Implementing KM in a Public Organization:  
The Case of the Dubai Police Force

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ABSTRACT

The past two decades have witnessed an increasing interest in Knowledge Management, a concept which has been recognised as key to the success of an organization’s overall strategy. Public organizations have also come to realize the importance of managing data and information and of building an efficient knowledge base to achieve effective decision making which in turn increases organizational performance. Knowledge Management in police organizations is particularly important because police officers rely heavily on information and knowledge to perform their work. Despite the growing rate of adoption of Knowledge Management practices by both private and public organizations the literature shows that many Knowledge Management projects fail to achieve their assigned goals (Davenport & Prusak, 1998). This is because management neglects to determine the critical dimensions that influence the success of their Knowledge Management implementation initiatives. This study identifies and examines various factors that influence the success or failure of Knowledge Management initiatives as manifested in the Dubai Police Force, an Arab public-sector organization. Conclusions from the literature review and the pilot study found four main dimensions which are critically influential in the implementation of Knowledge Management in the Dubai Police Force, namely organizational culture, leadership style, information and communication technologies and training. This study examines the correlative relations of these critical dimensions, and of their collective association with regard to the Knowledge Management initiative. The findings conclude the validity of all the variables that were investigated, confirming a positive correlation between these critical factors and Knowledge Management practice. This study therefore contributes to Knowledge Management literature from an Arab public sector perspective by measuring the most critical factors in Knowledge Management implementation from within. It also proposes a model of critical success factors for Knowledge Management initiatives in this particular context.
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DECLARATION

Whilst registered as a candidate for the above degree, I have not been registered for any other research award. The results and conclusions embodied in this thesis are the work of the named candidate and have not been submitted for any other academic award.

Signature of DBA Candidate

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ABBREVIATIONS

CKO – Chief Knowledge Officer
CoPs - Online Communities of Practice
DBA - Doctor of Business Administration
DC- Dubai Courts
DEWA - Dubai Electricity and Water Authority
DPF - Dubai Police Force
IACP- International Association of Chiefs of Police
IDP- Individual Development Plan
ICT - Information and Communications Technologies
KHDA - Knowledge and Human Development Authority
KL – Knowledge Leader
KM - Knowledge Management
RTA - Road and Transport Authority
SME - Small and Medium Enterprise
SSPS - Statistical Package for Social Science
UAE - United Arab Emirates
ZSEM - Zagreb School of Economics and Management
CHAPTER 1

INTRODUCTION

1.0 Introduction

This chapter provides an overview of the research study as well as the motivation behind carrying out this work. The background of that study and the justification for why this research is important is discussed. The chapter also outlines the research problems, aims and objectives and identifies the scope and limitations of the research. A review of past studies of Knowledge Management (KM) in the public sector is presented and the critical factors that influence KM are identified. Finally, the contribution this research makes to KM scholarship is highlighted.

1.1 Background of the Research

As the world has entered an information and knowledge-economy era, defined by increased information technology which makes knowledge much more accessible, it has become crucial for organizations to sustain competitiveness by maintaining an up-to-date knowledge management system. Interest in KM burgeoned as public organizations have come to realize the importance of data and information management and of building an efficient knowledge base, in order to achieve effective decision-making which in turn contributes to enhanced performance. KM in police organizations is particularly important because police officers rely heavily on information and knowledge to perform their daily duties.

Police officers and agencies regularly deal with a plethora of information (Luen & Al Hawandeh, 2001), and in order for police organizations to ensure the successful investigation efforts of its members, they must guarantee that distilled and organised
knowledge is available to them at any given time. In police investigations, knowledge is both time-critical and intensive in nature (Hashemian & Mahdizane, 2008). Quick and easy access to information which is optimally organised is indispensable to the prevention of crime, protection of life and guardianship of the law— the core of police work (Gottschalk, 2006).

Despite the growing adoption of KM practices by private and public organizations, the literature shows that there are many KM projects that fail to achieve their assigned goals (Davenport & Prusak, 1998). This is because management neglects to decide, or falls short of determining, the critical factors that will influence the success of their KM implementation initiatives (this will be discussed in more detail later in this chapter). Organizations must plan properly and be ready to deal with certain challenges while implementing KM strategies. The internal environment of an organization greatly influences the success of any changes within its program (Jashapara, 2004). Management must fully understand an organization’s internal environment to be able to clearly and accurately identify the KM enablers within it. KM enablers can simplify the process of knowledge creation and sharing within the organization, whereas the absence of certain enablers may become a barrier to KM implementation, and lead to the failure of a KM program.

1.2 Motivation for Proceeding with the Research

In the past few years, KM strategy has increasingly captured the attention of the Dubai Police Force (DPF). Although this organization is well equipped in terms of infrastructure and technology, the lack of empirical investigation in the area of KM implementation has motivated the author, an experienced working police officer, to remedy this shortcoming by conducting this research. The author was not aware of KM implementation in the DPF until
a few years after the knowledge management program had been launched. The DPF had created a department to oversee KM practice within the organization which focuses on knowledge-sharing strategies. This raised the question of why this initiative was not announced overtly, and why its implementation proceeded without the necessary empirical investigation. Moreover, as a member of the organization, the author has encountered many challenges in the workplace which may be attributed to lack of a proper knowledge management system. For example, there is no succession-planning that ensures the systematic replacement of retiring senior officers. Furthermore, there is no procedure in place for the debriefing of talented workers who leave a department of the organization for another. Those department-changing workers simply take their knowledge with them, often into contexts where it is of little or no use to their work. Similarly, communication with workers who leave the organization proves somewhat difficult, oftentimes because of loss of interest in the old workplace, and an increased concentration on responsibilities in the new workplace. It is for these reasons, among others, that retrieving the right knowledge at the right time from the right source have proven to be a challenge in the DPF.

Noting these and other operational shortcomings, the author conducted a literature review of KM practices and policies, and of how police organizations can benefit from KM implementation. The author's cornerstone belief was that many of the daily challenges and issues in the workplace can be resolved if KM is implemented effectively.
The lack of empirical studies of police organizations in the Arab context also motivated the author to undertake a research program to identify the factors that are capable of facilitating or inhibiting the successful implementation of KM in such organizations.

1.3 Justification of the Research

The research results are expected to stimulate awareness of the importance of KM in public organizations, especially in police forces (Luen & Al-Hawamdeh, 2001), because KM can enhance the efficiency of the decision-making process. Biygautane & Al-Yahya (2010) found that many challenges face the Dubai public sector. They included the DPF in their study, and note that the departure of talented workers has a severe adverse impact on organizational knowledge. In fact, 66% of Dubai public organizations report the loss of significant core competencies when staff members leave or are transferred to other departments. Furthermore, creating employment opportunities for the national workforce has placed an added pressure on the public sector, as it is required to integrate unskilled people into the market workforce by equipping them with work skills (Biygautane & Al-Yahya, 2010).

The dearth of studies that address KM issues within Arab context in general and in the DPF in particular makes this research important, as it contributes a cross-cultural perspective to existing KM literature. The cross-cultural background of the study provides interesting and important insights into KM implementation practices and challenges in the Arab police context, pointing out how work is done differently, in different cultural contexts.

1.4 The Research Problem

Although some studies have examined KM in the Arab world, and some even looked at public organizations, this study makes its own contribution to the literature about KM in the Arab public sector; it identifies and evaluates the most critical factors that contribute to the
success or failure of a KM implementation. It also provides an original assessment of the level of KM implementation in the DPF, and a model of the critical success factors for KM initiatives in the context of the Arab public sector.

The goal of this research is to contribute to the improvement of the DPF operations by suggesting a framework in which the findings can be implemented. Although the DPF has already proceeded in implementing a KM initiative, the project is still in its infancy; therefore, there is room for recommendations and improvement. Furthermore, the shortage of studies that tackle operational issues based on empirical evidence urgently calls for the rigorous exploration of KM implementation practices.

1.5 Research Aims and Objectives

The main aim of this study is to assess the most critical factors in KM implementation, and consequently, to identify and implement successful practices in the context of the Arab public sector. To achieve this, the research has the following objectives:

- to investigate the issues and challenges in knowledge management in the Arab context;
- to measure the levels of influence of the most critical dimensions on KM management in the Arab public sector;
- to determine the correlation between KM practices and their positive or negative influences;
- to propose a model for the implementation of KM initiatives in the Arab public sector;
- to recommend practical solutions that can help organizations overcome barriers for effective KM.
1.6 Scope of Research

This research focuses on the DPF, and not on other police organizations in the United Arab Emirates (UAE). This particular organization was chosen because it has recently adopted KM practices and policies into its operations (Biygautane & Al-Yahya, 2010) and also because the author is a member of the organization which puts him at an advantage with regards to data collection. A study by Seba, Rowley and Deldridge (2012) on knowledge sharing in the DPF helped to shape the objectives for the study. The main discussion will address the factors that influence the execution of KM strategies rather than the general aspects of police operations. The research questionnaire was posted on the DPF intranet therefore limiting the survey access to members of the organization.

1.7 Past Studies and the Research Gap

KM literature is extensive and many authors have examined the barriers to its effective implementation. BenMoussa (2009), for example, reports on the results of case studies on five major companies, diverse in types and sectors, identifying barriers that were experienced to effective KM implementation. He highlights the problem that KM has been, and to some extent still is, regarded as a technological matter and ‘such an IT driven approach[e]...[has] led firms to overemphasise technological issues at the expense of such major issues as culture and users behaviour’ (BenMoussa, 2009, p. 1266). He goes on to suggest that ‘it is only after the technological capability exists that firms realize how vital the people factors are’ (BenMoussa, 2009, p. 1266). Clearly, it is important to examine the cultural and behavioural dimension in KM implementation in order to illuminate good practice.

Although most studies look at private businesses, a number of them have observed KM in the public sector. The work of Wiig (2002) and Yao, Kam and Chan (2007) is notable
as they investigate how culture, attitudes and barriers have an impact on the knowledge-sharing process among Hong Kong government departments. Also noteworthy is the investigation by Chong, Salleh, Ahmad and Sharifuddin (2011) of how accountants in the Malaysian public sector perceive KM implementation issues, and the study by Chawla and Joshi (2010) that conducts a comparative research of various dimensions of KM in public and private sector organizations in India. Chong et al.’s (2011) work identifies key enablers of KM implementation such as effective knowledge-sharing processes, ICTs infrastructure, job rotation and leadership support in the knowledge-sharing culture. They found that other enablers such as training and learning as well performance evaluation and incentives are less significant to performance. Chawla and Joshi (2010) who compare KM initiatives in the Indian private and public sectors note that the private sector was performing better than the public sector at all levels of KM including process, leadership, technology, culture and measurement levels. This can be attributed to the different perceptions of approaches to KM implementation in the two sectors. These authors see the private sector approach as one tending to prioritise profit, and inclined to view effective KM as a means of increasing profit, and a facility that supports their efforts to satisfy customers and employees. Cardoso, Meireles and Ferreira Peralta (2012) propose a framework of factors that influence (positively or negatively) KM in Portuguese social economy sector organizations. The study identified organizational commitment, knowledge-centred culture and training as critical success factors in KM practices.

Some researchers have investigated KM issues in Arab countries and compared their approaches and findings to those of the West (Al-Alawi, Al-Marzooqi & Mohammed, 2007). Al-Salti and Hackney (2011) conducted a study to investigate the factors that
influence successful knowledge transfer from outsourced private organizations to the public sectors in Oman. They found that there are large differences in terms of management practices, organizational culture, work routines, goals and polices. Furthermore, the study also raised important public-sector issues. Most participants described their organizations as rigid and centralized, with bureaucratic procedures that make the decision-taking process longer than expected, slow communication flows and hierarchical power structures.

Biygautane and Al-Yahya (2010) conducted a case study of Dubai’s public sector. The study focused on the opportunities and challenges of KM implementation in Dubai’s public sector. It concluded that the KM implementation process was slow. According to their findings, the individual’s perception of the importance of KM and the government’s approach to KM practice hinders the knowledge-sharing process. Biygautane and Al-Yahya (2011) conducted another study to determine the enablers and barriers in Dubai’s public sector. The main enablers identified included availability of sufficient financial resources, involvement of employees and reward system for knowledge sharing. From another angle, this study identified barriers to effective KM, such as organizational culture and lack of trust.

Arab culture emphasises trust among business parties, which is established through relationships. Individuals build up relationships based on trust before any knowledge-sharing activities occur. Bairi, Manohar and Kundu (2011) contend that trust between the senders and receivers of information influences the effectiveness of KM technologies whereby trust promotes more collaboration in utilizing information technology. Al Rawabdeh (2009) indicates that Western nations use the English language to
communicate, whereas many regions in the Arab world have not yet taken to using English language for business purposes, and this limits internet usage in this region. Butler (2009), when analysing leadership style in multicultural Arab organizations concluded that communication and trust between leaders and their subordinates influences employees’ commitment to an organization. Al-Salti and Hackney (2011) found that a top-down leadership style causes fear among subordinates to disagree with their superiors. In this sense, the Arab world differs from non-Arab (Western and Eastern) countries in leadership style.

Leadership is considered one of the most influential factors in KM implementation in the Arab context. Randeree and Chaudhry (2012) concur that Arab culture has a significant influence on leadership style in Arab organizations. Weir and Hutchings (2005) provide useful insights into the process of sharing and managing knowledge in Arab culture. Most, if not all, business operations in the Arab World occur in social networks. The success of business leaders and managers depends largely on the nature of their relationship with their community. Thus one of the components of Arab culture is *wasta*, which names the concept that refers to social connections.

Social connections play a key role in Arab organizations and business relations (Tlaiss & Kauser, 2010). In fact, a similar concept is operative in non-Arab countries as well (Weir and Hutchings, 2006b). *Wasta* has been the basis of business relations in the Arab world for many years. According to Tlaiss and Kauser (2010), *wasta* differs from the Western approach to the networking of businesses in that it draws its unique characteristics from Arabic society only. Social connections in Arab society sometimes override personal qualifications, unlike in the networks of Western societies. The
emphasis on social connections has attracted criticisms, especially when personal qualifications are overlooked in employee recruitment (Tlaiss & Kauser, 2010).

Arab countries follow the doctrines of Islam, which emphasises the importance of relationships even in the business environment. Kumar and Che Rose (2012) conducted a study of KM among public officers in the Malaysian public sector, investigating specifically the link between knowledge sharing and the Islamic work ethic (IWE). The IWE has a significant influence on the conduct of employees in the work place whereby some employees value the propositions of IWE more than organizational values. The study results indicate that the IWE has a substantial effect on knowledge sharing in the Malaysian public sector. The findings of Kumar and Che Rose (2012) imply that organizations in the public sector should have a clear understanding of the effects of the IWE on the conduct of employees.

Emine (2012) investigated the impact of KM on the productivity of small and medium enterprises (SMEs) in the Arab world and found that many organizations in the Arab world recognize the contribution of knowledge to their competitiveness. However, it was also found that many other Arab SMEs have not realised the importance of KM. Emine (2012) analysed the factors that have limited SMEs in adopting and implementing KM. The findings of Emine’s study indicate that most economies in the Arab world have weak managerial structures, lack social protection and have poor training and skill structures. Nour (2010) explores the prevalence of transfers of knowledge in the Arab world and suggests that there is a positive relationship between the economic growth of Arab countries and KM. This positive relationship implies that Arab countries can use knowledge to enhance economic growth and build their human capital.
Nour’s (2010) findings further indicate that Arab countries can promote the use of KM through education, ICTs and research and development. Obeidat, Shannak, Masa’deh, and Al-Jarrah (2012) identify employee training as a main challenge in Arab management and found that many Arab organizations have adopted theories and strategies in management without recognizing that those theories and strategies apply to Western cultures. Training courses for employees are few or even absent in many Arab organizations, and when they do exist, their designs rarely meet the needs of employees.

The police sector has received considerable attention, given its knowledge-intensive activities. Several studies were found which address KM implementation specifically in police organizations. Hughes and Jackson (2004) point out that police organizations are a part of the public sector which do not compete directly in the marketplace. However, economically challenging times have forced many public sector institutions to improve their efficiency in managing their available resources. Police organizations in the past few decades have been engaging in continuous learning as a way of improving their efficiency (Mitchell & Casey, 2007).

Hildreth and Kimble (2004) examine the case of the Dutch police force and conclude that like other organizations, it is experiencing rapid changes. Police operations have become more complex because of constant changes in government laws and regulations. The authors note that in view of such changes, police knowledge has to be current if they are to carry out their duties adequately. This implies that the police do not just require KM systems to conduct investigations; they also need immediate access to
information about the changes in laws and regulations that may affect their operations. According to Hashemian and Mahdizane (2008), police work is complex, dynamic and knowledge-intensive. Police officers deal with multiple crime types and have to process diverse information to solve cases and share tacit knowledge during their interactions at the team level.

Establishing safe databases can enhance access to information and knowledge sharing within an organization. Group structures create a platform for police officers to share their experience in previous cases (Hashemian & Mahdizane 2008). Nordin, Pauleen and Gorman (2009) conclude that KM antecedents are relevant to the criminal investigation process. A clear understanding of KM antecedents is critical when using KM applications. Seba and Rowley (2010) conducted their study in four UK police forces aiming to explore the strategies used in sharing and managing knowledge in the UK’s public sector. They found that none of the four police forces involved in the study had a clear KM strategy or policy and identified various challenges in the UK police forces with regard to knowledge sharing. The challenges included the large size of the forces, culture and variations among officers’ evaluation of KM.

Seba, Rowley and Delbridge (2012) conducted a similar study to investigate the process of knowledge sharing in the DPF. The aim of this study was to investigate the DPF’s initiatives to improve knowledge sharing and the challenges faced in this process. Some of the barriers that they identified included certain shortcomings of organizational structure, the lack of trust, leadership issues and time allocation and rewards systems. Police officers expect their leaders to facilitate knowledge sharing and recognise the officers’ efforts at sharing information. Where leaders are reluctant to
release information, the process of knowledge sharing is slow and ineffective. Mitchell and Casey (2007) examine leadership and management in police organizations and conclude that continuous learning is necessary for effective leadership. Leadership in police organizations requires a proper understanding of the issues that affect the police force and its relations with the public. They conclude that organizational knowledge is important in leadership issues in police organizations. Harfield (2009) argues that information plays a key role in police organizations, and the capacity of these organizations to turn such information into knowledge depends largely on front-line staff. The skills of frontline-staff in collecting accurate information will determine whether police organizations will transform the available information into useful knowledge.

Other significant studies which address KM implementation in police organizations include the Singapore-based work of Luen and Al-Hawamdeh (2001), the US-based study by Lahneman (2004) and the Norway-based study by Berg, Dean, Gottschalk and Karlsen (2008).

The reviews of past research studies have revealed that although those studies address different aspect of KM practice, and do so in different culture contexts, it remains to be determined which factors or dimensions are the most critical for KM implementation in the Arab public sector. Moreover, the relationship between KM initiatives and critical success factors is unclear whereby it is not even known whether the correlation is negative or positive. For example, Cardoso, Meireles and Ferreira Peralta’s (2012) work mentioned earlier revealed a negative effect of reward-based commitment to KM practices. On the other hand, Ajmal, Helo and Kekale (2010) who examined various
factors that influence the success or failure of KM initiatives, found a positive correlation between reward and the success of KM initiatives in projects. This helps determine the level of attention that should be afforded to each factor during the KM initiative implementation.

1.8 Interim Conclusion

The literature shows that there are clear distinctions between Eastern and Western approaches to KM. Many studies discuss KM practice in relation to national culture. For example, An, Deng, Wang and Chao (2013) conduct a comparative study between China and Western countries to identify KM approaches within Chinese companies. Park, Vertinsky and Lee (2012) discuss knowledge sharing practice within Korean companies when they are involved in international joint ventures. Magnier-Watanabe and Senoo (2010) studied Japanese culture’s effect on the management of knowledge. Likewise, there is a growing interest in studying Arab approaches to knowledge management (see Esia & Skok, 2014; Yeo & Gold, 2014). The distinction between non-Arab (Western and Eastern) and Arab approaches to KM is frequently investigated as chapter two provide more elaboration on this.

According to Mohannak (2011), the key problem with KM research and literature is that it has been accumulated through a Western lens. Looking at the Arab context through this Western lens, one is unlikely to find reliable results (Skok & Tahir, 2010). For one thing, culture and social setting in the Arab world influences management practice in organizations. Skok and Tahir (2010) conclude that people are the biggest barrier to knowledge-sharing in Arab countries. These findings imply that non-Arab KM models should be implemented with caution. Mohamed et al (2008) cite the opinion of His Highness Sheikh Muhammad Bin Rashid Al Maktoum, the ruler of Dubai, that there is a
distinct need to build an ‘Arab model’ of KM ‘that reflects Arab culture’ (Mohamed et al, 2008, p. 111). This position acknowledges the differences between Arab and non-Arab cultures, and appreciates the significance of those differences for KM purposes. It serves to highlight the importance of attention to ‘soft’ issues for the success of KM implementation in the DPF.

1.8.1 Pilot Study

Since there are no studies which have been previously conducted to investigate the critical success factors that are influencing KM implementation in the DPF, the author decided to conduct a pilot study. The aim of this study is to identify the key variables that are affecting KM implementation within the specific context of the DPF. To this end, the author ran a series of interviews with key members from the KM department and based on the input received and the findings of an exhaustive literature review, attempted to identify factors influencing KM implementation. The conduct and results of this study are discussed in Chapter 3.

With this in mind, this study focuses on the four dimensions of KM that the author believes are keys to KM success in the Arab world. Those dimensions are: leadership style, organizational culture, ICTs and training. The author has interviewed the Head of the DPF KM Department and other members of the same department who are actively involved in the KM implementation program all of whom confirmed the importance of these four dimensions. Although the literature shows that other factors have been investigated by various scholars, the four which this research is concerned with have been found to be the most critical in the Arab public sector organizational context.
Furthermore, conclusions drawn from past studies (Luen & Al-Hawamdeh, 2001; Lahneman, 2004; Hildreth & Kimble, 2004; Hughes & Jackson, 2004; Weir & Hutchings, 2005; Weir & Hutchings, 2006b; Glomseth, Gottschalk, & Solli-Saether, 2007; Mitchell & Casey 2007; Berg et al., 2008; Hashemian & Mahdizane, 2008; Nordin, Pauleen, & Gorman, 2009; Al Rawabdeh, 2009; Tlaiss & Kauser, 2010; Biygaute & Al-Yahya, 2010; Seba & Rowley, 2010; Ajmal, Helo & Kekale, 2010; Bigiardi, Dormio & Galati, 2010; Nour, 2010; Chawla & Joshi, 2011; Chong et al., 2011; Al-Salti & Hackney, 2011; Etter & Griffin 2011; Mohannak, 2011; Randeree & Chaudhry, 2012; Cardoso, Meireles & Ferreira Peralta, 2012; Emine, 2012; Kumar & Che Rose, 2012; Odedait et al., 2012; Seba, Rowley & Delbridge, 2012) indicate that each of these dimensions has a significant influence on KM success and are also interrelated in their effect on KM. For instance, leadership style and organizational culture in Arab organizations are built on the beliefs and values of the national culture and influenced by religion of Islam. Leadership style in an organization determines the nature of information technology and the organizational culture. According to Schein (2010), organizational culture and leadership are two sides of the same coin—leadership has a great impact on organizational culture because it is leaders who begin the process of culture-creation by selecting and forming the influential groups within an organization. Once the organizational culture is established, its values and norms entail the assumptions about the calibre of the person who is the suitable leader of that organization (Schein, 2010). Therefore, as leaders can influence organizational culture and vice versa, leadership cannot but stamp itself on the processes of motivating people and promoting the knowledge-sharing culture. Leaders inspire workers to collaborate and break down any barriers that may hinder KM practices. A knowledge-friendly culture, also referred to as a knowledge-centred culture (Davenport & Prusak, 1998; Cardoso, Meireles &
Ferreira Peralta, 2012) that leaders create nourishes the culture in which the use of ICTs becomes routine. ICTs cannot ignore training in a culture that appreciates KM; training is recognised and highly valued in a knowledge-friendly organizational culture (Cardoso, Meireles & Ferreira Peralta, 2012).

1.8.2 Importance of Study

In short, this study contributes to the KM literature concerned with the Arab public sector by measuring the most critical factors that play a key role in KM implementation. Also a contribution to the literature is this study’s assessment of the extent to which KM is being practiced in the DPF. A further contribution is the model this study constructs of the critical success factors for KM initiatives in the context of the Arab public sector. This study is both important and timely in that it augments the shortage of studies that focus on the Arab public sector.

1.9 Summary of Chapters

Chapter 2, the Literature Review rounds up the key KM pertinent concepts and evaluations in the existing literature and identifies the factors of success of KM implementations such as 'organizational culture', 'leadership', 'ICTs' and 'training programs'; emphasises the importance of clarity in the KM-related usage of the terms: 'data, 'information' and 'knowledge'; examines the content of the concept 'KM'; distinguishes the concepts 'explicit' and 'tacit' knowledge; highlights the concepts of 'organizational culture' and 'police organizational culture'; examines 'knowledge sharing' both generally and specifically to Arab culture; outlines leadership styles (transformational, knowledge leaders, police leadership); examines the role and impact of ICTs on KM; and highlights the role of training in the KM context.
Chapter 3, Research Methodology, offers a description of the research design and an account of the ‘onion’ (Saunders, Lewis & Thornhill, 2009) style; a discussion of the author's choice of mixed-methods research procedure on positivist interpretivist paradigms; an account of the research procedure and pilot study; and justification of the choice of the questionnaire instrument; and a summary of the ethical measures taken to protect research participants.

In Chapter 4, Procedural Methodology of the Field Study, the DPF is presented as the research community. An outline is offered of the methodology of the data collection and of the procedure for addressing the research questions and testing the related hypotheses, which includes observation of the correlative relations of the variables, and an analysis of variance to determine the fundamental relationship between the variables and the phenomenon (KM implementation) under study. Testing is carried out by means of t-tests and linear regressions. The degree of influence of each variable on KM implementation is calculated.

There is an analysis of the data obtained in the quantitative study, and of the data collected by means of the field-study’s survey list in Chapter 5, entitled Data Analysis and Findings.

Chapter 6, Summary and Discussion, outlines the research findings and implications, and its contribution to KM scholarship while Chapter 7, The Proposed Framework and Recommendations, focuses on proposing a framework for the effective implementation of a KM infrastructure. It discusses the practical contributions of this study to KM
literature and offers the author’s reflections on experiences in the course of this research project.

The next section sets out the theoretical foundation for the study through a review of relevant literature.
CHAPTER 2

LITERATURE REVIEW

2.0 Introduction

Chapter one provided an introductory overview of the research study and disclosed the main aim and objectives of this research. It provided a review of past studies on knowledge management in the public sector and identified the critical factors that influence knowledge management in relation to Arab culture. This chapter distinguishes the concept ‘knowledge’ from ‘data’ and ‘information’ and then defines KM. It paves the way for the description of the theoretical framework of the study by discussing the importance of the four critical dimensions identified in the previous chapter: ‘organizational culture’, 'leadership style', 'ICTs' and 'training programs.'

These four dimensions, referred to as ‘enablers’ (success factors) and as ‘barriers’ (failure factors), reflect the critical role they play in the eventual success of a KM initiative. For example, if an organization's culture does not support KM implementation, the KM project is doomed to fail; if it is supportive of it, then the chances of the successful implementation are high (Davenport & Prusak, 1998). Material from this section has informed and supported the design of the empirical work for this study.

2.1 Understanding the KM concept

Davenport and Prusak (1998) emphasise the importance of clarity of purpose and language, and list these attributes as critical factors in the success of a KM project. Clarity of language is imperative, for unclear terms or ambiguous or vague statements
give rise to confusion during the KM implementation process. This is demonstrated in the study by Biygautane and Al-Yahya (2010) which investigates KM practice in Dubai government organizations. These researchers' analysis reveals that one of the major obstacles of KM implementation projects in the Dubai public sector is the vagueness of the KM concept. A large proportion of the respondents in this study note that their lack of awareness of what KM is and does was the major challenge for them. This study notes also that government entities use different terms, or they use terms interchangeably, to elucidate the purport of the KM concept. For example, 51% use the term ‘KM’, 46% use ‘knowledge sharing’, while the rest reveal divergent perceptions with terms such as ‘information management’ and ‘capacity development’.

The literature shows an overwhelming consensus that the terms data’, ‘information’ and ‘knowledge’ are clearly distinguishable; as will be explained in the following section. Indeed, failure to acknowledge their differences has had dire consequences. For example, Davenport and Prusak (1998) found that some organizations that have confused these terms have invested in unsuitable technology. These authors point out that the distinction of these terms is crucial, because the success or failure of knowledge work is contingent on which concept is the main focus of an organization.

2.1.1 Data, Information, Knowledge: The Differences

The data-information-knowledge division is frequently posited in the literature to illustrate the different concept that each of these terms names. Nygard and Aamodt (1995) define data as a pattern without meaning. These patterns form the input for the interpretation process, which is the first step in decision-making. Davenport and Prusak (2005) also define data as a set of objective facts. According to Liew (2007), data is unfiltered or unrefined information used in reasoning and calculations. It can be
concluded that data is numbers, figures and raw facts that do not acquire meaning until they are organised and processed to yield meaningful information in a given context (Jashapara, 2004; Liew, 2007). Thus data is subjected to statistical analysis (or to other procedures) to produce information that illuminates a situation (Davenport & Prusak, 1998). Information is the output of the data-interpretation process, and is both the input and output of the decision making process (Nygard & Aamodt, 1995). It follows, therefore, that individuals with particular functions create information from data as they interpret it. Hence, human mediation is necessary to construct information. While information is processed data, knowledge is information acted upon with a purpose.

The essence of this discussion is that knowledge differs from data and information because it relies on particular applications of the meaning of information. Likewise, data differs from information in that it lacks relevance and purpose, while information is “data endowed with relevance and purpose” (Drucker, 1995, p.45). Therefore, the salient difference between ‘knowledge’ and the other two terms is that knowledge does not transfer as easily as data and information because it is person and/or purpose specific, and therefore resides in the human mind (Nonaka & Takeuchi, 1995).

The earlier discussion revealed that there is a clear distinction between data, information and knowledge in the literature; however different researchers defined knowledge from different perspectives. The definition of ‘knowledge’ is a contingency of different perceptions. For instance, Nonaka (1994, p.15) defines knowledge as a “justified true belief”, whereas, Davenport and Prusak (1998) offer a pragmatic definition of knowledge:
“Knowledge is a fluid mix of framed experience, values, contextual information and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers. In organization, it often becomes embedded not only in documents or repositories but also in organizational routines, processes, practice, and norms” (Davenport & Prusak, 1998, p. 5).

For the purpose of this study, the author chose the definitions put forth by Nonaka (1994) and Davenport and Prusak (1998) because they both incorporated the practice of capturing, storing and knowledge sharing. It is clear from the above passage that there are both ‘hard’ and ‘soft’ dimensions to successful KM implementation. However, as Peters and Waterman (2004) have pointed out ‘soft is hard’ (Peters & Waterman, 2004, p.11). It is relatively straightforward to put in place repositories, documents and procedures, but more difficult to ensure their effectiveness in use by people. The embedded nature of knowledge means that any organization wishing to improve Knowledge Management practices must focus on people, norms, values and practices forming the culture of a particular organization. These definitions have emphasized the key variables associated with the human side of KM practice, rather than merely focusing on technology. Accordingly, this research project focuses on the soft side of KM (i.e. people, culture and process).

Nonaka and Takeuchi (1995, p.58) view knowledge as a “dynamic human process”. Knowledge is a combination of information with other factors such as context, experience and interpretation (Jarrar, Schiuma & Zairi, 2010). People interpret information according to their experiences and competencies. Individuals acquire new knowledge by deploying their expertise and experiences (Psarras, 2006). It follows, therefore, that individuals with particular functions create information from data as they interpret it. Hence, human mediation is necessary to construct information. While
information is processed data, knowledge is information acted upon with a purpose (Davenport & Prusak, 1998).

A proper management of information will result in knowledge-generation and evidence production that assist in identifying and charging criminals. For example, if an eyewitness is unable to recall precise information about the crime, this may result in leaving the criminal unpunished, or in convicting an innocent person. To boot, information has to be obtained in accordance with legal requirement. Information obtained in breach of these requirements will not be admitted by a court (Nordin, Pauleen and Gorman, 2009).

Though ‘knowledge management’ appears to have an explicit meaning because the words ‘knowledge’ and ‘management’ are in common use, the KM concept in fact has a deeper meaning for organizations.

2.1.2 What is Knowledge Management?

The management perspective of knowledge evolves from perspectives such as identification, manipulation, organization, dissemination, storage and reuse. In KM, knowledge is a process of creating performance and improvement, a technologically driven perspective and a people-driven perspective (Alavi & Leidner, 2001).

According to Davenport and Prusak (1998), knowledge can be seen as both a process and stock that can be stored and manipulated. Luen and Al-Hawamdeh (2001) concur, and assert that police organizations are well prepared to adopt KM practices as both object and process, as the two are complementary in those contexts, and equally
important for KM implementation approaches. According to this view, police organizations can capture, organise, store and use knowledge as an object. These organizations can also treat knowledge as a process that helps encourage knowledge sharing and creation where officers are motivated to apply KM practices willingly (Luen & Al-Hawamdeh, 2001). Emine (2012) defines KM as the process of identifying, creating, acquiring, transferring, sharing and exploiting knowledge. Jarrar, Schiuma and Zairi (2010) see the KM process as one that revolves around knowledge codification and processes that include knowledge generation, transfer, mapping and storing. For Kane, Robinson-Combre and Berge (2010), KM is the management of human knowledge within an organization. That is, KM involves the collection, synthesis and dissemination of knowledge.

According to Kane, et al (2010), KM prompts individuals in an organization to articulate and capture the knowledge they possess. KM also involves sharing human knowledge with the right people and at the right time. The research of Nordin, Pauleen and Gorman (2009) extends this view. They conducted a study to determine the antecedents of KM that relate to police investigation. According to them, ‘antecedents’ refer to what is considered to be KM, since that concept has various uptakes. The main intellectual antecedents include philosophy, sociology, psychology, information system and management. Each of these antecedents has corresponding elements of knowledge. For instance: the sociological KM elements include culture, organizational and social elements; the philosophy element includes logic and ethics; psychological element includes cognition; management includes the personal and the investigative; and computing includes networking, applications, databases and communication, among others. Nordin, Pauleen and Gorman (2009) concluded that these KM antecedents
are relevant to the criminal investigation process. A clear understanding of KM antecedents is critical when using KM applications. Additionally, the most dominant classification of knowledge propagated by Nonaka and Takeuchi (1995) is based on Polanyi’s (1966) work. Accordingly, ‘knowledge’ is categorized either as explicit or tacit.

The concept ‘explicit knowledge’ refers to knowledge that is codified, easily transmitted, articulated and usually generated from the documentation of an organization (Nonaka & Takeuchi 1995). Documentation exists variously as financial statements, organizational policies, technical reports, files, computer databases, procedure manuals, etc. For police organizations, documentation can include the prescribed procedures of arrest, or a statement of illegal parking policies (Newburn, 2008).

Tacit knowledge is the kind that evolves from experience, skills, intuition, behaviours and individual perceptions (Nonaka, 1991). This type of knowledge is developed through accumulated learning and experience. It is very difficult to reproduce or duplicate, and therefore to document and codify as explicit knowledge. Polanyi (1996, p.4) refers to tacit knowledge as that which “we can know more than we can tell”, thus calling attention to its highly personal character, and to its consequential resistance to communication, transferability and documentation.

Polanyi (1966) provides the good example of the police identikit picture as an instance of tacit knowledge. In this technique, police agencies usually use a database of images of facial features (nose, mouth, eyes, etc.). The witness, the holder of information about the
criminal’s appearance, can easily be shown thousands of images of each facial feature, one by one. He would then have to choose from among this vast number of images the facial feature that is most like the criminal’s. However, the witness need not be subjected to this gargantuan task when an identikit technician is on hand to help construct the criminal’s face. It is very hard to explain how the technician’s tacit knowledge guides the witness to the features on the enormous database that are most likely to be the criminal’s, having only the witness’s verbal description of that criminal. Although both explicit and tacit knowledge are important in any organization's repository, there is rather more emphasis in the literature on tacit knowledge, no doubt because of its management issue.

Studies which are concerned with defining KM vary significantly. At one end of the spectrum, definitions are highly inclusive and cover everything about knowledge, while at the other end, definitions limit their focus to certain contexts. This is mainly due to a lack of consensus on what actually constitutes a “good” definition of KM. According to Dalkir (2005) however, there is a widespread agreement on the goals that organizations are looking to achieve when undertaking KM (Dalkir, 2005).

Knowledge management has been discussed in various contexts and from within diverse industries and sectors. Some examples include the work of Emine, (2012), who discussed SMEs in relevance to KM; the work of Hammoud, (2011), which brought in the perspectives of religion and national culture; and the work of Filstad and Gottschalk (2011) connected knowledge management with law firms and the police force.
The main intention of this study is to investigate KM within the context of the public sector, particularly looking at the Dubai Police Force. The discussion around KM here revolves around the variables that are considered key to leading successful KM implementation strategies. Because police organizations consist of different departments, this study considers that KM goals may in fact vary among these various departments. And since the main aims of police organizations are the prevention of crime, the protection of life and the guardianship of the law— the core of police work (Gottschalk, 2007) – this study will focus on knowledge capturing, knowledge codifying and knowledge sharing among departments and individuals in improving and enhancing detection rates and reducing crime.

Gottschalk and Dean (2008) contend that police officers depend on their professional knowledge and the availability of knowledge to successfully carry out investigations. Based on the author’s experience working at DPF, for example, crime detection departments work closely together to analyse crime cases and arrest criminals. For such departments, the transfer and exchange of information and the sharing of knowledge between departments is paramount for crime case investigation. For the most part, detectives prefer regular face-to-face meetings as well as informal meetings. Given the nature of how such departments function, personalization strategies for knowledge sharing work best. On the other hand, for departments such as HR or finance, knowledge codification strategies work better than personalization strategies. The discussion of which strategies work better and when, will be in the following section.
2.2 KM Strategies: Codification and Personalisation

The earlier discussion identified two types of knowledge, namely tacit and explicit. Accordingly, an important question which arises is how two different types of knowledge can be transmitted. In an article entitled “What’s Your Strategy for Managing Knowledge?” Hansen, Noheria and Tierney (1999) found that firms foster knowledge sharing by using two different strategies: codification and personalisation.

