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Effectiveness of AI-Driven Public Relations Strategies in Advancing Sustainable Development Initiatives: "A Case Study of Leading Organizations in the United Arab Emirates"

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Abstract

The study investigated the level of implementation of "AI-powered public relations strategies" and determined the reality of sustainable development initiatives in the UAE leading organizations. It sought to verify the effect of AI-powered public relations strategies on promoting sustainable development initiatives. The study was based on the descriptive approach. A questionnaire was distributed to 230 workers chosen from leading organizations in the United Arab Emirates. The results revealed that using AI-driven public relations strategies and adopting sustainable development initiatives yielded high response scores. In addition, "AI-powered public relations strategies" had a statistically significant impact on promoting sustainable development initiatives. The study recommended providing public relations professionals with training courses on artificial intelligence methods that maximize the success of sustainable projects. In addition, it is recommended to use AI to assess audience trends, which contributes to uncovering sustainability-related issues, identifying business prospects, and guiding quality communication plans.

Keywords: effectiveness, artificial intelligence, public relations strategies, sustainable development initiatives, leading organizations, United Arab Emirates

1. Introduction

Public relations are responsible for identifying an organization's strategic public and creating communication plans to establish trustworthy relationships with them (Jerman, D., Vuković, G., & Završnik, 2018). Changes brought about by technological advancements have affected the methods used by public relations departments in communication. These recent developments compelled organizations to look for fresh approaches to engage with existing and new clients (El-Aidy, 2015). Big data, the Internet of Things (IoT), and Artificial Intelligence (AI) are "industry 4.0 technologies" that can significantly enhance the quality and effectiveness of various public relations tasks (Pribadi & Nasution, 2021). Public relations is witnessing a significant transformation in communication with the introduction of artificial

intelligence (Anani-Bossman, Nutsugah & Abudulai, 2024; Osei-Mensah, Asiamah & Sackey, 2023). Businesses are gradually integrating AI into their PR strategies, even though it is still early in the process of being widely adopted (Jeong & Park, 2023).

This paradigm shift changes the mechanism through which public relations practitioners can engage with stakeholders to effectively communicate (Mahmud, Sultana & Rashid, 2025). Virtual assistants, social media monitoring and analysis, customer relationship management, internal communication, and crisis management are just a few areas in public relations where artificial intelligence offers significant time and cost savings (Zararsiz, 2024). Artificial intelligence technologies have the potential to enhance communication by simplifying procedures, providing professionals with data-driven insights, and automating repetitive tasks (Pinto & Bhadra, 2024). Artificial intelligence incorporation into public relations strategy is a shining example of how these technologies can engage stakeholders, drastically enhance communication, and positively impact business (Agrawal, 2024).

The public relations industry uses big data, analytics, media monitoring tools, and podcasts. AI assistants help with data analysis and content production. Chatbots and live streaming are quickly becoming essential components of many industries. AI tools such as ChatGPT, Gemini, Copilot, and Bard have become commonplace in public relations efforts. Public relations and artificial intelligence should be seen as interrelated, although they are two different fields, and efforts should be made to exploit them in a mutually beneficial context (Kayım & Sezer, 2025). Developing exceptional communication skills, maintaining an open mind, and staying current with emerging trends are essential for public relations practitioners to fully use Artificial Intelligence techniques (Pinto & Bhadra, 2024).

Credible communication with "key audiences that impact business outcomes, including media analysts, policymakers, policy influencers, customers, and shareholders", is becoming public relations' focal point (Mikáčová & Gavlaková, 2014). Good public relations campaigns can positively impact social and economic factors (Lin & Liu, 2021). Leading companies are more likely to incorporate sustainability principles into their strategies due to the public expectations of "corporate social responsibility" and the perceived benefits to their image. Understanding of and commitment to sustainable practices, which prioritize ecology, nature preservation, corporate social responsibility, and mindful consumption, are subsequently influenced by public relations teams using advanced strategies (Tworzydło, Gawroński, Opolska-Bielańska & Szuba, 2024). That is to say, using artificial intelligence as a "public relations tool" promotes sustainable development goals by sustaining business operations (Kayım & Sezer, 2025).

1.1 Problem Statement

Artificial intelligence (AI) has become increasingly significant in developing public relations strategies (Agrawal, 2024). Although there is increasing interest in integrating artificial intelligence into public relations, few empirical studies examine how it affects organizations and their processes (Oduenyi & Williams, 2024). Seif (2024) indicated that the sustainable application of artificial intelligence and its effects on strategic communication within the company are critical issues to be considered in this debate. Numerous scholarly publications analyze and describe sustainable development. However, comparing it to public relations-related actions is a novel approach worth considering (Tworzydło et al., 2024).

