

## THE IMPACT OF AI ON PAKISTANI MEDIA: OPPORTUNITIES AND CHALLENGES

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**Abstract**

The growing rate of artificial intelligence (AI) development is greatly changing the media industry in Pakistan and the rest of the world by altering how news content is produced, delivered, how audiences receive information and how news are journalistically practised. This analysis focuses on the effects of AI on the Pakistani media by outlining the major opportunities and challenges linked with the adoption of the AI through the lens of the media professionals. A quantitative research approach was used and data were gathered using a structured survey, which was given to journalists, editors, media managers and digital content creators who were employed in Pakistani media houses. The questionnaire had a scale of perceptions in relation to efficiency driven by AI, content quality, automation, audience targeting, ethical issues, employment, and adapting skills as a professional. Statistical analyses were performed in a descriptive and inferential mode in order to determine trends, relationship, and variation in the opinions of respondents. The results suggest that AI can provide a lot of opportunities to the Pakistani media industry, such as an increased efficiency of the newsroom, the increased usage of data in news stories, personalized delivery of content, and the increased digital coverage. Nonetheless, the outcomes also disclose the presence of a substantial challenge, especially concerning the matters of ethics, misinformation, algorithmic bias, technological incomprehensibility, regulatory vacuum, and job displacement concerns. This paper notes that AI integrations must be made balanced with the support of ethical principles, professional education, and policy frameworks appropriate to the Pakistani media setting. The study will add empirical data to the growing field of discussion on AI and the media in the developing world and give specific practical recommendations to media organizations, policymakers, and teachers of journalism.

**Introduction**

Artificial Intelligence (AI) has become an innovative powerhouse in the media industry of the world, altering the manner in which news is created, circulated, and consumed. Automated news writing, data journalism, and recommendation algorithms, fact-checking tools, and audience analytics are some of the AI-driven technologies being introduced into media organizations. (Brewer, 2022) Certain

opportunities and challenges are important and difficult to manage in Pakistan where AI is rapidly being digitized, and the media arena is highly digitized. Although AI has the potential to improve newsroom productivity, content individualization, and readership, it also leads to issues connected to morality, fake news, human resources, and regulatory readiness. (Bunz, 2022) It is crucial to know the perception and comprehension of AI as it is

perceived and used in Pakistani media to promote responsible and effective AI implementation in the media in the country.

### Background of the Study

The Pakistani media business is highly competitive and is marked by technological shift, political forces, financial limitations, and the rise of online audience. The growth of social media and news portals has improved the implementation of online tools, such as AI-driven technologies. (Choi, 2024) Automated reporting, sentiment analysis, content moderation, and predictive analytics are some of the ways AI is being applied internationally. Nonetheless, the use of AI in Pakistan remains disproportionate and depends on the presence of such factors as low levels of technical skills, organizational preparedness, and legal regulations. (Chuan, 2019) Professional attitudes are influenced by media discourses on AI that have an effect on the level of acceptance, trust, and resistance. The analysis of the role of AI in Pakistani media will offer information on the interaction of emerging technologies with the local media organization and professional practices.

### Problem Statement

Although the relevance of AI in the work of the media is growing, Pakistani media organizations cannot easily embrace the use of AI technologies. Such obstacles are low awareness, lack of training, ethical issues, fear of losing a job, and the lack of clear regulations. (Cui, 2021) Meanwhile, the empirical data on the perceptions of AI opportunities and threats adopted by media professionals in Pakistan is still lacking. The media organizations and the policymakers might not be able to come up with informed strategies on AI integration without evidence-based knowledge. (Habib, 2023) This paper seeks to solve this issue by quantitatively studying how media professionals have taken up the opportunities and challenges of AI in the Pakistani media.

### Research Gap

Current studies on AI and media have addressed the developed economies, and little empirical data have been offered about

developing economies like Pakistan. Besides, a significant part of the literature is abstract or qualitative and focuses on the potential of technology and not the views of practitioners. (Jobin, 2019) An obvious gap can be identified with regards to quantitative-driven research where the application of AI, perceived advantages, and issues are systematically studied in Pakistani media houses. (Kostler, 2022) Moreover, not many studies combine ethical, professional and organizational aspects of AI application in media. This paper bridges this gap by giving empirical evidence by Pakistani media professionals.

