



## THE INFLUENCE OF AI ASSISTED DECISION MAKING ON HUMAN JUDGEMENT

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### Abstract:

This study looks at how AI-assisted decision-making affects human judgment. It mainly focuses on people's awareness of AI, how much they trust it, how much they depend on it, and the ethical concerns they may have. The research is based on primary data collected from 100 respondents through a structured questionnaire, along with information from secondary sources. The findings show that although AI reduces effort and improves analysis, most users still prefer to check or verify the suggestions given by AI. Some common concerns include over-dependence on AI, reduced critical thinking, data privacy issues, and bias in systems.

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### Introduction:

Artificial Intelligence (AI) has become an essential part of modern life. It widely used in fields such as education, healthcare, finance, and business. AI-assisted decision making systems help individuals and organizations by collecting and analysing large amounts of data and then providing useful suggestions or recommendations. Because of this ability, many people now rely on AI tools to make decisions more quickly and efficiently. Human judgment, however, not based only on data. It includes personal thinking, experience, emotions, and ethical values. Before making decisions, people usually consider different situations, feelings, and possible consequences. In contrast, AI systems mainly depend on data, algorithms, and past records. While AI can improve accuracy and reduce human errors, excessive dependence on it may weaken independent thinking and decision-making skills. Over time, individuals might begin to accept AI recommendations without properly questioning them. There are also ethical concerns linked to AI-assisted decision-making. Issues such as bias in data, lack of transparency in algorithms, and responsibility for incorrect decisions raise serious questions. These concerns make people wonder how much trust should actually be placed in AI systems. This research examines the influence of AI-assisted decision-making on human judgment. It focuses on users' awareness, trust, reliance, and opinions about AI tools. The main aim of the study is to understand whether AI acts as a helpful support system for humans or whether it negatively affects human judgment and independence.

### Statement of Problem:

Artificial Intelligence (AI) is increasingly being used to support decision-making in areas like education, finance, healthcare, and even daily life activities. AI tools provide quick analysis, predictions, and recommendations that influence how people make choices. Although these systems improve efficiency and accuracy, their growing use also raises some concerns such as over-reliance, reduced critical thinking, and weaker independent judgment.

Many users tend to trust AI suggestions without fully understanding the system's limitations, possible bias, lack of transparency, accountability issues, or data privacy risks. It is still not completely clear whether AI mainly supports human judgment or slowly starts replacing human reasoning and confidence. Therefore, this study examines how AI-assisted decision-making influences human judgment, focusing on awareness, trust, reliance, and related concerns.

### Significance of the Study:

This study is important because it helps understand how AI-assisted decision-making tools influence human judgment in everyday life. As AI is increasingly used in education, career planning, healthcare, and business, it becomes necessary to evaluate whether these tools actually support thinking or reduce independent decision-making.

The study looks at users' awareness, trust, and reliance on AI systems, also highlights ethical issues such as bias, transparency, accountability, and data privacy, which have been discussed by scholars like Michael Polanyi, Herbert A. Simon, and Cathy O'Neil. The findings can be useful for students, professionals, educators, and policymakers. It emphasizes the need for human supervision and critical thinking, so that AI remains a supportive tool rather than completely replacing human judgment.

### Limitations of the Study:

Despite careful planning, the study has certain limitations. The findings are based on a limited sample of 100 respondents and may not fully represent the entire population. The study depends on self-reported data, which may include personal bias or subjective responses. Time limitations and limited geographical coverage also restrict the overall scope of the study. So the results cannot be generalized everywhere.

### Objectives of the Study:

The main objectives of the study are:

1. To examine the level of awareness about AI-assisted decision-making tools.
2. To analyse the extent to which AI influence human judgment.
3. To study the level of trust and reliance individuals place on AI systems.
4. To identify ethical and behavioural concerns related to AI-assisted decisions.
5. To assess whether AI acts as a support system or reduces independent human thinking.

### Hypothesis Testing :

We segregated the top 5 question related to our objectives from the secondary data which was collected by us & calculated the Hypothesis t testing along with analysis, following is our findings;

1. AI helps me analyse multiple options before making a decision & The use of AI assisted decision-making raises ethical concerns, such as bias, lack of transparency, and accountability issues

### Correlation

|          | <i>Column 1</i> | <i>Column 2</i> |
|----------|-----------------|-----------------|
| Column 1 | 1               |                 |
| Column 2 | 0.004822        | 1               |

|                     | <i>Variable 1</i> | <i>Variable 2</i> |
|---------------------|-------------------|-------------------|
| Mean                | 3.69697           | 3.545455          |
| Variance            | 0.703154          | 0.842301          |
| Observations        | 99                | 99                |
| df                  | 98                | 98                |
| F                   | 0.834802          |                   |
| P(F<=f) one tail    | 0.186504          |                   |
| F Critical one-tail | 0.716105          |                   |