Codification Strategy

An analysis of different business organizations revealed that in some companies the strategy centres on the computer, whereby knowledge is codified and stored in databases, and is made accessible to knowledge workers. Knowledge is codified using a “people to documents approach” which is a method that fits companies which are process oriented. Furthermore, through knowledge accumulation, codification strategies help organizations to build organizational memory—a practice which allows knowledge workers to search for and retrieve codified knowledge without having to revert back to the main developer of such knowledge. The overarching goal of this codification strategy (Hansen et al, 1999), is the ability to learn from past experience and to resolve problems or issues in similar ways to before.

Personalization Strategy

This strategy focuses on people who develop knowledge and communicate through direct person–to–person contact. In this instance, knowledge is transmitted through conversation and brainstorming among individuals rather than through organizational databases. The reliance on ICTs in this approach is limited to connecting people with one another.
Organizations that implement this strategy direct their investments in building networks of people and in addition to face-to-face contact; knowledge is also transmitted through email, video conferencing and telephone. Nevertheless, companies which follow such a strategy rely on electronic documentation systems, which are used for the purpose of capturing tacit knowledge.

It can be concluded that organizations have two strategic choices which they may follow:

- people-to-document which focuses on codification and relies on developing an electronic database that codifies, stores and disseminates knowledge after retrieving it from the repository or;
- person-to-person which focuses on personalization through networking and connecting people to share tacit knowledge.

The question then poses itself: how can organizations choose the right knowledge management strategy to gain an advantage or use knowledge effectively?

**Balancing KM Strategy**

Hansen et al (1999) found that companies who use knowledge effectively focus on one strategy predominantly and use the other strategy to support the main strategy. They contend that an 80-20% ratio in a KM strategy is most effective. This means that companies either focus on an 80% codification strategy and 20% personalization strategy or vice-versa.
For example, Ernst & Young, Anderson Consulting and Dell emphasize codification strategy as predominant, whereas, Bain and Company, Boston Consulting Group and Mckinsey emphasize personalization strategy as predominant. They have concluded that the knowledge management strategy should be aligned with the business goals of the firm. Thus, codification works better with companies that sell standardized services and products that do not vary and where people depend on explicit knowledge. Companies that sell innovative and customized products and services however, should apply a personalization approach where the reliance on people and tacit knowledge, is more. Additionally, they went on to argue that companies that straddle the two strategies equally have a high risk of failing at both.

While Hansen et al (1999) cautioned against the equal use of two strategies, Koenig (2001) argued that an 80%-20% emphasis is a confusing practice. Through his work, he found that companies that have an equal emphasis on both strategies were more successful than those that have an 80%-20% knowledge management strategy.

It can be concluded that there is no single strategy that fits better than the other, but rather that the right choice depends on the nature of the business and the organizational goals (Dalkir, 2005).

Considering such strategies within the context of the DPF, it can be argued that police organizations have different departments which have significantly different goals and work activities. The core business differs greatly from one department to another. Support function departments such as HR, finance and logistics remain the same with slight
differences among them. These types of departments rely on standardized services where
the work processes and daily activities, for the most part, remain almost the same and are
repeated frequently.

Making the right choice of KM strategy depends on the goals of the departments or
sections. For this reason, the distinction between investigative departments and other
managerial departments needs to be made on the grounds of types of services offered:
namely standardized services or customized services. Customized service in relation to
police investigation means that the nature of crime cases are different in terms of time,
approach, aggression and techniques used to commit the crime. This implies different
techniques and different approaches to analyse the crime case. Consequently, data is
gathered, information is exchanged and knowledge is captured and created for specific
cases in order to identify the suspects. Gottschalk (2008) coined this process: professional
knowledge of police officers.

To illustrate more, at the crime scene, much physical evidence is present, such as
fingerprints, bloodstains, fibres, hairs, guns, documents, identities, etc. All these items of
physical evidence remain objects until they are processed. This raw data has to be
analysed and organised in order to yield meaningful information. Processed, data
convey different meanings to, and have various levels of relevance for, different people
police departments. The victim, or eyewitness, for example, sees physical evidence just
as objects present at the crime scene. The patrol officer sees in them important
information that should be recorded to initiate the preliminary investigation by
the patrol department (Gottschalk, 2006), while the investigations officer reads this
record to understand and make sense of the incident.
Physical evidence at the crime scene remains undisturbed until it is photographed, analysed and examined by forensics departments. Those departments produce the articulate information that is then sent to the investigation department, where the suspects will be discovered. Finally, the collected evidence and accumulated information is acted upon to solve the case. At this stage, knowledge is deployed: the investigator deploys professional experience in the field of crime investigation (tacit knowledge) to interpret and analyse information to solve the crime case by locating the criminal suspect. At this stage, knowledge plays the critical role in making sense of the available information. This distinction between data, information and knowledge has many consequences for police work. The main challenge for police officers during investigations is to analyse and apply the information and knowledge obtained. Holgersson and Gottschalk (2008) and Holgersson, Gottschalk and Dean (2008) remark that the performance of police officers depends on their professional knowledge. The police require knowledge to handle each situation effectively. According to Gottschalk (2006), the success of police investigations depends largely on the availability of knowledge. The first stage of police investigations involves the apprehension of crime suspects. This requires information and evidence that will lead to their arrest. The second stage involves gathering evidence from the crime suspects and other sources that will lead to their convictions. Both preliminary and follow-up investigations require effective tools of obtaining and storing information.

Earlier examples have demonstrated that police officers rely heavily on experience and knowledge to solve criminal cases. Departments that are involved with analysing and solving crime cases depend more on tacit knowledge than explicit knowledge. It is clear that investigative departments are more dependent on the person-to-person approach than
the people-to-document approach. It can therefore be concluded that although the codification strategy is important for police investigations; the personalization strategy needs to be the predominant approach in such departments. Even though procedures and methodology may have similarities, and in which case the codification strategy may be of some use; crime cases are very different to one another and personalisation strategy should be utilized at the 80%-20% ratio that Hansen (1999) et al suggest.

Having noted the importance of understanding the concept of KM, knowing how it differs from the related terms (data and information), and KM strategic choice it is essential now to discover and address the influencing factors that are critical for the success of the KM initiative. The next sections address the four critical dimensions that are identified by the author, following interviews with members of the KM Department in the DPF. With backing gleaned from the related literature, the author intends to highlight the importance of these dimensions and their related issue with regard to KM, and seeks to understand the extent of the influence of these dimensions on knowledge management practice in the DPF.

2.3 Organizational Culture

The term ‘culture’ stems from the verb ‘to cultivate’ (Pheysey, 1993, p.2). Over the years, many philosophers and researchers, in their studies of social and human behaviours, have investigated the ‘culture’ concept from different perspectives, and advanced illuminations of its meaning (Fairholm, 1994). As expected, given the breadth and diversity of interest in this concept, no general agreement has emerged on what might be a universally acceptable definition of it. This confirms that there is no such thing as a single universal definition of “culture”, nor yet a “common culture” (Schein, 2010, p.7). For example, Kroeber and Kluckhohn (1952) found that there are more than 160
definitions of culture in the literature. Yet it is true that most definitions of culture engage concepts such as values, norms, beliefs, attitudes, behaviours and languages.

Defining ‘culture’ is well-covered academic ground, and it is beyond the scope of this thesis to pursue a new definition. Instead, since the purpose of the present discussion is to highlight the importance of organizational culture and its influence on the knowledge setting of an organization, it is expedient to make use of the most-repeated definition in the KM literature. This definition is offered by Schein (2010), who is broadly considered to be the father of the concept 'organizational culture' (Mishra, 2009). The same definition has been adopted by the British Police Academy (Kiely & Peek, 2002). According to Schein (2010), the culture of a group can be defined as:

“A pattern of shared basic assumptions learned by a group as it solved its problems of external adaptation and internal integration, which has 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” (Schein, 2010, p.18).

2.3.1 The Significance of Organizational Culture

Many studies confirm the great impact of organizational culture on an organization’s performance. For example, a study by Peters and Waterman (1982) which examines the secrets behind the success of American organizations found that corporate culture is the key to their success. Given the great influence of the culture of an organization, it follows that management should pay more attention to culture. Schein (2010) points out that a deeper understanding of organizational culture can enable organizations to react effectively to internal and external environmental forces. Understanding an organization’s culture is imperative and crucial. As Alvesson (2002) argues, even in cases where top management has a strong awareness of culture, there is still the lack of a
deep understanding of the way that their organization and its people interact.

Schein (2010) urges managers and other leaders to understand both the national culture and the subculture to gain a deeper understanding of an organization’s culture. Why an organization and its people interact in certain ways is explainable in terms of an understanding of the broad cultural spectrum (Alvesson, 2002). That understanding enables management to be more capable and comfortable when it handles the organization-specific issues that arise, and it sees managers less puzzled or anxious when they encounter unfamiliar situations. Typical issues that arise in organizations are why people are in conflict rather than collaborating, why some activities or tasks take too long, and why is it difficult to introduce change in an organization.

It is true that people are the core element of the KM initiative (Skok & Tahir, 2010). Knowledge issues connect closely with organizational culture, and people form the main component of any culture (Schein, 2010). If an organization’s culture does not support employees’ needs as they pursue set goals, then a KM initiative is less likely to be appreciated in that culture (Ajmal, Helo, & Kekale, 2010). These authors hold that organizational culture is one of the critical factors that influence KM. In appreciation of this fact, Alavi, Kayworth and Leidner (2005; 2006) point out that managers consider culture to account for 80% of the success of a KM initiative. Organizational culture is highly important in the changing of a process or in the creation of knowledge or sharing or utilizing as emphasised by Buckman Laboratory’s Koskiniemi:

“Successful knowledge sharing is 90 per cent cultural, 5 per cent tools and 5 per cent magic; all the technology and tools in the world will not make you a
knowledge-based organization if you do not establish a culture that believes in sharing” (Gerami, 2010).

2.3.2 Police Organizational Culture

Police culture has been the subject of examination by many researchers and practitioners (Newburn, 2008). Police culture is, like any other culture, composed of beliefs, values and profession-specific practices. However, the literature shows that certain themes are highlighted more frequently by researchers. They are secrecy, self-protection and the ‘us and them’ consciousness (Waddington & Wright, 2010).

Glomseth, Gottschalk and Solli-Saether (2007) investigated the role of organizational culture in knowledge-sharing during police investigations. Their study emphasises secrecy, respect, violence and self-protection. Glomseth, Gottschalk and Hole (2011) indicate that an organizational culture is socially construed, holistic and difficult to change. The socially relevant environment of an occupation has an influence on organizational culture. According to them, an organizational culture manifests in values, underlying assumptions and observable artefacts. Moreover, some values in the police culture that have an effect on KM indicate that police officers value time, traditions, privacy, control and group orientation. Police officers prefer co-operation to competition. Other values in police culture include balance, planning, effectiveness and productivity, creativity and task orientation (Glomseth, Gottschalk & Hole, 2011). Andersson and Tengblad (2009) found in the Swedish police force, that police culture is prone to resistance to change. The study by Blumenstein, Fridell and Jones (2011) conducted in the US Southern States reveals two aspects of the police sub-culture burnout: authoritarianism and intimate violence, especially among those who adhere to the
traditional police culture. Kiely and Peek (2002) studied British police culture to explore the perceived meanings of ‘quality’. The study assesses different cultural aspects, and notes that the relationships and interpersonal communications among the various ranks are quite formal, as is the bureaucratic decision-making process, with the result that downward communication is poor. A blame culture is noted, and a lack of support from senior officers to middle managers, and the fact that mistakes are remembered by the former. The greatest influence noted is the ‘canteen culture’.

According to them the danger that associates with this culture is that young recruits acquire their values over eight-hour days, spending long periods in cars watching seasoned policemen do their job, and eating and socialising with them. Doing this, they are prone to being influenced by ‘old cynics’, and to picking up out-dated values. Scerra (2011) argues that police officers adopt different cultural practices right from their training days. Feltes (2002) maintains that police-officer candidates should be taught to distinguish between the informal ‘cop culture’ that establishes over time among peers, and the official culture of police organizations, the ‘police culture’. ‘Cop culture’ is not helpful in police-organization culture because it resists change (Feltes, 2002). Reusslanni (1983) makes the distinction between street-cop culture and management-cop culture. Manning (1997) goes further to distinguish three levels of police culture: command, middle management and lower ranks, each with its own array of subcultures.

Glomseth, Gottschalk and Solli-Saether (2007) conducted a study of police in Norway to examine the role of occupational culture in sharing knowledge during police investigations, as knowledge-sharing is critical in police investigations. They identify four dimensions of occupational culture: team, traditional, planning and theoretical.
The study results indicate that team culture had a significant effect on the process of knowledge-sharing, and on the outcome of police investigations. Nalla and Kang (2011) examine the organizational culture of South Korean police. More than 400 police officers participated in their study. They indicate that most participants are dissatisfied with managerial support, ambivalent and prone to complaining about poor communication.

Scerra (2011) investigated the impact of police cultural-knowledge on police investigations in Australia. They found that police cultural knowledge influences their choice of technique or approach to criminal investigations. This showed a strong impact on the ability of investigators to identify serial crimes, which hampers the progress of their investigation. Nordin, Pauleen and Gorman (2009), argue that criminal investigators are limited by the police code of ethics.

According to Kleinig and Zhang (1992, cited by Davis, 1995), the International Association of Chiefs of Police (IACP) produced a document entitled *Law Enforcement Code of Ethics* in 1957, which was the first ‘code of ethics’ for police. They defined ‘code of ethics’ as “a formal statement of a certain kind of practice” (p. 84). Codes of ethics are based on practices of morality and the practices of law, and are meant to serve as guides in the making of decisions throughout an investigation process (Nordin, Pauleen & Gorman, 2009).

Review of the literature on police culture suggests that it varies from country to country, and even within one organization to another. However, it can be argued that there are common police-culture characteristics across different countries and regions— for
example, secrecy, self-protection, privacy, task orientation and group orientation (Gottschalk, 2006). These are rife in police departments, notably in investigations. The literature reveals that there is no single police culture, although the existence of a police sub-culture is obvious everywhere. Research has shown also that the influence of national culture cannot be overlooked, especially in the Arab context. Pursuant to the literature, it stands to reason that the KM initiative in police organizations must take account of the culture of the local police organization in which it is being implemented, for the failure or success of the initiative will be attributable in large part to that culture.

2.3.3 Arab Culture and KM

Since the leading studies of culture, organizational culture and KM were conducted in Western (Pauleen, 2007), and Eastern countries (non-Arab) it is logical to supplement these studies with an investigation of cultural issues in Arab countries. According to Weir and Hutchings (2005), knowledge cannot be comprehended without a clear understanding of the culture in which it is contained. As culture is a very important component of any organization, many researchers believe that national culture can deeply affect organizational culture (Schein, 2010; Pauleen, 2007), as well as the way people process information and what they deem important knowledge (De Long & Fahy, 2000). For this reason, a discussion will follow of the cultural issues that impact KM in Arab countries, and specifically, in the UAE.

Arab culture stems from religious and tribal belief systems (Hammoud, 2011). Social life in the UAE is influenced mainly by the values and traditions of Islam, and by the local culture (Abdulla, Djebarni, & Mellahi, 2011). Islam teaches that seeking and acquiring knowledge is an obligation, and that it is the duty of all Muslims to pass on knowledge without expecting anything in return (Kumar & Rose, 2012). Yet on the
business level, all activity is conducted by networking and connection with society (Al-Adaileh, 2011). Weir and Hutchings (2006a) note that Arab culture is based on trust, especially when it comes to sharing knowledge. According to them, managers share knowledge only with those people with whom they have built a firm relationship based on confidence and trust. Skok and Tahir (2011) argue that building relationships takes time, and that this may decrease the chances of informal knowledge-sharing within an Arab organization. Yasin and Yavas (2007) note that Arabs prefer face-to-face interaction, and they have little trust in electronic transactions, for trust is established among people, over time. These aspects of Arab culture are evident in the study conducted by Skok and Tahir (2011) in which they find that Arab national culture is averse to indiscriminate public knowledge-sharing, and prefers verbal communication (97%), one-to-one knowledge sharing (87%) and informal meetings (71%). They add that Arab culture relies on fast, discreet and verbal communication, and that this hinders effective knowledge-sharing because it places little emphasis on recording and proper knowledge-exchange channels.

Davenport and Prusak (1998) point out that managers get two-thirds of their knowledge from face-to-face meetings or phone conversations, and only one-third from documents. This is not a disadvantage when the quest is to share tacit knowledge, which by nature requires extensive personal contact and the establishment of the relationship that builds up over time in working place and in group membership (Al-Salti & Hackney, 2011).

Another important component of Arab culture is the influence of social and family connections, that is, the dynamics of the wasta (Tlaiss & Kauser, 2011). Wasta is the exercising of power, influence and information-sharing through social networks (Weir
& Hutchings, 2006b). *Wasta* entails the use of personal power or social connections to influence or request the completion of a job (Tlaiss & Kauser, 2011). *Wasta* is a potential danger in the workplace, for its impact can be negative. For example, Tlaiss and Kauser (2011) note that people use *wasta* to secure promotions, to obtain jobs or ranking positions, or to obtain tax deductions. This is a practice that easily results in the appointment of people to positions when their personal and formal qualifications for occupying those positions are not as strong as those of other candidates. This view is in line with that of Anwar and Chaker (2003), who claim that in most Arab companies, promotions are obtained on the basis of personal and tribal relationships, and not on merit.

Closed-circle promotion is, of course, not unique to the police forces of the Arab. The UK, for instance, has its own problems in this regard: The UK press has engaged in sporadic ventures into exposing the deleterious effects of Freemasonry in the police force and the judiciary ever since the celebrated exposé of this fraternity by Stephen Knight (1984). This author asserts, among other serious issues, that promotions in the UK police force and judiciary are seriously biased against non-Masons. Allegations regarding the influence of freemasonry in UK public affairs continue to be made. See for instance the report on Operation Tiberius, written in 2002 but only published in 2014 by the House of Commons Home Affairs Committee. Further allegations of nepotism not involving Masonry were made against senior police officers in the North Yorkshire force in 2010 (see Wainwright, 2010). Similarly, in the Arab world, the excessive use of *wasta* may erode employees’ trust, and reflect negatively on the overall performance of an organization (Tlaiss & Kauser, 2011). Hammoud (2011) examines the characteristics of Arab corporate culture, and concludes that national culture has a significant influence on
corporate culture. Most businesses in the Arab world are family business. Thus, their expansion involves the incorporation of new family members and the outer family circle. The ownership-management structure of Arab organizations is often the basis of their corporate culture. Yeo and Gold (2014), who conducted studies into knowledge sharing in organizations in Saudi Arabia, suggest that the key element for managers to focus on is trust between co-workers. Esia and Skok (2014) who conducted studies on multicultural organizations in the UAE confirm that trust is a key element in a KM strategy, pointing out that the prevailing culture of *wasta* may enhance knowledge sharing among groups of co-workers recruited locally. However, when foreign co-workers are introduced to the environment, the impact of *wasta* may have a negative impact between the two groups in terms of knowledge sharing behaviour. While co-workers from the Emirates tend to communicate through informal channels, interactions with foreign co-workers tend to happen through more formal processes, such as official meetings or emails. They suggest a new KM strategy model is needed for multi-cultural organizations in an Arab setting, which is sensitive to these differences and provides vehicles to enhance trust and informal knowledge sharing.

It is clear that anyone wishing to implement KM strategies in an Arab context cannot afford to ignore the incidence of *wasta*. This may provide both enablers and barriers to effective implementation of KM within Arab culture. On the one hand, strong, informal interpersonal communication practices may be useful in enhancing knowledge-sharing practices among co-workers, particularly where tacit knowledge is crucial. However, if the context is multi-cultural, efforts will be needed to ensure inclusiveness. The downside of *wasta* in relation to KM practice may be that recruitment practice does not favour those whose knowledge is most valuable to the organization, nor those who are best at sharing and utilizing their
knowledge but rather those who are best connected socially.

Hammoud (2011) adds that it is families that link the business environment and society. As the owners of businesses, families bring traditional values and beliefs to the workplace making corporate culture an extension of tribal beliefs, norms and values. This is unlike the Western approach, where corporate culture is separate from the national culture. Al-Yahya (2008) indicates that most Arab states have central power and control. According to him, this approach to leadership leads to unpredictable bureaucratic decisions and unsustainable representation in institutions. This is in line with the view of Hammoud (2011) that the decision-making process is a top-down process, which is sometimes moderated by consultations, however mostly at the top levels. Al-Yahya (2008) notes that in the Arab business context, there is over-reliance on supervision and direction from managers—consultations are too frequent in the decision-making processes. The Arab public-sector has centralised most of its decision making processes. That has restricted the public sector’s capacity to use its human capital resources. Another aspect of public-sector management in the Arab world is the clear preference for participative practices (Al-Yahya, 2008).

The foregoing discussion provided ample indication of the fact that in Arab states, national culture impacts greatly on how people perform their work and when they share knowledge. As Pauleen (2007) warns, the effect of national culture on people should be taken into serious account during the development and implementation of a KM initiative.
It can be said that there is emphasis in the literature on the key aspects of Arab culture in relation to knowledge sharing. Arab people prefer face-to-face conversations in order to share tacit knowledge. The work of Esia and Skok (2014) showed a strong tendency among Arab workers in the UAE to share knowledge with other fellow Arab co-workers in an informal face-to-face manner.

This norm in Arab culture supports the argument that personalization KM strategy should be dominant in the investigative department where most of the knowledge sharing process takes the form of face–to–face discussions in analysing crime cases in the DPF. Based on the author’s work experience, personalization strategy should be predominant in investigative departments– and this is supported by findings in Esia and Skok ‘s (2014) work. According to them Arab KM strategy must be centred around personalization strategy since Arab culture revolves around networking and social connections. Moreover, they found that the lack of use of technology in Arab organizations to share knowledge limits the codification strategy. Yasin and Yavas (2007) support these findings that Arabs prefer face– to– face interaction. They also found that they have little trust in electronic transactions, and that it takes a long time for trust to be developed among people. These cultural elements support the argument that KM personalisation strategy should be implemented in the DPF.

In addition, Arab participative culture supports knowledge sharing, yet the hierarchical nature of Arab culture inhibits knowledge sharing across levels. Although this aspect does exist in Arab national culture however, the DPF has overcome this challenge. This is evident in their organizational chart which has been flattened to enhance the knowledge sharing process. Furthermore, there has been a creation of a social interaction area and the
implementation of teambuilding and social networks activities which can help in reducing such knowledge movement barriers across levels (Esia & Skok, 2014).

The purpose of discussing Arab cultural norms is to help in understanding the knowledge sharing culture in the Arab public sector, particularly the DPF. Although some aspects of police culture are highlighted throughout the study, there is no major difference among Arab countries in relation to knowledge sharing as it has been made clear through the previous discussion.

Brown and Duguid (1991) in their article of organizational learning and communities of practice discussed the stickiness and leakiness of knowledge. The discussion revolved around the movement of knowledge from one part of an organization to another. This means that knowledge flows within the borders of the firm (sticky). On the other hand, leakiness focuses on the external part of knowledge particularly, the loss of knowledge across the boundaries of the firm to competitors.

In order for tacit knowledge to flow and to be shared, subjects need to believe in sharing. For example, communities of practice share knowledge about subjects related to their interests even though the members are not in one organization. This is what Brown and Daguid (1991) called the leakiness of knowledge.

The author perceives this view in a slightly different manner at the work place. Brown and Daguid (1991) contented that “knowledge may more easily flow out of a firm than more
productively within it.” The author perceived this view as opposing because work ethics are bounded by secrecy and privacy. From the author’s own personal work experience, tacit knowledge is shared among department members only. Such knowledge is also shared with other related departments that are involved in crime case analysis yet with limitation and restriction. In some cases, knowledge is exchanged and shared with counterpart departments around the world in the form of collaboration agreements or under the umbrella of Interpol for knowledge capturing and creation purposes. However, generic information for all police members (such as wanted people or criminals) is shared with less restriction and sometimes even made public. Therefore, knowledge of investigation is highly restricted and limited to certain people who work in the same field. Nevertheless, it is shared with limitation with external parties yet it does not take the form of informal community practice in the case of the DPF practice.

2.4 Organizational Culture and KM

Several studies (Weir & Hutchings, 2005; Weir & Hutchings, 2006a; Weir & Hutchings, 2006b; Pauleen, 2007; Yasin & Yavas, 2007; Al-Adaileh, & Al-Atawi, 2011; Al-Salti & Hackney, 2011; Skok & Tahir, 2011; Kumar & Rose, 2012) confirm that organizational culture plays a crucial role in KM initiatives, and that the success or failure of KM projects depends highly on the existence of a knowledge-friendly culture (Cardoso, Meireles & Ferreira Peralta, 2012). This is made evident in the study of 453 organizations by Leidner, Alvi and Kayworth (2006). More than half of their subject organizations claimed that organizational culture is the biggest barrier to the success in their KM initiatives (Ruggles, 1998).

Abdulla, Djebarni and Mellahi (2011) note that public organizations tend to be more bureaucratic, and they fail to reward their employees or provide adequate job security.
According to Al-Alawi, Al-Marzooqi and Mohamed (2007), the components of an organization’s culture exert different levels of influence on knowledge-sharing in the organization. These authors identify trust, communication, rewards and recognition, information systems and organization structures as the levers of influence on knowledge sharing.

Biygautane and Al-Yahya (2010), in their case study of Dubai’s public sector, suggest that the prevailing culture hinders KM success. Many individuals in the public sector assume that KM is the responsibility of their leaders, and most do not view KM as important. In addition, the association of knowledge sharing with loss of power limit knowledge sharing in the public sector. Glomseth, Gottschalk and Solli-Saether (2007) share their view, and contend that the occupational culture of police organizations is the most influential factor in knowledge sharing.

Biygautane and Al-Yahya (2010) conducted a study on KM practices in the public sector. The aims of their study were to highlight the importance of KM and the factors that influence its implementation in the context of the Dubai government sector. Their data was collected from several major entities that have incorporated KM into their organizations. These include the DPF, the Dubai Courts (DC), the Dubai Electricity and Water Authority (DEWA), the Knowledge and Human Development Authority (KHDA) and the Road and Transport Authority (RTA). A part of their study examines the challenges that confront knowledge sharing. Their findings identify two challenges: one is the difficulty of capturing tacit knowledge, and the other the lack of time to share.
Another study conducted by Biygauteane and Al-Yahya (2011), on the same subjects, examined the enabler and barrier factors of effective KM implementation. The results identified the various issues that are affecting willingness to share knowledge: the fear of losing one's job if one shares the knowledge in one's possession, and the worry about unauthorised access to data. Abdulla, Djebarni and Mellahi (2011) argue that governments are custodians of information on behalf citizens, thus when they share information they are obliged to protect it from misuse or abuse. This necessarily slows the knowledge-sharing process. In a more recent study by Seba, Rowley and Delbridge (2012), four key barriers to knowledge sharing are identified in the DPF: organizational structure, leadership, time allocation and trust.

Gottschalk, Holgersson and Karlsen, (2009) argue that people rarely give away valuable possessions such as knowledge without expecting something in return. Thus organizations cannot expect the free flow of knowledge without a reward system that motivates it. Knowledge initiatives that ignore this facet of human nature are doomed to fail (Ajmal, Helo and Kekale, 2010). Davenport and Prusak (1998) summarise the cultural factors that inhibit the smooth flow of the movement of knowledge in an organization. Although this research is a decade old, it remains in line with recent research. They call these factors ‘friction’, and suggest ways of overcoming them. Table 1 below offers a summary:
Friction | Possible Solutions
--- | ---
Lack of trust | Build relationships and trust with face-to-face meetings.
Different cultures, vocabularies frames of reference | Create common ground through education, discussion, publications, teaming, and job rotation.
Lack of time and meeting places; narrow idea of productive work | Establish times and places for knowledge transfers, fairs, talk rooms, conference reports.
Status and rewards go to knowledge owners | Evaluate performance and provide incentives based on sharing.
Lack of absorptive capacity in recipients | Educate employees on flexibility; provide time for learning; hire for openness to ideas.
Belief that knowledge is the prerogative of particular group: the not-invented-here syndrome | Encourage non-hierarchical approach to knowledge; quality of ideas more important that status of source.
Intolerance for mistakes or need for help | Accept and reward creative errors and collaboration; no loss of status from not knowing everything.

Table 1: Cultural Factors that Inhibit the Smooth Flow of the Movement of Knowledge (adapted from Davenport & Prusak, 1998, pp. 96-97)

Police investigation represents a knowledge-intensive and time-critical setting. Consequently, the process of knowledge sharing is critical in police work, and especially so in investigation work (Gottschalk, Holgersson & Karlsen, 2009). Successful KM in police work relies mainly on developing a knowledge culture that simplifies and rewards knowledge sharing (Glomseth, Gottschalk & Hole, 2011).

It can be concluded that there is an urgent need to nurture a knowledge-sharing culture, and for leadership support that stimulates and encourages knowledge sharing (Berg et al., 2008). This requires the support of managers at all levels (Abdulla, Djebari &
Mellahi, 2011), and a culture in which all actors honour the obligation to abstain from misusing shared information (Hawryszkiewycz, 2010). Openness, collaboration and sharing among police officers, as well as trust, are the essential preconditions of successful knowledge sharing (Filstad & Gottschalk, 2011). Without trust, a knowledge initiative will fail, regardless of other supportive factors such as technology (Al Rawabdeh, 2009). Also essential is a workforce properly motivated by reward and incentive schemes (Al-Alawi, Al-Marzooqi & Mohamed, 2007).

In appreciation of this, many authors and researchers urge the need for intervention to create culture change where the extant culture does not support the implementation of KM. Although organizational change is a difficult and often lengthy process, it is a critical requirement of KM implementation (Dalkir, 2005).

In summary, there is general agreement among scholars and practitioners, as the earlier studies have shown, that the existence of a knowledge-friendly culture is crucial for the success of a KM initiative.

2.5 Leadership Style

The main concern of the ensuing discussion is to reflect on the style of leadership most suitable in the context of a KM initiative. More attention is paid to transformational leadership and the knowledge leader than to leadership theories in general. However, it is necessary to briefly review the general literature on leadership behaviour and management to demonstrate where transformational leadership fits in the overall leadership paradigm especially in knowledge setting organizations.
Leadership has long been a subject with universal appeal, and has attracted the attention of academics and practitioners. A review of the literature reveals the vast body of commentary on this subject. Perhaps this is the case because leadership is considered a highly valuable commodity (Northouse, 2010). Leadership theories emerge from a number of theoretical approaches, ranging across trait theory (Boyatzis, 1982) to behavioural theory (Fleishman, 1953) and contingency theory (Fiedler, 1964). Trait theory is premised on the view that certain individuals have special innate characteristics or qualities that make them leaders, and these qualities differentiate them from non-leaders (Northouse, 2010). Behavioural theory focuses on how leaders relate to subordinates and interact with groups. Contingency theory seeks to identify the contingencies that attach leaders to situations (Fiedler 1964; Fiedler & Gracia, 1987). This theory proposes the model framework that effectively matches leader and situations (Northouse, 2010). According to this theory, the leader’s style changes as a situation changes.

2.5.1 The Roles of Leadership and Management

It is important to discuss the functions of both management and leadership before engaging in an analysis of the leadership role in KM implementation. Kotter (1995) argues that the functions of management and leadership are dissimilar yet nevertheless complementary. Neither replaces the other and each has its own characteristic function. Both are necessary to achieve the success of an organization in an increasingly complex and volatile business environment (Kotter 1995). Each focuses on activities such as managing problems between individuals or departments, pacifying all sides while ensuring that an organization's daily business gets done. Leaders, on the other hand, adopt personal, active attitudes towards goals. They invest their own energy into the creative process and look for the potential in people and the chance to inspire their
employees and team members (Northouse, 2010).

According to DeTienne, Dyer, Hoopes and Harris (2004), the term ‘leader’ refers to everyone from the CEO and board of directors down to the unofficial opinion leader who works on the shop floor. It can be argued, as DeTienne et al. (2004) do, that the term ‘leader’ subsumes everyone who is influential in a group, regardless of whether that person exercises influence in an official or unofficial capacity. However, it has to be remembered that in an organization, people in official roles have executive power while the unofficial opinion leader does not. Furthermore, as the literature shows, executive power of management and leadership may be equal; however, the roles of the incumbents of these two spheres of influence differ remarkably (Kotter, 1995). Distinguishing between management and leadership is important if an organization is to prosper. For example, if an organization has strong management without leadership, the outcome can be stifling and bureaucratic. Conversely, if an organization has strong leadership without management, the practical implementation of ideas and techniques is frustrated. To be effective, organizations should nourish both competent management and skilled leadership (Northouse, 2010).

2.5.2 Leadership and KM

Many scholars and practitioners assert that the roles of leader and manager are both important (Kotter, 1995) at different stages of the KM implementation cycle (Anantatmula, 2008). Although managers are important in maintaining stability and control within an organization, leadership plays the most critical role in developing and implementing KM initiatives (Kotter, 1995; Anantatmula, 2008). According to DeTienne et al. (2004) leaders set the example for others in the company. They have a direct impact on an organization's culture, and on how a company approaches and deals
Dean and Gottschalk (2013) argue that KM initiatives, like any other change-introducing project, need managers with a background in creation, distribution, and use of knowledge; and while specialists are critical to the success of KM initiatives, managing knowledge should be part of everyone’s job (Davenport & Prusak, 1998). De Tienne et al. (2004) share this view and emphasise that KM practices must be actively and determinedly pushed forward and practised by the company’s leaders. If KM does not reach all levels of an organization, it is unlikely that the KM program will be embraced nor succeed. Therefore, without managers to stress the importance of KM programs, employees will assume that KM is just a passing methodological approach, and not take it too seriously (Cardoso, Meireles & Ferreira Peralta, 2012).

Davenport and Prusak (1998) found that strong support from executives is critical for the implementation of transformational-knowledge projects. They point to three types of essential support: (i) sending out clear messages to the organization that KM and organizational learning are critical to the organization’s success; (ii) clearing the way and providing funding for infrastructure; and (iii) identifying the type of knowledge that is most important to the company. As Northouse (2009) observes, there is a strong demand for effective leadership. Effective leadership exerts direct influence that creates change for the greater good. De Tienne et al. (2004) argue that without effective leaders who set appropriate examples, employees will not be motivated to participate willingly in KM programs. That is why organizational leadership plays a critical role in a company’s efforts to capture and share knowledge. Northouse (2010) concludes that effective leadership skills are three types: administrative skills, interpersonal skills and
conceptual skills.

Taleghani, Salmani and Taatian (2010) indicate that characteristics of leadership vary across cultures and countries. Organizational managers, especially in international organizations, should obtain information on cultural differences across regions when executing their leadership roles. Yasin and Yavas (2007) indicate that the Arab culture values tribal influence. The Arab world differs from the West in its approach to leadership. Managers in Arab organizations face challenges when they attempt to integrate Western organizational culture with Arab culture. Taleghani, Salmani and Taatian (2010) analysed the leadership approach in Arab countries, and found that tribal traditions influence leadership, yet Western approaches to leadership styles is also evident. They also argue that the value attached to tribal relations in the Arab world restricts leaders’ ability to work with people outside their tribal relations.

Some scholars have found that Islam dominates Arab corporate culture more than tribal beliefs. Any aspects of the non-Arab management practices that contradict Islamic teachings face resistance in the Arab context (Hammoud, 2011). Randeree and Chaudhry (2012) indicate that the Arab culture has a significant influence on leadership styles in the organizations of the Arab world. Randeree and Chaudhry (2012), citing the works of Ali et al. (1995) and Ali (1993), suggest that Arab culture promotes a consultative style of leadership.

The participative and consultative leadership styles in the Arab world are built on tribal beliefs and values, and the doctrines of Islam. These styles of leadership have a positive
effect on the job satisfaction and commitment of employees (Randeree & Chaudhry 2012). Butler (2009) analysed the leadership style in a multicultural Arab organization. He found that communication and trust between leaders and their subordinates influence the effectiveness of leadership. Relations and exchanges between leaders and subordinates depend on the employees’ work experience. Butler (2009) concluded that a top-down leadership style in the multicultural organization influenced KM. The relations between subordinates and leaders influence employees’ commitment to an organization.

Odedait et al. (2012) indicate that the Arab national culture contributes to poor management in Arab organizations. Arab culture is prone to a collectivist view of power, and creates a large difference in power between leaders and subordinates. Consequently, individuals in an organization are loyal to their leaders rather than to the organization. The high value that Arab culture places on personal relationships contributes to employees’ loyalty to individuals. Employees may not participate in knowledge sharing and management if their leaders do not prioritise such organizational goals.

Odedait et al. (2012) observe that the Arab style of leadership does not promote the delegation of authority. Such an approach to leadership may hinder an organization’s success at encouraging employees to participate in KM (see the last paragraph of section 2.3.3). Taleghani, Salmani and Taatian (2010) found that most of the Arab organizations are centralised, irrespective of their strategies and levels of technology.
Jabnoun and Al Rasasi (2005) conducted a study in UAE hospitals to determine the relationship between transformational leadership and the quality of service. The study investigated the patients’ level of satisfaction with the service and the employees’ perception of transformational leadership. These researchers found that patients are satisfied with services in UAE hospitals. However, the employees had a negative perception of their leaders as transformational leaders.

In this regard it can be said that the transformational leadership style would suit the Arab culture. Since the trust issue is critical in Arab culture, and trust is established through personal acquaintance, knowledge sharing typically occurs only in circles of trust. According to Northouse (2010), transformational leaders are effective at working with people, and they build trust and foster collaboration with others. In the Arab context however, the transformational leader who sets out to build trust that reaches beyond the circles of trusted connections faces a formidable challenge.

Schafer (2010) investigates leadership in the context of police leaders to determine the traits and habits of effective leaders within that context. He concludes that efficacy is common among effective leaders, and it links to integrity, effective communication, care for subordinates and work ethics. Schafer (2010) observes also that the process of developing effective leaders requires training and education, personal experience and consistent feedback, however, he concedes that the main barriers to the development of effective leaders are cultural, political and structural.

