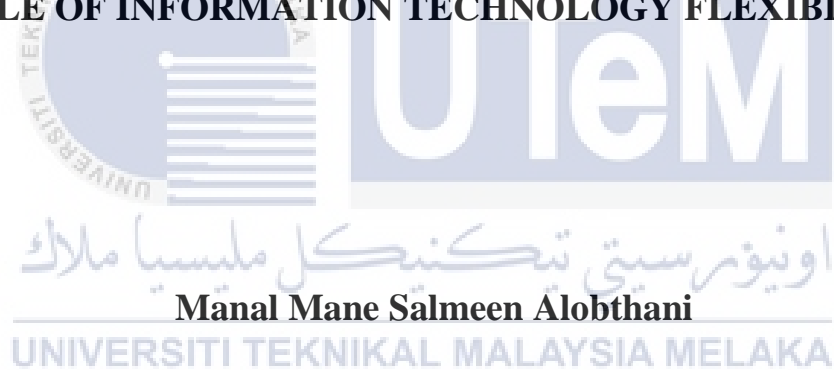**Faculty of Technology Management and Technopreneurship**

THE IMPACT OF INFORMATION TECHNOLOGY ALIGNMENT ON ZAYED UNIVERSITY PERFORMANCE: THE MODERATION ROLE OF INFORMATION TECHNOLOGY FLEXIBILITY

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Master of Science in Technology Management

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

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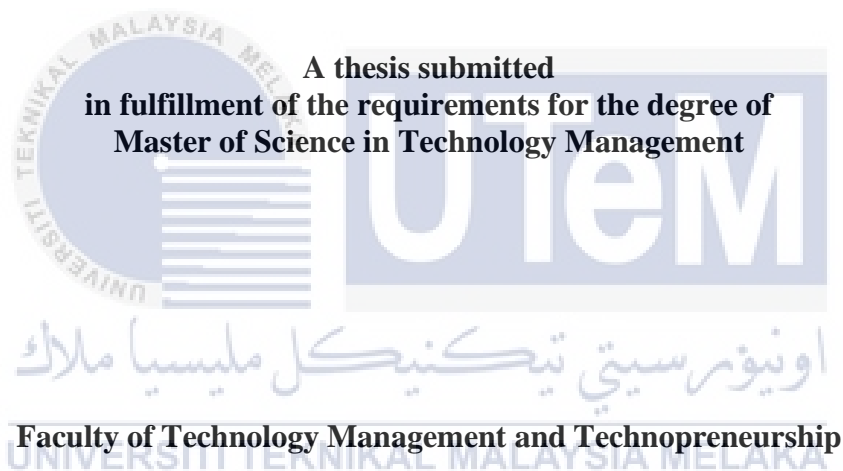
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**A thesis submitted
in fulfillment of the requirements for the degree of
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DEDICATION

This work is dedicated to the individuals who have played pivotal roles in my journey, guiding and inspiring me towards success.

To my esteemed parents, I express my deepest appreciation. Their unwavering support, unwavering love, and heartfelt prayers have always propelled me towards excellence. Their constant desire for my well-being and success have been a driving force behind my endeavors.

Lastly, I express my profound gratitude to my esteemed guide, Assoc. Prof. Dr. Norain Binti Ismail. Her profound insights and expertise in the field of have significantly shaped this work. Her visionary guidance and unwavering support have been invaluable, enriching the depth and quality of my research.

May this dedication serve as a testament to the profound impact these remarkable individuals have had on my personal and academic journey. Their unwavering support and guidance shall forever be etched in my heart.

ABSTRACT

In certain emerging economies, higher education institutions (HEIs) struggle to effectively utilize the advantages of Information Technology (IT), resulting in stagnation in their operations. The problem this research addresses is the underutilization of IT and its alignment components within HEIs in the context of the United Arab Emirates (UAE). The overarching aim of this study is to investigate the impact of IT alignment factors on the institutional performance of HEIs, and to scrutinize the moderating role of IT flexibility in the relationships between IT components (including IT communications, IT competence/value measurement, IT governance/structure, IT partnerships, IT scope and architecture, and IT skills) and institutional performance. Data was collected from a sample of 310 employees at Zayed University employing a cross-sectional survey design. The instrument utilized was a questionnaire, and the analysis was performed using a Partial Least Squares approach within a Structural Equation Modelling framework. The findings of this study revealed that IT alignment significantly and positively impacts the performance of HEIs, with IT skills demonstrating the most potent effect. Additionally, IT flexibility was found to play a significant moderating role in the relationships between IT alignment components and the institutional performance of HEIs. Grounded in the Dynamic Capabilities Perspective Theory and Resource-Based Theory, this research contributes to the existing literature by highlighting the integral role of IT alignment in improving institutional performance. Furthermore, it underscores the importance of IT competency among senior management in influencing performance through effective IT alignment. This real world exploration of the complementarity between IT governance and IT competence extends the understanding of IT governance practices. The findings have practical implications for policymakers and HEIs' management, highlighting the potential benefits of investing in IT alignment and enhancing IT flexibility to boost institutional performance.

