Study of AI and its effects on people

Evaluating the psychological effects of AI exposure. Risk assessment based on survey data

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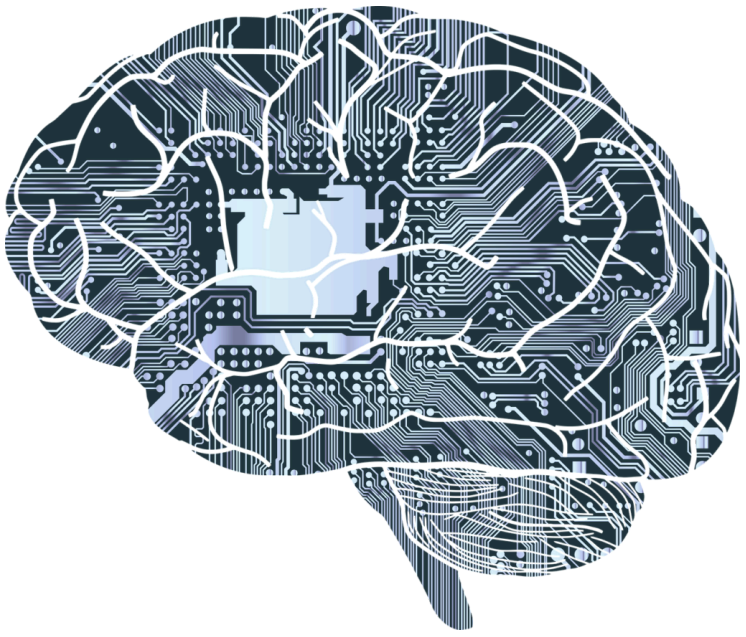


Abstract

Background:

The growing integration of artificial intelligence (AI) into daily life has prompted important questions about its influence on human behavior, autonomy, and mental health.

Objective:

This study aims to examine the psychological effects of frequent AI use, with particular attention to its impact on individual decision-making, emotional resilience, problem-solving capabilities, and interpersonal relationships. Special focus is given to identifying potential psychological risk factors associated with AI dependency.

Methods:

Participants from diverse demographic backgrounds completed a structured questionnaire based on Ryff's model of psychological well-being. The survey also included self-reported behavioral patterns and detailed accounts of participants' interactions with AI tools.

Results:

Frequent users of AI technologies reported diminished confidence in their ability to solve problems independently and demonstrated increased reliance on algorithmic feedback. Additionally, many participants exhibited reduced emotional autonomy and a tendency to second-guess their own knowledge and judgment.

Conclusion:

The findings suggest a measurable association between high AI usage and reduced psychological autonomy, including signs of increased self-doubt. Based on these patterns, we developed a predictive model capable of identifying individuals who may be at risk of developing mental health concerns due to overreliance on AI, with the goal of supporting early psychological intervention

Introduction

Artificial intelligence (AI) has become a regular part of modern life, showing up in everything from online searches and virtual assistants to navigation apps and content recommendations. What was once a futuristic idea is now something many people interact with on a daily basis, often without even realizing it.

One area that hasn't received enough attention is the psychological impact of frequent AI use. While AI tools can help us be more efficient and informed, relying on them too heavily might also come with hidden costs. People may start to feel less confident in solving problems without

So far, most research about AI has focused on technology itself—how it works, how to improve it, and how it's changing industries. What's missing is a closer look at how AI is affecting individuals from a psychological and emotional perspective. There's a clear need for more data-driven studies that explore this angle, especially ones that consider the mental health risks linked to heavy AI use.

This study sets out to explore that connection. By collecting self-reported data on people's AI usage and how they feel about their own decision-making, emotional independence, and relationships, we aim to identify early signs of psychological strain. Our approach is based on Ryff's model of psychological well-being, which offers a useful framework for understanding how people experience their lives. The goal is to spot patterns that could help identify when someone may be at risk of over-relying on AI in ways that could affect their mental health.

Methods

Demography

We received survey responses from people around the world, covering a wide range of ages, educational backgrounds, and professions. The survey was divided into two main parts. The first section focused on gathering personal and contextual information about each participant's daily life and environment. The second part explored their perception and use of AI, which helped us build a risk assessment based on their responses.