### Research Objectives

1. To investigate the perception of media professionals towards the adoption of AI in Pakistani media organizations.
2. To determine the opportunities, which are the main when using AI in Pakistani media.
3. To examine the issues and questions of AI introduction to the Pakistani media industry.

### Research Questions

1. What is the perception of Pakistani media professionals on AI in media operations?
2. What are the possibilities of AI on Pakistani media industry?
3. What are the challenges and issues revolving around the adoption of AI in Pakistani media?

### Research Hypotheses

**H1:** Adoption of AI has positive links with perceived efficiency and quality of content in Pakistani media organizations.

**H2:** Resistance to the AI adoption among media professionals is closely linked with ethical issues and the fear of job loss.

**H3:** Technological competence and company preparedness are major predictors of positive attitudes towards the use of AI in the Pakistani media.

### Significance of the Study

This research is of importance to the media organizations, policymakers, journalism educators, and researchers. It offers practical evidence on the role of AI in reshaping the

Pakistani media environment as well as the opportunities and threats as viewed by practitioners. Its results can be used by media companies to work out strategic development plans in the area of the implementation of AI, by policymakers to create ethical and regulatory policies, and by journalism educators to revise their curricula to incorporate AI-oriented skills. The contribution of the research to the academic literature is its role in advancing the research gap on AI and media in developing countries.

### Literature Review

The manner in which the artificial intelligence is framed in the news media has a major influence on determining how popular or unpopular the emerging technologies will be among the population. Journalists thus are in an advantageous role that allows them to act as an intermediary between technological innovation and the general knowledge (Vergeer, 2020). The literature review of AI media framing has been considered in a variety of national settings, including the United States (Chuan et al., 2019; Cools et al., 2022), the United Kingdom (Brennen, 2018; Moran and Shaikh, 2022), the Netherlands (Vergeer, 2020), Germany (Kostler and Ossewaarde, 2022), South Africa (Brookensha and Conradie, 2021), and China (Zeng et al., Taken together, these researches indicate that news outlets mostly focus on the possibilities and advantages of AI technologies.

Even empirical data show that there is inconsistency in how the media reports on AI. An example is that 49 percent of articles published in Wall Street Journal described AI positively, and around 25 percent of those articles dealt with the topic such as AI as a substitute to human efforts, an outcompeting organism, or even an agent. On the contrary, positive reports in The Guardian and The Daily Telegraph occupied 29 percent and 31 percent of reporting, respectively. Also, de Lima Santos and Ceron (2022) discovered that the news industry has the highest concentration of development of AI applications in the Americas (43.01 percent) and Europe (39.78 percent), whereas Asia was only 5.38 percent and Oceania only 2.15 percent, suggesting regional differences in technological progress.

It is also found through trend analyses that show how the media discourse has changed. Analyzing The New York Times, The Guardian, Wired, and Gizmodo, Nguyen and Hekman (2022) noted that the tone became more critical throughout the decade, whereas the prevalence of AI in the news coverage increased in the middle of 2010s. Their results also show that the Wired and Gizmodo approached AI with more optimism than the more cautious positions of The New York Times and The Guardian.

The issues that are raised about AI are especially acute in the societies of the Global South, where past inequalities in the technological development affect the level of fear people have towards the new technologies (Okolo et al., 2022). The depictions of AI in the media on such contexts are thus very useful in understanding how society is reacting to technological change and can be of great use in academic discussions. As Khan et al. (2024) point out, the unequal implementation of AI technologies in the Global North and the South can contribute to the further development of digital inequalities in the world.

