KNOWLEDGE MANAGEMENT FRAMEWORK TOWARDS COLLABORATIVE PROJECT IN THE UAE AVIATION INDUSTRY

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DEDICATION

To my beloved father and mother for their immeasurable support and care. This thesis is also dedicated to my brothers and Sisters who have continually supported and believed in me. I dedicate this thesis especially to my wife, the best in the world, without your support, none of the positive things I have accomplished when we've been together would have been possible. This thesis is as much yours as it is mine. To my wonderful son who is the lights of my life and inspire me every moment of every day.

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ABSTRACT

Over the last decade, the aviation industry in the United Arab Emirates has seen intense competition. Within the aviation industry, there is a dearth of collaboration projects. This is attributed to the several collaboration projects established within the global aviation industry. The previous literature did not take into consideration the role of stakeholders' trust in easing collaborative projects. The purpose of this research is to look into the role of knowledge management dimensions in collaborative projects. Besides that, this study also aims to determine the mediation role of stakeholder trust in the relationship between knowledge management dimensions and collaborative projects in the UAE aviation industry. Also, establishing a framework for knowledge management toward collaborative projects. A cross-sectional time horizon was used to collect the data from 373 employees with a response rate of 79.4% using a questionnaire as an instrument in the aviation sector of the United Arab Emirates. The obtained data was analyzed using PLS-SEM in order to develop structural equation modeling. The findings of this study revealed that two dimensions of knowledge management—stakeholders' knowledge and community nodes of practice—were found to have a significant effect on collaborative projects. While nodes of internal practice and behaviors of practice were found to have no significant effect on the collaborative projects. In addition, stakeholder trust had no significant mediation role in the relationship between the knowledge management dimensions and the collaborative projects. This study established a framework for performing collaborative projects in the aviation industry. Thus, this study contributes to the knowledge of aviation management by identifying factors of an effective knowledge management system that would be applicable to the UAE aviation industry. This study adds to knowledge management theory by addressing the role of stakeholder trust in obtaining collaborative projects.

ABSTRAK

Sepanjang dekad yang lalu, industri penerbangan di Emiriah Arab Bersatu telah menyaksikan persaingan yang sengit. Dalam industri penerbangan, terdapat kekurangan projek kerjasama. Ini disebabkan oleh beberapa projek kerjasama yang diwujudkan dalam industri penerbangan global. Literatur sebelum ini tidak mengambil kira peranan kepercayaan pihak berkepentingan dalam memudahkan projek kerjasama. Tujuan penyelidikan ini adalah untuk melihat peranan dimensi pengurusan pengetahuan dalam projek kolaboratif. Selain itu, kajian ini juga bertujuan untuk menentukan peranan pengantaraan kepercayaan pihak berkepentingan dalam hubungan antara dimensi pengurusan pengetahuan dan projek kerjasama dalam industri penerbangan UAE. Selain itu, mewujudkan rangka kerja untuk pengurusan pengetahuan ke arah projek. kerjasama Satu horizon masa keratan rentas digunakan untuk mengumpul data daripada 373 pekerja dengan kadar tindak balas 79.4% menggunakan soal selidik sebagai instrumen dalam sektor penerbangan Emiriah Arab Bersatu. Data yang diperolehi dianalisis menggunakan PLS-SEM untuk membangunkan pemodelan persamaan struktur. Dapatan kajian ini mendedahkan bahawa dua dimensi pengurusan pengetahuan—pengetahuan pihak berkepentingan dan nod amalan komuniti—didapati mempunyai kesan yang ketara ke atas projek kerjasama. Walaupun nod amalan dalaman dan tingkah laku amalan didapati tidak mempunyai kesan yang ketara ke atas projek kerjasama. Selain itu, kepercayaan pihak berkepentingan tidak mempunyai peranan pengantaraan yang signifikan dalam hubungan antara dimensi pengurusan pengetahuan dan projek kerjasama. Kajian ini mewujudkan rangka kerja untuk melaksanakan projek kerjasama dalam industri penerbangan. Oleh itu, kajian ini menyumbang kepada pengetahuan pengurusan penerbangan dengan mengenal pasti faktor sistem pengurusan pengetahuan yang berkesan yang akan digunakan untuk industri penerbangan UAE. Kajian ini menambah kepada teori pengurusan pengetahuan dengan menangani peranan kepercayaan pihak berkepentingan dalam mendapatkan projek kerjasama.

CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

LIST OF ABBREVIATIONS

UAE	United Arab Emirates
OECD	Organization for Economic Co-operation and Development
ICAO	International Civil Aviation Organization
NPD	New Product Development
PLS-SEM	Partial Least Square Structural Equation Modelling
SPSS	Statistical Package for the Social Sciences
GDP	Gross Domestic Product
GVA	Gross value added
ICT	Information and Communication Technology
ICAO	International Civil Aviation Organization
ANSP	Air Navigation Service Providers
LoI	Letter of Intent
UAM	Urban Air Mobility
KM	Knowledge Management
COP	Communities of Practice
KLC	Knowledge Life Cycle
RDI	Results-Driven Incremental
CFA	Confirmatory Factor Analysis

CHAPTER 1

INTRODUCTION

1.1 Introduction

In a competitive environment with globalization, any organization's knowledge strength is the basic foundation of its success and wealth. Private and public organizations comprehend the importance of knowledge management and tried to develop programs and strategies for it. Aviation is a major macroeconomic segment in the UAE, and the industry is quickly expanding as a result of the emergence expansion of regional industries and the substantial capital invested by the UAE's airlines. The UAE is a tiny country, as well as its airlines rely heavily on regional and international measures to strengthen industrial management; the UAE is committed to continual attempts to enhance resource utilization; and also, its implementation of sustainable prosperity.

1.2 Research background

Organizations are becoming increasingly reliant on collaboration (Curtis & Sweeney, 2019). Several scholars agree that an organization's success or failure is determined by how well its personnel collaborate in teams (Fawad Sharif *et al.,* 2020). Organizations are attempting to adapt to a reality that is growing increasingly complicated in terms of both the information and the working techniques that are being used by bringing together in real time the abilities, experience, and judgement of a range of specialists. In this approach, literature describes collaborative work in interprofessional teams as an efficient, productive, and pleasant method to provide aviation services (Fossum *et*

al., 2020). Collaboration in aviation refers to the process of interdependent experts organising a collective activity to meet the demands of passengers (Löhr *et al.*, 2018). This collaborative method is based on voluntary participation and necessitates some form of bargaining. It necessitates that the parties abandon a competitive strategy in favour of one focused on collaboration, both among experts and across aviation institutions.

This sort of adjustment is difficult to implement (Bond-Barnard *et al.,* 2018). Indeed, building collaborative practise among a group of aviation experts continues to be a significant problem for both political decision-makers and organisational managers. Despite the fact that organisational changes are increasingly focusing on collaboration between professionals working in aviation teams, managers and political decision-makers implementing such reorganisations have little empirical evidence identifying the characteristics of organisations that effectively encourage the development of collaborative relationships within the aviation industry. The way collaboration emerges and is consolidated in aviation is influenced by a number of factors. These factors are based on the interpersonal interactions that exist among team members, the organisational framework, and the external environment of the company. Knowledge management is not really a novel phenomenon, but it has only recently evolved as a specific topic of study for managing organizational knowledge (Abbas & Kumari, 2021). During centuries, knowledge has indeed been passed on informally between one generation toward the next. The origins of transferring knowledge and increased collaboration may be traced back to nomadic peoples who made sure to pass on practices like hunting to one another in order to ensure the survival of their communities (Al-Dmour *et al.,* 2021).