### F-test two-sample for variance

| SUMMARY                    |              |            |                |                 |                |               |
|----------------------------|--------------|------------|----------------|-----------------|----------------|---------------|
| <i>Groups</i>              | <i>Count</i> | <i>Sum</i> | <i>Average</i> | <i>Variance</i> |                |               |
| Column 1                   | 99           | 366        | 3.69697        | 0.703154        |                |               |
| Column 2                   | 99           | 351        | 3.545455       | 0.842301        |                |               |
| ANOVA                      |              |            |                |                 |                |               |
| <i>Source of Variation</i> | <i>SS</i>    | <i>df</i>  | <i>MS</i>      | <i>F</i>        | <i>P-value</i> | <i>F crit</i> |
| Between Groups             | 1.136364     | 1          | 1.136364       | 1.470588        | 0.226713       | 3.889341      |
| Within Groups              | 151.4545     | 196        | 0.772727       |                 |                |               |
| Total                      | 152.5909     | 197        |                |                 |                |               |

### Anova: Single factor

Interpretation- A one-sample t-test was applied to examine whether respondents perceive AI as helpful in decision-making when compared to the neutral value of 3. Based on the collected responses, the mean score was 3.70, showing a higher-than neutral agreement. This indicates that respondents generally believe AI assists them in analysing options and improving decisions. The result suggests a positive but moderate reliance on AI rather than complete dependence.

2. How often do you verify or Cross-Check Ai-generated suggestions before accepting them? & Overall, how do you rate the influence of AI on human judgment?

### Correlation

|          | Column 1  | Column 2 |
|----------|-----------|----------|
| Column 1 | 1         |          |
| Column 2 | - 0.31634 | 1        |

|                     | Variable 1 | Variable 2 |
|---------------------|------------|------------|
| Mean                | 3.68       | 3.414141   |
| Variance            | 1.128889   | 0.612451   |
| Observations        | 100        | 99         |
| df                  | 99         | 98         |
| F                   | 1.843231   |            |
| P(F<=f) one tail    | 0.001341   |            |
| F Critical one-tail | 1.395481   |            |

### F-Test Two-Sample for Variances

| SUMMARY  |       |     |          |          |         |        |
|----------|-------|-----|----------|----------|---------|--------|
| Groups   | Count | Sum | Average  | Variance |         |        |
| Column 1 | 100   | 368 | 3.68     | 1.128889 |         |        |
| Column 2 | 99    | 338 | 3.414141 | 0.612451 |         |        |
| ANOVA    |       |     |          |          |         |        |
| Source   | of SS | df  | MS       | F        | P-value | F crit |

| Variation      |          |     |          |          |          |          |
|----------------|----------|-----|----------|----------|----------|----------|
| Between Groups | 3.51628  | 1   | 3.51628  | 4.032521 | 0.045997 | 3.889096 |
| Within Groups  | 171.7802 | 197 | 0.871981 |          |          |          |
| Total          | 175.2965 | 198 |          |          |          |          |

### Anova: Single factor

Interpretation- The test was conducted to evaluate whether respondents verify AI suggestions before accepting them. The mean value obtained was 3.68, which is above the neutral midpoint. This shows that respondents usually cross-check AI outputs instead of accepting them blindly. The findings suggest that AI is treated as a support tool while final decisions remain under human control.

- AI reduces the chances of human error in decision-making. & Over-reliance on AI may weaken human critical thinking skills.

### Correlation

|          | Column 1 | Column 2 |
|----------|----------|----------|
| Column 1 | 1        |          |
| Column 2 | 0.082538 | 1        |

|                     | Variable 1 | Variable 2 |
|---------------------|------------|------------|
| Mean                | 3.2        | 3.79       |
| Variance            | 0.848485   | 0.915051   |
| Observations        | 100        | 100        |
| df                  | 99         | 99         |
| F                   | 0.927255   |            |
| P(F<=f) one tail    | 0.353923   |            |
| F Critical one-tail | 0.717329   |            |

