Positive Impact of Artificial Intelligence on Human Behaviour

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Abstract- Artificial intelligence is becoming a prominent transformative phenomenon that has an effect on every aspect of human life and conduct. To this end, the present research paper strives to explore the impact of AI on human behaviour from multiple dimensions. Through an interdisciplinary lens united by the point of view of psychology, sociology, and computer science, the article sheds light on the interrelations between AI technologies and human behaviour. The theoretical introduction to the analysis provided in the paper dwells upon such foundations of human behaviour as the social shaping of technology, affordances, and socio-technical systems theory. Subsequent sections within the paper take a more practical application-oriented perspective by exploring specific domains of behaviour change due to AI. In addition to these, the paper explores the psychological effects of human interaction with AI systems, including the impact on cognition, emotion, and identity. The research also reviews the ethical issues relating to behavioural modifications driven by AI, covering privacy challenges, autonomy concerns, and bias. More fundamentally, the research paper looks at AI's role in altering peoples' group behaviours at the societal level. This analysis delves into the implications of AI on cultural behaviours, political behaviours, and public opinion dynamics. This paper also reviews existing research on how AI is likely to exacerbate currently existing social inequalities. This paper helps shed light on the complex nature of AI-driven behavioural change by synthesizing findings from empirical studies, theoretical literature, and real-world trends. This paper also highlights the need for a balanced approach to AI-associated behavioural changes that considers its associated opportunities and threats.

Keywords: Artificial Intelligence, Decision-making, Human behaviour, Technology.

I. INTRODUCTION

Artificial intelligence (AI) has quickly become a powerful force that is transforming many aspects of our lives. From the way we work and communicate to how we make decisions and understand the world around us, AI is making a significant impact. Advances in machine learning, natural language processing, and robotics have allowed AI to permeate various industries, with the potential to revolutionize them, improve efficiency, and enhance our quality of life. However, the integration of AI also raises important questions about its profound and complex influence on human behaviour and society.

AI's impact on human behaviour is complex. This study explores this relationship. Understanding AI's effects on people matters. It impacts individuals, groups, and societies. Analysing AI-driven behavioural changes reveals insights. These insights show how AI shapes thoughts, actions, and interactions. This knowledge can inform decisions, policies, and frameworks. The goal is to leverage AI's benefits while reducing risks. (Davenport, T. H., 2018).

In recent years, the AI field is growing rapidly. AI touches many areas like health, money, transport, and entertainment. AI systems use huge data and complex codes. These systems are now part of daily life. They impact how we get information, services, and interact socially. From personalized streaming picks to self-driving cars, AI tech changes how we view the world. AI is powerful but raises issues. As AI grows, worries emerge about ethics, like privacy rights, unfairness, who's accountable, and decision-making freedom. Impacts on jobs and society are also concerns - AI automation may disrupt work, deepen inequalities, and change social structures fundamentally.

AI has big effects on how humans act. We should carefully study these effects. By learning from many fields like psychology, sociology, anthropology, and computer science, we can better grasp how AI changes

individual and group behaviours. Combining knowledge helps us understand the reasons behind these changes more fully.

Our study explores how AI impacts human actions.(Yang, Z et al,2021)We analyse research discussing AI's effects on decision-making, biases, social connections, and culture. Reviewing literature, theories, and data helps us understand AI's opportunities and challenges. This promotes responsible AI use, benefiting society. AI influences many human behaviours (Khosrowabadi et al., 2022). We break down the complex interplay between AI and people's choices. Our analysis looks at mental processes, social interactions, and cultural dynamics. Understanding AI's mechanisms opens new possibilities for deploying these technologies responsibly. We aim to deepen knowledge about AI's effects to inform future decision-making.

We will explore AI's impact on behaviour in the next parts. We will discuss decision-making, emotion recognition, social dynamics, and ethics. Unpacking these themes gives a complete view of AI and human behaviour. This insight is relevant for scholars, practitioners, policymakers, and the public.

