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THE EFFECT OF ARTIFICIAL INTELLIGENCE TECHNOLOGIES ON ENHANCING THE EFFICIENCY OF ADMINISTRATIVE OPERATIONS WITHIN MEDIA ORGANIZATIONS

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ABSTRACT

This study aims to examine the impact of artificial intelligence (AI) technologies on improving the efficiency of administrative processes within Palestinian media institutions. A descriptive survey method was employed. The study sample was selected using a stratified sampling technique from three geographically and functionally diverse media institutions: the Palestinian News and Information Agency (WAFA), Ma'an News Network, and Al-Aqsa TV, with a total of 60 participants. The results indicated that the current use of AI technologies within the media institutions was at a moderate level (61.4%), as was the level of administrative process efficiency (67.8%). Furthermore, a statistically significant effect of AI utilization on enhancing Administrative Process Efficiency was observed. Regarding differences related to participants' personal variables, no statistically significant differences were found. Based on these findings, it is recommended to strengthen AI training, raise awareness of its impact on improving Administrative Process Efficiency, and tailor AI technologies to meet the specific needs of different media institutions.

KEYWORDS: Artificial Intelligence Technologies, Enhancing the Efficiency of Administrative, Media Organizations.

INTRODUCTION

The present era is witnessing rapid development in all fields of knowledge and technology. This evolution compels companies to reconsider their future operations and management approaches, adopting various methods and tools to address increasingly complex issues composed of multiple elements. This progress relies on harnessing modern technological advancements to achieve effective and well-organized management.

Artificial intelligence (AI) represents one of the outcomes of the Fourth Industrial Revolution at the beginning of the twenty-first century, given its wide-ranging applications in military, economic, industrial, technological, medical, and service sectors. It is also regarded as the main driver of future progress, fueled by the digital revolution, the Internet, 3D printing, smart robotics, and AI applications (Aqqad & Bouamama, 2022).

AI applications have become an indispensable necessity for business organizations, as their integration plays a fundamental role in improving institutional performance (Artbaz, 2022). AI involves the development of computer systems capable of performing tasks that typically require human intelligence, including analyzing issues and making decisions based on the outcomes of such analyses, thus simulating human reasoning (Nur Alhuda & Ismail, 2022).
Despite the significant potential benefits of AI, its applications in the media sector face specific challenges—particularly in regions suffering from economic and political hardships. Palestine exemplifies such challenges, as media institutions there struggle with technological constraints and weak infrastructure, which make it difficult to fully exploit the potential of AI technologies (Chauvet, 2024).

Nevertheless, these technologies remain vital tools that can substantially enhance Administrative Process Efficiency in media institutions, provided they are properly and comprehensively implemented. Hence, studying the effectiveness of AI technologies in a context such as Palestine becomes essential for identifying the opportunities and challenges media institutions may encounter in their pursuit of higher Administrative Process Efficiency.

RESEARCH PROBLEM

Media institutions in the Gaza Strip face numerous challenges that significantly affect their Administrative Process Efficiency and overall performance. Operating in an environment marked by ongoing economic and political crises, these institutions encounter increasing difficulties in maintaining their effectiveness. In addition, they suffer from technological

limitations and weak infrastructure that hinder their ability to adapt to modern demands and sustain the delivery of their media content (Palestinian Information Center, 2023; UNRWA, 2023). Based on the researcher's observations and close monitoring of this sector, these accumulated challenges create a wide gap between the available resources and the actual needs of media institutions, leaving them in a difficult position to preserve competitiveness and effectiveness.

Under such complex conditions, AI technologies emerge as a promising opportunity to significantly improve the administrative performance of media institutions in Gaza, through automating routine tasks, enhancing data analysis, and managing human and technical resources with greater efficiency and accuracy (Gardner, 2021). However, despite these possibilities, the extent to which these institutions are able to adopt and integrate AI technologies remains unclear, as insufficient research has been conducted to explore the compatibility of these technologies with the political and geographical realities of Gaza (UNRWA, 2023). Therefore, the researchers find it necessary to conduct an in-depth study to understand how media institutions in Gaza can benefit from AI, and what challenges may hinder its implementation—thus contributing to strengthening their Administrative Process Efficiency and improving the quality of media content in an unstable environment.

RESEARCH QUESTIONS

What is the impact of AI applications on improving the efficiency of administrative operations among employees in media institutions?

