The challenges of integrating artificial intelligence applications and algorithms in the production of journalistic content.

Study trends for an intended sample of experts and professionals

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Abstract: This study aimed to find out the level of awareness of experts about the possibility of integrating journalism into artificial intelligence algorithms, to find out whether there is a significant difference between experts and specialists in their awareness of the transformations that artificial intelligence algorithms may bring about, and to find out whether there is any significant difference between experts in their perception of professional practices. that can be performed by artificial intelligence algorithms. An open-ended questionnaire was used to collect data, which was distributed to a sample consisting of 178, to examine four hypotheses: that artificial intelligence algorithms in journalism are able to collect, analyse and formulate data in traditional journalistic templates and forms, that artificial intelligence algorithms will completely solve the tasks of a traditional journalist, that artificial intelligence algorithms in journalism will force changes in communication theories and structural construction of journalistic forms, Integrating AI algorithms into journalism shortens content production and marketing processes in no time. The study concluded with a set of results, the most important of which were: Artificial intelligence is still a new field for journalism, and within narrow limits, writing style is still the main component, and journalism needs human intervention when applying algorithms. Opinion differs about the changes that artificial intelligence applies to communication theories Infrastructure preparations will affect the acceleration of AI algorithms in journalism, sending and receiving.

Keywords: integrating artificial intelligence applications,applications, diabetes,algorithms,journalistic, content.

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1. Introduction

The annals of history keep the media as always at the forefront of sectors that are affected by and adapting to technological developments, and this is what is now happening with algorithm-based AI applications.

The theoretical rooting of AI may speed up the creation and distribution of media messages; This is an optimistic view despite the opposition facing any development that requires changing the patterns of doing things in different ways from what people are used to, especially since the media industry is linked to intertwined parties of stakeholders, in addition to laws. And the regulations that regulate the practice of the media, preserve the rights and obligations of the various parties, and remind them of their duties.

Certainly, the laboratories specialized in integrating artificial intelligence algorithms relied in the production of algorithms on the templates and theories that traditional and modern media use in creating content and placing it in familiar journalistic templates, as well as adjusting methods of communication with the public, and paying attention to differences in the nature of the audience in receiving and choosing news and information, which was it in the twentieth century.

There are some challenges that may face the media's complete transition to applying artificial intelligence algorithms and employing them in their work, such as ethical challenges, intellectual property and copyright challenges, and transparency in content presentation and circulation.

The experience of employing artificial intelligence algorithms in the production of media content will be accompanied by a margin of error that requires human intervention, to create a balance and control transparency with limits that do not affect the policies of countries or ethnicities, and in line with the editorial policies of institutions.

The issue of integrating artificial intelligence algorithms into the media content production processes for traditional media is of great importance, given the large number of target audiences, as well as the huge volume of data circulating in the web, and this prompts researchers to study what is expected. To avoid any negative changes that may affect the media content.

To frame the research problem, this paper poses a question about the trends of media experts towards the expected transformations of integrating artificial intelligence algorithms in the creation of media content. The current study is classified within the research based on the descriptive approach(Bryman, 2012), which includes descriptive or qualitative methods and a case study and is used when scientists observe phenomena in a negative way that requires measurement. certain. That is, it "describes" the topic of the research without covering the "reason" for its occurrence.The current study designed an open-ended questionnaire, which was circulated to an

intentional sample of media experts and specialists in data analysis and artificial intelligence algorithms.The questionnaire wasaimed to measure the extent which the study's hypotheses were achieved and reveal the sample's expectations of integrating and using artificial intelligence algorithms in creating media content, and the extent of the expected effects on the professional performance of journalists, in addition to their estimates of the errors that NLG creation algorithms might make in the newsroom.

