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Requirements of Information Technology for Achieving Strategic Agility in King Khaled University

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Abstract

This research aims to measure the extent of information technology requirements needed to achieve strategic agility in King Khalid University. Additionally, it seeks to assess the significance of statistical differences in competence across genders and academic rankings. The researchers employed a descriptive research design and quantitative methodology, utilizing a questionnaire as the primary tool for data collection, to accomplish the objectives of the study. The study polled a total of 523 academic members from KKU, who expressed strong approval of the information technology requirements necessary to achieve strategic agility. The results also indicated that the perspectives of KKU faculty members about the prerequisites of information technology for attaining strategic agility were not correlated with demographic variables such as gender or academic ranking

Keywords: *Requirements of information technology, achieving strategic agility, KKU.*

Introduction

Global administrative systems have faced many challenges in the last few decades, such as globalization, formation of trade unions and international economic treaties, changes in technology (such as production technology, information technology, the internet, and e-commerce), increased competition, customer focus, and social, political and cultural changes have all led to a change in business environment with its dynamic state (Olu-Egbuniwe & Maeyouf, 2019). The significant and swift changes in the internal and external environment of higher education institutions have required substantial alterations in traditional university administrative practices. It is no longer acceptable to largely depend on evaluating and extrapolating previous occurrences, believing that the future is simply a continuation of the past, and perceiving change as a danger to universities rather than an opportunity to gain (Babazadeh & Titkanloo, 2019). As a result, new terminologies were introduced to address these developments, such as strategic agility, which was discussed in diverse administrative literature with varying conceptions, including organizational agility (Razavi et al., 2019).

Strategic agility, comprising strategic sensitivity, resource fluidity, and leadership unity, is the fundamental element of an organization's response to changes. It is essential to leverage strategic agility to support companies in implementing transformative measures for long-term business sustainability (Tan et al., 2017). Strategic agility is a crucial trait for organizations in the information age, given the widespread use of information and network technology in modern society. This includes embracing new organizational concepts like network organization, virtual projects, agile manufacturing systems, and organizations with hyperlinks (Panda, 2022). Thus, it can be asserted that information technology has

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dismantled the conventional limitations in overseeing diverse organizations, such as colleges, in favor of more adaptable and nimble approaches to confront numerous transformations. Thus, institutions require several technological prerequisites that are essential for enhancing their strategic agility (Yazdanjooei & Khamseh, 2020).

Technology is considered as the primary factor influencing university management. Thus, universities that effectively utilize technology for management purposes will have the greatest potential for survival and longevity in the face of existing competition (Heydari et al., 2020). Information technology plays a crucial role in gathering, organizing, processing, storing, and disseminating knowledge. The utilization of information technology in management higher education institutions, enhances the proficiency of university staff while also offering greater adaptability in managing information and data. This is due to the existence of databases that can be accessed remotely from any location, by authorized people rather than being owned by specific individuals (Ridwandono & Subriadi, 2019).

Universities are currently endeavoring to replace their tradtional administration systems with administrative procedures that heavily rely on information technologies. Strategic agility, resulting from advancements in information technology, is a crucial administrative strategy for universities (Koçu, 2018). Liang et al. (2017) confirmed that the changes in administrative sciences have resulted in the development of modern administrative tools and technology-based methods. These tools are competitive with each other and help overcome challenges, enabling institutions and their employees to achieve progress and prosperity. Information technology plays a crucial role in enhancing an organization's efficiency and its capacity to detect and promptly adapt to both internal and external changes (Ravichandran, 2018). Furthermore, information technology is a vital component of production, alongside capital and human resources, and so represents a distinct advantage for many organizations. Properly classified and analyzed information plays a crucial role in the future planning processes and timely decision-making of institutions. In order to stay competitive, institutions should prioritize efficient management of their affairs by acting swiftly (Deng et al., 2021).

Conversely, contemporary administrative literature has elucidated the correlation between information technology and the attainment of strategic agility in diverse institutions. This relationship is anticipated to persist as a significant area of research for scholars, owing to the crucial role and significance of information technology in commercial, industrial, and service enterprises (Xie et al., 2022). King Khalid University, similar to other universities in developing nations, have encountered escalating obstacles due to the transformations and advancements occurring in their internal and external surroundings. The management of higher education institutions is adapting to these changes and developments, with a focus on ensuring that King Khalid University is equipped to effectively address these changes internally. Additionally, external factors have a direct impact on how universities perceive and choose their strategic options, as they are influenced by true environmental conditions (Panda & Rath, 2018).

