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ORIGINAL RESEARCH ARTICLE

The use of artificial intelligence in the field of communication: A research on the perspectives of communication academics

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ABSTRACT

Artificial intelligence (AI) has become a very important concept in today's digital communication age. With the development of technology, the use of AI has become widespread in many fields, including the field of communication. This article focuses on the relationship between communication and AI. In this context, the advantages, and disadvantages of using AI in the field of communication were examined. Data obtained from semi-structured in-depth interviews with communication academics were analysed with the content analysis technique. The findings underscore the increasing prevalence of AI usage in the field of communication. Positive aspects such as speed and efficiency, cost-effectiveness, and the ability to analyse large datasets easily were highlighted. However, negative impacts were also identified, including concerns related to privacy and security, the potential lag in emotional intelligence compared to humans, the risk of individuals losing their jobs or harbouring job loss concerns, and the possibility of applications that may not align with ethical principles. As AI continues to evolve in the future, the aim is to address privacy and security concerns, develop applications in alignment with ethical principles, and enhance capabilities to analyse larger datasets while achieving a more advanced emotional intelligence structure.

Keywords: academics; artificial intelligence; AI; communication

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1. Introduction

AI, initially conceptualized in academic articles such as McCulloch and Pitts[1] and Turing[2], has undergone substantial change and transformation from its first emergence to the present day. Since its conceptual inception, particularly with the Dartmouth Conference and the continuous impact of advancing technology, AI has become an integral part of the contemporary world, so to speak. AI finds application in various domains, from education to healthcare, finance to industry, steadily increasing its prevalence.

As the development of AI accelerates with technological progress, its usage expands into various applications in different fields. In communication, AI applications take form through diverse tools that optimize and enhance communication processes, leading to more efficient results compared to traditional approaches. However, the utilization of AI in communication, while offering positive contributions, also brings along some negative effects. Within this scope, it is crucial to thoroughly examine the use of AI in communication, detailing its positive and negative impacts.

This study evaluates the relationship between AI and the communication field, exploring AI applications, and assessing their positive contributions and negative effects on the field.

2. Artificial Intelligence

2.1. Concept

Initially introduced in academic articles, the concept of AI[1,2], gained prominence at the Dartmouth Conference[3,4]. The ability of AI to solve intricate problems was acknowledged through the program "Logic Theorist"[5].

In the subsequent years, criticism arose regarding the limited capabilities of AI, demonstrating that it was not yet on par with human intelligence[6]. However, with advancing and evolving technology, numerous studies addressed the progressing abilities of AI and its transformation[7,8].

The concept of AI can be defined as a system with abilities similar to human intelligence, fundamentally capable of performing tasks related to computer structures[7]. Comprising an interdisciplinary whole, AI possesses critical skills such as deep problem-solving, learning, and decision-making[9].

AI, which can generally be categorized into weak and strong AI, exhibits capabilities comparable to human intelligence in certain specified aspects for weak AI, whereas strong AI is closer to general intelligence levels[10].

Having a vast application scope, AI manifests its impact in various fields such as the functioning of automatic systems, content analysis, healthcare, education, communication, and more[11]. With a broad application domain, AI generally encompasses machine learning, natural language processing, and image recognition techniques.

Various learning methods (supervised learning, unsupervised learning, reinforcement learning, image and speech recognition, and deep learning) contribute to a more detailed knowledge accumulation[12].

2.2. Fields of application

AI can perform tasks and provide services in various fields. Indeed, AI can be leveraged in the following contexts:

Healthcare: Diagnosis and/or treatment of diseases[13].

Finance: Risk and portfolio management[14].

Marketing and customer services: Development and personalization of services[15].

Education: Measurement of student performance, enhancement of personal learning processes, and development of educational materials[16].

Agriculture: Implementation of more efficient practices[17].

Industry: Quality control, supply chain management[18].

Knowledge management: Processing and analysis of big data[18].

The application areas of AI mentioned above, and the examples provided can be expanded further. Particularly, the ongoing development of technology is broadening the scope of AI applications with each passing day.

3. Artificial intelligence and communication

The utilization of AI, as mentioned above, extends across various fields, including communication, where it finds numerous applications. Some of these applications can be categorized as follows: text generation, text analysis, translation, enhancement of communication processes, natural language processing, social media management, customer support, etc.[19].

