

Artificial Intelligence and Airports

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The problem statements

The technological and cognitive revolution has made a big difference in our life, as the widespread spread of these modern technologies has forced many business organizations to pay attention to this aspect and put it at the top of their priorities due to the great role of these technologies and their direct contributions to developing all institutions, improving their performance, as many modern technological means have been used such as networks, satellites, geographic information systems, database management systems (Imad, Alam El-Din, 2009).

One of the most important pillars of successful airport operations is the implementation of modern, highly efficient technical systems to achieve the lowest possible percentage of operational risks. Managing and controlling many airport runways and stations is inherently complex and a daily challenge. Artificial intelligence can also play a pivotal role in reshaping airport operations and innovating solutions to common problems facing airports Such as flight delays that lead to the suspension of thousands of passengers as well as cargo problems, environmental factors, and organizing baggage paths. And investing the airport's operational capacity in cases of non-occupancy.

In fact, there are many technologies based on data, artificial intelligence, Which constitute the solid ground for creating many applications that will provide technical solutions that enhance airport performance. Among them is computer vision, which is the main pillar of facial recognition technology to identify or confirm a person's identity using his face. It works according to three pillars: discovery, analysis, and recognition. Discovery includes finding a face in an image or video clip through computer vision, extracting useful information from image data, analysing, classifying and understanding it. Thus, the problem of the research can be stated as follows:

What is the effect of using Artificial Intelligence in enhancing the services in airports?

*** The study objectives**

The research Objectives can be stated as follows:

1. To comprehensively analyze the existing uses of Artificial Intelligence in Airports.
 - To identify the current uses of Artificial Intelligence in Airports as outlined in the literature.
2. To evaluate existing uses of Artificial Intelligence in Airports frameworks:
 - To explore alternative validation approaches proposed by scholars regarding uses of Artificial Intelligence in Airports.
3. To propose a comprehensive framework for enhancing the use of uses of Artificial Intelligence in Airports.
 - To develop a framework that addresses the uses of Artificial Intelligence in Airports.
4. To validate the proposed framework in diverse AI application.
 - To assess the generalizability and effectiveness of the proposed framework in various AI contexts.
5. To provide practical recommendations for the implementation of the proposed framework:
 - To contribute to the ongoing discourse on responsible and trustworthy AI development.

Literature Review

There were many studies which threw light on the event management and the use of technology tools in organizing the events. In the study of (Saleh, 2019), which entitled "The impact of applying artificial intelligence and emotional intelligence on the quality of decision-making", this study aimed to reveal the impact of applying artificial intelligence and emotional intelligence on the quality of decision-making, and to achieve the goal of the study, the researcher used the opinions of a sample of 98 managers of Jordanian commercial banks, and the study

reached several results, most notably the existence of a statistically significant relationship between the use of artificial intelligence methods and the quality of administrative decision-making.

Another study was conducted by (Al-Hawamdeh, Abdel Moneim, 2018) which was entitled "The impact of artificial intelligence in creating the correct strategic thinking for entrepreneurial leaders of business organizations to achieve added value for their strategic operations - a proposed model". The study aimed to clarify the impact of artificial intelligence on strategic thinking among entrepreneurial leaders of business organizations. The study showed that entrepreneurial leadership with an intellectual starting point has received the attention of organizations due to the need of those organizations for leadership that possesses strategic thinking that alterations with the change in the surrounding circumstances as a result of the acceleration of the complex environmental conditions surrounding those organizations; the emergence of the phenomenon of globalization, knowledge economy and technological progress, which may be represented in artificial intelligence technologies, therefore, it is expected that entrepreneurial leaders possess the qualities of intellectual stimulation, which is an important matter in entrepreneurial leadership by adopting advanced technological techniques in the work environment, and that it is expected to help them achieve the visions of their organizations to reach local and global leadership.

Also, in the Study of (Naseef, 2017) which entitled "Using artificial intelligence systems as a tool for excellence in quality and competitiveness: A field study in the private hospital sector in Jeddah Governorate." The study sought to clarify the role of artificial intelligence systems as a tool for achieving excellence in quality and competitiveness in Saudi private hospitals. To achieve the study's objective, the researcher designed a questionnaire that he later distributed to a sample of 15 managers in three private hospitals in Jeddah Governorate. The study concluded by proving the

effective role of artificial intelligence systems in achieving quality and excellence. Let alone, in another study conducted by (Al-Younis, 2016), which was entitled "Using Artificial Intelligence Technology in Re-Engineering Operations in Application at the General Company for the Manufacture of Pharmaceuticals and Medical Supplies in Nineveh". The study aimed to clarify the relationship between the use of artificial intelligence and the process of re-engineering operations in organizations. To achieve the aforementioned objective, the researcher developed a questionnaire tool that was later distributed to a sample of 50 managers at the General Company for the Manufacture of Pharmaceuticals and Medical Supplies in Nineveh Governorate, Iraq. The study finally concluded that there is a positive correlation between artificial intelligence technology and re-engineering operations in the company under study.