II. REVIEW OF LITERATURE

1) This research found people do not always make rational choices. Their prospect theory showed we judge gains and losses differently. We avoid losses more than seeking equal gains. They identified mental shortcuts called heuristics we use for simplicity. The availability heuristic means memorable events seem more likely. The representativeness heuristic leads to judgments based on stereotypes. Their famous "Asian disease" scenario and "framing effect" study provided proof. Their discoveries challenged standard economic theories. Their work greatly influenced economics, psychology, and public policymaking. (Kahneman and Tversky,1979)

2) They researched about AI's ability to detect and respond to human emotions back in the era. They developed algorithms to interpret emotional cues like facial expressions, vocal tone, and physiological signals. Machine learning techniques helped train AI models to identify emotions accurately. Additionally, they explored how AI systems could adapt responses based on detected emotions. The goal was more empathetic human-computer interactions. This has implications for healthcare, education, and customer service, where understanding emotions is key for effective communication and user experience. (Picard,2001)

3) They shed light on the significant influence of AI algorithms on user behaviour within social media platform. AI algorithms utilized by social platforms like Facebook and Twitter determine what content appears in users' feeds. They consider factors such as past engagement, preferences, and perceived relevance. By customizing content for each person, these algorithms contribute to echo chambers and filter bubbles. Users mainly see information aligning with their existing beliefs and interests. This selective exposure reinforces biases and polarizes viewpoints, potentially spreading misinformation and amplifying extreme ideologies. Grasping how AI algorithms operate is key to understanding online discourse dynamics and addressing information diversity, echo chambers, and digital polarization issues. (Bessi and Ferrara,2016)

4) In this study researchers are exploring how AI algorithms used on social media impact user behaviour. These algorithms use machine learning to analyse vast user data and personalize the content they see. By prioritizing posts and ads tailored to individual preferences, these algorithms can create echo chambers and filter bubbles. This isolates users within information bubbles, reinforcing existing beliefs and limiting exposure to different perspectives. As a result, opinions become more polarized, making constructive discourse difficult and potentially contributing to the spread of misinformation. Understanding these impacts is crucial. (Frey and Osborne,2017)

5) They researched and examined the impact of social media-like algorithmic decision-making systems on user behaviour. This study looks at how such algorithms based on statistics and machine learning determine the type of content users can find or interact with online. The authors'

purpose is to show how these automated recommendation services select, prioritize, and tailor information for their users thus shaping their online experiences. They also draw attention to the risk associated to personalization via algorithms, such as creating echo chambers and filter bubbles that hinder exposure to diverse opinions which in turn intensifies polarization. Additionally, Fong et al explore ethical and societal implications of algorithmic decision-making, bringing out transparency, accountability as well as literate use of algorithms for curbing negative outcomes while facilitating informed participation in cyber space. The research further suggests that there is a need for critical scrutiny as well as regulation of these mechanisms so that they benefit public interest broadly speaking. (Fong et al.,2003)

6) The research addresses AI algorithms' influence on user behaviour. The investigation explores how these algorithms that are based on intricate computational models manipulate what people come across in such online sites. It is shown by Griffiths how AI algorithms use customer interactions, taste and past data to bring up personalized content for users' feeds and enhance ranks of posts on their walls. However, through these customized content delivery systems, the algorithms end up unwittingly encouraging echo chambers and filter bubbles as users are predominantly exposed to information consistent with their pre-existing beliefs and interests. Moreover, Griffiths discusses psychological mechanisms of user response to algorithmically curated content like confirmation biases and selective exposures among others. Therefore, by exploring the complex relationship between AI algorithms and human behaviour, Griffith's scholarly work contributes towards debates concerning the public consequences of algorithmic decision-making which shapes web discussions as well as information consumption habits. (Griffiths,2005)

7) In this research, he explores the way AI algorithms analyse users' data and use it to personalize their recommendations, which is done through analysing such things as browsing history, past interactions, and preferences. Echo chambers and filter bubbles are common phenomena in this case. Ethical concerns regarding algorithmic decision-making are liable to be involved here. The complex interplay between user behaviour and AI algorithms is not understood by many people. This calls for responsible algorithmic governance to ensure information diversity is maintained and positive digital dialogue enhanced. (Lyon,2007)