Knowledge management has evolved into a comprehensive, rigorous subject over the previous couple of decades (Abdelwhab Ali *et al.*, 2019). Since before the early 2000s, authorities in developed nations, particularly those that are participants of the OECD, have launched a number of efforts to encourage the use of knowledge in their workplaces (AlQershi *et al.,* 2021). Such state governments also undertaken detailed survey of their individuals and organizations, finding that knowledge management is an essential driver of organizational efficiency and competitive edge, as well as an impactful way to address economic issues such as high profitability and retiring working population damages (Attia & Salama, 2018). Organizations who have looked into their knowledge use as well as dissemination often realized that they also

have better knowledge than they think. Significant rapid structural and financial performance issues had sparked a major discourse regarding governmental and private organizations' abilities to adopt and administer human resources and knowledge resources in a much more strategic and sustainable manner (Cabrilo & Dahms, 2018).

Even though this had been claimed that Knowledge Management (KM) dates back to ancient times to the very first people scribbled drawings on a wall, it was deemed a scholarly technique in the 1990s (Haddadi Harandi *et al.,* 2019). Our predecessors needed to learn how to operate a fire, hunt a prey, and construct a refuge. Human culture might not have survived this longer if they had not learned from their mistakes, developed their inventions, and shared their knowledge from down the generations (Al Shraah *et al.,* 2021). Because most firms are using form of knowledge management presently, many would not attribute it all to the context of knowledge, which entails storing employees' knowledge and expertise in the company (Sivasubramanian, 2016).

Despite widespread acknowledgement of the importance of organizational knowledge for a sustainable enterprise in today's global economy, firms continue to struggle to completely comprehend and implement knowledge management (Amoozad Mahdiraji *et al.,* 2021). Several of those that is attempting to develop knowledge management have failed from not fully grasping the essence and the procedure for it. It may be contended that knowledge management is arguably extremely important in the aviation business than those in other industries (Alghail *et al.,* 2021).

Researchers have divided knowledge in a variety of ways to better comprehend the term "knowledge." Subjective knowledge is shown through social transactions; it is constructed socially and held collectively (Ashok *et al.,* 2021). However, objective knowledge is a priori perspective knowledge that is independent of any external contribution. Different perspectives on knowledge assist in discovering potential needs for different theories to control knowledge (Buhagiar & Anand, 2021). Knowledge management literature typically accepts the division of intuitive and apparent knowledge. Databases, surveys, guidelines, and papers are examples of explicit knowledge. Knowledge of this nature could be recorded, formalized, expressed, and validated. Explicit knowledge, on the other hand, is only the tip of the iceberg (Crupi *et al.,* 2021).

The majority of knowledge is tacit knowledge, or knowledge we do not really realise we have. Tacit knowledge is defined as the knowledge that is held in the sub-consciousness and includes experiences, attitudes, viewpoints, and morals. It originates in the brains of individuals or groups of individuals (Farooq, 2021). In addition, identifying, articulating, capturing, and transferring tacit knowledge is becoming increasingly difficult. In general, tacit knowledge is divided into two categories: cognitive and technical.

Technical parts comprised know-how, trades, and abilities that pertain to a given setting, whereas cognitive elements show a person's mental mappings, attitudes, and perspectives (Garcia-Perez *et al.*, 2020). Whereas explicit knowledge is context-independent, tacit knowledge loses its significance when removed from its framework. Nonetheless, tacit and explicit knowledge exist side by side. Tacit knowledge is the foundation for understanding and using explicit knowledge (Ge & Campopiano, 2021).

1.3 Problem statement

The growing percentage of jobs working in a virtualized world reflects the broad interest in the information economy, intellectual capital, and all intangible attributes. Furthermore, the global distribution of project team members forces organizations to reorganize as a cooperative effort and form new enterprises in order to meet risks and, in particular, to build value from intangible resources that empower them to be more efficient (Isip and Young, 2017). Additionally, enterprises working in complicated professions, like the automotive and aviation industrial sectors, must improve their competencies in providing customer-oriented commodities at reasonable rates while adhering to regulatory authorities' criteria in order to remain competitive. With little capacity, a complicated manufacturing process, and a significant dependency on clients, achieving success is difficult for world economies. New Product Development (NPD) is possibly the most critical process in several complicated companies, but it's also one of the most misunderstood. New Product Development is in charge of a firm's revenue and profit percentages, as well as its overall value (Barragan-Ferrer *et al.*, 2017).