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IMPAK PENJAJARAN TEKNOLOGI MAKLUMAT TERHADAP PRESTASI UNIVERSITI ZAYED: PERANAN MODERASI FLEKSIBILITI TEKNOLOGI MAKLUMAT

ABSTRAK

Di beberapa ekonomi yang sedang berkembang, institusi pendidikan tinggi (IPT) menghadapi masalah untuk menggunakan kelebihan Teknologi Maklumat (IT) dengan efektif, yang berakibat pada stagnasi dalam operasi mereka. Masalah yang dikaji dalam penyelidikan ini ialah penggunaan IT dan komponen penjajaran IT yang tidak mencukupi dalam IPT di konteks Emiriah Arab Bersatu (UAE). Tujuan utama kajian ini adalah untuk menyelidiki kesan faktor penjajaran IT terhadap prestasi institusi IPT, dan untuk mengkaji peranan moderasi IT fleksibiliti dalam hubungan antara komponen IT (termasuk komunikasi IT, pengukuran nilai / kompetensi IT, struktur / tadbir urus IT, perkongsian IT, skop dan seni bina IT, dan kemahiran IT) dan prestasi institusi. Data dikumpulkan dari sampel 310 pekerja di Universiti Zayed menggunakan reka bentuk kajian lintas seksyen. Instrumen yang digunakan adalah soal selidik, dan analisis dilakukan menggunakan pendekatan Partial Least Squares dalam kerangka Pemodelan Persamaan Struktural. Penemuan kajian ini menunjukkan bahawa penjajaran IT memberikan kesan yang signifikan dan positif terhadap prestasi IPT, dengan kemahiran IT menunjukkan kesan yang paling kuat. Selain itu, fleksibiliti IT didapati memainkan peranan moderasi yang signifikan dalam hubungan antara komponen penjajaran IT dan prestasi institusi IPT. Berdasarkan Teori Perspektif Keupayaan Dinamik dan Teori Berasaskan Sumber, penyelidikan ini memberikan sumbangan kepada literatur yang sedia ada dengan mengetengahkan peranan integral penjajaran IT dalam meningkatkan prestasi institusi. Selanjutnya, ia menekankan kepentingan kompetensi IT di kalangan pengurusan kanan dalam mempengaruhi prestasi melalui penjajaran IT yang efektif. Eksplorasi dunia nyata tentang pelengkap antara tadbir urus IT dan kompetensi IT memperluas pemahaman tentang amalan tadbir urus IT. Penemuan ini memiliki implikasi praktikal untuk pembuat polisi dan pengurusan IPT, mengetengahkan manfaat potensial pelaburan dalam penjajaran IT dan peningkatan fleksibiliti IT untuk meningkatkan prestasi institusi.

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First and foremost, I express my sincere gratitude to Almighty Allah (SWT) for His blessings and guidance, which have enabled me to successfully complete my thesis.

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Moreover, I would like to express my gratitude to UTeM for providing me with a conducive research environment. The institution's commitment to academic excellence and research support has played a vital role in the successful completion of this thesis. I am sincerely grateful for the opportunities and resources made available to me.

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Alobthani, M.M.S., Ismail, N.B. and Mansor, N.B., 2023. IT Alignment and Performance: A Study in UAE Higher Education Institutions. *Journal of Economics, Management and Trade*, 29(10), pp.77-88.

CHAPTER 1

INTRODUCTION

1.1 Introduction

This chapter presents the background of the study and clarifies the problem statement, research objectives, research question, and significance of the study. Also, the limitation of the research and the structure of the thesis is discussed as well.