2.Significance of The Study

Journalists are exposed to potential concerns about incorporating artificial intelligence algorithms and robots into the journalistic work environment; Which portends the possibility that the owners of media companies will dispense with the human journalist to reduce spending on labor and use algorithms in the performance of their journalistic tasks, and the content represents all forms of benefiting from content on the web such as browsing parts of information, searching for news and products, and even constantly searching for something. Media content - texts, documents, conversations - is critical to understanding how people interact with content and how it is prepared.

For this reason, and in the context of that, the importance of this study appears to remove any confusion about the use of artificial intelligence in building content. In addition, the current research contributes to knowing the real challenges facing the work of journalists in building content, such as sending emails, receiving materials and publishing stories., especially since collecting data is the hardest part.

.3. Reviewof Related Studies

According to **T. Gillespie**,(Lucas Vieira de Araujo, Assis Gurgaz College, 2018) algorithms are not necessarily software; It is much larger because it consists of coded procedures for converting input data into output based on specific mathematical equations, as instructions for reviewing content through mathematical formulas capable of predicting, in addition, algorithms perform many operations and reconfigure data in groups for example as well as store and re-review(XinZhanga, WangDahu, 2019), Artificial intelligence (AI)(Kallem, 2012) is the study of how to make computers do things that people do better at the moment.An algorithm (quinyx, n.d.)can be either a simple series of if → then statements or a series of more complex mathematical equations. The complexity of the algorithm depends on the complexity of each individual step that needs to be performed and on the sheer number of steps the algorithm needs to perform.Artificial intelligence algorithms are generally grouped into three categories,(Filiz, 2017)these are Supervised Learning, Unsupervised Learning, and Reinforcement Learning.According to **R. Neelsen, R. Sambrook**(Lucas Vieira de Araujo, Assis Gurgaz College, 2018), algorithms and artificial intelligence are currently being used with the same mechanism as digital social networks, which distribute a large variety of videos created by third parties.Artificial intelligence is a transformational technology of the digital age and an increasingly critical business mindset for companies, especially for those in the media sector with a growing array of digital content products and advertising opportunities.(Chan-Olmsted, 2019)

Although content is an important component (R. Andersen and T. Batova,, 2015)of any news medium, a news organization must be able to publish relevant news regularly if it aims to attract visitors and invest that in attracting advertisers and readers. Low-level coverage of local weather news, sports news and deals for high-profile investigative journalism and embedded opinion pieces.It is not possible to fully automate textual content, however, it is possible to start automating the lower levels quite well, since there are already tools that allow fully automated publication of news of football matches as they are played, news of traffic or social activities in urban and rural areas. This saves journalists time to focus on more creative tasks.Any news related to linking a data source to a model algorithm. The data source provides a stream of data about a particular niche, and the model algorithm returns a text based on this data ("routed" using machine learning terms)(Kameli, 2018). Template algorithms vary from purely designed programs to deep learning language creation modelIn the media sector, the term (Robojournalism) has recently appeared, and it refers to the use of robots in the production of journalistic content. 75% of social media platforms use artificial intelligence to create content that forms the backbone of media.

Many well-established news organizations around the world are developing advanced algorithms to speed up data collection and processing (Kameli, 2018)to build news content and write stories and stories.The media and entertainment industry is also using the power of artificial intelligence (AI) to make visual content more interactive and interesting. It helps serve the audience with automated data-dense and personalized content, making their viewing experience more interesting and entertaining.(COGITO, 2021)

AI applications in media have occurred in the eight main areas: audience content recommendations/discovery, audience engagement, augmented audience experience, message optimization, content management, content creation, audience insights, and operational automation.(Chan-Olmsted, 2019)

Among the most famous news organizations, we can refer to the Washington Post, which absorbed the concept of automated journalism and sought to use techniques based on the principle of artificial intelligence. In the analysis of news related to automated journalism, and on the same approach, the CNN platform has installed a Chabot application to send a daily report to Facebook Messenger accounts on the most important news of interest to readers, and many news organizations are also working to reduce the process of building press stories and news through the project editor, who Analyses and understands content through artificial intelligence and machine learning techniques(Kameli, 2018).

