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The Use and Gratification of Artificial Intelligence (AI) in Television News Production in China's Guangdong Province

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The study delves into how AI has altered the media landscape. The effects of AI integration on many aspects of the television environment are thoroughly examined via a systematic literature study that emphasises important topics and concepts. Ethical considerations, the theoretical underpinnings of "artificial intelligence" (AI) in the television industry, content creation and curation, television distribution and ingesting, marketing and advertising tactics, and labour dynamics are all part of the research. According to the research, AI has revolutionised the media sector by improving content production and curation, automating data analysis, tailoring user experiences, increasing advertising efficiency, changing the dynamics of the workforce, and posing significant ethical challenges. The benefits of AI include increased efficiency, personalisation, and innovation; yet there are concerns about algorithmic prejudice, job loss, and privacy that require more research. The findings stress the need for ethical AI practices, skill-updating methods, and moral standards. By drawing attention to research gaps, methodological advances, and regulatory consequences, the endeavour adds to the body of learning and influences the future of AI in the television sector.

Keywords: Artificial intelligence (AI), Television news production, Guangdong province, Gratification, Media technology.

1. Introduction

As AI continues to advance at a rapid pace, it has far-reaching consequences for many industries. The advertising, media, entertainment, and broadcasting sectors are all part of this category. This technology has caused a tremendous shift in the media sector, which is based on narrative, human imagination, and the dissemination of information. By combining data analytics, machine learning, computer vision, and language processing techniques, media businesses may improve operations, increase efficiency, and customise content via the interdisciplinary area of artificial intelligence (Yeo et al., 2022). To provide interesting and relevant results, algorithms that use machine learning can sort through massive amounts of data, such as user preferences, records, and trends in social media. Robotic journalism, or "robot journalism," swiftly and reliably generates financial assessments, sports summaries, and news pieces. Alternatively, these technological advancements have sparked conversations about algorithmic bias, the value of human reporters, and the need for high-quality reporting

(Nel et al., 2023). Additionally, AI is influencing shifts in the distribution and consumption patterns of media. Artificial intelligence (AI) powered recommendation systems are vital for boosting user engagement and retention. Streaming services like Spotify and Netflix employ AI to analyse user-watching habits and preferences and then provide personalised suggestions. The increasing prevalence of "filter bubbles" the practice of individuals only seeing information that confirms their views and interests is a worrisome development. Artificial intelligence has also had a major effect on the marketing and advertising industries. Using analytics and targeted advertising powered by AI to provide extremely pertinent and customised content has the potential to improve advertising campaigns and enhance ROIs. However, personal responsibility, diversity in the workplace, and algorithmic prejudice must all be addressed (Moran & Shaikh, 2022). Employees are not the only ones AI adoption impacts. While AI might automate tasks, increase efficiency, and save costs, others worry that it would compel people to retrain or acquire new skills to keep up with the workforce. To create laws that encourage constructive dialogue between people and AI systems, the researcher needs an in-depth understanding of these processes (Laato et al., 2022). With a focus on the workforce, advertising, and content distribution, this research intends to do a comprehensive literature review to explore the possible influence of AI on the media sector. Its goals include minimising AI-related hazards while maximising its potential advantages, identifying research gaps, and proposing new directions for AI-related study, policy, and practice (Kang & Lou, 2022).

2. BACKGROUND OF THE STUDY

The advancement of artificial intelligence technologies in the last several years has caused significant upheaval in the media sector. As AI continues to enter more and more areas of society, academics, professionals, and politicians must comprehend its effects on the media industry. The danger that AI presents to the media sector prompted this investigation. Media companies use AI for content creation, distribution, advertising, and workforce management; this fast progress brings both advantages and disadvantages. If researchers want to know all there is to know about the impacts, constraints, and possible uses of AI technology in the news sector, researchers need to look at the academic literature and study (Haleem et al., 2022). The media and broadcasting industry is among those that have been seeing an uptick in the use of AI systems, and this trend is not limited to China. AI can improve content quality, increase productivity, and simplify operations. With the rise of digital technology, traditional ways of producing news are changing at a fast pace. The use of AI has the prospective to completely transform the news industry by automating hitherto manual processes like content creation, video editing, and data analysis. One of China's most economically dynamic provinces, Guangdong is also home to several prominent media outlets. Learn more about the use of AI in news creation in this area to have a better grasp of the bigger picture of China's media ecosystem and what it means for news creators and viewers. Another possible driving force behind the research is an interest in gauging the effects of AI-powered news output on viewer participation and happiness. The success of AI-generated news material in catering to the changing tastes and demands of news consumers may be evaluated by studying the satisfaction felt by viewers. Policymakers, media professionals, and companies' stakeholders might benefit from the study's findings by learning more about the pros and cons of using AI to

