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Iranian Twitter Users' Public Perception of Artificial Intelligence: A Thematic Analysis of Tweets Regarding ChatGPT

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Abstract

In recent years, artificial intelligence has had a significant impact on the digital realm. This study aims to conduct an exploratory and qualitative analysis by examining user-generated opinions on Twitter regarding ChatGPT to understand the public perception of artificial intelligence. To achieve this, posts and comments from Twitter were reviewed. The study encompasses at least one hundred opinions that were carefully evaluated and selected to represent a diverse range of user perspectives. These opinions were analyzed in an exploratory and unrestricted manner to uncover the various aspects of public perception surrounding artificial intelligence. In this study, we took an exploratory approach to collect data from posts and comments of Iranian users on Twitter. Among the nearly a thousand posts and comments we collected in the first phase, we identified nearly 100 posts and comments that exemplify 18 themes in our data. By categorizing these themes, we could name two main categories that portray Iranian public perceptions of AI, especially Chatgpt. The first one is positive, which consists of opportunities, capacities, and capabilities themes, and the second one is challenges, concerns, and limitations of AI and ChatGPT. The first wing has themes such as "Humanistic communications of AI," "Artificial intelligence and problem-solving," "No bias in discussion with chatgpt," "AI and Productivity," "AI and daily work routines," "AI as a writing assistant," "Artificial intelligence human emotions," "Artificial intelligence as a teacher" and "Helping jobs to reduce errors." The second wing, Negative: Challenges, Concerns, and Limitations is comprised of "Unknown Future Challenges Using AI," "Hyped AI," "Monetization and Monopolization of Artificial Intelligence," "Cheating Artificial Intelligence," "Privacy Violation by AI," "Invalid and Unreliable Information," "Unintelligent and Untrained Intelligence," "Ideological Surveillance," and "Substitution for Human Labor."

Keywords: Artificial Intelligence, ChatGPT, Public Perception, Thematic Analysis, Chatbot

AI, Chatbots, and ChatGPT

Artificial Intelligence (AI) refers to a collection of computer techniques and methods that enable computers and artificial systems to perform tasks requiring human-like intelligence and reasoning. The main goal of AI is to produce intelligent systems capable of understanding, learning, processing, and interpreting data and information. AI employs mathematical and statistical methods and algorithms to achieve this objective. The main challenge in designing AI systems is their resemblance to the functioning of the human brain.

In contrast to computers that operate based on explicit instructions, AI can operate autonomously and interactively, learning and improving its performance based on experiences and data. Among the techniques used in AI is Machine Learning, which enables computers to recognize patterns from input data and utilize them for prediction and decision-making. Neural Networks that is based on the structure of the human brain. Using neural networks, intelligent systems can recognize patterns, make decisions, and process data. Natural Language Processing enables computers to comprehend and interact with humans naturally and interactively. Data Mining is a process that enables computers to extract useful information, patterns, and

relationships from large, complex datasets. And finally, Fuzzy Logic enables computers to make decisions in uncertain and ambiguous conditions based on fuzzy logic rules.

A Chatbot is a conversational software system that mimics human communication skills and interacts with users automatically. Chatbots use AI techniques to understand natural language, identify meaning and emotions, and design meaningful responses (Jangjarat *et al*., 2023) [16]. AbuShawar and Atwell (2015) [4] define a chatbot as a conversational agent interacting with users using natural language. Chatbots are utilized in numerous industries, including education, smart systems, and medical services (Rosruen and Samanchuen, 2018) [29]. Chatbot is a computer program that facilitates and enhances this interaction (Thorat and Jadhav, 2020) [41]. A chatbot is a software system that can interact or "chat" with a human user in a natural language such as English (AbuShawar and Atwell, 2007) [3].

ChatGPT is a large language model developed by OpenAI (Mijwil, Aljanabi, and Ali, 2023) [22]. ChatGPT is designed to generate human-like text based on a given prompt or context and has been implemented in various applications, such as natural language processing, dialogue systems, and language translation (Ge and Lai, 2023) [10].

However, the increasing popularity of artificial intelligence in the form of chatbots, particularly tools such as ChatGPT, necessitates understanding how society reacts to it. It is important to understand why there has been such a sudden interest in them and whether there are concerns and issues alongside this interest in dealing with this technology and its tools. Public perception and understanding of artificial intelligence, chatbots, and especially ChatGPT are crucial and enlightening.

One of the most important cultural impacts of the use and development of artificial intelligence on social media is the scalability (expansion of the scope) of the effectiveness of human decisions and actions, new structuring of the human communication system, transformation in the way of cultural consumption, reducing the power of human choice and delegation. Such technological transformations can create societal tensions, as Maleki Borujeni *et al*. (2022) [21] note that social factors including discrimination and repressive attitudes require careful management to maintain community stability.Other aspects mentioned are the disruption of the functioning of the representation of truth in the media, the disruption of the balance between the benefits of personalized content and privacy protection, the countercultural effects of designers and technology owners on the functioning of intelligent systems, the transformation in the way humans and technology interact, the lack of transparency of the consequences of the use of artificial intelligence, and the limitation of the power of governance as well as traditional and the impossibility of effective supervision and legislation, etc (Rajabi & Nasrollahi, 2023, 95-125) [27].