From this main question, the following sub-questions arise:

1. What is the current state of AI technologies within media institutions?
2. What is the level of Administrative Process Efficiency within media institutions?
3. Is there a statistically significant relationship at the ($\alpha \leq 0.05$) level between AI technologies and Administrative Process Efficiency in media institutions?
4. Is there a statistically significant effect at the ($\alpha \leq 0.05$) level of using AI technologies on improving Administrative Process Efficiency in media institutions?
5. Are there statistically significant differences at the ($\alpha \leq 0.05$) level in the perceptions of research participants regarding AI technologies and Administrative Process Efficiency in media institutions that can be attributed to variables such as gender, academic qualification, and years of experience?

RESEARCH OBJECTIVES

1. To identify the current state of AI technologies within media institutions.
2. To assess the level of Administrative Process Efficiency in media institutions.
3. To investigate the relationship between AI technologies and Administrative Process Efficiency in media institutions.
4. To examine the impact of AI technologies on improving Administrative Process Efficiency in media institutions.
5. To explore differences in the perceptions of research participants regarding AI technologies and Administrative Process Efficiency in media institutions based on gender, academic qualification, and years of experience.

RESEARCH SIGNIFICANCE

The theoretical significance of this study lies in enriching knowledge related to the impact of AI applications on improving Administrative Process Efficiency. This research contributes to filling a gap in the literature concerning the integration of technology and leadership, by providing deeper insights into how AI can be utilized to enhance leadership capabilities among employees in media institutions. Furthermore, the study offers a theoretical framework that future researchers can build upon to further explore the intersections between technology and management in other contexts.

STUDY MODEL AND VARIABLES

- **Independent Variable:** Artificial Intelligence (AI) Technologies, which include (Recommendation Systems, Chatbots, and Data Analytics). This classification is based on previous studies such as Vafeiadis et al. (2015), Breazeal (2003), and Gómez-Uribe & Hunt (2015).
- **Dependent Variable:** Administrative Operations Efficiency, drawing on the frameworks of Al-Qarni & Al-Qahtani (2019) and Al-Thubaiti (2017).
- **Demographic Variables:** These consist of (Gender, Educational Qualification, and Years of Experience).

Figure (1) illustrates the relationship between the study variables.

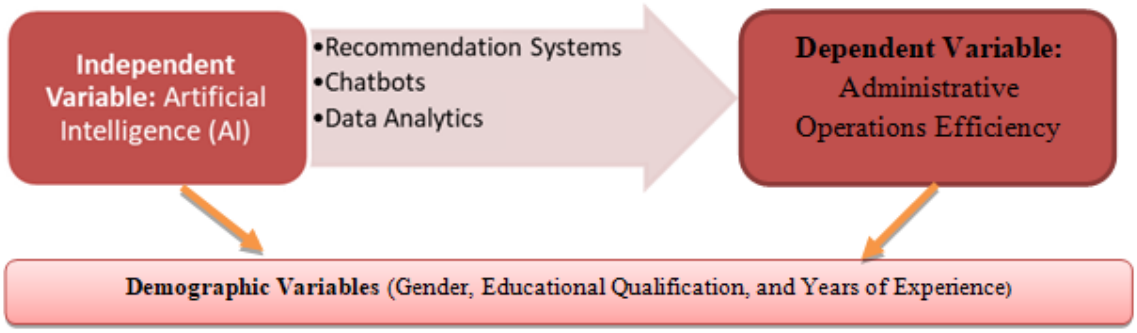

Figure (1): Relationship between the Study Variables.

Source: Prepared by the researchers (after reviewing the literature on AI and Administrative Process Efficiency, the researchers selected these criteria as they align most closely with the nature of media institutions in the Gaza Strip).

RESEARCH HYPOTHESES

- **Main Hypothesis 1:** There is a statistically significant effect at the level of significance ($\alpha \leq 0.05$) of using AI technologies on improving the efficiency of administrative operations within media institutions.
- **Main Hypothesis 2:** There are statistically significant differences at the level of significance ($\alpha \leq 0.05$) in the mean scores of research participants' perceptions regarding AI technologies and Administrative Process Efficiency in media institutions, attributable to demographic variables (gender, educational qualification, years of experience).

STUDY BOUNDARIES

- **Spatial Boundaries:** The study was conducted on media institutions operating in the Gaza Strip.
- **Temporal Boundaries:** The study was applied during the year 2024.
- **Human Boundaries:** The study included all employees working within media institutions in the Gaza Strip.
- **Subject Boundaries:** The impact of AI technologies on improving the efficiency of administrative operations in media institutions.

STUDY TERMINOLOGY

- **Artificial Intelligence (AI):** The field of science that seeks to develop computer systems that operate with high efficiency. It refers to the ability of machines to imitate and

simulate human motor and cognitive processes, including reasoning, inference, response, and learning from past experiences and intelligent feedback—essentially emulating the human mind and performing its functions (Qatami, 2018).

