

**The Impact of Artificial Intelligence Applications on Journalistic Content Production**  
**A Survey Study on a Sample of Algerian Journalists from Various Media Outlets**

تأثير تطبيقات الذكاء الاصطناعي على إنتاج المحتوى الصحفي  
دراسة مسحية على عينة من الصحفيين الجزائريين من مختلف وسائل الاعلام

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**Abstract:**

This study examines the impact of artificial intelligence and automation on the media industry, specifically in terms of execution speed and content quality improvement. Through a field study involving 152 journalists from various media outlets in Algeria, the findings revealed that automation significantly accelerated the journalistic content production process, with 80% of the sample confirming its effectiveness. Additionally, results indicated that artificial intelligence greatly enhances interaction between journalists and their audiences, with a reported impact of 75%.

**Keywords:** Applications; Impact; Artificial Intelligence; Production; Content; Journalism.

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## **1. INTRODUCTION**

In the second half of the 19th century, the seeds of artificial intelligence began to emerge. Although computers did not yet exist, artificial intelligence—conceived as mathematical logic—found its place and paved the way in the scientific community. Despite the varying definitions and interpretations of artificial intelligence by specialists, whether academic, philosophical, or scientific, there has been a consensus since the emergence of the term in the early 1950s. This period coincided with the advent of electronic computers, which opened the path toward a world that seeks to replicate human intelligence.

### **2. A conceptual entrance to artificial intelligence**

#### **2.1 The concept of artificial intelligence**

Artificial Intelligence (AI) is defined as a cognitive field that thrives on data and is considered the primary driving force behind the current social and economic revolution (Osaba et al., 2021, p. 69). It refers to the ability to enable machines to perform complex tasks that cannot be easily accomplished using a fixed set of instructions, achieved through Machine Learning (ML), where machines are trained to solve more complex problems. This concept emphasizes the role of machines in solving intricate tasks that are difficult to address, by training the machines to find solutions through an AI system capable of offering solutions to problems based on a predetermined algorithmic pattern.

AI is the process of simulating human intelligence through computer systems, aiming to replicate human behavior, thinking patterns, and decision-making processes. Human behavior is studied by conducting experiments on their actions, placing them in specific situations, and observing their reactions, thought patterns, and interactions with these situations. This is followed by attempting to replicate human thinking through complex

computer systems. AI is a powerful and transformative technology for the modern world, and it is expected that much of the human progress in the 21st century will be linked to how these technologies are developed (Sarkar, 2022, p. 10).

Additionally, AI is also defined as the science and engineering of replicating, extending, and enhancing human intelligence through artificial means and technologies to create intelligent machines (Zhongzhi, p. 1). This term is frequently applied to systems that possess human-like cognitive processes such as the ability to think, discover meaning, generalize, and learn from past experiences (Copeland, 2019, p. 12).

Based on these definitions, AI is considered an advanced technology that relies on machines and computer systems to simulate human intelligence and perform complex tasks swiftly and effortlessly

## **.2.2 Artificial Intelligence: Capabilities and Limits of Similarity to the Human Mind**

Artificial Intelligence (AI) is a branch of computer science that enables machines to think like humans, essentially creating computers with their own "minds." It is also defined by behaviors and characteristics inherent in computer programs that mimic human cognitive abilities and working patterns. Among the most significant of these characteristics are the abilities to learn, infer, and react to situations for which the machine has not been explicitly programmed. AI systems or devices simulate human intelligence to perform tasks and can improve themselves based on the information they collect.

In recent years, the media industry has undergone radical transformations due to rapid technological advancements, particularly in the field of Artificial Intelligence (AI). AI is one of the most influential factors in media automation, contributing to faster content production, improved news personalization, and offering new ways to interact with the audience. However, these transformations raise numerous questions about the impact of automation on the quality of journalistic content and journalistic creativity. This study aims

to explore these impacts through a field survey involving 152 journalists from various media outlets in Algeria.

### **3. Artificial Intelligence in Media**

#### **3.1 Roles, Areas of Use, and Benefits**

Artificial Intelligence (AI) is an advanced field of computer science focused on developing systems capable of performing tasks that typically require human intelligence, such as learning, decision-making, and data analysis. In the media industry, AI encompasses technologies like Machine Learning (ML) and journalistic robots, which are used to automatically generate news content based on available data, thus contributing to improved efficiency and accelerating the production process (Graefe, Binns, & Howes, 2018, p. 1052). Additionally, AI in journalism relies on several techniques such as pattern recognition and Big Data analytics to extract news from multiple sources and convert it into publishable text, thereby enhancing the effectiveness of digital journalism and reducing costs. Studies indicate that AI plays a crucial role in improving the speed of journalistic production by predicting the most relevant topics and assisting journalists in preparing news more quickly and accurately (Graefe, Binns, & Howes, 2018, p. 1052). Furthermore, AI personalizes news based on reader interests, which increases engagement with the content and improves the quality of interaction between the media and the audience.