UAE media and communications have developed in line with the nation's belief that technology is a significant societal force. The UAE is among the few countries in the region to have announced sustainable technology development and adoption plans for artificial intelligence (Ayish, 2021). Public relations helps businesses in the UAE establish their brand, become more visible, and eventually succeed financially. Another study (Farhi, Jeljeli, Slamene, Mohsen & Zamoum, 2023) revealed that communication benefits "Emirati media institutions". Public relations and communications processes are instrumental in helping achieve economic sustainability. It was found that these organizations are influenced by "public relations and communication" to promote partnership in terms of transparency of operations and building trust. It is critical to investigate the role of public relations strategies in achieving "sustainable development goals" in the Emirati corporate sector. Despite the United Arab Emirates' strategic investments in the adoption of AI, there are no clear regulations for adopting AI in the media and communication (Hassouni & Mellor, 2025). Seif (2024) indicated that discussions about the sustainable and responsible use of "artificial intelligence and how it affects the organization's strategic communication and digital marketing are desperately needed and should be highlighted in the United Arab Emirates".

In a time when sustainable development and artificial intelligence have become global priorities, businesses are incorporating AI into their PR campaigns more frequently to achieve sustainable development goals better. Though interest in AI-powered communication tools like chatbots, sentiment analysis, predictive analytics, and automated content creation is growing, little is known about how effective these tools are in advancing sustainable development initiatives, especially in the socio-cultural and economic context of the UAE. The UAE has established itself as a regional leader in sustainability and digital transformation, as demonstrated by national initiatives such as the UAE Net

Zero 2050 project and its active involvement in international climate discussions (COP28). However, few empirical studies have been done on how AI-enhanced public relations strategies influence sustainability in leading organizations.

1.2 Study Questions

1. What is the level of AI-powered public relations strategies in UAE leading organizations?"
2. "What is the reality of leading UAE organizations' sustainable development initiatives?"
3. "Is there a statistically significant effect ($\alpha \leq 0.05$) of AI-powered public relations strategies on promoting sustainable development initiatives?"

1.3 Literature Review

Establishing and maintaining "positive relationships with target audiences", as well as with the general public, media, investors, customers, employees, and other stakeholders, is accomplished through the strategic communication process known as public relations (PR). PR aims to establish and preserve a favorable reputation and image for the company or person it represents (Akgöz, & Kaymaz, 2023). The social science and art of public relations rely on connecting the organization's internal and external stakeholders (Gilaninia, Taleghani & Mohammadi, 2013).

The Industrial Revolution has influenced the development of public relations' roles, responsibilities, and strategies. During "the 1960s and 1970s", public relations practitioners were responsible for performing their duties in traditional manners. The primary information sources at the time were magazines, newspapers, and television, which described one-way communication from a single source to a sizable target audience to support broadcasting activities. In the era of PR 2.0, the emergence of online media illustrates a horizontal, networked communication pattern that comes from a broad audience, focusing on public relations as a link. In the PR 3.0 era, social media is the most popular, favored, and reliable form of public communication. PR 4.0 is marked by employing "artificial intelligence" in public relations strategies (Pribadi & Nasution, 2021).

A wide range of socio-technological approaches is covered under the term artificial intelligence. Unlike its limited use when it was first introduced in the 1950s, almost everyone uses it daily. It has changed the way that businesses all over the world handle marketing and communication strategies (Zahra, 2024). AI has also made tracking and measuring public relations campaigns easier, providing useful analytics and data for more effective campaign management. Artificial intelligence in public relations strategies has changed how companies engage and communicate with their target audience. With "AI-powered tools and algorithms", public relations teams can analyze data, identify patterns and trends, and make data-driven decisions regarding their approach (Agrawal, 2024). AI-driven public relations strategies can be reviewed as follows:

- AI technologies for crisis management: Real-time monitoring systems outfitted with AI-driven sentiment analysis can help organizations quickly detect and handle possible crises, preserving stakeholder trust and safeguarding their brand. Public relations practitioners can use sentiment analysis of news articles and social media discussions to identify key stakeholders, assess the significance of a crisis, and modify their communication strategies (Agrawal, 2024).
- Data Analysis and Insights: Public relations practitioners can make data-driven decisions that could benefit their clients by employing predictive analytics (Oduenyi & Williams, 2024). Tools with AI capabilities can examine data from various sources, including blogs, news articles, social media, and customer reviews. Important information about audience sentiments, new trends, and rival activity can be gleaned from these tools. Public relations teams can use these insights to find opportunities, better understand their target audience, and adjust their messaging and tactics accordingly (Agrawal, 2024). AI-powered "data analytics tools" are used by "public relations practitioners" to gather, examine, and interpret data from various sources. This aids in acquiring essential knowledge about market trends, audience behavior, media coverage, and public opinion. AI improves data processing skills, making it possible to analyze the impact and efficacy of public relations campaigns more precisely and effectively (Luttrell & Wallace, 2025).
- Personalization and Targeted Communication: Public relations practitioners can reach various stakeholders with tailored and focused communications with AI. Public relations specialists can use AI algorithms to examine user demographics, preferences, and behaviors to develop campaigns, content, and messages tailored to each individual. Artificial intelligence optimizes audience segmentation and content delivery (Luttrell & Wallace, 2025). "AI-powered personalization" in strategic communications seeks to assist companies in utilizing AI technologies to develop more impactful, relevant, and targeted communication strategies, ultimately improving engagement, fortifying brand perceptions, and boosting business results (Nkembuh, 2024).