8) They looked on how these algorithms interplay with different contents users come across and deal with on the internet. In this light, Barocas and Selbst explain how AI algorithms analyse user data like interaction history, interests, and demographics to offer content recommendations that are customized and prioritize posts in feeds of users. This leads to personalized content delivery that unknowingly helps foster echo chambers and filter bubbles where people are exposed mostly to information that agrees with what they already believe in. Moreover, Barocas and Selbst critically evaluate ethical and social implications associated with algorithmic decision-making processes such as fairness, accountability, transparency etc. Among other things, their findings stress the importance of responsible algorithmic governance for preventing harms by ensuring that there is information diversity while also advocating for equity in online discussions. (Barocas and Selbst,2016)

9) Their research closely examines how these advanced algorithms, using complex computational methods, shape the content that users encounter and engage with online. They explain how AI algorithms analyse vast amounts of user data, including their interactions, preferences, and demographics, to personalize content recommendations and prioritize posts in users' feeds. This personalized content delivery inadvertently contributes to the creation of echo chambers and filter bubbles, where users are primarily exposed to information that aligns with their existing beliefs and interests. Furthermore, they explored the psychological mechanisms that influence how users respond to algorithmically curated content, such as the impact of cognitive

biases and information processing shortcuts. By shedding light on the intricate relationship between AI algorithms and user behaviour, their research provides valuable insights into the evolving digital landscape and underscores its complexities. (Li and Karahanna,2015)

10) Their work was all about how complex computer codes influence what people see- online. They explained that these codes look at people's history, like what they click on and scroll past. The- codes then give e-ach user a custom set of posts and updates. This can accide-ntally make it so people only see stuff that fits their current views. The researchers studied why people react how they do to the custom fee-ds the codes create. Things like mental shortcuts play a role here. Overall, their findings say we- need to be very careful with coding feeds. If not done- properly, custom feeds can narrow what ideas people are exposed to online. Their work calls for coders and rule makers to address this risk. (Pennycook and Rand,2018)

11) Goodfellow and others invented a new way to train neural networks. Two networks competed: one created sample, the other identified real data. The creator aimed to fool the spotter into thinking fakes were real. Meanwhile, the spotter tried to get better at knowing what was real. Through this back and forth, both improved until the creator made very realistic data. This approach has many uses like making images, combining text and pictures, and creating more training data. Goodfellow's work pushed deep learning forward by helping understand and ge-nerate complex data. (Goodfellow et al.,2014)

12) They looked at how cognitive enhancement methods could help or hurt people. They studied drugs, brain stimulation, and genetic changes. Sandberg and Savulescu thought about the ethics of using these technologies. They talked about safety, fairness, autonomy, and impacts on society. They said cognitive enhancements must be available to eve-ryone. We cannot let them make inequality worse or give some people unfair advantages. Their research warned about long-term effects on thinking and behaviour. Sandberg and Savulescu said we need careful ethics discussions and rules for cognitive enhancements. Their work helps us understand the ethics and responsible use- of cognitive enhancement technologies. (Sandberg and Savulescu,2011)

13) The re-searchers concentrated on developing and enhancing reinforcement learning methods, especially deep reinforcement learning (DRL). This combines deep learning with reinforcement learning principles. They explored DRL's capabilities in various tasks like game playing, robotic control, and natural language processing. They highlighted DRL's potential to achieve or surpass human level performance in specific areas, showcasing its versatility and effectiveness in learning complex tasks from raw sensory input. Additionally, their research addressed challenges such as sample efficiency, generalization, and safety when deploying DRL systems. Their work significantly advanced reinforcement learning, paving the way for more sophisticated AI systems capable of autonomous learning and decision making. (Amodei et al.,2016)