Public perception of AI, Chatbots, and ChatGPT

Dowler *et al*. (2006) [7] believe that "the term "public perception" is difficult to define." According to Dowler, public perception is "the understanding and opinion of a particular issue." Scott (2002) [36] demonstrates that "public perception is complex and idiosyncratic," which makes straightforward analysis or generalization problematic. Yedavalli (2019) [46] states, "Public perception is the aggregate view of a group of people." Public perception was defined by Kamarulzaman (2019) [17] as "a social phenomenon of how the public sees risks and benefits in current situations based on current knowledge, culture, and/or media." Kassens-Noor *et al*. (2021) [18] also defined Public perception as "the way people think about something, understand it, or the impression they have of it."

Public perception is a term used by various researchers and academics to describe how individuals perceive and evaluate particular issues, situations, or phenomena. Rahmatian (2025) [28] reveals how demographic factors shape AI perceptions, showing that future business leaders view AI as both a tool for geopolitical leverage and a source of structural anxiety - mirroring the dual optimism and concern in public discourse. Individual behavioral variations significantly influence social perceptions, as Jamali *et al*. (2022) [15] demonstrate that personality factors can predict different responses to technological innovations, explaining diverse public reactions. However, there is no consensus on defining public perception, as various sources have distinct perspectives and methodologies.

There is no doubt that artificial intelligence (AI) has made significant strides in recent years, with tools such as ChatGPT attracting attention and sparking public discussion. However, this increased awareness has also led to varying perceptions and concerns regarding the capabilities and risks associated with AI tools on social media.

In their study of early adopters' attitudes toward ChatGPT, Haque and his colleagues (2022) [12] found "overwhelming excitement and limited concerns about this application of a large language model." They believe "the majority of users were impressed by the performance of ChatGPT and the potential of large language models to assist with tasks related to several domains (e.g., Software development, Business initiatives, and analysis, NLP)." However, they also demonstrate "there are important ethical implications that need to be considered in ChatGPT use and further development."

Jangjarat *et al*. (2023) [16] explore public perceptions towards accepting ChatGPT as a Robo-Assistant in Thailand, using a mixed method approach that collected data through closed-ended questionnaires and in-depth interviews. Their study found "acceptance of ChatGPT among Thai people and highlighted the importance of developing sociable robots that consider human interaction and communication."

Firat (2023) [9], in his article on ChatGPT and universities, explores scholars' and students' perceptions of ChatGPT's implications for universities. Responses from 7 scholars across 4 countries and 14 PhD students from Turkey were analyzed using thematic content analysis. Nine key themes emerged, including the evolution of learning systems, changing educator roles, impacts on assessment, ethical considerations, future employability, personalized learning, digital literacy needs, AI as an extension of the human brain, and retaining human skills.

Miyazaki *et al*. (2023) [23] found a significant interest in generative AI extends beyond IT-related occupations to encompass individuals across various professional domains. Leiter *et al*. (2023) [20] analyzed over 300,000 tweets and over 150 scientific papers. They discovered that ChatGPT is viewed as a high-quality system, with positive sentiment predominating and joyous emotions dominating social media discussions.

Russell and Norvig (2016), in their book "Artificial Intelligence: A Modern Approach," provide a comprehensive overview of artificial intelligence, covering various topics such as knowledge representation, problem-solving, machine learning, and natural language processing. It can shed light on various perspectives on AI and its societal effects.

In "Artificial Intelligence: A New Synthesis," Nilsson (2014) [25] provides a synthesis of the field of artificial intelligence, discussing its history, key concepts, and applications. It can provide a fundamental understanding of artificial intelligence and its implications. In his 2017 book "Superintelligence: Paths, Dangers, Strategies," Bostrom examines the potential risks and benefits of developing superintelligent artificial intelligence systems. It delves into the societal impact and ethical considerations surrounding artificial intelligence.

Goertzel and Pennachin (2007) [11], in "Artificial General Intelligence," focus on the concept of artificial general intelligence (AGI), which refers to machines that possess the ability to understand or learn any intellectual task that a human being can do. It explores the challenges and possibilities of achieving AGI and its societal implications.

ChatGPT is a generative AI tool that has garnered public interest and discussion because it demonstrates the capabilities and potential of large language models to generate natural language texts based on user input. ChatGPT can be used for various purposes, including software development, business analysis, natural language processing, education, entertainment, and creativity. However, ChatGPT also raises ethical issues that must be considered in its use and further development, such as the generated texts' quality, accuracy, reliability, bias, fairness, privacy, and accountability.

Various studies and sources have investigated the public perception of ChatGPT by analyzing the sentiments, opinions, attitudes, expectations, and concerns of various groups of people regarding ChatGPT using diverse methods and data.

Methodology: Thematic analysis of public perceptions

Scharp and Sanders (2019) [35] describe thematic analysis as a qualitative method for identifying, analyzing, and reporting patterns within a data corpus. Nowell and colleagues (Nowell, Norris, White, & Moules, 2017) [26] contend that thematic analysis is a qualitative research method that can be broadly applied to a variety of epistemologies and research questions.

Although Dawadi (2021) [6] demonstrates that thematic analysis is a qualitative research technique used to organize and analyze complex data sets systematically, Finlay (2021) [8] demonstrates that thematic analyses can take various forms, some of which are systematic and others intuitive.

To conduct this thematic analysis on public perception of AI chatbots such as ChatGPT, we followed these steps: Data collection, data preparation, coding, theme development, review, and finally, reporting.