- Media Monitoring and Coverage Analysis: AI-powered media monitoring systems can track real-time mentions of a business, brand, or sector in various media outlets. These tools can identify relevant news articles, social media posts, and other mentions, allowing PR teams to monitor their brand's reputation, track the effectiveness of their campaigns, and respond promptly to emerging issues or crises (Agrawal, 2024).
- Digital Marketing: Artificial intelligence revolutionizes marketing practices by improving content personalization, streamlining campaign tactics, and enabling proactive crisis management via automation and advanced analytics. As AI develops, its application to marketing operations holds promise for improving consumer interaction and propelling business expansion in the digital age (Zahra, 2024).

Sustainability is one study area relevant to today's society (Roger-Monzó & Castelló-Sirvent, 2025). The term "sustainable development describes growth that satisfies current demands without endangering the capacity of future generations to satisfy their own (Aleryani, 2024). By balancing "social justice, environmental preservation, and economic expansion", sustainable development enables organizations to secure the prosperity of present and future generations. Additionally, maintaining organizational performance highly depends on sustainable development initiatives (Abdulbaqi & Mhaibes, 2024). Since the Sustainable Development Goals (SDGs) were introduced, sustainable development has emerged as a key strategic trend in public relations since the Sustainable Dvelopment Goals (SDGs) were introduced (Estanyol, Compte-Pujol & Lalueza, 2024).

Public expectations of "corporate social responsibility" and perceived image benefits make large organizations more likely to integrate sustainability principles into their strategies. Seniority in PR then affects one's knowledge of and dedication to sustainable practices, emphasizing ecology, nature preservation, corporate social responsibility, and mindful consumption. Studies have indicated that sustainability is a significant aspect of public relations practitioners' work. The subject directly impacts business procedures and stakeholder communication. Public relations professionals' increasing commitment to sustainability issues and growing awareness can help businesses project a positive image and improve public relations. This is supported by the requirement to report on sustainability initiatives, which translates into the organization's adoption of socially conscious practices (Tworzydło et al., 2024). Businesses can attain sustainable development and provide better services to consumers and society by expanding public education and awareness, ensuring data diversity and fairness, and adopting unbiased digital tools (Zhong, 2024).

Digital platform adoption has increased global reach while reducing financial costs and environmental waste. This shift is further improved by incorporating AI tools into public relations communication, which offer sentiment analysis, real-time monitoring, and predictive insights. Using these tools, organizations can interact with stakeholders, react to new trends, and foster trust via moral behavior (Aleryani, 2024). Organizations can use chatbots to educate stakeholders about their corporate social responsibility (CSR) programs, which include promoting diversity, equity, and inclusion, reducing carbon emissions, and protecting the environment. Additionally, chatbots can respond to stakeholders' inquiries about CSR and motivate them to participate in CSR initiatives. Additionally, stakeholders can ask questions about CSR and get pertinent information by using AI chatbots (Jiang, Cheng & Wang, 2025).

Moreover, the literature also addressed the role of AI in campaigning and PR-development towards the enhancement of implementation possibilities of different sustainability initiatives. For instance, a study suggested the role of the professional experience in determining the usage of sustainable development component in the use of PR campaign among 315 Polish PR professionals, which was conducted in 2022 in an online survey done. It was highlighted by the findings that sustainability becomes an increasingly important consideration in the Polish PR practice, which designates the future development of business communication and the improvement of corporate image (Tworzydło et al., 2024). In another study, the researchers investigated the ways of integrating AI into sustainable marketing and the role of its integration in improving decision-making, engagement with customers and campaigns, and overcoming ethical dilemmas such as data privacy and algorithmic bias. It also placed emphasis on how AI can be used to strike a balance between the economic interests and the environment and social responsibility and provide theoretical understanding and practical steps toward making sustainable marketing activities a reality (Emon & Khan, 2024).

Another paper delved into the relationship between deep learning algorithm, trust on sustainable advertising and perception of sustainable advertising in an educational setting. Through quantitative design and regression analysis, the results indicated that besides determining a positive relationship between deep learning algorithms and trust on sustainable advertising, prior knowledge moderated the relationship in a negative manner which means that the higher the prior knowledge, the more flexible it was towards eliminating the positive influence of trust on sustainable advertising (Ediriweera, Fernando & Pramudika, 2024).