Also, in the study of (Shahid and Li, 2019) which entitled: "The Impact of Artificial Intelligence on Marketing: The Perspective of Marketing Professionals in Pakistan", which aimed to reveal the impact of artificial intelligence on marketing functions in Pakistani educational organizations. To achieve the aforementioned goal, the researchers conducted interviews with 10 marketing professionals in Pakistani companies. The study concluded that integrating modern applications of artificial intelligence into various marketing functions in organizations would improve the performance of activities, improve the organization's profitability, and achieve a competitive advantage.

In another study conducted by (Geisel, 2018) which entitled "The Current and Future Impact of Artificial Intelligence on Business", this study sought to clarify the current and future impacts of artificial intelligence applications on business, and to achieve the study's goal, this study came in a descriptive theoretical form in which the researcher addressed the benefits of artificial

intelligence, and the study relied on the interview tool, while the researcher concluded her study by analyzing the most prominent current and future areas of applying artificial intelligence in the field of business, which are: trade, marketing, sales, finance, accounting, and the researcher indicated in the end that artificial intelligence applications develop the level of services provided by organizations, and that artificial intelligence applications will witness huge developments and leaps in the future, so organizations must keep pace with various contemporary technological developments.

Also, in the study of (Kenneth Payne, 2018) which entitled "Artificial Intelligence, a Revolution in Strategic Operations Related to Organizational Management", where the study attempted to reveal the impact of artificial intelligence on strategic operations management in organizations. The study highlighted that there are some interesting similarities between the modern development of artificial intelligence systems and the development of strategic thinking within organizations. The study also explained that it is necessary to pay attention to the distinguished mental capabilities in various organizations while investing in the organizational characteristics that enhance the role of strategic leadership in generating new creative initiatives related to artificial intelligence applications. The study relied on the interview and observation tool, and the results showed that the use of artificial intelligence applications in strategic operations management within organizations achieves the elements of innovation and initiative for those organizations, which ensures the building of a sustainable competitive advantage for the services provided, which necessitates the necessity of achieving harmony and interconnection between strategic thinking capabilities and development in artificial intelligence. The study also showed that integrating the supply chain into work affects the increase in the competitive advantage of organizations, and that the relationship between the supply chain and competitive advantage is

positive. The study recommended the necessity of integrating the supply chain into organizations to achieve competitive advantage.

In addition, in the study of (Daekwan Kim, 2020) which showed that artificial intelligence tools represented by advanced artificial intelligence tools, appropriate artificial intelligence tools, and supply chain communication systems have a significant impact on enhancing the capabilities of the organization's internal communication channels, which in turn facilitates the exchange and transmission of information within the organization, enhances internal coordination, and the response of supply chains, which are factors that positively affect the performance of the organization as a whole. Advanced artificial intelligence tools also have a moderate impact on the performance of communication systems related to supply chains, as artificial intelligence tools appropriate for communication systems in supply chains enhance the exchange of information within the organization and coordination of direct activities.

The study also showed the impact of the supply strategy in terms of reducing inventory, flexibility, and purchase price on institutional performance, and that high-performing organizations focus on achieving competitive advantages related primarily to quality, flexibility, reliability, and delivery, and secondarily to cost.

Furthermore, in the study of (Lee & Whang, 2019) which indicated that successful organizations apply the basic principles and ideas of the supply chain in highly effective ways. These principles include information exchange, cooperation between supply chain partners, and responding to consumer desires. The Internet is one of the main tools in artificial intelligence tools that allowed organizations to create creative solutions that contributed to raising the ability to adopt the basic principles of the supply chain. It also became clear that organizations that used artificial intelligence tools in their operations, in order to redefine supply chain integration, were able to

achieve high levels of efficiency and effectiveness, as well as achieve a competitive margin over real competitors.

The results also showed that exploiting artificial intelligence tools leads to reducing shipping and supply costs, which may reach reducing the time required to complete various operations and operational activities.

Finally in the study of (Tallir, 2017) which indicated that the evaluation of artificial intelligence tools and information systems should be based on the elements of cost, flexibility, quality, and time, as the elements of cost, flexibility, quality, and time directly affect strategic level planning, tactical level planning, and operational level planning, and supply chain management works to manage and coordinate these activities, which requires the introduction of technologies that help facilitate these processes by relying on artificial intelligence tools.

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