Furthermore, it has been verified that there exist several impediments that impede the management of universities, with the most significant being the absence of use of contemporary technological approaches in university administration and the institutions' steadfast adherence to their traditional administrative practices (Cepeda & Arias-Pérez, 2019). There are several outcomes concerning the administration of universities, including indications of limited financial autonomy. This is evident through the loss of universities' influence in determining their budget, the lack of flexibility in reallocating funds within different departments, and the limited capacity of universities to secure funding from

various sources (Setiawati et al., 2022). The multitude of financing sources is a significant demonstration of the financial autonomy of universities. The primary impediments to the university's administrative autonomy include: ambiguous administrative goals, the absence of explicit and unambiguous work instructions, inadequate efforts towards administrative growth and reform, dependence on inflexible regulations and legislation, the absence of initiative and creativity in administrative work, insufficient training, and a rigid organizational structure (Gao et al., 2020). The concept of education, until it became synonymous with school work, primarily focused on imparting information to students. Consequently, universities transformed into institutions that upheld the prevailing social order, encompassing the authority of academics and administrators, which mirrored the dominant powers in society in terms of knowledge and management (Zhen et al., 2021). Conversely, the implementation of internal audit in universities is generally deficient due to the absence of dedicated units for this purpose. The audit is restricted solely to the oversight conducted by the Ministry of Education, which focuses on guaranteeing educational quality and accreditation through external auditing procedures aimed at accrediting the institution. Based on the preceding information, the concept of the present investigation can be inferred. The purpose of crystallizing this study was to address the information technology criteria that institutions must fulfill in order to attain strategic agility.

Research Questions

The aim of this study is to examine the questions that were raised in the previous discussion, as indicated below:

1. What are the requirements of information technology for achieving strategic agility in King Khalid University?
2. What is the extent to which gender and academic ranking influence the viewpoint of the study sample about the information technology requirements for attaining strategic agility in King Khalid University?

Literature Review

The world is currently experiencing a global scientific, informational, and technological revolution that has surpassed national boundaries. This revolution is driven by the growth in communication technology, which has facilitated the rapid dissemination and interchange of information (Felipe et al., 2020). Information technology is distinct from prior technologies because it interacts with both tangible and intangible aspects of human society. Information technology has become a ubiquitous factor in all human activities, seamlessly integrating into the fabric of human society and prominently contributing to the extensive economic and media globalization. With the advancement of information, knowledge, and technology, the criteria for wealth and influence have shifted. Information and knowledge have now become the primary measure of development and productivity, surpassing traditional factors like land, capital, natural resources, and labor force (Melián-Alzola et al., 2020). Indeed, the expense of knowledge often surpasses the cost of other physical production elements, and its additional worth yields returns that are several times greater than those of other production factors. Consequently, the adoption of these new standards, which are rooted in knowledge, presents a significant obstacle for emerging nations that lack the capacity to establish an educational system that enables its citizens to keep up with advancements in knowledge and information technology (Karimi-Alaghehband & Rivard, 2019).

The advent of information and communications technology has instigated profound transformations worldwide. At the individual level, these revolutions resulted in significant transformations in people's lives, customs, traditions, behavioral patterns, and interpersonal relationships. At the organizational level, information technology has influenced the structures and work methods of institutions (Tomomitsu & Moraes, 2021). Mao et al. (2021) noted that the management of administrative affairs was impacted by the introduction of telephone technology in the early twentieth century. Those that stay updated on current advancements understand the significance of information technology and its fundamental elements, including software, equipment, and communication. The science highway serves as a central component of an integrated system that affects the development and expansion of universities.