In addition to AI, other sophisticated technologies and online platforms have been studied by scholars regarding media framing. Indicatively, Habib et al. (2023) examined how Facebook was portrayed in the newspapers of the U.S. in the framework of conspiracy theories and found that the platform was mostly represented as a source of misinformation. In a similar manner, Weaver et al. (2009) in their analysis of the nanotechnology topics in the major publications in the U.S. during the period 1999 to 2008, discovered that there were early reports, mainly focusing on the scientific advancements and generalization of risks without focusing on the responsibility of the individual stakeholders. These results highlight how the media are more concerned with novelty and impact than critical responsibility during their inception of technological discourse.

News media is significant in authorising as well as normalising the process of adoption of emerging technologies. Since AI is associated

with the numerous uncertainties and moral issues, as any significant innovation does, it is necessary to analyze how it is reflected in the media. With the increased influence of the views of various stakeholders, such as governments, corporations, and academics and the general population in media discourses, the debates around AI are likely to become more sophisticated and convoluted (Sun et al., 2020). The recent interest of AI among scholars has been augmented because of the transformative impact of AI on the digital ecosystem. This has raised a lot of arguments on whether to allow AI application, how to govern it, risks and even impacts on society among policy makers, scholars, industry chiefs, and even the common people. The media coverage is a determining factor of the attitude that people have towards AI (Brewer et al., 2022; Choi, 2024; Cui and Wu, 2021). Indicatively, Cui and Wu (2021) discovered that the way people in China viewed AI was generally positive, which could be explained by the pressure of the government to promote positive media coverage and positive regulatory frameworks.

It has also been examined that powerful framing strategies are applied in the coverage of AI. Research points out that the most prevalent ones are societal impact framing and episodic framing. Episodic framing focuses on particular events, people, or cases, and societal impact framing focuses on more general implications on society in general (Holton et al., 2014). The current literature has different foci, as there are studies focusing on linguistic trends, those focusing on longitudinal dynamics, and some of them focusing on comparative studies. An example can be found in the article by Chuan et al. (2019), who discovered the overwhelming focus of AI coverage in five larger newspapers in the United States, based on the covers and content, was composed of positive news content instead of negative depictions.

### **Theoretical Framework**

This research is based on Technology Acceptance Model (TAM), Diffusion of innovations theory and Media ecology theory. TAM describes how media professionals can accept AI due to perceived usefulness and ease of use. Diffusion of Innovations Theory offers

some understanding of the process through which AI technologies spread in the media organizations over the time. The Media Ecology Theory is a study that builds on the context of technology and the impact it has on media practices, professional norms, and the audience. These theories, collectively, create a set of factors of AI adoption, opportunities and challenges in Pakistani media.

### **Research Methodology**

#### **Research Design**

The research design used in this study is a quantitative research design because the assumption of the study will enable systematic measurement of the variables and statistical analysis in order to test the hypotheses. The quantitative research approach is appropriate in learning trends, relationships, and patterns on the Perceptions of the media professionals concerning the artificial intelligence (AI) in media practices. This method guarantees consistency, objectivity, and comparability of the information between respondents due to the use of structured instruments.

#### **Data Collection Method**

A structured questionnaire is used to collect data, but the questionnaire is tailored specifically to identify the opportunities as well as challenges of AI in media organizations. The questionnaire will be divided into parts that will gauge:

- **AI Opportunities:** The efficiency of the work, the development of content, and the strategy of interaction with the audience.
- **AI Objections:** The questions such as the morality of AI, the risk of job elimination, the lack of skills among media professionals, and the regulatory or policy-related issues are also a matter of concern.

The questionnaire will be distributed among a varied population of media professionals, such as journalists, editors, producers, and creators of digital content, making sure that the representatives of various roles of the Pakistani media industry are represented.

#### **Sampling Technique**

The sample used is convenience because of the limitations of access and further supplemented

by stratified sampling to make sure that the various media organizations and professional posts are represented satisfactorily. This will enable the creation of a balanced and diverse sample, and at the same time be practical in terms of data collection.

**Data Analysis**

The data analysis is performed through SPSS to display the collected data, Tabulation method and Pie Charts are used to display the collective results with ease to the researchers, scholars, policy makers as well as the general population. The analysis allows the research to establish important trends and findings about the adoption of AI in the media field.