- **AI Technologies:** Software, hardware, and intelligent applications with cognitive capabilities similar to the human mind, capable of making decisions and functioning in ways comparable to human reasoning (Al-Subhi, 2020).
- **Operational Definition of AI Applications:** Refers to the use of AI technologies in executing and improving daily operations and procedures within institutions. This includes using AI systems to perform specific tasks such as data processing, decision-making, and performance improvement. Examples include:
  - **Recommendation Systems:** Systems that provide personalized suggestions and information based on user data analysis (Vafeiadis et al., 2015).
  - **Chatbots:** AI-powered systems that interact with users and provide responses to their inquiries (Breazeal, 2003).
  - **Data Analytics:** Tools and techniques used to analyze big data and extract insights that contribute to enhancing administrative performance (Gómez-Uribe & Hunt, 2015).
- **Administrative Operations:** Specific activities and tasks carried out to ensure the smooth functioning of an institution, thereby achieving its goals of survival, growth, and prosperity. These include planning, directing, supervising, administrative control, decision-making, communication, measurement, evaluation, and feedback (Aleimat, 2007, p. 15).
- **Operational Definition of Administrative Operations Efficiency:** Achieving optimal results in executing administrative activities while using the least possible resources and time. This is measured by the effectiveness of the procedures in achieving organizational goals, minimizing errors, and reducing bottlenecks. Improving Administrative Process Efficiency includes streamlining processes, enhancing coordination, and leveraging technology.
- **Media Institutions:** Any organization or entity concerned with disseminating news to the public, using a variety of media channels or a single medium such as a television station, radio, newspaper (print or digital), enabling broad mass communication (Al-Qaddour, 2022).
- **Palestinian Media Institutions:** Entities engaged in media and journalism within the Palestinian territories or targeting Palestinian audiences. These.

PREVIOUS STUDIES

Axis One: Studies Addressing Artificial Intelligence (AI) Technologies

1. **Awawdeh (2023), entitled: The Degree to Which School Principals within the Green Line Possess Skills in Employing Artificial Intelligence in Administrative Work from Their Perspective**

This study aimed to identify the degree to which school principals within the Green Line possess skills in employing AI in administrative work from their own perspective. It also examined the impact of variables such as gender, educational qualification, and years of experience on their assessments. The descriptive method was employed, with a sample of 72 principals randomly selected from a total population of 102. A questionnaire served as the data collection tool. Findings revealed that principals' assessments of their AI-related skills were at a high level. No statistically significant differences were found based on the studied variables. Recommendations included: (1) continuing to raise awareness about AI through workshops and seminars; and (2) integrating AI applications into curricula to enhance technological literacy.

2. **Smith (2022), entitled: The Impact of Artificial Intelligence on Business Efficiency**

This study examined the impact of AI technologies on business efficiency across a sample of 200 organizations. A quantitative method was employed using surveys distributed to different administrative departments. Results showed that 80% of respondents reported noticeable improvements in productivity, with institutions recording a 25% increase in performance. Decision-making speed improved by 30% thanks to AI tools, while human errors decreased by 20%. The study recommended integrating AI technologies across all managerial levels, supported by continuous training programs and performance evaluation strategies to ensure sustained improvements.

3. **Johnson & Wang (2021), entitled: Artificial Intelligence and Operational Efficiency in Organizations**

This research investigated the influence of AI on operational efficiency in organizations using a descriptive–analytical method. Data were collected from institutions across various sectors. Findings indicated that AI adoption significantly enhanced customer satisfaction, with satisfaction levels increasing by 40%. AI also contributed to a 15% reduction in operational costs and expedited administrative processes, highlighting its role in accelerating operations. The authors recommended developing integration strategies for AI within existing processes, fostering an innovation-oriented organizational culture, and investing in modern technologies to sustain these improvements.

4. **Al-Azzam (2021), entitled: The Role of Artificial Intelligence in Enhancing the Efficiency of Administrative Systems for Human Resource Management at the University of Tabuk**

This study aimed to explore how AI contributes to improving the efficiency of administrative systems in HR management at the University of Tabuk. Using an analytical method, data were gathered from 70 HR employees via a 36-item questionnaire. Results indicated no statistically significant differences related to gender, education level, or years of experience. The study recommended launching training programs to enhance employees' AI skills, conducting future research with larger university samples, and updating HR policies to align with technological developments in AI.