- Initially, we collected information regarding the public's perception of AI chatbots and ChatGPT from the Persian Twitter environment by searching for AI, Chatbots, and ChatGPT as main keywords, as well as combinations of these keywords with words such as pros and cons, possibilities, and concerns.
- We eliminated irrelevant information, duplicates, and inconsistencies during the data preparation phase.
- Then, during the coding process, we read through the collected Twitter data and identified emerging patterns (themes). We assigned codes to each theme and grouped codes with similar characteristics.
- In the fourth stage, we developed themes by analyzing the relationships between codes and grouped them into broader categories.
- Reviewing the themes ensured they accurately reflected the data and were relevant to the research question.
- Finally, the findings were reported by describing each theme in detail and providing data examples to support the claims.

We used an exploratory method to collect data from the tweets and comments of Iranian users for this study. To achieve this, we searched for Persian keywords such as AI, chatbots, and chatgpt, and in a second phase, we added secondary keywords such as possibilities, capabilities, limitations, concerns, etc., to make combinations to search for and collect data.

This study has no generalization objective. We collected only posts and comments to the point of theoretical satisfaction and topic saturation. Among nearly 1000 posts and comments we collected randomly in the first phase, we finally reached almost 100 posts and comments that represented 18 themes we found in our data. We excluded the other almost 900 posts and comments due to similarities, repetition, and theoretical saturation. The nearly 100 posts and comments we analyzed and discussed were relevant to our study, and each represented a different aspect of the public's perception of artificial intelligence, chatbots, and ChatGPT. These nearly 100 posts and comments better represent the public's perception, so we included them in our final data set for analysis. In contrast, the others with the same content were excluded because their representation was weaker.

In the following section, we present our findings and a selection of tweets that represent our data collection's primary themes and categories.

Findings: Iranians' tweets on AI, chatbots and ChatGPT

We examined Twitter data using thematic analysis to determine how Iranian Twitter (X Platform) users perceive AI chatbots, specifically ChatGPT.

Thematic analysis of the collected data identified 18 themes among Twitter users' posts and comments: 1. "Humanistic communications of AI," 2. "Artificial intelligence and problem solving", 3. "No bias in discussion with chatgpt", 4. "AI and Productivity", 5. "AI and daily work routines," 6. "AI as a writing assistant," 7. "Unknown Future Challenges using AI," 8. "Cheating Artificial intelligence," 9. "Privacy violation by AI," 10. "Invalid and unreliable information," 11. "Unintelligent and Untrained Intelligence," 12. "Substitution for human labor," 13. "Helping jobs to reduce errors," 14. "Hyped AI", 15. "Monetization and monopolization of artificial intelligence," 16. "Artificial intelligence human emotions," 17. "Artificial intelligence as a teacher".

Humanistic communications of AI

The capability of artificial intelligence chatbots to generate human-like text and simulate a variety of interactional dimensions has raised concerns from multiple angles.

Concerns have been raised by Iranian Twitter users, for instance, regarding the creation of emotionally charged content and the establishment of human-like relationships with these chatbots.
User (@matillend) has written:

> "I finally had to ask ChatGPT "how to politely cancel a crappy project?". I got a useful answer too. ChatGPT is really helping me a lot with beating around the bush:))"

User (@farshadxrii) has written:

> "…I really love ChatGPT, especially when I ask it to write me a letter of apology and regret, it makes the other person feel so bad that you really didn't even think about it."

User (@beingheech) has written:

> "…really ChatGPT is my best friend and more understanding than anyone around me…"

User (@Gerdali_jan) has written:

> "My new hobby: talking and confiding with ChatGPT..."

Artificial intelligence and problem-solving
Among the benefits highlighted by Twitter users of ChatGPT is its capacity for problem-solving and providing solutions for various issues. Problem-solving is crucial in many fields of work, including programming, but it should be noted that creativity in presenting a solution can be challenging**.** This also reflects what Hosseini *et al*. (2025) [14] term 'mediation gaps'—where inadequate human guidance in digital interactions risks normalizing AI relationships as substitutes for organic social bonds and critical thinking development.
User (@Mardetanha) also announced in a tweet:

> "Cheers to ChatGPT that helped me do a work problem with much higher quality today. I explained the problem to him and he calculated exactly what I wanted and gave it to me."

User (@mssaffari) also announced with an example of ChatGPT's performance in Python:

> "I wanted to show an optimization problem to the kids in the Python environment. I was testing with ChatGPT and we did not get the same answer. In short, I said let's calculate step by step and see what happens. This process that after each correction step, it calculated the new output and confirmed it was really interesting:)".

No bias in discussions with chatgpt
User (@omidamraei) wrote about ChatGPT:

> "The good thing about ChatGPT is that in arguing with many people, there is no need to waste hours of energy on every trivial issue. Very simply, you validate any claim at least at the basic level…".

AI and Productivity
Incorporating chatbots and AI technologies has significantly impacted users' productivity across multiple domains. Chatbots, computer programs designed to simulate human conversation, have been widely adopted in customer service, healthcare, education, and other sectors. Chatbots can use AI algorithms to comprehend and respond to user queries in real time, providing immediate support and assistance. This has resulted in enhanced user efficiency and productivity.
User (@Chaay) wrote:

> "It seems that ChatGPT is filling some of the important gap in work productivity that I lost due to migration - division of labor, team cover and focus on competitive advantage - to some extent...".

AI and daily work routines
User (@jranil) wrote:

> "Ultimately, the widespread use of tools for generating text, image, video, sound, product and even objects with artificial intelligence will be useful and practical. Even now, I think with the presence of ChatGPT …, a lot of work has been reduced and soon producing useless content will not have any special advantage.".

User (@itistherehix) also wrote:

> "How did some people code projects without chatgpt?".