2.5.3 The Transformational Leader

The concept of effective leadership has been captured in the elaboration of the concept
‘transformational leader’ (Adlam & Villiers, 2003). This concept is one of the current and most popular approaches of leadership studies. It has been the focus of much research since the early 1980s (Northouse, 2010). Essentially, transformational leadership is the expression of a style of leadership that changes and transforms people (Birasnav, Rangnekar & Dalpati, 2011; Dean and Gottschalk, 2013; Bass and Riggio, 2006). It is a leadership style that instils change into social systems and individuals. (Randeree & Chaudhry, 2012) It has long-term objectives and considers values, ethics, emotions and standards. Furthermore, it includes evaluating and assessing the needs of team members, considers their motives and attempts to satisfying their needs, while affording them full human dignity (Fitzgerald & Schutte, 2010; Edwards & Gill, 2012). It is postulated that transformational leadership exercises an exceptional form of influence that motivates followers to accomplish more than would ordinarily be expected of them (Gay, 2013). Bass (1981) gives an insight into its nature by noting that transformational leaders are often described as visionaries, leaders of reform, innovators, movers and shakers or heroes (Adlam & Villiers, 2003). Northouse (2010) adds that they build trust and foster collaboration with others. To distinguish transformational leadership, Burns (1978) contrasts it with the more common and less effective ‘transactional’ leader (Adlam & Villiers, 2003). Nguyen and Mohamed (2011) focus on the contribution of transactional and transformational styles of leadership to KM.

Transactional leadership style is built on exchanges between leaders and their subordinates (Burns, 1978). In this style, leaders acknowledge and reward or reprimand the actions of their subordinates. Transactional leaders will reprimand their subordinates when they fail to meet their targets. On the other hand, transformational leaders motivate
employees to set and achieve higher goals than they did in the past. Transformational leaders equip their subordinates with values that enhance their commitment and loyalty to an organization. (Edwards & Gill, 2012).

Birasnav, Rangnekar and Dalpati (2011) argue that transformational leadership produces greater effects than transactional leadership. Whereas transactional leadership produces expected outcomes, transformational leadership produces performance that goes well beyond what is expected. Transformational leaders always show concern for subordinates’ needs, treat them with respect and deploy a flexible, orienting manner with them (Fitzgerald & Schutte, 2010). They never resort to harsh tactics or punishment.

Nguyen and Mohamed (2011) conclude that both transactional and transformational styles of leaders have a positive effect on KM. Analoui, Doloriert and Sambrook (2013) share the view that the effects of transformational and transactional leadership styles both impact positively on KM activity. Although some studies indicate that a mixture style of transformational and transactional leadership has positive effects on KM implementation (Nguyen & Mohamed 2011; Analoui, Doloriert & Sambrook, 2013), it is reasonably argued that the most suitable leadership style for the implementation of a KM initiative is that of the transformational leader. For example, Bryant (2003) found that there is a clear relationship between transformational leadership and successful KM. Another finding in a survey of 227 persons conducted by Politis (2001) reveals that the leadership style that involves human interaction and encourages participative decision-making impacts positively on the successful operation of KM (Politis, 2001). This view is shared by Crawford (2005) in his study of the relationship between
transformational leadership, organizational position and KM. He found that the transactional leadership style and laissez-faire leadership style do not approach any level of significance. He notes that transformational leaders are significantly more innovative than the transactional or laissez-fair ones, and concludes that transformational leaders are better suited to handling even the most technical aspects of the modern workplace than are their transactional or laissez-faire peers.

More recently, Merat and Bo (2013) studied the link between KM and leadership in knowledge-intensive organizations, and identified two combinations of KM and leadership systems. These combinations are personalisation-distribution and codification-centralisation. According to them, in organizations where knowledge takes more personal (tacit) form, each knowledge-holder becomes an independent source of leadership influence. On the contrary, in a firm were knowledge is highly codified, leadership may take a centralised form. It has also been noted that, as individual leaders move up in an organization, they are better suited to engage in KM at least partially, because they are more transformational in leadership style, and that subordinates in conflict situations are expected to comply more willingly with transformational leadership than with transactional leadership (Birasnav, Rangnekar & Dalpati, 2011).

Further to this, Dean and Gottschalk (2013) investigated six leadership roles to determine their importance in the Norwegian police context. They found that the most important role was that of the personnel leader, where the manager is responsible for supervising, hiring, training, organising, coordinating and motivating to achieve the goals of the organization. However, they argue that the entrepreneur role is important and more appropriate in police leadership, especially when they function as knowledge
based organizations that keep abreast of the development of crime trends. According to them, this role is also closely aligned to that of change management and in the context of policing: managers must practise transformational leadership in order to change the police culture from a reactive to a proactive one.

The foregoing discussion proposed that organizational culture and leadership style are imperative, and have direct impact on the implementation and facilitation of KM activities. Therefore, leaders should model the proper behaviours that develop in a way that enables and motives knowledge workers to transfer and use knowledge. In addition, the establishment of a Chief Knowledge Officer (CKO) role can contribute to improving organizations attempts to implement and maintain KM programs and initiatives (Hannay, Jaafar & Earl, 2013).

2.6 Knowledge Leadership

Many organizations around the world have appreciated the importance of KM in effective performance, and as a source of competitive advantage (Birasnav, Rangnekar & Dalpati, 2011; Analoui, Doloriert & Sambrook, 2013; Merat & Bo, 2013; Green Consulting, 2011).

KM can be found in almost every type of organization, such as in law firms, healthcare institutions, banks, government departments, military sectors and intelligence communities (Dalkir, 2005). The adoption of this discipline to improve daily operations has created the need for the CKO position. This position is a relatively new one, and not yet well known in many organizations (De Tienne et al., 2004; Cavaleri, Seivert & Lee 2005), especially not in Arab world. For example, a study by Siddique (2012) on the
UAE private sector observed that 17.4 per cent have informal KM leaders and fewer than two per cent reported having a full-time or part-time KM officer. His study further concludes that none of the companies included in his sample have formal job titles such as a KM Officer or KM Manager. Some researchers assert that these roles as formal positions will become increasingly important for organizations seeking competitive advantage (De Tienne et al., 2004; Cavaleri, et al, 2005; Lakshman, 2008; Dalkir, 2005).

Different titles are associated with positions that manage knowledge (ENTOVATION, 1999). Many firms in the United States and in Europe have appointed CKOs to carry the KM responsibility (Davenport and Prusak, 1998). Most world-class companies have mandated a senior leader to oversee and steer the knowledge-enterprise strategy. Yet there are some, such as Buckman Laboratories for example, that have not created a CKO position because knowledge sharing and collaboration have been imposed top-down, and their philosophy is that all workers are knowledge leaders (De Tienne et al., 2004). Similarly, for Global Software Company has no such position because knowledge sharing and collaboration are emphasized at all levels (KM Best Practices).

Another related position is ‘direction of intellectual capital’, a term introduced at Skandia, a Swedish insurance company (Davenport & Prusak, 1998). Most organizations have faced challenges in properly defining the roles and responsibilities of their CKOs in a way that enhances and accommodates knowledge work (Dalkir, 2005). Davenport & Prusak (1998) argue that the role of the CKO is complex and multifaceted and that the position is still being defined because of its short history. This is mainly because CKO responsibilities are relatively new (De Tienne et al, 2004) and there is a wide range of differing job titles describing the CKO roles (Dalkir, 2005). The leadership
role in KM stems from the strategic responsibilities of the CEO (Lakshman, 2008). Cavaleri, et al (2005) suggest that knowledge leaders (KL) bridge the roles of managers and leaders by overseeing KM systems and creating supportive workplace environments for knowledge development. Top-management support is critical for KLS if they want to see their KM strategy implemented with full support. To gain such support from top management, Jones and Leonard (2009) suggest that KLS must be able to demonstrate their full understanding of KM, and that they should engage top management in the KM-related decision-making processes.

Cavaleri, et al (2005) believe that the competitive advantage of a business depends to a great extent on the ability of the knowledge leader to learn from experience, and to inspire others to do the same. To attain this goal, top executives have to define their CKO position in a way that connects it directly to the organization's operations. In addition, the CKO should be appointed to a position that has strong ties to the main value-creating operational aspects of the organization. Hannay, Jaafar and Earl (2013) on the other hand, indicate that every department in the organization should have a knowledge leader to coach, mentor and teach employees about the processes of inside out pragmatic knowledge development. Other authors also advance opinions on what KLS should do. Lakshman (2008), for instance, contends that they should operate along two broad routes: technology and social networks. Dalkir (2005) states that they should promote the importance of knowledge sharing, create a technical infrastructure, reward knowledge-sharing behaviours, and measure the value of KM practices within the organization. In more recent research conducted by Analoui, Doloriert and Sambrook (2013) which investigates which styles of leadership are most appropriate for the knowledge leader, it was found that the adoption of transformational and transactional
leadership styles by the knowledge manager has shown a remarkable increase in KM practice.

2.7 Leadership Style and the Police Force

Police leaders play a critical role in the process of sharing knowledge. Berg et al. (2008) conducted a study to investigate the role of police managers in sharing knowledge in criminal investigations. Their six managerial-skills model includes personnel management, resource allocation, networking or spokesperson, problem solving, liaising, and monitoring roles. Their study concludes that only the spokesperson or networking role has significant influence on knowledge sharing. This style of leadership plays a critical role in directing and convincing people of the need to change, and in aligning them with new directions. It motivates people to collaborate to achieve KM objectives in difficult and demanding work environments (Merat & Bo, 2013).

Flistad and Gottschalk (2011) conducted a study in the Norwegian police force to determine the values within the force that were compatible with the values of a learning organization. They discovered that many police managers preferred empowerment and information to authority and hierarchy as the route to promoting learning in the police force. Vito, Suresh and Richards (2011) sought the opinions of police managers on servant leadership. The police managers’ perception preferred servant leadership to other styles of leadership, including autocratic, hands-off, command and control styles. According to them, the bureaucratic structures of most police forces promote the authoritarian style of leadership, and many police leaders focus on directing operations and establishing their departments. This is because they have little faith in the capabilities and skills of their subordinates to run operations. The bureaucracies in the police force promote self-interests instead of enhancing the relationship between police
managers (or leaders) and their subordinates (Vito, Suresh & Richards 2011). Schafer (2010) conducted a study to determine the traits and habits of effective leaders. He concluded that efficacy is common among effective leaders, and is linked to integrity, effective communication, care for subordinates, and work ethics.

The public expects flexibility and responsiveness to its needs. This constitutes an ongoing challenge to any police force. The need for innovative ways of protecting the public is in greater demand now than ever. The police force should be alert to this, and it should recognise a need to find more efficient ways of rendering the services demanded by the community. To do this, changes have to occur within police organizations, and police personnel have to keep pace with the changes in their environments if they want to address these new challenges (Dean & Gottschalk, 2013). This presumes the need for police to be better equipped in terms of skills, knowledge and experience. Police leadership should be attentive to the guidelines and practices recommended by the models outlining effective leadership practices, and note the emphasis on the nature and value of transformational leadership (Schafer, 2010). Transformational leaders promote change energetically, and deal creatively with resistance to it. In doing so, transformational leaders use the democratic, participative, relations oriented, considerate leadership style to engage people in change (Birasnav, Rangnekar & Dalpati, 2011). This style of leadership motivates people to work together to achieve KM objectives in difficult and demanding work environments (Merat & Bo, 2013). Some of the key demands on police leaders are to secure loyalty, arouse enthusiasm, and command respect and commitment. The transformational police leader responds to these demands by being a role model to junior officers, and by using his knowledge and expertise to further their development (Dean & Gottschalk, 2013).
The leader’s ability to inspire followers and to pay attention to their needs can have a great impact on followers, and is more likely to engage and motivate them in knowledge sharing (Xue, Bradley & Liang, 2011). Another advantage of transformational leadership style, as Bass and Avolio (1990) advocate it, is that transformational leadership can be taught to people at all levels in an organization, and that it can positively affect an organization’s performance. Earlier studies have revealed that leadership style is a key variable in the relationship between KM and organizational effectiveness. For these reasons alone, it is obvious that the transformational leadership style is the most desirable when implementing KM in the police force. This style allows the participative behaviour of police officers, and involves them in the decision-making process. Their involvement allows the leader to keep the officers informed about everything that impacts their work environment, and in turn, to share problem-solving and decision-making responsibilities with them (Dean & Gottschalk, 2013).

Having discussed the importance of organizational culture and leadership style as human-related dimensions’, it is essential now to discuss the Information and Communication Technologies’ role as a non-human-based dimension within the knowledge context.

2.8 Introducing ICTs

The important role that ICTs play in facilitating the work of organizations is mounting. Most organizations are adopting ICTs to support many of their information processes, and to facilitate their day-to-day activities. Consequently, organizational activities can no longer be performed without some form of interaction with ICTs. The adoption of
ICTs provides many advantages for organizations. For example, ICTs are useful tools for information distribution and communication within and across organizations (Bigliardi & Galati, 2010). ICTs have multiple uses in assisting organizational performances such as decision making, marketing, financial and project management (Bairi, Manohar & Kundu, 2011). Moreover, ICTs in law enforcement organizations is indispensable, as they provide police officers with effective ways of analysing data, such as records of crimes in databases and geographical information systems (Ellahi & Marnavi, 2010). Thus it becomes widely accepted that ICTs play a critical role in terms of communication and collaboration within and across organizations (Lee & Kelkar, 2013). Hislop (2009) defines ICTs as:

“The technologies which facilitate the management and sharing of knowledge and information. Thus the term covers an enormous diversity of heterogeneous technologies including computers, telephones, e-mail, database, data mining systems, search engines, the internet and video – conferencing equipment” (Hislop, 2009, p.220).

Since ICTs are multifaceted, organizations’ adoption of them differ according to their objectives. For the purposes of this research, the discussion will concentrate on the role of ICT in relation to KM.

2.8.1 The Role of ICT in KM

As knowledge workers require time to think, communicate and conduct their daily work more effectively, ICTs can provide them with an option of performing knowledge-based tasks faster and more effectively (Palvalin, Lonnqvist & Vuolle, 2013). Bigliardi, Dormio & Galati (2010) point out that ICTs are the most suitable forms of technology in KM. ICTs support KM activities and play a critical role in facilitating the KM process by simplifying the acquisition, storage and dissemination of knowledge, and crucially, by making the KM process possible (Pérez-López & Alegre, 2011). ICTs help organizations overcome some barriers to effective KM by enhancing productivity and
reducing the time of task completion (Palvalin, Lonnqvist & Vuolle, 2013).

Pérez-López and Alegre (2011) surveyed 162 managers who work for various IT-intensive Spanish firms to assess the link between IT competency, the KM process and organization performance. One of their findings is that IT competency plays a critical role in the KM process. Chong et al. (2011) identified the main enablers of KM as technology, the knowledge sharing process, job rotation and employees’ ICT skills. Ajmal, Helo and Kekale (2010) contend that the information system is the most significant factor of KM success. According to them, however, the KM system can be either an enabler or a barrier to KM success. Their study concludes that for the KM initiative to be successful, two critical factors are needed: an incentive and user-friendly information system. A common erroneous assumption of businesses is that their implementation of IT will allow them to manage their knowledge effectively (Hislop, 2009).

For knowledge to be managed effectively, a technology system should be developed to meet an organization’s specific knowledge needs. That entails the prior identification of KM goals, and the construction of a process that makes the right knowledge available to the right people at the right time, and helps them take the right action (Ho, 2008; Palvalin, Lonnqvist & Vuolle, 2013). It can be concluded that ICTs are a critical dimension of KM success. However, organizations need to select the most suitable system for supporting the achievement of their objectives, and similarly, the selected technology should be aligned with KM objectives (Mohamed, Murray & Mohamed, 2010). Further to this, employees’ ICT skills need to be improved to ensure the effective use of the implemented system as the promoter of a smooth flow of knowledge.
Therefore, a user-friendly information system that is backed up with an incentive scheme will motivate individuals in an organization to share knowledge actively (Ajmal, Helo & Kekale, 2010).

The success of KM programs in promoting knowledge-sharing necessitates participation and willingness to share knowledge. Hence, organizations should reward and recognise individuals for embracing and integrating new technology in their roles. According to Bairi, Manohar and Kundu (2011), information and communication technologies incorporate several characteristics. For insistence, they must enable organizations to store and to communicate, and they must enhance the participation of employees in knowledge-sharing, and offer speed in the creation, sharing and transference of knowledge within and across organizations.

There are many examples of ICT technology tools that facilitate knowledge-sharing and exchange in the literature. These include intranets, extranets, content management, data warehousing and mining, groupware, expert systems, online communities of practice (CoPs), knowledge repositories, blogs, search engines, data filters and collaboration tools. For illustration, collaborative tools like videoconferencing help companies overcome the barriers of distance and cost in time; the ‘yellow pages’ kind of search tools enable members to easily locate knowledge holders within and outside the organization. Codification and documentation of knowledge help companies share and disseminate knowledge among members (Anantatmula, 2008; Bigliardi et al., 2010; Bairi, Manohar & Kundu, 2011; Siddique, 2012).
Modifying the above position, Sáenz, Aramburu and Blanco (2012) argue that although ICTs are effective tools for knowledge sharing, they are less useful when it comes to generating new ideas. According to them, personal interaction that involves, (for example online communities of practice, training and mentoring) is more significant for innovation and creativity than is the use of ICTs. Li (2010) partially agrees with this– she conducted a cross-culture study to identify the factors that impact employees’ practice of online knowledge-sharing. The study indicates that many factors were inhibitors to online knowledge sharing, including organizational issues, national cultural differences, and online communities of practice (CoPs). The study concludes that language and different thinking structures were behind the low contribution to online knowledge-sharing. It is evident in the findings of Al Rawabdeh (2009) that since most online web pages are in the English language, limited use is made of the internet in the Arab region by people who speak only Arabic language.

Mohamed, Abuzaid and Benladen (2008) provide some insight into the cultural context of Saudi Arabia. According to them, the Saudi culture is a barrier to the adoption of modern technology. This is because the conservative Saudi religious beliefs limit modern methods of learning and of transferring knowledge. The Saudi government resisted the introduction of the internet, having decided that it will have more social drawbacks than benefits. Cultural and religious precautions pose challenges to institutions when introducing modern technology into their operations. Al Rawabdeh (2009) points out that the political environment and the regulatory measures of some Arab governments have created severe barriers to the adoption of the internet, and that they show no interest in providing sufficient financial resources to build the required infrastructure (Biygautane & Al-Yahya, 2011). Kaba and Said (2012) note that Arab
countries differ in their levels of IT use in communication, business transactions, interaction, relations and knowledge sharing. Most GCC countries (Saudi Arabia, Qatar, Bahrain, Oman and the UAE) have formulated policies and legislative structures to facilitate the utilisation of information technology (Kaba & Said 2012).

The above discussion highlighted the critical role that ICTs have in achieving KM success; the adaption challenges of ICTs in the Arab countries; and the introduction of ICTs in the Arab region (particularly the UAE); and how the use of ICT is more important than the investment in such technology itself. It is imperative now to discuss how technology acceptance is crucial in order to foster a knowledge sharing process within an organization.

Technology does not carry out knowledge work but rather people do. The crucial issues for this study are the ways in which ICTs may be used by staff in carrying out their organizational roles (usefulness) and how the organization should act to foster acceptance of technologies in the context of knowledge sharing behaviour. This is confirmed by, e.g. Esia and Skok (2014), who list six key issues for a KM strategy in an Arab context, only one of which relates to ICTs.

No technology can make unwilling members of a company contribute their knowledge to the database (Davenport & Prusak, 1998) nor will it turn a knowledge-hoarding organization into a knowledge sharing one (Mohamed, Murray, & Mohamed, 2010). In reality, it is people’s acceptance and willingness to use ICTs that will lead to knowledge sharing culture.
Research has revealed different sets of information technology acceptance models. These include: the theory of reasoned action (TRA), technology acceptance model (TAM), and motivational model (MM) (Venkatesh, Morris, Davis & Davis 2003).

TAM uses TRA as a theoretical basis for specifying causal linkages between two key sets of constructs. The technology acceptance model represents an important theoretical contribution toward understating information system usage and information system acceptance behaviours (Malhotra & Galletta, 1999). Since TAM does not account for social influence in the adaption and utilization of new information systems, TAM uses TRA as a theoretical basis for social influence (Malhotra & Galletta, 1999).

TAM was originally envisioned by Fred Davis in 1986. TAM introduced the idea that sharing knowledge through different social media outlets has the advantage of gradually wider IT acceptance and it became established as a sensibly proper predictor of both the intention of users and their usage system (Money & Turner, 2004).

Moreover, social media use is significantly influenced by ICTs. Organizations (including public ones) are using ICTs and social media in an effective and efficient manner in the transfer and sharing of knowledge. (Holsapple & Joshi, 2011). Consequently, this study focuses on the soft side of ICTs as an influential success factor in KM, rather than focusing on physical technology.
According to Aladwani (2003), Arab countries have similar customs, values, traditions and religious beliefs. However, they differ in terms of size, and in access to resources because of their financial capacities. Some Arab countries are large however, have insufficient resources for funding development projects such as the diversification of information and communication technologies. The bulk of government expenditure of large Arab countries is expended on the construction and maintenance of infrastructure. Naama (2006) analyses the state of information technology in Arab countries, and notes that many issues and challenges have constrained the spread of information technology. The issues and challenges include lack of trust on the part of consumers, lack of incentives, poor marketing of the technology, lack of support from the government and poverty. Other challenges include economic instability, unreliable internet connections, government control of communication channels and low investment in technological training. Government initiatives to provide incentives for e-commerce and internet use are not concentrated on the use of information technology (Naama 2006). The scarcity of Arabic software creates an additional barrier to the adoption of modern technology in organizations (Yasin & Yavas, 2007). Kaba and Said (2012) found that the high cost of ICT has constrained the adoption of ICT in the poorer Arab countries. Arab countries in which ICT costs are high record low levels of ICT use and access. This means that the cost of ICT is still a significant determinant of ICT usage in parts of the Arab region.

Al-Awadi and Saidani (2010) noted that information technology penetrated the UAE in the 1990s. The introduction of ICT in the region has transformed business operations. Before the 1990s, many businesses kept their records on paper. Kaba and Said (2012) concluded that many Arab countries are working towards developing information technology. This progress is evident in Arab governments’ ministries and reports.
The introduction of IT has created the need for data security systems. The team in charge of data security in an organization must understand the data security risks and design mechanisms of managing those risks. Data and information security requires managerial and technical support. The management must establish and enforce technical security standards. Data security protects the reputation of an organization, and restores customer confidence (Al-Awadi & Saidani 2010).

Hashemian and Mahdizane (2008) emphasise that the knowledge that police officers require to solve cases is always kept secret, and some areas of other knowledge are kept from them. For instance, police officers have limited access to the technology of nuclear weapons. Criminals guard information that would lead to their arrest. Police officers must also protect information about their policies and strategies. Criminals search for such information to protect themselves. Creating knowledge in police work is a challenge, especially when the reliable sources of information have relations with criminals. The limited access to useful information limits police officers in creating knowledge (Hashemian and Mahdizane 2008).

Establishing safe databases can enhance access to information and sharing of knowledge within an organization. Group structures create a platform for police officers to share their experience in previous cases (Hashemian & Mahdizane 2008). Information technology can enhance police operations when integrated with organizational practices that take advantage of data availability. Police officers must be willing to take advantage of stored data, and to utilize them in their operations.
Otherwise, a law enforcement organization may not achieve the desired results when introducing information technology.

Information technology can improve police operations only if the police officers value and embrace technology. Technology assists police officers in handling the large amount of information they have to process each day (Ellahi & Marnavi, 2010). Gottschalk (2006) notes that knowledge is the most critical resource in any police investigation. The success of police investigations depends largely on the availability of knowledge. The first stage of a police investigation involves the effort to apprehend crime suspects. This requires information and evidence that will lead to their arrest. The second stage involves gathering evidence from the crime suspects and other sources that will lead to their convictions. Both preliminary and follow-up investigations require effective tools for obtaining and storing information. One of the challenges in the police force is the small number of investigators with the capacity to handle large amounts of information. Effective management of knowledge in the police sector requires IT support.

Gottschalk (2006) outlines four stages in the development of KM systems that support police investigations. The first is the officer-to-technology stage where police officers use IT tools to improve their personal efficiency. The second is the officer-to-officer stage where police officers use IT tools to connect with other knowledge workers. The third is the officer-to-information stage where officers used IT tools to access documents that contain valuable information. The final stage is the officer-to-application where police officers use specific IT systems to solve knowledge-related problems. Gottschalk (2006) says that police officers come across astounding amounts of
information in their daily operations. This information is in different forms and from different sources. The main challenge for police officers during investigations is to analyse and apply the information and knowledge obtained.

A direct derivation from the foregoing discussion is that the balance between people and technology is necessary to manage knowledge effectively. The excessive use of technology can lead to the neglect of other important factors, and that can ruin a KM project. And neglect of technology can result in a culture in which people are not sufficiently versed in IT products to be able to decide whether any item of it will promote the achievement of their KM goals, and it can even result in a culture in which people cannot use technology effectively. Such a level of technological illiteracy is enough to increase the cost of knowledge exchange among members. On the other hand, many advantages accrue to organizations that are technologically competent. An example of this is the implementation of ICTs at the Zagreb School of Economics and Management (ZSEM). Through ICTs, ZSEM was spared expenditure on an expansion of premises; saved time spent on travel, and was able to avoid the cost of employing more teachers. ZSEM’s effective use of ICTs tools enabled its staff to reach students, teachers and researchers in foreign countries without physically having to move. Tools such as videoconferencing contributed an improvement in communication, knowledge- sharing and targeted training, and boosted the quality of education provided. This raised the school’s social capital considerably— at that time; ZSEM has around 1,400 students and more than 140 courses (Aleksic-Maslac & Magzan, 2012).
Some investigators note that what is common for most companies when they attempt to implement a knowledge project is simply to jump into the technological domain by installing some ICT tools. Although the introduction of such technological tools is considered a good start to building up a KM infrastructure, Hislop (2009) and Dalkir (2005) argue that many ICT-enabled KM initiatives fail because of excessive focus on IT issues rather than on the human factor. Therefore, ICTs alone cannot ensure the success of KM initiatives. Rather, it is people who produce and share knowledge (Lee & Kelkar, 2013).

As Davenport and Prusak (1998, p. 26) warn: “Don’t expect software to solve your knowledge problems”. Technology alone will not motivate workers to start searching for new knowledge, nor to improve the calibre of the knowledge they have. Technology cannot make unwilling company members contribute their knowledge to the database. Mohamed, Murray and Mohamed (2010) agree; pointing out that technology will not turn a knowledge-hoarding organization into a knowledge-sharing and exchanging one. A common mistake of companies is to assume that when they install a new technology to facilitate a knowledge project, that technology will of itself move knowledge around in an organization freely, without stimulators, motivational force, or a reward and incentive plan (Davenport & Prusak 1998).

Although it is now well established that organizations are increasingly dependent on IT based technology to support their day-to-day KM activities, this technology still has a limited intrinsic value in the implementation of a successful KM infrastructure. This is because people are the essential creators and transferors of knowledge. Gottchalk (2007) adds that the failure of IT in KM initiatives is attributable to the fact that the designers of
the KM systems fail to understand the situations and work practices of its users and the complex human process involved in working with it. While it is true that a good technological infrastructure can promote the effective exchange of explicit knowledge, the essential truth is that the knowledge to be exchanged must first be created. Furthermore, technology is wholly inadequate as a means of capturing the tacit knowledge that resides in human minds as a result of skills-creating work experience. In short, unless a knowledge-sharing social interaction is well established in an organization, IT is effectively paralysed as a disseminator of knowledge. Organizations are therefore well advised to look to the health and vigour of the social interactions in their operations. Gerami (2010) concludes that tacit knowledge can never be replicated by information and communication technology.

Pérez-López and Alegre (2011) argue that IT alone is not enough to gain companies a competitive advantage. Capo´-Vicedo, Mula and Capo (2011) add that the interaction between technology, techniques and people that allows an organization to manage its knowledge effectively (such that it secures competitive advantage) must be nurtured carefully and consistently. Davenport and Prusak (1998) offer a rule of thumb to managers about how they might monitor whether they are managing knowledge as they should: if managers are spending more than a third of their time and money on technology, then they are neglecting the rest of the important nurturing factors.

The changing pace of technological innovation is another issue knowledge-intensive organizations have to deal with, especially those organizations (such as a police force) of which the major product is knowledge. Dramatic changes in KM-related technology might imply that knowledge workers must be kept abreast of them. However, since new
technology is expensive, and police services are required to work within limited budgets, (Gottschalk, 2007) they must spend money wisely. It is therefore imperative that this service make sound decisions about which KM-related technology it implements. To be able to do this, the relevant police executives must be equipped with the knowledge that enables them to conduct a thorough examination of the ICTs on offer, and select those items that support the KM models that best pursue police-force goals.

Moreover, training is essential for knowledge workers to refresh their experiences and sharpen their skills. One cannot expect employees to use technology without offering them proper training (Sheldon & Wright, 2010). Training is an important dimension of ICTs and enhances KM awareness in organizations, as earlier research has shown. The next section will address in detail training in relation to KM.

2.9 Training

The aim of this section is to understand the concept of training and to outline its importance within knowledge based organization. Training centres on the personnel entrusted with the implementation of a KM initiative and is concerned with the training programs by means of which organizations encourage the upgrading and updating of their members’ competencies. Accordingly approaches to the concept 'organizational learning' are not addressed directly. As Davenport and Prusak (1998) note, that the concept ‘organizational learning’ is broad, and can include everything from the most prosaic training to change in organizational culture. Ensuring appropriate training to support a knowledge initiative can help modify employees’ attitudes to knowledge exchange, and it can promote the kind of cultural change that values training (Nakano, Muniz & Batista, 2013).
Related concepts in the literature overlap with the term ‘training’ and can cause confusion. They are concepts such as ‘learning’, ‘education’ and ‘development’. It is important to clarify that the discussion in this section will be limited to the scope of training programmes that organizations plan and provide for their employees. According to Jashapara, “training is a planned process to help modify employees’ attitude, or the knowledge or skill behaviour of an individual through a learning experience” (2004, p. 26). Training yields many advantages for organizations. The following list for example, is indicative of them:

- Continuous training can improve work performance and reduce the occurrence of mistakes. - It helps also to reduce accidents and therefore to achieve better health and safety standards.

- Training greatly enhances job satisfaction, and creates the sense of security for worker that renders them more loyal and well-adjusted in the workplace. As a result, firms can maintain a low employee turnover rate and reduce absenteeism.

- The importance of training is in that it facilitates the learning process, and therefore creates competitive advantage for organizations (Stewart & Tansley, 2002; Debowksi, 2006).

For a training program to achieve its objectives, it has to be planned appropriately to achieve its desired outcome. For example, Wilson (2000), tenders the seven steps that a comprehensive training programme must include to be successful: (1) identify the training needs; (2) identify those who need training; (3) identify the training method to be used; (4) prepare the training materials; (5) deliver the training programme; (6) evaluate the effectiveness; and (7) audit the process for future modification (Wilson
Lu and Betts (2011) conducted a study of two units involved in the financial services that had the same training program and found unsatisfactory outcomes. They attribute this to three key reasons: the lack of the prerequisite knowledge basis, little time for feedback and lack of management support. Furthermore, these researchers concluded that for training to be successful, learners should be ready to take advantage of the course and be in a position to learn, and the training course should be designed in a way that fulfils the participants’ goals in taking the course. Importantly, the organizational culture should be one that appreciates the adoption of the knowledge acquired in the training program.

2.9.1 The Role of Training in KM

Many researchers indicate that training plays a critical role in the success of the KM initiative, and facilitates the creation of a knowledge culture that in return appreciates knowledge-sharing practices (Nour, 2010; Goodman & Schieman, 2010; Chong et al., 2011; Cardoso, Meireles & Ferreira Peralta, 2012; Abd Rahman, Ng, Sambasivan & Wong, 2013). Training creates a learning environment that enables knowledge creation and a knowledge-sharing culture that contributes to organizational efficiency and productivity (Nakano, Muniz & Batista, 2013). Nevertheless, despite scholars’ and practitioners’ persistent advice that training plays a critical role in successful KM implementation, findings show that inadequate attention is paid to training (Srikantaiah & Koenig, 2008). Jones (2008) conducted a study to investigate the outcomes of training programs in the UAE, with the aim of determining the effectiveness of the Western training programs in the Arab cultural context. He concluded that the cultural context modifies the outcome of Western training programs in the Arab region. Odedait et al.
(2012) analysed the main challenges in Arab management, and cite employee training as one of the challenges. They also indicated that many Arab organizations have adopted theories and strategies in management without recognising that those theories and strategies apply to non-Arab cultures. Their research also concludes that training courses for employees in many Arab organizations fail because they do not meet the needs of employees, and that training courses that meet the development needs of managers are few.

According to Kilmann, Saxton and Serpa (1986), when training is the first item to be let go when budget cuts are necessary, this signals a strong message that training itself is not of value. Two reasons are given for why organizations undervalue the training program in their budget: one is that it is unclear when management opts for training; the other is that the training program is traditionally the first to be reduced when companies are forced to cut costs of business operations during an economic downturn. Yet an analysis of KPMG consulting data shows the extent of KM failures attributable to inadequacies in user education and training, and identifies inadequate training and user education as the principal cause of KM failure (Srikantaiah & Koenig, 2008). In the wake of the KPMG study, McInerney and Koenig (2011) accuse that the KM culture at KPMG was not aware of the importance of training and user education. This finding illustrates that the mere existence of a knowledge culture is not enough to achieve the success of a KM project if it is not supported by an appropriate training and education program.
Similarly, if the introduction of new technology is not supported by training programs, it is most likely that investment in it will not yield the expected outcomes, and will result in an unnecessary cost burden (Wright, 2013). A mistake common in many companies is that once they have installed KM technology, they think they have ensured the success of their KM programmes, wrongly assuming that their employees will automatically begin to use the KM ICT tools. This assumption neglects to consider employees’ abilities to use KM system tools (Hislop, 2009; Lee & Kelkar, 2013). Ajmal, Helo and Kekale (2010) also argue that training cannot ignore the impact of ICTs, hence organizations should understand the training needs created by the adoption of new technology, and offer training to their members, and support it with incentives. For example, the introduction and advancement of technology in the police force creates a need for training old officers. Old officers require training in the use of the new technology in their operations. For example, in the US some states have created laws that ensure that old officers undergo in-service training to retain their licences (Etter and Griffin, 2011). Therefore, workers have to be educated to become competent and confident users of KM technology.

Because of the constant changes and advances in technology, employees must regularly upgrade and update their skills. The more updated, upgraded and effective that knowledge, the more competitive is the organization in the marketplace (Wright, 2013). Through investing in the training and development of their workers, organizations are actually contributing to their own organizational knowledge (Abd Rahman et al., 2013). Such investment will eventually reflect on overall organizational performance, and create competitive advantage in the knowledge-economy environment (Chong et al., 2011).
According to Nour (2010), education and training enhance the incidences of share of knowledge in organizations. The training and management team can help build an organization’s competitive advantage (Lu & Betts, 2011). Practice has proven the critical role of training and development in the success of change-introducing projects (Lau, 2010). This is evident in the case of the Land Registry, where training and investment in development prepared managers well to lead the change project. Learning and development department managers in the Land Registry were less interested in development and training because of its decentralised HR departments. Consequently, were left without the skills to lead the changes the program introduced. The designed training course was purely theoretical, and unrelated to their training needs. However, the new training course corrected this. After conducting the short training workshops tailored to advising managers on how to lead change, and how to enable their acquisition of the base-line level of knowledge and skills that enabled them to take responsibility for innovations, there was a culture change that become efficient and effective at handling all related issues. A centralised HR group replaced the decentralised one, and the Land Registry became competent to receive more than 800 calls weekly (Pollitt, 2010).

Although training gives many advantages to individuals and organizations, training programmes are not always satisfactory. Lu and Betts (2011) claim that this is because of an inadequacy in the transfer of learning from training programs to the workplace. The main objective of training is the application of knowledge in an organization. Ab Rahmanet et al. (2013) add that although training enables employees to gain skills and knowledge, there is no guarantee that training will improve performance if the
knowledge gained through training courses is not shared and documented for organizational use. These authors suggest that trained employees should be given opportunities to practise their knowledge at the workplace, and allowed to share their knowledge with colleagues. Tacit knowledge should be codified, for it belongs to organization, and policies that aim to retain trained employees. Failing that, an organization cannot protect organizational knowledge, and therefore wastes its investment in training.

2.10 Succession Planning

Durst and Wilhelm (2012) argue that the danger of knowledge loss associates with the absence of succession planning. Succession planning should be a priority of the KM initiative, to avoid the accident of ‘falling into a hole’ when key personnel leave an organization. According to these authors, succession planning is:

“...the attempt to plan for the right number and quality of managers and key-skilled employees to cover retirements, death, serious illness or promotion, and any new positions which may be created in future organization plans'. Activities such as selection, development and training of the follow-up as well as activities by the predecessor such as documentation and induction of the successor can be assigned to this process” (Durst & Wilhelm, 2012, p.639).

Etter and Griffin (2011) indicate that older police officers are a valuable resource to any police unit. They have accumulated knowledge and experience that can help police units solve crimes efficiently. Goodman and Schieman (2010) advise that organizations sometimes spend money to gain knowledge that employees already possess. Such cases occur where organizations are unaware of what information or knowledge their employees have. Large companies are more likely to spend money on unnecessary training programs than smaller companies. They suggest that multinationals require a KM model that enables them to capture all the information that is obtained from global training programs, and store it in a central database.
Training and development should never be relegated to being the lowest budget priority. For example, the Baltimore County Police Department has commented that in times of economic downturn, manpower is reduced, and one of the first programs cut is training. This is the case despite the fact that the Baltimore Police Academy is explicitly committed to the view that trained individuals are more comfortable and confident in the executing their work and they assume responsibility much more readily than untrained workers do (Baltimore Police Academy). The inevitable conclusion is that more training is better than less training. Escalating workers’ skills and knowledge enables them to assume responsibilities capably. Stewart and Tansley (2002) expect that future training programs will prioritise support for KM initiatives and the construction of social capital. This view is endorsed in a study by Malhotra (2005), who notes that the annual corporate and government training expenditures in the KM context in the US is self-projected at over US$70 billion. Lu and Betts (2011) claim that developed countries spend billions of dollars each year on management training. Abd Rahman et al. (2013) discusses a critical challenge encountered by almost all organizations. According to these authors, when a core knowledge worker leaves an organization, that worker takes away a large body of organizational memory. To protect themselves against this kind of ‘brain drain’, organizations must identify their core employees and transfer their valuable knowledge to maintain organizational memory through succession planning. Succession planning occurs when organizations plan to maintain the unique knowledge held by workers by selecting and training successors to fill the gap left when these core workers leave the organization (Appelbaum, Benyo, Gunkel, Ramadan, Sakkal & Wolff, 2012).