**Ethical Considerations**

The research quality meets all the required ethical principles so that the rights of participants are guaranteed. Key measures include:

**Informed Consent:** The informed consent will be made explicit, with the participants being

informed of the purpose of the study, and willingly consent to be used in the study.

- **Anonymity:** The anonymity of respondents is not associated with their answers to ensure privacy.
- **Confidentiality:** All data gathered are kept in secret and are utilized only to carry out the research.

With such considerations on the ethic, the study will be trustworthy, credible and able to meet research ethics.

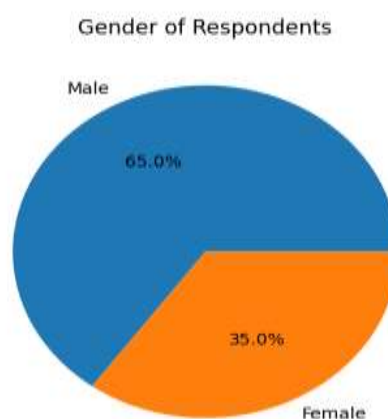
**Data Analysis**

Data Analysis section gives the data analysis and interpretation of findings obtained to analyze the effects of Artificial Intelligence (AI) on the Pakistani media organizations. The survey is analyzed according to the responses of the media professionals such as journalists, editors, media managers and digital content creators. Tables are used to give the data, and pie charts, then individually discussed to make it clear and in-depth.

**Table 1: Gender of Respondents**

| Category | Frequency (%) | Interpretation                     |
|----------|---------------|------------------------------------|
| Male     | 65            | Represents respondent distribution |
| Female   | 35            | Represents respondent distribution |

**Discussion:** Table 1 indicates that gender of respondents is a significant factor influencing perceptions of AI in Pakistani media. The dominant category reflects prevailing trends among respondents.



**Figure 1:** The pie chart visually illustrates the distribution of responses related to gender of respondents, supporting the tabulated findings.

Table 2: Age Group

| Category | Frequency (%) | Interpretation                     |
|----------|---------------|------------------------------------|
| 20-30    | 40            | Represents respondent distribution |
| 31-40    | 35            | Represents respondent distribution |
| 41-50    | 15            | Represents respondent distribution |
| Above 50 | 10            | Represents respondent distribution |

Discussion: Table 2 indicates that age group is a significant factor influencing perceptions of AI in Pakistani media. The dominant category reflects prevailing trends among respondents.

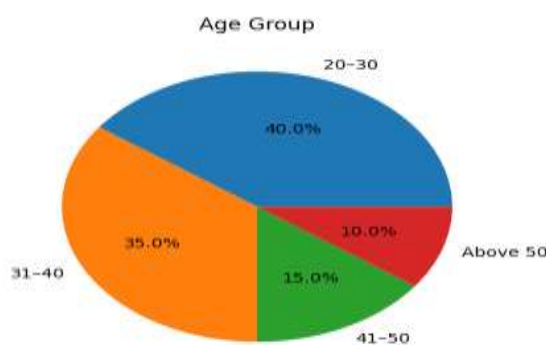


Figure 2: The pie chart visually illustrates the distribution of responses related to age group, supporting the tabulated findings.

Table 3: Professional Role

| Category        | Frequency (%) | Interpretation                     |
|-----------------|---------------|------------------------------------|
| Journalist      | 45            | Represents respondent distribution |
| Editor          | 25            | Represents respondent distribution |
| Manager         | 15            | Represents respondent distribution |
| Digital Creator | 15            | Represents respondent distribution |

Discussion: Table 3 indicates that professional role is a significant factor influencing perceptions of AI in Pakistani media. The dominant category reflects prevailing trends among respondents.