produce television news. This has the potential to result in the creation of standards, recommendations, and plans for making the most of AI while mitigating its possible negative effects, such as those on employment and ethics. This study's goal is to examine the application and effect of AI in television news production in Guangdong Province, China, with a special emphasis on the confluence of technical creativity, media industry dynamics, consumer behaviour, and regional context (Hagendorff, 2022).

3. PURPOSE OF THE RESEARCH

The study's primary purpose was to investigate the potential applications of AI in Guangdong Province's television news production. This research aimed to investigate various aspects such as the extent of AI integration, its impact on news content creation, audience engagement, and overall effectiveness in delivering news information. Additionally, it sought to understand how AI technologies satisfied the needs and preferences of both news producers and consumers within the context of television news in Guangdong Province. Overall, the purpose was to gain insights into the role and implications of AI in modern news production processes and its reception within a specific regional context.

4. LITERATURE REVIEW

Many industries, including technology and research, have seen potential in artificial intelligence (AI). The need for specialised expertise in AI, however, means that the expense of creating and implementing AI systems remains an issue. To consolidate control and thwart competitors, tech companies are actively purchasing businesses that use AI technologies. Since newsrooms pay less than the IT sector, it is difficult to recruit and keep specialists, which creates talent competition and slows down AI growth in the news business (Craiut & Iancu, 2022). Automation of news items is on the rise as news organisations throughout the globe integrate AI into their newsrooms. Machine learning is being used by a few projects, but most still rely on simple automation to fill in gaps instead of using historical data to create unique tales. Despite the absence of ML/NLP models, news bots understand when to disseminate messages by following timetables and a predefined approach (Chan, 2022). Twitter bots integrated with artificial intelligence models specifically natural language processing (NLP), machine learning (ML), and scheduling, preparation, and optimization are indispensable in Brazilian newsrooms for handling massive amounts of data and interacting with social media platforms. Recent events, including the Brexit campaign and the 2016 US elections, have made use of bots with malicious intent. AI models are often built with a predetermined storyline in mind, which means that new projects need building and training these algorithms from scratch. Because of this, it is not possible to spread out high upfront expenses among many things. Massive quantities of money are needed to construct the necessary technology infrastructure and to recruit top talent to create the computer vision software needed for investigative reporting projects. Since AI models are often built using biassed and out-of-date datasets, several ethical concerns may also emerge (Ahmed et al., 2022). Although news organisations such as AP, Washington Post, and NYT have successfully implemented AI initiatives in their newsrooms, these organisations do not have the financial resources to fully implement AI. The

best news organisations still have a way to go before they can fully grasp the possibilities of AI in the workplace. Take GPT-3, a sophisticated text machine-learning model that was published in 2020. It uses very little processing power to generate articles, translate them, summarise them, and make predictions; it contains 175 billion parameters. In the short, medium, and long term, artificial intelligence technologies played a central role in the news industry's reorganisation that the rise of the internet and digitalization prompted (Ansari et al., 2022). It is essential to use AI-enforcement strategies that disregard power relations among various stakeholders to guarantee that AI systems adhere to ethical and legal norms. This investigation made use of a systematic literature review as it offers a neutral evaluation of all academic publications about the subject under investigation. Finding, choosing, analysing, and synthesising significant research from various sources (e.g., academic databases, journals, books, and conference proceedings) is the essence of this methodology. The systematic literature review guarantees the reliability and validity of its findings by evaluating the study quality, analysing its outcomes, and making conclusions. To sum up, the systematic literature review approach is a powerful tool for enhancing the news industry's AI systems' validity and dependability, resolving ethical problems, and promoting openness (Dash et al., 2023).

5. RESEARCH QUESTION

How has AI affected China's television news production in Guangdong province?