AI as a writing assisstant
User (@mohadeselgh) wrote:

> "…Chat gpt wrote an introduction for my project and it's so cool I want to cry.".

User (@noooooooush) wrote:

> "I do not know about you, but since chatgpt came, my life has become much easier!".

User (@glglglgl99) wrote:

> "Finally, I thank chatgpt for closing my thesis.".

Unknown Future Challenges Using AI
Concerns about the unknowable future and regret over the widespread use of ChatGPT today have raised concerns about its extensive use for cheating in schools and universities, the absence of source verification for ChatGPT-generated texts, and the violation of users' privacy. These are among the concerns and challenges raised by Iranian users.
User (@realthornwithin) wrote:

> "This is also my concern. I think we will regret some of our decisions today about the excessive use of ChatGPT and … in a few years.".

The possibility of future challenges arising from the current implementation of ChatGPT is one of the most significant aspects of these concerns. Unfamiliarity with artificial intelligence space and its tools, including chatbots, has

instilled profound, albeit limited, fear and anxiety. Many users have not delved into this topic. Still, there is a great deal of concern about the challenges that the use of generated questions and answers and artificial intelligence will pose for users' lives in the future.

Cheating artificial intelligence

User (@AlirezaNaji_) wrote:

> "… now using chatGPT is also banned in New York schools for what is considered cheating and learning development."

Privacy violation by AI

User (@n_aghpour) wrote:

> "For now, artificial intelligence and ChatGPT are fashionable; but not much attention is paid to privacy violations by these tools. … At first they were amazed at how nice it was and what services it provided. Then we saw that it was everywhere and in fact we were paying for its service.".

This concern highlights such advanced AI technologies' potential ethical implications and societal impact. As the popularity of chatbots, particularly tools like ChatGPT, continues to grow, it is crucial to understand and address these concerns to ensure responsible and beneficial use of this technology**.**

Invalid and unreliable information

User (@Khonsard) wrote:

> "I searched for a very normal problem in Chat GPT. He gave me the information. I asked him to give me the source of information. He gave 9 websites and a PDF link. Except for PDF, they all had 404 errors. It is not clear where he got the information from but he did not provide any reliable source that is available now.".

User (@mahshadrzz) wrote:

> "I once got caught between two people who believed they could refer to ChatGPT as a truth-teller.".

User (@jahaanguir) posted a picture of the artificial intelligence tool "Midjourney" and wrote:

> "… The structure of artificial intelligence is that when you ask a question, it searches all web sources. It selects the most frequent one and combines these contents and gives the best analysis. Therefore, when it is questioned in a non-scientific subject, it naturally gives an unreliable answer. Therefore, in my opinion, the outputs of artificial intelligence from non-scientific subjects that have bias, delusion, nationalism and similar characteristics in data production have no value".

Artificial intelligence is based on our information and data. Therefore, our desires, delusions, and wishes to influence the information and data produced by artificial intelligence and its output are therefore unreliable. Khodabin *et al.* (2024) [19] identify this as a critical AI literacy failure—where users' inability to distinguish between human biases encoded in training data and algorithmic outputs leads to uncritical acceptance of flawed information."

Unintelligent and Untrained Intelligence

User (@hitoshi_Sanches) wrote:

> "I have a technical question. I do not understand why we call something intelligent that decides and does something like a human. Now we say none of these things we have are artificial. Chatgpt is just a smart web browser".

User (@mousa_ahmadii) also wrote about this:

> "I do not understand: We have read so many books for English. For learning Persian grammar and vocabulary, probably two times as much is enough. So why do all kinds of artificial intelligence, including ChatGPT have so many bugs in Persian responses? While they can learn in a few seconds! Do we have the right to say they have not been trained?".

Substitution for human labor

One main concern about artificial intelligence is its substitution for human labor. This concern often stems from misapplied implementations where technology prioritizes cost-cutting over collaborative augmentation—a pattern observed in critical sectors like healthcare (Toosi *et al*., 2025) [44], where AI succeeds only when complementing human expertise. On the other hand, Soroori Sarabi *et al.* (2023) [39] caution that adopting advanced technologies without strategic frameworks can exacerbate risks like workforce displacement, while underscoring IT's potential to augment human capabilities when integrated with training and balanced risk assessment. Althoug, Artificial intelligence's lack of creativity cannot replace humans, and concern is unnecessary, Zamani *et al*. (2024) [47] counter that education remains the cornerstone of workforce adaptability, arguing that even AI-augmented workplaces require continuous learning to maintain operational efficiency and ethical standards—a dimension where human judgment prevails.

User (@AbdollahZangian) wrote:

> "A person cannot replace another person unless he thinks and creates better. Now, how can a robot that has no creativity compared to a human come and make people unemployed?".

User (@QReader6) also replied to another user (@rasputin52) and wrote:

> "Who goes to a general practitioner with chatgpt:) Unfortunately, with the advent of artificial intelligence, general medicine is in serious danger.".

User (@tahmors2) wrote:

> "Considering chatGPT, if I had a 14-15 year old boy now, along with studying and … I would make him learn a technical skill. Pottery, glassmaking, mechanics, carpentry, blacksmithing, jewelry making, … In short, something that artificial intelligence cannot replace.".

User (@MichealFTM) wrote:

> "When you go to the doctor, you ask a question, the doctor has to answer you patiently, not insult you and explain again if you do not understand something. They compared chatGPT with the doctors themselves and saw that in 80% of cases chatGPT gave a better and more sympathetic answer. Dear doctors, work more on your ethics, you have a serious competitor".