#### **3.2 The Balance Between Automation and Creativity in Media Content**

Automation in the media industry refers to the use of automated technologies to reduce the role of journalists in certain aspects of content production. In this context, media organizations are increasingly relying on technological tools, such as automated software for generating articles and editing images and videos, which contribute to speeding up journalistic processes and reducing costs. This type of automation enables the creation of

news content based on available data through algorithms that analyze information available online (Zeng et al., 2020).

However, despite the benefits it offers, such as faster production and increased efficiency, excessive reliance on automation can negatively impact journalistic creativity. Overuse of automated tools may lead to the loss of the human touch, which provides uniqueness and innovation to journalistic content. Therefore, it is crucial to maintain a balance between using automation and fostering journalistic creativity to ensure the quality and diversity of media content (Shang et al., 2021).

#### **4. Importance of the Study**

This study gains significance from the rapid digital transformations witnessed by the media sector, where Artificial Intelligence (AI) is directly influencing journalistic content production. The study aims to analyze this impact in the Algerian context by surveying the views of journalists working across various media outlets.

**A. Scientific Importance:** This study contributes to enriching academic research on the application of AI in journalism and provides a theoretical framework for understanding the challenges and opportunities associated with its integration.

**B. Professional Importance:** It helps journalists adapt to modern technologies, enhancing journalistic production efficiency while maintaining professional standards.

**C. Economic Importance:** The study clarifies the impact of automation on the journalism labor market and the competitiveness among media organizations.

**D. Ethical and Societal Importance:** It addresses issues related to credibility, bias, intellectual property rights, and the overall impact of AI on the quality of media content.

#### **5. Objectives of the Study**

This study aims to analyze the impact of AI applications on the production of journalistic content in Algeria, with the following objectives:

- A. To analyze the extent of the use and prevalence of AI applications in Algerian journalistic institutions.
- B. To determine the impact of AI on the journalistic content production process in terms of speed, accuracy, and quality.
- C. To explore the opportunities AI provides to journalists, such as improving productivity and developing editorial and analytical mechanisms.

## **6. Hypotheses of the Study**

### **-First Hypothesis:**

"Automation improves the quality of journalistic content by reducing editorial errors and increasing the accuracy of information. However, it may negatively affect news credibility due to the lack of sufficient linguistic and editorial review."

### **-Second Hypothesis:**

"The use of automation contributes to accelerating the process of journalistic content production and increasing work efficiency. However, it may lead to a reduction in the quality of news as speed is prioritized over accuracy and analysis."

### **-Third Hypothesis:**

"Automation reduces the level of journalistic creativity in some areas, particularly in report preparation and investigative journalism. However, creativity can be enhanced by integrating automation with the analytical and innovative skills of journalists."

### **-Fourth Hypothesis:**

"Artificial Intelligence improves the interaction between journalists and the audience through intelligent data analysis and content personalization, while potentially reducing the need for direct interaction between journalists and the audience."

## **7. Methodology of the Study**

7.1Study Design:

The study used a survey directed at journalists working in various media outlets. The survey was distributed to 152 journalists from different media organizations in Algeria during the period from January 2024 to March 2024.

7.2Research Approach:

This study adopts a descriptive-analytical approach, which combines the theoretical analysis of the automation phenomenon in journalism with a practical study of its applications and its impact on content quality.

7.3Main Survey Questions:

- What is the impact of automation on the quality of journalistic content?
- Do Artificial Intelligence techniques contribute to increasing the speed of content production?
- Does automation affect journalistic creativity?
- How does Artificial Intelligence impact journalists' interaction with the audience?

8.Data Analysis Methods:

The data was analyzed using SPSS version 21. Descriptive analysis and statistical analysis were applied to obtain accurate results regarding the effects of AI and automation on journalism.

9. Study Results

9.1Descriptive Analysis:The analysis of the data gathered from the survey revealed that automation has varying effects on different aspects of the media industry.