**F-test two-sample for variances**

|                     |         |     |          |          |          |          |
|---------------------|---------|-----|----------|----------|----------|----------|
| SUMMARY             |         |     |          |          |          |          |
| Groups              | Count   | Sum | Average  | Variance |          |          |
| Column 1            | 100     | 320 | 3.2      | 0.848485 |          |          |
| Column 2            | 100     | 379 | 3.79     | 0.915051 |          |          |
| ANOVA               |         |     |          |          |          |          |
| Source of Variation | SS      | df  | MS       | F        | P value  | F crit   |
| Between Groups      | 17.405  | 1   | 17.405   | 19.73876 | 1.48E 05 | 3.888853 |
| Within Groups       | 174.59  | 198 | 0.881768 |          |          |          |
|                     |         |     |          |          |          |          |
| Total               | 191.995 | 199 |          |          |          |          |

**Anova: Single factor**

Interpretation- This analysis examined perceptions regarding AI's impact on human accuracy and thinking ability. The mean score for reduction of human error was 3.20, indicating slight agreement. However, concern about reduced critical thinking due to over-reliance on AI showed a higher mean of 3.79. These results suggest that while AI improves accuracy, respondents are cautious about depending on it excessively.

**Review of Literature:**

Artificial Intelligence (AI) has become a powerful force across many fields, influencing decision-making, ethics, human behaviour, and even social structures. Researchers from computer science, philosophy, economics, and social sciences have studied how AI interacts with human thinking, changes the nature of work, and challenges traditional systems. To truly understand AI's strengths and weaknesses, it is important to look not only at its technical abilities but also its social, ethical, and economic impacts. This literature review highlights major contributions that explain AI's influence on human judgment, society, and governance.

Michael Polanyi (1966) discusses the idea of tacit knowledge, explaining that much of human expertise cannot be fully written down or programmed, as it is based on experience, intuition, and skills. This shows the limits of purely algorithm-based intelligence. Roger Schank (1980) explains that human thinking is structured around memory and stories, suggesting that intelligent systems should learn from experiences instead of depending only on abstract rules. Don Norman (1988) supports human centered design, showing that systems work best when they match human perception and behaviour, which is very important in AI interface design. Peter Norvig

and Stuart Russell (1995) provide a basic framework for AI as intelligent agents that can perceive their environment and make decisions using logic, search, planning, and learning techniques.

Herbert A. Simon (2003) argues that human intuition is not magical but comes from cognitive processes shaped by experience. He suggests that AI helps us understand how humans recognize patterns and make decisions, combining both intuitive and analytical reasoning. Nick Bostrom (2003) introduces the philosophical “simulation argument,” proposing that humans might be living in a computer simulation, which raises deep questions about reality and the future of intelligence. Tom Mitchell (1997) defines machine learning as systems that improve with experience, forming the theoretical base for adaptive technologies that learn from data. Joseph Weizenbaum (1997) warns that AI should not replace human judgment, especially in areas requiring morality or emotions, because machines lack empathy and moral responsibility.

Cathy O’Neil (2016) describes algorithmic systems as “Weapons of Math Destruction,” explaining how they can reinforce inequalities and bias, especially in jobs, credit scoring, and law enforcement. She stresses the importance of transparency and regulation. Kevin Kelly (2016) discusses long-term technological trends, showing how AI and digital systems evolve alongside human behaviour, reshaping economic and social systems. Joseph E. Aoun (2017) proposes a “humanics” model of education that combines data literacy, technology skills, creativity, critical thinking, and empathy, preparing students for an AI-driven world.

Luciano Floridi (2018) expands this discussion by explaining that AI creates artificial versions of human activities, called “ectypes,” which need ethical governance to prevent misuse. Timnit Gebru and Joy Buolamwini (2018) reveal biases in facial recognition systems, showing that darker-skinned women were misclassified more often, highlighting fairness and accountability issues. Erik Brynjolfsson and Andrew McAfee (2014) describe the “Second Machine Age,” where AI replaces not just physical labor but also cognitive tasks, affecting employment and inequality. Later, Andrew McAfee and Brynjolfsson (2018) explain that innovation now comes from combining digital platforms, machines, and human creativity. Yochai Benkler, Robert Faris, and Hal Roberts (2018) study digital media ecosystems and show how misinformation and polarization spreads through social networks. Cass R. Sunstein (2019) explains how social norms and small informational signals can influence large scale social change, which is relevant in AI-driven systems.

Shoshana Zuboff (2019) studies surveillance capitalism, showing how companies collect and use personal data to predict and influence behaviour, which threatens privacy and autonomy. Raja Chatila (2019), through his contribution to the IEEE Global Initiative, emphasizes that AI systems must include ethical governance, accountability, and human oversight to protect society. Paul Daugherty and H. James Wilson (2018) argue that the future of work depends on human–AI collaboration, where AI supports creativity and decision-making instead of replacing humans.