The capabilities outlined above are widely employed within the framework of enhancing communication and related processes by AI.

Examples of AI applications in the communication domain are as follows:

Through chatbots, significant contributions to customer service can be made in online support pages or applications, facilitating the prompt retrieval of information, and addressing users' or customers' inquiries efficiently[20]. AI, capable of responding to voice commands, recognizing speech, and thus engaging in advanced communication, ensures a more natural and effective interaction between users or customers and the system[21].

Due to its natural language processing capabilities, AI can comprehend, interpret, and process texts effectively. In this context, it proves valuable in areas such as customer service, call center management, and information retrieval.

In social media management, AI evaluates the success of brands, identifies user trends, and recommends brands more effectively to target audiences[22]. This is because AI's social media management applications can analyse vast amounts of data, determine user preferences, perform emotional analysis, and assess the reputation of brands.

The use of AI in communication aims to enhance user and/or customer satisfaction, accelerate information flow, and improve business processes. This widespread application contributes to making interpersonal interactions more comprehensive and efficient, aligning with advancements in technology.

It is pertinent to discuss the positive and negative impacts of AI utilization in the field of communication.

3.1. Positive impacts

Firstly, when discussing the positive impacts of AI in the field of communication, technologies such as chatbots, natural language processing, and customer services and support stand out, providing various advantages to organizations employing them[20].

24/7 uninterrupted service: The concept of working hours becomes obsolete as AI can operate continuously, allowing users to receive services at any time, on any day of the week. This is particularly beneficial for services like customer support, providing uninterrupted assistance[22].

Speed and efficiency: While the continuity of service is crucial, the equally important aspect is the delivery of fast and efficient service. AI, being constantly available, can provide instant and speedy assistance. Its capacity to understand and guide enables effective support and issue resolution[15].

Big data analysis: AI, capable of rapidly analysing large datasets, can evaluate users' or customers' preferences, prominent trends in the relevant field, and crucial feedback. Swift and comprehensive access to this data aids companies in making critical decisions[18].

Cost savings: Processes requiring human labor can be carried out by AI (e.g., chatbots, automated responses), leading to cost savings for organizations. In other words, more efficient and beneficial business processes can be achieved at a lower cost[15].

Personalization and recommendations: AI, tracking the approaches of users or customers, can establish personalized communication through analyses. For instance, it can recommend services, products, or campaigns that are more likely to be preferred by the user or customer[19].

All of the aforementioned advantages demonstrate how AI and communication work together to improve many processes and provide effective, easily accessible, and more individualized services.

3.2. Negative impacts

While there are many advantages to the cooperation of AI and communication, there are also some unavoidable negative aspects. There are major drawbacks, particularly in applications like automated answers and natural language processing that have numerous benefits.

Security and Privacy Concerns: The usage of AI, which frequently depends on huge datasets, may put people's security and privacy at danger. This possibility may cause people to become uneasy and might result in a general lack of confidence[15].

Decrease in Human Interaction: Human interaction may decrease if AI apps become more widely used. For example, losing the human touch and/or emotional connection might result from using AI exclusively in live support and customer service settings without human interaction[20].

Technology Dependency: People who use communication apps with AI infrastructure excessively risk becoming unduly reliant on these technologies and used to them. This dependence might lead to an over-reliance on technology and the loss of abilities associated to conventional communication techniques[23].

Bias and Injustice: AI's innate biases can result in a variety of injustices. AI, with its learning capability, can learn and even perpetuate biases. Biases learned and perpetuated in this way may result in unfair practices based on demographic factors such as race, gender, orientation, etc.[24].

Job Loss or Fear of Job Loss: The increasing use of AI contributes to increased automation and wider acceptance of AI. This rise in acceptance, particularly in the automation of routine tasks, may lead to some individuals losing their jobs[25]. Additionally, the possibility of job loss can create anxiety even among those who do not lose their jobs.

4. Research

4.1. Methodology

In this study has prefer the qualitative research method to identify the relationship between AI and communication, determine the sub-domains of communication in which AI is utilized, identify the positive and negative impacts of relevant applications, and provide recommendations. The use of qualitative research is intended to delve into the depths of the subject and address it in detail.

