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The impact of knowledge management processes on organisational performance: The case of the airline industry

Mohammed Tubigi Sarmad Alshawi

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Mohammed Tubigi and Sarmad Alshawi
Business School, Brunel University, London, UK

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Abstract

Purpose – The purpose of this paper is to evaluate knowledge management (KM) processes and to investigate their impact on organisational performance (OP) within the context of the airline industry (AI).

Design/methodology/approach – An inductive and deductive qualitative approach was used based on a preliminary study. A pilot study was conducted which involved the use of interviews as a primary data collection method. Content analysis was used to extract and analyse themes from the data.

Findings – The study showed that knowledge usage is the most influential aspect of KM in terms of the impact on OP. Moreover, the study revealed that knowledge transfer is a common KM process employed by organisations.

Research limitations/implications – This study outlined the findings of a pilot study which aimed to test a proposed conceptual model and to provide an initial understanding of the interrelationships between KM processes and OP. To this end, a number of interviews were conducted in order to consolidate a conceptual model. As such, the nature of this preliminary study imposed some time and context limitations. These limitations will be dealt within later stages of the research journey.

Originality/value – The value of the study is generated from the extensive review of the literature it provided which enhanced proposing a conceptual model that was initially tested with the aim of defining an appropriate KM processes within a unique and yet untested context as well as describing the impact of these processes on OP. Determination of KM processes is expected to set a guideline for future research in the AI.

Keywords Knowledge management, Organizational performance, Knowledge management processes, Pilot study

Paper type Research paper

1. Introduction

The current economic climate brings a range of difficulties and challenges for organisations, such as growing competition between organisations as a result of continually increasing globalisation. This situation is such that new management concepts and paradigms, i.e. knowledge management (KM), are being recognised as important tools for improving the efficiency and success of organisations (Lee and Choi, 2003).

Most studies relating to KM have considered organisational knowledge as a significant asset for gaining competitive advantage and as a significant contributor to the success and survival of any organisation within a highly competitive business environment (e.g. Zack *et al.*, 2009; Marques and Simon, 2006; Hasan and Al-Hawari, 2003; Claycomb *et al.*, 2002). As such, rigorous and intensive research of some aspects of KM (mainly KM processes) is viewed as crucial (Tubigi and Alshawi, 2012). Such research is warranted as it presents an opportunity better understand effective KM processes and in-turn improve organisational performance (OP). Suitable KM and

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application can assist organisations to be more creative, intelligent and better able to adapt to an ever changing business climate (Wong and Aspinwall, 2004).

Indeed, KM can be seen as a strategy that assists organisations to use knowledge to envisage, make and control the whole decision-making process (Kongpichayanond, 2009). Furthermore, enhancing and cultivating the individual knowledge of members of an organisation is a clear strategy for developing a continuous organisational learning that can lead to better performance (Nonaka, 1998; O'Dell and Grayson, 1998). However, despite the potential benefits that can be gained from utilising KM in the workplace, and the relatively large number of studies relating to the KM concept, there is a lack of research that analyses the ways in which OP can be influenced by KM processes within AI. The present study aims to bridge this gap by proposing an applicable conceptual model for the interaction between a comprehensive set of KM processes and a set of OP measurements within AI. To this end, this study seeks to provide an in-depth examination into the practices and implications of KM within a specific AI context. This will potentially enable the development of a conceptual model for KM implementation that can improve the performance of organisations. The overall importance of this study lies within the importance of KM as a strategic organisational tool and the potential impact of KM processes on overall OP.

AI is chosen as the context for this study due to the lack of empirical study related to KM and OP in the airlines industry (AI). Recent studies (e.g. Zaim *et al.*, 2013; Zawawi *et al.*, 2011) have shown a relationship between KM processes and OP within the context of AI. Furthermore, the processes that have been used in this study and the mechanisms are also shown an effect of these processes on OP within the context AI.

Based on this argument, the current study seeks mainly to answer the following research question:

RQ1. What is the impact of KM processes (creation, acquisition, knowledge modification, immediate use, archiving, transfer, translation, user access, and disposal) on OP within the context of AI?

2. Literature review

2.1 Knowledge and its management

Knowledge is an invisible and intangible asset and thus difficult to be measured or managed by traditional parameters (Al-Adaileh and Al-Atawi, 2011). Therefore, management of knowledge is also more comprehensive than the simple management of information. It had been hypothesised that knowledge is comprised of information along with the possibility of ideas, obligations, inspirations, human talent, capabilities, and perceptions (Grey, 1996). Nevertheless, Nonaka and Takeuchi (1995) define knowledge as a procedure of mitigating personal idea towards actuality. However, these two definitions stress the involvement of human beings and as Beveren (2002, p. 19) asserts "even though some argue knowledge can be acquired, stored and used outside of the human brain, knowledge cannot exist outside of the human brain and that only information and data can exist outside of the brain". It is clear therefore that KM goes far beyond the management of information and data but must necessarily involve the information contained within the minds of the firm's employees.

The focus of KM differs depending on which view of knowledge is adopted. Alavi and Leidner (2001) have proposed that knowledge can be viewed as a process or an object. The former implies that the KM focus is on the knowledge flow and the

processes of creating, sharing, and distributing knowledge. Conversely, the latter implies that KM should focus on the building and management of knowledge stocks. Commenting on the different viewpoints of KM, Tubigi and Alshawi (2012) have asserted that "in spite of the fact that KM has become an important line of research in the last few years, it is still difficult to find a conceptualisation that is commonly accepted by a majority" (Tubigi and Alshawi, 2012, p. 749). This is unsurprising given that knowledge is, in itself, both a tangible and intangible resource (Hall, 1993).