6. METHODOLOGY

The objective of this study is to examine how television news programmes in Guangdong Province make use of artificial intelligence (AI). It evaluates the AI integration and its effect on content quality using content analysis. Information on the news production team and how viewers see AI-generated material is gathered via surveys and questionnaires. To find out how AI affects things like production efficiency, content quality, and audience engagement, gather data and put it through statistical testing. Our knowledge of AI in news creation is enhanced by this study, which fills a gap.

Statistical Software: SPSS Version 25.0

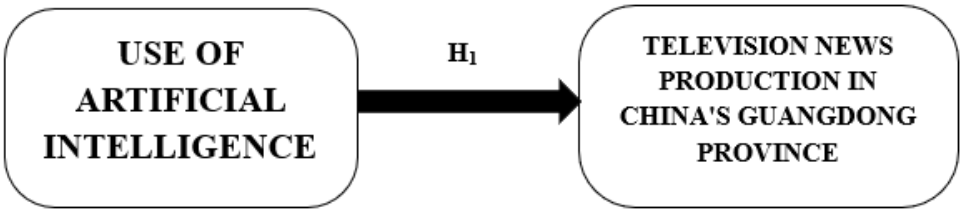
Sampling: A random sample of 1500 people was used in the research. Viewers, editors, journalists, and technicians were all part of this sample, as were producers and editors involved in making television news. Its stated goal was to guarantee cross-sectional representation in Guangdong Province across age groups, occupations, and regions.

A rating system based on the Likert scale is often used in surveys and questionnaires to gauge respondents' ideas and viewpoints. In many surveys, respondents may choose from five pre-selected answers "strongly agree," "agree," "did not respond," "disagree," or "strongly disagree" in response to a prompt. If the research uses numeric coding, such as 5 for "strongly agree," 4 for "agree," and so on, then the values for each category of the answer must be established. By asking on a Likert scale from 1-20, as shown above, researchers may learn about shoppers' preferences for both online and traditional retail. The survey began with a series of "control" questions on the respondent's demographics and their level of familiarity

with online vs. offline buying.

Statistical Tools: Descriptive analysis was used to grasp the fundamental character of the data. The researcher applied ANOVA for the analysis of the data.

6.1 Conceptual Framework



7. RESULTS

7.1 Factor Analysis:

Factor Analysis (FA) is a popular tool for validating the latent component structure of a set of measurement measures. It is believed that latent (or unseen) factors were responsible for the scores on the observable (or measured) variables. One approach that relies on models is factor analysis (FA). Its main goal is to represent the relationships between seen events, their unobserved causes, and measurement errors.

The Kaiser-Meyer-Olkin (KMO) Method may be used to determine whether the data is suitable for factor analysis. The researchers checked whether we sampled each model variable and the overall model well. Probability measures the extent to which numerous variables may share some variance. The suitability of the data for factor analysis was often enhanced when the proportion was reduced. Numbers between zero and one are returned by KMO. Sampling is deemed adequate if the KMO value falls within the range of 0.8 to 1.

Inadequate sampling is indicated by a KMO lower than 0.6, which necessitates remedial action. Since 0.5 is the value that some authors choose, you'll need to exercise your discretion anywhere between 0.5 and 0.6.

• KMOs If it's close to zero, it means the overall correlations are tiny compared to the partial correlations. Component analysis is severely hindered by large correlations, to restate. Here are the standards that Kaiser uses to determine acceptability:

Lowly 0.050 to 0.059.

• Below-average by 0.60 to 0.69

The range is often seen in middle school: Range: 0.70 to 0.79.

With a quality point score ranging from 0.80 to 0.89.

The value range of 0.90 to 1.00 is just mind-blowing.

Table 1: KMO and Bartlett's Test

KMO and Bartlett's Test[a]		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.986
Bartlett's Test of Sphericity	Approx. Chi-Square	6790.175
	df	190
	Sig.	.000

This proves that claims made for the sake of sampling are legitimate. The overall significance of the correlation matrices was further confirmed by using Bartlett's Test of Sphericity. The sampling adequacy value according to Kaiser-Meyer-Olkin is 0.986. According to Bartlett's sphericity test, the p-value is 0.00. A significant test result from Bartlett's sphericity test demonstrated that the correlation matrix is not an identity matrix.