During the 1990s, several economists highlighted that the rate of environmental changes surpasses the capacity of institutions to effectively adjust to them. These institutions were incapable of effectively utilizing the available prospects, and their inability to adjust to evolving environmental circumstances may ultimately result in their insolvency and failure to address the problem. US Department of Defense convened a group of management specialists at a university in Pennsylvania to deliberate on the most effective ways for resolving the situation (Hassan & Arshad, 2023). The team's work resulted in a two-volume report titled "Productive Business Strategy in the Twenty-First Century," which was published in the fall of 1991. It was in this report that the term agility was first introduced. Since then, this concept has gained widespread popularity in management sphere, and has served as a starting point for numerous researchers who have conducted studies on this topic. Strategic agility has been recognized as a crucial means of ensuring the survival and continuity of institutions in an uncertain environment. It has been proven to be a key factor in achieving institutional success, which in itself is an advantage. The sustainability of the organization can be ensured by the provision of high-quality ideas, services, and goods (Awwad et al., 2022).

Contemporary universities encounter numerous challenges due to the swift and unforeseen transformations in their surroundings. Consequently, different institutions employ relevant and effective strategies to address those developments (Abdel-Al., 2019). Strategic agility is a significant method that surpasses mere adaptation to changes. It involves aligning institutional procedures with advanced modern technology. This leads to delivering consumers with top-notch products within the lowest feasible timeframe (Olu-Egbuniwe & Maeyouf, 2019). It is evident that the concept of strategic agility arose due to universities' inability to adjust to changing environmental conditions. It has been demonstrated that strategic agility is essential for universities to successfully adapt to changes and equip themselves with modern advanced technological capabilities (Babazadeh & Titkanloo, 2019).

Strategic agility is a contemporary concept in strategic management that sets modern institutions apart due to its substantial influence on their ability to outperform competitors with speed and accuracy (Razavi et al., 2019). Tan et al. (2017) defines it as the capacity to adapt, ensuring consistent alignment with the business's strategic direction is crucial for success. This involves developing innovative production models and methods by effectively recognizing and responding to political and structural challenges. It also involves preventing unnecessary crises and implementing political changes when necessary. According to Panda (2022), organizational agility refers to the capacity of an organization to swiftly and effortlessly adapt to unforeseen circumstances, enabling it to be flexible and efficient in modifying its operations by making timely decisions. Strategic

agility necessitates a range of qualities including perceptive strategic thinking, unified dedication, accountability, and efficient allocation and management of resources. These factors constitute the core aspects of strategic agility (Yazdanjooei & Khamseh, 2020).

Strategic agility plays a crucial role in effectively implementing university administration. Pages and Morgan argue that strategic agility is crucial for universities to succeed in a rapidly changing environment. This involves being able to provide support and quickly adapt to take advantage of opportunities (Heydari et al., 2020). Strategic agility allows universities to efficiently and promptly achieve various goals, such as implementing flexible and intelligent competitive strategies to respond to the dynamic nature of their surroundings and create a new reality. Strategic agility empowers universities to promptly and efficiently adapt to changes in the environment, enabling them to develop a better competitive advantage (Ridwandono & Subriadi, 2019). Acquiring this skill is currently necessary, as strategic adaptability is essential in two areas: firstly, for doing research in universities to comprehend fundamental capabilities, and secondly, outside of universities to gain a thorough grasp of the surrounding environment. Based on the aforementioned information, it can be concluded that strategic agility is crucial for the advancement of universities. It involves continuously managing the strategic direction and adapting to internal and external environmental changes by employing innovative approaches and methods. Strategic agility improves the competitive ability of universities by enabling them to effectively and quickly respond to any changes that may arise (Koçu, 2018).

Universities are characterized by a prominent emphasis on change, and as sophisticated institutions, they must regularly modify their administrative and educational approaches. Hence, they have no choice, but to modify their vision and goals (Liang et al., 2017). Worldwide transformations taking place in different domains of existence, which give rise to global instability, the rise and expansion of small-scale industries, and fierce competition stemming from the rapid expansion of markets, elevated expenses, and heightened competitiveness, alongside technological, social, and economic shifts, provide a compelling rationale for the emergence of strategic agility in universities (Ravichandran, 2018).

Information systems technology is crucial for universities to achieve strategic agility. By utilizing information, universities may assess their operations and restructure their operational procedures. Information systems facilitate efficient communication among faculty members and their staff, while also giving the university's senior administration with the necessary details to support decision-making (Deng et al., 2021). Agility refers to a manufacturing system that possesses the necessary capabilities, such as advanced technologies, skilled workforce, knowledgeable management, and information, to effectively adapt to the constantly evolving market demands in terms of speed, flexibility, customer satisfaction, competition, supplier relationships, infrastructure, and responsiveness. It is a system that rapidly transitions between models. Ideally, products on manufacturing lines should be able to promptly and accurately meet client demand (Xie et al., 2022).