In the aviation industry, competition is getting fiercer, either at the local or global level (Haaskjold *et al.,* 2020). The highly competitive environment of the aviation business ensures that any opportunity to lower operating costs is explored and exploited wherever possible, besides maintaining a higher level of quality (Hamzeh *et al.,* 2019). In this regard, several global aviation regulations, such as the Open Skies Regulation, have limited the airline companies' capabilities (Sankaran *et al.,* 2021). As airlines, they no longer have access to multi-city destinations. For example, Emirates Airlines is not allowed to operate flights from Dubai to New York via transit in London because they have to fly either to London or New York on a direct trip. Due to this obstacle, the aviation industry witnessed collaborative projects that eased operating routes. From another perspective, the aviation industry has become a multiservice business, not limited to offering flights only; they offer many products and services (Saukko *et al.,* 2020). All these obstacles motivate airlines toward establishing collaborative projects that aim to maximize profit and minimize operating costs.

The current practice of collaborative projects in the UAE aviation industry is limited to collaborative operations, which ease the management of current operation capacity. The UAE aviation industry lacks collaborative development projects that are required for the industry's global expansion as well as long-term growth. The collaborative operation projects, such as the agreement signed between the UAW aviation affaire and the International Civil Aviation Organization (ICAO), aim to enhance the aviation cybersecurity strategy. In addition, the UAE aviation industry signed a collaboration agreement with Pilatus, which aims to manage the supply of carbon fiber to the UAE aviation industry. These collaborative projects focus more on meeting the current operational requirements and have less concern for long-term sustainability (Abbas and Kumari, 2021).

The continuation of involving collaborative projects, which has less concern on the development side, will affect the industry's long-term growth. According to Al Hashmi *et al.,* (2020), the aviation industry should pay more attention to collaborative projects that provide a competitive advantage to the industry. Hence, the UAE aviation industry should be involved in collaborative projects, either that improve the current management operations or that aim to manage the long-term growth of the industry. This will ensure a better position within the global aviation market. Furthermore, the current trend is toward collaborative technology projects, which run parallel to the fierce global competition in the aviation industry.

The establishment of collaborative projects has been linked to several determinants. According to Bose (2018), knowledge management plays a crucial role in drafting better strategic plans and initiating collaborative projects. Better management knowledge provides a better understanding of either the internal or external environment factors that influence the establishment of a collaborative project. These factors influence the types of collaborative projects required, the optimal benefits' recognition for collaborative projects, and the structure of collaborative projects. Hence, practicing effective knowledge management is needed to lead the establishment of collaborative projects within the UAE aviation industry. This argument is supported by the UAE aviation industry's low awareness of the importance of knowledge management (Al Hashmi *et al.*, 2020a).

According to Greer and Lei (2019), establishing collaborative projects relies mainly on meeting stakeholders' interests, specifically the internal stakeholders. The internal stakeholders' trust plays an essential role in supporting the establishment of collaborative projects. In this regard, Chen and Yang (2019) emphasized that stakeholders, represented by the managerial levels and employees, should be motivated by achieving the organization's long-term objectives. The stakeholders' trust in the potential benefits of collaborative projects supports the initiation of these projects. According to Buerkner and Damm (2019), the support of collaborative projects in an establishment should rely on highly knowledgeable management that can optimize the best collaborative projects that suit the organization's objectives. Thus, gaining stakeholders' trust is necessary to ensure an optimal portfolio of collaborative projects that maximizes the organization's profit, service quality, and sustainability.

Collaboration and value creation have been encouraged by airlines and airports in the passenger air transport industry to create a point of uniqueness, improving the entire customer experience, and eventually leading to improved loyalty and commercial income streams (Bose, 2018). Despite substantial research into transportation collaboration, little useful insight into the variables that sustain collaborative aviation enterprises has been discovered. The aviation industry in the UAE comprises five airline companies: Air Arabia, Emirates, Etihad Airways, Fly Dubai, and Wizz Air Abu Dhabi (Alshamsi and Ahmad, 2018). Even though these five airlines operate locally and globally, they lack established collaborative projects that

will help them advance their positioning within the global aviation industry (Al Hashmi *et al.*, 2020).