Purva Grover, Arpan Kumar Kar & Yogesh K. Dwivedi indicated in their study that the feasibility of using AI within an organization is based on six factors such as job suitability, complexity, long-term consequences, influence on use, social factors, and facilitating conditions for different elements of OM from Prospecting the collective intelligence of experts on Twitter,(Purva Grover, Arpan Kumar Kar & Yogesh K. Dwivedi, 2020) and that applies to journalism as an institution with editorial regulations and policies governing the work of editors.

4.Objectives of The Study

- To know the level of experts' awareness of the possibility of integrating journalism into artificial intelligence algorithms.

- To find out if there is any significant difference between experts and specialists in their awareness of the transformations that artificial intelligence algorithms may bring about with reference to the following background variables (1) gender (2) experience (3) academic qualification.

- To see if there is any significant difference between experts in their awareness of the professional practices that AI algorithms can do.

5.Hypotheses of The Study

- AI algorithms in journalism will be able to collect, analyze and formulate data into traditional journalistic templates and formats

- AI algorithms will completely solve the tasks of a traditional journalist

- Artificial intelligence algorithms in journalism impose changes in communication theories and the structural construction of journalistic forms

- Integrating AI algorithms into journalism shortens the processes of content production and marketing in a snap.

6.Population and Sample

The population includes experts from academics and professionals in the field of journalism. The research used the intentional sampling method, the sample includes 116 university professors in the domains of media and data science, 62 journalists, including 8 administrators and team leaders, 18 disk editors, and 36 field editors. 35 years of experience between 5-7 years, and 35 years of experience between 5-7 years.

### 6.1.Statistical Techniques Used in the Present Study

The current study used simple statistical methods such as extreme values, mean, median, and standard deviations, to provide insights into, explore, summarize and visualize the data, as shown in the appendices table.

6.2.Data Analysis and Interpretation

Table.1. showing the AI algorithms can collect, evaluate, and format data into standard press templates and formats.

Questions	strongly agree	agree	disagree	strongly disagree
AI algorithms can collect, evaluate, and format data into standard press templates and formats.	31%	26%	40%	3%

Figure.1showing the AI algorithms can collect, evaluate, and format data into standard press templates and formats.
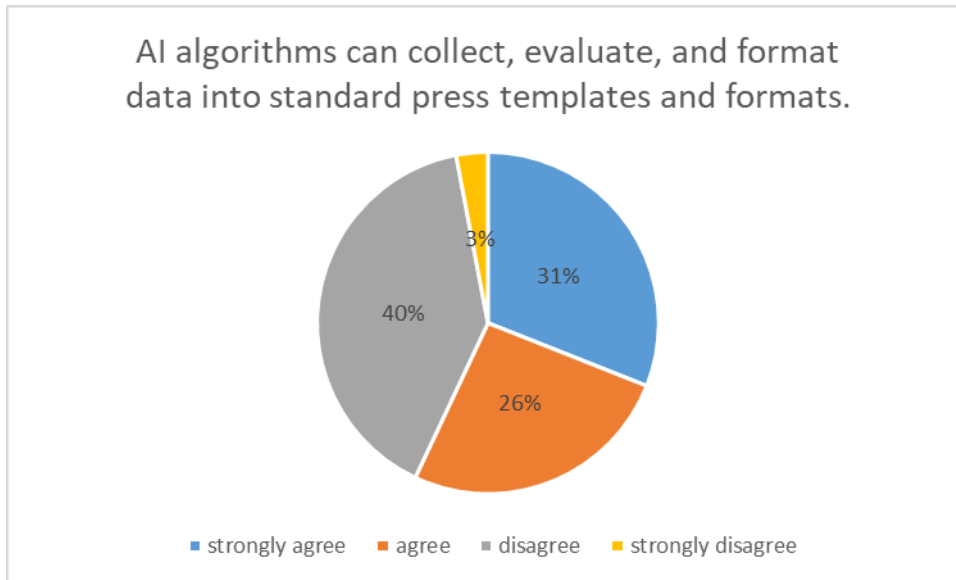
Interpretation of table-1.