1.2 Background of the study

Organizations nowadays rely extensively on information technology to facilitate service delivery at all levels and improve institutional performance. As a result, large IT-related expenditures are made in order to create economic value, yet businesses may not always reap the benefits (Bowen et al., 2007). This tendency may also be seen in the field of education. Information and communication technologies (ICTs) continue to play an essential role in updating teaching, learning, research, and administrative services in universities all over the world as a result of technological advancements in recent years (Bates, 2000; Snyder et al., 2007). Nonetheless, education institutions in certain emerging countries have failed to gain a competitive edge from IT expenditures, and university operations remain unchanged (Bates et al., 2011; Buabeng-Andoh, 2012; Kirkup and Kirkwood, 2005; Sife et al., 2007). One of the issues associated with this failure, in general, is that the purchased IT systems are not aligned with an organization's operations. As a result of IT and organizational mismatch,

failure to integrate IT into service delivery occurs (Luftman et al., 2012). As a result, because the technology integration process incorporates IT, human, institutional structure, and policy elements, among others, the problems linked to IT-organizational alignment may be analyzed from both technical and nontechnical viewpoints.

Scholars and practitioners have claimed that, despite significant expenditures in IT, there is still a mismatch between new technology and university services, particularly in poor nations (Kashorda and Waema, 2011). This issue frequently emerges in developing-country higher education institutions (HEIs). In certain circumstances, there may be no strategic framework or clear policies in place to guide the use of ICT in HEIs (Sife et al., 2007; Tedla, 2012), making it even more difficult to determine if a particular technology adds value to the present university services.

In general, the literature defines IT-business alignment as the degree of alignment between IT strategies and IT infrastructure, as well as business strategy and organizational infrastructure (Chan and Reich, 2007; ElMekawy et al., 2015; Luftman, 2003). When institutional goals and actions are in line with the IT systems in place inside the company, this alignment is effective. Given the significance of IT-business alignment, this is no longer a matter that is primarily the responsibility of the executive team. Instead, senior institutional executives are concerned about how this alignment can be formed, improved, and maintained across all units (El-Mekawy et al., 2015; Leonard and Seddon, 2012).

Universities, like any other form of business, are concerned with IT application strategy, purchase, deployment, and administration to guarantee successful integration and a beneficial impact on the institution's operations. Technology and business alignment is an issue not just for general commercial enterprises but also for academic institutions, as Brown and Motjolopane (2005) point out. Aligning IT and educational activities is thus seen as a critical

step in maximizing the value of IT expenditures while also improving institutional performance. The difficulty of integrating IT systems into various university institutions continues to rise (Wang et al., 2015), resulting in low rates of new technology acceptance and utilization. As a result, strategies, models, and procedures must be developed to assist practitioners in developing and evaluating technology-university service alignment. This is accomplished through a set of techniques that can be understood from both a social and technological standpoint.

Although some research suggests that there is no link between organizational alignment and improved business performance, experts and practitioners generally agree that alignment between business and IT has a favorable impact on company success. These studies are based on the idea that when an organization's IT resources, such as physical IT infrastructure, knowledge assets, and technical and management IT skills, are correctly aligned with business strategy, it will perform better.

Because of the increased competitiveness in the business environment, it is more important than ever to properly bridge the gaps between business requirements and IT capabilities. According to a recent review of the business and IT alignment research, maintaining IT alignment is becoming more important than ever before, as misalignment could lead not only to a drop in organizations' performance but also to an erosion of their agility and market competitivity.

The UAE higher education comprises of 118 higher education institutions, higher education institutions in the United Arab Emirates need to be recognized by the Commission for Academic Accreditation (CAA), which is part of the Ministry of Education (Ashour, 2020). Among these institutions, 41 education institutions out of the CAA, while the 77 education institutions with CAA. Furthermore, according to the global universities ranking -quality standard- (QS) (2021), the UAE occupied a late ranking as shown in Table 1.1.

Table 1.1: Global UAE universities ranking -quality standard- (QS) (2021)

No	Higher education institutions	QS Ranking
1	Khalifa University	211
2	United Arab Emirates University	284
3	American University of Sharjah	348
4	American University in Dubai	601-650
5	University of Sharjah	601-650
6	Abu Dhabi University	701-750
7	Ajman University of Science and Technology	701-750
8	Zayed University	701-750

Source: Global universities ranking -quality standard- (QS) (2021)

The complexity of the information technology systems integrated into various university institutions continues to grow (Wang et al., 2015), resulting in low rates of acceptance and usage of new technologies. Thus, strategies, models, and techniques should be established to help practitioners in developing and evaluating strategies, models, and methods for aligning technology and university services. This alignment is accomplished by a series of activities that are both social and technological in nature.

While observing the UAE environment, it is clear that the UAE intends to become a developed nation by 2030 via the implementation of the Vision 2030 project, which aims to fulfil the UAE's millennium development goals through sustainable development initiatives (MDGs report, 2008-2018). The United Arab Emirates (UAE) has one of the world's fastest expanding economies. The UAE government wants sophisticated technology and encourages entrepreneurs to conduct business in this developing market (Al-Ameri and Al-Shibami, 2019).