14) She examined how our growing dependence on technology for talking and socializing changes how we connect with others. Turkle pointed out worries about potential downsides of interacting through tech, like weaker face-to-face skills, less empathy, and feeling disconnected from real relationships. She stressed finding balance between online and offline interactions and using tech more mindfully to nurture meaningful human bonds. Turkle's research sparked discussions about psychology and society impacts of tech use, prompting people to think harder about building healthier relationships in the digital world. (Turkle,2011)

15) Brynjolfsson and others studied "digitalization" how technology like automation and data analytics impact industries and economies. Their research explored how IT advancements change business practices, boost efficiency, and drive innovation. The relationship between investing in IT and productivity gains was examined, showcasing digital tech's potential benefits and drawbacks for jobs and income distribution. Their

work also addressed digitalization's challenges and opportunities, like adapting workforces and policy interventions for inclusive growth. Brynjolfsson et al. offered valuable insights into IT's transformative power on businesses, economies, and society overall. (Brynjolfsson et al.,2011)

16) Awad et al. used a big survey. They called it the Moral Machine. It showed people many difficult situations involving self-driving cars. In some scenarios, the car had to choose between different actions. These actions affected passengers and pedestrians differently. The study wanted to understand what people think is right. It looked at how people's views differ across cultures and groups. The researchers studied the survey results carefully. They found patterns in how people responded. Their findings are very important for self-driving car makers and regulators. It shows that ethical concerns must be addressed. This will help the public trust and accept self-driving cars. (Awad et al.,2018)

17) Manyika et al. studied how using robots could change jobs, workers, and skills needed. They looked at robots affecting both simple jobs and highly skilled work. The study also explored effects on income levels, economic growth, and societal well-being. Additionally, they examined policies to help worke-rs move to an automated workforce. This included spending on education and job retraining programs. Manyika's findings stressed preparing for challenges like job losses and skill gaps. But they also highlighted potential upsides: higher output and new innovations fuelled by robots worldwide. (Manyika et al.,2017)

18) Matthew Gentzkow and Jesse Shapiro conducted research on media bias and its effects. They investigated whether news outlets skew public opinion by selective reporting or framing stories. The scholars used unique economic methods to measure bias and its impact on audience views and actions. Factors like ownership, competition, and viewer demographics were analysed for influencing bias. They studied how media incentives and decisions relate to bias. Furthermore, they explored consequences of bias like political polarization, public talk, and democratic government issues. By explaining mechanisms behind bias and societal impacts, Gentzkow and Shapiro provided valuable insights on media ecosystems and fair reporting challenges. (Gentzkow and Shapiro,2011)

19) Their research examined how advancements in tech, particularly AI and machine learning, transformed jobs, skill needs, and employment trends. Autor and colleagues analysed data to grasp automation's displacement of human performed tasks and demand for new skill sets. Additionally, they probed automation's implications for income inequality, job polarization, and economic mobility. Moreover, their work explored policy measures addressing automation challenges, like investing in education and training programs. By shedding light on the labour market's evolving dynamics amid tech change, Autor et al.'s study contributed to talks on ensuring inclusive growth and mitigating automation's potential negative worker effects. (Autor et al.,2019)

20) The team studied a creative network that made new, nice artworks. This network was not like usual ones that make real images. Instead, it aimed to create art that was fresh and humans enjoyed. Elgammal et al. explored how this network could make different art styles by itself. This challenged the idea that only humans can be creative. The network learned from huge datasets of art. It then produced art that looked like humanmade pieces. Elgammal et al.'s work pushed AI creativity further. It also started talks about AI making art and what human creativity means. (Elgammal et al.,2017)

III. RESULT

People are changing the way they act because of Artificial Intelligence's big effect. AI tech makes digital tools better, giving tailored experiences with recommendation tools and virtual helpers. These customized tools keep people happy and make them want to use AI more. People now expect tech made

just for them.(Schultze, U., & Orlikowski, W. J.,2004).

AI is also shaking up healthcare a bunch. It has made people more likely to go to the doctor because it helps with diagnosis, treatment plans, and predicting health issues. AI makes healthcare better and more accurate, so people trust doctors and nurses more.