Information technology is a fundamental component that aids universities in carrying out their primary objectives, which include scientific research, education, community service, and environmental advancement (Panda & Rath, 2018). An optimal vision for an information technology and systems development project should acknowledge that information technology is neither a standalone entity or under the exclusive ownership of any individual or group. It is not a one institution, but rather a collection of tools that aid in the accomplishment of university aims and objectives. Information systems and

technology development support and enhance universities in their efforts to digitize and disseminate information efficiently through university information networks (Cepeda & Arias-Pérez, 2019). This helps to establish new educational models, streamline university administration and the educational process through automation, and equip the university community with the necessary skills through targeted and ongoing training. The primary significance of traditional information technology, encompassing computers, software, communications, and the internet, lies in its ability to enhance the efficacy and efficiency of contemporary organizations (Setiawati et al., 2022). This is achieved by streamlining procedures, saving time and effort, minimizing expenses, augmenting precision and swiftness in completion processes, and elevating administrative productivity. Moreover, the technical requirements for constructing decision support systems that prioritize objective accuracy and effectively contribute to making critical strategic decisions must be distinct from those of traditional systems (Gao et al., 2020). This distinction is particularly evident when considering the indispensable role of artificial intelligence in these systems, as expert systems are integrated and combined with them in the modern era. Expert systems are occasionally called expert support systems, as they combine with decision support systems, executive information systems, and group decision support systems to facilitate accurate and right decision-making. The implementation of this contemporary technology in university administration would enhance its efficiency and precision in accomplishing tasks and making suitable administrative judgments (Zhen et al., 2021).

Universities rely on information technology to facilitate decision-making processes, as information is considered a valuable resource alongside material and human resources. However, it is important to note that information technology is unable to substitute the human intellect, which oversees and supervises the decision-making process (Felipe et al., 2020). Instead, it can be argued that information technology equips decision makers with the ability to gather and analyze data, as well as generate various solutions to problems. Decision support systems are created by integrating databases with mathematical and statistical models (Melián-Alzola et al., 2020). These systems are designed to be adaptable and may be updated to accommodate changes and respond to surrounding situations. Many universities employ strategic information technology applications to enhance the caliber of their graduates or alter their competitive approach. The strategic utilization of information technology has a significant impact on the success of universities by affecting the development and execution of university strategy (Karimi-Alaghehband & Rivard, 2019).

Due to the inability to conceal the significant impact of information technology, which serves as a crucial asset for institutions in adapting to environmental changes, it is necessary to investigate the technological requirements for enhancing the institution's strategic adaptability and flexibility. However, it should be noted that meeting the information technology requirements for achieving strategic agility in universities is a complex and costly endeavor (Tomomitsu & Moraes, 2021). The devices themselves, although important, account for less than 20% of the overall expenses of these programs. The majority of the costs are attributed to the programs, curricula, and methodologies utilized to operate the devices and train personnel based on contemporary scientific principles (Mao et al. (2021). Furthermore, technology encompasses more than simply controlling equipment or receiving training on readily available applications in the market. Administration officials have expressed varying opinions on how to define the information technology requirements necessary to achieve strategic agility at universities. It is often attributed to the extensive variety of information technology (Hassan & Arshad, 2023). Some individuals categorize it as dynamic capabilities, useful capabilities, and competitive

capabilities, while others categorize it as requirements reflected in the information technology architecture. IT infrastructure and personnel goods (Awwad et al., 2022). Although some argue that the categories of information technology requirements consist of technical resources, administrative resources, and administrative capabilities, it is more precise and significant to address these requirements as follows:

IT infrastructure requirements: The significance of information technology infrastructure skills is swiftly escalating. Consequently, institutions have augmented their investments in this domain, as certain studies suggest that the aggregate sum invested in information systems infrastructure inside institutions corresponds to 58% of the overall budgets designated for investment in information technology within the institution. This is because having a strong information technology infrastructure allows the organization to effectively handle competitive challenges by minimizing costs associated with advanced technology. This infrastructure is a valuable resource that is hard for competitors to replicate (Olu-Egbuniwe & Maeyouf, 2019). Infrastructure flexibility is utilized across several industries to ensure the delivery of accurate, reliable, secure, and confidential information to users. Based on the aforementioned, it can be concluded that the significance of information technology infrastructure is growing in universities. Consequently, numerous prestigious universities have recognized that establishing a robust information technology infrastructure is a fundamental objective within the scope of comprehensive information technology management. This endeavor effectively aids institutions in adapting to environmental changes and enhancing their strategic agility (Babazadeh & Titkanloo, 2019).

Human resources requirements: Undoubtedly, there exists a strong correlation between the demands of information technology and the human component employed to use it. The significance of human resource skills has grown in tandem with the increasing role of information technology in contemporary enterprises. The skills required in the field of human resources in information technology can be categorized as technical skills, administrative skills, business skills, and interactive skills (Razavi et al., 2019). The significance of these talents resides in programming procedures, systems analysis, and database administration. Recent endeavors have highlighted the significance of these particular capabilities in information technology as a means to establish a state of connection and convergence between the operational needs of contemporary organizations, ultimately leading to the attainment of additional value. Some argue that the capabilities of human resources in the field of information technology go beyond just technical knowledge. They also include the ability to effectively share, utilize, and manage that knowledge (Tan et al., 2017). Therefore, the emphasis in this resource is on advanced and intricate technical skills that are hard to replicate. Achieving this requires reengineering administrative skills and job roles in universities to align with the new vision. This stage may also necessitate the development of an awareness program, involving individuals and groups both within and outside universities, through a process known as purposeful awareness (Panda, 2022).

Dynamic requirements: Despite the significance of the aforementioned information technology requirements, universities, in dynamic and competitive environments, prioritize the acquisition of dynamic information technology capabilities. This enables them to effectively address environmental threats and risks, while also capitalizing on emerging opportunities resulting from the dynamic nature of both information technology and the competitive landscape (Yazdanjooei & Khamseh, 2020). Dynamic capability refers to the organization's need to continuously update its information technology capabilities in order

to adapt to changing environmental conditions. This allows the organization to promptly address threats and take advantage of opportunities. Additionally, dynamic capabilities involve the ability to seek, explore, acquire, absorb, and utilize knowledge about resources and opportunities, as well as how to effectively organize them (Heydari et al., 2020).

To capitalize on the opportunities that arise from changes or variations in demands. Within the same framework, defines dynamic capabilities as "the capacity of an organization to effectively combine, construct, and reconfigure both internal and external resources in order to develop well-structured capabilities that are deeply embedded within the organization's cultural and social context." The concept of dynamic capability emphasizes the need for organizations to continuously update their capabilities in order to adapt to environmental changes. This allows organizations to effectively respond to environmental risks and take advantage of new opportunities (Ridwandono & Subriadi, 2019).

By leveraging advanced information technology, organizations can quickly identify and acquire knowledge about resources and opportunities, and effectively organize their resources to exploit these opportunities arising from changes in demands, their acceleration, or their diversity. The types of dynamic capabilities varied. The researchers' viewpoints on their categorization, particularly the classifications proposed by Liang et al. (2017), revolve around adaptive capabilities. These capabilities pertain to an organization's capacity to adjust and seize opportunities in the external environment. The focus of this ability is on conducting effective and ongoing research. The aim is to identify the most favorable prospects in the external environment and determine the most effective investment strategies to make use of the institution's strategic flexibility. Next, we have the absorptive capacities, which refer to the institution's capacity to recognize, incorporate, and utilize the value of information. The final capability is the creative capability, which pertains to the institution's capacity to produce its products in novel and imaginative ways (Koçu, 2018).

Administrative requirements: The success of technology goals in universities is heavily dependent on administrative requirements, as the administration plays a crucial role in creating a suitable educational administrative environment (Ravichandran, 2018). The conventional approach to management typically employs a centralized style, whereas the effectiveness of an agile institution relies on the necessary decentralization and adaptability. Consequently, university leaders possess a distinct vision that encompasses the establishment of new operational procedures, backed by comprehensive planning, well-researched outcomes, and the development of a novel technological ecosystem (Deng et al., 2021).