Risk assessment and analysis

The questionnaire consist on questions were thoughtfully developed to align with Carol Ryff's six dimensions of psychological well-being:

Dimension	Description
Self-Acceptance	Evaluating how one feels about oneself.
Positive Relations	Ability to maintain close interpersonal relationships.
Autonomy	Being independent and capable of resisting social pressures.
Environmental Mastery	Ability to manage life and the world around us.
Purpose in Life	Having goals and a sense of direction.

Each participant's responses were scored based on Ryff's well-being framework. Scores were grouped by dimension to assess strengths and vulnerabilities in psychological health. Special attention was given to areas like autonomy and self-acceptance, as these were considered especially relevant to the impact of AI on personal decision-making and self-confidence.

The questions, their dimension and their justification:

Question	Psychological Well-Being Dimension	Justification
How often do you use AI tools?	Autonomy / Environmental Mastery	Frequency of use reflects decision-making autonomy and the ability to manage available resources.
What do you primarily use AI tools for?	Purpose in Life / Personal Growth	The reason for use reflects goals, motivation, and personal development.
Do you feel more productive when using AI tools?	Environmental Mastery	Feeling productive suggests a sense of control and effectiveness in managing one's environment.
Do you believe overuse of AI can negatively affect mental health or problem-solving skills?	Personal Growth / Autonomy	Questioning overuse implies self-reflection and awareness of one's personal development.
Do you know someone that uses AI as a conversational partner?	Positive Relations with Others	Relates to how others use technology for interpersonal connection.
I feel more confident in solving problems on my own without AI assistance.	Autonomy / Environmental Mastery	Evaluates independence and confidence in one's own abilities.
Using AI makes me feel mentally lazy.	Personal Growth / Autonomy	Suggests a perception of stagnation or technological dependence.
Relying on AI helps reduce my stress.	Self-Acceptance / Environmental Mastery	Stress reduction reflects emotional management and functional control over one's surroundings.
AI tools make me second-guess my own knowledge or decisions.	Autonomy / Self-Acceptance	Reflects internal questioning and one's relationship with personal judgment.
It is recommendable for people to use AI as a conversational partner.	Positive Relations with Others / Autonomy	Reflects opinion on AI in relational contexts and the freedom to choose how it's used.

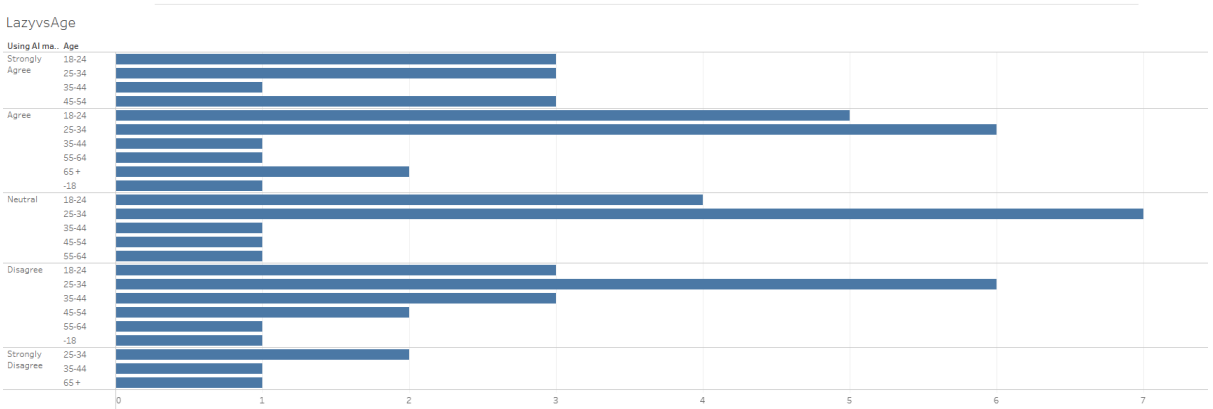
Each dimension was covered by 2–3 targeted questions. All items were rated on a 5-point Likert scale, ranging from "Strongly Disagree" (1) to "Strongly Agree" (5). The goal was to keep the survey concise while still capturing a meaningful snapshot of participants' mental and emotional state, especially in relation to their engagement with AI tools.

