

# American Public's Perception about Artificial Intelligence in Society

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## Introduction

Artificial Intelligence (AI) is spreading across society into some of the most important aspects of people's lives, including daily usage and their jobs. As Americans watch this spread increase across the country, many are wondering about the impact of artificial intelligence. Some are worried while others are excited to see what AI can do in the future. The growth of artificial intelligence and its impact could be a net positive for the future but there has been little public opinion on the topic so far. It is vital to understand the public opinion on AI as public sentiments have shaped many policy debates, including those about immigration and climate change in the past (Zhang and Dafoe, 2019).

The talk about artificial intelligence has been growing over the past few years and has recently started to pick up in the national media. Patterns of optimism and pessimism wane throughout the years when there mentions of AI, particularly of the worry of the loss of AI or AI sentience through connected networks. But there is also evidence of hope in the fields of healthcare and education from analyses of various text corpora over a lengthy time span (Fast and Horvitz, 2017).

There is also a sense of a conundrum when discussing artificial intelligence in that systems using artificial intelligence match or surpass human level performance in more and more domains, leveraging rapid advances in other technologies. Yet measured productivity growth has declined by half over the past decade, and income growth has stagnated since the late 1990s for a majority of Ameri-

cans. Four explanations contribute to this paradox: false hopes, mismanagement, redistribution, and implementation lags (Brynjolfsson et al., 2018). The realized potential of AI has not yet been fully realized and the required skills to handle this new technology has not developed which warps how we perceive AI either as a threat or a tool.

## Aims of the study

The aims of this study is to investigate the factors influencing an individual's likelihood of supporting artificial intelligence development in society. Specifically, we sought whether or not minorities would be more negative towards AI given their socio-economic background and potential distrust of this new technology. We wanted to see if White respondents would have a greater pull towards supporting AI or if all respondents regardless of race answered similarly. Additionally, we also wanted to investigate the relationship between people's awareness of AI usage in daily life and their likelihood to support the technology. If there is a correlation between these two variables, perhaps it can shed some insight into how people really feel about AI through their understanding of it.

## Design

The survey was created on Qualtrics and primarily consisted of 23 multiple-choice questions excluding demographics questions. This survey was broken up into three sections. The first section primarily focused on basic demographic information related to income, education level, and employment status. Note that we did not ask ques-

tions about their gender, age, and race because participants' ID contained that information which we asked for in the beginning of the survey. The second section contained information about what AI is and what is used for. This was followed by asking about participant's thoughts and feelings about AI development and if they were excited or concerned about its potential usage. The third section consisted six questions related to awareness of AI usage in daily life and if they understood how AI was properly used (e.g. product recommendations or email sorting out spam).

## Methods

### Participants

Demographics of the participants were recorded through the survey and shall be discussed here. 25 participants (12 female, 13 male) partook in the survey. The mean age of participants was 34.96. The majority of the sample was Caucasian ( $n = 16$ ), with the rest of the sample identifying as Asian ( $n = 4$ ), African-American ( $n = 2$ ), or Mixed Race ( $n = 3$ ). A majority of the sample also reported being highly educated, with 22 participants having education beyond an associate's degree in a 2-year college. Most participants reported that their annual income was around 30,000 - 70,000 in US dollars ( $n = 14$ ). The final demographic of interest was their prior computer programming experience in which 19 reported that they had no previous experience and 6 reported that they did have some prior experience in programming.

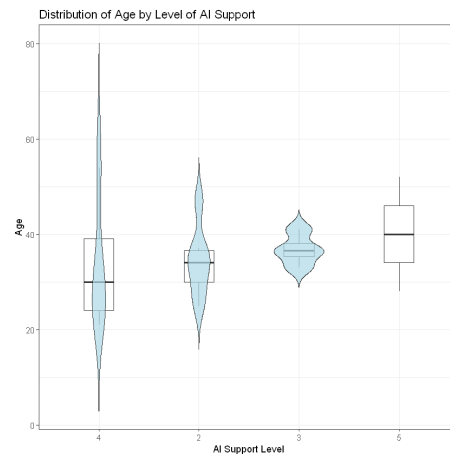
### Procedure

The only prescreening that was done was to screen for participants from the United States for generalizability purposes. An posting for the study was uploaded to Prolific. Only participants who reported through Prolific that they were from the U.S. could see this posting. The posting included basic information about the content of the survey, the estimated time to take the survey (9 minutes),

and the amount of compensation they would receive for completion of the survey. Participants who were interested clicked a hyperlink to take them to the survey which was hosted on Qualtrics. The survey content was once again described, and participants agreed to continue the survey. While questions were encouraged to be answered, participants had the option to not answer any of the questions. Upon completing the survey, a final page displayed a thank you message along with a completion code. Participants took this completion code and pasted it into their Prolific accounts to receive compensation. Participants received compensation of one dollar and eighty cents which equated to an average hourly rate of about twelve dollars an hour.