Additionally, a different approach was used in a different study via systematic review of the literature based on PRISMA known as the prevalence of the AI impact on the sustainability of digital marketing. The results indicated that by incorporating AI in digital marketing, a better environment, economy, and social sustainability could be achieved

and the findings demonstrated that businesses, marketers, and policy-makers who want to be more environmentally sustainable would benefit by using digital marketing strategies which are developed in cooperation with AI (Gündüzyeli, 2024).

Another study discussed the most important strategies and initiatives in environmentally sustainable smart cities, as well as how they contributed to solving the problems of urbanization and ensuring the quality of life. Results outlined the interdependence of renewable energy, smart transportation, effective waste and water management, green parks, IoT-based infrastructure, and active involvement of citizens in being more carbon-reducing, resource-conserving, and more livable cities (Popescu, 2022).

Conversely, AI was found in another study to reshape sustainable marketing because it can make individualized, data-based approaches that can be used to enhance green consumer behavior. It discovered that AI software, such as predictive analytics and chatbots, can improve audience optimization and targeting as well as ethical concerns, providing strategic advice to encourage environmentally-friendly consumption patterns among marketers (Vijayakumar et al., 2025). Moreover, another research concluded that AI-based marketing has the potential to influence green consumption by Malaysian Gen Z, although the negative impact might be associated with ethical issues such as the privacy of data and bias. It emphasizes the necessity to use AI responsibly to provide a compromise between personalization and ethical and sustainable approaches (Rajuroy, Liang, Stephen & Emmanuel, 2024).

2. Research Procedures

2.1 Methodology

The study is based on the descriptive approach, defined as a set of integrated study procedures to describe a phenomenon or topic based on the adequate and accurate collection, classification, processing, and analysis of facts and data in order to reveal implications and results.

2.2 Participants

The study community includes all workers of the leading organizations in the United Arab Emirates. The study sample, which randomly included 230 individuals from the study population.

2.3 Characteristics of the Study Sample

For general data regarding the study sample members, such as demographic data (years of experience, gender), frequencies and percentages were computed as follows:

Table 1. Distribution of Sample Individuals by Characteristics

Gender	**Frequencies**	**Percentages%**
Male	142	%61.7
Female	88	%38.3
Total	230	100%
Years of Experience	**Frequencies**	**Percentages%**
Less than 5 years	54	%23.5
From 5 to 10 years	79	%34.3
More than 10 years	97	%42.2
Total	230	100%

The table reveals that the highest percentage attained by individuals, classified by gender, was 61.7% for males, whereas the lowest percentage was 38.3% for females. The highest percentage attained by participants based on years of experience is 42.2% for those with over 10 years, followed by 34.3% for those with 5 to 10 years, and the lowest percentage of 23.5% for individuals with less than 5 years of experience.

2.4 Study Instrument

Using a case study of the leading organizations in the United Arab Emirates, the researcher created a questionnaire to investigate the effectiveness of AI-driven public relations strategies in advancing sustainable development initiatives. Several techniques, such as the arbitrators' face validity, were used to confirm its validity and reliability. The arbitrators received the questionnaire to evaluate the linguistic formulation, clarity, and relevance of the statements in relation to the questionnaire. More than 80% of the arbitrators agreed that some statements should be removed and reworded. As a result, the questionnaire included thirty statements spread over two axes in its final form after arbitration. A survey sample of thirty members of the study population was used to confirm the questionnaire's psychometric qualities. The following criteria were used to assess validity and reliability:

- First Axis: The internal consistency validity of the axis was assessed by calculating the coefficient of Pearson correlation between the score of each statement and the overall score of the corresponding dimension. At a

significance of 0.01, all correlation coefficients were statistically significant, exhibiting high values between -0.719** and 0.881**. The correlation coefficients of the dimensions, ranging from -0.870** to -0.898**, were statistically significant at the 0.01 level, so confirming the general construct validity of the axis dimensions. The Cronbach's alpha reliability coefficients for the axis dimensions and the total score of the first axis were validated; the coefficients for the axis dimensions ranged from -0.811 to 0.888, while the total reliability coefficient for the axis was 0.942. The values of the reliability coefficients indicate the applicability of the first axis and the reliability of its conclusions.

- The internal consistency validity of the axis was assessed by calculating the coefficient of Pearson correlation between the evaluations of each statement and the overall score of the second axis. All correlation coefficients were statistically significant at a significance threshold of 0.01, with high values ranging from -0.743 to 811. The reliability coefficient for the second axis attained a value of .928 upon verification of the Cronbach's alpha reliability coefficients. This figure demonstrates the reliability and validity of the results, along with the relevance of the second axis. The study tool (questionnaire), validated with a five-point Likert scale (strongly disagree, disagree, neutral, agree, strongly agree), yielded the following responses: "strongly disagree" (1), "disagree" (2), "neutral" (3), "agree" (4), and "strongly agree" (5). The researcher employed “SPSS software” to extract data through various statistical approaches.