In Table and Figure No. (2), it was found that 31% of the research sample strongly agree that artificial intelligence algorithms can collect and evaluate data and format data in standard media formats, and 26% agreed to it in lesser degree, while 3% strongly disagree with this hypothesis. 40% have slightly less disagree this hypothesis.

That means 57% agree to this hypothesis compared to 43%, so the ratio between the two parties is considered close. The reason for this is that the field of artificial intelligence is still very young in the press and that actual applications have only occurred within narrow limits.

Table.2. An AI Algorithms will completely solve the work of a traditional journalist.

Questions	strongly agree	agree	disagree	strongly disagree
An AI Algorithms will completely solve the work of a traditional journalist.	39%	42%	11%	8%

Interpretation of table-2.

Table and Figure 3 show that only 19 percent agree that the work of traditional journalists will be replaced by artificial intelligence algorithms, and for many reasons, 71 percent downplay the importance of this hypothesis. The main element is the human style of writing. Journalism needs advice from journalistic algorithms and bots, which reduces the overall reliance on algorithms in the performance of a human journalist..

Figure.2. Showingan AI Algorithms will completely solve the work of a traditional journalist
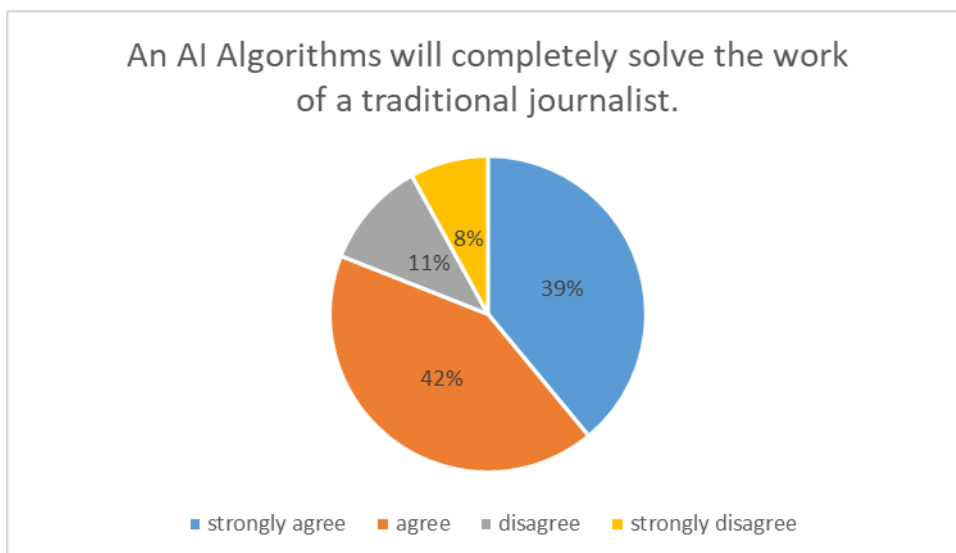
Table.3. Difference between rural and urban prospective teachers in their awareness on healthy dietary habits.

Questions	strongly agree	agree	disagree	strongly disagree
Artificial intelligence algorithms in journalism impose changes in communication theory and the structural development of journalistic form.	56%	21%	18%	5%

Interpretation of table-3.

table and figure (4): Hypothesis based — Algorithms for journalism AI force changes in the theory and structural change of journalistic communication — 77% agree with and agree on the text. Those who agree that changes caused by artificial information algorithms to the communication process are convinced of the hypothesis, and only 23 percent question the validity of the assumption that these changes are based on non-traditional theory of communication, or even on non-social media applications. An artificial intelligence or even algorithmic practice analysis must be described. While the opinion differs have been about the changes caused to communication theories by the application of artificial intelligence, the communication is based on the key pillars of the caller and the recipient, which is the role of artificial intelligence.