2.11 Conclusion

This chapter pointed out the importance of precision in the use of the KM terms ‘data’, ‘information’ and ‘knowledge’. The literature shows that the clarity of terminology is
critically important for the successful implementation of any knowledge project (Davenport & Prusak, 1998). The clarity of terms in use enables an organization's members to focus on relevant knowledge rather than become bogged down in random information or data, or in knowledge that is irrelevant to an organization. Police agencies especially are organizations in which a plethora of information accumulates on a daily basis (Nordin, Pauleen & Gorman 2009). The confusion about terminology that arose in the DPF (Biygautane & Al-Yahya, 2011) made the importance of precise terminology clear, and illustrated the critical importance for the success of a KM project of the identification of knowledge that is relevant to the scope of an organization's work.

The knowledge era in which the contemporary economy finds itself has redefined the ways of competition in a manner that makes the survival of organizations a contingency of organizational knowledge, and of the capitalisation of knowledge workers (Drucker, 1995). KM has therefore become a necessity for organizations’ ability to sustain their competitiveness. This chapter called attention also to the factors that play a critical role in the success or failure of KM implementation, and identified organizational culture, leadership, ICTs and training as the most critical dimensions of the success of a KM initiative. The relationships among these factors and their impacts were discussed in detail. Four influencing dimensions (independent variables) were identified, through interviews (pilot study) and the literature, as the most critical for KM success (dependent variable). The dependent variable is KM success, and the independent variables are organizational culture, leadership style, ICTs and training. These variables are interrelated, according to Schein (2010), inasmuch as organizational culture and leadership are the two sides of the same coin. Leadership has a great impact on organizational culture because it is leaders who begin the process of culture creation by
selecting and forming groups within an organization. Once the culture is established, the values and norms of that culture determine certain criteria and create assumptions about the suitability of future leaders in the context of that created culture (Schein, 2010). The selection of an effective leader is therefore a critical first step of a solid KM initiative (Anantatmula, 2008). Therefore, as leaders influence an organization’s culture, and *vice versa*, leadership style is pivotal in motivating people to promote a knowledge-sharing culture. Organizational culture and leadership style are indispensable both in the process of the implementation of KM and in the facilitation of KM activities. Therefore, leaders should model those behaviours that shape an organization’s culture and enable and motivate knowledge workers to create and transfer knowledge. The establishment of the office of the CKO can help a company’s efforts to implement and maintain KM programs and initiatives (De Tienne et al., 2004). Leaders inspire workers to collaborate and break barriers that hinder the KM initiative. If leaders create a knowledge-friendly culture, that culture will, in return, make the use of knowledge-collaborative tools and ICTs the common knowledge-sharing practice of employees. As training cannot ignore the impact of ICTs, organizations should understand the training needs that are created by the adoption of new technology, and offer an appropriate and constant training and education to their members. Training has to be a continuous process in any changing environment, especially in police organizations, and employees’ knowledge has to be upgraded and updated in order to sustain competitive advantage. Accordingly, in a culture that appreciates KM, training is highly valued, thus workers are educated and well trained to perform the work allotted to them, as they become competent and confident. In view of the constant changes and advances in technology, employees must regularly upgrade and update their skills (Hislop, 2009).
The KPMG study by McInerney and Koenig (2011) reveals that the mere existence of a knowledge culture is not enough to achieve the success of a KM project if it is not supported by an appropriate training and education program. Providing support to employees by offering them training to update and upgrade their skills and competencies is an indispensable facet of the KM-friendly organizational culture. The leader has a crucial role in obtaining management and budgetary support at the senior level, and in building a suitable technology infrastructure to back KM implementation (Anantatmula, 2008). Technology helps bring people together, and provides the platform for the KM process, especially in the storing and dissemination of knowledge (Bigliardi, Dormio & Galati, 2010). Technology makes that possible, and the KM process relies on it, and brings people together to create a culture of sharing (Pérez-López & Alegre, 2011). Training helps change and shape culture by modifying employees’ attitudes and improving their understanding. Through training, leaders can enhance their competencies and update their knowledge, which also upgrades their leadership skills and experience (Schafer, 2010).

In appreciating the associations and relationships of the variables, it is vitally important that balance be maintained, for that enhances the chances of the success of the implementation of KM. It is on the basis of this principle that a theoretical framework is developed, and testable hypotheses are proposed in Chapter 3.
CHAPTER 3

RESEARCH METHODOLOGY

3.0 Introduction

The previous chapter reviewed the literature and outlined the difference between data, information and knowledge. More importantly, it highlighted the significant impact of the four dimensions (organizational culture, leadership style, ICTs and training) on the KM practice, thereby justifying these factors as the foci of this research. This chapter describes the operational framework of the research design. Figure 1 below shows the research sequence. Sharing the principle of Bryman and Bell (2007) that there is no such thing as a single research design that a researcher follows, this study follows the ‘onion’ layers approach (see Figure 2) advanced by Saunders, Lewis and Thornhill (2009) which in turn demonstrates the philosophical paradigm and research methodology.
The author selected KM as a research area because the KM initiative was adopted by the DPF. The concern of the KM department was the successful implementation of KM. Also to fulfill the DBA requirements by conducting research at workplace. Therefore, the work started to seek the gap in KM studies in public organizations using the DPF as a case.

Research Flowchart and Sequence

Primary Data
A pilot study was performed at workplace to understand the key success factors that lead to the successful implementation of the KM initiative. A semi-structured interview was used with an open question asking the KM department “what are the most critical factors that lead to successful implementation of KM?” Four key factors were mentioned (Organization Culture, Leadership Style, ICTs and Training). Also, the survey questionnaire strategy was used as a primary instrument for collecting data from the DPF.

Secondary Data
The secondary sources of data were derived from articles published in journals, such as those of Emerald Group publishing, EBSCO, Text books and internet. The review of past studies led to identification of the key critical factors that influence KM implementation in the public sector namely (Organization Culture, Leadership Style, ICTs and Training).

Qualitative Approach
- Semi-structured interview (pilot study)
- Conducted with an open-ended question to identify the key critical factors for KM success.

Research Methodology
Based on the findings, theoretical framework was developed, five propositions have been used to shape the survey and testable hypotheses are proposed. Mixed methods (qualitative and quantitative) were used for data collection based on onion layers approach advanced by Saunders, Lewis, and Thornhill (2009).

Quantitative Approach
- A questionnaire was designed to collect data through 44 phrase survey instrument.

It is suggested that the demonstration of ‘trustworthiness’ is more appropriate for qualitative research validity. Trustworthiness can be enhanced by demonstrating: (i) credibility, e.g., through prolonged engagement with participants; triangulation of data from different sources; thick descriptions of data and respondent validation of transcripts and emerging concepts; (ii) traceability/ transparency, e.g., through thick description of the research, the participants, the methodology design, interpretation of the results and emerging theory; (iii) dependability, e.g., by thick descriptions and examination/discussion of process with participants and observers, such as research advisers or peers. In the context of this study, this advice has been followed by the discussion of research design with colleagues and academic advisers; thick description through extensive note taking during and after the interview processes; feeding back results to participants, and triangulation with the quantitative survey. Sekaran (2003) contends that for the effectiveness of the study and validity of the research questions under discussion, researchers should use a pilot study.

Measurement of the Discriminative Validity of the survey form the phrases of an expression will be valid when they elicit the different views and responses of the different categories of participants. If the directions of the sample views do not manifest as such different responses to a phrase, that phrase will not be true because it does not distinguish among the different classes of sample; it should be deleted. The survey sample understood and distinguished the contents of the survey form in accordance with the individual participants’ different experiences, cultures and trends. From the above, and on the results of the measurement of reliability, validity, and discriminative validity, it can be concluded that the survey form measures the variables of the study reliably. Thus, there is an assurance that the indicators obtained in this study could be applied or generalized to the entire community safely and completely. Reliability of the research process and instruments used is an important prerequisite to ensure validity.

Conclusion
The author conducted qualitative research (pilot study) to generate propositions for this study using grounded theory methodology. These guided the design of the quantitative survey and were used to structure hypotheses for testing in the analysis (Glaser & Strauss, 1990). The accumulated outcome of both approaches (qualitative and quantitative) concluded that the four dimensions that were found in the qualitative interviews (pilot study) and surveyed quantitatively have a strong relationship and positively correlated with the KM success.

Proposed Framework for KM implementation in DPF
The developed framework for this study in chapter three improved based on the research findings and proposed a framework for KM implementation in DPF that can lead to successful implementation of the KM initiative.

Research Limitation
The scope of this research was limited to one police organization, and therefore, the findings of this study may not be applicable in total to other police organizations, nor to other public organizations. Arab culture has its impact on knowledge sharing. Although this has been discussed by other authors like Esia and Skol (2014) and Yeo and Gold (2014), there is still a dearth of empirical work. Obtaining the required data from an Arab public sector organization has intrinsic difficulties. KM literature is not limited to the factors selected for this study as influencers. Access to the relevant data in a police organization is problematic.

Figure 1: Research Flowchart and Sequence
3.1 The Theoretical Framework

Having considered the literature of Knowledge Management (see Chapter 2), and in conjunction with the results of the Pilot Study detailed below, the objectives for the study were formulated in the form of research questions, as follows:

1. What are the key issues and challenges to knowledge management in the Arab context? (Evidenced by the review of the literature)
2. What are the critical dimensions for the effective implementation of a KM strategy in an Arab public sector organization? (Evidenced by the review of the literature and the pilot study)

3. What are the levels of influence of these critical dimensions on KM management in the Arab public sector? (Evidenced by the survey data)

4. What correlations can be determined between KM practices and their positive or negative influences? (Evidenced by analysis of survey data)

5. What would constitute an effective model for the implementation of KM initiatives in the Arab public sector? (Evidenced by the review of the literature and analysis of qualitative and quantitative data)

6. What are the practical solutions that can help organizations overcome barriers for effective KM implementation? (Analysis and review of findings)

The importance of the theoretical framework of the research process is in that it paves the way for the development of testable hypotheses by describing the relationships of the variables that pertain to the central concerns of the study (Sekaran, 2003). Through preliminary interviews (see section 3.10.2 for qualitative approach) coupled with a thorough review of the literature, four influencing dimensions (independent variables) were identified as the most critical for successful KM implementation (dependent variable). The theoretical framework of this study is developed on the basis of the preceding literature review whereby the dependent variable is ‘KM implementation success’, and variance is illustrated by the four independent variables: ‘organizational culture’, ‘leadership style’, ‘ICTs’ and ‘training’.
According to Schein (2010), organizational culture and leadership are two sides of the same coin—leadership has a great impact on organizational culture because it is leaders who begin the process of culture-creation by selecting and forming the influential groups within an organization. Once the organizational culture is established, its values and norms entail the assumptions about the calibre of person who is the suitable leader of that organization (Schein, 2010). Therefore, as leaders can influence organizational culture and vice versa, leadership cannot but stamp itself on the processes of motivating people and promoting the knowledge-sharing culture. Leaders inspire workers to work in collaboration, and break any barriers that hinder the KM initiative. The knowledge-friendly culture that leaders create nourishes the culture in which the use of ICTs becomes routine practice.

ICT training cannot be ignored by the culture that appreciates KM; training is recognised and highly valued in a knowledge-friendly organizational culture. Such an organizational culture plays a critical role in the support of employees' needs and expectations of training that updates and upgrades their skills and competencies. Culture and leadership play critical roles in facilitating KM implementation. Leadership secures the full support of top management in the matter of the provision of sufficient funds for training and for the acquisition of knowledge-oriented ICTs tools. Technology helps in bringing people together, and this provides the foundation of the KM process, especially with regard to knowledge storing and dissemination.

It is technology that has made KM possible, because the KM process relies greatly on it. In turn, technology brings people together and creates the sharing culture. Training helps
change culture by modifying employees’ attitudes and improving their understanding. Through training, leaders also enhance their competencies and update their knowledge, thereby upgrading their skills in and experiences of leadership.

It is important to maintain a balance of the four independent variables to achieve effective KM implementation. The more supportive the culture, the more knowledge is generated and shared. On the other hand, leadership is the instrument that creates the knowledge-enabling environment. The leader operates with a deep understanding of the organization’s culture, and uses that understanding to implement the strategies of knowledge creation. Able leadership not backed up by a supportive culture and an appropriate technological infrastructure will result in the lack of communication that fails to excite interest in the KM program. Likewise, if attention centres heavily on technology and insufficiently on leadership, an unhealthy culture develops: one that produces information that is short of being knowledge, and neglects training. These relationships are diagrammed in the Figure 3, below:
Figure 3: The Author’s Diagram of the Theoretical Framework

3.2 Propositions

Based on the theoretical framework above as well as the research objectives set out in Chapter 1, the following propositions may be put forward:

1. Leadership style has a significant impact on the activation of KM in the DPF.
2. There is a significant impact of organizational culture on the activation of KM in the DPF.

3. There is a significant impact of training on the activation of KM in the DPF.

4. There is a significant impact of information and communication technologies on the activation of KM in the DPF.

5. The cohering elements of independent variables exert a significant influence on the activation of KM in the DPF.

These five propositions have been used to shape the survey and to derive the following hypotheses for testing in the resultant quantitative analysis (see section 4.6 below):

*H1:* Transformational leadership style will lead to more successful knowledge management.

*H2:* Transactional leadership style will lead to more successful knowledge management.

*H3:* ICTs acceptance will positively influence attitudes toward social media usage.

*H4:* The usage of social media will lead to more successful knowledge management.

*H5:* Organizational culture will lead to more successful knowledge management.

*H6:* Training will lead to more successful knowledge management.

*H7:* The independent variables will significantly explain the variance in successful knowledge management.

### 3.3 The Research Paradigm

The working paradigm encapsulates the author’s world view, and explains the study's attention to phenomena. According to Saunders, Lewis and Thornhill the research paradigm “is a way of examining social phenomena from which particular understanding of these phenomena can be gained and explanation attempted” (2009, p.118). It is the philosophical foundation that contains the important assumptions that underlie the researcher's ideas.
(Saunders, Lewis & Thornhill, 2009). An understanding of the researcher’s basic assumptions can help clarifying the research design (Blumberg, Cooper & Schindler, 2008). Easterby-Smith, Thorpe and Jackson (2008) identify three useful reasons for seeking to understand the philosophical approach of a research study of management: First, it helps the researcher to clarify the overall research design. This clarification includes reflection on the type of evidence to be collected, on where it was gathered, and on how the researcher should explain and answer the research question. Secondly, clarity of the research philosophy helps the researcher select the most suitable stance for the research, for that clarity affords the vantage point from which the shortcomings of each approach to the planning of the research study are visible. Finally, that vantage point is likely to help the researcher think beyond past experience, and therefore become creative and innovative.

3.4 The Philosophical Approaches to Research

Remenyi, Williams, Money and Swartz (2005) adds that it benefits individuals pursuing doctoral degrees to know their own philosophical research stances clearly. Though the literature on research paradigms outlines numerous philosophical approaches, for example, positivism, realism, interpretivism and critical theory, several researchers (Hallebone & Priest, 2009; Saunders, Lewis & Thornhill, 2009; Blumberg, Cooper & Schindler, 2008) believe that research in the management and business areas are dominated by two philosophical approaches: positivism and interpretivism. This research will proceed with these two philosophical paradigms.

3.4.1 The Positivist Approach

The positivist researcher is an objective analyst and interpreter of tangible social data, and does not allow subjective attitudes to intrude upon his analysis of that data (Remenyi et al., 2005). This means that the researcher’s analytical and evaluative tools are always neutral,
and that he avoids all analytical attitudes and procedures that would bring to bear a subjective influence on the research.

The positivist paradigm is considered the obligatory paradigm of the natural sciences, where research that is not value-free is repudiated (Easterby-Smith, Thorpe & Jackson, 2008). Thus observations that are ‘scientific’ in the positivist sense are quantifiable and available for statistical analysis, and research findings are capable of proof by replication before they are validly expressed as generalisations (Remenyi et al., 2005).

From a positivist approach it is possible for the researcher to use either qualitative or quantitative procedures to formulate a hypothesis, but must seek to prove that hypothesis by quantitative methods (Saunders, Lewis & Thornhill, 2009). The positivist researcher observes the social world by collecting objective data, that is, by performing empirical research (Blumberg, Cooper & Schindler, 2008). Positivist theory evolves essentially from the findings of empirical research. But existing theory can be (and is) developed non-empirically by means of logical calculations that seek to accommodate new hypotheses, and thereby, expand existing theory (Saunders, Lewis & Thornhill, 2009). As Blumberg, Cooper & Schindler (2008) explain, positivist researchers observing the same social phenomenon work with the same facts that describe the social world, but they construe them differently when they work with different theoretical models.

3.4.2 The Interpretivist Approach

The interpretivist paradigm sees the social world as far too complex to be understood with the rigid tools of the natural sciences (Saunders, Lewis & Thornhill, 2009). Piecemeal objective observations of the social world are insufficient to understand the complexity of
social phenomena. The subjective meanings that people make of these phenomena have to be explored in order to gain a comprehensive understanding of them (Blumberg, Cooper & Schindler, 2008). The concepts of 'meaning' and 'understanding' implicit in the interpretivist paradigm are such that they include the researcher as a part of what is being observed by that researcher. That is, the researcher is one of an indeterminate number of ‘social actors’ who advance interpretations and explanations of the social world (Saunders, Lewis & Thornhill, 2009).

Therefore, interpretivism, unlike positivism, recognises and accommodates the subjective researcher who engages with the research participants and collaborates with them in the effort to deconstruct the meaning of a social phenomenon, sets of apparently related facts, etc. (Blumberg, Cooper & Schindler, 2008). The interpretivist approach is suitable in a situation where the researcher attempts to understand the relationships among the different variables within an industry or organizations. An example of such a situation is one in which a researcher sets out to explore what happens to men and women when the variables are education and income (Hallebone & Priest, 2009).

A summary of the characteristics of the positivist and interpretivist approaches to research is presented in Tables 2, 3 and 4: Each Table is adapted from Hallebone and Priest (2009).

<table>
<thead>
<tr>
<th>Aspect of Research</th>
<th>Positivism</th>
<th>Interpretivism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purpose</td>
<td>Test theory or theoretical prediction.</td>
<td>Develop descriptive theory.</td>
</tr>
</tbody>
</table>
Using extant literature | Identify theory to test. Identify hypotheses to test the theory. | Identify need for theory. Develop sensitising concepts.
---|---|---
Form of inquiry | Develop hypotheses as posited relationships between variables. | Explore social world to develop key questions and new theory.
Tactic in conducting study | Hypotheses are fixed in order to test a theory. Theory is expanded, reinforced, confirmed, qualified or rejected. | Hypotheses emerge as meaning is constructed using building blocks of local integrating descriptive theory.

### Table 2: Research Aims and the Form of Inquiry Reflecting Their Philosophy (Hallebone & Priest, 2009, p.45)

<table>
<thead>
<tr>
<th>Aspect of Research</th>
<th>Positivism</th>
<th>Interpretivism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purpose of data</td>
<td>Test hypotheses. Typically answer IS–ARE (testing) questions.</td>
<td>Generate understanding. Typically answer WHAT (descriptive) questions.</td>
</tr>
<tr>
<td>Nature of data</td>
<td>Collect data.</td>
<td>Generate data.</td>
</tr>
<tr>
<td>Dealing with data</td>
<td>Analyse after all data collected.</td>
<td>Analyse concurrently with data generation.</td>
</tr>
<tr>
<td>Purpose of analysis</td>
<td>Qualify hypotheses according to disconfirming evidence.</td>
<td>Produce typified meanings.</td>
</tr>
<tr>
<td>Process of data analysis</td>
<td>Statistical tests of significance.</td>
<td>Inductive generalisation or abductive distillation (reduction) to categories.</td>
</tr>
</tbody>
</table>

### Table 3: Approaches to Assembling and Analysing Data Reflect a Philosophy (Hallebone & Priest, 2009, p.45)
### Two Philosophies: Their Similarities and Differences

<table>
<thead>
<tr>
<th>Aspect of Research</th>
<th>Positivism</th>
<th>Interpretivism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Validation</td>
<td>Validity as appropriate operationalization of concepts and likely objective truth of resulting statistics.</td>
<td>Findings shared with participants who attribute a truth value to study’s descriptions and interpretations.</td>
</tr>
<tr>
<td>Reporting</td>
<td>Often compact and quantitative.</td>
<td>Often detailed and qualitative.</td>
</tr>
<tr>
<td>Generalisation</td>
<td>Produce generalizable findings and the possibility of making predictions about general phenomena.</td>
<td>Time and space specific. Deep understanding about particular or categorical phenomena.</td>
</tr>
<tr>
<td>Representation</td>
<td>Nomothetic and objective statements.</td>
<td>Idiosyncratic and relativist statements.</td>
</tr>
</tbody>
</table>

**Table 4: Comparison of Two Philosophies that Inform Research Style (Hallebone & Priest, 2009, p.45)**

#### 3.4.3 The Qualitative and Quantitative Approaches

Blumberg, Cooper and Schindler (2008) believe that in business and management studies there is no clear predominance of either the qualitative or the quantitative approach, nor is there indication that one is considered more useful than the other. However, researchers should consider the following questions before they choose their research strategies:

- What is the research problem to be investigated?
- What is the research purpose?
- What kind of result is expected?
- What kind of information will be obtained, and will it be accessible to the researcher?
As one or both of these two methodologies (qualitative and quantitative) is inevitably used for the data analysis of any study, it is necessary to discuss them in order to acquire the means of propounding the argument (Blumberg, Cooper & Schindler, 2008) that the present researcher has selected this study’s methodology appropriately.

The quantitative approach pursues facts and is adopted when researchers desire to acquire numeric data (Saunders, et al, 2009). This approach can be implemented by various data-collection techniques, such as the questionnaire survey or laboratory experiment or observation. The qualitative approach is used when researchers require non-numeric data. When engaging in qualitative research, the researcher is focused on the richness of a context of investigation where the identification of the feelings and experiences of individuals carries more weight than does, for instance, the frequency (number) of the occurrence of a feeling or experience.

Qualitative research is less structured than the quantitative. That leaves the researcher with a greater chance of overlooking or misinterpreting important facets of the phenomenon under scrutiny. Quantitative research, on the other hand, is structured by the data collected, and the scope of findings is delimited by that structure. The chances of overlooking or misinterpreting are effectively absent (Blumberg, Cooper & Schindler, 2008).

The quantitative approach associates with the positivism paradigm, where research is conducted to test theory or hypotheses. This approach is used for explanatory research, and purports to explain the causal relationships between variables, usually by large sample size.
The qualitative approach is bound to the interpretivist paradigm, tends to have a small sample size, and has an exploratory purpose.

### 3.4.4 Induction and Deduction

Saunders, Lewis and Thornhill (2009) posit induction and deduction as noteworthy factors in research. They are right to do so, for obviously, either one or both of these two sequences of reasoning (the specific-to-the-general of induction, or the general-to-the-specific of deduction) have to be called into play both in data collection and data analysis, for all sequences of reasoning are either inductive or deductive. Which one is brought into play depends on whether the intellectual quest is to arrive at a generalisation from a set of data items (inductive reasoning), or to characterise an item of data in terms of a generalisation (deductive reasoning). The classic models of the syllogism determine the valid moves in both these sequences of reasoning. All moves that are not valid are fallacious, and a fallacious move disallows the conclusion, whether it is reached deductively or inductively. Of course, the researcher must pay close attention to the validity of his reasoning processes, whether is working with a positivist or interpretivist paradigm.

### 3.5 The Philosophical Approach of the Present Study to Research

For the most part, this research takes the positivist approach, however resorts to interpretivism when necessary. This dualist approach allows the author to supplement quantitative findings collected statistically from empirical research with subjective information that facilitates a richer understanding of the complex reality of the knowledge setting in the DPF.

Richter (2011) examines the several research paradigms of studies within the KM context, and concludes that the dominant paradigms are both positivist and interpretivist, either simultaneously or exclusively. Although the positivist approach has been criticised for its
shortcomings in explaining the concept of KM, some researchers consider it reliable (Koohang, Harman & Brits, 2008) since generalization is not of crucial importance in interpretivism; and since the business world is in a constant state of change and all organizations are unique in their context, generalizations become less useful. The same can be said about generalisations with regard to police organizations (Saunders, et al, 2009).

It is this author's view that the interpretivist paradigm is useful in an exploration of the factors that influence KM implementation in the DPF. Positivism alone would possibly be sufficient if the objective were to abstract generalizations that apply to all police organizations, or at least to the police organization of a region. However, there is no such objective in this research study since the objectives clearly centre on the DPF. Therefore, the dualist approach is very helpful when the author comes to offering recommendations concerning the KM practices that would serve to improve the chances of a successful conclusion of the KM implementation initiative in the DPF. Even so, it remains true that the positivist approach is relied on heavily in data collection and analysis, which is the major activity of this study.

As the Onion Layers approach outlined above demonstrated, it is evident that the choice of research approach has great impact on research design and direction. Moreover, that choice gives a clear direction regarding the objectives of a study, and helps keep the pursuit of those objectives on track. This author has chosen the quantitative method for the bulk of the research, and combines it with some qualitative strategies where deemed appropriate. In other words, this study proceeds as a mixed-method research project, which has been proven as a widely sanctioned research strategy (Saunders, et al, 2009).
With this choice, the researcher can convey a deeper and enhanced understanding of the study phenomenon than would have been possible with a single-method approach. Furthermore, the qualitative choice facilitates quantitative research because it is a good approach to developing hypotheses that can subsequently be tested quantitatively (Bryman & Bell, 2007). For example, the author conducted a number of interviews with the DPF KM department workers to in order to understand what factors are considered the most critical for the success of the initiative. The interviews yielded four findings as to what is considered the most critical for the success of the KM implementation. This is data collected qualitatively can be converted into quantitative data to test the hypotheses developed specifically for this research.

The mixed method can offer more flexibility to collect qualitative data, then convert it into numerical codes for statistical analysis, the results of which can subsequently be interpreted qualitatively to explain the complex reality of KM in the DPF (Saunders, Lewis and Thornhill (2009). Table 5 below summarizes reasons for using mixed-method procedures (Saunders, et al, 2009; Bryman, 2006):

<table>
<thead>
<tr>
<th>Reason</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triangulation</td>
<td>Use of two or more independent sources of data or data collection methods to corroborate research findings within a study.</td>
</tr>
<tr>
<td>Facilitation</td>
<td>Use of one data collection method or research strategy to aid research, using another data collection method or research strategy within a study (e.g. qualitative/quantitative providing hypotheses, aiding measurement, quantitative/qualitative participant or case selection).</td>
</tr>
</tbody>
</table>
Complementarity | Use of two or more research strategies in order that different aspects of an investigation can be dovetailed (e.g. qualitative plus quantitative questionnaire to fill in gaps quantitative plus qualitative questionnaire for issues, interview for meaning).

Generality | Use of independent source of data to contextualise main study or use quantitative analysis to provide sense of relative importance (e.g. qualitative plus quantitative to set case in broader context; qualitative x quantitative analysis is to provide sense of relative importance).

Aid interpretation | Use of qualitative data to help explain relationships between quantitative variables (e.g. quantitative/qualitative).

Study different aspects | Quantitative to look at macro aspects and qualitative to look at micro aspects

Solve a puzzle | Use of an alternative data collection method when the initial method reveals unexplainable results or insufficient data

Table 5: Justifying the Mixed-Method Approach to Research (adapted from Saunders, Lewis & Thornhill, 2009, p. 154)

3.6 Data Collection

Since the validity of the findings depends largely on the gathered data, the final outcome of a study may be unreliable if data is collected inaccurately, or with an inappropriate technique. Hence, this research utilizes the most discussed sources of data collection in the literature, namely, primary and secondary sources of data.

3.6.1 The Pilot Study

The empirical inquiry commenced with a pilot study, consisting of a series of interviews with key members from the KM department. The interview protocol was derived from the results of the literature review (see Chapter 2). Interviews commenced with the following statement: “I am here to identify the critical factors that are playing a key role in implementing KM successfully. Based on your inputs I aim to develop a framework and
make appropriate recommendations to enhance the chances of success of KM
implementation. I would just like to talk to you now, and administer a questionnaire later.”

Each interview lasted approximately fifteen minutes, during which extensive notes were
taken by the author. When the responses were tabulated, it became clear that the issues
most frequently brought up by the respondents in one form or another, related to four key
areas: leadership style (the participants indicated the need for leaders who have close
relations with workers; appreciate knowledge sharing; and communicate well and have a
clear understanding of employee needs in order to improve knowledge creation and
knowledge flow); organizational culture (the participants indicated problems which
included: departments competing with each other; no collaboration in knowledge sharing;
lack of knowledge sharing; little time available to share knowledge; the inability to
exchange information freely due to secrecy issues etc.); ICTs (the participants reported that
there is no codifying system set in place; employees are reluctant to use technology and
tend to discuss things informally; employees feel IT programs and software systems are
time consuming and complicated; employees prefer to use social media to share
information and knowledge like WhatsApp, intranet etc.); and training (the participants
reported that employees do not have access to proper training; there is mismatch between
the work demands and the qualifications of workers; there is a lack of training strategies
such as job rotation ).

Furthermore, the review of the literature confirmed that the above mentioned variables
were good predictors for the successful implementation of KM. Additionally, social media
was also found to be a useful predictor. A theoretical framework was developed based on
the interviews and the literature review, and seven hypotheses were developed accordingly. (See Section 3.10.2 for details of the qualitative approach used).

3.6.2 The Survey

The survey questionnaire strategy is used as a primary instrument for collecting data from the DPF. According to Saunders, et al, (2009), for business and management studies, the best and most frequently used survey strategy is the questionnaires. The secondary sources of data were derived from articles published in journals, such as those of Emerald Group Publishing and ESBCO. Text books and the various studies available on the internet were also used as sources of secondary data.

3.7 Research Purpose

Blumberg, Cooper and Schindler (2008) explain that the research purpose in a business and management study can be descriptive, explanatory or exploratory, depending on the research questions to which answers are pursued.

Explorative studies usually develop hypotheses to be tested or questions to be answered by further research (Blumberg, Cooper & Schindler, 2008). Since this research intends to explore relationships among variables with a view to understanding the selected variables’ influence on KM implementation, the purpose of this research can be said to be explorative and correlational (Sekaran, 2003), where hypotheses are developed about the variables’ influence on KM success alongside descriptive aspects built by statistical analysis. According to Sekaran (2003), a correlational study is called for when the researcher intends to identify the important factors that are associated with a problem, develop a theoretical framework that accommodates the identified factors, then collect and attach that which is relevant to the research findings.
3.8 Sampling Method and Size

Considering that the DPF is a large organization with more than 15,000 employees, it is clearly difficult to collect data from that entire population, taking into consideration also the limited resources available for the author, especially the time resource (Blumberg, et al, 2008). Therefore, the author has deployed a simple random-sampling method of gathering primary data. This sampling method is suitable for this research because the information obtained from the different departments can be generalized to the entire organization. It would not have been possible to generate a sample that is representative of a larger population if the non-probability sampling method had been used (Sekaran, 2003).

According to Saunders, et al (2009), the simple random-sample technique is more accurate and accessible to the author, especially in the case where the sample size is over a few hundred. Based on the comparison of probability and non-probability sampling that Sekaran (2003) provides, the author opted for the former method, as Table 6 shows:

<table>
<thead>
<tr>
<th>Probability Sampling</th>
<th>Sampling Design</th>
<th>Description</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Simple random sampling</td>
<td>All elements in the population are considered, and each element has an equal chance of being chosen as the subject.</td>
<td>High generalizability of findings.</td>
<td>Not as efficient as stratified sampling.</td>
</tr>
<tr>
<td>2</td>
<td>Systematic sampling</td>
<td>Every n'th element in the population is chosen starting from a random point in the population frame.</td>
<td>Easy to use if population frame is available.</td>
<td>Systematic biases are possible.</td>
</tr>
<tr>
<td>3</td>
<td>Stratified random sampling (Str.R.S.)</td>
<td>Population is first divided into meaningful segments.</td>
<td>Most efficient among all probability designs.</td>
<td>Stratification must be meaningful.</td>
</tr>
<tr>
<td>Method</td>
<td>Description</td>
<td>Pros</td>
<td>Cons</td>
<td></td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Proportionate</td>
<td>Thereafter subjects are drawn in proportion to their original numbers in</td>
<td>All groups are adequately sampled and comparisons among groups are</td>
<td>More time-consuming than simple random sampling or systematic</td>
<td></td>
</tr>
<tr>
<td>Str.R.S.</td>
<td>the population.</td>
<td>possible.</td>
<td>sampling.</td>
<td></td>
</tr>
<tr>
<td>Disproportionate</td>
<td>Based on criteria other than their original population numbers.</td>
<td></td>
<td>Population frame for each stratum is essential.</td>
<td></td>
</tr>
<tr>
<td>Str.R.S.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Cluster sampling</td>
<td>Groups that have heterogeneous members are first identified; then</td>
<td>The least reliable and efficient among all probability sampling</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>some are chosen at random; all the members in each of the randomly</td>
<td>designs since subsets of clusters are more homogeneous than</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>chosen groups are studied.</td>
<td>heterogeneous.</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Area sampling</td>
<td>Cluster sampling within a particular area or locality.</td>
<td>Takes time to collect data from an area.</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Double sampling</td>
<td>The same sample or a subset of the sample is studied twice.</td>
<td>Original biases, if any, will be carried over. Individuals may not</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Offers more detailed information on the topic of study.</td>
<td>be happy responding a second time.</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Convenience sampling</td>
<td>The most easily accessible members are chosen as subjects.</td>
<td>Not generalizable at all.</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Quota sampling</td>
<td>Subjects are conveniently chosen from targeted groups according to</td>
<td>Very useful where minority participation in a study is critical.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>some predetermined number or quota.</td>
<td>Not easily generalizable.</td>
<td></td>
</tr>
</tbody>
</table>

Table 6: Comparison of Probability and Non-Probability Sampling (Sekaran, 2003, p.280)
The sample size and sampling method are determined on the basis of the resources available to the researcher, such as financial support, the time frame in which data must be collected, as well as the chosen data-analysis method (by means of a computer-based program or manually). Thus the sample size and method are effectively determined by the availability of resources. Saunders, et al (2009) suggest that a minimum sample size of 30 is required for statistical analysis. For this study, the author expected 400 respondents for statistical analysis, which is considered an appropriate sample size by Blumberg, et al (2008) for a study of this kind. This is in line with the suggestion by Sekaran (2003) that if the sample size is larger than 30 and less than 500, it is an appropriate size for most kinds of research. This author submits that for a population of 15,000, a sample size of 375 is appropriate, as is a sample size of 377 for a population of 20,000 (see Sekaran 2003, p.294).

3.9 The Rationale of the Survey Questionnaire

Given the several available data-collection strategies, the choice of the most suitable one is largely determined by the resources available to the researcher (Saunders, et al, 2009), as already noted. Of the data-collection techniques pragmatically available to the present researcher (interviews, case study and survey questionnaire) the survey questionnaire was determined to be the most suitable instrument for data collection.

The questionnaire was designed to allow the collection of empirical evidence from the quantitative data obtained, which was then interpreted qualitatively. The questionnaire technique was deemed appropriate also because it enabled the author to reach a large number of participants in a short time, and because it is cost effective (Bryman & Bell, 2007). The further advantage of the questionnaire is in that it gives participants sufficient completion time, since it is self-administered.
The author took note of the suggestions offered by Saunders, et al (2009) with regard to the wording and translation (in this case, from Arabic to English) of the questions, the design and layout of the questionnaire, and the explanation of the purpose of the questionnaire. However, survey questionnaires are not without shortcomings. Blumberg, et al (2008) provide a comparison of the self-administered survey and other approaches. That comparison is displayed in Table 7:

<table>
<thead>
<tr>
<th>Description</th>
<th>Personal Interviews</th>
<th>Telephone Interviews</th>
<th>Self-administered Surveys</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>People selected to be part of the sample are interviewed in person by a trained interviewer</td>
<td>People selected to be part of the sample are interviewed on the telephone by a trained interviewer</td>
<td>Questionnaires are: a. mailed, faxed or couriered to be self-administered - with return mechanism generally included b. computer-delivered via intranet, internet and online services — computer stores/forwards completed instruments automatically c. people intercepted/studied via paper or computerized instrument in central location - without interviewer assistance</td>
</tr>
<tr>
<td>Advantages</td>
<td>• Good cooperation from respondents • Interviewer can answer questions about survey, probe for answers, use follow-up questions, and gather information by observation • Special visual aids and scoring devices can be used • literate and functionally illiterate respondents can be reached • Interviewer can pre-screen respondent to</td>
<td>• Lower costs than personal interview • Expanded geographic coverage without dramatic increase in costs • Uses fewer, more highly skilled interviewers • Reduced interviewer bias • Fastest completion time • Better access to hard-to-reach respondents through repeated call-backs • Can use computerized random-digit dialling • CATI-computer-</td>
<td>• Allows contact with otherwise inaccessible respondents (e.g. CEOs) • Incentives may be used to increase response rate • Often lowest-cost option • Expanded geographic coverage without increase in costs (a) • Requires minimal staff (a) • Perceived as more anonymous (a) • Allows respondents time to think about questions (a) • More complex instruments can be used (b) • Fast access to the computer-literate (b) • Rapid data-collection (b, c) • Respondent who cannot be reached by phone (voice)</td>
</tr>
</tbody>
</table>
ensure he or she fits the population profile
- CAPI — computer-assisted personal interviewing: responses can be entered into a portable microcomputer to reduce error and cost

<table>
<thead>
<tr>
<th>assisted telephone interviewing: responses can be entered directly into a computer file to reduce error and cost.</th>
</tr>
</thead>
</table>
| may be accessible (b, c)
- Sample frame lists viable locations rather than prospective respondents (b, c)
- Visuals may be used (b, c)

**Disadvantages**
- High costs
- Need for highly trained interviewers
- Longer period needed in the field collecting data
- May be wide geographic dispersion
- Follow-up is labour intensive
- Not all respondents are available or accessible
- Some respondents are unwilling to talk to strangers in their homes
- Some neighbourhoods are difficult to visit
- Questions may be altered or respondent coached by interviewers
- Response rate is lower than for personal interview
- Higher costs if interviewing geographically dispersed sample
- Interview length must be limited
- Many phone numbers are unlisted or not working, making directory listings unreliable
- Some target groups are not available by telephone
- Responses may be less complete
- Illustrations cannot be used

- Low response rate in some modes
- No interviewer intervention available for probing or explanation (a)
- Cannot be long or complex (a)
- Accurate mailing lists needed (a)
- Often respondents returning survey represent extremes of the population - skewed responses (a)
- Anxiety among some respondents (b)
- Directions/software, instruction needed for progression through the instrument (b)
- Computer security (b)
- Need for low-distraction environment for survey completion (c)

**Table 7: Comparison of the Self-Administered Survey with Other Approaches**
(adapted from Blumberg, Cooper & Schindler, 2008, p.283)

This comparison helped the author evaluate the effectiveness of the survey questionnaire against the other approaches. The closed-question (closed-end questions) style was chosen for the survey on the basis of the discussion by Bryman and Bell (2007). In Table 8, the author summarises the benefits and drawbacks of closed-ended questions in the context of the questionnaire to which they point.
Table 8: Benefits and Drawbacks of Closed-Ended Questions in the Questionnaire (Bryman & Bell, 2007, pp. 261).