The UAE economy's rapid expansion over the previous decade has also highlighted the importance of the technology economy (KE) as a source of income and economic growth (Majdalawieh et al., 2017). The technology economy idea is predicated on the premise that

perhaps the ability to generate, disseminate, and utilise information and technology is critical for economic growth and development (OECD , 2000). technology economy entails both opportunities and difficulties. In this climate, employers anticipate new graduates to bring a unique blend of values, skills, technology, and competences. As a result of the technology economy, educational institutions are reconsidering their roles, revising their norms and procedures, and speeding up curricular revisions (Gardner, 1993) in order to better prepare their graduates for the job.

UAE put in place policies and strategies for rebuilding the country in all sectors, including education. One of the leading strategic plans at national level was the UAE Vision 2020 (UAE Vision, 2020). This guiding document sets out the country's strategic pillars for achieving the planned sector-level objectives, and education, and ICT are among these pillars. As articulated in the UAE Vision 2020, one of the sectors to be focused on in transforming the country from an Oil-based economy to a technology-based economy is the UAE education system. The alignment and use of ICT are therefore considered to be key strategies for the above transformation. This statement is also emphasised in the national-level ICT in Education policy (Majdalawieh et al., 2017).

The Ministry of Education in UAE is responsible for the abovestated policy and for the implementation of ICT in education at the national level. Due to the effective alignment of ICT, and since ICT takes the form of new artefacts being introduced to the academic community, the UAE higher education system has been experiencing systematic and radical institutional reforms. These transformations have taken place not only in teaching and learning, but also in research and administrative processes, with the primary aim of improving the quality of education and research, as well as innovation in administrative services.Similarly, to streamline the higher education system in UAE, both private and public universities operate under the supervision of the UAE Higher Education Council (HEC). The mandate

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of HEC is to ensure the structure and functioning of HEIs in UAE and to monitor and evaluate the standard of provision and ensuring the quality of teaching and research.

In this institution, the alignment of ICT into service delivery at the new university of UAE has therefore been seen as one of the most important aspects supporting various innovative reforms at this institution (Majdalawieh et al., 2017). Likewise, these institutional reforms were undertaken in the expectation that ICT resources would be a pillar supporting both managerial and academic processes (UAE Vision, 2020). It is from this perspective and based on the inspiration of the UAE ICT in Education policy that a number of IT support systems have been acquired to support teaching, learning, research and the general educational management of universities in UAE.

One of the perceived benefits of information technology is the enhanced accuracy and speed of information, which improves the institution or organization's operations significantly. As a result, the rising importance of information technology may be considered to be directly proportionate to the investment invested (Majdalawieh et al., 2017). This will necessitate careful preparation in the future implementation of information technology investments, and therefore their governance will necessitate effective information technology inside an organisation, beginning with planning and ending with execution.

This research will carry out mainly in UAE, a land developing country in the Asia region. Although a broad perspective was adopted to develop a theoretical underpinning for this research, this work will primarily undertaken in UAE as a geographical research context. Hence, higher education organizations will selecte in UAE. The participants in this research will drawn from technical, managerial and academic dimensions.

1.3 Problem statement

Since the start of the 20th century, higher education has contributed significantly to societal economic and social growth (Razinkina et al., 2018). Higher education has numerous problems, including an unpredictable economy, new technologies, technology proliferation, and life-long learning. According to experts, rising costs, unpredictability of earnings, an explosive increase in student demand, quality difficulties, and an explosion of new technologies have forced Higher Education Institutions (HEIs) onto a steep learning curve (Elatawneh and Sidek, 2021). As a result, such specific difficulties must be considered, and efforts must be made to satisfy the projected requirements of individuals and communities (Helbing, 2019). As a result, more countries are attempting to grow their educational systems, and they must attract, support, and devise processes to retain academic employees. Universities are obliged to provide flexible programmes and possibilities in order to meet the demands of their students.

The UAE Ministry of Education does not recognize educational institutions based in free zones (Ashour, 2020). While individual Emirates are responsible for managing the standards of educational institutions within their free zones, universities Dubai is the only Emirate that does so through the Technology and Human Development Authority's University Quality Assurance International Board. According to Saji and Nair (2018) the low performance of the UAE higher education institutions attributed to the lack of aligning the information technology , which presents a gab between the technology practising and managing higher education institutions. The technology department do not understand what the higher education institutions are doing, and these institutions folks think technology is just about turning PCs on and off again (Al-Qirim et al., 2018). This issue dis-accelerates the UAE higher education institutions performance. Hence, paying much attention toward this gap is needed.