5. **Al-Awadi & Abu Latifah (2020), entitled: The Impact of Employing Artificial Intelligence on the Development of Administrative Work in Light of Governance Principles (A Field Study on Palestinian Ministries in the Gaza Governorates)**

This study investigated how AI contributes to developing administrative work under governance principles in Palestinian ministries in Gaza. A descriptive–analytical approach was used, with a sample of 112 ministry employees. Findings showed a low degree of AI utilization (62.2%) compared to a high degree of governance principle application (80.56%). No significant differences were found based on education, age, or years of service. Recommendations included developing AI utilization strategies, strengthening governance practices, organizing workshops to raise awareness, and encouraging further research in this area.

Axis Two: Studies Addressing Administrative Operations Efficiency

1. **Musleh (2023), entitled: E-Management and Its Role in Developing Administrative Work**

This paper highlighted the role of e-management in developing administrative work. E-management is defined as the use of modern technologies such as computers and the Internet to perform administrative functions, including planning, organizing, coordinating, supervising, and monitoring. Its objectives focus on modernization and improving services. Principles of e-management include service quality, accessibility, and efficiency. Benefits include its applications in administrative tasks, financial transactions, online conferences, HR processes, and monitoring systems. The paper discussed implementation steps, justifications for transformation, and stages (initiation, interaction, transaction, and integration). Challenges

highlighted included lack of skilled human resources, absence of proper legislation, and insufficient technological infrastructure.

2. **Al-Shoubaki (2023), entitled: The Role of Digital Technology in Enhancing Professional Efficiency among Employees at the Ministry of Education**

This study explored how digital technology enhances professional efficiency among Ministry of Education staff. The descriptive–analytical method was applied, with data collected through surveys distributed across southern governorates. Results indicated a statistically significant positive correlation between the use of digital technologies and professional efficiency, as well as positive effects on work performance. Significant differences were found based on age and job type. Recommendations included strengthening training programs, supporting the integration of digital technologies into administrative work, and achieving a balance between professional efficiency and technological advancements.

3. **Ibrahim (2023), entitled: The Role of E-Management in Improving Administrative Process Efficiency among Jordanian School Principals from the Perspective of Their Assistants**

This study aimed to assess the role of e-management in improving principals' Administrative Process Efficiency from their assistants' perspectives. Using a descriptive–survey method, a 24-item questionnaire was administered to 73 assistants in the Al-Rusaifa district in Jordan. Findings revealed that the role of e-management in improving Administrative Process Efficiency was moderate. No statistically significant differences were observed based on gender, social type, or years of experience. Recommendations included intensifying training programs on e-management for school leaders and encouraging governmental institutions to adopt e-management due to its importance in enhancing performance and efficiency.

Benefits and Comparison between the Researcher's Study and Previous Studies

The present study builds upon both the theoretical and practical foundations established by previous research on artificial intelligence technologies and Administrative Process Efficiency, offering a deeper perspective on how these technologies can be applied within the Gaza media sector, which is characterized by complex political and economic conditions. While studies such as Awawdeh (2023) focused on the extent to which school principals possess skills to employ AI in educational settings, research by Smith (2022) and Johnson & Wang (2021) highlighted the positive effects of AI on business efficiency and operational performance across diverse institutions. In contrast, the current study narrows its lens to the

media context in Gaza, making it unique in addressing the operational and environmental challenges faced by media organizations in an exceptional setting.

Furthermore, the study benefits from recommendations emphasized in earlier works that underscored the importance of training and awareness. For example, Al-Azzam (2021) and Al-Awadi & Abu Latifah (2020) stressed the need for training programs to enhance employees' skills in utilizing AI, a recommendation that this study explicitly incorporates in its proposals for improving Administrative Process Efficiency in media institutions.

With regard to Administrative Process Efficiency, the study intersects with the contributions of Musleh (2023), who explored the role of e-management in advancing administrative work, as well as Shobaki (2023), who confirmed the role of digital technologies in boosting professional efficiency. The present research reflects the importance of integrating AI within e-management systems to strengthen performance under Gaza's challenging conditions. It also aligns with Ibrahim (2023) in emphasizing the necessity of training programs and developmental initiatives to reinforce e-management efficiency, particularly in light of scarce resources and technological constraints.

On the other hand, the researcher's study diverges in its specific concentration on the Gaza media environment, which represents an exceptional case shaped by political and economic hardships—an area not directly addressed by earlier studies. Moreover, it seeks to examine the readiness of media institutions in this context to adopt AI, as well as the unique challenges they face, thereby contributing a valuable addition that fills an existing research gap.

In sum, the study integrates the findings and recommendations of prior research with the unique local realities of Gaza, providing both practical and academic value by advancing the efficiency of media institutions through the adoption of AI and e-management within a highly complex and rapidly changing environment.