Previous studies

Olu-Egbuniwe and Maeyouf (2019) examined the impact of information technology on the efficiency and adaptability of telecommunication firms in Libya. The study conducted a survey on a sample of 364 respondents employed in the telecommunication sector in Libya. The surveys were segmented into three sections, each focusing on the integration of IT in enterprises, namely their IT infrastructures and personnel usage, the organization's productivity in terms of market profits and lead, and the organization's adaptability. The findings indicated that the impact of information technology on organizational agility is highly significant. The study demonstrated that the competitiveness of the communications business in Libya is strongly dependent on the expansion and incorporation of Information technology.

In their study, Gao et al. (2020) examined the impact of crucial managerial IT capabilities, specifically IT business spanning capability, on organizational agility. They also explored

how these capabilities interact with two important categories of technical IT capabilities, namely IT flexibility and IT integration. The authors primarily focused on investigating the positive synergy or complimentary connection between IT business-spanning capability and IT flexibility, as well as the negative synergy or substitution relationship between IT business-spanning capability and IT integration. Empirical evidence has demonstrated a positive correlation between IT flexibility and IT integration with organizational agility. Additionally, the research findings suggested a beneficial interaction or complementary connection between IT business-spanning capability and IT flexibility, while indicating a detrimental interaction or substitutive connection between IT business-spanning capability and IT integration in terms of organizational agility. This discovery illustrates that the ability of IT to stretch across different areas of a business can have varying effects on the agility of an organization, depending on how it interacts with specific types of technical IT capabilities. Furthermore, the impact of IT flexibility on organizational agility is significant, but the efficacy of IT integration diminishes when there is a high level of IT business-spanning capacity. Different types of technical IT capabilities exhibit varying levels of efficacy when applied to a wide range of IT business functions. Therefore, it is crucial to establish suitable technical IT capabilities, with a particular emphasis on highly efficient ones like IT flexibility, especially when dealing with extensive IT business-spanning capabilities.

The objective of Yazdanjooei et al. (2020) was to promote agile organizations by utilizing information technology and examining the influence of internal views of information technology services on the quality of such services in small and medium companies located in the Alborz province. This study was a descriptive and field research with a practical objective. The statistical population consisted of a subset of small and medium industries situated in the Alborz province. The data has been gathered via the Industrial Towns Company of Alborz province and encompasses all the managers and experts of small and medium industries in Alborz province. The sampling approach employed in this research was a random selection process, and the questionnaire has been disseminated among persons of the population in a random and selected manner. The study has assumed a predetermined population size of approximately 1,200 individuals. The data analysis results indicated a direct correlation between the perception of internal information technology services and the quality of information technology services. There existed a direct correlation between the excellence of information technology services and the level of agility in information technology. A direct correlation existed between the perception of internal information technology services and the agility of information technology services. Information technology agility and organizational agility were positively correlated.

Setiawati et al. (2022) investigated the impact of information technology on the ability of a business to quickly adapt and respond to changes. They also examined the factors that influence this agility, the parties who are engaged, and the reasons why information technology is essential in a firm. Business agility refers to a company's capacity to observe and evaluate changes in order to make informed decisions in an uncertain environment, particularly in the context of the COVID-19 epidemic and the challenges posed by the fourth industrial revolution. The employed approach entailed a comprehensive literature evaluation, wherein a thorough examination of 401 relevant publications has shown many elements that impact company agility. The findings demonstrated that business agility holds significant importance inside the organization. Business agility is shaped by the integration of technology, the leadership of top management, and the contributions of human resources, operations, and information technology departments. Through the utilization of

information technology, firms can enhance their ability to discover and address business prospects, clients, and resources with greater efficiency and effectiveness.

Methodology

The present study utilized a descriptive research technique and quantitative approaches to offer a comprehensive, accurate, and structured depiction of the characteristics and data pertaining to the population under investigation. Descriptive quantitative research, as outlined by Saunders et al. (2016), aims to comprehensively elucidate and define the diverse attributes of the subject or place under investigation. Subsequently, the gathered data undergoes meticulous processing and is then displayed.

Sample

To gather the data of this study, a survey was conducted on 523 faculty members from King Khalid University, who were randomly selected.