Mary C. Lacity (2022) examines blockchain as a system for decentralized trust and governance, moving beyond cryptocurrencies into identity and enterprise applications. Max Tegmark and Steve Omohundro (2023) argue that as AI develops toward general intelligence, safety must be based on provable systems rather than simple rules, to avoid unpredictable outcomes. Elon Musk (2015), by co-signing an open letter on AI safety, stresses

the importance of proactive research and alignment with human values. Kate Crawford (2021) critiques AI as a political and material system, pointing out environmental costs, labour issues, and power imbalances, and she calls for more responsible development.

Overall, these studies show that AI is not just a technical invention but a socio technical system that affects human thinking, ethics, work, and society. While AI has great potential to improve productivity and decision-making, it also creates ethical, social, and environmental challenges. Most scholars agree that human-centered design, fairness, transparency, and strong governance are necessary to ensure AI enhances human abilities rather than weakening human values and independence

#### **Research Methodology:**

The present study adopts a descriptive as well as analytical research design. The descriptive approach is used to understand the current level of awareness, usage, trust, and reliance on AI-assisted decision-making tools among individuals. At the same time, the analytical approach helps in examining how AI influences human judgment, critical thinking, and decision behaviour. This design is suitable because the study mainly aims to describe and analyse people's perceptions, rather than establish direct cause-and-effect relationships.

#### **Sources of Data:**

The study is based on both primary and secondary sources of data.

Primary data was collected directly from respondents through a structured questionnaire.

Secondary data was collected from textbooks, academic journals, research articles, conference papers, and published reports of reputed organizations such as World Economic Forum and IBM. These sources provided theoretical and empirical background for the study and helped in understanding the broader context of AI assisted decision-making.

#### **Population of the Study:**

The population of the study includes students and working professionals who use or are exposed to AI-based tools such as recommendation systems, virtual assistants, and AI-driven decision-support applications in their daily life. These individuals regularly interact with AI in different forms, whether knowingly or unknowingly.

#### **Sample Size and Sampling Technique:**

A sample size of 100 respondents was selected for the study. The respondents were chosen using the convenience sampling method, as it allowed easy access to participants within limited time and resources. This method was considered suitable for an exploratory study focusing on user perceptions and experiences with AI tools. However, since it is not a random sampling method, the results may not fully represent the entire population.

#### **Data Collection Tool:**

A structured questionnaire was used as main data collection instrument. The questionnaire was divided into different sections covering demographic details, awareness about AI, frequency of AI usage, influence of AI on decision-making, trust in AI systems, and ethical concerns. Likert-scale questions were included to measure



attitudes and perceptions, while a few open-ended questions allowed respondents to express their personal views and experiences in their own words.

### Variables of the Study:

**Independent Variable** – AI-assisted decision-making

**Dependent Variable** – Human judgment

**Supporting Variables** – Trust in AI, level of reliance, awareness, ethical concerns, and decision confidence

### Method of Data Analysis:

The collected data were systematically classified, tabulated, and analysed using percentage analysis and frequency distribution methods. Graphical representations such as bar charts and pie charts were also used to present the findings in a clear and understandable manner. These methods helped in simplifying the interpretation of data and made the results easier to understand.

### Period of the Study:

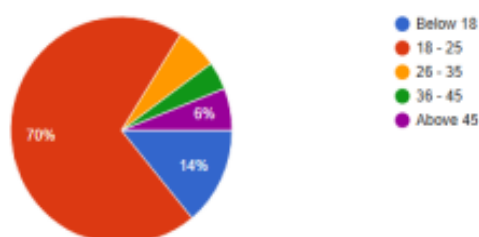
The study was conducted over a period of 22 days during the academic year 2025–26.

### Ethical Considerations:

The study ensured voluntary participation of respondents. All responses were kept confidential and used only for academic purposes. No personal or sensitive information was collected without consent.

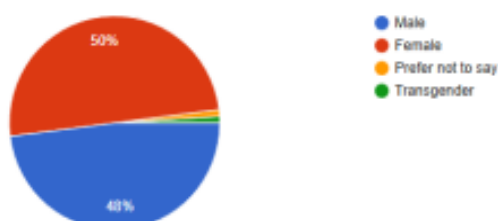
### Data Analysis & Interpretation:

#### 1. Age group



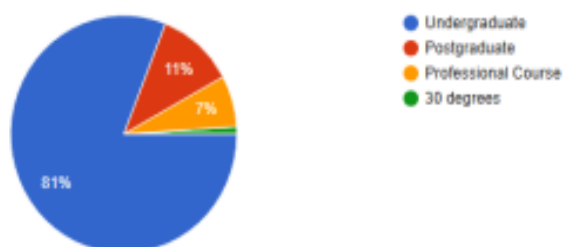
The survey is dominated by youth, with 70% respondents falling into the 18–25 age bracket.