Comparing the output of chatbots to that of professions such as medicine reveals concerns regarding the impact of this artificial intelligence on specific professions.

Helping jobs to reduce errors

User (@virgooolgij) also replied to @ElNOozi and @kooshiar and said:

> "I think technology and artificial intelligence and chatgpt and such things will definitely help medicine and will definitely increase the accuracy of work and reduce errors, but it is unlikely that they will completely replace a doctor.".

These perspectives align with systematic reviews of clinical AI adoption (Tomraee *et al*., 2022) [42], where physicians consistently emphasize that AI's greatest value emerges as a decision-support tool—enhancing accuracy while preserving human judgment in complex, high-stakes scenarios. This professional consensus reinforces the public's intuitive understanding of AI's assistive (rather than substitutive) role across domains.

Hyped AI

Some also find recent attention unusual and believe similar products, such as chatGPT, have existed in previous years.

User Creed Aventus (@paper_cutttt) wrote:

> "I do not know why chat gpt and AI got so hyped this year. Maybe about ten years ago there was a messenger app called nimbuz; old people remember it had a chat room. This app also had a bot that you could talk to because it worked with artificial intelligence! Even older versions of siri worked with artificial intelligence !! It's amazing".

Artificial intelligence and human emotions

Exaggerated senses and responses of intelligent robots can result in a momentary bias in interactions with their outputs.

User (@Truth_V_Fact) wrote:

> "… In my opinion, it is more than normal to be flattering, obsequious, and permissive. Probably some parts of your personality will be tickled, but never forget that it is virtual and not made of flesh and bone, and it mimics emotions."

User (@isaaeed) also wrote:

> "In my opinion, artificial intelligence has gone far beyond what we see, even to self-awareness, but it is pretending to be silly. Don't be afraid …".

User (@mahshid_zs) wrote:

> "I wish Chat GPT was a real human and I could hug him."

Monetization and monopolization of artificial intelligence

Monetization and monopolization of artificial intelligence is an important issue in AI. The following statement suggests that AI will not remain free indefinitely and will likely become more monopolistic as it advances.

User Ali (@oopsipoups) writes:

> "… AI is never meant to be free forever … soon, firstly, it will no longer be free, secondly, it is likely that the more specialized and advanced it becomes, the more monopolistic it will become…"."

The rise of artificial intelligence has prompted discussions about its potential for monopolistic behavior and monetization.

Ideological surveillance

User (@alishaker62) writes:

> "…ChatGPT can actually become a kind of ideological thought police in society…"."

Sakhaei *et al*. (2023) [32] show such risks disproportionately affect younger demographics lacking media literacy—where unchecked exposure to algorithmic content can normalize ideological manipulation before critical thinking skills develop. The user is expressing concern about the potential misuse of artificial intelligence, particularly ChatGPT, which he believes could be used as a tool for ideological surveillance in society. While this is a valid concern, it's important to remember that AI technology can also improve healthcare, education, and scientific research.

Artificial intelligence as a teacher

User (@sh_3789) suggests "writing a writing sample for a specific question in a particular topic using ChatGPT". He/She recommend "learning the formatting and then writing your own writing sample and having it corrected like an IELTS examiner".

User (@S_Khsrow) wrote:

> "Man, this [chatgpt] is much better than Google!!! It has the role of that teacher / guide who is with you:)".

Discussion

In the previous section, we report findings about 18 themes around AI, chatbots, and ChatGPT in Iranians' tweets. By categorizing these themes, we could name two main categories that portray the Iranian public perceptions of AI, especially Chatgpt. This dichotomy mirrors what Sharifipour Bgheshmi & Sharajsharifi (2025) identify as AI's fundamental tension—between its emancipatory potential and its risks of exploitation—where societal narratives simultaneously celebrate capabilities while fearing systemic harms. The first one is positive, which consists of opportunities, capacities, and capabilities themes, and the second one is challenges, concerns, and limitations of AI and ChatGPT.

The first wing has themes such as "Humanistic communications of AI," "Artificial intelligence and problem-solving," "No bias in discussion with chatgpt," "AI

and Productivity," "AI and daily work routines," "AI as a writing assistant," "Artificial intelligence human emotions," "Artificial intelligence as a teacher" and "Helping jobs to reduce errors."

The second wing, which is Negative: Challenges, concerns, and limitations, consists of "Unknown Future Challenges using AI," "Hyped AI," "Monetization and monopolization of artificial intelligence," "Cheating artificial intelligence," "Privacy violation by AI," "Invalid and unreliable information," "Unintelligent and Untrained Intelligence," "Ideological surveillance" and finally "Substitution for human labor."

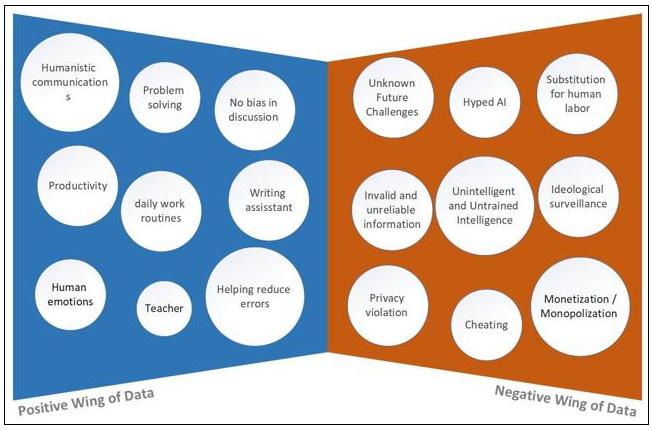

Fig 1: Wings of Public Perceptions on AI, Chatbots, and ChatGPT among Iranian Users of Twitter