2.2 KM processes

Chen (1998/1999) has proposed nine KM processes, they are: selection, acquisition, learning, creation, dissemination, construction, storage, management systems, and culture. An effective organisational environment and the implementation of KM processes should increase the quality as well as quantity of both explicit and tacit knowledge of individuals, teams, and the whole organisation (Sanchez and Palacios, 2008). A more comprehensive view of the constituent KM processes is provided by Zaim (2006) who claims that it is possible to compose a more comprehensive process-oriented view of KM. He has argued that "KM is the systematic management of all activities and processes referred to generation and development, codification and storage, transferring and sharing, and utilisation of knowledge for an organisation's competitive edge" (Zaim, 2006, p. 3). A process-oriented definition of KM was also emphasised by Jashapara (2004) who proposed that KM involves any practice or process of acquiring, creating, sharing, capturing and using knowledge, wherever it resides, to enhance organisations learning and performance. Bergeron (2003) provides arguable the most comprehensive and (for the purposes of this study) useful description of KM processes. He adopted the concept of KM life cycle (KMLC) including eight processes (creation and acquisition, modification, use, transfer, archiving, translating/repurposing, access, and disposal). This study will also adopt these eight processes to evaluate KMLC processes.

2.3 OP

Chakravarthy (1986) has argued that it is difficult to engage in comprehensive comparative analysis of the differences between the performances of companies when using traditional financial measures such as return on equity (ROE), return on capital (ROC), and return on sales (ROS). Similarly, Kaplan and Norton (1996) found that classic financial accounting measures such as return on investment (ROI) and earnings per share (EPS) can be deceptive when providing indications regarding the issues of continuous progress and innovation. This suggests that these traditional accounting practices with their focus on short-term indicators such as share prices, turn over, cash flow and profit are not actually appropriate for assessing the overall performance of corporations, whereas non-financial elements such as stakeholders, investors and customers have recently been recognised as more accurate indicators (Edvinsson, 1997; Lee *et al.*, 2005). Behn and Riley (1999) empirically examine whether timely non-financial performance information is a useful predictor of financial performance in the AI. Their study revealed that on-time performance, mishandled baggage, ticket over-sales, and in-flight services are significantly associated with their proxy for customer satisfaction. Many scholars have therefore thought it necessary to attempt to measure other OP indicators when attempting to investigate the effects of KM. Such indicators include non-financial performance measures such as productivity (Lapre and

Wassenhove, 2001), quality (Mukherjee *et al.*, 1998), and innovation (Francisco and Guadamillas, 2002).

Performance is the paramount concern for every scholar or practitioner within business and management disciplines (Politis, 2002). An empirically tested model valid in modern organisations, namely, dynamic multi-dimensional performance (DMP) framework has been developed by Maltz *et al.* (2003) for considering financial and non-financial measures. This framework contains five success dimensions as explained below:

(1) Financial measures: such measures show the conventional method of organisational success. Essentially these involve measures related to revenues, profit margins or ROI.

(2) Customer/market measures: these measures are concerned with the relationship between a company and its customers. Customer-focused organisations are skilled at knowing the needs of their customers, and have ability to build products and services that fulfil these needs. These companies are capable of satisfying their customers and maintaining high customer retention rates.

(3) Process measures: these measures depict the efficiency and extent of constant business process improvement within an organisation. In the past decade business process improvement has been one of the most popular business themes along with total quality management, learning organisations, and team-based efforts.

(4) People development measures: these measures address the important role of stakeholders in the accomplishment of organisational goals. Also, the quality of employee skills, dedication to technology leadership, and human resource development play a vital role in the process of attaining organisational aims.

(5) Preparing for the future measures: these measures include scales such as excellence in strategic planning, critical partnerships and pacts, anticipation and preparation for future challenges in the business environment, and investments in new markets and technologies. Essentially, these are aims of future.

These five performance measures (Maltz *et al.*, 2003) provide a holistic approach to measuring organisational success and are comprehensive and clear in their identification of measurement tools. As such, these measured will be utilised in this research in order to evaluate OP.

2.4 KM processes impact on OP

The main issue for scholars dealing with the area of KM is attempting to examine the ways in which it affects OP (Tubigi and Alshawi, 2012). A body of research has highlighted the importance of knowledge in company performance, and organisations are increasingly concerned with managing their knowledge effectively so as to keep ahead of the competition. However, according to Kalling (2003), current research into KM does not adequately explore the role of KM in improving organisation's performance.

AL Maani (2009) has conducted research which attempts to reveal the KM attitudes of Central Ministries' managers ($n = 260$) in Jordan. The research looked at general

views of different KM concepts and their impacts on performance. The study also examined the attitude differences in of managers according to their demographic characteristics. Findings highlighted that Ministries tended to adopt KM at a moderate level and that managers' level of performance was high. Statistical analysis revealed that a set of variables (knowledge creation, knowledge teams, knowledge application, knowledge, sharing, knowledge storage, and KM technology) significantly impacted managers' performance, with KM accounting for 40.9 per cent of the variance in managers' performance.