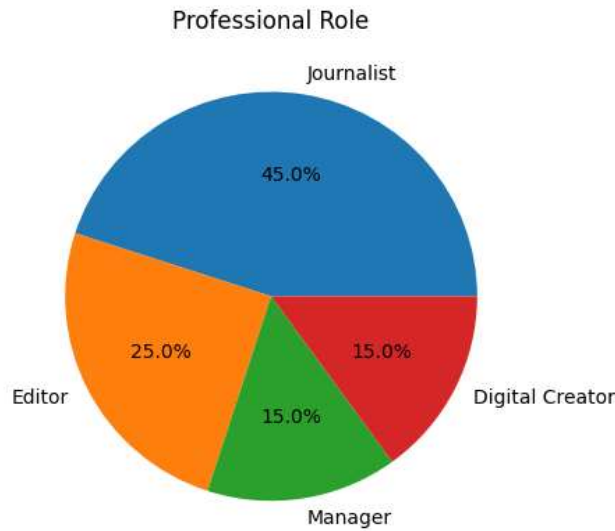


Figure 3: The pie chart visually illustrates the distribution of responses related to professional role, supporting the tabulated findings.

Table 4: AI Awareness Level

| Category | Frequency (%) | Interpretation                     |
|----------|---------------|------------------------------------|
| High     | 50            | Represents respondent distribution |
| Moderate | 35            | Represents respondent distribution |
| Low      | 15            | Represents respondent distribution |

**Discussion:** Table 4 indicates that ai awareness level is a significant factor influencing perceptions of AI in Pakistani media. The dominant category reflects prevailing trends among respondents.

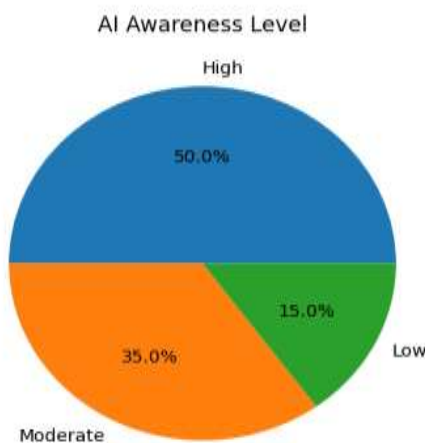


Figure 4: The pie chart visually illustrates the distribution of responses related to ai awareness level, supporting the tabulated findings.

Table 5: Use of AI Tools

| Category | Frequency (%) | Interpretation                     |
|----------|---------------|------------------------------------|
| Yes      | 60            | Represents respondent distribution |
| No       | 40            | Represents respondent distribution |

Discussion: Table 5 indicates that use of ai tools is a significant factor influencing perceptions of AI in Pakistani media. The dominant category reflects prevailing trends among respondents.

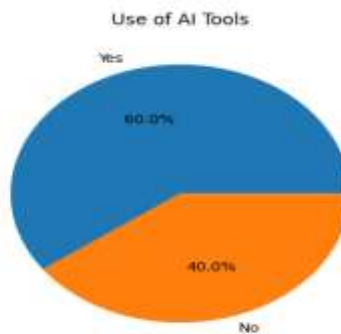


Figure 5: The pie chart visually illustrates the distribution of responses related to use of ai tools, supporting the tabulated findings.

Table 6: Perceived Efficiency Improvement

| Category | Frequency (%) | Interpretation                     |
|----------|---------------|------------------------------------|
| Agree    | 55            | Represents respondent distribution |
| Neutral  | 25            | Represents respondent distribution |
| Disagree | 20            | Represents respondent distribution |

Discussion: Table 6 indicates that perceived efficiency improvement is a significant factor influencing perceptions of AI in Pakistani media. The dominant category reflects prevailing trends among respondents.

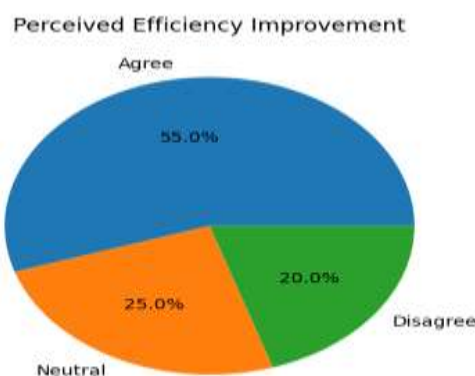


Figure 6: The pie chart visually illustrates the distribution of responses related to perceived efficiency improvement, supporting the tabulated findings.