Research Tool

In order to accomplish the research objectives, the researchers utilized a previous study conducted by Abdel-Al (2019) to assist in the creation of the questionnaire, which served as the primary research tool. The survey was divided into two separate portions. The survey's first section collects data on the respondents' "gender" and "academic ranking." Section 2 encompassed a comprehensive compilation of 15 elements that were particularly tailored to assess four various facets of information technology requirements for attaining strategic agility. These areas include the range of needs for IT infrastructure, human resources, dynamic factors, and administrative aspects.

Tool Validity

A team of 10 educational management experts, who are associated with Saudi Arabian universities and have specialized knowledge in language development, scientific accuracy, and clarity, were tasked with evaluating the reliability of the research tool. According to evaluations conducted by experts, it has been determined that all components have been deemed satisfactory, but with slight linguistic modifications.

Tool Reliability

One method was employed to determine the dependability of measurement is assessing the uniformity of outcomes by employing comparable samples and tools while maintaining all other variables unchanged. The assessment of answer consistency was conducted with Cronbach's alpha coefficient. As per Saunders et al. (2016), the assessment of a survey's dependability relies on its trustworthiness, which is seen to be attained when it reaches or exceeds a minimum threshold of 60%. The measure of Cronbach's alpha coefficient was 0.862 indicating a substantial level of dependability. As a result, there were no discrepancies found among the various elements of the study tool.

Data Analysis

The study queries were addressed using SPSS software to compute means, do the independent sample t-test, and conduct one-way analysis of variance (ANOVA). Cuevas et al. (2004) suggest using the ANOVA One-Way test instead of the independent sample t-test when comparing three or more means. The subsequent elucidation pertains to the outcomes, which were ascertained by the used methodologies for their characterization. The item's average score is 2.33 or lower, indicating a low grade. The item's mean score is within the range of 2.34 to 3.67, indicating a reasonable grade for the item. The item's mean score exceeds or equals 3.68, indicating a high grade.

Findings and Discussion

The study utilized descriptive analysis to present a detailed portrayal of the characteristics of the participants, focusing specifically on their "gender" and "academic ranking." The survey findings indicated that a substantial percentage of respondents, precisely 58.2%, self-identified as male. Conversely, the female respondents accounted for only 41.8% of the sample, indicating that the male respondents constituted the majority. According to Table 2, 50.5% of the participants held the position of assistant professors, 35.0% were associate professors, 14.5% were professors.

Table 1: The respondents profile

The variable	Categories	N	%
Gender	Male	304	58.2
	Female	219	41.8
Academic ranking	Assistant Professor	264	50.5
	Associate Professor	183	35.0
	Professor	76	14.5

The first research question was addressed by calculating the means and standard deviations for all variables of the requirements of information technology for achieving strategic agility in King Khalid University.

Table 2. Means and standard deviation

N	Items	Means	St.devs	Results
1	It is necessary for the university to set budgets allocated for investment in information technology	4.65	0.40	H
2	The university's ability to provide comprehensive communications and access to sites through its scope and reach.	4.30	0.54	H
3	Developing effective information technology infrastructure	4.10	0.61	H
4	The devices and equipment used are updated periodically	4.27	0.40	H
5	Periodically seek help from experts to train faculty members and administrators on the use of information technology	4.45	0.46	H
6	Developing the skills of faculty members and administrators by involving them in training courses	4.40	0.52	H
7	The university provides technical specialists responsible for operation, including system analysts, software developers, and system operators.	4.55	0.42	H
8	The necessary studies are prepared and work procedures are proposed in order to adjust devices and equipment and improve the performance of current systems	4.60	0.45	H
9	The necessity of renewing information technology capabilities to comply with ongoing environmental changes	4.25	0.44	H
10	Providing the university with the ability to adapt to business process trends and needs	4.00	0.39	H
11	The university must exploit opportunities arising from changes in the local environment	4.51	0.36	H
12	Information technology provides opportunities to implement modern management systems based on software that achieves integration between the parts and activities of a single university	4.34	0.48	H
13	Developing legislation and regulations regulating work at the university in order to simplify them and harmonize them with the requirements of technological interaction through networks	4.36	0.38	H
14	Developing a comprehensive strategy for university information technology at the university level	4.15	0.42	H
15	Developing the administrative skills of university employees	4.37	0.37	H