Tanriverdi (2005) found only a moderately weak relationship ($r = 0.15$-0.17) between a firm's financial performance (ROA and Tobin's *Q*) and its ability to create, share, integrate, and use knowledge. Davenport (1999) has posited that the relationship between KM and performance indicators has been widely discussed in terms of balance sheet, exchange value, and market value. However, the fact remains that firms are still unable to identify a causal relationship between KM activities and OP using traditional measurements. Many scholars have tried to assess KM's contribution such as Su *et al.* (2006), who claims that knowledge work can lead to new technologies to develop new products and ways of working. Moreover, the knowledge base of a company is commonly viewed as the fundamental underlying factor in performance levels (Lai and Lee, 2007). For a number of researchers; knowledge, which includes all types of strategic assets, is the only source of attaining sustainable higher performance (Grant, 1996; Spender, 1996; Teece, 2000; Eisenhardt and Santos, 2002; Amit and Schoemaker, 1993; Krogh and Roos, 1996).

There is a significant gap in the literature of "large-scale empirical evidence that KM makes a difference to organisational performance" (Zack *et al.*, 2009, p. 393). This gap presents problems for practitioners. For example, in a survey of 431 US and European organisations by the Ernst & Young Centre for Business Innovation, the most difficult obstacle faced in carrying out KM practices was found to be "measuring the value of knowledge assets and/or impact of knowledge management" (Ruggles, 1998, p. 82). An empirical study carried out on 222 Spanish companies in the biotechnology and telecom industries by Marques and Simon (2006) investigated the link between KM practices and OP. This research depicted the way organisations embrace KM methods to achieve better results than their competitors. Furthermore, Zack *et al.* (2009) investigated the organisational impact of KM in terms of performance. In all, 12 KM practices were identified and explored in terms of their impact on OP within the context of business organisation in North America and Australia. The research revealed that KM practices are directly associated to company performance, which is of course linked with financial performance. Conversely, no direct association exists between KM practices and financial performance. In fact, the lack of capacity to directly associate OP and KM in correlation studies has led many researchers to extrapolate from the association they are able to apprise positively. For instance, Lee and Choi (2003) argued that as long as KM practices improve portions of company performance, financial performance will improve. They found direct relationship between KM practices and various intermediary measures of strategic OP such as operational quality, customer relationship and product headship which consequently result in positive financial performance.

It appears that, within the context of the AI, airlines are beginning to use KM processes in their operations (Wang *et al.*, 2011). However, research exploring the relationship between KM processes and OP in this context is scarce. Moreover, the few studies that have been conducted have shown positive relationship between the

KM processes and OP (Zaim *et al.*, 2013; Zawawi *et al.*, 2011). Some of these studies will be discussed to illuminate how KM processes are relevant in the airlines industry.

Zaim *et al.* (2013) examined the effect of KM on the OP of Turkish airlines using a case study. The focus of the study was on four KM processes: the creation of knowledge; storage of knowledge; transfer of knowledge; and the utilisation of knowledge. The results of the analysis showed that there is a positive relationship among the four components of KM. Moreover, results also indicated that there is a positive relationship between the four KM activities and the OP of Turkish airlines. Relevant to understanding KM and OP in the Arab region, Zawawi *et al.* (2011) conducted a study into operations-based KM within the Saudi Arabian AI. One of the key findings from this study highlighted that the field of KM is far less understood in Saudi Arabia than in other parts of the world. They argue that, despite the particular importance of KM to such industry, KM has often "taken a back seat" (p. 164). They also found that the western KM literature is overly reliant upon IT-based solutions and as a result, is less applicable to countries that are not as comprehensive in their use of IT solutions as the west. Indeed, it is unfortunate that mainstream literature has neglected the social capital aspect of KM. Table I summarises the key finding of previous studies concerning the interrelationship between KM processes and OP.

Since knowledge is rapidly becoming a very important measure of the organisational future performance (Choi and Lee, 2002), it is therefore vital that indictors and measurement techniques are developed in order to allow managers to handle the organisational knowledge better.

Knowledge creation and acquisition. The process of knowledge creation points to the ideas and actions undertaken towards the generation of new ideas or objects (Mitchell and Boyle, 2010). It is the company's capability to build new ideas and solutions related to various dimensions of organisational activities, from managerial procedures to products/services to technological innovations (Un and Cuervo-Cazurra, 2004). The term acquisition refers to a company's capability to recognise, obtain and accumulate knowledge (whether internally or externally) that is vital to its operations (Mills and Smith, 2011). In the creation and acquisition phase of the KMLC, information is created or acquired internally by knowledge workers, externally through outsourcing, or purchased from an outside source. The mechanisms for this phase include self-reporting, documentation, programme, instrumentation, network, and knowledge engineering (Bergeron, 2003). Within the AI the knowledge is created/acquired through interaction with passengers at the airports and sales offices, established training in maintenance, front-line staff, cabin-crew, health and safety, and attending global conferences such as International Air Transport Aviation (IATA) annual meeting to improve the performance of the employees' because it will help them to get new information/knowledge which in turn will benefit organisation. To that end:

- Knowledge creation and acquisition affects OP through self-reporting, documentation, programme instrumentation, networks, and knowledge engineering.