7.2 hypothesis test:

7.2.1 Dependent variable:

- Television News Production in China's Guangdong Province

Television news production in China's Guangdong Province involves the creation, broadcasting, and dissemination of news content specifically tailored for television audiences in the region. Guangdong Province, located in southern China, is one of the country's most populous and economically vibrant regions, with a diverse population and significant cultural and economic influence.

7.2.2 Independent variable:

- Use of Artificial Intelligence

Artificial Intelligence (AI) maximizes efficiency across industries, automating tasks, analyzing vast data sets for insights, enhancing decision-making, and powering innovations in healthcare, finance, transportation, and more. Its applications include predictive analytics, natural language processing, computer vision, and robotics, revolutionizing how work, communicate, and live. AI in television news production streamlines workflows automates video editing, generates real-time subtitles, and improves content personalization for viewers. It enhances live broadcasts with virtual sets and graphics, facilitates audience engagement through sentiment analysis, and optimizes scheduling and distribution strategies. AI empowers newsrooms to deliver timely, relevant, and compelling stories efficiently to audiences worldwide.

Based on the above discussion, the researcher formulated the following hypothesis, which analyses the relationship between the Use of Artificial Intelligence and Television News Production in China's Guangdong Province.

H_{01}: There is no significant relationship between the Use of Artificial Intelligence and Television News Production in China's Guangdong Province.

H_1: There is a significant relationship between the Use of Artificial Intelligence and Television News Production in China's Guangdong Province.

Table 2: ANOVA test H_1

ANOVA					
Sum					
	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	39588.620	824	5655.517	267.798	.000
Within Groups	492.770	675	5.356		
Total	40081.390	1499			

The outcome of this research is noteworthy. With a p-value of.000 (less than the.05 alpha level), the value of F approaches significance with a value of 267.798. "H_1: There is a significant relationship between the Use of Artificial Intelligence and Television News Production in China's Guangdong Province" has been accepted, and the null hypothesis has been rejected.

8. DISCUSSION

The study investigates the utilization of Artificial Intelligence (AI) in television news production in Guangdong Province, China, aiming to assess its integration and impact on content quality. Data was collected through content analysis, surveys, and questionnaires, evaluating perspectives from the news production team and viewers. Results from factor analysis indicated a high level of sampling adequacy, supported by the "Kaiser-Meyer-Olkin" (KMO) measure and Bartlett's Test of Sphericity, suggesting the validity of the sampling approach. The hypothesis testing revealed a significant relationship between the use of AI and television news production in Guangdong Province, as evidenced by the ANOVA test results. The findings suggest that AI integration in television news production positively influences various aspects, including production efficiency, content quality, and audience engagement. The significant relationship between AI utilization and news production implies that AI technologies play a vital role in enhancing the overall quality and effectiveness of television news in Guangdong Province. AI's ability to automate tasks, analyze data, and personalize content contributes to streamlined workflows and improved storytelling, enabling newsrooms to deliver timely and compelling stories to audiences. The study fills a gap in understanding the impact of AI on news creation in the region, giving scholars and practitioners in the media and technology sector useful information. Future research could delve deeper into specific AI applications and their effects on different facets of television news production to further enhance our understanding of this evolving landscape.

9. CONCLUSION

The study delved into the utilization of Artificial Intelligence (AI) in television news production in Guangdong Province, China, with a focus on assessing its integration and impact on content quality. Through content analysis, surveys, and questionnaires, perspectives from

both the news production team and viewers were evaluated. Results from factor analysis demonstrated a high level of sampling adequacy, supported by the "Kaiser-Meyer-Olkin" (KMO) measure and Bartlett's Test of Sphericity, indicating the validity of the sampling method. Hypothesis testing revealed a significant relationship between the use of AI and television news production in Guangdong Province, as evidenced by the ANOVA test results. The findings suggest that AI integration positively influences various aspects of television news production, including production efficiency, content quality, and audience engagement. This implies that AI technologies play a crucial role in enhancing the overall quality and effectiveness of television news in the region. The study fills a gap in understanding the impact of AI on news creation, providing valuable insights for practitioners and researchers in the field of media and technology. In conclusion, the study underscores the importance of AI integration in television news production, highlighting its potential to streamline workflows, improve storytelling, and deliver timely and compelling stories to audiences. The significant relationship between AI utilization and news production emphasizes the need for continued exploration and research into AI applications in the media industry to further enhance our understanding and maximize its benefits (Lund et al., 2023).

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