Results

Statistics

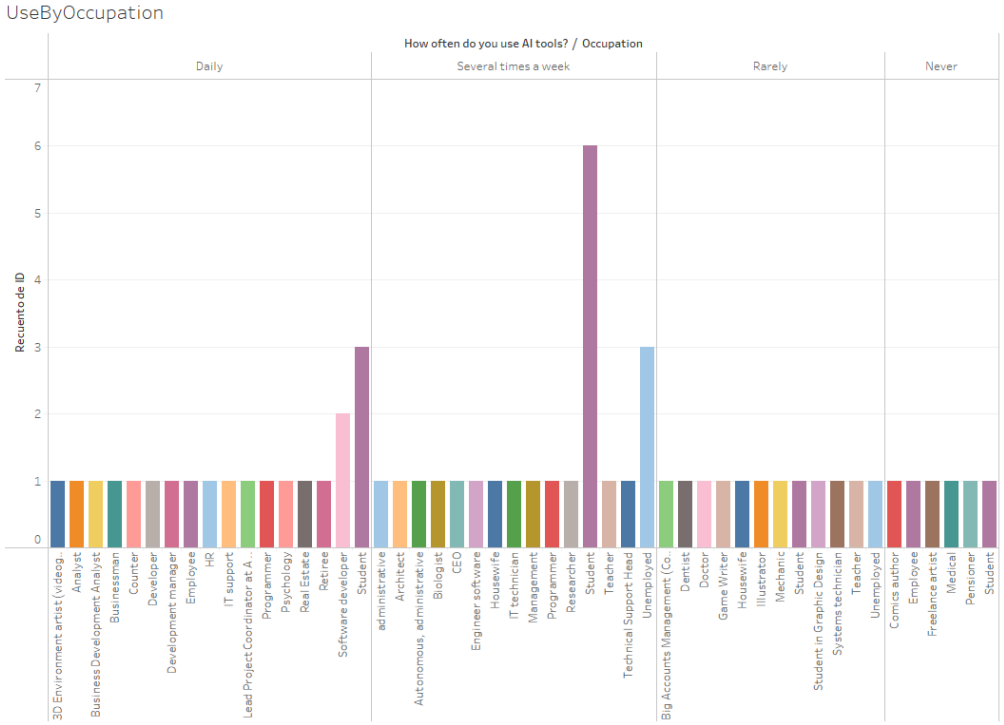
Here are some charts that are interesting to understand how the population feels about IA.

- How the age effects on detecting more laziness on working with AI



https://public.tableau.com/app/profile/marc.mirapeix/viz/AI-behaviour/LazyvsAge

- How occupation affects how often the people use AI



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- Use of the AI as a Conversational Partner taking into account the EducationLevel

	Education Level				
Its recomendable for people to use A..	Other	Bachelor's Degree	High School	Master's Degree	PhD or higher
Agree	1	3	2	1	
Neutral	2	10	3	4	1
Disagree	2	7	1	2	1
Strongly Disagree	1	13		6	