Persistent downward pricing competition has now become a well-known feature of the aviation industry. In addition, soaring energy prices, fierce rivalry, and security issues have put the aviation industry in one of the most difficult situations to survive. In an enterprise where maintenance operations account for a significant share of costs, long-term sustainability in such operations is heavily reliant on effective information management methods that rely on knowledge and technology exchange (Hardwig *et al.*, 2020). Furthermore, it indicates that knowledge management has not really been accorded high priority due to severe engagements and a major focus on reducing operational expenses. Corporations are constantly appreciating the value of aviation knowledge as an advantage, necessitating the need to preserve vital knowledge within the organization (Sivasubramanian, 2016).

The aviation industry has numerous opportunities to investigate the potential of NPD initiatives for tough items that demand large expanses to suit the industry's diverse criteria. The product is built in modules in this segment, and a number of units are constructed by various manufacturers. Other industries represented by such businesses include plastics and rubber, prefabricated metals, glassware, textiles, and metal castings. It implies that commodities in the aviation industry require significant design expenditures, as well as a complicated and hard atmosphere in which to execute new product development and a high level of synchronization, along with a variety of different experts engaged in multiple stages of product development. It can often be managed by a variety of successive operations, which may cause the production line to be delayed, potentially resulting in customer losses (Bajaj, 2015).

Traditional means of production are becoming auxiliary as knowledge emerges as one of the main important sources of information today (Harwood & Arnau, 2018). Knowledge management became generally regarded as vital for the successes and failures of firms as enterprises became aware of the significance of knowledge as the most important economic resource in the economy (Abbas and Kumari, 2021). Knowledge management has evolved from a new phrase to a more comprehensive definition in commercial organizations during the last fifteen years.

The aviation industry in the United Arab Emirates does indeed have many issues with knowledge management, and in this day of internationalization and massive flow of information, the aviation system does have a lot of issues with

knowledge management and measurement (Ceci, 2021). Nonetheless, because of enormous engagements and a greater emphasis on lowering operating expenses, knowledge management has not really been accorded a significant amount of prominence. Corporations are beginning to recognize the value of knowledge management as a resource, which has prompted the need to preserve essential knowledge within the firm (Heisig *et al.,* 2016). The gap in knowledge affects the majority of enterprises in the aviation sector, including aircraft manufacturers, airlines, and service suppliers (Al-Dmour *et al.*, 2021).

To assist in retaining and improving existing knowledge in the UAE aviation sector, it is imperative to identify the important factors of an effective knowledge management system (Alaffad & Masrom, 2017). By doing this, it would help the leaders see what is required of them to optimize their businesses. Additionally, it would be beneficial to look into the practices in the UAE aviation industry because looking at this will give perspective on how the business is conducted (Ali *et al.,* 2019).

In contrast to the previous studies such as Seufert *et al.,* (2017), Davenport & Volpel (2019), and Zheng *et al.,* (2019) that investigated the determinants of establishing collaborative projects, this study focused on addressing the role of knowledge management in establishing collaborative projects, which has received less attention in the literature. In addition, previous studies such as Greer and Lei (2019), Al-dhaqm, *et al.,* (2017), and Saukko et al. (2020) ignored the role of knowledge management in creating stakeholders' trust, which was addressed by this study by testing the mediation role of stakeholders' trust between knowledge management and collaborative projects.

However, in order to develop an effective knowledge management system, it is necessary to understand the challenges that the UAE aviation industry faces. Once the obstacles are identified, it will be easier to devise strategies to overcome them and create a framework for a knowledge management system in the UAE aviation industry. This study intends to promote a sustainable and everlasting knowledge management system in the UAE aviation industry by providing a working framework for collaborative projects in the aviation industry upon completion of the research process.

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