	Total	**4.35**	**0.32**	H

According to the data provided in Table 2, the mean score for the requirements of information technology for achieving strategic agility in King Khalid University was determined to be 4.35, accompanied by a standard deviation of 0.32. The item labeled "It is necessary for the university to set budgets allocated for investment in information technology" (item 1) exhibits the highest mean value among all the elements, with a score of 4.65. Followed by item 8, which corresponds to "The necessary studies are prepared and work procedures are proposed in order to adjust devices and equipment and improve the performance of current systems", measuring at 4.60. The item labeled 10, which addresses "Providing the university with the ability to adapt to business process trends and needs", demonstrated the lowest mean score (4.00) compared to all other items.

The reason for this outcome is the implementation of a comprehensive information technology strategy at the university level, which aims to achieve strategic agility. This approach prevents each college and university administration from independently preparing their own technological transformation projects. Such isolated efforts result in fragmented endeavors, wastage of resources, and redundant studies on irrelevant topics. Furthermore, this involves establishing connections and relationships between the various colleges, departments, and administrative units within the university, as well as with external organizations and administrative bodies. It also includes enhancing their interactions with those who are involved with them. University administrators also allocate the required financial resources to individuals responsible for implementing information technology systems, ensuring their successful execution. This outcome is also credited to the examination of the prerequisites of the personnel operating within the system, as well as the implementation of an employment and training strategy. It is crucial to highlight that the pivotal and most essential factor in achieving strategic agility through information technology is the human resources employed by the university. Consequently, senior management must prioritize this matter and actively seek to recruit and appoint individuals possessing the necessary skills and qualifications. Rapid and sustained progress and expansion. There is a growing interest in providing training for university administrative leaders to enhance their understanding and knowledge of strategic agility in universities. This includes increasing awareness of the challenges, technological advancements, ongoing obstacles, and intense competition that university education currently faces, as well as those that may arise in the future. The problem at hand is not solely a technological one, but primarily a technical administration issue that relies on sophisticated management thinking and competent administrative leaders. Workshops and training programs in technology domains can be utilized to accomplish this objective, namely within capacity development units and leadership preparation centers. This result aligns with the studies conducted by Olu-Egbuniwe and Maeyouf (2019), Gao et al. (2020), Yazdanjooei et al. (2020), and Setiawati et al. (2022).

The second research question was investigated by employing the independent sample t-test and one-way analysis of variance to ascertain if there were statistically significant disparities in the information technology requirements for achieving strategic agility in King Khalid University based on gender and academic ranking.

Table 3. T- test

Variables	N	Mean	St.dev	df	t	Sig
Male	304	3.72	0.36	1718	1.025	0.102
Female	219	3.69	0.38			

Table (3) indicated that the average male responses were (3.72), whereas the average female responses were (3.69). Furthermore, the Sig value for both gender groups is (0.102), suggesting that, according to faculty members in KKU, gender does not have a major influence on the information technology needs for attaining strategic agility.

Table 4. ANOVA

Variable	Groups	Sum of Squares	df	Mean Square	F	Sig
Academic ranking	Between groups	0.201	3	0.067	0.853	0.475
	Within groups	157.964	1717	0.092		
	Total	158.165	1720			

The data reported in Table 4 reveals that there were no observed discrepancies among the groups in terms of academic ranking. The p-values for academic ranking, specifically given as (0.475), suggest that there is no statistically significant correlation between this variable and its impact on the information technology requirements for achieving strategic agility.

Conclusion

The main objective of this study was to investigate the information technology needs necessary to achieve strategic agility in King Khalid University. The research findings indicate a growing acknowledgement of the significance of establishing needs for information technology in order to attain strategic agility in King Khalid University. The majority of faculty members held positive views about requirements, indicating that information technology is highly effective in achieving strategic agility. This entails forging connections and interactions among several colleges, departments, and administrative divisions inside the institution, as well as with external organizations and entities. Additionally, it encompasses improving their interactions with individuals who are associated with them. University administrators provide the necessary financial resources to those responsible for establishing information technology systems, ensuring their effective implementation. This result is also attributed to the analysis of the qualifications of the staff working within the system, as well as the execution of a recruitment and training plan.

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