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Drawbacks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  Placing a tick or circling answers is easy to perform.</td>
<td>Loss of possibility of interesting replies due to fixed answers.</td>
</tr>
<tr>
<td>2  Enhances the comparability of answers; shows the relationship of</td>
<td>Fixed answers that overlap may confuse respondents.</td>
</tr>
<tr>
<td>variables; enables comparisons of respondents.</td>
<td></td>
</tr>
<tr>
<td>3  The answers made available clarify the meanings of questions for the</td>
<td>Exhaustive fixed answers are difficult to compile, so the ‘other’ category is often necessary.</td>
</tr>
<tr>
<td>respondents.</td>
<td></td>
</tr>
<tr>
<td>4  Easy, precise and can be completed quickly.</td>
<td>Possibly irritating when not applicable to respondent.</td>
</tr>
<tr>
<td>5  Reduces the possibility of variation that occurs in the recorded</td>
<td>The absence of rapport between respondent and interviewer.</td>
</tr>
<tr>
<td>answers obtained in structured interviews.</td>
<td></td>
</tr>
</tbody>
</table>

The fully designed and pre-tested questionnaire was distributed to the target sample by internal email on an intranet program used for internal correspondence by the DPF departments.

3.10 Data Collection Procedures

3.10.1. Quantitative Approach

The questionnaire has two sections. The first section surveys the demographic profile of respondents (age, gender, designations, nationality, education level and years of professional experience). The second section consists of 44 questions regarding the existing KM initiative in the DPF that specifically probe the factors that are influencing the KM implementation initiative. The questions were designed on the basis of a review of the KM literature of commentary pertinent to the four dimensions selected for this study.
(organizational culture, leadership style, ICTs and training). For face-validity purposes a pilot test was performed to detect any aspects of the developed instrument that might need improvement or clarification before its final distribution (Bryman & Bell, 2007).

Blumberg, et al (2008) suggest that the size of the pilot group should range between 5 and 100 subjects. For this particular study 30 participants were invited to take the pilot survey of which 20 samples where returned from three different departments of the DPF (the Decision-Making Support Centre, the General Department of Total Quality and Department of Traffic). Some of these departments were selected based on their active involvement in the KM implementation project. In fact, the Decision-Making Support Centre, which was indispensable to this project, is the hub of research and development activities at the DPF and the locus of many researchers, statistical analysts and publishers of police-related studies. The respondents were asked for their suggestions and comments on the survey instrument. Based on their feedback, the author re-examined the content of the questionnaire and amended some parts of it. The revised questionnaire is attached in full in Appendix C.

Computer-delivered self-administered questionnaires are usually sent to participants by e-mail on an organization's intranet system. Blumberg, et al (2008) suggest that an e-mail delivered survey is quicker and less costly than other means of delivery, and the personalisation of the survey's cover letter is more easily accomplished.

The approved letter of request to conduct the survey was included with the survey. The questionnaires were e-mailed to 18 departments through the intranet, as this procedure
allowed the targeted population to simply download and distribute them to members. The completed questionnaires were to be returned to the KM Department within 21 days. The author included his personal contact information on the cover letter to ensure that this survey is purely for doctoral degree purposes. This is to avoid any bias in the respondents’ answers. Additionally, the survey was emailed electronically to the departments where each department intranet operator redistributes to sub departments and then it can be downloaded by individuals easily at their pace if any of them decided to participate. A computer-delivered self-administered questionnaire was used to avoid any kind of direct contact where the respondents feel obliged to take part in the survey just to please or do a favour for the author. The author’s department was being excluded from the survey to ensure that the answers are not biased (Saunders, Lewis & Thornhill, 2009).

The administration of the research instruments took into consideration the different strategies suggested by Saunders, et al (2009) for ensuring a high response rate. First, a pre-survey contact was made when the author emailed the intended recipients and advised them to expect a questionnaire. Next, all questionnaires were delivered with a covering letter that made it clearly stated that all respondents will be treated as anonymous, and all information will be considered strictly confidential and that participation is voluntary where participants are free to withdraw at any time without giving reason. One week later, the first reminder was e-mailed, and included a 'thank you' for early responses. Another reminder was e-mailed during the second week, and all respondents were asked to return their completed questionnaires to the KM Department within the specified deadline (nevertheless, some questionnaires were delivered after the deadline).
To determine the perception of the respondents on the implementation of KM in the DPF, the questionnaire was structured in five parts, with the KM-related literature designated as a dependent variable, and the four selected variables of the study (organizational culture, leadership style, ICTs and training) as the independent variables.

3.10.2. Qualitative Approach

This study utilized a mixed method approach, whereby qualitative research methodology complemented the quantitative approach described above. Different research endeavours rely on different qualitative approaches. Qualitative research can be interpretive, thematic, narrative, or ethnographic (Patton, 1990, Merria, 1998). The use of grounded theory is also common. Developed by Glaser and Strauss in the 1960s, grounded theory allows the researcher to raise questions that can guide the research. Glaser and Strauss (1970) stated that grounded theory is similar to qualitative research in terms of source of data collection; for example, interviews and field observations.

In relation to qualitative research using Grounded Theory, measures of validity and reliability that would be appropriate to a quantitative study are not really meaningful, since the results are specific to context and not necessarily intended to be generalizable. It is suggested that the demonstration of ‘trustworthiness’ is more appropriate. A number of authors have offered guidance on this dimension of qualitative research processes, (see e.g. Checkland & Holwell, 1998; Burns, 2007; Sikolia, Mason, Biros & Wieser, 2013). Trustworthiness can be enhanced by demonstrating (i) credibility, e.g. through prolonged engagement with participants; triangulation of data from different sources; thick descriptions of data and respondent validation of transcripts and emerging concepts; (ii) traceability/transparency, e.g. through thick description of the research, the participants, the methodology design, interpretation of the results and emerging theory; (iii) dependability,
e.g. by thick descriptions and examination/discussion of process with participants and observers, such as research advisers or peers. In the context of this study, this advice has been followed by the discussion of research design with colleagues and academic advisers; thick description through extensive note taking during and after the interview processes; feeding back results to participants, and triangulation with the quantitative survey.

Sekaran (2003) contends that for the effectiveness of the study and validity of the research questions under discussion, researchers should use a pilot study. To this end, a pilot was run for this study as a primary source, to help identify factors that are critical for knowledge management success. Additionally, the author carried out semi-structured interviews with five participants from the knowledge management department of DPF, the rationale behind this being that the KM department has ownership in implementing KM initiatives in the organization. The KM department regularly runs questionnaires, interviews and sets up visits to different departments at DPF with the aim of exploring and uncovering any gaps or critical issues with regards to the success of the KM process. The KM department was the logical choice for conducting the pilot study as well as the interviews, which revolved around one open ended question: "what are the most influential factors that have an impact on KM success?"

Interviews commenced with the following statement, “I am here to identify the critical factors that are playing a key role in implementing KM successfully. Based on your inputs I aim to develop a framework and make appropriate recommendations to enhance the chances of success of KM implementation. I would just like to talk to you now, and administer a questionnaire later.”
Each interview lasted approximately fifteen minutes, during which extensive notes were taken by the author. When the responses were tabulated, it became clear that the issues most frequently brought up by the respondents in one form or another, related to four key areas: leadership style (the participants indicated the need for leaders who have close relations with workers; appreciate knowledge sharing; and communicate well and have a clear understanding of employee needs in order to improve knowledge creation and knowledge flow); organizational culture (the participants indicated problems which included: departments competing with each other; no collaboration in knowledge sharing; lack of knowledge sharing; little time available to share knowledge; the inability to exchange information freely due to secrecy issues etc.); ICTs (the participants reported that there is no codifying system set in place; employees are reluctant to use technology and tend to discuss things informally; employees feel IT programs and software systems are time consuming and complicated; employees prefer to use social media to share information and knowledge like WhatsApp, intranet etc.); and training (the participants reported that employees do not have access to proper training; there is mismatch between the work demands and the qualifications of workers; there is a lack of training strategies such as job rotation).

Furthermore, the review of the literature confirmed that the above mentioned variables were good predictors for the successful implementation of KM. Additionally, social media was also found to be a useful predictor. A theoretical framework was developed based on the interviews and the literature review, and seven hypotheses were developed accordingly. In general, the answers revolved around the study variables which have been selected for
this research, namely: leadership style, information and communication technologies, social media, organizational culture and training.

3.10.3 The Relationship Between the Qualitative and Quantitative

The author utilized a mixed method approach for this research. The qualitative approach was used to focus on understanding a phenomenon from a closer standpoint. In order to gather information that describes a phenomenon in more detail, the author conducted interviews with open-ended questions with a small number of participants from the Knowledge Management Department. Semi-instructed interviews were used to identify the critical factors that influence KM implementation in DPF.

This qualitative approach helped to identify the critical factors that are influencing KM implementation in DPF and uncovered important factors of inquiry that were critical to the second (quantitative) part of this study.

Based on the findings of the qualitative research, the quantitative approach was used to gather data that describes a phenomenon across a larger number of participants within DPF. This was conducted in order to examine the qualitative findings through a larger sample of individuals, using statistical techniques to recognize the relationship between the identified (independent) variable in the qualitative approach and (dependent) variable of this study i.e. (KM).

The statistical analysis following the survey validated the qualitative findings. The accumulated outcome of both approaches (qualitative and quantitative) concluded that the
four dimensions that were found in the qualitative interviews (pilot study) and surveyed quantitatively have a strong relationship and positively correlated with the KM success.

The qualitative approach allowed the author to understand the critical factors that are influencing KM implementation which might not have surfaced if only the survey was conducted. Interviewing a few participants reflects a specific finding, which cannot be generalized to the whole population. Supporting the qualitative findings with a quantitative approach however, provides strong evidence that enables generalization to the overall population.

In conclusion, at the time this study commenced, there were neither pre-determined hypotheses nor specified variables that assumed to have an impact on the successful implementation of knowledge management strategy. The author conducted qualitative research (pilot study) to generate propositions for this study using grounded theory methodology. These guided the design of the quantitative survey and were used to structure hypotheses for testing in the analysis (Glaser & Strauss, 1970).

The statistical analysis allowed the author to illustrate the numerical data. Qualitative and quantitative approaches were combined in this study as the relationship between them was found to be complementary and supportive.

3. 10. 4 Qualitative Research Procedure

The author followed the axial coding procedures outlined by Strauss and Corbin (1990) in grounded theory. Thus, coding is a process of relating, summarising or describing a sentence, a paragraph or even a whole piece of text such as an interview. In axial coding the main concepts or themes are disaggregated during the qualitative data analysis.
Consequently, the process used is that the core themes were categorised into four main dimensions namely: leadership style, information and communication technologies, organizational culture and training and related to the associated themes (see Appendix D).

The question of validity in qualitative research has been a controversial one. In times past, qualitative research was often looked upon as inferior in terms of rigour, since methods were often non-repeatable and contexts not replicable, as may be the case with quantitative or experimental methods. However, when looking for a more nuanced understanding of particular contexts, qualitative research is clearly attractive and so attention has been given to ways in which validity can be improved. The process of analysis in qualitative research involves continuous reflexivity and self-scrutiny, due to the need for creativity and design and subjective interpretation of results (Pyett, 2003). By ‘reflexivity’ is meant a ‘continual evaluation of subjective response, intersubjective dynamics, and the research process itself (Finlay, 2002, p.532). Reflexivity includes checking method, analysis and interpretation via a number of means, including relevant literature, peer groups and with the subject population (collaboratively or through critical stakeholder groups) (Wadsworth, 1997).

The nature and objectives of many types of qualitative research mean that objectivity and generalizability cannot be demonstrated. However, transparency and trustworthiness should then be the goal of researchers. Lincoln and Guba suggest that trustworthiness can be established through rigour in choice, design and application of method, coherence of results, transferability and applicability of results (Lincoln and Guba, 1985). However, it is also important to remember that an over-emphasis on rigour in achieving validity could have the effect of detracting from the richness and relevance of the results of the study (Barbour, 2001).
In terms of validity of method, these authors point to a number of important factors: 1) whether the chosen methodology/epistemology framing the research process, and the research questions, are appropriate for the topic; 2) whether sampling is appropriate and adequate; 3) rigour in methodological design; 4) rigour and internal consistency in application of the chosen approach, (e.g., phenomenological methods, grounded theory, ethnography, etc), including the quality and thoroughness of the grounds upon which the conclusions are based. Attention to these factors can help to support the credibility of the research process. It is important for researchers to make their decisions transparent, setting out clear descriptions of internal research processes, including reflexive actions (Sousa, 2014).

Coherence of results requires a continuing, cyclical interaction among descriptions, interpretations, and the data collected, following a circular logic of conjecture and validation, until the ‘general meaning structures are saturated’ (Ricoeur, 1986, p. 225). Interpretations should arise from the data, and it should be clear and explicit how more abstract constructions and conclusions are directly connected to both context and content of information and observations from participants (Hill, Thompson and Williams, 1997). Furthermore, it is important to demonstrate how interpretations of results contribute towards the development of new knowledge, understandings or perspectives about the subject area of study (Polio, Henley and Thompson, 1997).

In the light of these recommendations, the validity of method and analysis in the current study were approached in the following way:

- Reflexivity: This was achieved through many iterations in the design of method and drafting of research questions, as well as in relation to data validity – detailed in chapter 4 below. Methodological decisions were discussed and critiqued through discussions with a
number of research partners, including DBA mentor, research supervisor, workplace mentors and stakeholder representatives.

• **Methodology, epistemology and research questions:** Methodological decisions were made following the scrutiny of relevant literature, including previous studies relating to knowledge management initiatives within the DPF. The overall aims of the study and the research context were discussed with colleagues and other advisers previously mentioned, in order to draft key objectives and derive suitable research questions. The approach and the questions were tested using a pilot study of semi-structured interviews with key stakeholders. Revisions were made to the framework for the main study. Triangulation between the pilot study, the main study results and the literature were planned and executed.

• **Sampling:** General literature on qualitative methods, methods and adequacy of sampling were consulted initially. Discussion with critical colleagues and scrutiny of other research projects within the same domain followed before decisions on sampling were made.

• **Interpretation of results and consistency:** Recognised, standard statistical techniques were identified and applied to the results of the study. Results of the pilot study were fed back to key stakeholders in order to check the interpretations of the researcher for relevance and consistency. Many cycles of coding and reflection upon interpretation of data were conducted, feeding back results to partners to ensure confidence. Measures of validity here could include repeatability/reproducibility (i.e. reliability). This was demonstrated by asking another analyst (colleague) to examine results and comment upon interpretations. The main researcher also completed iterations of analysis to check that interpretations were consistent at different times.
• Applicability: Results of the analysis were consistent with the findings from literature review and of direct applicability to the research context, i.e. to the smooth implementation of a knowledge management strategy within DPF.

3.11 Data Analysis Approach

Having discussed the data collection procedures, it is necessary to conduct a preliminary discussion on the data analysis although a more in depth and detailed discussion is the subject matter for chapter 4.

The design of the survey questionnaire included a group of phrases that measure the attitude of the sample individuals to the variables of the study. To design this list, the author reviewed many previous studies of the topic in the field, and then prepared the desired survey list of questions based on that review. The draft of the survey questionnaire was shared with some professors and researchers with a request for feedback and the questionnaire was amended on the basis of their comments. The final format of the survey questionnaire contained five main dimensions to measure views about and the attitudes of the study sample to the variables:

- The first dimension, Leadership Style: ten phrases (X1).
- The second dimension, Organizational Culture: ten phrases (X2).
- The third dimension, ICTs: six phrases (X3).
- The fourth dimension, Training: eight phrases (X4).
- The fifth dimension, Elements of the Application of KM: ten phrases (Y).

The first four dimensions represent the four independent variables, and the fifth dimension the dependent variable.
The Interval Scale was used, as the respondents were asked to grade each on a five-point Likert scale, ranging from 1-5, with ‘5’ amounting to ‘strongly agree’ and ‘1’ to ‘strongly disagree’. A score above three was considered as a significant:

<table>
<thead>
<tr>
<th>Agreement scale</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean of scores</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

3.11.1 Statistical Treatment

The author used the Statistical Package for the Social Sciences (SPSS) version 17 to analyse the data obtained from the survey, applying the different methods as follows:

- Coefficient of Alpha Cornbach to measure and verify the stability of the degree of the used reliability standards;
- T-test and the level of morality to measure the discriminatory of the truth;
- Frequencies and percentages to describe the study sample;
- Measures of dispersion (averages and the standard deviations) to measure the trends in the study sample;
- Analysis of variance ANOVA tests to demonstrate the strength of the correlation relationships between variables;
- Linear regression to demonstrate the effects of the different variables of the study on the topic of the research.

3.11.2 The Measurement of the Stability of the Survey

‘Reliability’ means that if the questionnaire is re-distributed to the same sample in the same circumstances as their first application, the responses will be the same, or close to the same, as they were in first application. This reassurance of the durability of indicators licenses their generalisation to the community. The author used Coefficient Alpha Cornbach to measure consistency in the reliability of the four independent variables and the one
dependent variable. The ranging value of the coefficient ‘alpha’ is between ‘zero’ and ‘1’. The closer the value of the coefficient to the perfect ‘1’, the higher the internal-consistency reliability (Sekaran, 2003). There is, however, no fixed value that can be relied upon to measure consistency in all studies. The measurement of consistency depends on acceptance of a value compatible with the localization of the phenomenon of measurement in the study's community, on the number of research phrases that measure a phenomenon, and on the readiness of the researcher to accept a degree as the degree of reliability.

3.12 The Ethics Consideration

The ethics concerns of this research centre on protecting the rights of respondents to remain unharmed by their participation in the research survey. Blumberg, Cooper and Schindler (2008) note that there is no single approach to protecting that right, however they do offer general guidelines about how one may go about it. The author considered suggestions by Saunders, et al (2009) and Bryman and Bell (2007), and carried out the following:

(i) The author committed formally to conduct this research in accordance to the ethical standards of the University of Portsmouth (see Appendix A).

(ii) Formal permission was sought from the DPF top management to administer the survey.

(iii) The cover letter that accompanied the questionnaire document assured participants of the anonymity, privacy and confidentiality of survey results.

(iv) The participants' informed consent was secured before the survey began. They therefore knew that their participation is voluntary and that they have the right to withdraw at any stage, and that they need not to answer any question they are uncomfortable with.

(v) The purposes of the study and data collection were stated clearly, and the participants were informed about data disposal procedures upon submission of the research. The author supported the respondents’ confidence in him by disclosing to them his name and contact information.
3.13 Conclusion

This chapter outlined the research design, and explained that it is guided mostly by the research ‘onion’ proposed by Saunders, et al (2009). From the research philosophies and methodologies well documented in the literature, the author chose to proceed with the positivist paradigm, and to supplement it opportunely with interpretivist procedures (the author was aware that the positivist and interpretivist procedures are the predominant ones in business and management studies.) The research-method choice was influenced by the evaluations of Saunders, et al (2009) and Bryman and Bell (2007) on the mixed-method (qualitative and quantitative) approach primarily because it enabled flexibility with regard to the collection and analysis of data: data collected quantitatively was open to subsequent qualitative interpretation.

Given the various research strategies available in the 'onion' layered research design, the author decided to use a survey questionnaire since it is a rapid and inexpensive method for securing a large sample size. The survey questionnaire was distributed to 18 DPF departments, and succeeded to draw the target sample size of 400, as recommended by several researchers (Saunders, et al, 2009; Bryman & Bell, 2007; Sekaran, 2003). 490 completed questionnaires were collected, of which 450 were valid for analysis. Data analysis was performed on the SPSS version 17 and the data analysis procedures and tests performed will be discussed in detail in Chapter 4.
CHAPTER 4
PROCEDURAL METHODOLOGY OF THE FIELD STUDY

4.0 Introduction

The previous chapter outlined the research design for this study and discussed the research philosophy, research methodology and the development of a theoretical framework where testable hypotheses were derived from and data collection procedures. The discussion highlighted the procedure taken into consideration, and the fact that the data collection process was guided by researchers’ suggestions (Saunders, et al, 2009; Bryman & Bell, 2007; Sekaran, 2003) to ensure that the data was collected in a proper manner, as this is important for data analysis.

The first section of this chapter contains the procedural methodology of the field study. The specific contents of this section are the profile of the DPF, the society and characteristics of the sample of the field study, and the design of the survey instrument. In addition, the first section outlines the applied statistical methods, and the assessment of the reliability and validity of the measurement instrument.

The second section outlines the procedure for hypothesis testing. The procedure involves studying the correlative relations of the variables selected for the study, and an analysis of variance to determine the fundamental relationship between the variables and the phenomenon under study. Other statistical procedures outlined include the t-test and the level of its indication, and the f-test and the level of its indication, and the linear regression to demonstrate the different effects of the study variables and the degree of influence of each variable.
4.1 DPF Profile

The DPF is the organization dedicated to protecting the people and the society of the city of Dubai in the UAE. Representing the majority of the police strength in the city, the DPF which was formed on June 1, 1956 in Naif with 29 members, employs today over 15,000 individuals. Located in Al Towar, Dubai, the force is under the leadership of Chief of Police Lieutenant General Dahi Khalfan Tamim and is closely governed by the UAE’s Prime Minister and Vice President (who is also Dubai’s ruler). Its organizational structure entails more than eighteen departments (Dubai Police Force Website).

4.1.1 Facts about the DPF

• The DPF is an integral part of the UAE Police Force. Its mission is to improve the quality of life in the country by operating in accordance with the constitutional rights of law enforcement, and to carry out its mandate to maintain the security and safety of the community.

• The DPF is chaired by His Highness, Sheikh Mohammad Bin Rashid Al-Maktoum, Vice-President, Prime Minister, and Ruler of Dubai.

• The DPF uses the highest and the most precise measures of operation in performing its duties and functions in accordance with institutional performance indicators, and, practising strategic planning, efficiently managing human and financial resources. By simplifying procedures, it promotes community partnership, innovative initiatives, and respect for personal excellence and teamwork.

• The DPF is the first Arab police institution to apply DNA testing in criminal investigation, the first Arab police institution to use Electronic Fingerprinting, and the first Arab police institution to apply the concept of ‘Clean Desk Policy’.

• The DPF is the first Arab police institution to establish a department exclusively for human rights. An overall ‘Community Police’ exercises this role, which is highly advanced when compared to many police departments in the world.
• The DPF is the first Arab police force to use the Global Positioning System (GPS), and the first to apply the patrol-location technique, ahead of many countries.

• The DPF has won many awards for excellence, locally, regionally and globally. In addition, it has won numerous first-place awards in many competitions.

• The DPF is the first in the Arab world to introduce the ‘Electronic Services’ application where transactions and completion of procedures can be completed remotely, in a record time and in an effective way (Dubai Police Website).

4.2 The Community and the Study Sample

Saunders, et al (2009) suggest that a minimum sample size of 30 is required for statistical analysis. For this study, the author expected 400 respondents for statistical analysis, which is considered an appropriate sample size by Blumberg, Cooper and Schindler (2008) for a study of this kind. This is in line with the suggestion by Sekaran (2003) that if the sample size is larger than 30 and less than 500, it is an appropriate size for most kinds of research.

This author submits that for a population of 15,000, a sample size of 375 is appropriate, as is a sample size of 377 for a population of 20,000 to construct a 95% confidence interval with a margin of error of about +5%, as shown in Table 9, for the sample size for a given population (Sekaran, 2003).
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<tr>
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**Table 9: Sample Size for a Given Population Size (Sekaran, 2003, p.294)**

The author was able to use 450 forms (of the 490 collected forms) from all the 18 departments of the DPF for statistical analysis, as shown in Table 10:
Table 10: Distribution of DPF Departments and Percentage of Forms Collected from Each

<table>
<thead>
<tr>
<th>Cumulative Percentage</th>
<th>Valid Percentage</th>
<th>Percentage</th>
<th>Frequency</th>
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<tr>
<td>83.8</td>
<td>3.1</td>
<td>3.1</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>89.6</td>
<td>5.8</td>
<td>5.8</td>
<td>26</td>
<td>15</td>
</tr>
<tr>
<td>92.7</td>
<td>3.1</td>
<td>3.1</td>
<td>14</td>
<td>16</td>
</tr>
<tr>
<td>94.7</td>
<td>2.0</td>
<td>2.0</td>
<td>9</td>
<td>17</td>
</tr>
<tr>
<td>100.0</td>
<td>5.3</td>
<td>5.3</td>
<td>24</td>
<td>18</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
<td><strong>450</strong></td>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

4.2.1 Demographics of the Study Sample

The reliability of results obtained from a study sample depends primarily on whether the sample is representative of the community (in this instance, the DPF) from which the
results are collected. However, it also depends significantly on whether the differences among the sample’s participants are identified, and whether those differences are taken into account. Since this author seeks from the study sample a representation of the views and values of the DPF personnel, the relevant categories across which differences in views and values might occur were identified as age, gender, nationality, rank, academic qualifications levels and length of work experience. The author submits that these categories differentiate the study sample accurately and pertinently, and that their identification and due consideration contributes successfully to the reliability of the study results.

<table>
<thead>
<tr>
<th>Cumulative Percentage</th>
<th>Valid Percentage</th>
<th>Percentage</th>
<th>Frequency</th>
<th>AGE IN YEARS</th>
</tr>
</thead>
<tbody>
<tr>
<td>23.3</td>
<td>23.3</td>
<td>23.3</td>
<td>105</td>
<td>Less than 30</td>
</tr>
<tr>
<td>55.6</td>
<td>32.2</td>
<td>32.2</td>
<td>145</td>
<td>Between 30 and 40</td>
</tr>
<tr>
<td>83.6</td>
<td>28.0</td>
<td>28.0</td>
<td>126</td>
<td>Between 40 and 50</td>
</tr>
<tr>
<td>100.0</td>
<td>16.4</td>
<td>16.4</td>
<td>74</td>
<td>Over 50</td>
</tr>
<tr>
<td></td>
<td>100.0</td>
<td>100.0</td>
<td>450</td>
<td>Total</td>
</tr>
</tbody>
</table>

Table 11: Age Distribution in the Study Sample: Frequencies and Percentages

Figure 4: Age Distribution in the Study Sample: Frequencies and Percentages
Table 11 and Figure 4 show that the study sample includes different age groups. The inclusion of different age groups contributes to the validity of the study results because it ensures the representation of views, values and trends of the different generations which make up the Dubai Police.

<table>
<thead>
<tr>
<th>Gender</th>
<th>Cumulative Percentage</th>
<th>Valid Percentage</th>
<th>Percentage</th>
<th>Frequency</th>
<th>GENDE R</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>92.2</td>
<td>92.2</td>
<td>92.2</td>
<td>415</td>
<td>Male</td>
</tr>
<tr>
<td>Female</td>
<td>100.0</td>
<td>7.8</td>
<td>7.8</td>
<td>35</td>
<td>Female</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>450</td>
<td>Total</td>
</tr>
</tbody>
</table>

Table 12: Gender Distribution in the Study Sample: Frequencies and Percentages

![Gender Distribution Graph](image.png)

Figure 5: Gender Distribution in the Study Sample: Frequencies and Percentages

Table 12 and Figure 5 show that the study sample included the views of the both genders, to make sure to give voice to a representative sample. Although the majority of the respondents were male, due to the traditions and culture in the UAE which sees women prefer to take on more administrative occupations rather than pro-active policing roles, the study was inclusive of female voice, even though in small proportion.
<table>
<thead>
<tr>
<th>Cumulative Percentage</th>
<th>Valid Percentage</th>
<th>Frequency</th>
<th>Nationality</th>
</tr>
</thead>
<tbody>
<tr>
<td>80.4</td>
<td>80.4</td>
<td>362</td>
<td>Emirati</td>
</tr>
<tr>
<td>87.1</td>
<td>6.7</td>
<td>30</td>
<td>Gulf</td>
</tr>
<tr>
<td>93.3</td>
<td>6.2</td>
<td>28</td>
<td>Arabian</td>
</tr>
<tr>
<td>97.3</td>
<td>4.0</td>
<td>18</td>
<td>Asian</td>
</tr>
<tr>
<td>100.0</td>
<td>2.7</td>
<td>12</td>
<td>Elece</td>
</tr>
<tr>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
<td><strong>450</strong></td>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

Table 13: Nationality Distribution in the Study Sample: Frequencies and Percentages

Figure 6: Nationality Distribution in the Study Sample: Frequencies and Percentages

Table 13 and Figure 6 show that the study sample included different nationalities. This reflects the inclusion in the sample of the views of the DPF employees from different cultural backgrounds.
<table>
<thead>
<tr>
<th>Rank Title</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percentage</th>
<th>Cumulative Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raed</td>
<td>45</td>
<td>10.0</td>
<td>10.0</td>
<td>10.0</td>
</tr>
<tr>
<td>Molazem</td>
<td>145</td>
<td>32.2</td>
<td>32.2</td>
<td>42.2</td>
</tr>
<tr>
<td>Mosaed</td>
<td>112</td>
<td>24.9</td>
<td>24.9</td>
<td>67.1</td>
</tr>
<tr>
<td>Areef</td>
<td>94</td>
<td>20.9</td>
<td>20.9</td>
<td>88.0</td>
</tr>
<tr>
<td>Elec</td>
<td>54</td>
<td>12.0</td>
<td>12.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 14: Rank Distribution in the Study Sample: Frequencies and Percentages

Figure 7: Rank Distribution in the Study Sample: Frequencies and Percentages

Table 14 and Figure 7 show that the study sample included all organizational rank levels. This reflects the inclusion in the sample of the views of the various ranks in the DPF.
Table 15: Distribution of Academic Qualifications in the Study Sample: Frequencies and Percentages

<table>
<thead>
<tr>
<th>Cumulative Percentage</th>
<th>Valid Percentage</th>
<th>Percentage</th>
<th>Frequency</th>
<th>HIGHEST QUALIFICATION LEVEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.4</td>
<td>6.4</td>
<td>6.4</td>
<td>29</td>
<td>Postgraduate</td>
</tr>
<tr>
<td>66.0</td>
<td>59.6</td>
<td>59.6</td>
<td>268</td>
<td>Graduate</td>
</tr>
<tr>
<td>96.2</td>
<td>30.2</td>
<td>30.2</td>
<td>136</td>
<td>Secondary School completed</td>
</tr>
<tr>
<td>100.0</td>
<td>3.8</td>
<td>3.8</td>
<td>17</td>
<td>Secondary School not completed</td>
</tr>
<tr>
<td>100.0</td>
<td>100.0</td>
<td></td>
<td>450</td>
<td>Total</td>
</tr>
</tbody>
</table>

Table 15 and Figure 8 show the different education levels, reflecting the higher confidence in the results of the higher levels of education. This provides a better understanding and awareness of the topic under the study.
Table 16: Distribution of Work Experience Across the Study Sample: Frequencies and Percentages

<table>
<thead>
<tr>
<th>Cumulative Percentage</th>
<th>Valid Percentage</th>
<th>Frequency</th>
<th>TIME IN YEARS</th>
</tr>
</thead>
<tbody>
<tr>
<td>32.9</td>
<td>32.9</td>
<td>32.9</td>
<td>Less than 5</td>
</tr>
<tr>
<td>55.6</td>
<td>22.7</td>
<td>22.7</td>
<td>5 - 10</td>
</tr>
<tr>
<td>79.6</td>
<td>24.0</td>
<td>24.0</td>
<td>10 - 15</td>
</tr>
<tr>
<td>100.0</td>
<td>20.4</td>
<td>92</td>
<td>More than 15</td>
</tr>
<tr>
<td></td>
<td>100.0</td>
<td>450</td>
<td>Total</td>
</tr>
</tbody>
</table>

Table 16 and Figure 9 show that the study sample included different levels of experience, and that the study sample includes a broad range of participant experience. This supports the confidence in the results obtained.

4.3 Designing the Survey Questionnaire

The survey questionnaire includes sets of evaluative phrases, with each set composed to measure the attitudes of individual participants against the variables of the study (these variables are discussed in more detail below). The author studied many published survey
lists in similar subject areas and the related literature before deciding upon a suitable design for the survey questionnaire for this sample. The draft survey list was shared with several experts who included a university professor and some research scholars and was adjusted accordingly. A pilot study was then executed to ensure that the questionnaire is measuring the right concepts (Field, 2011; Salkind, 2011).

4.3.1 The Measurements

The views of, and attitudes to, the variables of the study sample were measured on five main dimensions: The first dimension, ‘leadership style’, offers a choice of ten evaluative phrases (X1). The second dimension, ‘Organizational Culture’, also offers a choice of ten phrases (X2). The third dimension, ‘Information and Communication Technologies and the Ways of Communication’, offers six evaluative phrases (X3), and the fourth dimension, ‘Training’, offers eight such phrases (X4). The first four dimensions represent the first four independent variables. The fifth dimension, ‘The Elements of the Application of KM’, which offers ten evaluative phrases (Y), represents the dependent variables. As mentioned earlier, the survey questionnaire was designed for measurement on the Likert Scale.

4.3.2 The Methods of Statistical Treatment

As previously mentioned, SPSS version 17 was utilized to analyse the data obtained from the survey questionnaires. The coefficient ‘Cronbach’s Alpha’ was used to measure and verify the degree of the instrument reliability and the ‘t’ test was applied to the ‘morality’ level to measure discriminatory truth values. The frequencies and percentages described in the study sample were subjected to dispersion (averages and the standard deviations) to measure the trends in the study sample. The strength of correlation relationships among the variables were analysed through the one-way ANOVA Test. Finally, linear regression was performed to demonstrate the effects of the different variables on the research subject.
4.4 Measurement of the Reliability and Validity of the Survey Form

Assessing the quality of the measuring instrument is a routine task in the effort to assess the reliably and validity of research outcomes. This is because an inappropriate scale can cause errors in the measurement of attitudinal variables (Sekaran, 2003), which in turn will reduce the scientific quality of the research. Therefore, establishing the reliability and validity of the measuring instrument is important (Field, 2009). Its reliability can be established by testing for consistency and stability (Sekaran, 2003). Its validity has to do with determining that the right (intended) concept is being measured (Field, 2009; Sekaran, 2003; Salkind, 2011; Frenz, Nielsen & Walters, 2009). Given that several reliability and validity tests that are available, the author has employed the more widely used methods (Salkind, 2011).

4.4.1 The Reliability Test

In this study, the author resorted to the widely used test-reliability assessment method, the Coefficient ‘alpha Cornbach’ (Field, 2009; Sekaran, 2003; Salkind, 2011; Frenz, Nielsen & Walters, 2009) to measure the reliability, or internal consistency, of the survey form. Table 17 outlines the various reliability tests as summarised by Salkind (2011). A survey instrument is strongly reliable if the ranging value of the coefficient ‘alpha’ is between zero and one, and if the value of the coefficient is closer to the perfect one. No fixed value can be relied on to measure consistency in all studies. Instead, the right value depends on the acceptance of it in the localisation of the phenomenon of measurement in the community of the study, on the number of phrases that measure the phenomenon of research, and on the reliability of the researcher’s acceptance of the degree of reliability (Sekaran, 2003; Kent, 2001).
### Table 17: Descriptions of the Types of Reliability (adapted from Salkind, 2011, p.108)

<table>
<thead>
<tr>
<th>Type of Reliability</th>
<th>When You Use It</th>
<th>How You Do It</th>
<th>Examples of What You Can Say When You’re Done</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test-retest reliability</td>
<td>When you want to know whether a test is reliable over time.</td>
<td>Correlate the scores from a test given in Time 1 with the same test given in Time 2.</td>
<td>The Bonzo test of identity formation for adolescents is reliable over time.</td>
</tr>
<tr>
<td>Parallel forms Reliability</td>
<td>When you want to know if several different forms of a test are reliable or equivalent.</td>
<td>Correlate the scores from one form of the test with the scores from a second form of the same test of the same content (but not the exact same test).</td>
<td>The two forms of the Regular Guy test are equivalent to one another and have shown parallel forms reliability.</td>
</tr>
<tr>
<td>Internal consistency Reliability</td>
<td>When you want to know if the items on a test assess one and only one dimension.</td>
<td>Correlate each individual item score with the total score.</td>
<td>All of the items on the SMART test of creativity assesses the same construct.</td>
</tr>
<tr>
<td>Interrater reliability</td>
<td>When you want to know whether there is consistency in the rating of some outcome.</td>
<td>Examine the percent of agreement between raters.</td>
<td>The interrater reliability for the best-dressed Football player judging was .91, indicating a high degree of agreement between judges.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variables</th>
<th>No. of Items</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership</td>
<td>10</td>
<td>79.5%</td>
</tr>
<tr>
<td>Organizational</td>
<td>10</td>
<td>63.1%</td>
</tr>
<tr>
<td>Culture</td>
<td>6</td>
<td>82.6%</td>
</tr>
<tr>
<td>ICTs</td>
<td>8</td>
<td>73.4%</td>
</tr>
<tr>
<td>Training</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 18 and Figure 10 show that the coefficients of reliability ranged between 63.1% and 93.1%, with an overall reliability of 87.5%. This attests to the reliability of the measurement tool, and to the reliability of the findings about the views and values of the sample surveyed.