Theoretical Framework of The Study

First: Applications of Artificial Intelligence (AI)

Artificial intelligence is a field of computer science that focuses on developing systems and programs capable of exhibiting human-like intelligence, such as learning, reasoning, and decision-making. AI aims to enable machines to perform tasks that typically require human

intelligence, including natural language processing, image recognition, and intelligent interaction with the environment. AI applications are diverse and extensive, ranging from smart personal assistants, such as voice-activated helpers, to advanced systems in healthcare, transportation, and e-commerce. These applications enhance efficiency, save time, and improve accuracy across various domains, making AI a pivotal element in modern technological development.

Concept of Artificial Intelligence

Artificial intelligence is a branch of computer science concerned with creating systems capable of thinking, learning, and acting like humans. It is also known as machine intelligence or automated intelligence processing and relies on a wide array of methods and techniques, including machine learning and deep learning (Vasudevan, 2021). Diab (2022) defines AI as an advanced technology that contributes to managing operations and tasks more intelligently and efficiently than the humans who created it, enabling machines to learn autonomously and evolve independently.

Concept of AI Applications

AI applications refer to programs and systems that utilize artificial intelligence to process information and solve problems. These applications can be applied in various sectors, including education, healthcare, business, and industry (Attallah et al., 2022).

Types of Artificial Intelligence

According to Hussain (2018), the main types of AI are

1. **Narrow AI (ANI):** Focused on a single domain; examples include chatbots and voice assistants.
2. **Superintelligent AI (ASI):** AI that surpasses human intelligence; for instance, mainframe computers in government banks.
3. **Artificial General Intelligence (AGI):** AI capable of performing human-level tasks autonomously, such as self-driving cars.

Al-Estal et al. (2021) categorize AI types as follows

1. **Artificial Narrow Intelligence (ANI):** Performs specific tasks such as facial recognition, online information retrieval, booking services, and driving vehicles with performance exceeding human capabilities.

2. **Artificial General Intelligence (AGI):** Machines designed to perform all human-level tasks, expected to develop further until around 2040.
3. **Artificial Superintelligence (ASI):** Machines with capabilities surpassing human abilities, with future designs potentially exceeding human performance.

AI Application Areas

Prominent areas where AI is applied include (Topol, 2019; Chakrabarti & Rao, 2020; Lee et al., 2018; Holmes et al., 2019)

1. **Healthcare and Education:** AI is used for medical data analysis, diagnostic improvement, personalized curriculum design, and educational data analytics.
2. **Finance and Security:** AI facilitates financial data analysis, market forecasting, fraud detection, and enhanced cybersecurity strategies.
3. **Manufacturing and Transportation:** AI improves manufacturing processes, predictive maintenance, autonomous vehicle development, and traffic management.
4. **E-commerce and Marketing:** AI enhances user experience, analyzes customer behavior, and enables targeted advertising campaigns.
5. **Agriculture, Environment, and Energy:** AI boosts agricultural productivity, monitors climate change, and optimizes energy management.

Specific AI Applications

Some notable AI applications include (Vafeiadis et al., 2015; Breazeal, 2003; Gómez-Uribe & Hunt, 2015):

1. **Image and Speech Recognition and Sentiment Analysis:** AI technologies identify people and objects in images, understand voice commands, and analyze reviews to gauge public opinion.
2. **Interactive Robots and Chatbots:** Robots like Pepper interact with humans using AI, while chatbots use natural language processing for user support.
3. **Personalized Recommendations and Machine Translation:** Recommendation algorithms, such as in Netflix, offer tailored suggestions, while neural machine translation enhances cross-language accuracy.
4. **Facial Recognition and Fraud Detection:** AI is used in smartphone security, surveillance systems, and detecting fraudulent financial transactions.

5. **Big Data Analysis and Predictive Marketing:** AI analyzes vast datasets to detect patterns, make informed decisions, and predict customer behavior for marketing strategies.

Second: Administrative Process Efficiency

Administrative processes constitute the foundation of any successful organization and represent the core of effective management aimed at achieving strategic goals efficiently and effectively. These processes encompass planning, organizing, directing, and controlling activities to ensure goals are met efficiently.

Administrative processes begin with **planning**, which involves setting objectives and devising strategies to achieve them. This is followed by **organizing**, which allocates resources and defines the organizational structure. **Directing** then guides and motivates individuals toward achieving the established goals, and **controlling** monitors performance to ensure objectives are realized.

Administrative Process Efficiency is crucial because it determines an organization's ability to achieve its objectives effectively at minimal cost. Well-structured administrative processes improve productivity, reduce waste, and enhance competitive advantage. In rapidly changing economic and technological environments, continuous improvement of Administrative Process Efficiency is essential to maintain success and sustainability.