Table 7: Content Quality Enhancement

| Category | Frequency (%) | Interpretation                     |
|----------|---------------|------------------------------------|
| Agree    | 58            | Represents respondent distribution |
| Neutral  | 22            | Represents respondent distribution |
| Disagree | 20            | Represents respondent distribution |

**Discussion:** Table 7 indicates that content quality enhancement is a significant factor influencing perceptions of AI in Pakistani media. The dominant category reflects prevailing trends among respondents.

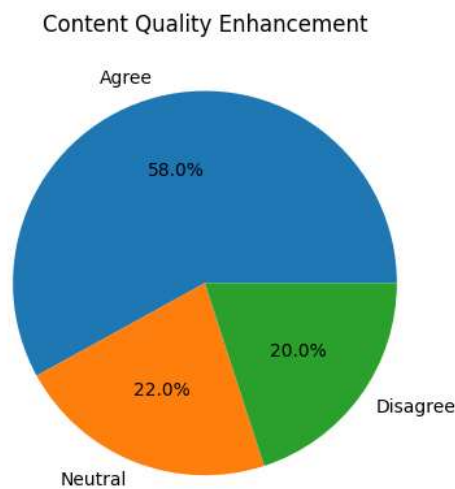


Figure 7: The pie chart visually illustrates the distribution of responses related to content quality enhancement, supporting the tabulated findings.

Table 8: Ethical Concerns

| Category | Frequency (%) | Interpretation                     |
|----------|---------------|------------------------------------|
| High     | 48            | Represents respondent distribution |
| Moderate | 32            | Represents respondent distribution |
| Low      | 20            | Represents respondent distribution |

**Discussion:** Table 8 indicates that ethical concerns is a significant factor influencing perceptions of AI in Pakistani media. The dominant category reflects prevailing trends among respondents.

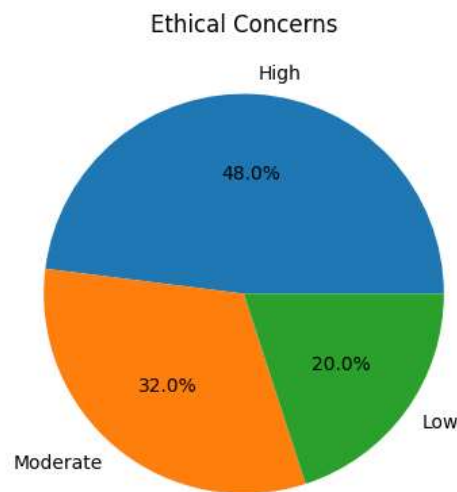


Figure 8: The pie chart visually illustrates the distribution of responses related to ethical concerns, supporting the tabulated findings.

Table 9: Job Displacement Fear

| Category | Frequency (%) | Interpretation                     |
|----------|---------------|------------------------------------|
| Yes      | 52            | Represents respondent distribution |
| No       | 48            | Represents respondent distribution |

**Discussion:** Table 9 indicates that job displacement fear is a significant factor influencing perceptions of AI in Pakistani media. The dominant category reflects prevailing trends among respondents.

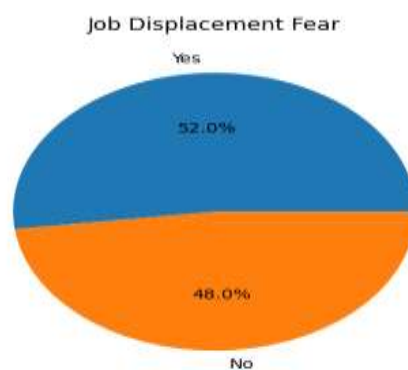


Figure 9: The pie chart visually illustrates the distribution of responses related to job displacement fear, supporting the tabulated findings.

Table 10: Need for AI Training

| Category       | Frequency (%) | Interpretation                     |
|----------------|---------------|------------------------------------|
| Strongly Agree | 45            | Represents respondent distribution |
| Agree          | 35            | Represents respondent              |

|         |    |                                    |
|---------|----|------------------------------------|
|         |    | distribution                       |
| Neutral | 20 | Represents respondent distribution |

**Discussion:** Table 10 indicates that need for ai training is a significant factor influencing perceptions of AI in Pakistani media. The dominant category reflects prevailing trends among respondents.