Knowledge modification. Bhatt (2001) has argued that the modification or conversion process takes place along the supply chain of data, information and knowledge. He has suggested that organisations should speedily convert data into information, and then convert this information into organisational knowledge in order to maximise the

Table I. Summary of previous studies concerning the interrelationship between KM processes and organisational performance

Article	Nature of study	Study method	Key finding(s)
Zaim *et al.* (2013)	Empirical	Case study	The results of the analysis showed that there is a positive relationship among the four components (creation, storage, transfer, and utilisation) of KM. Moreover, results also indicated that there is a positive relationship between the four KM activities and the OP of Turkish airlines
Zawawi *et al.* (2011)	Empirical	Case study	The key findings from this study highlighted that the field of KM is far less understood in Saudi Arabia than in other parts of the world. They argue that, despite the particular importance of KM to such industry, KM has often "taken a back seat" (p. 164). They also found that the western KM literature is overly reliant upon IT based solutions and as a result, is less applicable to countries that are not as comprehensive in their use of IT solutions as the west
Zack *et al.* (2009)	Empirical	Survey	KM practices were found to be directly related to organisational performance which, in turn, was directly related to financial performance. There was no direct relationship found between KM practices and financial performance
AL Maani (2009)	Empirical	Survey	The study highlighted that Ministries tended to adopt KM at a moderate level and that managers' level of performance was high. Statistical analysis revealed that a set of variables knowledge creation, team, application, sharing, storage, and KM technology significantly impacted managers' performance, with KM accounting for 40.9% of the variance in managers' performance
Zaim (2006)	Empirical	Survey	This study revealed that there is a positive relationship between KM processes and KM performance
Tanriverdi (2005)	Empirical	Survey	IT relatedness of business units enhances the cross-unit KM capability of the firm. The KM capability creates and exploits cross-unit synergies from the product, customer, and managerial knowledge resources of the firm. These synergies increase the financial performance of the firm. IT relatedness also has significant indirect effects on firm performance through the mediation of KM capability
Lee and Choi (2003)	Empirical	Survey	The study shows that KM enablers effect KM processes, which in turn effect organisational performance through intermediate impacts
Behn and Riley (1999)	Empirical	Survey	The study shows that on-time performance, mishandled baggage, ticket over-sales, and in-flight services are significantly associated with their proxy for customer satisfaction
Ruggles (1998)	Empirical	Survey	The most difficult obstacle faced in carrying out KM practices was found to be "measuring the value of knowledge assets and/or impact of knowledge management"

benefits from this process. Within the context of AI, the process of modification is applied to meet the future needs of KM and their worker. For example, information or knowledge that is stored in the database regarding passengers, fleet details, and operations is always revised to check its value for current and future need. Hence, modification is continues process. According to Bergeron (2003) the information through the modification phase is modified to meets the requirements of the future needs of the KM and their workers, the support mechanisms of this phase include editing tools, tracking, security, and version control. To that end therefore:

- Knowledge modification affects OP through editing tools, tracking, security, and version control.

Knowledge use. In the AI the information is employed for whichever purpose necessary based on the situation such as decision made to operate a flight, buy new airplane, or leasing aircraft for peak season. The range of potential uses for information is virtually unlimited depending upon the needs and activities of the knowledge workers and management within the organisation (Bergeron, 2003). Knowledge that an employee fails to use or share is of little importance to an organisation. Bhatt (2001) stated that making knowledge more active and relevant for the organisation in creating values depends on applying and sharing this knowledge. Bergeron (2003) stated that the support mechanisms for this phase are feedback system, tracking system, dissemination technology, and search technologies. To that end therefore:

- Knowledge use affects OP through feedback systems, tracking systems, dissemination technology, and search technologies.

Knowledge archiving. Archiving is essentially about storing information using methods that enhance the confidentiality and security of the information but also enable efficient access. This process is applied in the AI due to the huge number of data that is related to passengers and operations which need more confidentiality and security. Information technologies, controlled vocabularies, trained librarians, controlled environments, and maintenance programmes are some of the resources used in archiving (Bergeron, 2003). Alavi and Leidner (2001) have framed information as the memory of an organisation, which resides in various forms such as electronic databases, written documents, codified knowledge in expert systems, organisational procedures and processes, and tacit knowledge located in individuals' brains. Saedi *et al.* (2002) proposed a framework for archiving knowledge within an organisation. The authors proposed that any practice (e.g. development a new product, practice of solving a problem) or decision (e.g. pricing, recruitment decisions) creates knowledge that needs to be archived within the organisation. They added that every practice or decision-making process that occurs in an organisation is a practice of knowledge or learning that must be stored and managed for future use. To that end:

- Knowledge archiving affects OP through information technologies, controlled vocabularies, librarian, controlled environment, and maintenance programmes.

Knowledge transfer. Knowledge transfer was defined as: "a process of exchange of explicit or tacit knowledge between two agents, during which one agent purposefully receives and uses the knowledge provided by another", "agent" can refer to an individual, a team, an organisational unit, the organisation itself or a cluster of organisations (Kumar and Ganesh, 2009, p. 163). Argote and Ingram (2000, p. 151)

define knowledge transfer as "the process through which one unit (e.g. group, department, or division) is affected by the experience of another". Knowledge transfer is about connection that ultimately depends on choice made by individuals (Dougherty, 1999). Within the context of AI, information transferred freely within the organisation using various types of media (e.g. intranet, e-mail). For example, any internal correspondence is transferred through internal network. Bergeron (2003) postulated in order to increase the value of information and to enable knowledge sharing, information should be transferred freely within organisations using various types of media (e.g. entrant, e-mails). He assumed that in this phase, physical transfer and networks are the support mechanisms. As such:

- Knowledge transfer affects OP through physical transfer and networks.