Definition of Administrative Processes

Al-Ajmi (2008) highlights several definitions, including Fayol's view that administrative processes encompass planning, organizing, commanding, coordinating, and controlling, while Cole emphasizes planning, organizing, directing, coordinating, report writing, and budgeting.

Administrative Functions

Administrative functions form the backbone of any successful organization, comprising activities that contribute to achieving organizational objectives efficiently (Al-Maqsoud & Abdul Aziz, 2021):

1. **Planning:** The process of defining goals and devising strategies, analyzing current conditions, anticipating future changes, and allocating necessary resources. Planning provides clarity and minimizes risks.

2. **Organizing:** Following planning, organizing involves defining and distributing tasks, coordinating activities, and structuring human and material resources to ensure efficiency.
3. **Directing:** Involves motivating and guiding personnel toward organizational objectives, encompassing leadership, communication, and performance motivation.
4. **Controlling:** Monitoring performance to ensure goals are met as planned, evaluating outcomes, and taking corrective actions when necessary, ensuring quality and objective attainment.

MATERIALS AND METHODS

Study Methodology

Based on the nature of the study and its objectives, the researchers employed the **descriptive survey method**, which is widely used across various types of scientific research. Generally, scientific description involves portraying the characteristics of a person, object, time, or place in its natural state, expressed in detail for clarification purposes (Ubaidat et al., 2006).

The researchers aimed to describe the current reality of **artificial intelligence (AI) technologies** in Palestinian media institutions and analyze their role in enhancing Administrative Process Efficiency. Therefore, the study utilized data collected from different instruments to examine the relationship between the **independent variable** (AI technologies) and the **dependent variable** (administrative process efficiency).

Study Population and Sample

- **Study Population:** The study population consisted of employees working in Palestinian media institutions in the Gaza Strip. The population data were obtained through coordination with the **Palestinian Journalists Syndicate** and the **Ministry of Information**. The researchers relied on the 2023 updated registry from the Journalists Syndicate, which included 765 members and media sector employees. Official coordination provided access to contact lists and addresses, allowing the researchers to accurately define the study population and ensure comprehensive coverage within the specified study timeframe. Data validity and currency were confirmed through direct communication with relevant authorities to ensure fair and accurate representation of the media community in Gaza.
- **Study Sample:** A **stratified proportional sampling** technique was used to ensure balanced representation across different functional and geographic sectors within the

Palestinian media community. The population was divided into three main strata representing the following institutions:

Palestinian News & Information Agency (WAFA), Ma'an News Network, and Al-Aqsa TV.

- **Institution Selection:** These institutions were selected based on functional and geographic diversity. WAFA represents official government media, Ma'an represents independent media, and Al-Aqsa TV represents politically affiliated media. This diversity allows a comprehensive understanding of AI technologies' impact across different media environments.
- **Sample Size:** The total sample size was **60 participants**, with 20 participants from each institution. Within each institution, the distribution was as follows:

Table (1): Study Sample.

Media Institution	Journalists	Admin Staff	IT Staff	Total
WAFA	10	5	5	20
Ma'an News Network	10	5	5	20
Al-Aqsa TV	10	5	5	20
Total	30	15	15	60

The sample size was determined based on

- **Strata diversity:** Ensuring comprehensive representation of different layers within the Palestinian media community.
- **Strata balance:** Equal numbers from each institution guarantee balanced institutional representation, enhancing accuracy and objectivity.
- **Statistical adequacy:** The sample size is sufficient to achieve statistically significant results while considering time and resource constraints.
- **Functional sector representation:** Distribution within each institution ensures inclusivity of all job categories related to administrative processes.
- **Scientific justification:** This approach achieves fair and balanced representation of different media environments, reducing variance within strata and increasing the accuracy of generalizations.

Table (2): Distribution of Respondents According to Study Variables.

Variable	Number	Percentage
Gender	Male	25
	Female	35
Education Level	Bachelor or lower	35
	Master	19
	PhD	6
Work Experience	Less than 5 years	8
	5 – less than 10 years	35
	10 years or more	17
Total	60	100%

Study Instruments

The researchers adopted measurement instruments from **Vafeiadis et al. (2015), Breazeal (2003), and Gómez-Uribe & Hunt (2015)** for AI, and **Al-Qarni & Al-Qahtani (2019) and Al-Thubaiti (2017)** for administrative process efficiency, tailored to the current study. The **questionnaire** served as the primary tool for field data collection, completed by respondents.

- **Independent Variable:** AI applications measured using **30 items**.
- **Dependent Variable:** Administrative process efficiency measured using **30 items**.

Additionally, **interviews** were conducted to collect in-depth qualitative data on how AI technologies are used in Palestinian media institutions, including the challenges and opportunities for improving Administrative Process Efficiency.