2.5 Sample-Based Limitations

The gender division of the study sample can be viewed as one of the potential limitations because the percentage of males who took part in the research is 61.7, whereas the proportion of females is 38.3. The resultant imbalance can bring a gender bias and makes the results non-generalizability unless gender as a factor can shape the views or interest in AI-driven PR strategy and sustainable development practices. A more diverse sample size would have provided a wider picture of the views, especially because different genders might have different communication styles, the use of technology, and sustainability focus.

Also, since the sample is diverse in terms of the professional experience level, it is quite biased in favor of those who have over five years of experience and especially over 10 years (42.2%). That might restrain the representation of younger generations of workers that might possess various attitudes to AI implementation and sustainability since they were exposed to new technologies and new values in the workplace a bit later. A broader sample in experience may offer a more detailed insight into the perspective of the individuals representing the various segments of the workforce in how they interact and view AI driven public relations en route to sustainable development.

3. Findings

3.1 The Presentation, Analysis, and Interpretation of the Findings from the First Question: "What Is the Level of AI-Driven Public Relations Strategies in Leading Organizations?"

To address this inquiry, the mathematical values and standard deviations for the dimensions of the first axis, AI-Driven Public Relations Strategies, were calculated. The arithmetic means for every dimension was subsequently employed to organize these dimensions in descending order. The subsequent table demonstrates this:

Table 2. “Arithmetic means standard deviations for the dimensions of the first axis: AI-Driven Public Relations Strategies”

Number	Dimensions	Arithmetic means	Standard deviation	Response score	Rank
1	Dimension 1: Data analytics	4.07	.915	High	1
2	Dimension 2: Targeted Communication	3.85	1.071	High	3
3	Dimension 3: Media Monitoring	3.98	.944	High	2
4	Dimension 4: Digital Marketing	3.77	1.021	High	4
Overall average		3.92	.901	High	

This clearly indicates that the overall average for all participants for the first axis's dimensions—AI-Driven Public Relations Strategies—was 3.92, with a standard deviation of 0.101 and a response score classified as High.

The first axis achieved a response score of (High). This can be explained by the fact that AI-powered public relations systems generate specific marketing messages through rapid analysis of big data, enabling target audiences. AI also enables organizations to take proactive measures thanks to their ability to recognize patterns and potential emergencies early on. Furthermore, the organization presents a better image to its audience through faster response score s, in addition to audience engagement enabled by smart tools such as chatbots and others.

Below, the discussion of the dimensions of the first axis in more detail as follows:

- **Dimension 1: Data Analytics** The statements that were part of the first dimension were arranged in

descending order according to the arithmetic mean for each statement following the calculation of the arithmetic means and standard deviations. The subsequent table demonstrates this:

Table 3. "Arithmetic means and standard deviations of sample responses to the first dimension: Data Analytics"

No.	statements	Arithmetic means	Standard deviation	Rank	Response score
1	Artificial intelligence technologies are used to analyze target audience data.	3.86	1.331	5	High
2	AI technologies are used to identify audience engagement trends.	4.36	1.103	1	Very High
3	The organization uses AI technologies to transform big data into executable goals.	3.92	1.286	4	High
4	AI technologies are used to evaluate the organization's media campaigns.	4.24	1.205	2	Very High
5	The organization uses AI tools to analyze audience trends in real-time.	3.98	1.346	3	High
Overall average		4.07	.915	High	

According to the above data, the first dimension had an overall mean of 4.07, a deviation of 0.915, and a "High" response score.

The fact that the first dimension achieved a "High" response score can be attributed to these organizations' awareness of relying on real data rather than intuitive decisions. Data analytics is a vital tool that helps organizations meet their needs for a precise understanding of target audience preferences and requirements. This understanding enhances audience engagement because it enables organizations to develop specialized communication approaches and proactive media policies by tracking future public opinion trends.

- **Dimension 2: Targeted Communication**

The standard deviations and means were calculated for the second-dimension statements. The arithmetic mean for each statement was subsequently employed to rank them in descending order. The subsequent table demonstrates this:

Table 4. Arithmetic means and standard deviations of sample members' responses to the second dimension

No.	statements	Arithmetic means	Standard deviation	Rank	Response score
6	Artificial intelligence technologies deliver more effective messaging using information extracted from audience interactions.	3.69	1.588	4	High
7	Artificial intelligence technologies are used to identify target audiences based on their interests.	4.15	1.202	1	High
8	Artificial intelligence gives organizations the ability to adjust their communication methods.	3.57	1.573	5	High
9	Artificial intelligence provides advanced analytical capabilities that help deliver appropriate messages to audiences.	4.06	1.292	2	High
10	Artificial intelligence technologies provide personalized recommendations at the best time to present content to each audience segment.	3.79	1.476	3	High
Overall average		3.85	1.071	High	

Targeted communication received an overall average of 3.85, with a standard deviation of 1.071, and a response score classified as "High."