4.4.2 The Validity Test

For face-validity purposes a pilot test was performed to detect any aspects of the developed instrument that might need improvement or clarification before its final distribution (Bryman & Bell, 2007). A total of 30 participants were invited and based on their feedback, the author re-examined the content of the questionnaire and amended some parts of it.
<table>
<thead>
<tr>
<th>Type of Validity</th>
<th>When You Use It</th>
<th>How You Do It</th>
<th>Examples of What You Can Say When You’re Done</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content validity</td>
<td>When you want to know whether a sample of items truly reflects an entire universe of items on a certain topic.</td>
<td>Ask expert to make a judgment that the test items reflect the universe of items in the topic being measured.</td>
<td>My weekly quiz in my stat class fairly assesses the chapter’s content.</td>
</tr>
<tr>
<td>Criterion validity</td>
<td>When you want to know if test scores are systematically related to other criteria that indicate that the test taker is competent in a certain area.</td>
<td>Correlate the scores from the test with some other measure that is already valid and that assesses the same set of abilities.</td>
<td>The EATS test (of culinary skills) has been shown to be correlated with being a fine chef 2 years after culinary school (an example of predictive validity).</td>
</tr>
<tr>
<td>Construct validity</td>
<td>When you want to know if a test measures some underlying psychological construct.</td>
<td>Correlate the set of test scores with some theorized outcome that reflects the construct for which the test is being designed.</td>
<td>It’s true: men who participate in body contact and physically dangerous sports are higher on the TEST (osterone) test of aggression.</td>
</tr>
</tbody>
</table>

Table 19: Descriptions of the Different Types of Validity (adapted from Salking, 2011, p.118)

4.5 Measurement of the Discriminative Validity of the Survey Form

The phrases of an expression will be valid when they elicit the different views and responses of the different categories of participants. If the directions of the sample views do not manifest as such different responses to a phrase, that phrase will not be true because it does not distinguish among the different classes of sample; it should be deleted. Table 20 shows the discriminative validity of the survey form phrases used in this study:
<table>
<thead>
<tr>
<th>Upper</th>
<th>Lower</th>
<th>Mean Difference</th>
<th>Sig. (2-tailed)</th>
<th>df</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.9167</td>
<td>3.6344</td>
<td>3.77556</td>
<td>.000</td>
<td>449</td>
<td>52.566</td>
</tr>
<tr>
<td>3.8617</td>
<td>3.5917</td>
<td>3.72667</td>
<td>.000</td>
<td>449</td>
<td>54.252</td>
</tr>
<tr>
<td>4.6735</td>
<td>4.5088</td>
<td>4.59111</td>
<td>.000</td>
<td>449</td>
<td>109.566</td>
</tr>
<tr>
<td>3.8897</td>
<td>3.6525</td>
<td>3.77111</td>
<td>.000</td>
<td>449</td>
<td>62.507</td>
</tr>
<tr>
<td>3.3169</td>
<td>3.0964</td>
<td>3.20667</td>
<td>.000</td>
<td>449</td>
<td>57.165</td>
</tr>
<tr>
<td>2.9008</td>
<td>2.6281</td>
<td>2.76444</td>
<td>.000</td>
<td>449</td>
<td>39.836</td>
</tr>
<tr>
<td>2.7862</td>
<td>2.5071</td>
<td>2.64667</td>
<td>.000</td>
<td>449</td>
<td>37.272</td>
</tr>
<tr>
<td>3.6531</td>
<td>3.4313</td>
<td>3.54222</td>
<td>.000</td>
<td>449</td>
<td>62.757</td>
</tr>
<tr>
<td>2.8151</td>
<td>2.5227</td>
<td>2.66889</td>
<td>.000</td>
<td>449</td>
<td>35.884</td>
</tr>
<tr>
<td>2.9205</td>
<td>2.6350</td>
<td>2.77778</td>
<td>.000</td>
<td>449</td>
<td>38.247</td>
</tr>
<tr>
<td>4.5163</td>
<td>4.3503</td>
<td>4.43333</td>
<td>.000</td>
<td>449</td>
<td>104.956</td>
</tr>
<tr>
<td>3.8057</td>
<td>3.5943</td>
<td>3.70000</td>
<td>.000</td>
<td>449</td>
<td>68.792</td>
</tr>
<tr>
<td>3.1770</td>
<td>2.9341</td>
<td>3.05556</td>
<td>.000</td>
<td>449</td>
<td>49.445</td>
</tr>
<tr>
<td>2.9248</td>
<td>2.6707</td>
<td>2.79778</td>
<td>.000</td>
<td>449</td>
<td>43.273</td>
</tr>
<tr>
<td>2.3457</td>
<td>2.1077</td>
<td>2.22667</td>
<td>.000</td>
<td>449</td>
<td>36.771</td>
</tr>
<tr>
<td>2.5285</td>
<td>2.2715</td>
<td>2.40000</td>
<td>.000</td>
<td>449</td>
<td>36.701</td>
</tr>
<tr>
<td>3.6836</td>
<td>3.4276</td>
<td>3.55556</td>
<td>.000</td>
<td>449</td>
<td>54.591</td>
</tr>
<tr>
<td>2.6279</td>
<td>2.3632</td>
<td>2.49556</td>
<td>.000</td>
<td>449</td>
<td>37.054</td>
</tr>
<tr>
<td>3.7136</td>
<td>3.5042</td>
<td>3.60889</td>
<td>.000</td>
<td>449</td>
<td>67.758</td>
</tr>
<tr>
<td>3.5956</td>
<td>3.3110</td>
<td>3.45333</td>
<td>.000</td>
<td>449</td>
<td>47.688</td>
</tr>
<tr>
<td>2.6523</td>
<td>2.4010</td>
<td>2.52667</td>
<td>.000</td>
<td>449</td>
<td>39.513</td>
</tr>
<tr>
<td>2.3565</td>
<td>2.1235</td>
<td>2.24000</td>
<td>.000</td>
<td>449</td>
<td>37.785</td>
</tr>
</tbody>
</table>
Table 20: Discriminative Validity of the Survey Form Phrases

<p>| | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2.2270</td>
<td>2.0041</td>
<td>2.11556</td>
<td>.000</td>
<td>449</td>
<td>37.299</td>
<td>X33</td>
</tr>
<tr>
<td>2.2441</td>
<td>1.9959</td>
<td>2.12000</td>
<td>.000</td>
<td>449</td>
<td>33.576</td>
<td>X34</td>
</tr>
<tr>
<td>3.4100</td>
<td>3.1456</td>
<td>3.27778</td>
<td>.000</td>
<td>449</td>
<td>48.727</td>
<td>X35</td>
</tr>
<tr>
<td>2.8313</td>
<td>2.5954</td>
<td>2.71333</td>
<td>.000</td>
<td>449</td>
<td>45.202</td>
<td>X36</td>
</tr>
<tr>
<td>2.3623</td>
<td>2.1221</td>
<td>2.24222</td>
<td>.000</td>
<td>449</td>
<td>36.690</td>
<td>X4</td>
</tr>
<tr>
<td>2.4835</td>
<td>2.2409</td>
<td>2.36222</td>
<td>.000</td>
<td>449</td>
<td>38.266</td>
<td>X42</td>
</tr>
<tr>
<td>3.6883</td>
<td>3.4539</td>
<td>3.57111</td>
<td>.000</td>
<td>449</td>
<td>59.897</td>
<td>X43</td>
</tr>
<tr>
<td>3.4535</td>
<td>3.1821</td>
<td>3.31778</td>
<td>.000</td>
<td>449</td>
<td>48.044</td>
<td>X44</td>
</tr>
<tr>
<td>3.6822</td>
<td>3.4200</td>
<td>3.55111</td>
<td>.000</td>
<td>449</td>
<td>53.227</td>
<td>X45</td>
</tr>
<tr>
<td>2.8357</td>
<td>2.5687</td>
<td>2.70222</td>
<td>.000</td>
<td>449</td>
<td>39.785</td>
<td>X46</td>
</tr>
<tr>
<td>2.5834</td>
<td>2.3455</td>
<td>2.46444</td>
<td>.000</td>
<td>449</td>
<td>40.724</td>
<td>X47</td>
</tr>
<tr>
<td>3.3973</td>
<td>3.1805</td>
<td>3.28889</td>
<td>.000</td>
<td>449</td>
<td>59.640</td>
<td>X48</td>
</tr>
<tr>
<td>2.5084</td>
<td>2.2561</td>
<td>2.38222</td>
<td>.000</td>
<td>449</td>
<td>37.118</td>
<td>Y</td>
</tr>
<tr>
<td>3.9705</td>
<td>3.7762</td>
<td>3.87333</td>
<td>.000</td>
<td>449</td>
<td>78.352</td>
<td>Y12</td>
</tr>
<tr>
<td>2.8919</td>
<td>2.6414</td>
<td>2.76667</td>
<td>.000</td>
<td>449</td>
<td>43.416</td>
<td>Y13</td>
</tr>
<tr>
<td>2.5525</td>
<td>2.2831</td>
<td>2.41778</td>
<td>.000</td>
<td>449</td>
<td>35.270</td>
<td>Y14</td>
</tr>
<tr>
<td>3.5219</td>
<td>3.2914</td>
<td>3.40667</td>
<td>.000</td>
<td>449</td>
<td>58.103</td>
<td>Y15</td>
</tr>
<tr>
<td>3.1672</td>
<td>2.8906</td>
<td>3.02889</td>
<td>.000</td>
<td>449</td>
<td>43.040</td>
<td>Y16</td>
</tr>
<tr>
<td>2.8158</td>
<td>2.5575</td>
<td>2.68667</td>
<td>.000</td>
<td>449</td>
<td>40.877</td>
<td>Y17</td>
</tr>
<tr>
<td>3.6275</td>
<td>3.4169</td>
<td>3.52222</td>
<td>.000</td>
<td>449</td>
<td>65.725</td>
<td>Y18</td>
</tr>
<tr>
<td>2.4120</td>
<td>2.1702</td>
<td>2.29111</td>
<td>.000</td>
<td>449</td>
<td>37.238</td>
<td>Y19</td>
</tr>
<tr>
<td>2.2273</td>
<td>1.9905</td>
<td>2.10889</td>
<td>.000</td>
<td>449</td>
<td>34.997</td>
<td>Y110</td>
</tr>
</tbody>
</table>

Table 20 illustrates the trends in the study sample of all classes. For the moral degree, the survey sample understood and distinguished the contents of the survey form in accordance with the individual participants’ different experiences, cultures and trends. From the above,
and on the results of the measurement of reliability, validity and discriminative validity, it can be concluded that the survey form measures the variables of the study reliably. Thus, there is an assurance that the indicators obtained in this study could be applied or generalized to the entire community safely and completely. Reliability of the research process and instruments used is an important prerequisite to ensure validity. Valid research is reliable; however, reliable research does not necessarily mean that it is valid (Field, 2009; Sekaran, 2003; Salkind, 2011; Frenz, Nielsen & Walters, 2009).

4.6 Testing Hypotheses

The propositions stated in section 3.2 above were used to derive testable hypotheses. Researchers can use various statistical methods to test their hypotheses. In this study, three methods were used to test hypotheses that depict the correlation between each independent variable with the dependent variable (application of KM). The three methods used include nonparametric correlations, the ANOVA test, and the coefficient of determination. Correlations coefficients are useful in explaining the linear relationship between variables under a normal distribution. Nonparametric correlations are important when such conditions are violated as is the case in this study. A large coefficient indicates that there is a strong correlation between two variables while a small coefficient indicates that the relationship is weak (Mun, 2008; Heavey, 2011).

The ANOVA test is an analysis of variances between the means of independent variables. A large value of F from the ANOVA test indicates a strong relationship between two variables (Mann & Lacke 2010; Salvendy, 2012). The coefficient of determination indicates the proportion of variance in the dependent variable that can be explained by one or more independent variables. The coefficient of determination is expressed in percentages, and a high percentage indicates that a large proportion of the changes in the
dependent variable can be explained by the independent variable under study (Anderson, Sweeney & Williams, 2011).

Accordingly, the following section is dedicated to testing the developed hypotheses in order to identify which were valid and which could not be proven. Each of the seven hypotheses of this study are subjected to three tests: Pearson’s correlation, ANOVA and Coefficient of Determination R-square, in an attempt to prove the validity of each.

4.6.1 The First Hypothesis

The first null and alternative hypotheses in leadership style relate to transformational leadership as follows:

H1o: Transformational leadership style will not lead to more successful knowledge management.

H1a: Transformational leadership style will lead to more successful knowledge management.

To assess the effectiveness of transformational leadership in the DPF, Pearson's correlation was used in order to identify the strength of association or the significant relationship between the two variables: transformational leadership style and knowledge management.
Table 21 shows that the value of the Pearson’s correlation between transformational leadership style and knowledge management activation is 0.753 (r = 0.753, p = 0.006 < 0.01). This indicates that there is a positive and strong relationship exist between transformational leadership style and knowledge management activation. The P value is 0.006 which is less than 0.01. This concludes that transformational leadership style will lead to more successful KM. Therefore, the null hypothesis: “transformational leadership style will not lead to more successful knowledge management” is rejected while the alternate hypothesis: “transformational leadership style will lead to more successful knowledge management,” is accepted.

### 4.6.2 The Second Hypothesis

The second null and alternative hypotheses relating to transactional leadership are as follows:

H2o: Transactional leadership styles will not lead to more successful knowledge management.

H2a: Transactional leadership style will lead to more successful knowledge management.
Pearson’s correlation analysis was conducted to examine the strength of the association and correlation between transactional leadership style and the activation of knowledge management.

<table>
<thead>
<tr>
<th>Transactional leadership style</th>
<th>Pearson correlation</th>
<th>Knowledge management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sig. (2-tailed)</td>
<td>.622</td>
<td>.038</td>
</tr>
<tr>
<td>N</td>
<td>450</td>
<td>450</td>
</tr>
<tr>
<td>Knowledge management</td>
<td>Pearson Correlation</td>
<td>.622</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.038</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>450</td>
<td>450</td>
</tr>
</tbody>
</table>

Correlation is significant at the 0.01 level (2-tailed).

**Table 22: A-Correlation for Second Hypothesis**

The above analysis of Pearson’s output presented in Table 22 reveals that a negative and weak relationship exists between transactional leadership style and successful knowledge management. Pearson's value is 0.622 and the P value is .038, which is greater than 0.01. (r= 0.622, P = .038 > 0.01).

Statistically, it can be concluded that there is no significant influence or strong relationship between transactional leadership style and knowledge management activation. Accordingly, since transactional leadership style has a weak relationship and is negatively correlated to knowledge management activation, the null hypothesis: “transactional leadership style will not lead to more successful management” was rejected and nor was the alternate hypothesis: “transactional leadership style will lead to more successful management” supported. Consequently, the second hypothesis has been removed from the proposed framework as only variables that are positively correlated to KM success will be used to develop the KM model for the DPF.
4.6.3 The Third Hypothesis

The third null and alternative hypotheses relating to ICT and social media usage are as follows:

H3o: *ICTs acceptance will not positively influence attitudes toward social media usage.*

H3a: *ICTs acceptance will positively influence attitudes toward social media usage.*

To test this hypothesis, the Pearson's correlation was used.

<table>
<thead>
<tr>
<th></th>
<th>ICTs acceptance</th>
<th>Social media use</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICTs acceptance</td>
<td>Pearson correlation</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>450</td>
</tr>
<tr>
<td>Social media use</td>
<td>Pearson correlation</td>
<td>.524**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>450</td>
</tr>
</tbody>
</table>

Correlation is significant at the 0.01 level (2-tailed).

**Table 23: A-Correlation for Third Hypothesis**

Table 23 shows that there is a positive correlation between the spread of ICTs and the use of social media. The Pearson’s correlation is .524 and the P value is 000 (r = .524, P = 000 < 0.01). This indicates that there is a significant relationship between ICTs acceptance and the use of social media. Accordingly, it becomes clear that ICTs acceptance will positively influence attitudes toward using the social media. Consequently, the null hypothesis: “*the ICTs acceptance will not positively influence attitudes toward using the social media,*” was rejected and the alternate hypothesis “*ICTs acceptance will positively influence attitude toward using the social media,*” was supported.
4.6.4 The Forth Hypothesis

The forth null and alternative hypotheses developed for this study focus on social media as follows:

H4o: *The usage of social media will not lead to more successful knowledge management.*

H4a: *The usage of social media will lead to more successful knowledge management.*

Pearson’s correlation was used to analyse the effects social media usage on KM success.

<table>
<thead>
<tr>
<th>Usage of social media</th>
<th>Pearson Correlation</th>
<th>Usage of social media</th>
<th>Knowledge management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>1</td>
<td>.684**</td>
</tr>
<tr>
<td>N</td>
<td></td>
<td>450</td>
<td>450</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Knowledge management</th>
<th>Pearson Correlation</th>
<th>Knowledge management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sig. (2-tailed)</td>
<td>.003</td>
<td>1</td>
</tr>
<tr>
<td>N</td>
<td>450</td>
<td>450</td>
</tr>
</tbody>
</table>

Correlation is significant at the 0.01 level (2-tailed).

**Table 24: A-Correlation for Forth Hypothesis**

The above analysis indicates that there is a significant and positive relationship between the usage of social media and KM success as the Pearson’s correlation value is 0.684, with a P value of 0.003. Statistically, the P value is less than the pre-determined significant level 0.01 (P = 0.003 < 0.01) which means that there is a significant influence of the usage of social media on KM success. Therefore, it can be concluded that the null hypothesis: “*the usage of social media will not lead to more successful knowledge management*” was rejected and the alternate hypothesis: “*the usage of social media will lead to more successful knowledge management*” was supported.
4.6.5 The Fifth Hypothesis

The fifth null and alternative hypotheses concerned with organizational culture are as follows:

H5o: *Organizational culture will not lead to more successful knowledge management.*

H5a: *Organizational culture will lead to more successful knowledge management.*

Pearson’s correlation was used to examine the strength of the association and correlation between organizational culture and knowledge management.

<table>
<thead>
<tr>
<th>Organizational culture</th>
<th>Pearson correlation</th>
<th>Knowledge management</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>.815**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>450</td>
<td>450</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Knowledge management</th>
<th>Pearson correlation</th>
<th>Knowledge management</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.815**</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>450</td>
<td>450</td>
</tr>
</tbody>
</table>

Correlation is significant at the 0.01 level (2-tailed).

**Table 25: A-Correlation for Fifth Hypothesis**

The analysis presented in table 25 shows that there is a significant and positive correlation between organizational culture and knowledge management success. The Pearson’s correlation is 0.815 and the P value is 0.000, \( r = 0.815, p = 0.000 < 0.01 \). Accordingly, it can be concluded that the null hypothesis: “*organizational culture will not lead to more successful knowledge management,*” is rejected while the alternate hypothesis: “*organization culture will lead to more successful knowledge management,*” is supported.
4.6.6 The Sixth Hypothesis

The sixth null and alternative hypotheses relating to training are:

H6o: *Training will not lead to more successful knowledge management.*

H6a: *Training will lead to more successful knowledge management.*

Pearson’s correlation was used to analyse the influence of training on knowledge management success.

<table>
<thead>
<tr>
<th></th>
<th>Training</th>
<th>Knowledge management</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Training</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson correlation</td>
<td></td>
<td>.706**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>450</td>
<td>450</td>
</tr>
<tr>
<td><strong>Knowledge management</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson correlation</td>
<td>.706**</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>450</td>
<td>450</td>
</tr>
</tbody>
</table>

Correlation is significant at the 0.01 level (2-tailed).

**Table 26: A-Correlation for the Sixth Hypothesis**

Table 26 demonstrates Pearson’s correlation which is 0.706 and the P value is 0.000 (r = 0.706, P = 0.000 < 0.01). Statistically this shows that there is a significant and positive correlation between training and knowledge management success. As Pearson’s correlation is 0.706 and the P value is less than the significant value (0.000 <0.01), it can be concluded that the null hypothesis: *“training will not lead to more successful knowledge management,”* is rejected and the alternate hypothesis: *“training will lead to more successful knowledge management”* is supported.
### 4.6.7 Inter-Correlation Findings

The Pearson’s correlation was conducted to examine the relationship between knowledge management success as a dependent variable and other independent variables that were identified for this research.

<table>
<thead>
<tr>
<th>Transformational leadership style</th>
<th>Transformational leadership style</th>
<th>Knowledge management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transformational leadership style</td>
<td>Pearson correlation</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.002</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>450</td>
</tr>
<tr>
<td>ICTs acceptance</td>
<td>The usage of ICTs</td>
<td></td>
</tr>
<tr>
<td>ICTs acceptance</td>
<td>Pearson correlation</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>450</td>
</tr>
<tr>
<td>Social media usage</td>
<td>social media usage</td>
<td></td>
</tr>
<tr>
<td>Social media usage</td>
<td>Pearson correlation</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>450</td>
</tr>
<tr>
<td>Organizational culture</td>
<td>Organizational Culture</td>
<td></td>
</tr>
<tr>
<td>Organizational culture</td>
<td>Pearson correlation</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>450</td>
</tr>
<tr>
<td>Training</td>
<td>Training</td>
<td></td>
</tr>
<tr>
<td>Training</td>
<td>Pearson correlation</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>450</td>
</tr>
</tbody>
</table>

Correlation is significant at the 0.01 level (2-tailed).

Table 27: Assessment of Strength of Inter-Correlation
The assessment of the strength of the association and correlation between variables revealed that all variables except “transactional leadership style” were positively correlated to each other as can be seen in table 27 above. On the other hand, the results shown in Pearson's output of transactional leadership style in table 22 reveals that a negative and weak relationship exists between transactional leadership style and knowledge management success as the Pearson's value is 0.622 and the P is value .038, which is greater than 0.01. (r = 0.622, P = .038 > 0.01).

4.6.8 The Seventh Hypothesis

The seventh null and alternative hypotheses relating to the seven independent variables are as follows:

H7o: The independent variables will not significantly explain the variance in successful knowledge management.

H7a: The independent variables will significantly explain the variance in successful knowledge management.

To test this hypothesis, multiple regression analyses were conducted. The results of the regression of the five independent variables against knowledge management success are presented in the following tables. Three different regression analyses were conducted, namely: ANOVA, R Square and unstandardized coefficients B to look at transformational leadership style, ICTs acceptance, social media usage and organizational culture effect on knowledge management success.

Multiple Regression Analysis

The following outputs presented in tables 28 and 29 show the regression analysis of all variables.
Table 28: Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R square&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Adjusted R square</th>
<th>Std. error of the estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.923 (b)</td>
<td>.853</td>
<td>.861</td>
<td>1.17617</td>
</tr>
</tbody>
</table>

Table 29: ANOVA Test

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of squares</th>
<th>Mean square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>3163.569</td>
<td>632.714</td>
<td>457.371</td>
<td>.000&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Residual</td>
<td>546.431</td>
<td>1.383</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3710.000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent variable: knowledge management

Table 28 is the output of the five independent variables that are entered into the regression model. R .923 is the correlation of the five independent variables with the dependent variable after all the inter-correlations between the five independent variables are taken into account. The R square .85, which is the explained variance, is actually the square of the multiple R .923. The ANOVA output shows that the F value of 457.371 is significant at the 0.01 level. An analysis of variance in the ANOVA test displayed in table 29 shows that the significance value is .000 which is less than 0.01. This statistical value confirms a fundamental relationship between the independent variables taken together as a whole with the dependent variable of KM activation in the DPF. It can therefore be argued that the model developed for this study is valid, reliable and effort free. The value of R square is .85 which indicates that there is a significant influence of all the variables on KM success. This means that the independent variables taken together as a whole explain the activation, expressed by 85% of KM in the DPF. The remaining dependent variables are explained by
the other variables, which did not interfere in the relationship of the regression analysis. This determines the validity of the seventh hypothesis. It can be concluded that 85% of the variance (R-square) in the success of knowledge management has been significantly explained by the five independent variables. Therefore, the seventh alternative hypothesis: \textit{“the independent variables will significantly explain the variance in successful knowledge management,”} is substantiated.

Table 30 below of coefficients illustrates which among the five independent variables has the most influence on knowledge management success (therefore being the most important). The results clearly show that the highest number in the B is .749 which is attributed to training and is significant at the .001 level. The positive B weight indicates that if KM success is to be enhanced it is necessary to enhance the training of employees.

<table>
<thead>
<tr>
<th>Sig.</th>
<th>t</th>
<th>Standardized coefficients</th>
<th>Unstandardized coefficients</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Beta</td>
<td>Std. Error</td>
<td>B</td>
</tr>
<tr>
<td>.009</td>
<td>32.632</td>
<td></td>
<td>3.279</td>
<td>107.013</td>
</tr>
<tr>
<td>.000</td>
<td>.807</td>
<td>.641</td>
<td>.589</td>
<td>.572</td>
</tr>
<tr>
<td>.007</td>
<td>.745</td>
<td>.412</td>
<td>.693</td>
<td>.369</td>
</tr>
<tr>
<td>.008</td>
<td>.309</td>
<td>.516</td>
<td>.452</td>
<td>.416</td>
</tr>
<tr>
<td>.000</td>
<td>69.030</td>
<td>.562</td>
<td>.091</td>
<td>.488</td>
</tr>
<tr>
<td>.000</td>
<td>83.299</td>
<td>.873</td>
<td>.040</td>
<td>.749</td>
</tr>
</tbody>
</table>

\textit{a Dependent Variable: Y}

Table 30: Coefficients
As noted above, the author carried out regression procedures to isolate the impact of the correlation among elements of the independent variables. Based on the findings and subsequent analysis, the following conclusions can be made:

- The values of test ‘t’ indicate significant evidence, and show the strength of the regression relationship between the independent variables and the activation of KM in the DPF.
- The values of the coefficient ‘Beta’ refer to the independent variables that increase the activation of KM in the DPF at different rates. This cannot be by chance, as the value did not reach zero in any of the variables.
- The values of ‘B’ can be expressed as a regression equation that describes the relationship between the independent variables and the increase in the activation of KM in the DPF as follows:
  - KM Success = 107.013 (constant) +.572 (transformational leadership) +.369 (the spread of ICT) +.416 (social media usage) + .488 (organizational culture) +.749 (training).

4.7 Conclusion

Based on the above discussion, the following points can be concluded:

1. Each increase that equals 0.749 of improvement in the efficiency of the training process leads to the increase by one degree in the level of the activation of KM in the DPF.
2. Each increase that equals 0.572 of improvement in the pattern of the leadership style leads to an increase by one degree in the level of the activation of KM in the DPF.
3. Each increase that equals 0.488 of improvement of the organizational culture leads to the increase by one degree in the level of the activation of KM in the DPF.

4. Each increase that equals 0.416 of improvement in the social media usage leads to an increase by one degree in the level of the activation of KM in the DPF.

5. Each increase that equals 0.369 of improvement in the information and communication technologies acceptance leads to the increase by one degree in the level of the activation of KM in the DPF.

The hypothesized framework outlined in figure 2 of chapter 3 is based on the findings presented in this chapter. This framework is proposed to the Dubai Police Force as a mechanism to improve knowledge management implementation and to enhance the chance of success by focusing on the most important dimensions.
CHAPTER 5

DATA ANALYSIS AND FINDINGS

5.0 Introduction

The previous chapter provided an analysis of the field study results. It displayed the averages and frequencies that measure the trends of the research sample, the measures of dispersion to determine the elements of the higher dispersion variables and interpretation, and the establishment of the reliability and validity of the measurement tool. It outlined the procedure followed in the testing of the study hypotheses which involved an investigation into the correlative relations of the variables, and an analysis of variance to determine the fundamental relationship between the variables and the phenomenon under study. Based on these findings this chapter displays the analysis of the data obtained from the quantitative study, and of the data collected by means of the 44 phrases (questionnaire) of the survey list. The dimensions these phrases addressed are also displayed in this chapter.

5.1 Analysis of the Field Study’s Survey List Results

This section presents an analysis of the field study's survey list results and the data collected through the 44 phrase survey instrument and offers a discussion of the dimensions addressed through this instrument.
5.1.1 Results for the Dimension ‘Leadership Style’

<table>
<thead>
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<th>Strongly Agree</th>
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<th>Attitude</th>
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</table>

Table 31: Leadership Dimension

Table 31 shows the statements that were made by participants on leadership style. The majority of the statements had values for the weighted mean between 3.2067 and 3.7756 which reflects the participants’ agreement on leadership style. On the other hand, four statements 6, 7, 9 and 10 had values for the weighted mean between 2.6467 and 2.7778 which reflects the participants’ disagreement on the leadership style.

The overall mean of the leadership style dimension was 3.3471. This means that the participants’ overall attitude is “agree.” Therefore, this finding suggests that there are certain elements of leadership style that can support KM success. Moreover, the missing elements can be created and improved to achieve the needed style for KM success by activating them in the DPF.
Figure 11: Leadership Dimension Statements

Figure 11 represents statements of participant’s ratios on the leadership style dimension. It shows participants’ attitude ratios on the leadership style dimension. As the figure indicates, 29.36% of the participants strongly agreed, 28.44% agreed and 10.16% were neutral. On the other hand, 2.30% strongly disagreed and 10.65% disagreed.

It can therefore be concluded that approximately half of the participants agreed on the overall leadership style that supports KM success, whereas, only 12.85% were not in agreement.
5.1.2 Results for the Dimension ‘Organizational Culture’

Table 32: Organization Culture Dimension

Table 32 shows statements made by DPF participants on the organizational culture dimension of KM. As the above table indicates, the weighted mean ranged between 3.0556 and 3.7000 which reflects that most of the participants demonstrated a tendency toward agreement on the organizational culture element in supporting knowledge management activation and its subsequent success.

On the other hand, the results revealed that there are four statements (14, 15, 16 and 18) out of the ten that received a weighted mean between 2.2267 and 2.7978, which reflects a disagreement on the part of some participants on some aspects of organizational culture. Overall however, the mean on organizational culture was 3.17268 which reflects an overall attitude of “agree” on a KM supportive organizational culture in DPF. The development of such a culture can enhance the success of KM initiatives.
Figure 12: Organizational Culture Statements

Figure 12 represents participants’ attitude ratios on the organizational culture dimension. As the above figure indicates, 21.97% of participants strongly agreed, 29.24% agreed and 13.88% were neutral. On the other hand, 21.01% strongly disagreed and 13.89% disagreed.

These ratios lead to an overall conclusion that organizational culture supports the success of KM. Only a 34.9% minority of participants disagreed with this conclusion.

5.1.3 Results for the Dimension ‘ICT’

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</table>

Table 33: ICT Dimension
Table 33 shows statements made by DPF participants regarding the acceptance of ICTs and the usage of social media. As the results show, the majority of the values for the weighted mean were between 2.1156 and 2.7133, reflecting an overall disagreement on the acceptance of ICTs and social media usage among DPF participants. On the other hand, the participants agreed on statement 10.25 which had a value of weighted mean 3.2778.

The overall weighted mean value of 2.4989 shows a general attitude of “disagree” on ICT acceptance and social media usage. This demonstrates a low acceptance of ICT in DPF and a low tendency to use social media to share knowledge. Should there be more acceptance among members on ICT, then the use of social media would increase.

![Figure 13: ICT Acceptance Attitudes](image)

Figure 13 represents the attitude of participants with regards to ICT acceptance and social media usage whereby 32.27% strongly disagreed, 26.37% disagreed and only 9.30% were neutral.

On the other hand, 23.37% agreed and 8.70% strongly agreed. With an overall disagreement rate of 58.64% and an agreement rate of 32.07%, it can be concluded that
more than half of the participants do not accept ICTs in the DPF and are not keen on using social media.

5.1.4 Results for the Dimension ‘Training’

Table 34: Training Dimension

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</table>

Table 34 shows the results of DPF participants regarding the dimension of training. As the above table indicates, half of the statements had values for the weighted mean between 2.2422 and 2.7022 which reflects an overall disagreement by DPF participants on the availability of an effective training framework. On the other hand, the survey sample revealed that almost half of the statements had values for the weighted mean between 3.2889 and 3.5711 which reflects agreement on the dimension of training.

Based on the above analysis the overall results on training dimension was 2.93745 which means that the participants’ overall attitude is “disagree” on training effectiveness to support knowledge management initiative in DPF.
Figure 14: Training Effectiveness Framework Acceptance Attitudes

Figure 14 represents participant attitude ratios regarding training effectiveness frameworks. It can be seen that 24.58% strongly disagreed, 16.76% disagreed, and 14.5% were neutral. On the other hand, 29.61% agreed and 15.06% strongly agreed.

It can therefore be concluded that almost half 41.34% of the participants revealed a tendency toward disagreement on training effectiveness to support KM initiatives in DPF. However, 44.67% showed agreement on the training dimension. This shows that DPF training programs are ineffective in supporting KM success.

5.1.5 Results for the Dimension ‘KM’

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</table>

Table 35 presents the statements made by DPF participants with regards to elements of KM. The majority of the statements had values for the weighted mean between 2.1089 and 2.7667 which reflects a disagreement on sufficient KM elements. However, the survey sample showed less than half of the statements had values for the weighted mean between 3.0289 and 3.8733 which reflects participant agreement on KM elements.

The overall finding on KM elements dimension was 2.84845 which means that the general attitude of participants in the DPF with regards to KM elements is one of disagreement.

Figure 15: Attitudes on KM Elements
Figure 15 represents participants’ attitude ratios with regards to KM elements. It can be seen that 27.18% strongly disagreed, 15.15% disagreed and 17.08% were neutral in their responses. On the other hand, 26.8% agreed and 13.77% strongly agreed.

It can be concluded that almost half 42.33% of the participants’ attitude reflects a tendency toward disagreement on the sufficiency of KM elements, while the other 40.57% have shown agreement on the sufficiency of KM elements. Clearly, the results show that KM elements in DPF are insufficient in leading a successful KM initiative.

5.2. Conclusion
Based on the results of the quantitative study, whereby 44 phrases were processed and analysed, the conclusion is twofold. On the one hand, a number of strong points (supporters or enablers) were identified and on the other, some weak points (obstacles) in the DPF organizational structure were highlighted. The results of the data analysis and its implications will be discussed in more detail in the following chapter.
CHAPTER 6
SUMMARY AND DISCUSSION

6.0 Introduction

The previous chapter presented an analysis of the data collected through the survey questionnaire. The results of the 44 phrases of the survey list that address the five dimensions were at the centre of this analysis and subsequent discussion. Chapter 5 identified the shortcomings of facilitators and the practice that hindered the effective implementation of KM in the DPF. The weaknesses and the strengths of all dimensions under investigation were also identified. Based on these findings, this chapter offers a discussion on implications of such findings.

6.1 Discussion of the Results

The study contributes to KM literature by assessing the degree of influence of the critical factors that impact KM practice through a body of empirical evidence which is useful for police organizations in general and for police agencies that operate in Arab countries, more specifically. Moreover, the empirical evidence presented will also be of interest to researchers and academics interested in studying the public sectors of the Arab world. The study findings reveal the reliability and validity of the questionnaire used in this research in its quest to collect primary data. The accuracy of this data is very important in the procedure that tests the measurement instrument developed specifically for this study. The procedure involves the examination of the correlative relations between the variables of the study, and the analysis of variance to determine the fundamental relationship between the variables and the phenomenon under investigation. The findings concluded the validity of the all variables that were subject to the examination. The data obtained from the quantitative study and their analysis, performed by answers to 44 phrases of the survey list, confirmed the weaknesses and strengths of all variables included in this study, as will be
discussed subsequently. The survey investigated the participants’ attitudes and opinions on the levels of the five dimensions: leadership style, organizational culture, ICTs, training programs and KM practice elements. The study examined the impact of each dimension on the success of the KM implementation project. (The participants indicated their agreement or disagreement with statements in relation to these five dimensions.)

The results revealed that the four identified dimensions are critical for KM success, and that they are interrelated. The four dimensions collectively have a positive impact on KM success, as they play critical roles in activating KM practice in an organization. There is also a positive correlation between each dimension and KM practice applications. The research findings show that leadership style, organizational culture, training and ICTs play an important role in facilitating or hindering the successful use of a KM application. These findings are congruent with theory and practice as much of the literature and many empirical studies indicate these dimensions are mandatory for KM success. The level of influence each factor has on KM activity, identified through the value of $R^2$, reveals that training has the highest level of influence, followed by leadership style, organizational culture and social media. ICTs are the least influential dimension. A discussion of each dimension follows.

### 6.2 Leadership Style

The data analysis in Chapter 4 revealed that leadership style is the second largest contributor of all independent variables included in this study of KM practice. The value of Pearson’s correlation between transformational leadership style and knowledge management activation is $0.753 (r = 0.753, p = 0.006 < 0.01)$. Therefore, this indicates that there is a positive and strong relationship which exists between transformational leadership style and knowledge management activation. The P value is 0.006 which is less than 0.01.
This indicates a strong and positive correlation between these two variables. The unstandardized coefficients B= .572 shows that leadership style is responsible for an increase of 57% in the activation of KM in the DPF.

The remaining percentage is explained by the other variables that did not interfere in the relationship of the regression. The finding concerning the relationship between leadership style and the application of KM is consistent with Crawford’s (2005) propositions. The results of this study suggest that transformational leadership style is positively related to KM practices.

In the field study, the participants responded to ten probe leadership style in the DPF. The responses to these phrases indicated evaluations of the strengths and weaknesses of the leadership team. It emerged that there are some strong points in the DPF leadership style, such as clear vision and objectives and the upholding moral values. Other strong points included trust and mutual respect, excellent communication skills, ability to deal with ambiguous situations, and an interest in improving the skills of employees.

The participants highlighted some of the weak points as well. In response to the question on whether there are personnel who lead and support KM practice, such as CKO, the sample tended to demonstrate disapproval. This indicates that although the DPF has knowledge leaders who are dedicated to lead and support KM practice (since there is a KM department responsible for KM implementation); their positions are not clearly stated. Almost 50% of responses disagreed with the phrase that proposed that those positions are clearly stated. The possible reason for these shortcoming is that the
CKO position is relatively new, and not yet a well-known term/position in many organizations (De Tienne et al., 2004; Cavalere & Seivert, 2005), and especially in the Arab world. This opinion is supported also by Siddique’s (2012) study of the UAE private sector, where only 17.4 per cent of organizations have formal or informal KM leaders. He points out that none of the companies included in his sample have formal job titles such as a ‘KM officer’ or ‘KM manager’. In addition, the leaders do not advocate for cooperation and teamwork among employees. This is consistent with the finding of Nalla and Kang (2011) in the South Korean police force, where overall, police officers across rank and job assignment are dissatisfied with managerial support.

Hashemian and Mahdizane (2008) emphasize that police units can improve the creativity of their officers by encouraging teamwork. They note also that knowledge creation at the team level has long-term effects on the performance of police officers. As police officers handle large volumes of information every day, they require experience (tacit knowledge) to process and utilize information effectively. Police officers share tacit knowledge during their interactions at the team level. This is also emphasized by the research of Glomseth, Gottschalk and Solli-Saether (2007) who found that team culture had a significant effect on the process of knowledge sharing and the outcomes of police investigations.