Qualitative research is an approach that aims to reveal the meanings attributed by one or more individuals to social or human problems. This type of research involves developing research questions, processes for data collection, extracting general themes from specific cases, conducting inductive data analysis, and interpreting the acquired data by the researcher[26].

In a case study, the goal is to elucidate how and why predetermined and delimited characteristics of a sample evolve. Focusing on a single group, rigorous studies are conducted, and the characteristics unique to that group are examined from multiple perspectives to gain in-depth insights into how and why those characteristics arise[27].

For the answers to the research objectives related to the use of AI in communication, it was deemed appropriate to obtain insights from communication scholars. Accordingly, semi-structured in-depth interviews were conducted with a sample of communication scholars, as detailed below.

In qualitative research, interviews, being a commonly used data collection technique, provide the opportunity for individuals being interviewed to express themselves directly. The researcher, in turn, can conduct a comprehensive observation of the person or persons being interviewed[28,29].

Interviews involve asking questions that cover all dimensions of the research topic, obtaining detailed answers, and enabling one-on-one data collection[29,30]. Interviews can be categorized into unstructured, semi-

structured, and structured types[29,31]. Semi-structured interviews use predetermined questions, but compared to unstructured interviews, they allow for more spontaneous questions and the elaboration of targeted data or responses based on the flow of the interview.

In this study, a semi-structured in-depth interview method was preferred. Interviews were conducted based on pre-prepared questions, and spontaneous questions were also included during the interviews to elaborate on the data.

4.2. Sampling

In the study, semi-structured in-depth interviews were conducted with communication scholars to obtain their opinions on the relationship between AI and communication, as detailed above. Despite the preference for snowball sampling in determining the interview group, certain criteria were taken into consideration.

Snowball sampling involves creating a pool of individuals by asking those already identified, "Whom do you recommend I talk to about this topic?"[32]. In this context, while participants were identified using snowball sampling, certain criteria were prioritized in line with the objectives of the research. The primary criterion was that participants should be academics in the field of communication. Following this, participants were required to have at least 5 years of professional experience, engage in research related to AI and communication within their respective fields, and/or have knowledge and interest in the subject.

Considering these criteria and aiming for the universality of the topic and study, the sample was determined without any geographical restrictions.

The selected individuals were asked to recommend others who meet these criteria. Among the experts in the field, the criterion of a minimum of 5 years of professional experience shaped the interview group, ranging from 5 to a maximum of 20 years of professional experience. The snowball sampling technique is a method that involves selecting a reference person related to the subject of the study and reaching other individuals through recommendations. This method is iterative, and participants guide researchers, contributing to the growth of the sample. Therefore, it is known as the "snowball effect"[33].

Within this scope, a total of 10 communication academics meeting the criteria mentioned above were included in the sample.

4.3. Analyses

The data obtained in the research were evaluated using the content analysis method. Content analysis is the neutral, systematic, and quantitative description of the content resulting from communication[34,35]. Another definition characterizes content analysis as a research technique used to derive repeatable and valid results from data[36]. According to yet another definition, content analysis is a research technique where valid interpretations extracted from the text are articulated through successive processes[35–37].

In this context, the data obtained from semi-structured in-depth interviews with communication scholars were coded and analysed as "Use of AI in Communication" under the categories and themes: "AI and Communication Relationship, Human-Labeled AI, Community Management and AI, AI in Communication and Human Factor, Big Data and Analytical AI, Workforce and Education in the Communication Sector, Privacy, and AI, Future Trends in AI."

In line with the nature of the study, sometimes detailed coding is required, while at other times, comprehensive coding may not be necessary[38,39]. Therefore, due to the ease of evaluating the data obtained through the conducted interviews in the context of the study, a more intricate coding and categorization theme was not deemed necessary.

4.3.1. Artificial intelligence and communication relationship

AI has diverse applications in the field of communication, such as text generation and analysis, translation, improving communication processes, natural language processing, social media management, and customer service support[19].

The mentioned applications indicate the extensive scope of the relationship between AI and communication, a perspective shared by the interview participants.

P2: "AI is fundamentally a communication technology and has extensive applications."

P5: "…For example, customer service, social media management, translation services, etc."

However, the use of AI in communication comes with advantages and disadvantages.