In classrooms, smart tech enables customized lessons for each pupil's learning style. Guiding lifelong education, it bolsters crucial skills growth and readies students for our digital world's rapid shifts. Also, AI optimizes business operations, sparks new startups and jobs. Fostering innovation and flexibility mindsets, AI drives economic success and boosts adaptability/creativity. AI helps socie-ties, too. It aids disaster relief efforts and social programs. The tech promotes diversity by decreasing bias in decision making.

AI fixes also assist society through disaster aid, environmental safety, and welfare, fostering togetherness, empathy, and responsibility within groups. Leveraging AI's positive effects across areas can realize society's full potential for a more linked, fair, and sustainable future for all. Through ethical deployment and thoughtful use, AI proves a potent asset driving progress, enhancing quality of life worldwide. With comprehension, ability to leverage transformative AI realizes an inclusive, prosperous, well-being centric future.

In sum, AI's good effects on human behaviour show it can create a better world for all. If used responsibly with ethics in mind, AI can change society for the better (Moreira, F.et al, 2019). It connects people and makes life fairer and greener globally.

IV. DISCUSSION

AI impacts our lives in cool ways. It gives custom stuff people like. AI sees the things you do. It knows what you would want next. AI gets what you want. Maybe a movie or new shoes. You get exactly what fits you. This makes people rely on AI often. They use AI for more tasks and fun every day. Also, artificial intelligence transformed teaching by giving adjustable study websites and smart tutoring tools. These AI led education things help students of all ages learn new talents and info on their own. They build a growth mindset and love of lifelong learning. By changing what students read and how fast they go, AI encourages joining the learning. Ultimately, it shapes habits of self-improvement and skill growth.

AI has greatly helped healthcare in caring for patients, finding illnesses, and treating them. Computers learn by studying medical records. They help doctors spot diseases, plan care, and predict how patients will do. When diseases are found early and treatments are tailored, people feel more able to take care of their health. AI also powers telemedicine apps that make it easy to get healthcare, even from far away or in emergencies. These tools encourage people to engage with health services and resources more.AI enhances efficiency too. It makes work processes better. Data analysis lets AI aid decisions. AI shapes actions to boost workplace productivity and adaptability. AI fosters innovation and new ventures(Tanev et al, (2022). These impacts conduct towards resourcefulness, resilience, entrepreneurial efforts. The result is economic growth and societal advancement.

Also, AI aids society. It tackles difficult problems like disasters, the environment, and people's needs. AI tech helps respond faster to emergencies, protects nature better, and supports social aid programs. Plus, AI boosts fairness and togetherness by reducing bias in decisions, bringing people closer through teamwork, empathy, and responsible actions.AI changes how people act and think. It gives tailored experiences, makes education and health better. AI pushes new ideas and business growth.(Aghion, P., Jones, B. F., & Jones, C. I. (2017). It helps society in good ways. When we understand AI's power to transform, society moves toward a future of inclusion, success, and wellness for everyone. Using AI responsibly and ethically, it can keep making life better across the world.

V. IMPLICATION

Artificial Intelligence or AI is very helpful technology with big positives for human lives. One key gain of AI is automation, making work smooth and fast in many jobs. By automating boring, repeat tasks, AI lets people focus on hard, creative work instead. This raises output and gives more job pride and growth too. AI also powers smart suggestion systems used by Netflix, Amazon, Spotify. These analyse huge data to give customized user experiences. The systems learn user likes, showing relevant stuff matched to needs and interests. Tailored experiences increase user

happiness and interest, shaping good behaviour patterns.

AI is crucial for healthcare progress and better patient outcomes. Machine learning tools examine medical data, spotting patterns early. This enables faster disease detection and better treatment planning. AI diagnostic aids allow doctors to accurately diagnose and quickly decide, improving patient care. Moreover, AI assistive technologies boost quality of life for disabled people. For instance, AI prosthetics and exoskeletons help mobility impaired individuals regain independence, fully participating in society. Such advancements enhance physical well-being. They also foster positive attitudes about inclusivity and empathy(Pinto-Coelho,et al,2023).