Table 1. The Impact of Automation on the Quality of Journalistic Content

| Question                                          | Mean | Standard<br>Deviation | Percentage |
|---------------------------------------------------|------|-----------------------|------------|
| Do you think automation improves the accuracy and | 3.8  | 0.72                  | 70%        |

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|                                                                                                          |     |      |     |
|----------------------------------------------------------------------------------------------------------|-----|------|-----|
| quality of journalistic content?                                                                         |     |      |     |
| Does automation affect the credibility of published news?                                                | 3.5 | 0.80 | 65% |
| Does automation help reduce editorial errors in news?                                                    | 3.9 | 0.75 | 72% |
| Do you think the use of automation reduces linguistic and editorial proofreading?                        | 3.2 | 0.78 | 55% |
| Do you believe that content produced automatically lacks depth and analysis?                             | 3.6 | 0.81 | 60% |
| Do you think the audience trusts content edited by journalists more than content produced by automation? | 4.1 | 0.70 | 75% |

**Quantitative and Qualitative Analysis:**

The results of the first topic indicate that automation plays a positive role in improving the quality of journalistic content by reducing editorial errors and enhancing its accuracy. 70% of the participants agreed that automation contributes to improving content quality. However, concerns were raised regarding the credibility of the published news, with 65% of participants expressing concerns about its impact on the credibility of the content. Although automation helps reduce editorial errors by 72%, there is a feeling that it may lead to a reduction in linguistic and editorial proofreading, as 55% of the participants confirmed that reliance on automated systems could negatively affect quality in these areas. Additionally, 60% indicated that automated content may lack the depth and analysis that human journalists provide. On the other hand, the results showed that 75% of the participants trust content edited by journalists more than content produced by automation, highlighting the importance of the human element in maintaining the credibility and depth of news. These results suggest that while automation may improve efficiency and speed in content

production, it still cannot replace the journalistic creativity and in-depth analysis provided by journalists.

**Table 2.The Impact of Automation on the Speed of Content Production**

| Question                                                                                      | Mean | Standard<br>Deviation | Percentage |
|-----------------------------------------------------------------------------------------------|------|-----------------------|------------|
| Does automation help speed up the production of<br>journalistic content?                      | 4.3  | 0.65                  | 80%        |
| Does automation contribute to improving<br>journalistic work efficiency?                      | 4.2  | 0.68                  | 78%        |
| Do you think automation reduces professional<br>pressure on journalists?                      | 3.9  | 0.74                  | 72%        |
| Can automation negatively affect the quality of<br>news due to the focus on speed?            | 3.5  | 0.82                  | 65%        |
| Do you believe automation reduces the need for a<br>large number of journalists in newsrooms? | 4.0  | 0.70                  | 75%        |
| Do you think automation helps journalists focus<br>on more analytical and creative tasks?     | 4.1  | 0.67                  | 74%        |

**Quantitative and Qualitative Analysis:**

The results of the second topic indicate that automation plays a significant role in speeding up the production of journalistic content, with 80% of the participants stating that it helps accelerate this process. It also showed a positive impact on improving journalistic work efficiency (78%), reflecting its ability to enhance the organization and effective distribution of tasks. In contrast, 72% of the participants confirmed that automation helps reduce professional pressure on journalists, allowing them to focus on more important tasks rather

than routine ones. However, 65% of the participants expressed concerns that the focus on speed might negatively affect the quality of the news. Despite its benefits in increasing efficiency, 75% indicated that it could reduce the need for a large number of journalists in newsrooms, suggesting its impact on reducing the workforce. On the other hand, 74% of the participants believed that it allows journalists to focus on more analytical and creative tasks, enhancing their role in delivering high-value content. These results indicate that automation offers significant advantages in improving speed and efficiency, but it requires a delicate balance to avoid negative effects on quality.

**Table 3. The Impact of Automation on Journalistic Creativity**

| Question                                                                                                 | Mean | Standard<br>Deviation | Percentage |
|----------------------------------------------------------------------------------------------------------|------|-----------------------|------------|
| Do you think automation limits creativity in journalistic work?                                          | 2.6  | 0.85                  | 40%        |
| Does automation contribute to content repetition and standardization?                                    | 3.2  | 0.78                  | 55%        |
| Do you think journalists rely more on artificial intelligence rather than creative thinking?             | 2.9  | 0.82                  | 45%        |
| Does automation reduce journalistic opportunities for in-depth investigative reporting?                  | 3.1  | 0.79                  | 50%        |
| Do you think automation enhances the production of more neutral and objective content but less personal? | 3.7  | 0.75                  | 65%        |
| Do you believe that combining automation with                                                            | 4.2  | 0.68                  | 78%        |

|                                                        |  |  |  |
|--------------------------------------------------------|--|--|--|
| human creativity can lead to more distinctive content? |  |  |  |
|--------------------------------------------------------|--|--|--|