Advantages include speed and efficiency, continuous service provision, big data analysis, and personalization, among others. On the other hand, disadvantages encompass concerns/problems related to security and privacy, a decrease in human interaction, biases and injustices, and job loss or fears of job loss.

P6: "AI able to produce very fast content is advantageous but the accuracy of the results is questionable… And we also face a mechanized world..."

P10: "While the easy analysis of big data provides an advantage to companies, it can also lead to a violation of privacy."

4.3.2. Human-Labelled artificial intelligence

AI can learn in various ways, including supervised, unsupervised, and reinforcement learning. In this context, human-labeled AI, especially within the scope of supervised AI learning, holds significance[40,41].

When AI learns labeled by humans, biases, and issues related to discrimination may arise from the datasets. Biases in the pertinent datasets may cause AI to learn negatively, raising moral questions[24]. Addressing these issues requires enhancing openness, decreasing biases, and diversifying datasets.

P3: "Artificial intelligence continues its development. Especially interaction with people, that is, data input provided by people, is also a part of this development. However, this learning-based development process can also lead to problems such as discrimination and bias."

P4: "The diversity of data possessed by artificial intelligence and more accurate data entry will serve to solve the ethical problems."

4.3.3. Community management and artificial intelligence

AI offers major benefits in massive data processing, speed, efficiency, and continuous operation for managing online communities[20]. Nonetheless, there's a chance that AI will misread material and provide biased community management outcomes.

P1: "With AI, community management (online) can be provided 24/7 and speed… Same time, AI have a potential to biased because of misperceived."

P9: "AI is becoming an important tool for moderating virtual communities. However still development continues and may lead to some biased initiatives."

4.3.4. Artificial intelligence in communication and the human factor

When using AI for communication, human-AI connection is essential. AI may have difficulties comprehending subtle emotional changes and intricate human behavior[20].

AI systems currently lack the ability to develop deep emotional connections and unde-rstanding comparable to humans. To become more perceptive and useful, AI must learn to balance human interactions. Incorporating feedback from emotional AI simulations is crucial for achieving this balance.

P5: "I agree that AI is an important technology. However, it is important to remember that AI was created to serve humans. Humans are social beings; They have emotions. However, the AI we have experienced so far cannot yet fully understand human emotions."

P10: "While even humans may have difficulties in understanding people's emotions, it is a matter of paradoxical debate whether AI can fully achieve this. However, considering its rapid development in this debate, I believe that AI is making progress."

4.3.5. Big data and analytical artificial intelligence

AI can analyse massive amounts of data, making it a valuable tool for understanding user communication preferences and actions. Analytical AI can help improve content performance, tailor communication tactics to suit the target audience, and personalize the experience[18].

Analytical AI enables interaction analysis, user experience personalization, and enhanced targeting. However, privacy concerns and security measures are crucial factors to consider.

P1: "AI can provide more personalised results through the collection and analysis of personal data. Companies can organize their strategies around the interests of their customers."

P7: "...It provides various contributions. However, privacy and security breaches can cause negative consequences that are exactly the opposite of those intended."

4.3.6. Workforce and education in the communication sector

AI in communication may lead to some tasks being automated, which means workers will need to develop new skills. Automating repetitive jobs allows people to focus on more strategic and creative work.

AI training can enhance current abilities and open up new possibilities for those in the communication field. In this regard, it is crucial to nurture creativity, ethical reasoning, and data analysis skills.

P6: "AI is fast and can provide continuous service. This may lead to some routine tasks being done instead of humans. However, as I mentioned before, in a mechanized world, this may cause people to lose their jobs."

P8: "Yes, AI has begun to replace humans in some areas. However, I see this situation as positive. It saves people time and allows them to focus on more important matters."

4.3.7. Privacy and artificial intelligence

As in other fileds, privacy is a crucial component of using AI in communication. AI systems must use user data accurately and ethically in terms of collection, storage, and utilization. User privacy rights must be protected.

Transparency of AI systems is essential for establishing trust-based relationships with users. Additionally, strict security measures and appropriate data protection policies should be implemented.

P2: "Data protection and transparency are very important."

P4: "The highest level of precautions must be taken to prevent violations of personal data. This is an ethical and legal requirement."