AI positively impacts education through smart tutoring systems. These use algorithms to adapt lesson materials for individuals. By giving customized feedback and help, they boost student interest, drive, and achievements. Moreover, AI chatbots and virtual assistants offer 24/7 education aid. They enable independent learning by allowing constant access to study resources. AI enhances educational methods through personalization and autonomous resource availability.

In short, AI technology impacts people's actions positively. It automates tasks, making things easier and customized to users' needs. Healthcare sees new developments thanks to AI. Education benefits too, with personalized learning approaches. AI streamlines productivity and enhances experiences overall. However, society must thoughtfully guide AI usage to prevent harm despite these immense advantages. At its core, though, AI remains key for refining human behaviours going forward.

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REFERENCE

[1] "Thinking, Fast and Slow" by Daniel Kahneman: https://www.goodreads.com/en/book/show/11468377

[2] Learning Analytics and Educational Data Mining: Towards Communication and Collaboration" by George Siemens and Ryan S. J. d. Baker: https://www.researchgate.net/publication/254462827_Learning_analytics_and_educational_data_mining_Towards_communication_and_collaboration

[3] Griffiths, M. (2005). A 'components' model of addiction within a biopsychosocial framework: https://psycnet.apa.org/record/2005-08477-003

[4] Frey and Osborne (2017) article: https://www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf

[5] Prospect Theory: An Analysis of Decision under Risk: https://www.jstor.org/stable/1914185

[6] Relation between AI and human: https://www.economist.com/business/2023/02/02/the-relationship-between-ai-and-humans?utm_medium=cpc.adword.pd&utm_source=google&utm_campaign=a.io_apac_generic&utm_content=conversion.non-brand.anonymous.apac_in_en_generic_prosp_non-brand_google_subs_pmax_other_na_na&gad_source=1&gclid=Cj0KCQjw2PSvBhDjARIsAKc2cgOuRc0qWCeZzZNjqW0xK8j994WTBqFEj1uxc-cz7ubZAvMZqgzd-uMaAh89EALw_wcB&gclsrc=aw.ds

[7] Khosrowabadi, N., Hoberg, K., & Imdahl, C. (2022). Evaluating human behaviour in response to AI recommendations for judgemental forecasting. *European Journal of Operational Research*, *303*(3), 1151-1167.

[8] Davenport, T. H. (2018). *The AI advantage: How to put the artificial intelligence revolution to work*. mit Press.

[9] Hu, Q., Lu, Y., Pan, Z., Gong, Y., & Yang, Z. (2021). Can AI artifacts influence human cognition? The effects of artificial autonomy in intelligent personal assistants. *International Journal of Information Management*, *56*, 102250.

[10] Schultze, U., & Orlikowski, W. J. (2004). A practice perspective on technology-mediated network relations: The use of Internet-based self-serve technologies. *Information systems research*, *15*(1), 87-106.

[11] Au-Yong-Oliveira, M., Canastro, D., Oliveira, J., Tomás, J., Amorim, S., & Moreira, F. (2019). The role of AI and automation on the future of jobs and the opportunity to change society. In *New Knowledge in Information Systems and Technologies: Volume 3* (pp. 348-357). Springer International Publishing.

[12] Aghion, P., Jones, B. F., & Jones, C. I. (2017). *Artificial intelligence and economic growth* (Vol. 23928). Cambridge, MA: National Bureau of Economic Research.

[13] Tanev, S., Bailetti, T., Keen, C., & Hudson, D. (2022). The Potential of AI to Enhance the Value Propositions of New Companies Committed to Scale Early and Rapidly. In *Artificial Intelligence and Innovation Management* (pp. 185-213).

[14] Pinto-Coelho, L., Laska-Leśniewicz, A., Pereira, E. T., & Sztobryn-Giercuszkiewicz, J. (2023). Inclusion and adaptation beyond disability: Using virtual reality to foster empathy. *Medycyna Pracy*, *74*(1), 171-185.