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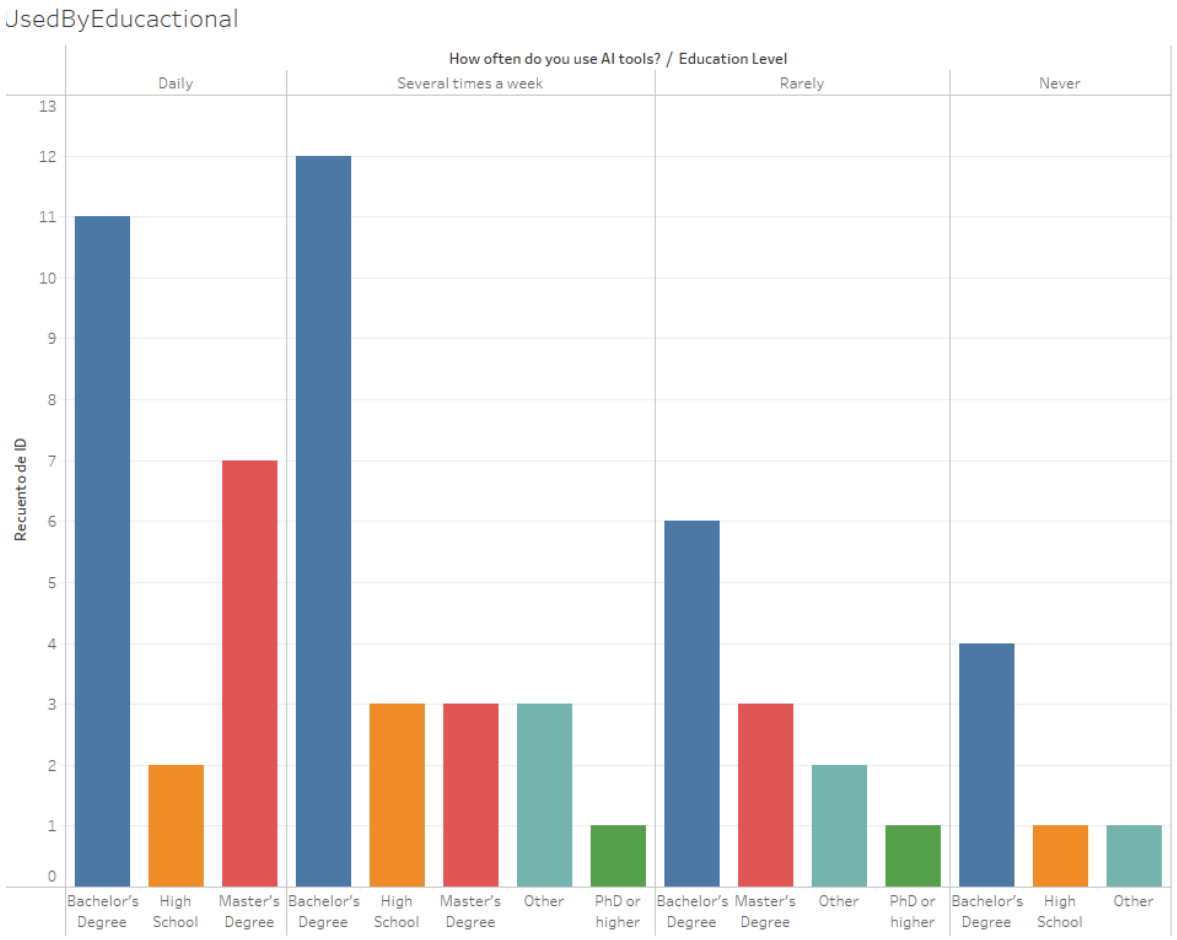
- Used taking into account educational level



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Hypothesis

- Frequency of users of AI tools are more likely to report less stress

Null hypothesis (Ho): There is no difference in self-reported less stress between frequent and infrequent users

Alternative hypothesis (H1): Frequent users report significantly higher less stress.

T-statistic: 3.8639

One-tailed p-value: 0.0003

Confidence Level: 99.97%

With this confidence level I can say that AI can help reduce stress.

Risk computation

As we explained before we use the Well-being table and the Likert scale to compute the risk. What we did was to take the different questions and define the output as a value that affects one or more dimensions of the Well-being table.

The mathematical explanation will be:

Let D={D1,D2,...,D6}D = \{D_1, D_2, ..., D_6\}D={D1,D2,...,D6} be the six psychological dimensions:

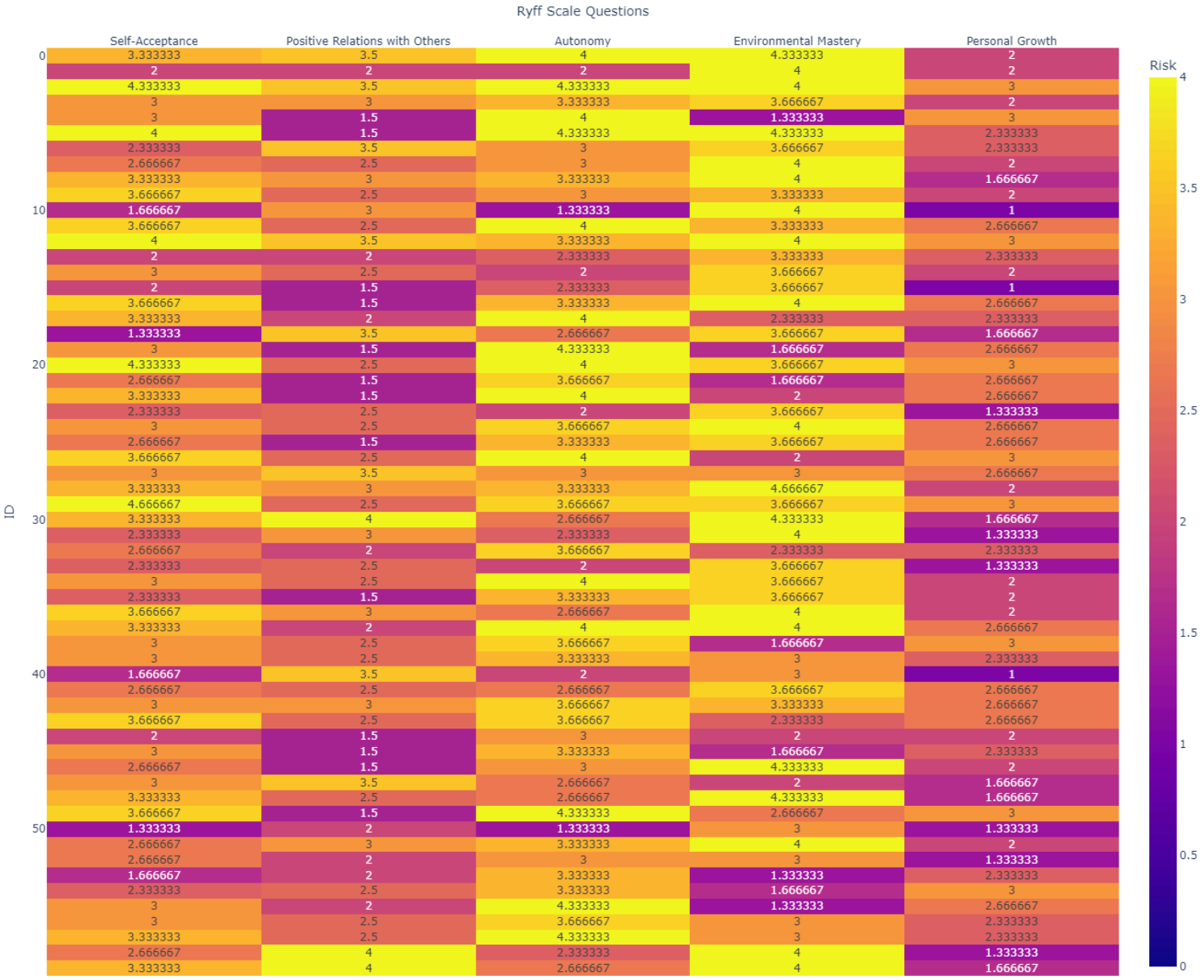
- **D1**: Autoacceptance
- **D2**: Positive Relationships
- **D3**: Autonomy
- **D4**: Environmental Mastery
- **D5**: Purpose in Life
- **D6**: Personal Growth

Let each dimension Di be computed as the average of the Likert values of its ni

$$Dimension\ Score = Sum\ of\ Likert\ scores / Number\ of\ items\ in\ that\ dimension$$