**Quantitative and Qualitative Analysis:**

The results of the third topic indicate concerns about the impact of automation on journalistic creativity. The results showed that only 40% of participants believe that artificial intelligence limits creativity in journalistic work, reflecting concerns about the ability of automated systems to produce innovative content. Additionally, 55% indicated that automation may contribute to content repetition and standardization, potentially limiting creative diversity in news presentation. Furthermore, 45% of participants believe that journalists might rely more on artificial intelligence rather than creative thinking, suggesting a concern about the decline of critical and analytical thinking among journalists. On the other hand, 50% of participants mentioned that automation could reduce journalistic opportunities for in-depth investigative reporting, meaning the speed provided by automation might negatively affect journalistic projects that require significant time and effort. Despite these concerns, 65% of participants believe that artificial intelligence contributes to producing more neutral and objective content, although it might lack the personal touch that human journalists provide. Conversely, the final result showed that 78% of participants believe that combining artificial intelligence with human creativity can lead to more distinctive content, suggesting that automation should be used as a supporting tool to enhance journalistic creativity rather than replace it. These results highlight the importance of balancing automation with the human element to maintain the quality, diversity, and depth of journalistic content.

**Table 3. The Impact of Artificial Intelligence on Journalists' Interaction with the Audience**

| Question | Mean | Standard | Percentage |
|----------|------|----------|------------|
|----------|------|----------|------------|

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|                                                                                                                                | Rating | Deviation |     |
|--------------------------------------------------------------------------------------------------------------------------------|--------|-----------|-----|
| Does artificial intelligence help improve interaction with the audience through smart data analysis?                           | 4.1    | 0.67      | 75% |
| Do you think artificial intelligence helps personalize news according to audience interests?                                   | 4.0    | 0.72      | 73% |
| Do you think artificial intelligence technologies reduce the need for direct interaction between journalists and the audience? | 3.4    | 0.79      | 58% |
| Do you believe artificial intelligence makes it easier to monitor audience reactions to news?                                  | 4.2    | 0.70      | 77% |
| Can over-reliance on artificial intelligence lead to a greater distance between journalists and the audience?                  | 3.6    | 0.76      | 62% |
| Do you think artificial intelligence can help analyze and respond to comments more quickly and accurately?                     | 4.3    | 0.65      | 80% |

**Quantitative and Qualitative Analysis:**

The results of the fourth topic show a noticeable positive impact of artificial intelligence in enhancing journalists' interaction with the audience. 75% of participants believe that artificial intelligence helps improve interaction through smart data analysis, enabling journalists to better understand the preferences and interests of the audience. Additionally, 73% pointed out that artificial intelligence enhances the personalization of news to meet the

audience's needs, which increases the content's impact and attracts more followers.

However, there are some concerns regarding the impact of artificial intelligence on human interaction. 58% of participants believe that artificial intelligence might reduce the need for direct interaction between journalists and the audience, potentially leading to the loss of the human element in communication. Despite this, 77% of participants believe that artificial intelligence makes it easier to monitor audience feedback quickly, allowing journalists to interact more flexibly and effectively. The results also reveal that 62% of participants fear that excessive reliance on artificial intelligence could lead to a greater gap between journalists and the audience, as communication becomes impersonal and limited to automated responses. However, the major positive result (80%) indicates that artificial intelligence helps analyze comments and interact with them more quickly and accurately, thus enhancing effective communication and enabling journalists to respond more swiftly to the audience's views. This analysis shows that artificial intelligence can be a powerful tool for improving journalistic interaction, but caution is needed to avoid over-relying on it.

## **10. Discussion of Study Results in Light of Previous Research:**

The results of this study align with many previous studies that addressed the impact of artificial intelligence (AI) in the media industry. The focus was on analyzing the impact of AI on improving production speed and the quality of journalistic content, as well as its influence on journalistic creativity and audience interaction.

### **Impact of Automation on Production Speed and Content Quality:**

The findings of this study indicate that AI applications significantly contribute to speeding up journalistic content production (average 4.3), which is consistent with Graefe et al. (2018), who confirmed that AI helps accelerate production. In the same context, the study also showed that automation helps reduce editorial errors (average 3.9), aligning with Carlson

(2015) and Tandoc & Johnson (2016), who indicated that automation can improve news accuracy and reduce human errors. The study results also suggest that AI applications might negatively affect proofreading and editing, raising concerns about the negative impact on content quality, which is consistent with Dörr's (2016) warning about the decline in content quality due to AI applications.