4.3.8. Future trends in artificial intelligence

As AI continues to evolve in the future, advanced natural language processing, emotional intelligence, human-machine interaction, new communication experiences, more transparent and ethical developments, blockchain, and security measures are expected to contribute to more effective services in communication.

P7: "AI will become much more advanced in the future. I think that with this development, it will become possible to perform faster transactions. However, especially security measures should be increased."

P9: "There may be developments such as more comprehensive natural language processing and a more qualified understanding of human emotions…"

5. Findings, discussion, and conclusion

The concept of AI first surfaced in academic articles and gained widespread use, particularly after the Dartmouth Conference. Subsequently, it has become an indispensable part of the present digital communication era, driven by technological advancements and rapid transformations. As its usage proliferated, discussions emerged concerning both the positive and negative impacts, particularly in the field of communication.

Examples of AI applications in communication include text generation and analysis, translation, improvement of communicative processes, natural language processing, social media management, customer service support, etc. However, these applications come with both advantages and disadvantages. Positive aspects include rapid and cost-effective operations, the potential for uninterrupted service provision, big data analysis, and personalization. While the positive aspects are as stated; security and privacy issues, a decrease in human interaction, the potential to cause prejudice and inequalities, and individuals' concerns that they may be dismissed from their jobs or may be dismissed are negative consequences.

On the other hand, AI, which provides 24/7 use without any time limitation, also stands out with its speed and low cost. However, these advantages can be overshadowed by significant dangers such as producing incorrect content and producing biased results.

Human interaction is of high importance for AI to understand human emotions. Because understanding or making sense of complex human emotions is still considered a non-negligible challenge in terms of AI. As the importance of the integration of AI and emotional intelligence is understood, the necessity of establishing a balance in this regard remains current. One of the methods to be followed in order to establish the mentioned balance is to collect user feedback through emotional AI simulations and establish more effective monitoring structures. If this path is followed, AI will be able to analyse big data more effectively by distinguishing between people's wishes and corporate expectations, and thus will make an even more important contribution to deciphering customer behaviors and tendencies, so to speak.

Analytical AI further increases communication effectiveness by adapting strategies to the specific tastes and preferences of the target audience, thus offering significant personalization. However, security and privacy should also be emphasized in this process. At this point, it is necessary to emphasize that the issue of privacy and security has the potential to cause negativities. AI applications that collect, store and process user data must carry out these processes in accordance with ethical principles; With transparency, users' rights, especially privacy, should be prioritized. Otherwise, it will not only create grounds for legal problems; It may also cause the trust of users to be shaken. In this context, it is clear that legal regulations and security measures regarding data protection are directly linked to the ability of AI technologies to provide ethical and safe services.

On the other hand, automation of routine tasks through AI may cause individuals to lose their jobs or fear losing their jobs. However, this negative situation may also enable individuals who do not have to perform routine tasks to be placed in more strategic positions and focus on work in this direction. In the proper progress of this process, prioritizing communicative artificial intelligence education; It is important to develop important skills such as creativity, participation to ethical rules, and data analysis.

All the positive and negative aspects listed are matters that should be considered carefully. Because in today's digital communication age, AI continues to develop more rapidly every day. In this context, it has become indispensable to discuss the high potential and its effects in the field of communication and to benefit from them correctly. When AI is evaluated in terms of possible and/or targeted developments, advanced natural language processing techniques, increased emotional awareness, more complex human-machine interfaces

developed through experiential learning processes, and increased transparency in ethical development using blockchain technology stand out.

However, with all these possible developments, security concerns that may increase are also a very sensitive issue.

All these matters need to be carefully evaluated.

It would be appropriate to continue efforts to further develop the positive effects of Artificial Intelligence, which is increasingly used in the field of communication, and to eliminate its negative effects.

For future academic research, it is recommended to first examine the ethical dimensions of the use of artificial intelligence in communication in more depth. Additionally, collaborative academic studies between engineering sciences and psychology are recommended, particularly for the detection and enhancement of emotional communication within the framework of human-machine interaction. In this context, it would be appropriate for in-depth interviews to be conducted by psychology experts with a selected interview group to identify the positive and negative aspects of users' interactions with AI chatbots.

Conflict of interest

The author declares no conflict of interest.

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