This dimension garnered a "High" response score due to the substantial capability of artificial intelligence technologies to process and evaluate large datasets and discern patterns within the target population. This facilitates the organization's ability to send specific, tailored messages to each audience individually. This helps increase the organization's predictive capacity regarding future audience needs.

- **Dimension 3: Media Monitoring**

The arithmetic means and standard deviations were calculated for the statements of the third dimension. Then these means were then employed to arrange them in descending order.

Table 5. “Arithmetic means and standard deviations for sample members' responses to the third dimension, Media Monitoring”

Ser.	statements	Arithmetic means	Standard deviation	Rank	Response score
11	Artificial intelligence technologies help with continuous media monitoring and analyzing media coverage.	3.75	1.462	5	High
12	Artificial intelligence technologies assess media reactions to press releases.	4.17	1.292	2	High
13	Artificial intelligence technologies enable real-time media monitoring across multiple platforms.	3.82	1.444	4	High
14	Artificial intelligence technologies are used to measure the impact of media on an organization's strategic objectives.	4.26	1.160	1	Very High
15	Artificial intelligence technologies help analyze media data to uncover audience interest.	3.89	1.382	3	High
Overall average		3.98	.944	High	

The third dimension exhibited an overall average of 3.98, a deviation of 0.944, and a "High" response score, as seen in the table above.

This "High" response score can be attributed to the significant advantage offered by artificial intelligence technologies in processing and analyzing big data in terms of accuracy and speed. This contributes to identifying market trends and target audiences, which helps the organization direct its resources more strategically to achieve its goals.

- **Dimension 4: Digital Marketing:** The means and standard deviations were calculated for the statements regarding the fourth dimension. The arithmetic mean for each statement was next employed to rank them in descending order, as demonstrated in the accompanying table:

Table 6. Arithmetic means and standard deviations for sample responses to the fourth dimension

No.	statements	Arithmetic means	Standard deviation	Rank	Response score
16	Artificial intelligence technologies help design advertising content that fulfils the aspirations of the target audience.	3.64	1.529	4	High
17	Artificial intelligence technologies select the most effective digital channels to reach the target audience.	4.03	1.339	1	High
18	Artificial intelligence technologies help businesses continuously engage with audiences across multiple platforms.	3.72	1.446	3	High
19	Artificial intelligence technologies help track the success of digital marketing initiatives.	3.93	1.347	2	High
20	Artificial intelligence technologies improve companies' user experiences on digital marketing platforms.	3.56	1.556	5	High
Overall average		3.77	1.021	High	

According to the preceding table, the standard deviation was 1.021, the overall mean for the fourth dimension—digital marketing—was 3.77, and the response score was "High." The fact that artificial intelligence technologies have greatly lowered organizations' operating costs by providing a quick and precise understanding of the market and audience's preferences explains why the fourth dimension, digital marketing, received a "High" response score. This has enabled organizations to define their objectives more clearly, enabling them to accurately determine their costs.

3.2 The Presentation of the Data from the Second Question: "What Is the Reality of Leading UAE Organizations' Sustainable Development Initiatives?"

The issue was resolved by computing the means and deviations for the statements on the second axis, "advancing Sustainable Development Initiatives." The arithmetic mean for each statement was subsequently employed to arrange them in descending order. The subsequent table demonstrates this:

Table 7. "Arithmetic means and standard deviations of sample members' responses to the statements in the second axis": "Advancing Sustainable Development Initiatives"

No.	statements	Arithmetic means	Standard deviation	Rank	Response score
21	The organization seeks to promote sustainable development initiatives by integrating them into its long-term plans.	4.18	1.277	1	High
22	The organization seeks to increase population and employee understanding of the importance of sustainable development.	3.42	1.643	10	High
23	The organization helps raise the standard of living in neighbouring communities.	4.09	1.391	3	High
24	The organization adopts sustainable environmental practices in its operations and products.	3.58	1.515	8	High
25	The organization implements development projects that enhance the empowerment of marginalized groups and rural communities.	3.94	1.237	5	High
26	The organization relies on long-term strategies to achieve the Sustainable Development Goals.	3.65	1.553	7	High
27	The organization focuses on integrating sustainable development initiatives into all aspects of its operations.	4.12	1.207	2	High
28	The organization supports partnerships with non-governmental organizations and civil society to promote sustainable development projects.	3.77	1.472	6	High
29	The organization improves access to healthcare and education.	4.08	1.287	4	High
30	The organization seeks to develop innovative solutions that support the achievement of the Sustainable Development Goals.	3.49	1.613	9	High
Overall average		3.83	.907	High	

According to the above data, the second axis had a response score of "High," an arithmetic mean of 3.83, and a standard deviation of 0.907.