Positive Wing: Opportunities, capacities, and capabilities

Aspects of public perception include awe and admiration for the capabilities of artificial intelligence, particularly ChatGPT. These positive perceptions mirror findings from high-stakes AI applications, where technological potential is tempered by the need for human expertise to guide implementation and interpret outputs (Hosseini *et al*., 2021) [13]. Numerous users are impressed by the ability to generate human-like responses, assist with tasks, respond to inquiries, and engage in conversations. Numerous positive reviews and comments from individuals who have interacted with ChatGPT demonstrate this. These users appreciate the convenience and efficiency that AI tools bring to their lives, as they can obtain quick and accurate information without relying on human intervention.

Chatbots and AI have made remarkable progress in terms of intelligence. These technologies are intended to mimic human-like conversations and provide intelligent responses to user queries. The intelligence of chatbots and artificial intelligence is primarily attributable to their understanding of natural language processing (NLP) and machine learning algorithms. NLP allows chatbots to comprehend and interpret human language, enabling them to derive meaning from user inputs. Machine learning algorithms, on the other hand, enable chatbots to learn from past interactions and improve their responses over time. This iterative learning process enhances the chatbot's intelligence by recognizing patterns, comprehending context, and providing more accurate and pertinent responses. Moreover, advancements in deep learning techniques have increased the intelligence of chatbots by enabling them to analyze vast quantities of data and make more informed decisions. The smartness of chatbots and AI is continually evolving as researchers and developers strive to enhance their capabilities.

The ability of chatbots to handle repetitive tasks is a critical factor in their ability to increase productivity. By automating routine processes such as answering frequently asked questions or processing simple transactions, chatbots free up human resources to focus on more complex and value-added activities. This saves time and allows employees to allocate their skills and expertise more effectively.

Moreover, chatbots can provide personalized recommendations and suggestions based on user preferences and historical data analysis. Chatbots powered by AI can provide tailored solutions to users by analyzing vast amounts of data quickly and accurately. This customization improves the user experience, simplifies decision-making, and ultimately increases productivity.

Moreover, the continuous learning capabilities of AI-powered chatbots enhance user productivity. Using machine learning techniques, these chatbots can be taught to recognize user behavior patterns and adapt their responses accordingly. As chatbots interact with more users over time, they become more adept at comprehending user requirements and providing pertinent information or assistance. This ongoing learning process ensures that chatbots continuously improve their performance, leading to higher user productivity levels.

These examples demonstrate AI tools like ChatGPT can positively impact users' lives. They highlight the potential for AI to increase productivity, enhance decision-making, and expand knowledge in a variety of fields. Unsurprisingly, many people view ChatGPT as an impressive application with the potential to revolutionize how we interact with technology.

Negative Wing: Challenges, concerns, and limitations

In addition to these positive perceptions, however, concerns exist regarding the limitations and risks of AI tools such as ChatGPT. This tension mirrors Webster and Sabbar's (2023) [45] findings about Iranian technological engagement - where populations strategically adopt foreign innovations while maintaining cultural vigilance. Similar dichotomies emerge in clinical settings (Tomraee *et al*., 2024) [43], where AI's diagnostic benefits coexist with concerns about eroded human judgment and ethical oversight—highlighting how professional and public apprehensions converge. Some users have reported instances where ChatGPT produced unfair or inappropriate responses, raising questions about the ethical implications of AI. These concerns are valid and underscore the need for the development and regulation of AI systems in a responsible manner. The historical precedent of tech-academic collusion (Sarfi *et al*., 2021) [31] serves as a warning: When corporations co-opt scholarly legitimacy to justify data exploitation, they create frameworks where ethical concerns are systematically dismissed as 'necessary trade-offs.' This pattern now threatens to repeat itself in AI development, particularly as tools like ChatGPT blur the lines between academic assistance and data harvesting.

These examples illustrate the potential risks associated with AI tools like ChatGPT. They emphasize the need for continuous AI system monitoring, evaluation, and improvement to mitigate these risks. Developers and researchers must address biases, improve data quality, and implement robust error detection and correction mechanisms.

Furthermore, public perception emphasizes artificial intelligence's broader ethical implications. These concerns

underscore a critical need for media literacy education (Sakhaei *et al*., 2024) [33]. Their research demonstrates that structured training—combining technical skills with critical analysis of digital tools—enables users to navigate technologies like ChatGPT more safely and effectively. Sabbar *et al*. (2023) [31] reveal how deeply media narratives influence technology perceptions - showing that public understanding of AI tools like ChatGPT becomes mediated through the same discursive frameworks that shape personal and collective identities. Without such frameworks, even tech-savvy users remain vulnerable to privacy violations and algorithmic manipulation. Users are concerned about privacy and data security issues when interacting with AI tools on social media platforms. These concerns reveal a fundamental tension in digital societies—where technological capabilities consistently outpace the development of critical safeguards and literacies needed for responsible adoption (Arsalani *et al*., 2022) [1]. AI systems frequently rely on extensive data collection and analysis, so they are concerned about the possible misuse or mishandling of their personal data. Arsalani *et al*. (2025) [2] demonstrate that media literacy training enables professionals to detect misinformation and mitigate digital risks—a capability equally critical for public interactions with AI, where opaque data practices demand heightened public vigilance.