Knowledge translation/repurposing. In this phase, the information might be translated from its original form into a form that is more suitable for the user (e.g. from numerical to textual form). For example, in the AI employees conduct data about one flight in term of no-show, go-show, fuel conception, load factor, every single detail write it as a full report. After that the responsible person loads this information in very small, clear figures (e.g. pie chart) to be presented to the managers next day. This is important to simplify the information in order to suit the recipient's specific requirements and their own knowledge base, and this process take place through outsource expertise, and information technologies (Bergeron, 2003). Knowledge translation refers to transforming knowledge into action and covers both processes of knowledge formation and knowledge application (Graham *et al.*, 2006). Various terms have been used to explain the procedure of transforming knowledge into action. Knowledge translation includes the coverage, quality appraisal, and modification of R&D knowledge into a comprehensible and contextually pertinent shape (Graham *et al.*, 2006). To that end therefore:

- Knowledge translation/repurposing affects OP through outsource expertise, and information technologies.

User access to knowledge. Bergeron (2003) demonstrated that successful KM systems should provide continuous access for authorised users through the use of query support mechanisms. Parallel access should also be available and supported by the system. Lettieri *et al.* (2004) assert that knowledge distribution can be accessible to whoever can use it. Furthermore, different kind of people (e.g. managers, professionals, client, etc.) may need to present the information in different ways depending on how they have to use (Lettieri *et al.*, 2004). In fact, within the context of AI, the value of knowledge is restricted with the ability to access it when needed to make decisions or to solve organisational problems or for whatever purpose in any given situation. It also provides continues access to authorised users. For example, each employee in the organisation has its own password to access several sites according to his organisation level. The support mechanisms for this phase are corporate policy, information technology, and librarian (Bergeron, 2003). To that end therefore:

- Knowledge access affects OP through corporate policy, information technologies, and librarian.

Knowledge disposal. Some information will be of little or no value in the future and therefore should be destroyed or stored elsewhere through established processes and

technologies in order to keep the standard body of knowledge at a level which is manageable (Bergeron, 2003). Within the AI, clear, coherent procedures should be applied when selecting information for disposal or disposing them in order that valuable information does not end up being destroyed. For example, in the airline organisation has its policy of five years to dispose any information that no longer needed. To that end therefore:

- Knowledge disposal affects OP through established processes, and technologies.

3. Conceptual model

Based on the previous discussion, the following conceptual research model (Figure 1) was proposed as a platform for exploration of the influential relationship between a set of KM processes (creation and acquisition, modification, use, transfer, archiving, translating/repurposing, access, and disposal) and OP. The first eight arrows represent the KM processes life cycle and its relationship to OP which is fits the AI.