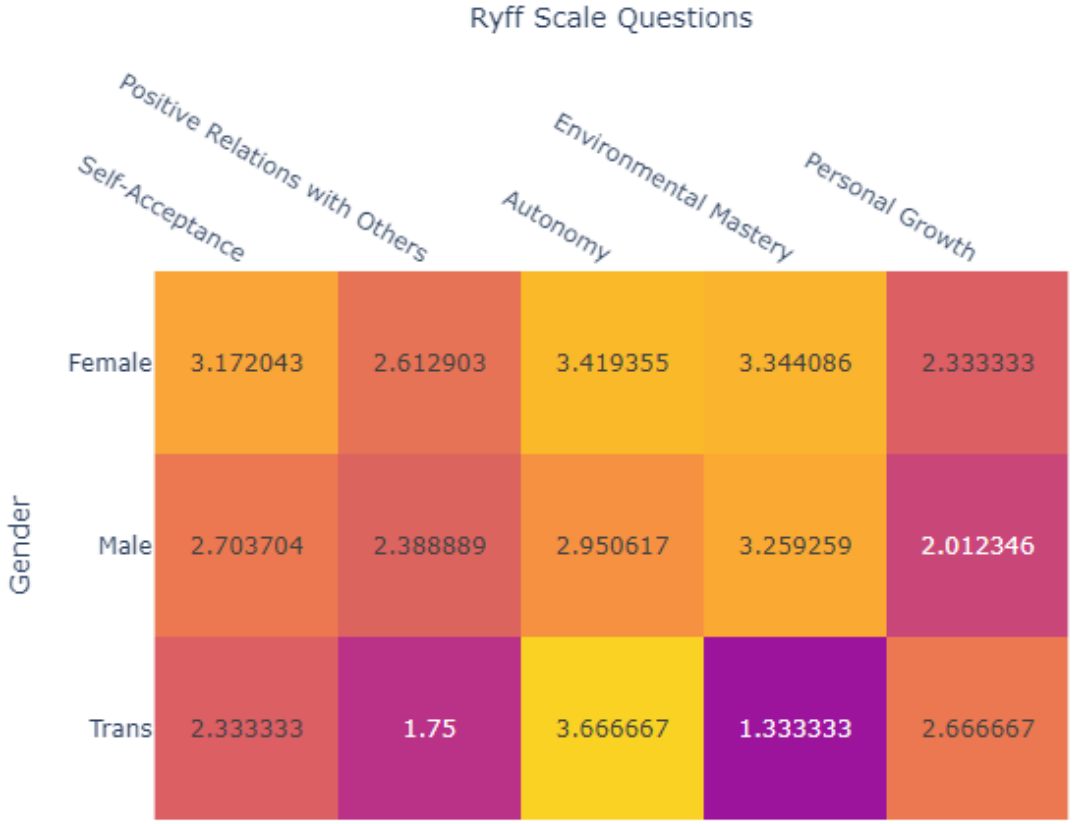
Lets define the Risk function as R where:

- R < 2.5 → High risk
- R >= 2.5 and R<3.5 → Moderate risk
- R >= 3.5 → High risk



- Risk computation from age point of view

- Risk computation from gender point of view



Discussion

Looking at the results, there seems to be a clear connection between frequent AI use and certain changes in how people feel about their own decision-making.

Some earlier research has talked about similar issues—like how people are starting to rely on technology for tasks they used to do on their own. But most of those studies focus more on memory, productivity, or decision speed. What sets this study apart is the emotional and psychological angle. Instead of looking at efficiency, we were more interested in how AI might be influencing how people feel about themselves and their ability to navigate everyday life without digital help.

This has a few practical implications. If people are becoming too dependent on AI, especially for reassurance or problem-solving, we might want to start talking more openly about that.

It's important to point out that the tool we used to flag psychological risk is not a clinical diagnostic instrument. It’s more of a first step—a way to notice patterns that might suggest a person is struggling, not a substitute for a psychologist or formal evaluation.

Moving forward, it could be interesting to run this kind of study again but with a clinical component, or to test the model with specific groups—like teenagers, people in high-stress jobs, or those who work with AI daily. With some refining, this kind of tool might eventually help identify when someone could use support before things get worse.

Conclusion

This study suggests that frequent use of AI tools may be quietly influencing how people feel about their own judgment and emotional independence. By focusing on well-being rather than just productivity, this approach offers a different way to think about AI's role in everyday life. It’s a small but important step toward understanding how we can use these tools without losing touch with our own instincts and confidence.

References

Likert notation: https://www.scribbr.com/methodology/likert-scale/

Ryff scale: https://centerofinquiry.org/uncategorized/ryff-scales-of-psychological-well-being/

Github repo: https://github.com/MarcMDeveloper/Data_Analysis-AI-Psychology