Recent instances of data breaches and unauthorized access to sensitive information have fueled this concern. Users desire assurances that their data is secure and that AI tools, such as ChatGPT, adhere to strict privacy standards.

Concerns exist regarding the potential for unethical use of AI, especially in the context of social media manipulation and disinformation campaigns. These concerns reflect broader governance gaps identified in AI systems worldwide, where institutional fragmentation and competing priorities often undermine ethical frameworks (Soroori Sarabi, 2025) [40]. The proliferation of AI-generated deepfake videos and text-based content raises questions regarding the authenticity and dependability of online information. Users are concerned about the potential for AI tools to be weaponized for malicious intent, exacerbating problems associated with misinformation and online manipulation.

To address these concerns, public understanding emphasizes the importance of transparency in AI systems. Users want to know how AI tools like ChatGPT work, how they are trained, and what measures are in place to ensure accountability. OpenAI, the organization behind ChatGPT, has promoted transparency by releasing guidelines and seeking public input on AI development. However, additional work is required to build trust and ensure that AI systems develop with ethical considerations.

In conclusion, integrating chatbots and AI technologies has transformed users' productivity in various domains. Chatbots enhance professional and personal efficiency and effectiveness by automating repetitive tasks, providing personalized recommendations, and continuously learning from user interactions.

Public perception regarding AI tools like ChatGPT combines excitement and caution. Despite many individuals valuing AI's capabilities and advantages, there are concerns regarding the limitations, biases, and potential dangers associated with these tools. The public emphasizes the importance of ethical development, bias mitigation, transparency, and adherence to ethical standards in AI systems. Only through continuous improvement and collaboration can we harness the full potential of AI while mitigating its risks. Sharifipour Bgheshmi & Sharajsharifi (2025) demonstrate how this requires redefining sovereignty itself—where democratic legitimacy must balance corporate algorithmic power through hybrid governance models integrating states, civil society, and public interest frameworks.

On the other hand, the human-machine spectrum can be utilized to analyze the public's perception of artificial intelligence, chatbots, and GPT chats. What does this entail? This spectrum is often shaped by infrastructural conditions—where societies with robust technical frameworks tend toward machine-centric views, while those with systemic gaps anthropomorphize AI to compensate for unreliable systems (Mohammadi & Kharazmi, 2021) [24]. Analysis of collected user-generated content reveals that users' approaches to artificial intelligence range from human-centric or humanistic to machine-centric and mechanical. This spectrum reflects what Zamani *et al*. (2025) [48] term the 'productivity paradox'—where technologies promising efficiency gains simultaneously demand careful calibration to preserve irreplaceable human elements in work ecosystems. The human-centered approach to artificial intelligence envisions it as a human with human characteristics and attributes. On the other hand, a machine-centric approach to artificial intelligence, chatbots, and GPT chats takes a purely mechanical view of these tools and technologies.

Fig 2: Perspective of Public Perceptions on AI, Chatbots, and ChatGPT among Iranian Users of Twitter: Humanistic vs. Machinistic Approaches

The above image depicts the public's perception of Artificial Intelligence (AI). It is divided into two sections, each representing a unique perspective.

1. **Human Perspective:** This section highlights the positive aspects of AI from the perspective of humans. It emphasizes AI's capabilities, such as communication, teaching, and assistance in daily work routines. These attributes underscore the potential benefits of AI in enhancing human productivity and efficiency.
2. **Machine Perspective:** This section discusses the potential disadvantages of AI from a machine approach perspective. It highlights concerns such as possible bias, privacy concerns, and reliability. These obstacles underscore the need for thoughtful consideration and regulation in developing and deploying AI technologies.

Essentially, the diagram encapsulates the dichotomy of public opinion regarding artificial intelligence, reflecting its promising potential and associated risks. This underscores the importance of balanced and informed discussions on AI's societal role.

Human Perspective:

- **Communication:** AI has the ability to understand, interpret, and respond to human language through Natural Language Processing (NLP). This facilitates interactions between humans and machines that are more natural.
- **Teaching:** AI can provide personalized learning experiences in educational settings. It can adapt to individual learning styles and paces, enhancing the effectiveness of education.
- **Assistance with daily tasks:** AI can automate repetitive tasks, allowing humans to devote more time to complex and creative tasks. This can result in increased efficiency and job satisfaction.
- **Human Emotions:** AI has the potential to recognize and respond to human emotions, a field known as affective computing. This can enhance interactions between humans and machines, making them more natural and empathetic. In addition, it raises questions about manipulation and authenticity.
- **Cheating:** AI can facilitate cheating in a variety of fields. In academic fields, students may use AI to write essays or solve problems on their behalf. In professional settings, businesses might use AI to gain an unfair advantage.
- **Ideological Surveillance:** AI can be used for surveillance purposes, such as tracking the behavior and opinions of individuals. If misused, this can lead to a form of ideological control, infringing on people's privacy and freedom of thought.
- **Substitution for Human Labor:** Artificial intelligence has the potential to automate a variety of tasks currently performed by humans. While this can increase efficiency, it also raises concerns about job displacement and the future of work.
- **Monopolization:** Large tech companies frequently dominate AI's development and application. This may result in monopolization, in which a small number of entities control most AI resources and benefits.