Results of this study demonstrated that the DPF leaders do not reward outstanding performance. This finding is in agreement with the research conducted by Biygautane and Al-Yahya (2011) in the Dubai public sector, which revealed that 39% of respondents confirm the lack of incentives in place for sharing knowledge, and that only 25% use monetary incentives as motivation to share knowledge. Therefore, organizations
should establish a reward system if they want to stimulate knowledge flows within and across organizations.

Empowerment and participation in decision making was found by this study to be low. Thus the DPF leaders and management should create a culture that encourages questioning and experimentation through staff empowerment (Nguyen and Mohamed, 2011), as this has a positive effect on employee productivity and tolerance of ambiguous situations (Katsaros & Nicolaidis, 2012).

The weaknesses outlined can be attributed to the lack of knowledge managers. On this point, it must be remembered that traditionally, Arab leadership style does not promote delegation of authority (Odedait et al., 2012). This style of leadership may hinder an organization’s success in encouraging employees to participate in KM. Every DPF department should be mindful of this, and seek to counter-balance it with the appointment of knowledge leaders who coach and mentor employees in the KM practice (Hannay, Jaafar & Earl, 2013). There is an urgent need for capable and experienced leaders in managing KM effectively.

To ensure successful KM implementation, the top leaders of the DPF should be committed to deliver the essential KM support activities. Knowledge leaders can play a critical role in establishing a knowledge-centred culture where workers are encouraged to share knowledge. An adoption of the transformational leadership style by the DPF knowledge leaders can improve KM practice, as the study by Analoui, Doloriert and Sambrook (2013) revealed. This is because transformational leaders are more effective at
working with people, they build trust and foster collaboration (Northouse, 2010) by deploying their clear vision, objectives, sound moral values, trust and mutual respect, excellent communication skills, ability to deal with ambiguous situations.

As Arab culture revolves around trust and is based on trusting relationships, this style is more appropriate to motivate people who work together to achieve KM objectives in difficult and demanding work environments (Merat & Bo, 2013). Being able to inspire followers and to pay attention to their needs can have a great impact, and is more likely to engage and motivate them in knowledge sharing (Xue, Bradley & Liang, 2011).

6.3 Organizational Culture

The field study of this research showed organizational culture to be the third most influential independent variable. The value of Pearson’s correlation between organizational culture and knowledge management activation is 0. 0.815 (r = 0.815, p= 0.000 < 0.01). Therefore, this indicates a positive and strong relationship existing between organizational culture and knowledge management activation. The P value is 0.000 which is less than 0.01. This indicates is a strong and positive correlation between these two variables. The unstandardized coefficients B = 0.488 shows that organizational culture is responsible for an increase of 48% in the activation of KM in the DPF. This means that there is a strong correlation and positive between ‘organizational culture’ (independent variable) and ‘KM practice’ that an increase of 48 % in the activation of KM in the DPF is attributable to organizational culture. As was the case with regard to the first hypothesis, the remaining percentage is explained by the other variables that did not interfere in the relationship of the regression. The finding on the relationship between organizational culture and the application of KM is consistent with those of many studies (Alvesson, 2002; Weir & Hutchings, 2005; Leidner, Alavi & Kayworth, T. 2006;
Pauleen, 2007; Yasin & Yavas, 2007; Gerami, 2010; Al-Adaileh & Al-Atawi, 2011; Al-Salti & Hackney, 2011; Skok & Tahir, 201; Ajmal, Helo, & Kekale, 2011; Scerra, 2011; Glomseth, Gottschalk & Hole, 2011; Cardoso, Meireles & Peralta, 2012; Kumar & Rose, 2012). However, it contradicts these studies’ claim that organizational culture is the biggest barrier to KM. This research revealed that leadership style is the second most critical barrier, and has emerged as the second highest influential dimension on KM practice in the context of the DPF.

The field results derived from the responses to the probing phrases related to organizational culture indicates that the DPF has made organizational goals clear to all individuals. Organizational objectives are in line with internal and external environment changes. This implies that there is continuous update and development in terms of organization goals; to keep abreast of crime patterns and public demands on the DPF services. Interestingly, this finding may be at odds with the observation that there is a shortfall in leaders’ promotion of cooperation and teamwork. The probable explanation here is that the general culture is characterised by collaboration when work is in progress, despite there being little effort by leaders to promote a cooperative team-work culture. Another possibility is that this general culture compensates for the burden of responsibilities and the inattention to making time for sharing knowledge, two factors that Seba, Rowley and Delbridge (2012) note about the DPF. A team-oriented culture naturally promotes knowledge sharing. Partners share in successes and failures and cooperation and understanding between them creates room for knowledge sharing. Police managers encourage group investigations instead of individual investigations. Team members are likely to share information on a case for reason alone that they want to contribute to the team’s success (Glomseth, Gottschalk & Solli-Saether 2007).
The DPF administration is committed to the KM initiative. This finding is backed by the fact that the DPF has a particular department responsible for KM-related activities. This indicates that at the organizational level there is a clear commitment to KM practice. Yet there is inadequate day-to-day support for KM practice within departments. This supports the finding there is a shortage of ‘knowledge’ and ‘transformational leaders’ in the ‘leadership style’ dimension. Further to this, the field results indicate that there are values and norms that guide the DPF individuals in performing their duties. This finding can be attributed to many factors, for example, strict organizational structure, centralisation, bureaucratic and Arab leadership style, as indicated by (Al-Yahya, 2008; Taleghani, Salmani, & Taatian, 2010). Al-Yahya (2008) indicates that power and control in most Arab states is centralised. This approach to leadership leads to unpredictable bureaucratic decision making and unsustainable representations in institutions. Moreover, Al-Yahya (2008) proposes that in the Arab business context there is over-reliance on supervision and direction from managers. According to him, the Arab public sector has centralised most of its decision-making processes, which consequently limits the sector’s capacity to utilise its human-resources capital. Taleghani, Salmani and Taatian (2010) share the view that Arab organizations are centralised, no matter what their strategies and level of technology.

Another strong point about the DPF organizational culture is clear and prevailing code of ethics. A strong code of ethics is an indication of knowledge-codification activity in an organization. This implies a propensity to documenting the work practice to be followed. According to Nordin, Pauleen and Gorman (2009), criminal investigators are bounded by the police code of ethics. Codes of ethics are based on the practices of morality and law,
and serve as guides to decision-making throughout an investigation process (Nordin, Pauleen & Gorman, 2009).

The finding that the DPF organizational-culture dimension is strong indicates that the DPF has been building a knowledge-supportive organizational culture. The knowledge-centred culture that leaders create paves the way for the other dimensions that are included in this study to be appreciated and implemented smoothly. Therefore, a culture emerges in which the use of ICTs becomes routine practice. Training is recognized and highly valued in a knowledge-friendly organizational culture (Cardoso, Meireles, Ferreira Peralta, 2012). Yet there are a few weak points that the DPF should address to enhance its efficiency in KM practice. One is the lack of trust among the DPF staff when it comes to sharing knowledge. This finding certainly has a parallel in the prior research of Biygautane and Al-Yahya (2011) and Seba, Rowley and Delbridge (2012). These studies suggest that the lack of trust is the main hindrance to KM development. This finding is predictable and readily explained: in the Arab world, business relations are based on trust, which is established through relationships. Collectivism and close groups based on trust characterise Arab culture. According to Obedait et al. (2012), trust is one of the fundamental values of Arab culture, and is rooted in Islam. Consequently, the amount of knowledge that individuals share depends largely on how many of them trust one another.

Butler (2009) declares that communication and trust between leaders and their subordinates influence the effectiveness of leadership. Trust and loyalty are important in the Arab world. Most business deals are based on connections, and social and family relations (Al Rawabdeh, Zeglat, and Alzawahreh, 2012). Al-Salti & Hackney (2011) in Oman found that vendors provide client organizations with useful knowledge. However, client organizations
will only adopt and consider knowledge obtained from trustworthy vendors. In addition, employees who share their expertise and skills do not receive reward, or recognition.

This finding is in line with that of Biygautane and Al-Yahya (2011) that the Dubai public sector should motivate its employees by creating an environment that incentivises and rewards them for sharing their knowledge (as 39% of their respondents claimed they receive no incentives). Similarly, Seba, Rowley and Delbridge (2012) found that the absence of a reward system is an obstacle to knowledge sharing in the DPF. Al-Alawi, Al-Marzooqi and Mohammed (2007) concur, averring that rewards and recognition are components of organizational structures that influence knowledge sharing. It is critical for all police units to develop a culture that promotes and rewards knowledge sharing (Glomseth, Gottschalk, & Solli-Saether 2007). Thus, the DPF should reward and recognise employees who perform as knowledge sharers if they want to stimulate and influence knowledge sharing flows in the organization. This view can be attributed to leadership style.

Another weakness in the DPF is the lack of clarity about KM roles and responsibilities. Biygautane and Al-Yahya (2011) and Siddique (2012) note that one of the challenges facing Dubai public sector employees is that they are without a clear understanding of the KM concept during the KM program’s implementation. Moreover, the KM terms in use during the implementation period appear to be interchangeable, and this causes confusion and may even result in unproductive KM practices. For example, 30 per cent of their respondents ‘strongly agree’, and 36 per cent ‘agree’, that there is a lack of awareness and understanding of the KM concept (Biygautane & Al-Yahya, 2011). There are several possible explanations for this: top management is not supportive; KM practice is not well
understood by the KM execution team itself; not enough time is allocated for KM practice; the importance of the KM program is underestimated; no recognition or reward system is aligned with KM practice; and training is insufficient.

This appears to contradict the study finding that participants attribute clear vision and objectives to leaders and clarity to organizational objectives. However, where KM objectives are yet not made clear, the ‘clear vision of leaders and of organizational objectives’ do not appear to be compromised. The DPF can take a number of basic steps to remedy the shortcomings of employees’ lack of understanding in this area. The literature review in chapter 2 emphasises the need to clarify KM terms, as do Davenport and Prusak (1998), Nygard and Aamodt (1995), Nonaka and Takeuchi (1995), Jashapara (2004), Liew (2007) and Jarrar, Schiuma and Zairi (2010).

Top management should recognise an obligation to make KM concepts clear, and to familiarise them to their members through workshops, seminars and training (Ajmal, Helo & Kekale, 2010). The organizational dimension revealed a sort-of unwelcoming attitude to the implementation of development projects. This finding shares the view of Biygautane and Al-Yahya (2011), who found that the Dubai public sector resisted the idea of improving KM, and that almost 50 per cent of their participants declared themselves disinclined to accommodate new KM practices. This finding might be explained in terms of the recent introduction of the KM concept to this region, and in terms of the caution inherent in Arab culture about warming to new ideas.

6.4 Training

The field study shows that the ‘training’ is the most influential independent
variable. Pearson’s correlation is 0.706 and the P value is 0.000 ($r = 0.706, P = 0.000 < 0.01$). Statistically this explains that there is a significant and positive correlation between training and knowledge management success. The Pearson’s correlation is 0.706 and the P value is less than the significance value ($0.000 < 0.01$), indicating a strong correlation between these two variables, and that they correlate positively with training (the independent variable) and KM practice (the dependent variable). The unstandardized coefficient $B = 0.74.9$ shows that training is responsible for an increase of 75% in the activation of KM in the DPF. This means that an increase by 75% in the activation of KM in the DPF is attributable to training. The remaining percentage is explained by the other variables that did not interfere in the relationship of the regression. The results of the field study’s findings about training are consistent with many researchers’ propositions, including those of Nour (2010), Goodman and Schieman (2010), Chong et al. (2011), Cardoso, Meireles and Ferreira Peralta (2012) and Abd Rahmanet et al. (2013). Their findings show that training plays a critical role in the success of the KM initiative, and facilitates the creation of a knowledge culture that in return appreciates knowledge sharing practices.

This study’s survey list contains probing phrases that relate to training practice in the DPF. The responses indicated some strong points about training practice in the DPF: the coordination among departments when training needs is identified; training programs are diverse and in line with organizational goals; and new employees are trained before being set to work. Pre-employment training of police officers helps police recruits apply the knowledge and skills they acquired in police academies (Lee, Jang, Yun and Lim 2010). In addition, employees are free to apply in their tasks the knowledge they acquired at training courses. This is to the credit of the DPF. Rahmanet et al. (2013)
emphasises that trained employees should be given opportunities to practice their knowledge in the workplace. They should be allowed to share their knowledge with colleagues. These authors also suggest that tacit knowledge should be codified, and that policies should be developed to retain the holders of tacit knowledge, to protect organizational knowledge, and to avoid wasted investment in training.

The author of this study however, partially disagrees with this research, which encourages the codification of tacit knowledge, arguing that this is not a straight forward process and that limitations exist in codifying tacit knowledge because its nature resides in human minds (Nonaka, 1994). As Hansen et al (1999) argued, knowledge related to regular or frequent practice (standardized knowledge) can be codified, however knowledge related to customized service, such as the type police officers deal with, is difficult to codify. The nature of police work requires the creation of knowledge as the crime case progresses, and involves situations or projects where knowledge of an expert emerges as the situation changes. This notion is in line with Druker’s (1960) statement, “we know more than what we can tell.”

Another strong point of the DPF training is that the organization recognises its importance to KM. However, there is a specific need to incorporate KM theory and practice in all training programs. The DPF should also plan programs that intend to develop leadership practice that is oriented to the transformational leadership style. Schafer (2010) found that the process of developing effective leaders requires training and education, personal experience and consistent feedback. Furthermore, earlier discussion of the ‘leadership style’
dimension revealed some weak points. Thus, in order to activate KM practice more efficiently, more attention to leadership style is warranted, since it is the highest influencing dimension. Also, the training dimension shows some weaknesses that act as barriers to the successful implementation of KM.

Some of the weak points in training include the lack of a proper methodology for identifying training needs. This point is contradictory to the coordination between departments when identifying training needs, and that the DPF training programs are diverse and in line with the organizational goals. The possible explanation is that the training needs that are identified by a collaboration of departments happen in a random process, and not methodically. Another weakness is in the absence of a systematic method for identifying the results or outcomes of training programs. The organization cannot design an effective and practical training program based on the actual needs of its employees without a clear understanding of the current training needs. The DPF cannot expect to improve its training programs while there is no proper method of determining whether the training programs it delivers are effective. Thus, the DPF leadership should consider designing a method for evaluating training outcomes. This is emphasised in the literature by Wilson (2000), (cited in Sinclair et al, 2012), who points out that, for a comprehensive training program to be successful, training needs, who needs training and training methods must be identified. In addition, training material programmes and outcomes for trainer’s and trainees should be subject to constant evaluation.
The field results also indicated that the DPF employees do not receive constant encouragement to further their own education. This finding is at odds with the research findings of Biygautane and Al-Yahya (2010) who found that the DPF strongly encourages and supports its employees in higher education pursuits, and that they participate in national and international training workshops to gain new skills and insights. The possible explanation here is that this support accrues to individuals on the *wasta* basis, and not on the basis of personal suitability and talent. Another explanation might be that the support to which Biygautane and Al-Yahya (2010) refer is the fully financed scholarships awarded to DPF initiates.

Employees require learning opportunities and training on how to process, preserve and share knowledge with other individuals in the organization (Harfield, 2009). Training the management team can help build an organization’s competitive advantage (Lu and Betts 2011). The more updated, upgraded and effective that knowledge, the more competitive is the organization in the marketplace (Wright, 2013). Investing in the training and development of their workers, organizations are actually contributing to their own organizational knowledge (Abd Rahman et al., 2013). Insufficient supply of the required resources and time hinder the transfer of training or learning (Lu and Betts 2011).

The participants indicated that the DPF employees do not benefit from the skills, knowledge, and expertise of retired officers. The DPF should exploit old officer experiences and management skills by establishing a link between new and old employees that protects valuable knowledge against the possibility of loss. The literature clearly makes the point that older police officers are a valuable resource to any police unit. They have accumulated knowledge and experience during their tenure that can help police units solve
crimes efficiently (Etter & Griffin, 2011). Harvey (2012) argues that many organizations ignore old employees and focus on young employees. This hinders the transfer of knowledge from one generation to the next.

It is noted in the literature that when a core knowledge worker leaves an organization, that worker takes away a large body of organizational memory. To protect themselves against this kind of ‘brain drain’, organizations must identify their core employees and transfer their valuable knowledge to maintain organizational memory through succession planning. Thus, succession planning is a suitable strategy to maintain the unique knowledge held by workers by selecting and training successors to fill the gap that would be left when these core workers leave the organization (Appelbaum et al., 2012). Additionally, retired workers who possess important knowledge can be offered an incentive to remain active as consultants and lecturers.

6.5 Information and Communication Technologies (ICTs) and Social Media (Moderator)

Results of the field study showed that ICTs is the lowest influencing independent variable following social media (moderator). The Pearson’s correlation for ICTs is .524 and the P value is 000 (r = .524, P = 000 < 0.01). This indicates that there is a significant relationship between acceptance of ICTs and the use of social media and thus, the acceptance use of ICTs will positively influence the attitudes toward using social media. This indicates an essential and positive relationship between these two variables.

Additionally, there is a significant and positive relationship between the usage of social media and the success of KM. Pearson’s correlation value is 0.684, and the P value is 0.003. Statically, the P value is less than the predetermined significant level 0.01 (P = 0.003 < 0.01) which means that there is a significant influence of the usage of social media on
KM. Furthermore, the unstandardized coefficients $B = 0.369$ shows that ICT acceptance is responsible for an increase of 37% in the activation of KM in the DPF in the case that there is an active use of social media. The unstandardized coefficients $B = 0.416$ shows that social media is responsible for an increase of 42% in the activation of KM in the DPF.

These results indicate that there is a strong correlation between these two variables, and that ICTs (independent variable) correlate positively with KM practice (dependent variable). However, it is also clear that the acceptance use of ICTs alone is not enough; and that social media must be actively used to improve knowledge sharing activities which in turn result in successful KM. A 37% increase in the activation of KM in the DPF is attributable to ICTs and a 42% increase is attributable to social media use.

To illustrate this further, the success of KM is the dependent variable which was positively influenced by the independent variable; namely, the acceptance of ICTs. The process and practice of knowledge sharing is further enhanced however, by the effective utilization of different social media tools (moderating variable). The relationship between the independent and dependent variables has now become contingent on the existence of a moderator variable; in this particular case being social media.

As was the case with regard to the former hypotheses, the remaining percentage is explained by the other variables that did not interfere in the relationship of the regression. The literature notes that individuals in an organization cannot create and share information effectively without the necessary information systems (Pérez-López & Alegre, 2011).
Sophisticated ICTs facilitate the easy flow of knowledge in an organization. Gottschalk (2006) indicates that information technology is particularly beneficial to the police sector because it is knowledge intensive. The effectiveness of the police in solving cases depends on their ability to access and utilise the available information. Establishing safe database can enhance access to information and the sharing of knowledge within an organization. Group structures create a platform for police officers to share their experience of previous cases (Hashemian & Mahdizane 2008). It can be concluded that past researchers emphasise the importance of information and communication technologies to KM, and indicate the ICTs are a critical factor for KM success (Ajmal, Helo & Kekale, 2010; Bigliardi, Dormio & Galati, 2010; Chong et al., 2011; Bairi, Manohar, & Kundu, 2011; Palvalin, Lonnqvist & Vuolle, 2013). However, the finding of this research does not endorse these findings. The results revealed that ICTs is the least influencing factor for KM practice in the DPF.

The results of the field study indicate that the DPF knowledge-oriented communication facilities are somewhat wanting: the organization has no electronic library that can assist its workers in research and knowledge development activity. It is noted in the literature that ICTs enable storage and communication, enhance the participation of employees in knowledge sharing, and offer speed in the creating, sharing and transferring of knowledge within and across organizations (Bairi, Manohar, & Kundu, 2011). For example, collaborative tools like videoconferencing help companies overcome the barriers of distance and cost in time. Also, 'yellow pages' kind of search tools enables members to easily locate knowledge holders within and outside the organization (Anantatmula, 2008; Bigliardi et al., 2010; Bairi, Manohar & Kundu, 2011; Siddique, 2012).
The results of this research indicate that in the DPF it is difficult to extract needed knowledge, and that there is no systematic way of capturing knowledge for codification purposes. This finding is inconsistent with that of Biygautane and Al-Yahya (2011). Their study reveals that creative ideas and new practices are documented in the form of reports that are published at six-month intervals by the DPF and shared with all departments. The possible explanation of this inconsistency is that while there is codification activity, it is in its early stage, and not yet advanced enough to be of real use to the DPF workers. This is a plausible reason, since the KM program itself is in its infancy stage and its implementation is slow. Codification and documentation of knowledge help companies transfer and disseminate knowledge among members (Al-Salti & Hackney, 2011). There seems to be regular updating activity of information and knowledge in the system. Possibly, participants were referring to the DPF website, or to a general data base such as traffic and criminal records. Even so, the DPF management should pay more attention to this variable, for it not strong enough to support KM success, as indicated by the field study. The DPF must acquire KM-oriented advanced technology if it wants to stimulate KM practices.

6.6 KM Elements

The last dimension looked at was a combination of the five independent variables, which include: leadership style, organizational culture, ICTs acceptance, social media use and training. The output of the five independent variables was entered into a regression model and R (.923) was found to be the correlation of these five variables with the dependant variable, once all of the inter-correlations (among the five independent variables) were taken into account. The R Square is .85, which is the explained variance, and is actually the square of the multiple R .923. The ANOVA output shows that the F value of 457.371 is significant at the 0.01 level. An analysis of variance of the ANOVA test shows that the significance value is .000 which is less than 0.01. This statistical value refers to the fundamental relationship between the independent variables as whole and the dependent
variable ‘KM activation in DPF’. Therefore, it can be concluded that the model developed in this study is valid and reliable without error. This .85 value of R Square indicates that there is a significant influence of all variables on the success of KM. This means that the independent variables taken together explain the activation, expressed by 85% of KM in the DPF. The remaining dependent variables are explained by the other variables, which did not interfere in the relationship of the regression analysis. This concludes the validity of the seventh hypothesis.

This substantiates that implementing the five independent variables at the same time would yield better results in the application of KM as opposed to implementing one variable at a time. The study analysis of this last dimension contained probing phrases about the different elements of KM practice that have not been previously discussed in existing literature. The elements that revealed the approval of participants include the following: regular evaluation and improvement of work methods; noticeable investment in KM infrastructure; a knowledge database that acts as a guide in the process of decision-making; and an organization that is keen to retain employees with vast knowledge and skills.

On the other hand, the field results on the combination of different elements of KM indicate that the management has insufficient concern for accumulating the knowledge, skills and experience of employees. In addition, there is no knowledge map (yellow pages) that enable employees to locate knowledge and experts. The DPF does not hold regular meetings and periodic workshops that would create a platform for employees to air new ideas. The organization does not integrate lessons learnt from experiences in the process of improving performance, and there is lack of succession planning to replace employees with an accumulated expertise before they leave. As discussed above, an analysis of the field results indicates that there are strong and weak points that relate to the chosen elements of
KM practice. Each of the independent variables has a significant influence on the application of KM practice. The relationship between KM and all the independent variables is positive. This means that the organization can improve and activate KM practice by eliminating or reducing the identified weakness in each variable.

6.7 Conclusion (Implications for KM Theory)

As stated earlier, this research has contributed to the KM literature with its examination of the most critical factors that influence KM implementation in the public sector, and more specifically, in police forces in an Arab context. Moreover, it assessed the level of influence that each of these dimensions have on KM practice, and determined the type of correlation between organizational culture, leadership style, ICTs, training and KM practice. This study offers new KM insights into the factors that influence the application of KM in police organizations. Past researchers outline the variables considered in this study as valuable enablers of KM, however offer no clear indication of their levels of influence. Earlier studies that address KM in the public sector within Arab context fail to determine whether the correlation is negative or positive, and do not demonstrate the interrelationships among these factors. Additionally, this research argues that leadership is the second most influential dimension to KM implementation in the Arab world, followed by organizational culture. Unlike the finding of several researchers (Al-Alawi, Al-Marzooqi and Mohammed, 2007; Siakas, Georgiadou and Balstrup, 2010; Gerami, 2010; Skok and Tahir, 2010) that organizational culture is the most critical factor and the biggest barrier to KM implementation, this research reveals that leadership has the second highest influence on KM practice. Leadership shapes the culture of an organization. According to Schein (2010), organizational culture and leadership are two sides of the same coin: leadership has a great impact on organizational culture because it is leaders who begin the process of culture-
creation by selecting and forming the influential groups within an organization. Once the organizational culture is established, its values and norms entail the assumptions about the calibre of the person who is the suitable leader of that organization (Schein, 2010). Therefore, as leaders can influence organizational culture and vice versa, leadership cannot affect the processes of motivating people and promoting the knowledge-sharing culture. Leaders inspire workers to work in collaboration, and break down barriers that hinder the KM initiative. The knowledge-friendly culture, or, as named alternately, the knowledge-centred culture (Davenport and Prusak, 1998; Cardoso, Meireles and Ferreira Peralta, 2012) that leaders create nourishes the culture in which the use of ICTs becomes routine. ICTs cannot be ignored in the training programs of a culture that appreciates KM; training is recognised and highly valued in a knowledge-friendly and organizational culture (Cardoso, Meireles & Ferreira Peralta, 2012).

Furthermore, the study provides a useful insight into organizational culture, leadership style, training practice, ICT infrastructure and KM elements in police organizations in an Arab setting, thereby remedying the shortage of studies that address police culture in the Arab world. Most related studies are non-Arab-based, (Western and Eastern) so the theoretical contribution of this study is useful for researchers and academics interested in studying KM practice in the Arab public sector, especially those of police organizations. The findings of this research are partially applicable not only to police organizations but to other organizations, as well. This study makes clear that all independent variables investigated here are critical to the KM implementation. The results indicate that leadership style is the most influential variable. The leadership in an organization will determine if all other elements or prerequisites of KM are in place. Therefore, organizations that intend to
implement KM should focus on leadership style as the key role. However, a balance of the four dimensions is imperative for the successful KM initiative.

Chapter 7 will take up the themes to which the conclusions of this research give rise, and on their basis, offer recommendations that may guide the successful conclusion of a KM implementation. These recommendations have a general application; however, the author addresses them specifically to the DPF.
CHAPTER 7
THE PROPOSED FRAMEWORK AND RECOMMENDATIONS

7.0 Introduction
The previous chapter discussed the research findings, related them to existing literature and briefly outlined the contribution of this research to KM theory. This chapter exposes the practical contribution that this research makes to scholarship, and hence revolves around the practical implications of the research findings. It begins with the proposal of a framework for KM implementation in the DPF. This proposal lists its advantages, as well as the problems that may emerge in the implementation process. Recommendations for effective application of KM in the DPF follow, and an outline is offered of practical contributions, implications for police top management, and for the DPF specifically. Problem-solving strategies are then advanced and the chapter concludes with reflections on the experience of conducting this research, an assessment of the limitations of the research, and suggestions for further research.
7.1 The Proposed Framework for Effective Implementation of KM in DPF

![Proposed Framework Diagram]

Figure 16: The Proposed Framework for Achieving the Effective Application of KM in the DPF
7.1.1 Analysis of the Components of the Framework

The author developed the framework represented by Figure 16. The proposed framework offers a guideline by means of which the DPF can enhance the chances for the effective application of its KM initiative. The following is an analysis of the proposed framework:

1. Leadership style has a direct and significant influence on the application of KM in the DPF. As the findings of this research indicate, leadership style is the second highest influential variable, accounting for 57.7% of the change needed to achieve KM practice efficiency. This implies that an improvement by 0.572 units in leadership style would lead to an improvement by one unit in the effectiveness of the application of KM practice. This means that every improvement in leadership style in the DPF will lead to an increase in KM efficiency. Conversely, decline in the calibre of the leadership style will decrease the effective practice of KM.

2. Organizational culture came up in the research findings as the second strongest influencer. This dimension has a substantial and direct influence on the organization’s capacity to achieve an effective KM application. This second most influential independent variable accounts for the 49% of change that would occur in the efficient application of a KM initiative. This implies that an improvement of 0.488 units in an organization’s culture will lead to a change by one unit in the effective application of KM practice. This means that there is a positive correlation between the organizational culture of the DPF and the application of KM practice. This relationship implies that every improvement in the organizational culture of the DPF that affects a knowledge-friendly culture will lead to an improvement in the application of KM practice.

3. The training dimension came up as the third most influential independent variable. Surprisingly, it surpassed the influential strength of the ICT dimension, which a number of studies have identified as the most influential factor after organizational
culture and leadership. Training has a direct effect on the achievement of the effective application of KM in the DPF. According to this research’s findings, training is the third influential variable that explains 75% of the changes that would occur in the effectiveness of KM implementation. This implies that every increase by 0.749 units in the efficiency of the DPF training programs would achieve an improvement by one unit of the efficiency of the KM implementation. This means that there is a positive correlation between the training dimension and the application of KM practice at the DPF. Therefore, this relationship implies that every improvement in DPF training programs will lead to an improvement in the application of KM practice.

4. The ICTs result revealed a substantial and direct impact on the effective application of KM in the DPF. It is the least influential dimension of all the independent variables of this study. ICTs is the fourth independent variable in this study, and accounts for 37% of the changes that would occur in the effectiveness of KM implementation. This implies that if ICTs improves by 0.369 units, the effectiveness in the application of KM will improve by one unit, and show that there is a positive correlation between ICTs and effective KM implementation.

5. The social media usage results revealed a substantial and direct impact on the effective application of KM in the DPF. It is the fourth influential moderating variable of all the independent variables of this study. Social media use accounts for 42% of the changes that would occur in the effectiveness of KM implementation. This implies that if social media use improves by 0.416 units, the effectiveness in the application of KM will improve by one unit, and shows that there is a positive correlation between social media use and effective KM implementation.

6. The independent variables collectively have a substantial and direct influence on the
effectiveness of KM practice in the DPF. The amalgamation of all independent variables explains 85% of the change that it would obtain to achieve the efficient application of the KM initiative. This means that there is a positive correlation among all independent variables and dependent variables and effective KM practice.

7.1.2 The Advantages of the Proposed Framework

This section discusses the potential benefits of the framework to the DPF that may be followed if a decision to execute it becomes active as follows:

1. The proposed framework consists of four key dimensions that can support the DPF in its pursuit of an effective KM initiative. Those dimensions are: leadership style, organizational culture, ICTs and training. They were identified on the basis of a review of past research and interviews of personnel in the DPF KM Department. The DPF KM Department is responsible for implementing the organization’s KM initiative. It has the authority to decide to adopt the framework, rather than ‘reinvent the wheel’ by devising another framework, as the basis of its KM initiative. It is also the department perfectly placed to improve and develop it on the basis of findings, obstacles, etc. in the course of the implementation process.

2. The findings of this study suggest that the proper employment of this framework would ensure the enhanced effectiveness of the DPF KM application, and serve as a KM-initiative blueprint.

3. The research findings identified several weaknesses and strengths in the internal environment of the DPF. These identifications were based on the opinions of the research participants. The value of these findings is in their power to indicate that opportunities and threats can also be identified in the external environment of the organization, and can be addressed in the interest of the further development and improvement of the framework.
4. The framework measured the level of influence that every independent variable has on the application of KM practices. An assessment of the most influential dimensions in terms of their consequences would allow the decision makers to be aware of these dimensions, and to pay attention to each as required, fully cognisant of their likely impacts. Furthermore, this framework illuminates the interrelations of all variables, thereby indicating what is needed to maintain the balance between these dimensions, and in turn, maximise the effectiveness of the application of this framework.

5. This framework contains the possibility of extension to other sectors in the Arab context. Of course, it would have to be adapted to the different circumstances of those sectors.

7.1.3 Expected Problems during the Application of the Framework and the Proactive Reactions

The application of the proposed framework may encounter some ‘hiccups’ that will need attention when this framework is executed, so proactive-response strategies that help mitigate their detrimental effect are provided:

1. Because police work is by nature dynamic, the author suggests that this framework be implemented gradually, such that it meets the requirements of all the DPF departments.

2. Should the DPF employees not respond positively to the application process because they believe that there is no benefit, the framework will not yield the desired results. Therefore, the author suggests that the DPF establish an incentive system to reduce any tendency of resistance by introducing selected KM practices into the organization’s day-to-day activities.

3. Given the diverse nature of DPF employees, it is to be expected that there will be differences in their appreciation of the importance and advantages of this
4. KM practice is very likely to see slow uptake in the earlier stages of the framework’s activation, especially its knowledge-sharing requirement. This calls for the urgent need to establish a knowledge-leader capacity to pave the way for the creation of a knowledge-centred culture. A leader with this designation has an important role, for the DPF has many departments, so the introduction of a knowledge-sharing culture may be difficult at the beginning.

5. As noted earlier, trust is very critical in Arab culture, for that is the basis of all connections and relationships. Leaders therefore face the task of cultivating an attitude of openness and transparency that presumes trust. This is because where there is no trust, there is no knowledge exchange.

6. The *wasta* principle is to be expected to generate major ‘hiccups’ in the effective execution of the KM framework. For example, *wasta*-selected people may be sent to training courses rather than those best qualified for such training. This is very likely to have the obvious negative consequences for the chances of an efficient implementation of the KM program, and may yield unexpected outcomes.

7. Training programs may not achieve their assigned goals if departments do not plan them properly. Therefore, training needs should be analysed carefully, and aligned with the DPF KM initiative. There should also be a systematic approach to evaluating the outcomes of training courses.

8. Team culture may be experienced as a barrier to knowledge sharing. To avoid this, a systematic program should be constructed, with a clear view to praising the necessity of knowledge-sharing in police operations. Such a program would be an optimally useful part of pre-employment training.
In light of theoretical studies and the results that have been obtained from the field study, the author has formulated some recommendations that will help increase the effectiveness of the DPF KM application. Table 36 below outlines these recommendations and the mechanisms of their implementation, and identifies the authorities that would foresee the implementation process.

<table>
<thead>
<tr>
<th>The Recommendations</th>
<th>The Implementation Mechanisms</th>
<th>Competent Authority</th>
</tr>
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</table>
| There is a need to empower participation in decision making. | • Employees should become authorised to confidently do the things that come within their work assignments. This will encourage them to play an active role in developing and improving their work performance and work procedures.  
• A culture should be created in which mistakes are acceptable. It should displace the blame culture (as past studies have pointed out).  
• Employees should be involved in the search for better insights into work problems, in order for realistic situations to inform organizational KM objectives.  
• Encourage employees to contribute to organizational performance by stimulating innovation and creating new ideas through informal knowledge-sharing meetings.  
• Create a sense of belonging to the organization through a loyalty program that pays more attention to employees’ needs, and thereby strengthen the relationship between organization and employee. | Top Management, leaders and other-level managers. |
| Improve and develop employees’ skills and knowledge. | • Create a research and development (R&D) department that pursues the creation of new knowledge and solves work-related problems.  
• Prevent ‘brain drain’ by devising a succession plan for filling critical positions.  
• Develop a career plan of individuals (IDP) by linking employees’ work | Top Management, and the HR and Training departments. |
descriptions to the training courses that are relevant for them, and thus help them meet the key objectives of the organization.

- Frequently evaluate training outcomes to ensure that trainers have themselves received the training courses that advance organizational objectives.
- Improve the ICT infrastructure – with blogs, an e-library, a data warehouse, a community of practice and yellow pages for knowledge workers and professionals – to enhance knowledge-sharing practices.
- Publish the details of best-practice performances, and create forums that discuss lessons learned.
- Encourage the practical application of useful knowledge gained at training course and conferences with a system of benchmarking at the workplace.
- Send the best qualified workers to the right training courses even though their performances are optimally productive. Always avoid sending inadequately qualified personnel to training courses for reason alone that a department can spare them.
- Time should be systematically made available to employees for knowledge-sharing and self-education purposes.

<table>
<thead>
<tr>
<th>There is an urgent need to acquire transformational leaders and knowledge leaders.</th>
<th>A permanent campaign to seek out personnel with leadership qualities should be instituted.</th>
<th>Top management, HR, and the Training and KM departments.</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is a need to create a knowledge-friendly culture.</td>
<td>A Chief Knowledge Leader (CKO) or Knowledge Officer (KO) position should be created.</td>
<td>Top management, and the HR, KM and TQM Departments.</td>
</tr>
<tr>
<td></td>
<td>Increase awareness of the transformational leadership style by affording it recognition.</td>
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</table>
Apart from the contribution this research makes to the KM literature in general, it contributes specifically, through its case study of the DPF, to the understanding of KM in the Arab context and in the public organizations of the UAE. The research developed a framework as a guide for KM implementation in the public sector, with a specific focus on the DPF. The framework will help the DPF avoid the pitfalls that it identifies, and to focus on the KM-activating factors that achieve KM implementation successfully. The research attends to leadership style, organizational culture, ICT issues and training as the critical success factors in the KM initiative. The research findings reveal the level of influence in the DPF of each of these factors.

### Table 36: The Recommendations

<table>
<thead>
<tr>
<th>Recommendations</th>
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<tr>
<td>• Top management should inculcate the values and norms of the knowledge-centred culture.</td>
</tr>
<tr>
<td>• DPF should align reward and recognition with knowledge sharing.</td>
</tr>
<tr>
<td>• Create a blueprint of KM practice to enhance awareness of the KM initiative, and to ensure that everyone knows what is required for the successful fulfilment of their KM roles.</td>
</tr>
<tr>
<td>• Reward employees who volunteer to share their exceptional knowledge across departments to break the knowledge-hoarding culture.</td>
</tr>
<tr>
<td>• Improve organization facilities that encourage knowledge sharing. For example, provide convenient spaces for coffee breaks to give employees a comfortable place where they can discuss work issues and generate new ideas.</td>
</tr>
<tr>
<td>• Improve organizational structure to ease communication flows, both top-down and down-up.</td>
</tr>
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</table>

### 7.2 Practical Contributions

Apart from the contribution this research makes to the KM literature in general, it contributes specifically, through its case study of the DPF, to the understanding of KM in the Arab context and in the public organizations of the UAE. The research developed a framework as a guide for KM implementation in the public sector, with a specific focus on the DPF. The framework will help the DPF avoid the pitfalls that it identifies, and to focus on the KM-activating factors that achieve KM implementation successfully. The research attends to leadership style, organizational culture, ICT issues and training as the critical success factors in the KM initiative. The research findings reveal the level of influence in the DPF of each of these factors.
This study offers new insights into the existing research into KM in police organizations. It also outlines some practical ways through which organizations can ensure that the independent variables of a case study are determined satisfactorily. Useful insights into why KM is important in police organizations are also provided, alongside an indication of the challenges that police organizations face in the process of implementing KM. Ways in which these organizations can eliminate those challenges are explained in detail.