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Because IT alignment tends to create complexity within university service delivery, it must be handled appropriately. Despite HEIs' efforts to integrate IT systems and accompanying IT investments, there are still a number of issues about how technology may best be linked with educational activities (Majdalawieh et al., 2017; Byungura, 2019). Relevant methods for integrating technology with university operations to bring value to teaching, learning, research, and administration are not well understood. As a result of this misalignment, numerous IT initiatives in developing-country HEIs have failed (Majdalawieh et al., 2017).

High-quality ICT infrastructure and internet connectivity, particularly in the UAE, as well as a lack of appropriate ICT skills, are issues that have hampered the alignment of technology in higher education (Majdalawieh et al., 2017). Furthermore, despite significant investment, the IT systems that are already accessible in the UAE, for example, are not being used properly. Similarly, even after training, system users such as instructors do not use the university's e-learning platform. Administrators are also taught to utilise the integrated computer-based management information system; however, this system is not being used as planned, despite allegations that users lack basic IT competence.

Several models, techniques, and frameworks have been created by scholars and practitioners with the goal of measuring and directing the deployment of technology inside HEIs (Al-Hamad et al., 2021). However, lack clarity, completeness, and emphasis in terms of which techniques should be implemented to build and measure alignments between IT and institution Performance. As a result, the idea of IT-business alignment is not clearly reflected in structuring relating to IT alignment inside educational institutions. Furthermore, most current models and frameworks in the literature must be tailored to specific settings, such as the higher education industry in the UAE.

IT infrastructure flexibility encompassing hardware, software, and networks could have a positive moderating effect on the link between IT alignment and higher education institutions performance. That is, institutions with similar levels of alignment between their IT and business strategy could have different performance depending on their respective IT infrastructure flexibility. Under the two rival perspectives that describe the link between alignment and institution performance, IT flexibility could further increase an already positive effect of alignment on institution performance, or it could decrease some negative effects of alignment on institution performance.

However, the alignment of IT and business, as well as associated strategies, has been extensively researched in other industries. IT institutional alignment are defined as a set of antecedents or processes that are intended to improve the fit between IT and the institutional business (Majdalawieh et al., 2017; Byungura, 2019). As a result, a large number of business-IT alignment models have been created, typically for large corporations (Majdalawieh et al., 2017; Byungura, 2019). These models and frameworks are primarily connected to Luftman's technique for measuring institutional alignment (2003). The latter technique offered six critical dimensions of IT-business alignment maturity: governance, communication, technology scope, competence/value measurement, skills, and collaboration.

Other studies have looked at the impact of IT alignment on institutional performance, mostly in commercial organisations (Byungura, 2019). Similar studies focused on HEIs, on the other hand, are still uncommon. As a result, the scope of this master's research is confined to investigating the information technology and institution Performance of Higher Education institutions in the UAE.

One study gap arises from the fact that the creation of these models and frameworks was mostly motivated by firms in developed regions. Another issue is that these existing models and frameworks do not take into account the higher education sector at all. As a

result, research on alignment methods in the context of higher education in poor countries is limited, creating still another research vacuum. When establishing IT systems in higher education institutions such as the UAE or comparable contexts, it is difficult to use the available models and of IT-institutional in the literature. A contextualized IT model for the higher education sector might be useful in directing the IT implementation process in UAE institutions and other comparable contexts.

The issue of IT alignment continues to be a significant problem for universities seeking to integrate their educational and technological goals. IT alignment has been viewed as a key facilitator for HEIs hoping to get the most out of their IT expenditures. Furthermore, it enables a higher education institution to devote important IT resources to critical areas in order to address educational difficulties and increase educational value. Although the previous study has looked at the underlying elements that contribute to alignment and improved HEI performance, alignment in developing countries and academic institutions has received less attention. Furthermore, the majority of research has examined alignment using business plans, ignoring alternative techniques used by HEIs.

Information Technology (IT) alignment, defined as the degree to which the IT objectives and activities of an organization are congruent with its business objectives and activities (Majdalawieh et al., 2017; Byungura, 2019), has increasingly become a critical focus in educational institutions. At Zayed University in the United Arab Emirates (UAE), as in many higher education institutions globally, IT alignment is considered a key component in achieving optimal institutional performance. Despite the recognized importance of IT alignment, there is a lack of understanding about which specific factors within this broad concept actually contribute to the performance of educational institutions like Zayed University. Several studies have examined IT alignment factors such as IT communications, IT competence measurement, IT governance, IT partnership, IT scope and architecture, and IT skills