Machine Perspective

- **Privacy Concerns:** To function effectively, AI systems typically require vast quantities of data. This information can occasionally be private or sensitive, raising concerns about privacy and data security.
- **Reliability:** Although AI systems can perform complex tasks, they can still make mistakes, especially in untrained situations. This raises questions about their reliability and the need for human oversight.
- **Error Reduction:** AI systems, especially those based on machine learning, can aid in reducing errors in a variety of fields. For instance, AI can help improve the accuracy of healthcare diagnoses and treatments. In manufacturing, AI can aid in defect detection and quality assurance.
- **Absence of Bias in Discussion:** Unlike humans, artificial intelligence does not have personal biases or emotions that can influence discussions or decisions. This may lead to more objective and fair results. However, it is essential to note that AI systems can still reflect the biases in their training data.
- **Problem Solving:** Artificial intelligence can solve complex issues for humans. For example, AI can optimize routes and schedules in logistics to improve efficiency. In the realm of research, AI can analyze large datasets and uncover novel insights.
- **Productivity:** By automating routine tasks, AI can significantly boost productivity. It enables humans to concentrate on more complex and creative tasks, increasing innovation and growth.

These aspects highlight the potential public comprehension and perceptions of artificial intelligence. It is essential to address these concerns to ensure that the development and use of artificial intelligence are ethical and beneficial to all.
Based on this, an analytical matrix can be used to explain the public's perception of artificial intelligence and its tools, such as chatbots and chat GPTs. Along the horizontal axis of this matrix are negative and positive attitudes toward artificial intelligence. On the other hand, the human-centric view is on one side of the spectrum, and the machine-centric view is on the other.

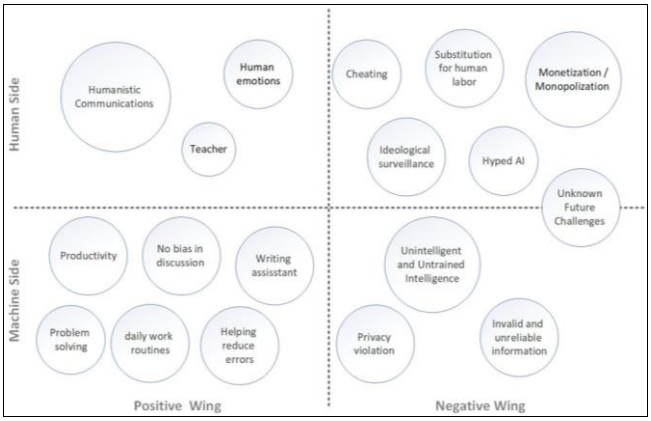

Fig 3: Analytical Matrix of Public Perceptions on AI, Chatbots, and ChatGPT among Iranian Users of Twitter: Humanistic vs. Machinistic / Negative vs. Positive Wings

This matrix has four sections: two perspectives or sides (human-machine spectrum) and two wings (positive-negative spectrum).

1. **Positive Humanistic section:** This section contains topics such as "Humanistic Communications," "Teacher," and "Human emotions." It appears to represent the human components of the context.
2. **Negative Humanistic Section:** This section highlights potential negative aspects or challenges, including "Cheating," "Substitution for Human Labor," "Monetization/Monopolization," "Ideological Surveillance," "Hyped AI," and "Unknown Future Challenges."
3. **Positive Machine section:** This section describes the advantages or positive aspects of machines or AI, including "Productivity," "Problem-Solving," "Daily Work Routines," "Helping Reduce Errors," "No Bias in Discussion," and "Writing Assistance."
4. **Negative Machine section:** This section emphasizes the negative outcomes such as "Intelligent and Unbiased Information," "Privacy violation," "Invalid

and unreliable information," and partly "Unknown Future Challenges."

Unknown future challenges are a theme that can be approached from both human and machine perspectives, albeit on the negative wing.

Conclusion

There are numerous Persian tweets about ChatGPT, one of the most popular and advanced artificial intelligence-based text generation systems. Users of this social network have discussed ChatGPT's features and functionality, as well as its advantages and disadvantages. We analyzed Iranian tweets on AI, chatbots, and especially ChatGPT to find themes and categories that portray Iranian Public perceptions of ChatGPT.

Numerous users applaud and endorse ChatGPT. They know it as a great development in artificial intelligence and text generation using deep neural networks and consider its capabilities very powerful and interesting. Many users are impressed by ChatGPT's capacity to generate stories and answer logical and pertinent questions. In addition, many users have mentioned ChatGPT as a beneficial and useful tool in various fields, such as scientific research, education, creativity, content production, and improving the user interface with customer service systems.

Nevertheless, some users have also expressed concerns about ChatGPT. They believe ChatGPT is not yet completely reliable and may provide incorrect or illogical responses. In addition, some users have voiced concern that ChatGPT could be used to generate fake news and spread misinformation. In their Persian comments on ChatGPT, numerous users have also mentioned the ethical and privacy concerns associated with its use. They are concerned about the misuse of ChatGPT to promote gender, racial, or religious discrimination, as well as its effects on social and interpersonal relationships.

In general, Persian perspectives on ChatGPT are diverse. Many users have lauded it as an impressive advancement in the field of artificial intelligence and text generation, while others have voiced concerns about its application. People's tweets regarding artificial intelligence reflect various attitudes, ideas, emotions, and perspectives. Some people are positive about artificial intelligence, praising its potential in solving complex problems and improving everyday life. Others, meanwhile, voice ethical, social, and economic concerns regarding the development of artificial intelligence.

Finally, the obstacles, barriers, and difficulties that Iranian users, particularly those who reside in Iran, face in gaining full access to ChatGPT are some of the most influential factors influencing the usage of Iranians and, consequently, their perceptions of it.

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