7.3 Implication for Police Top Management

The findings of this study offer useful insights into what police leaders must be aware of before they set out to implement KM initiatives in their organizations, especially in the Arab context. It is strongly recommended that before launching a KM initiative, its benefits for the organization be explained exhaustively to members. Training courses do this job best. Leaders and managers should be given this training before anyone else. Because of the critical role of leadership in Arab organizations, it is important that the support of top management be secured unequivocally.

As Seba, Rowley and Delbridge (2012) point out in their study of the DPF, the reliance on trust that permeates Arab culture is prominent in that organization. Leaders must therefore ensure that this culture of trust is not dissipated. Without it, knowledge sharing will not become operative, and a knowledge hoarding culture will develop. Seminars or workshops that address such issues are a good option for familiarising police personnel with KM objectives.
The findings of this study strongly commend the rise of transformational leadership in the implementation of the KM project. This is recommended not only to the DPF, but to all other police and public sector organizations in the Arab world. Management teams in police and other organizations have a role to play in identifying and elevating transformational leaders who show a capacity to facilitate KM processes.

Also, police organizations require the expertise of both current and retired leaders. The study shows that there is no mechanism in the DPF that is dedicated to affect the transfer of expertise and knowledge to new employees. Such a transfer requires the existence of a succession-planning model (perhaps a composition of programs or platforms) along which long-established employees can transfer their expertise to their juniors before they retire or leave to take employment elsewhere.

The prevailing organizational culture is the domain of managers and leaders. Their role is indispensable in shaping that culture such that it becomes supportive of KM applications. Fashioning an organizational culture may take some time and fostering a knowledge-friendly culture is particularly time consuming. A formally designated knowledge leader position can hurry it along. And it has to come into being for a KM application to have a context that can accommodate it successfully.

The DPF should be looking to establish a knowledge-sharing platform to enhance its members’ feel for the knowledge-sharing flow. Social media and communication tools such as video conferencing, community of practice, data warehousing, e-library and knowledge maps are productive in that area. The research findings regarding ICTs clearly imply the
need to equip the DPF departments with the necessary knowledge-based technologies and motivate workers to accept to use ICTs. The TAM model discussion clearly showed the importance of accepting ICTs which leads to social media use and consequently enhances the chances of KM success. Training that imparts expertise in their use is essential for successful implementation.

Many studies conducted in Dubai, such as that by Siddique (2012) in the private sector, discovered a lack of awareness of what KM is about. His study indicates that almost 50% of the UAE organizations are unaware of KM practices. Another study conducted in the public sector by Biygautane and Al-Yahya (2011) points out the vagueness of the KM concept for most employees. This is clear indication that any organization that intends to implement KM should be offering training programs that focus on the nature and importance of KM. It stands to reason that KM training is particularly important in police organizations, given the vast information load that police officers handle each day.

KM training can be integrated in the existing DPF programs for training police officers and in the training programs for new employees. However, these training programs do have to be efficient. A weakness of the present DPF training programs is that there is no evaluation of their outcomes, nor is there a proper analysis of training needs before these programs are designed. It is the managers’ role to ensure that training programs are effective, and geared to meet organizational objectives and the training needs of employees. This takes careful consideration at both the general planning level and the plan for individuals (IDP) level.

7.4 Implications for the DPF

The study findings indicate that employees require motivation to engage in self-education, and to share their knowledge with others. Managers are again the people best placed to be the motivators in both areas.
The participants in this study expressed both a respect for a relationship of cooperation between themselves and management, and the feeling that such a relationship does not obtain to a satisfactory level in their contexts of work. This infers that cooperation points to a two-way obligation – that of staff and of management – to work towards the building of cooperative relationships. Without it, all work, not least the process of introducing KM, proceeds at a disadvantage. The transformational leader is called for to play a key role in building a relationship of co-operation between management and employees, and among employees.

**7.5 Reflection on the Experience of Conducting this Research**

One of the modules delivered during the first year of the DBA program at Portsmouth University addressed reflection on experience. Its aim was to show how one can reflect on one’s own experiences. The author’s own DBA candidature yielded many invaluable experiences. One of the most important of them was the journey to the decision on what the research subject should be, and how the pursuit of its investigation might happen in accordance with the academic standards at the DBA level. Since the author is a member of the DPF, and a prerequisite of the DBA program is that the candidate conducts research in the professional field in which he is employed, it was appropriate to choose the DPF as the research context.

Conducting research in a police organization comes with many challenges. Police organizations are renowned for their culture of secrecy and centralised systems. Closely familiar with the DPF culture, the author was aware of the difficulties that might arise, hence another critical decision was about how to conduct a pilot study that will not disconcert the organization. Hence, the right strategy for data collection had to be decided.
The data collection strategy had to be planned carefully, and a sample should test the issues the researcher may encounter. The primary concern for the author was to ensure that the required data is accessible, and to identify the best way to collect it. Time constraints and the large sample pushed the author into using the quantitative approach as the data collection strategy, although the research made use also of the mixed method to gain a better understanding of the phenomena under investigation. This was because the collected data will eventually be interpreted qualitatively, and many researchers suggest the mixed method, as discussed in chapter 3.

After data collection, there was the matter of the data analysis procedure, the most critical part of this research, for the measurement tool in use was designed primarily for data collection. To assure the validity and reliability of the results, the author sought to become very well experienced with data analysis procedures. The deployment of the SPSS program was very knowledge enhancing for the author. This program was introduced at the early stage of the DBA program as a tool of statistical analysis. At the time, the author’s knowledge of statistical analysis was limited. However, the research activities proved to be a very instructive hands-on experience that enhanced the author’s confidence with conducting statistical analysis. Now the author is more confident to publish an article than ever before. More importantly, the guidance and feedback received from superiors was excellent. And the author learned a lot from supervisor guidance and support. Many more experiences might be mentioned; however, these were found to be the most useful. The lessons learned from them can be summarised as follows:

1) The decision about what the research topic should be is a very important one that should be made very carefully, and early in the research process, so that tracks can be beaten
directly to the ways of investigating its salient components. The research methodology has to be fully understood by the researcher, as does the data collection strategy and no less so the data analysis tool, such as the SPSS program.

2) Time has to be managed carefully. For the DBA, work experience is imperative, and is stipulated by the DBA program as a perquisite. That was the built-in constraint which underlined decisions about the research sample, its size and its best source in a context the researcher knew well, and therefore, knew it to be a context in which conducting research is inherently difficult. The good lesson learnt here was that a difficult context can be tamed, given the firm intention to tame it.

3) Sources and other references have to be kept up to date, especially for business and management studies, because thinking changes. It was easy enough to ascertain that it does. Less easy was the task of revising one’s conclusions, and hence the arguments that constructed them, to move beyond old thinking and insert the new.

7.6 Limitations of the Research

It is important to concede that the scope of this research was limited to one police organization, and therefore, the findings of this study may not be applicable in total to other police organizations, nor to other public organizations. Caution has to be exercised when the generalisations of this research are extended beyond its specific scope: they will not fit all of the many public-sector institutions of Arab countries, nor even all those of the UAE itself. Another limitation which needed to be considered while addressing Arab culture is its impact on knowledge sharing. Although this has been discussed by other authors like Esia and Skok (2014) and Yeo and Gold (2014), there is still a dearth of empirical work.
The author could not expand the research-sample size because of time constraints. And, as already noted, obtaining the required data from an Arab public-sector organization has intrinsic difficulties. The author knew that some of the prospective research participants would turn reluctant once they find out that there is a questionnaire to be filled out which is not of direct benefit to them.

KM literature is not limited to the factors selected for this study as influencers. Access to the relevant data in a police organization is problematic. Had the author not been a senior member of the subject organization, the problem of access to data could not have been surmounted.

7.7 Further Research
Further research could investigate public-sector organizations in the Arab setting through the lenses of other critical influencers. There are many different police organizations in the UAE, thus a similar study can be conducted in those. Future research could look at other dimensions suggested in the KM literature, such as ‘trust’, ‘motivation’ and ‘reward system’. Future research in the UAE and other Arab countries may take the form case-studies which look at police organizational culture in depth. To gain a comprehensive understanding of the phenomenon under investigation, a case study is the agile strategy. As Yin (2009) suggests, case studies are the appropriate approaches to investigating a contemporary real-life phenomenon. Finally, similar studies with a larger sample across all the Gulf countries’ police organizations would allow for stronger generalizations to be drawn.

7.8 Conclusion
The literature reviewed and the findings of the field study reveal that KM is essential in police organizations. The police handle numerous criminal cases, and in each, a vast body
of information is gathered, and the knowledge that informs operations is necessarily cumulative. The police depend on knowledge that accumulates in order to solve crime cases. Thus, police officers require a fast, efficient and reliable way of obtaining the right knowledge at the right time. The process of implementing KM in an organization has various enablers and barriers. This study considered the roles of leadership style, organizational culture, ICTs and training in the KM application. In addition, it analysed the influence of the combination of the four dimensions of the KM application. A field study was conducted in the DPF to investigate the level of influence of each variable on the KM application. The findings of the field study indicate that all the independent variables considered in the research correlate strongly with the KM application. However, ‘leadership style’ accounts for the second highest percentage of variations in it. The five independent variables, observed in the DPF context, have their own strong and weak points. Even so, ‘ICTs’ recorded more weaknesses relative to other independent variables. In fact, most of the responses that address ICTs were negative. The DPF management team has a significant role to play in enhancing the organization’s KM efficiency. The findings of this study indicate the relationships among all the independent variables, and the KM application is positive. This means that the DPF can improve KM practice and knowledge-sharing by eliminating the identified weaknesses of each independent variable. In addition, the results of this study indicate that a combination of all the independent variables has a significant influence on the KM application. This means that the DPF can achieve better results in its KM application by developing all the independent variables simultaneously. It can do this also by empowering staff members to share the responsibility and authority of implementing KM. In most cases, KM is allocated to a few individuals who may be overwhelmed by the task. The leadership team in the DPF should improve the organization’s intellectual base by offering rigorous training to its employees. The results of the field study indicate that there is no constant evaluation of KM training programs, nor
is there any method for determining the learning needs of employees. Thus, the process of training the DPF staff members should begin with an analysis of actual training needs and programs to determine the areas that require improvement and development. The DPF can enhance its efficiency in the KM application by giving prominence to transformational and knowledge leaders. Both styles of leadership are crucial in ensuring that employees have knowledge-sharing role models to emulate. Transformational leadership will also ensure that other enablers of KM are established in the organization. Participants in this study highlighted the need for DPF leaders to hold regular meetings and forums that give employees an opportunity to share their knowledge. A supportive organizational culture is necessary when implementing KM. Thus, the DPF management team should facilitate the development of positive values among employees. The DPF ICTs requires more development and an acceptance, as indicated by the fact that it recorded the weakest results in the field study. Investing in knowledge-based technology such as social media will simplify the process of creating and sharing knowledge more effectively in the DPF.
REFERENCES


## FORM UPR16

### Research Ethics Review Checklist

*Please complete and return the form to Research Section, Quality Management Division, Academic Registry, University House, with your thesis, prior to examination*

<table>
<thead>
<tr>
<th>Postgraduate Research Student (PGRS) Information</th>
<th>Student ID: 378815</th>
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<tbody>
<tr>
<td>Student Name: Abdullah Busenad</td>
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<tr>
<td>Department: Department of Strategy and Business Systems, Business school</td>
<td></td>
</tr>
<tr>
<td>First Supervisor: Dr Christine Welch</td>
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<td>Start Date: Oct/2006/2007</td>
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### Documentation of Ethics Procedures

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<th>Study Mode and Route</th>
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<th>Full-time</th>
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<th>MD</th>
<th>PhD</th>
<th>Integrated Doctorate</th>
<th>(NewRoute)</th>
<th>Prof Doc (PD)</th>
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| Title of Thesis: | Knowledge Management in the Dubai Police force |

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<tr>
<th>Thesis Word Count:</th>
<th>Approximately 67000</th>
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<td>(excluding ancillary data)</td>
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If you are unsure about any of the following, please contact the local representative on your Faculty Ethics Committee for advice. Please note that it is your responsibility to follow the University’s Ethics Policy and any relevant University, academic or professional guidelines in the conduct of your study.

Although the Ethics Committee may have given your study a favourable opinion, the final responsibility for the ethical conduct of this work lies with the researcher(s).

UKRIO Finished Research Checklist:

(If you would like to know more about the checklist, please see your Faculty or Departmental Ethics Committee rep or see the online version of the full checklist at: http://www.ukrio.org/what-we-do/code-of-practice-for-research/)

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<tr>
<td>a) Have all of your research and findings been reported accurately, honestly and within a reasonable time frame?</td>
<td>YES</td>
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<tr>
<td>b) Have all contributions to knowledge been acknowledged?</td>
<td>YES</td>
</tr>
<tr>
<td>c) Have you complied with all agreements relating to intellectual property, publication and authorship?</td>
<td>YES</td>
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<td><strong>d)</strong> Has your research data been retained in a secure and accessible form and will it remain so for the required duration?</td>
<td><strong>YES</strong></td>
</tr>
<tr>
<td><strong>e)</strong> Does your research comply with all legal, ethical, and contractual requirements?</td>
<td><strong>YES</strong></td>
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**Student Statement:**

I have considered the ethical dimensions of the above named research project, and have successfully obtained the necessary ethical approval(s)

**Ethical review number(s) from Faculty Ethics Committee (or from NRES/SCREC):**

Ethics application ref E134

**Signed:**

(Student) Abdullah Busenad

**Date:** 13/09/13
If you have *not* submitted your work for ethical review, and/or you have answered ‘No’ to one or more of questions a) to e), please explain why this is so:

<table>
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<th>Signed: (Student) Abdullah Busenad</th>
<th>Date: 13/09/13</th>
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N/A

*Delete as appropriate*
Ethical Review Checklist – Staff and Doctoral Students

This checklist should be completed by the researcher (PhD students to have DoS check) and sent to Sharman Rogers who will coordinate Ethics Committee scrutiny.

No primary data collection can be undertaken before the supervisor and/or Ethics Committee has given approval.

If, following review of this checklist, amendments to the proposals are agreed to be necessary, the researcher must provide Sharman with an amended version for scrutiny.

What are the objectives of the research project?

The aims of the research project centres on investigating KM in the context of Dubai police organization.

The following are the objectives of the study:

- To understand the existing KM initiatives in the Dubai Police.
- To identify the problems related to the implantation of KM in the Dubai Police.
- To propose a framework which can improve KM implementation in the Dubai Police.

Does the research involve NHS patients, resources or staff? YES / NO (please circle).

If YES, it is likely that full ethical review must be obtained from the NHS process before the research can start.

NO

Do you intend to collect primary data from human subjects or data that are identifiable with individuals? (This includes, for example, questionnaires and interviews.) YES / NO (please circle)

If you do not intend to collect such primary data then please go to question 14.

If you do intend to collect such primary data then please respond to ALL the questions 4 through 13. If you feel a question does not apply then please respond with n/a (for not applicable).

YES
What is the *purpose* of the primary data in the dissertation / research project?

This study utilized primary data to enable the author to conduct an investigation of the nature and mechanics of the KM initiative in the Dubai Police Force. The primary data was used to enable the author to reflect on the extent to which the KM initiative is succeeding to achieve the transfer of knowledge to where it is needed, that is, to the on-ground (frontline) police personnel, and, as far as possible, to identify the mechanism of the transfer.

What is/are the *survey population(s)*?

The survey necessarily encompassed executive personnel from the major general departments in direct contact with on-ground police officers: the General Department of Operations, the General Department of E-Services, the General Department of Forensic Science and Criminology, the General department of Airport Security, and the General Department of Anti-Narcotics. It had also to encompass the on-ground officers of all police stations, and final-year students of the Police Academy. At least one woman in all these categories, and more where available, was also thought necessary.

How big is the *sample* for each of the survey populations and how was this sample arrived at?

Of the executive personnel of the Departments listed at 5 (above) 14 responded to the researcher’s letter seeking their cooperation. Although sampling design is advisable when the population is greater than 100, the researcher concluded that, given the fact that the population in this case is the executive of a security service, it was not practicable to seek the level of access to it that sampling would require. The Police Academy sample was the entirety (42) of the graduating class of 2008 in the graduate course in law and police sciences. This sample was considered appropriate as an entirety because of its unique, even and up-to-the-minute instruction in (inter alia) KM. All on-ground officers of all police stations, an indeterminate number, were a chosen sample to enable the researcher to form a judgment about whether these officers are aware of KM on the level that the other two samples presume them to be.
How will respondents be *selected and recruited*?

The researcher purposively selected, on the strength of interviews, five respondents from the executives of the Dubai Police Departments. These officials were ascertained by the researcher to be the most knowledgeable about knowledge management and the way it is applied. The respondents were selected by invitation and a follow-up formal letter of inclusion which solicited their agreement to participate in the study.

Random sampling was used to select respondents form the Police Academy. It was presumed safe to use this probability method, given that the subjects had all received the same legal training, and that the questionnaire submitted to them probed that training only vis-à-vis its KM content. From this population, 11 respondents were selected by systematic sampling in which every fourth was selected from the list of population members. The respondents were notified of their selection by letter, and asked for their confirmation that they are prepared to participate in the study.

The on-ground (police station) officers were selected on the ‘convenience sampling’ non-probability method. Since the purpose of their participation in the study is to monitor their perceptions of KM in practice against that of the other two samples’ perceptions of it, an approximation of what actually is the case is sufficient datum for the purposes of this study. All initial respondents (34) were selected. Their selection was communicated to each by a letter in which their participation was also invited.

What steps are proposed to ensure that the requirements of *informed consent* will be met for those taking part in the research? If an Information Sheet for participants is to be used, please attach it to this form. If not, please explain how you will be able to demonstrate that informed consent has been gained from participants.
The researcher scheduled personal interviews with each prospective participant (PP). These interviews were held at the time and place appointed by the PP.

After introducing himself and verifying his identity and his place of study, and giving the PP a card that contained his contact details, the researcher described the nature of the research program, and responded to the PP’s questions about it. The researcher then explained what would be expected of the PP in terms of commitment of time, filling in forms, etc.

The researcher assured the PP that all information she/he provides will be confidential, and that his/her name and other personal details will not be published in any form, nor communicated to any other person. The researcher then handed the PP the following written statement, signed by him and witnessed by a solicitor of a well known Dubai law firm:

I, …………………………………………, a student at the University of Portsmouth, conducting research into knowledge management in the Dubai Police Force, solemnly undertake that I shall not publish or otherwise make known the name or other form of identity of persons who participate in this research program, and that I shall destroy all participants’ data upon my summation of the procedures and results of this research to my University. The participant is free to withdraw consent at any time.

SIGNATURE ………………………………………………………………………

SIGNATURE OF WITNESS

……………………………………………………………………
Having again responded to queries about this point, the researcher asked the PP if he/she is happy to be a participant in the research program.

To avoid using more of the PP’s time than necessary, the researcher gave the PP:

(i) the questionnaire to be completed and returned;
(ii) the consent form, with the request that the PP return it by a given date, which is recorded on that form.

The researcher, having already given the PP his contact details, invited the PP to feel free to contact him if she/he finds any part of the questionnaire unclear, or with any other query. The researcher also asked for permission to contact the PP once he/she has returned the consent form. (The consent form follows.)

CONSENT FORM

PARTICIPATION IN A RESEARCH PROGRAM CONCERNING KNOWLEDGE MANAGEMENT IN THE DUBAI POLICE FORCE

1. I, .................................................., met the researcher ................................., of xxxxx University on date ............., at place ................................, at time..........................

2. The researcher has explained the nature of his research program to me.

3. I understand the nature of that research program.

4. I agree to participate in that research program.

5. I am aware that I can discontinue my participation at any time, should I chose to do so.

6. I trust that no information I provide will be attributed to me in any forum, be it public or private.

7. I shall return this form, completed by me, to the researcher by date ............ by inserting it into the stamped and addressed envelope with which he provided me.

8. I shall return the Survey Questionnaire, of which the researcher has given me a copy, by date......................, in the stamped, addressed envelope with which he provided me.
How will data be collected from each of the sample groups?

All interview notes will be in the possession of the researcher. There is no concern, therefore, about their collection. Arrangements have been made in the consent form (see 8, above), for the collection of the first completed questionnaire form: the researcher has personally given the PP the stamped and addressed envelope in which the consent form and questionnaire are to be deposited, then posted.

How will data be stored and what will happen to the data at the end of the research?

Data will be stored in three formats (DVD, personal computer hard drive and paper) with the researcher. Since the data exists for the purposes of the researcher’s thesis only, all of the collected data will be destroyed after the thesis is examined. The researcher has made a written commitment (see 5) to this effect. The DVD will be rendered unusable by physical destruction with a suitable tool, the data will be deleted from the researcher’s personal computer’s hard drive, and the paper record will be shredded.

How will confidentiality be assured for respondents?

No-one has access to the research data records except the researcher. They are on the researcher’s computer as password-protected files, and the DVD and paper records are under lock and key in the researcher’s private premises. And most importantly, the researcher never discusses what any participant says with a third person. The latter is an ethical obligation.
What steps are proposed to safeguard the anonymity of the respondents?

Neither the questionnaires nor the written records of interviews carry the participants’ names. They are PPs until after the receipt of their consent forms, in the same envelope as the first questionnaire (see 8, above), and become participants only upon the researcher’s receipt of their consent forms. The researcher at that point attributes a number (1 – 50) to each participant, keeping a record of the parity of number and participant to himself. (That record will be among the destroyed documents upon the completion of the thesis process.) Upon receipt of any further documents from the participant, those documents will be marked with the number attributed to him/her. Where a participant is referred to in the thesis, reference will be to P1, P15, etc.

Are there any risks (physical or other, including reputational) to respondents that may result from taking part in this research?  YES / NO (please circle).

If YES, please specify and state what measures are proposed to deal with these risks.

NO

Are there any risks (physical or other, including reputational) to the researcher or to the University that may result from conducting this research?  YES / NO (please circle).

If YES, please specify and state what measures are proposed to manage these risks.

NO

Will any data be obtained from a company or other organization. YES / NO (please circle).

For example, information provided by an employer or its employees.

If NO, then please go to question 18.

YES

What steps are proposed to ensure that the requirements of informed consent will be met for that organization? How will confidentiality be assured for the organization?

---

1 Risk evaluation should take account of the broad liberty of expression provided by the principle of academic freedom. The university’s conduct with respect to academic freedom is set out in section 9.2 of the Articles of Government and its commitment to academic freedom is in section 1.2 of the Strategic Plan 2004-2008.
Letter of confidentiality will be introduced (with written consent and approval), and allowing them the right to withdraw if they change their mind later. (See 8, above) same procedures will be used for organization.

Does the organization have its own ethics procedure relating to the research you intend to carry out?  YES / NO (please circle).

If YES, the University will require written evidence from the organization that they have approved the research.

NO

Will the proposed research involve any of the following (please put a √ next to ‘yes’ or ‘no’; consult your supervisor if you are unsure):

- Vulnerable groups (e.g. children)? YES ☐ NO ☒ X
- Particularly sensitive topics? YES ☐ NO ☒ X
- Access to respondents via ‘gatekeepers’? YES ☐ NO ☒ X
- Use of deception? YES ☐ NO ☒ X
- Access to confidential personal data? YES ☐ NO ☒ X
- Psychological stress, anxiety etc? YES ☐ NO ☒ X
- Intrusive interventions? YES ☐ NO ☒ X

Are there any other ethical issues that may arise from the proposed research?

NO

Details of applicant

The member of staff undertaking the research should sign and date the application, and submit it directly to the Ethics Committee. However, where the researcher is a supervised PhD candidate, the signature of the Director of Studies is also required prior to this form being submitted.
Approval by Ethics Committee

I/We grant Ethical Approval

____________________________________
FREC

____________________________________
Date

AMENDMENTS

If you need to make changes please ensure you have permission before the primary data collection. If there are major changes, fill in a new form if that will make it easier for everyone. If there are minor changes then fill in the amendments (next page) and get them signed before the primary data collection begins.
### CHANGES TO ETHICS PERMISSION

**VERSION:** ____

Please describe the nature of the change and impact on ethics:

<table>
<thead>
<tr>
<th>Please print the name of:</th>
<th>I/We grant Ethical Approval</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Researcher</strong></td>
<td><strong>FREC</strong></td>
</tr>
<tr>
<td><strong>Signed:</strong></td>
<td>(Signed)</td>
</tr>
<tr>
<td><strong>Date</strong></td>
<td><strong>Date</strong></td>
</tr>
</tbody>
</table>

(please cut and paste the next section, together with the heading at the top of this page, as many times as required)

**VERSION:** ____

Please describe the nature of the change and impact on ethics:
APPENDIX B: The Means of Collecting Demographic Information about PDF Personnel for Use in the Field Study

This part of the questionnaire intends to collect some demographic information so please complete the following by ticking (√) on the appropriate response by selecting one answer only.

### 1-Dubai Police Departments

<table>
<thead>
<tr>
<th>Police stations ( )</th>
<th>General Department of Organization Protective Security and Emergency ( )</th>
<th>The General Department of Criminal Investigation ( )</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Department of Finance ( )</td>
<td>General Department of Fat Science ( )</td>
<td>Decision Support Centre ( )</td>
</tr>
<tr>
<td>General Department of Administrative Affairs ( )</td>
<td>The Dubai Police Academy ( )</td>
<td>General Department of Airports Security ( )</td>
</tr>
<tr>
<td>General Department of Community Services ( )</td>
<td>Commandants Organizational Office ( )</td>
<td>General Department of Human Resources ( )</td>
</tr>
<tr>
<td>General Department of Traffic ( )</td>
<td>General Department of Services and Supplies ( )</td>
<td>The General Department of Operations ( )</td>
</tr>
<tr>
<td>General Department of Total Quality ( )</td>
<td>General Department of Punitive Establishment ( )</td>
<td>General Department of E-Services ( )</td>
</tr>
</tbody>
</table>

### 2-AGE

- Less than 30 ( )
- Between 30 and 40 ( )
- Between 40 and 50 ( )
- Over 50 ( )

### 3-GENDER

- Male ( )
- Female ( )

### 4- NATIONALITY

- UAE ( )
- Arab ( )
- Arabian Gulf GCC ( )
### 5- RANK

<table>
<thead>
<tr>
<th>Rank</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major and above</td>
<td>(          )</td>
</tr>
<tr>
<td>Lieutenant - Captain</td>
<td>(          )</td>
</tr>
<tr>
<td>Sergeant – 1st, Warrant officer</td>
<td>(          )</td>
</tr>
<tr>
<td>Policeman- 1st, Corporal</td>
<td>(          )</td>
</tr>
<tr>
<td>Other</td>
<td>(          )</td>
</tr>
</tbody>
</table>

### 6- ACADEMIC QUALIFICATION

<table>
<thead>
<tr>
<th>Qualification</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postgraduate</td>
<td>(          )</td>
</tr>
<tr>
<td>Graduate</td>
<td>(          )</td>
</tr>
<tr>
<td>Secondary School Completed</td>
<td>(          )</td>
</tr>
<tr>
<td>Secondary School Not Completed</td>
<td>(          )</td>
</tr>
<tr>
<td>Other</td>
<td>(          )</td>
</tr>
</tbody>
</table>

### 7- WORK EXPERIENCE IN YEARS

<table>
<thead>
<tr>
<th>Experience in Years</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 5</td>
<td>(          )</td>
</tr>
<tr>
<td>5 – 10</td>
<td>(          )</td>
</tr>
<tr>
<td>10 – 15</td>
<td>(          )</td>
</tr>
<tr>
<td>More than 15</td>
<td>(          )</td>
</tr>
</tbody>
</table>
APPENDIX C: The Phrases of the Questionnaire and their Scoring System

The purpose of this part is to collect participants’ opinion on the five dimensions that are listed subsequently, leadership style, organizational culture, information and communication technologies, training and knowledge management elements within the DPF. The questionnaire (the 44 phrases of the survey list and the dimensions they address) is designed for measurement on the Likert scale, which allocates scores to answers on a descending scale of 5-1:

<table>
<thead>
<tr>
<th>AGREEMENT SCALE</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEAN OF SCORES</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

Use the given scale to indicate the extent of your opinion with the statements listed below for each dimension.

The first set of responses relating to leadership style was evoked by Phrases No. 1-10. This dimension measures leadership style practice in Dubai police.

<table>
<thead>
<tr>
<th>Serial</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>My boss has a clear vision for the future.</td>
</tr>
<tr>
<td>2</td>
<td>My boss consistently upholds moral values, such as justice and decency.</td>
</tr>
<tr>
<td>3</td>
<td>Mutual respect is the bases of the relationship between the bosses and the staff.</td>
</tr>
<tr>
<td>4</td>
<td>My boss has the ability to handle complicated situations, such as resolve conflicts and problems in the workplace.</td>
</tr>
<tr>
<td>5</td>
<td>My boss has an ability to communicate positively with people at all levels.</td>
</tr>
<tr>
<td>6</td>
<td>There is dedicated personnel who lead and support KM practice.</td>
</tr>
<tr>
<td>7</td>
<td>My boss promotes cooperation and teamwork as a means of improving efficiency and performance.</td>
</tr>
</tbody>
</table>
The second set of responses relating to organizational culture is evoked by Phrases No. 10-20. This dimension measures the organizational culture of the Dubai Police Force.

<table>
<thead>
<tr>
<th>Serial</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>My boss is constantly interested in improving skills and meeting the needs of the staff.</td>
</tr>
<tr>
<td>9</td>
<td>My boss rewards the excellent or distinguished performances of employees regularly and instantly.</td>
</tr>
<tr>
<td>10</td>
<td>My boss encourages empowerment and participation in decision making.</td>
</tr>
<tr>
<td>11</td>
<td>Organization objectives are clear and understandable to everyone.</td>
</tr>
<tr>
<td>12</td>
<td>The organization immediately reacts to influencing changes that occur in the internal or external environment.</td>
</tr>
<tr>
<td>13</td>
<td>Cooperation and teamwork characterise the organization’s way of achieving the overall objectives.</td>
</tr>
<tr>
<td>14</td>
<td>The employee’s shares expertise and knowledge conscientiously on the basis of trust.</td>
</tr>
<tr>
<td>15</td>
<td>There are aligned reward and recognition with knowledge sharing.</td>
</tr>
<tr>
<td>16</td>
<td>There is interest in and welcome for any developmental program introduced into the organization, such as quality project, knowledge management.</td>
</tr>
<tr>
<td>17</td>
<td>The top management shows commitment toward KM initiatives.</td>
</tr>
<tr>
<td>18</td>
<td>Everyone knows what is required to achieve success in terms of KM roles and responsibilities.</td>
</tr>
<tr>
<td>19</td>
<td>Specific values and norms are observed when getting the job done.</td>
</tr>
<tr>
<td>20</td>
<td>The organization has a code of ethics that assists the understanding of the difference between 'right' and 'wrong'.</td>
</tr>
</tbody>
</table>
The third set of responses relating to information and communication technologies is evoked by Phrases No. 21-26. This dimension measures the role of information and communication technology (ICTs) in the Dubai Police Force.

<table>
<thead>
<tr>
<th>Serial</th>
<th>Items</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>Supportive communication facilities are available (such as web-blogs, online community of practice, video conferencing, Data warehousing) to facilitate the exchange of experiences and knowledge.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>The organization makes available, to its employees, codified knowledge, and the best practices.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>There is a systematic process in place that collects and classifies information, knowledge and experience from employees, and makes these available for use by organization members.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Anyone can retrieve codified knowledge at any given time and with the required accuracy.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Data, information and knowledge items are updated constantly and invalid items are eliminated.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>The organization has an electronic library in which information and knowledge items are classified and indexed according to areas of specialisation.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The fourth set of responses relating to effectiveness of training is evoked by Phrases No. 27-34. This dimension measures the effectiveness of training practice in the Dubai Police Force.

<table>
<thead>
<tr>
<th>Serial</th>
<th>Items</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>27</td>
<td>There is a methodology to determine the actual training needs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>There is an appraisal system for the workers’ training outcome.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>There is constant consultation among departments of the organization to identify and plan training needs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>There is diversity and plurality in the training programs to meet the needs of the organization.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>--------------------------------------------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>New employees are trained and qualified before starting work.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>Former and present employees who possess exceptional knowledge are invited to conduct training courses or deliver lectures or to act as consultants.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>There is constant encouragement and support for employees to pursue their own further education.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>The organization gives its employee’s opportunities to apply in their place of work the skills and knowledge they acquired in training courses and elsewhere.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The first set of responses relating to availability of the elements of the application of Knowledge Management is evoked by Phrases No. 35-44. This dimension measures leadership style practice in the Dubai Police Force.

<table>
<thead>
<tr>
<th>Serial</th>
<th>Items</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>35</td>
<td>The organization has a significant interest in developing knowledge worker knowledge to enhance its knowledge assets.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>There is a noticeable investment in terms of knowledge infrastructure that facilitate knowledge sharing and exchange.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>37</td>
<td>There is a user-friendly knowledge map (yellow pages) that locates the experts in the organization.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>38</td>
<td>Periodic workshops are held for the purpose of stimulating innovation, creativity, and to generate new ideas for solving problems.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>39</td>
<td>The organization has a knowledge-based database that is used as a guide in the process of decision-making.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>The organization is doing its best to reduce employees’ turnover, and is particularly intent on retaining employees with exceptional knowledge and distinctive experience.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>41</td>
<td>The organization records and discusses experiences of success and failure and uses them as a learning tool for educating its employees.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>42</td>
<td>There is regular evaluation and review, with a view to their continuous improvement, of work methods and techniques.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>43</td>
<td>There is a systematic way of transferring the experience and knowledge from superiors to subordinates.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>44</td>
<td>The organization uses the job rotation technique as a training mechanism that gives its employees an opportunity to learn all necessary skills.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Thank for your time and participation in the completion of this questionnaire.
Note: This questionnaire was translated from English to Arabic because most participants do not speak English. Also, by law, all documents circulated in the government institutions of Dubai should be in Arabic.
Appendix D: Samples of Interviews

Samples of interviews that were conducted during the pilot study to understand the problems and challenges that are facing knowledge management implementation. The interviews conducted with participants from KM department in DPF.

Interview with KM department manager

Interviewer: Good morning. Based on our telephone conversation I am here to discuss KM practice in DPF and the issues or challenges that you are facing during implementation of KM. First can you please introduce yourself?

Interviewee: As I told you before, I am the manager of the KM department in DPF. I have been working for this department since it’s established. My main role here is to lead KM initiative in DPF and supervise the continuous improvement.

Interviewer: Could you briefly introduce your department responsibility?

Interviewee: KM department is established in 2005. The aim of this department is to plan and implement KM strategies in DFP. Moreover, KM department responsible for overall KM practice and assessment within DPF.

Interviewer: Can you brief me about KM project?

Interviewee: At the time when KM department was established we conducted gap analysis to understand from where we can proceed and what we need for KM implementation.

Interviewer: What did you conclude from that gap analysis?

Interviewee: We found so many challenges that needs to be tackled in our implementation plan if we have to implement KM successfully.

Interviewer: Can you give some examples of such challenges?

Interviewee: For example, during our investigation with different departments issues that are highlighted such as, Importance of leadership that support knowledge sharing between department and within. Other participant complaint about KM concept still vague to them also we had been asked to conduct a training program to clarify difference between knowledge and information and how it can be exchanged in a proper way and what is the right channels for knowledge sharing and how we can practice knowledge management smoothly. In addition to this, we found that some departments such as crime investigation don’t share knowledge or information with non-related department. Crime investigation sections compete with each other rather than cooperation. When we asked some participants from crime investigation department why don’t you share knowledge or information freely with other departments? The answer was
that we have an annual target to achieve. That’s way it is important to us to focus on our own target instead of sharing our work with others by sharing some of our key performance indicators (KPIs) with other departments. Also sometimes we strictly share information or knowledge with others because of secrecy and case sensitiveness.

Interviewer: what other issues you have come across that can be added?

Interviewee: we discovered issues such as more tendency toward knowledge sharing in the form of face - to - face and on the other hand very limited usage of technology such as social media like intranet to share knowledge. It is noticed that knowledge sharing practice is limited to small circles. This is because of trust issue and willingness to keep such knowledge within a small group. Another issue observed also like “there is no time to share knowledge because of work commitments and lack of support”.

Interviewer: Do you have other issues that can be added?

Interviewee: Generally speaking these are the main problems or challenges we need to tackle during KM implementation.

Interviewer: Thank you for your time.

Interview with researcher in KM department

Interviewer: can you please introduce yourself?

Interviewee: I am working in KM department since its establishment in 2005. My work is to conduct a survey and interviews as a researcher with different departments in DPF to understand problems that are related to knowledge management practice and therefore, report the findings in the form of recommendations and suggestions to improve KM practice in DPF.

Interviewer: If I ask what kind of problems do you think are most critical for KM implementation what would be your answer?

Interviewee: In general I can say that there are two types of problems or challenges founded in our investigation. Part of these problems are major and the others are minor in terms of their effects on KM implementation.

Interviewer: Could you describe the challenges or problems that you had encountered during your investigation?

Interviewee: Sure, majorly we found lack of support from senior officers to their subordinates to exchange knowledge and information with other departments, also they don’t believe in sharing knowledge through technology. According to them knowledge can be transferred through meeting and shadowing program, rather than exchanging reports and practice through electronic channels.
Interviewer: Thank you for your time and clarification.

<table>
<thead>
<tr>
<th>Major categories</th>
<th>Associated concepts</th>
</tr>
</thead>
</table>
| Leadership style           | Importance of leadership that support knowledge sharing  
there is no time to share knowledge because of work commitments and lack of support  
we found lack of support from senior officers to their subordinates to exchange knowledge and information with other departments |
| Organizational culture     | how we can practice knowledge management smoothly  
crime investigation don’t share knowledge or information with non-related department  
Crime investigation sections compete with each other rather than cooperation  
we strictly share information or knowledge with others because of secrecy and case sensitiveness  
tendency toward knowledge sharing in the form of face - to – face  
knowledge sharing practice is limited to small circles  
trust issue and willingness to keep such knowledge within a small group |
| Training                   | complaint about KM concept still vague  
we had been asked to conduct a training program to clarify difference between knowledge and information a  
knowledge can be transferred through meeting and shadowing program |
| ICTs acceptance            | how it can be exchanged in a proper way and what is the right channels for knowledge sharing  
limited usage of technology such as social media like intranet to share knowledge  
also they don’t believe in sharing knowledge through technology  
rather than exchanging reports and practice through electronic channels. |