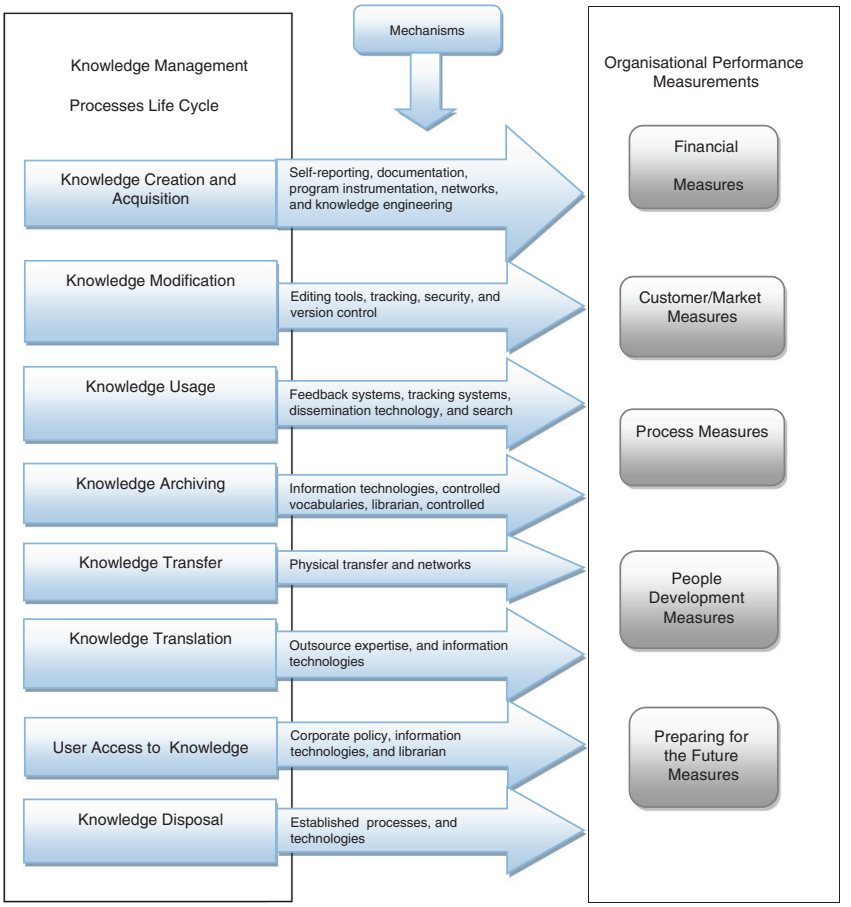

Figure 1.
Research conceptual model

4. Methodology

4.1 Research design

The study aims mainly to derive a conceptual model to explain the interrelationships between KM processes and some important selected measurements of OP. It outlines some initial correlations that will be tested more deeply in later stages to develop a model that is appropriate to explain the issue of KM processes and their impact on OP within a specific context. The scarcity of the available studies concerning this research topic within the developing countries motivated the researchers to conduct such a preliminary study to build such model. Accordingly, this research adopts elements of both deductive and inductive approaches. Schutt (1996) distinguishes between inductive and deductive research and claims that deductive research proceeds from general ideas (usually existed theories), deduces specific expectations from these ideas and tests the ideas with empirical data. Conversely, inductive research begins with specific data to develop empirical generalisations or theories to explain the data about the reality of particular context. However, deductive and inductive research strategies are useful to understand the relationship between theory and research. Within the field of social research, the distinction between these strategies is difficult to make because each of them is likely to entail some elements from the other. Based on this, one can argue that social research, in its nature, tends to be deductive and inductive at the same time: if we start from theory to explain reality or start from exploring empirical realities to develop theory we still have an impact on the reality or theory used. This impact (reflection and perception of the situation by the researcher) could either produce a new theory (inductive) or a revised theory through reflecting the researcher own findings that are built on an existed theory (deductive). This research starts with extensive review of the available relevant literature with the aim of generating a conceptual model which goes with the nature of deductive approach. Then, the conceptual model was tested using interview method in order to verify the proposed model which goes with the nature of inductive approach.

This research adopts a qualitative research paradigm demonstrating the main aspects of inductive approach. The use of this research paradigm is justified based on the need to collect in-depth data that are necessary to derive the adjusted model. However, the development of the initial proposed conceptual model was based on an extensive review of the available studies which involves elements of a deductive approach. In practice, the research variables were mainly derived from the available studies. Then, a conceptual research framework was proposed. Retesting of the relatively large number of variables was expected to validate the importance of KM processes and their potential impact on OP. This means that the variables generated from the available studies were not taken for granted but were used as a framework for KM processes. Figure 2 presents the overall research process.

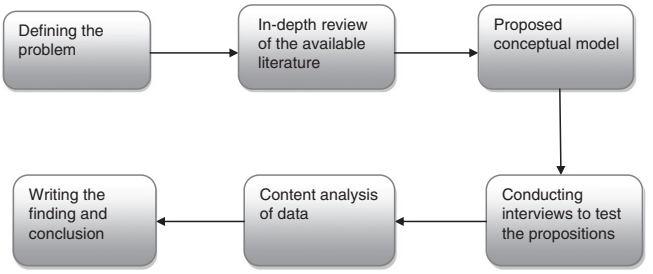

Figure 2.
The overall research process

4.2 Data collection and analysis

The study involves the use of interview approach as a primary data collection technique. Interviews have been favoured in this research as they allow for rich, in-depth, holistic data to be gathered. As such, it is hoped that a detailed perspective relating to KM processes and their potential impact on organisation performance in generated. Based on this conceptual model, the interview schedule was prepared. The interview schedule was constructed with Leech's (2002) recommendations in mind. As such, the schedule began with "grand tour" questions and then progressed to more specific, probing questions. Leech has argued that this structure allows participants to broadly introduce the topic of examination and then ease gently into the interview (Leech, 2002). As such, the first section ("introductory questions") explored general details of participants' experiences with KM processes. The interview then progressed into more specific questions, which were flexible and responsive to previous answers. Five managers (coded M1-M5) from one airline company were selected for this study in order to have the true picture of how OP is seen and consider by the employees who are chosen from various managerial levels representing sales department (M1), e-marketing department (M2), IT department (M3), departure control system (DCS) department (M4), and loyalty programme department (M5) processes. These managers who deal with systems, people, and information are involved to a certain extent in managing and implementing potential KM project. The interviewed managers were selected based on a formal communication processes that have been made to gain permissions and to arrange an appropriate time and interview schedule. Content analysis approaches were used to identify ideas of the main themes in order to consolidate adjusted conceptual model.

5. Results and discussion

Various aspects of KM were investigated in detail and interview questionnaire was prepared to observe the prime processes of KM and their impact on OP. Key features of all the KM processes were investigated in this pilot study. Data generated from interviews were analysed using content analysis. This fostered the identification of key themes in the data which related to the variables of the model. Respondents' feedback and answers were compared in order to define differences and common views concerning the impact of the proposed KM processes on OP. Considering the preliminary nature of the current study, the results presented below might provide direction for the later stages of the current study as well as future research concerning the categories of KM processes and their potential impact on OP.