Validity of Study Instruments

1. **Construct Validity:** The researchers verified the instruments' construct validity on a pilot sample of **30 media institution employees** outside the main study sample. **Pearson correlation coefficients** were calculated between each dimension's mean and the total score of the dependent variable.
2. **Internal Validity of Items:** Pearson correlation coefficients were also used to determine the internal consistency of each item with its corresponding dimension.

Table (3): Internal Consistency Validity of the Instruments.

Dimension	Correlation Coefficient	Significance (Sig.)
Recommendation Systems	0.947	0.000
Chatbots	0.961	0.000
Data Analysis	0.722	0.000
AI Dimension	0.941	0.000
Administrative Process Efficiency	0.946	0.000

Reliability of Study Instruments

The study questionnaire's reliability was assessed using **internal consistency** on the pilot sample (n=30), employing **Cronbach's alpha** to evaluate consistency among items.

Table (4): Reliability Test (Cronbach's Alpha Coefficient).

Dimension	Cronbach's Alpha
AI Dimension	0.811
Administrative Process Efficiency	0.735
Entire Questionnaire	0.881

Measurement Scale

A **five-point Likert scale** was used to measure AI applications and administrative process efficiency among media employees:

Table (5): Criterion Used in the Study.

Mean Score	Percentage	Level
< 1.80	< 36%	Very Low
1.80 – < 2.59	36% – < 51.9%	Low
2.59 – < 3.39	52% – < 67.9%	Medium
3.40 – < 4.19	68% – < 83.9%	High
≥ 4.20	≥ 84%	Very High

Statistical Treatments

Data were analyzed using SPSS v26 **with the following procedures**

1. Calculation of **means, standard deviations, and relative weights**.
2. **Independent-samples T-test** to examine gender differences.
3. **One-way ANOVA** to study differences by education level, job title, and years of experience; **LSD test** was used for post-hoc comparisons.
4. Calculation of **Pearson correlation coefficients**.
5. **Cronbach's alpha** for reliability testing.
6. **Pearson correlation** for construct validity and internal consistency of questionnaire items.

RESULTS AND DISCUSSION

Achieving the Study Objectives

To achieve the objectives of the study and answer its research questions, the researchers conducted this study by surveying a sample of employees from Palestinian media organizations to examine the effect of artificial intelligence technologies on enhancing the efficiency of administrative operations.

Results Related to the Study Questions

First Question: What is the current status of artificial intelligence (AI) technologies within media institutions?

To answer this question, the **mean, standard deviation, relative weight, and ranking** of AI status were calculated, as shown in Table (6):

Table (6): Descriptive Statistics of the Artificial Intelligence Scale

No.	Variable	Mean	Standard Deviation	Relative Weight	Level
1	Overall AI Scale Score	3.07	0.55	61.4%	Medium

It is evident from Table (6) that the overall AI mean score was **medium**, with a mean of **3.07**, a standard deviation of **0.55**, and an estimated relative weight of **61.4%**.

The researchers attribute this result to several factors, including:

- Limited technological resources and infrastructure in media institutions.
- Lack of specialized training and qualification for employees in AI usage.
- Political and economic conditions in the Gaza Strip, which impose restrictions on full adoption of modern technologies, affecting AI prevalence and utilization in administrative work.

Second Question: What is the level of administrative process efficiency within media institutions?

To answer this question, the **mean, standard deviation, relative weight, and ranking** of administrative process efficiency were calculated, as shown in Table (7):

Table (7): Descriptive Statistics of the Administrative Efficiency Scale.

No.	Variable	Mean	Standard Deviation	Relative Weight	Level
1	Overall Administrative Process Efficiency Score	3.39	0.61	67.8%	Medium

As shown in Table (7), the overall administrative process efficiency score was **medium**, with a mean of **3.39**, a standard deviation of **0.61**, and a relative weight of **67.8%**.

The researchers attribute this result to:

- A relative increase in awareness among employees regarding the importance of AI.
- Efforts by some media institutions to adopt and utilize AI technologies despite existing challenges.

- Gradual improvement in employees' skills in handling AI technologies.
- Training programs and workshops aimed at enhancing digital competencies.

However, reliance on AI remains limited due to technical and infrastructural constraints and economic and political conditions that restrict significant investment in modern technologies.

1.1.2 Results Related to Study Hypotheses

Main Hypothesis 1: There is a statistically significant effect ($\alpha \leq 0.05$) of AI technologies on improving administrative process efficiency within media institutions.

A **multiple regression model** was used to test the effect of independent variables on the dependent variable (administrative process efficiency) and to establish a predictive equation.