This high response score for the second axis can be attributed to the increased economic, social, and environmental awareness of organizations, which has encouraged them to integrate and implement the dimensions of sustainable development into their strategic plans. Sustainable development enhances long-term production quality and reduces some operational costs.

3.3 The Presentation, Analysis, and Comprehension of the Third Question's Findings: "Is There a Statistically Significant Effect at the Significance Level ($\alpha \leq 0.05$) of AI-Driven Public Relations Strategies on Advancing Sustainable Development Initiatives?"

A multiple linear regression analysis was used to address this issue, as shown in the accompanying table:

Table 8. "Effect of AI-driven public relations strategies on Advancing Sustainable Development Initiatives"

Independent Variable	B	Beta	R	R^2	T.Value	Sig.T
Data Analytics	.069	.070	.837[a]	.700	.954	.341
Targeted Communication	.292	.344			5.354	.001
Media Monitoring	.233	.242			2.827	.005
Digital Marketing	.226	.255			3.816	.001
Dependent Variable	Advancing Sustainable Development Initiatives					
Constant Coefficient	.648					
Adj R2	.695					
F Value	131.425					
Sig F	.001[b]					

Accordingly, the influence of AI-driven public relations strategies on advancing sustainable development initiatives is significant, as the accompanying table demonstrates. At the .001b significance level, the R value was 0.837a. According to the R2 value, AI-driven PR strategies likewise accounted for 70.0% of the variance in advancing sustainable development initiatives. The multiple linear regression model's strong explanatory power, ability to forecast the value of the dependent variable depending on the independent variables, and model validity are all shown by the F value, which was 131.425. This, in turn, illustrates the capacity to forecast how AI-powered PR tactics would advance sustainable development projects.

The ability of artificial intelligence technology to help businesses recognize sustainable trends explains this, which encourages them to develop more advanced strategic plans. This provides companies with greater transparency and credibility in their dealings and public reports, enhancing public confidence in them.

4. Discussion

Upon reviewing the literature, it becomes evident that each study provided unique insights that can be discussed in a critical manner; especially within the context of the current research as well. Accordingly, the present research

identified that there is great AI-powered PR strategy adoption among the top organizations in the UAE, thus demonstrating how efficient the AI tools are to create customized communication, immediate response, and data-based decision-making. The findings can be used to establish a serious correlation between them and other studies like those presented by (Emon & Khan, 2024) and (Gündüzyeli, 2024) that stated that AI implementation enhances marketing communication and enables targeted messages because it processes huge amounts of data.

The high scores of the response in terms of dimensions such as targeted communication and data analytics prove that AI is useful when it comes to identifying trends and learning more about the behavior of the listeners and forming PR campaigns in advance. This is similar to the results of (Vijayakumar et al., 2025) that demonstrated the effectiveness of predictive analytics and chatbot in enhancing the effectiveness of marketing, and segmentation of the audience.

As well, the present research outlined that organizations had gained the advantage of the capabilities of AI in digital marketing, where they rated high in terms of reduced costs of operation and efficiency. This aligns with (Gündüzyeli, 2024) that revealed that AI digital marketing is economically and environmentally sustainable due to its ability to streamline the results of the marketing campaign and resource utilization. On the same note, Zahra (2024) made a remark that AI does not only personalize content but also enables proactive management of crises, which also happens to apply to the UAE organizations surveyed, as AI systems enhanced strategic resource distribution and facilitated communication processes.

Regarding the contribution to sustainable development, the study found out that the commitment in the UAE organizations was high. Findings are consistent with (Tworzydło et al., 2024) and (Popescu, 2022) in which it was shown corporate and urban-scale studies demonstrated the growing integration of sustainable practices in the strategic plan along with the mandate of environmental and social awareness. The focus of the sustainability in this work as well resounds with (Emon & Khan, 2024), which focused on the increasing organizational interest in the economic and environmental and social responsibility congruence through AI-enhanced actions. This is reflective in the homogeneity of results in that the world is moving in a global direction on becoming more sustainable in strategy as a driving force supplemented by more advanced technological tools.

Most likely, the most critical result was that AI-based PR approaches provided statistically significant influence on the promotion of the sustainable development programs, revealing 70 percent of the variances. This directly corresponds to the finding of (Emon & Khan, 2024) and (Rajuroy et al., 2024) that states the transformative power of AI to establish consumers to eco-friendly behavior and transparency and trust in sustainability practices. Also, (Ediriweera et al., 2024) observed that the usage of AI tools to strengthen sustainable advertising can be activated by trusting the AI tools, yet its strength may be moderated by the previous experience, another detail that contributes to the importance of communicating effectively and applying ethical AI technologies when using PR technologies in promoting sustainability.

On the whole, the comparison indicates that the study results are in agreement with, not to mention elaborated on, global ones. The introduction of AI to the field of PR has not only allowed increasing the accuracy of communication and improving organizational responsiveness but is also a trend that contributes to ensuring sustainable development.