**-Impact of Automation on Journalistic Creativity:**

The study results reveal that automation might limit journalistic creativity, as 40% of participants indicated that automation restricts creativity (average 2.6). This outcome supports previous studies such as Graefe et al. (2018) and Tandoc & Johnson (2016), which pointed out that AI may reduce creative diversity in news. Despite these concerns, the results suggest that combining automation with human creativity can enhance content (average 4.2), reflecting Dörr's (2016) findings on the importance of balancing automation with human innovation to maintain content quality.

**-Impact of AI on Journalists' Interaction with the Audience:**

The study found that AI can enhance audience interaction, with 75% of participants indicating that AI helps improve interaction with the audience (average 4.1), which aligns with Zeng et al. (2020), who demonstrated that AI can enhance content personalization based on audience interests. Additionally, the results suggest that AI contributes to monitoring and analyzing audience feedback more quickly and accurately (average 4.3), reflecting Boczkowski & Mitchelstein (2019), who emphasized the importance of AI in improving journalists' interaction with their audience. However, despite these benefits, concerns exist about the negative effects of excessive reliance on AI for audience interaction, as indicated by 62% of participants (average 3.6).

**-Analysis of Positive and Negative Effects of Automation and AI:**

This study concurs with many previous studies regarding the positive and negative effects of AI. While automation contributes to improving production speed and efficiency, it may negatively impact journalistic creativity and news quality, as noted by Lewis & Usher (2014) and Napoli (2015). Similarly, Schroeder & Lacy (2020) pointed out that the increased use of AI in news production could raise concerns about its impact on journalistic quality. Therefore, the results of this study emphasize the importance of balancing the use of automation and AI with human elements to ensure the maintenance of journalistic content quality and to enhance journalists' interaction with the audience.

In conclusion, the results of this study indicate that automation and AI can have both positive and negative effects on the media industry. On the one hand, automation contributes to speeding up content production and improving its accuracy, while AI techniques enhance interaction with the audience. On the other hand, caution is required regarding the negative effects that may impact journalistic creativity and content quality, necessitating a balance between modern technologies and human capabilities to achieve outstanding journalistic results.

### **11. Discussion of Results in Light of Hypotheses:**

**First Hypothesis:** This hypothesis was partially confirmed. Seventy percent of participants confirmed that automation improves content quality, but 65% expressed concerns about its impact on credibility.

**Second Hypothesis:** This hypothesis was proven true, as 80% of the sample group confirmed that automation contributes to speeding up production, and 78% indicated it improves journalistic efficiency. However, 65% fear that focusing on speed might compromise quality.

**Third Hypothesis:** This hypothesis was partially proven, with 40% of the sample group considering automation to limit journalistic creativity, while 78% believe that combining

automation with human creativity could result in more distinctive content.

**Fourth Hypothesis:** This hypothesis was partially confirmed as well, with 75% of participants in the survey affirming that AI improves interaction with the audience, while 62% fear that excessive reliance on AI could create a larger gap between journalists and their audience.

## **12. Recommendations:**

### **1. Training on AI Tools:**

Media organizations should offer specialized training to journalists to ensure they can use AI tools efficiently without compromising the quality of their journalistic work.

### **2. Development of Balanced Automation Tools:**

Media institutions should develop automation tools that strike a balance between speeding up production and maintaining content quality.

### **3. Enhancement of Journalistic Creativity:**

The media industry should continue to encourage creativity and innovation in journalism to avoid the monotony that automation might cause.

## **Conclusion:**

The study reveals that artificial intelligence (AI) and automation have a profound impact on the media industry, offering both positive and negative outcomes. On the positive side, these technologies enhance the speed and efficiency of content production, enabling journalists to cover events faster and with greater accuracy. AI also enables content personalization, tailoring material to audience preferences, which fosters stronger engagement between journalists and their audience, creating a more dynamic media environment.

However, the study also emphasizes the potential drawbacks of over-relying on automation, particularly its effect on journalistic creativity. The repetitive nature of automated tools may

hinder the diversity and originality of news presentation, potentially diminishing the depth and quality of content. This raises concerns about the loss of the human element in reporting, which is vital for maintaining editorial integrity and thorough analysis. Consequently, media organizations face the challenge of striking a balance between leveraging AI's benefits and preserving the creative and professional aspects of journalism, ensuring that technology enhances, rather than replaces, human expertise in producing high-quality content.

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