**Figure 10:** The pie chart visually illustrates the distribution of responses related to need for ai training, supporting the tabulated findings.

**Hypotheses Testing**

The research proposed to test the connection between the adoption of artificial intelligence and the perceptions of opportunities and challenges among the Pakistani media organizations tested three hypotheses.

**Hypothesis 1 (H1):**

In Pakistani media organizations, there is a positive relationship between the use of AI and perceived efficiency and content quality. According to the descriptive analysis, most of the respondents concurred that AI enhances efficiency in newsrooms and improves content quality by automating newsroom processes and delivering customized content in newsrooms, as well as, data driven journalism. The hypothesis is supported by high levels of agreement in the efficiency and quality indicators. Therefore, H1 is accepted.

**Hypothesis 2 (H2):**

There are also ethical issues and fear of job loss which is closely related to the opposition to the adoption of AI by media professionals. The results point to the fact that the problems of ethics, the danger of misinformation, the presence of algorithmic bias, and the fear of job

displacement were rated as moderate to high. These issues align with the reluctance and opposition to AI adoption. The findings give adequate grounds to prove this relationship. Hence, H2 is accepted.

**Hypothesis 3 (H3):**

The positive attitudes to the use of AI in Pakistani media are greatly predicted by technical skills and organizational readiness. The review shows that there is a great consensus on the necessity of AI-related training and skill development. The more technologically ready an organization, the more positive the attitude towards the usage of AI expressed by its respondent. This shows that there is a positive correlation between capabilities, preparedness and acceptance of AI. Thus, H3 is accepted.

**Findings of the Study**

The main conclusions of this study can be summarized in the following way: Pakistani media experts indicate that they have constructive attitudes towards AI, especially in connection with efficiency in operations, speed in news generation, and audience participation.

AI is viewed as an effective data journalism, automated reporting, and content personalization tool, particularly on the digital media platform.

Although there are positive attitudes, such ethical issues as misinformation, absence of transparency, and algorithm bias also have a significant role.

The biggest obstacle is the fear of losing work especially to the journalists and old school newsroom employees.

The lack of technical skills and training topics results in poor AI adoption.

Management support and organizational readiness are a very important factor in the formation of attitudes towards AI.

The lack of definite regulatory and ethical guidelines on AI use in Pakistani media can be observed.

The media professionals highly underscore the role of capacity building and professional training in keeping up with AI powered media settings.

### Conclusions

The research arrives at the conclusion that artificial intelligence can be seen as a dynamic medium that is placing significant opportunities and severe challenges to the Pakistani media industry. The use of AI has a positive impact on the newsroom, the quality of the content, and digital innovation. Nonetheless, ethical risks, skills differences as well as job related issues are major obstacles to its successful integration.

Perceived usefulness, ethical trust, technical competence, and organizational preparedness are the factors that have major impact in the adoption of AI by media professionals. The advantages of AI can always be distributed unevenly without appropriate training, ethical protection, and support of policies. Altogether, the research contributes to the significance of a responsible and balanced approach towards AI implementation in media houses in Pakistan.

### Recommendations

The recommendations are as follows based on the findings and conclusions:

The media organizations can invest in the ongoing AI training programs to update the technical skills of the journalists and editors.

The use of AI in the media should have some ethical rules on how to deal with the misinformation, bias, and responsibility.

This should be done through the formulation of clear AI related regulations by policy makers and regulatory bodies in accordance with the Pakistani media context.

AI literacy, data journalism, and digital ethics should be incorporated into the curriculum of journalism and media studies.

What media houses need to embrace is a human centred AI strategy where AI is aimed at enhancing and not eliminating journalistic functions.

Media houses, technology firms and academic institutions should be encouraged to collaborate to bring about innovation and responsible use of AI.

They should launch awareness campaigns to ensure fear and resistance diminish by instilling AI as a professional improvement tool as opposed to job loss.

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