Lastly, it can be noted that the example of the UAE corresponds to the general tendency of using AI in a way that can fill corporate missions with global sustainability agendas. Nevertheless, the literature also warns about the ethical considerations, which is also stressed by (Rajuroy et al., 2024) so that, being an impactful enabler, AI has to be properly deployed to continue to be accepted and validated by the stakeholders.

5. Conclusion

The overall implication of the findings of the present study is that there is strong and explicit evidence that AI-driven approaches to the development of PR strategies are not only effectively incorporated into the work of the biggest companies operating in the region of the United Arab Emirates but are also making a crucial contribution towards the promotion of sustainable development agendas. The above-average response ratings at all of the dimensions, where the software was measured, namely, data-driven decision-making, targeted communication, the identification of trends on the market, and digital marketing, already show that organizations successfully utilize AI to optimize their communication strategies and the process of business activities. Besides, the fact that the impact of AI on sustainable development is statistically significant, as it is confirmed by the R modifying R square of 0.70, testifies to the further entrenchment of the existing ideas about the contribution of the relationship between technology-led communication and long-term organizational sustainability.

These findings are supported by the general body of scholarly research on the paradigm shift that AI has made in the sphere of the PR and sustainability. Predictive analytics, sentiment analysis, chatbots, and other AI tools have been repeatedly confirmed in the scholarly literature as capable of complementing strategic messaging, engagement of stakeholders, and decision-making during sustainability campaigns. Moreover, the transition to sustainable activity in the global environment reflected in the numerous studies is reflected in the rise of environmental, economic, and social understanding that has been observed in organizations of the UAE. The intersection between AI and sustainability in the

sense would make such organizations one of the first ones to adopt digital change in corporate responsibility and provide an example on such an account to the rest of the area and beyond.

Nonetheless, the demographic scope of the sample, in especially the unbalanced gender representation and the high concentration very experienced people, points to the fact that further studies are necessary to determine how other groups of the workforce experience and interpret AI-driven PR initiatives. Female workers and young professionals might introduce new perspectives and patterns of using such technologies and, therefore, affect the way of AI introduction and the range of priorities concerning sustainable development efforts. It will also be necessary to fill these gaps to create a more uniform, fair, and future-looking model of AI adoption into organizational communication strategies.

Consequently, the implication of the study is significant in the long-rung. Because of the evolving and maturing state of AI technologies, they will even become more strategic in application during the undertaking of sustainable development pursuits, particularly in the context of public relations. Enterprises that are persisting with AI functionality will most probably acquire competitive advantages regarding transparent activity, stakeholder confidence and sustainable real-time behavior responses. Educators, policymakers, and other corporate leaders should thus focus on developing AI literacy, ethics in AI usage, and making it available to all people so that it can be used responsibly. In this manner, achievement of organizational performance will not only be enhanced but it will also assist in the wider global community in meeting sustainability objectives.

6. Recommendations and Future Research

The philosophical issues related to AI in PR grow serious since companies implement AI in the context of targeting audiences, analyzing social sentiments, and engaging in interactions in real-time. Although the technologies allow higher efficiency and more strategic precision, the additional issues have emerged in the form of growing concern over data privacy, worries about algorithmic bias, and algorithmic manipulation of the opinion. Unethical risks presented by AI systems in the context of public relations involve a high level of collection and processing of sensitive information without sufficient control, transparency, or consent that may jeopardize stakeholder trust. Also, there is the potential that automatized personalized messaging will approach the aspect of persuasion close to manipulation, and, therefore, ethical norms should be developed that make it clear that AI-enhanced communicated should be fair, inclusive, and accountable.

Furthermore, the comparative analysis of various territories or industries can also provide precious data on the way the cultural, economic, and regulatory environment affects the possible adoption and outcomes of using AI-driven PR campaigns. Indicatively, although other pieces of research have suggested disparities in the maturity of AI, trust, and ethics across Europe and East Asia, the top organizations in the UAE have adopted AI to encourage sustainability. In addition, the use and reception of AI tools are constrained due to differences in sectors, e.g. between governmental organizations, healthcare, or consumer technology. Comprehending such differences can be useful as they guide policymakers and industry leaders in adapting best practice and regulatory models that not only ape the local market conditions but also maintain international norms.

Therefore, in order to overcome both the ethical issues and cross-sectoral disparities, there is an emerging necessity to develop such sturdy frameworks that can lead to efficient usage of AI and adhering to the Sustainable Development Goals (SDGs). Such structures must lay focus on design ethically inclined AI, inclusivity, data integrity, and transparency besides providing avenues through which innovation in sustainable communication can be carried out. The combination of AI ethics with sustainability indicators would allow ensuring that technological breakthroughs serve to positively affect social justice, environmental protection, and economic growth. These frameworks would assist organizations in utilizing AI not only as an efficacy instrument, but as a driver of responsible development and world-wide well-being.

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Authors contributions

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