5.1 Knowledge creation/acquisition

Managers M1 and M3 emphasised that knowledge creation and acquisition as a KM practices being employed by the company. This agrees with Obaisat (2005) and Mills and Smith (2011) who emphasised the high level of perception of the creation and acquisition managers in different contexts. However, M2, M4, and M5 mentioned that knowledge creation and acquisition is not employed in the company. Furthermore, M1 and M3 ranked knowledge creation and acquisition as a highest KM practice used in the company. In addition, M3 and M4 selected knowledge creation and acquisition as the most influential processes on OP. M1 chose programme instrumentation as a mechanism to create and acquire knowledge, whereas M2 selected self-reporting and documentation as the mechanisms used by the company to create and acquired knowledge. M3 selected self-reporting and documentation as a mechanism for

knowledge creation and acquisition. M4 selected documentation as a mechanism to create and acquired knowledge, while M5 selected self-reporting, documentation, programme instrumentation, networks as mechanisms to create and acquire knowledge.

5.2 Knowledge modification

Only participant M5 selected knowledge modification as the process being used by the company. M1 ranked knowledge modification as moderate process while M2 ranked it as the lowest being used in the company. In response to the question about the most influential processes on organisation performance, participants agreed that knowledge modification came in the middle neither high nor low influential process on organisation performance. Bhatt (2001) has stated that modification or conversion process takes place along the supply chain of data, information and knowledge. He has argued that organisations must speedily convert data into information, and this information into organisational knowledge to maximise benefits from this process. In response to the question about the mechanisms being used to modify knowledge, tracking was chosen by M1 and M5, editing tools and security were chosen by M2 and M5, version control was selected by M3-M5.

5.3 Knowledge usage

Managers M2, M4, and M5 selected knowledge usage as the process being employed by the company. This is has been supported by Daud and Yusoff (2010) who contend that employees should collaborate to use knowledge for the benefits of their organisation.

M1 and M2 ranked knowledge usage as a highest practice in the company. In response to the question about KM practices and their impact on OP, managers M2-M5 selected knowledge usage as the most influential process on organisation performance. Finally, in response to the question about the mechanisms being used to indicate the use of knowledge, M1, M2, and M5 selected feedback system while M3 had no idea. M4 selected tracking system.

5.4 Knowledge archiving

The managers (M2, M4, and M5) have selected the knowledge archiving process being employed by the company. M4 and M5 ranked knowledge archiving as the highest process being used by the company, while M1 ranked it as lowest, in the meantime M2 ranked it as moderate process. In addition, M2 selected knowledge archiving as the most influential process on organisation performance. Finally, M1, M2, M4, and M5 have selected IT as the mechanism to archive knowledge. The findings concerning knowledge usage and archiving agrees with most of the previous studies in other contexts (e.g. Hasan and Al-Hawari, 2003; Marques and Simon, 2006; Moorthy and Polley, 2010; Mills and Smith, 2011).

5.5 Knowledge transfer

Regarding the knowledge transfer process, all managers (except M4) described knowledge transfer as a process that is carried out by the company. None of the managers ranked knowledge transfer as a highest process being used by the company; nevertheless, M5 selected it as the lowest process. In response to the question about KM practice and their impact on organisation performance, only M3 and M5 selected knowledge transfer as the most influential process on organisation performance.

Networks are the most common mechanism being used to transfer knowledge. The use of networks is also supported by Bergeron (2003), who has postulated that in order to increase the value of the information and to enable knowledge sharing, information should be transferred freely within the organisational context using various types of media (e.g. entrant, e-mails). Bergeron has also asserted that in this phase, physical transfer and networks represent the support mechanisms. Physical transfer was selected by M3 and M4. The importance of knowledge transfer was also emphasised by other researchers including Al-Adaileh and Al-Atawi (2011).

5.6 Knowledge translation/repurposing

Knowledge translation was selected as a process being employed by the company by all the managers except M1. This is was cleared by Graham *et al.* (2006) who revealed that knowledge translation includes the coverage, quality appraisal, and modification of R&D knowledge into a comprehensible and contextually pertinent shape. Participants M2 and M5 ranked knowledge translation as a moderate process. None of the participants selected knowledge translation as the most influential process on organisation performance. IT was chosen as the mechanism used to translate knowledge, whereas M3 did not know.

5.7 User access to knowledge

Only interviewees M2 and M5 selected user access to knowledge as a process being employed by the company. M2 ranked user access to knowledge as the highest process being used by the company while M5 ranked it as moderate process. Bergeron (2003) show that successful KM systems should provide continuous access for authorised users through the use of query support mechanisms. None of the managers selected user access to knowledge as most influential process on organisation performance. In respond to the question about mechanism being used by the company to provide the user to access the knowledge, all the participants have selected IT in the first place, then corporate policy selected by M2 and M5.

5.8 Knowledge disposal

Some information will be of little or no value in the future and therefore should be destroyed or stored elsewhere through established processes and technologies in order to keep the standard body of knowledge at a level which is manageable (Bergeron, 2003). Managers M2 and M5 selected knowledge disposal as the process being employed by the company. None of the participants ranked knowledge disposal as the highest process being used by the company. Participant M1 ranked it as the lowest process, and M5 ranked it as moderate process being used by the company. M1, M2, M4, and M5 viewed technologies as the mechanism to dispose knowledge, while M3 did not know. Only M1 selected knowledge disposal as the most influential process on organisation performance, while M3 saw this as having the least impact.