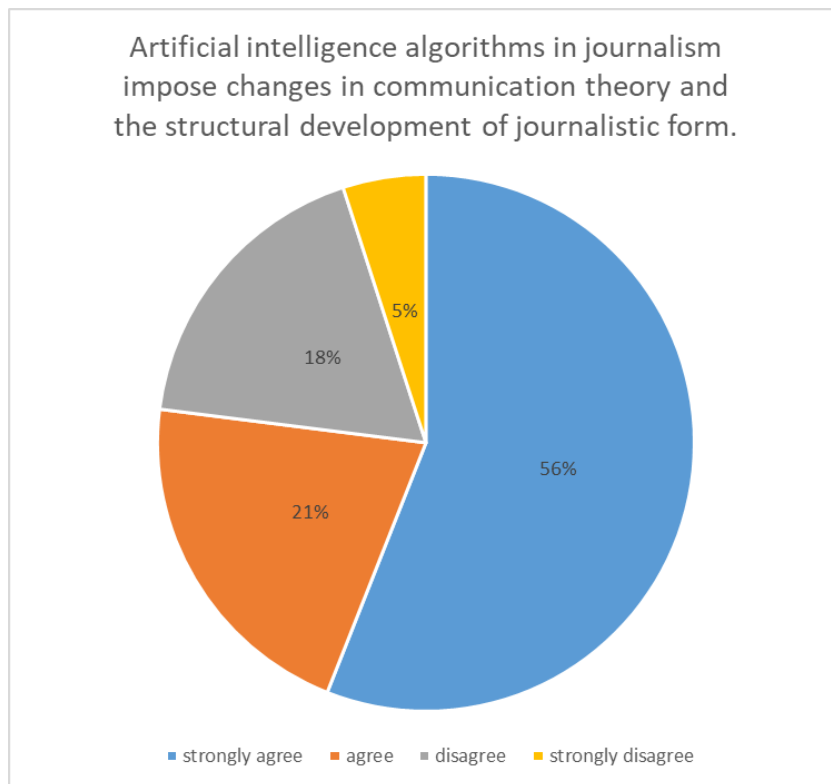**Figure .3.** Difference between rural and urban prospective teachers in their awareness on healthy dietary habits.

Table.4. The integration of AI algorithms into journalism dramatically reduces the time needed for content creation and promotion.

Questions	strongly agree	a gree	disa gree	strongly disagree
The integration of AI algorithms into journalism dramatically reduces the time needed for content creation and promotion.	51%	3 8%	8%	3%

Interpretation of table-4.

The data in table and figure (4) show that 89% agree to a significant reduction in the amount of time required to create and promote the content by the integrated artificial intelligence algorithms in the press. They relied on and differed from the situation that the digital communication revolution had created by accelerating the completion of several operations. In 11% opinion, they built that opinion on the basis of differences in infrastructure preparedness experienced by many countries around the world, particularly since until this moment country were suffering from shortages in electricity and poor communications networks.

Figure.4. The integration of AI algorithms into journalism dramatically reduces the time needed for content creation and promotion.
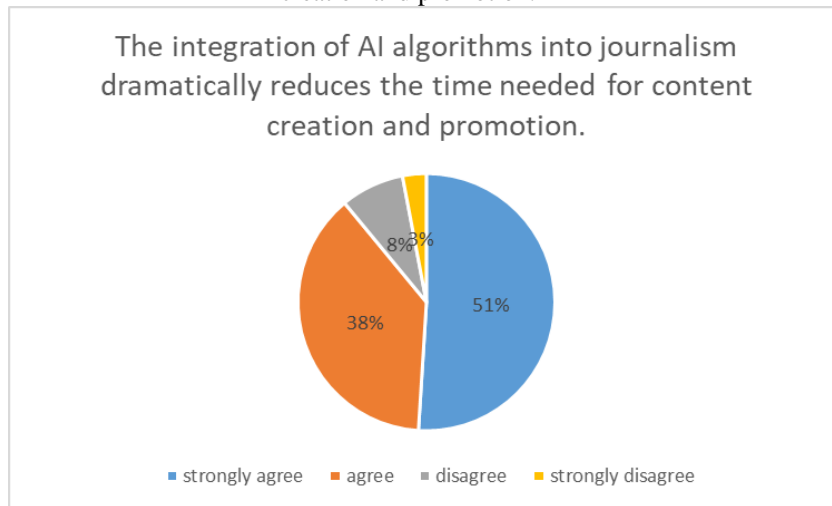