## Results

The relationship between participants' age and its interaction with their computer programming experience and their support for AI development is not significant, ( $df=1$ ;  $N=24$ ) = 33.651,  $p = 0.919$ . We can see that age and its interaction with computer programming experience does not have a significant impact on whether or not participants are more likely to support AI.

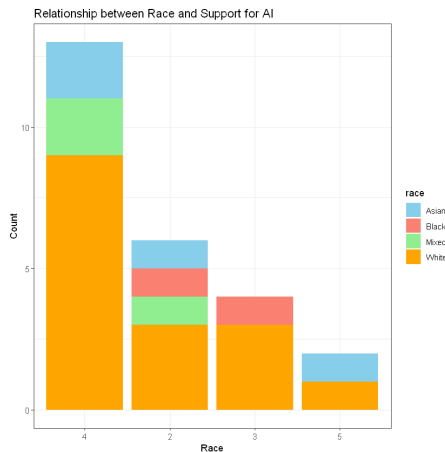


**Figure 1**

### *Support for AI among Participants' ages*

We also found that race and education both did not have a significant effect on participants' likeli-

hood to support AI, ( $df=1$ ;  $N=24$ ) = 33.651,  $p = 0.244$  and ( $df=1$ ;  $N=24$ ) = 33.651,  $p = 0.27$ . Additionally, we also found that previous computer programming experience did not play a role in determining participants' attitudes towards artificial intelligence, ( $df=1$ ;  $N=24$ ) = 33.651,  $p = 0.70$ .



**Figure 2**

### *Support for AI among Participants' Ethnicities*

Another important aspect to look at is the relationship between participants' support for AI and their thoughts on if AI can have a positive impact 10 years from now. We found there is a significant relationship between participant's likelihood to support AI development and their agreement on whether AI can be a positive influence in 10 years, ( $df=1$ ;  $N=24$ ) = 33.651,  $p < .001$ .

The correlation between higher support for AI and higher correctness of the awareness questions come to fruition. There was one participant who answered somewhat support for AI development and answered that he has heard of AI before, yet answered four of the six awareness questions incorrectly.

## **Discussion**

This study showed us that the factors of participants' likelihood of supporting AI development did not mainly come from their demographic information but rather came from their preconceived

notion of the impact of AI in the future. We saw from the survey that participants who are most excited for AI is because of the potential of artificial intelligence in helping people do routine tasks. On the other hand, the top reason for concern is privacy surveillance and the distrust of people using AI for beneficial purposes, which align with responses from previous surveys done before. Regarding previous computer programming experience and its connection to overall support for AI, we saw that there was no any meaningful relationship between the two which is interesting. One would think that people with prior computer programming experience would be more likely to express support for artificial intelligence development.

Lastly, our hypothesis about awareness of AI and greater likelihood to support AI development was correct. A majority of participants ( $n = 24$ ) answered 5 out of the 6 questions correctly indicating there is some positive correlation. Interestingly, there is one outlier respondent as he answered 2 questions correctly, yet expressed some support for AI development. Perhaps this can be treated as an outlier in this study.

## **Limitations and Future Directions**

This study has its limitations regarding its scope of the population and its ability to generalize to the broader American public. With only 25 participants in total and a majority being of Caucasian background, these results can be seen as biased because of extremely small and non-diverse sample size. Additionally, another limitation of this study is the use of self-reported questions which can have variance in its responses or have some questions not even answered at all resulting in inaccuracies and high bias.

Future directions should consider incorporating a larger and more diverse sample to capture more general sense of the American public. Moreover, future studies should also include questions about expert opinions as previous studies have shown that expert opinion can sway public thought on a

complex topic (Neri and Cozman, 2020). The ability to amplify negative messages about artificial intelligence can trigger many indirect effects in society and have many consequences which should be taken into account.

## Conclusion

In conclusion, while the present study did not find any significant relationships between increased likelihood for artificial intelligence and demographic factors, the observed trends are to a degree consistent with previous research and the hypotheses of this study. The limitations of a small, non-diverse sample size and lack of control over participant responses should be considered when interpreting these findings. Future studies with larger samples from other counties and more inclusive questions are needed to further investigate the potential relationship between higher likelihood to support AI development and demographic and socio-economic factors. Such research could contribute to the development of new artificial intelligence technology in specific fields such

as education and healthcare that could benefit society long term and possibly convince pessimists that AI is not a threat to one's livelihood but rather a tool to help them innovate and create.

## References

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