Table (8): Effect of Independent Variables on the Dependent Variable (Administrative Efficiency)

Variable	Coefficient	t-value	p-value
Constant	0.735	2.557	0.013
AI	0.866	9.391	0.000
Correlation coefficient = 0.777		Coefficient of determination (R^2) = 0.603	
F-test = 88.186		p-value = 0.000	

* p-value is statistically significant at $\alpha \leq 0.05$

Using the **stepwise method**, AI was found to significantly affect administrative process efficiency. The p-value < 0.05 confirms statistical significance. The F-test indicates strong explanatory power of the multiple linear regression model.

The R^2 value of **0.603** indicates that AI explains **60.3%** of the total variance in administrative process efficiency, while the remainder is due to other factors.

The regression equation is:

Administrative Process Efficiency = 0.735 + (0.866 × AI)

The researchers attribute these findings to the substantial and tangible impact of AI in improving administrative process efficiency, including:

- Task automation
- Faster decision-making
- Reduced human errors

This highlights the importance of investing in AI technologies to enhance administrative performance, while acknowledging that other factors also influence efficiency and warrant further research.

Main Hypothesis 2: There are statistically significant differences ($\alpha \leq 0.05$) in the perceptions of study participants regarding AI technologies and administrative process efficiency based on gender, educational qualification, job title, and years of experience.

1. Gender

Table (9): Statistical Differences by Gender (t-test).

Dimension	Gender	N	Mean	SD	t-value	Sig.
Overall AI Score	Male	25	2.95	0.46	0.152	0.698
	Female	35	3.15	0.60		
Administrative Process Efficiency	Male	25	3.40	0.46	0.543	0.464
	Female	35	3.39	0.70		

No statistically significant differences exist in AI or Administrative Process Efficiency scores based on gender.

The researchers explain that gender equality in access to AI technologies and uniform organizational environments result in similar perceptions and evaluations among male and female employees.

2. Educational Qualification

Table (10): ANOVA Results for Age

Variable	Source of Variation	Sum of Squares	df	Mean Square	F	Sig.
Overall AI Score	Between Groups	0.522	2	0.261	0.873	0.423
	Within Groups	17.043	57	0.299		
	Total	17.565	59			
Administrative Process Efficiency	Between Groups	1.092	2	0.546	1.498	0.232
	Within Groups	20.766	57	0.364		
	Total	21.857	59			

No statistically significant differences exist in AI or Administrative Process Efficiency scores based on educational qualification.

The researchers note that practical training and experience may matter more than formal education in evaluating AI adoption and Administrative Process Efficiency. Uniform organizational policies may also minimize differences.

3. Years of Experience

Table (11): ANOVA Results for Years of Experience.

Variable	Source of Variation	Sum of Squares	df	Mean Square	F	Sig.
AI	Between Groups	0.274	2	0.137	0.452	0.639
	Within Groups	17.291	57	0.303		
	Total	17.565	59			
Administrative Process Efficiency	Between Groups	0.308	2	0.154	0.407	0.668
	Within Groups	21.550	57	0.378		
	Total	21.857	59			

No statistically significant differences exist in AI or Administrative Process Efficiency scores based on years of experience.

The researchers explain that the rapid pace of technological change requires continuous adaptation regardless of experience length, and that the absence of specialized training programs levels perceptions across employees with varying experience.

STUDY RECOMMENDATIONS

1. **Enhancing AI Training:** Provide training courses for employees in media organizations to improve the use of artificial intelligence technologies.
2. **Raising Awareness of AI Impact:** Organize workshops to clarify the effect of artificial intelligence on enhancing administrative efficiency.
3. **Conducting Periodic Evaluations:** Continuously assess the effectiveness of AI applications to ensure that objectives are achieved.
4. **Encouraging Innovation within Media Organizations:** Motivate employees to use AI in developing administrative solutions.
5. **Customizing AI Technologies for Media Organizations:** Develop AI solutions tailored to the needs of media organizations to improve performance.

CONCLUSION

In conclusion, this study emphasizes the growing importance of artificial intelligence technologies in improving the efficiency of administrative operations within media organizations in the Gaza Strip, despite the challenges and constraints these organizations face. The results indicate that AI significantly contributes to enhancing administrative performance, and its impact goes beyond individual differences such as gender, educational

qualification, and years of experience. This highlights the importance of adopting these technologies as a central tool for administrative development. Therefore, embracing AI and developing employee skills in this field represents a cornerstone for strengthening the capacity of media organizations to face challenges and achieve sustainable performance in a complex and dynamic environment. Accordingly, decision-makers and specialists in media organizations should adopt comprehensive strategies that support the integration of modern technologies, with a focus on continuous training and professional development to ensure the maximum benefit from the potential offered by artificial intelligence technologies.

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