Table.5. Artificial intelligence algorithms are used by journalists to eliminate human effort to create content.

Questions	strongly agree	agree	disagree	strongly disagree
Artificial intelligence algorithms are used by journalists to eliminate human effort to create content.	22%	18%	36%	24%

Interpretation of table-5.

Table and figure (5) summarize the hypothesis of reporters using the use of artificial intelligence algorithms in order to remove the human effort to create content. This is agreed upon with about 40 percent of what previous digital applications imposed on the cancelation of a large number of jobs.

7.Recommendations

The study recommends the following:

1 - Encouraging the implementation of research and research projects related to the integration of synthetic information in the media.

2. Work to increase awareness of how quickly artificial intelligence acquires skills.

3. Not to be afraid of entering the field of artificial intelligence and including it in the work of the media.

4. The curricula of all universities include artificial intelligence applications and algorithms..

8.Conclusion

An open-ended questionnaire was used as the primary tool for data collection for the study. In the survey questions, five hypotheses were made to identify expert trends in incorporating AI algorithms into media content, and the following results were found through data analysis:

1. It is still a new field of artificial intelligence for journalism, and within narrow limits it is related to data collection and analysis only.

2. The style of writing is still the main component, and the press needs human intervention when applying journalistic algorithms and robots to reduce the journalist's total dependence on performing his tasks.

3. Opinion differs about the changes that artificial intelligence applies to communication theories, as communication depends on the basic pillars "sender, receiver, message and medium, and the difference was about the position of artificial intelligence algorithms in the traditional model of communication.

4. Infrastructure preparations affect the acceleration of artificial intelligence algorithms in the press, sending and receiving, due to the shortage of electricity and weak communication networks in many countries around the world.

5. Artificial intelligence algorithms are expected to change jobs and professions, similar to previous digital applications, by eliminating many jobs.

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Appendices

Table 1		Table 2		Table 3		Table 4		Table 5	
Mean	0.25	Mean	0.25	Mean	0.25	Mean	0.25	Mean	0.25
Standard Error	0.078846	Standard Error	0.089907	Standard Error	0.109011	Standard Error	0.116118	Standard Error	0.03873
Median	0.285	Median	0.25	Median	0.195	Median	0.23	Median	0.23
Mode	#N/A	Mode	#N/A	Mode	#N/A	Mode	#N/A	Mode	#N/A
Standard Deviation	0.157692	Standard Deviation	0.179815	Standard Deviation	0.218021	Standard Deviation	0.232236	Standard Deviation	0.07746
Sample Variance	0.024867	Sample Variance	0.032333	Sample Variance	0.047533	Sample Variance	0.053933	Sample Variance	0.006
Kurtosis	1.926942	Kurtosis	-5.72423	Kurtosis	2.524453	Kurtosis	-4.29445	Kurtosis	2.355556
Skewness	-1.19961	Skewness	0	Skewness	1.375626	Skewness	0.224187	Skewness	1.377061
Range	0.37	Range	0.34	Range	0.51	Range	0.48	Range	0.18
Minimum	0.03	Minimum	0.08	Minimum	0.05	Minimum	0.03	Minimum	0.18
Maximum	0.4	Maximum	0.42	Maximum	0.56	Maximum	0.51	Maximum	0.36
Sum	1	Sum	1	Sum	1	Sum	1	Sum	1
Count	4	Count	4	Count	4	Count	4	Count	4