6. Finding of the pilot study

The findings of the pilot study were as follows: 60 per cent of the interviewees were familiar of the term "knowledge management"; most respondents possessed some knowledge about the organisation's type of technologies; few respondents possessed knowledge about their organisation's profitability; there is a lack of knowledge about the various processes of the organisation, various clients associated

with the organisation, and various ventures undertaken by the organisation; interviewees revealed that KM processes can help the organisation through increasing profitability and improving employees' knowledge sharing and participation; respondents ranked KM practices of their organisation on scale from 1 – lowest to knowledge modification and knowledge disposal – to the rank 8 – highest to knowledge use and knowledge translation; respondents agreed that KM would add value to their organisation; interviewees agreed that KM is very important to their organisations; most respondents agreed that self-reporting and documentation are mechanisms to create and acquire knowledge, 60 per cent viewed version control as the mechanism to modify knowledge, 60 per cent agreed that feedback systems are the mechanism of knowledge use, 80 per cent agreed that information technologies represent mechanisms for archiving knowledge, 20 per cent saw physical transfer as the mechanism to transfer knowledge while 80 per cent saw networks as the mechanism to transfer knowledge, 80 per cent agreed that information technologies form the mechanisms to translate knowledge, 80 per cent saw IT as the mechanism to provide the user with access to knowledge. Although in literature established process is a mechanism to dispose knowledge Bergeron (2003), however, 80 per cent agreed that technologies is the only mechanism to dispose knowledge while 20 per cent did not know; respondents viewed knowledge usage and transfer as the most influential factors that impact on OP; and finally, most interviewees thought that financial measures were influenced by KM processes, while preparing for the future comes in the bottom of the list.

7. Revised model

Based on the finding of the pilot study, the proposed model was adjusted as seen in Figure 3. These involved modifications of the mechanisms of knowledge disposal only while other dependent and independent variables have not been changed. The study shows that established processes are not use as a mechanism to dispose knowledge which is incongruity with proposed conceptual model. Furthermore, the

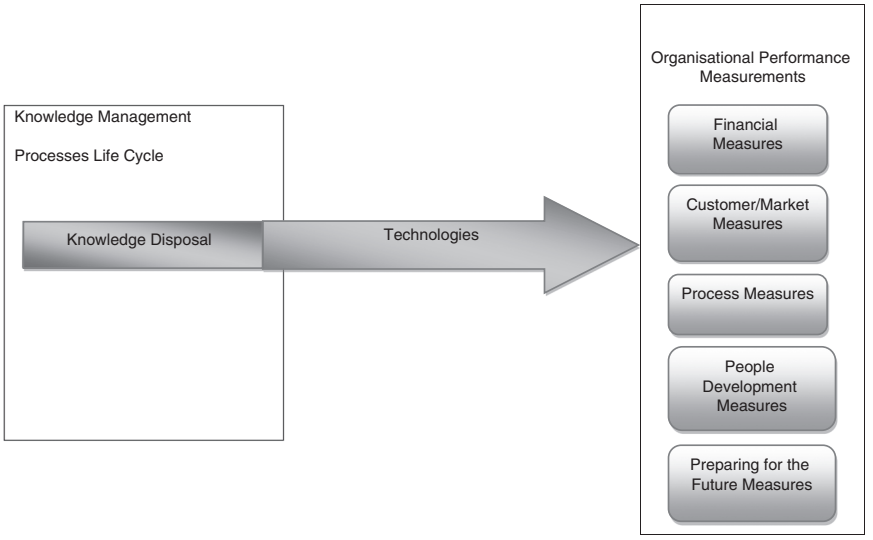

Figure 3.
The revised model

pilot study results agreed that the only way to dispose knowledge is through technologies such as paper shredder or using software.

As a result, the research proposition relating to knowledge disposal has been modified as follows:

- Knowledge disposal affects OP through technologies.

8. Conclusion

Most of the available studies relating to KM practically in the AI have considered organisational knowledge as a significant asset for gaining competitive advantage, and as a significant contributor to the success and survival of any organisation within a highly competitive business environment. Therefore, this paper has presented an analytical review of the existing research on the interrelationship between KM processes and OP within the context of AI. A number of processes were identify these processes including knowledge creation and acquisition, knowledge modification, knowledge usage, knowledge archiving, knowledge transfer, knowledge translation/repurposing, user access to knowledge, and knowledge disposal. These processes were used to construct a proposed conceptual model. The model is a way of evaluation KM processes and to explore their potential impact on OP. The results of the conducted qualitative pilot study show that these processes and the associated mechanisms are applicable and implementable in AI. All these processes and mechanisms have positive effect on OP with the exception of the established process mechanism which does not play an effective role in the relationship with the other mechanisms that are used to dispose knowledge. Moreover, the results show that knowledge usage and transfer are the most influential processes that impact on OP within the context of AI. Furthermore, this study has highlighted that the only mechanism to dispose knowledge is technology because it help to find tools such as software that use to delete information and knowledge from database. The study contributed towards validation of the KM processes and the mechanisms for these processes within AI context. The study was a pilot study; hence, a small interview sample used in this study for particular purpose to improve the conceptual model for further research. Nonetheless, important indications and direction for future research might be highlighted. The next empirical stage of this research would be to explore the level of these KM processes and to measure their impact on OP. This might lead to more in-depth validation of these proposed processes and the provision of a set of guidelines for effective utilisation of these processes. Such guidelines may serve to improve OP. Moreover, future KM research will have to explore the impact of the cultural attributes within the AI and the potential impact of these attributes on success of any proposed KM system.

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Corresponding author
Mohammed Tubigi can be contacted at: mtubigi@hotmail.com