#### 2. Gender



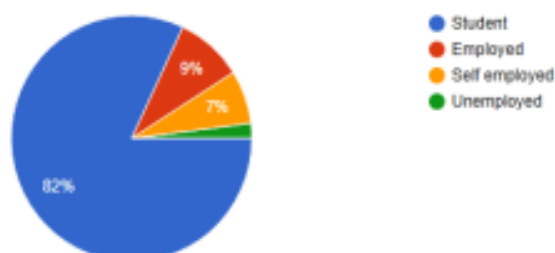
The respondent pool is almost perfectly balanced, consisting 50% female and 48% male participants.

### 3. Education Qualification



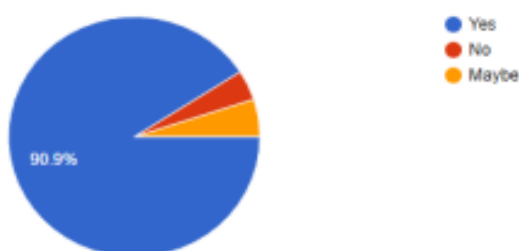
Vast majority of the participants (81%) are currently pursuing or hold undergraduate degree

### 4. Occupation



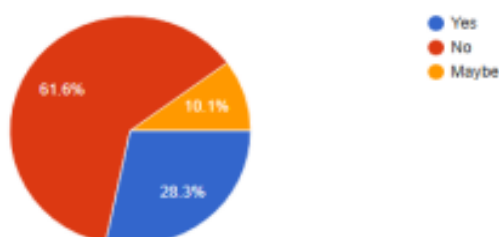
The data reflects a student-centric perspective, as 82% respondents identify as students.

### 5. Are you aware of AI-based tools? (e.g. Chat GPT, Google Assistant, recommendation systems)



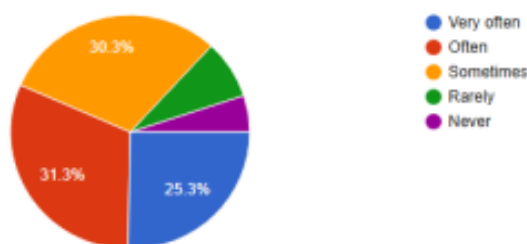
Awareness is nearly universal, with 90.9% of respondents reporting are aware of AI-based tools.

### 6. Do you have any formal training or education related to AI or digital tools?



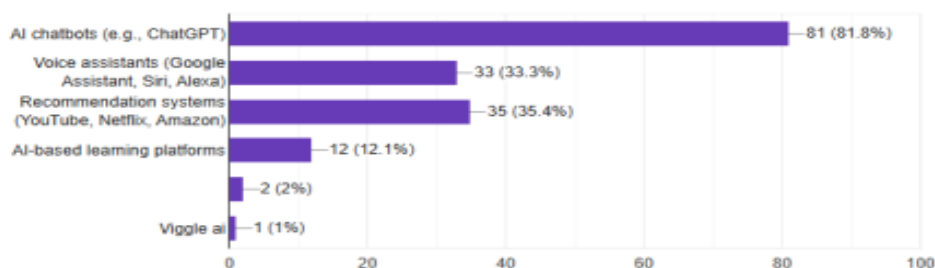
Despite high awareness, 61.6% users have no formal training or education regarding AI or digital tools.

### 7. How often do you use AI-based tools for decision-making?



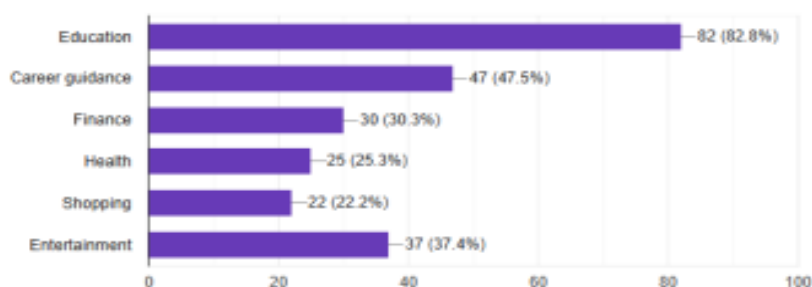
Over half of the users (56.6%) integrate AI into their decision-making process "often" or "very often"

### 8. Which AI tools do you use most frequently?



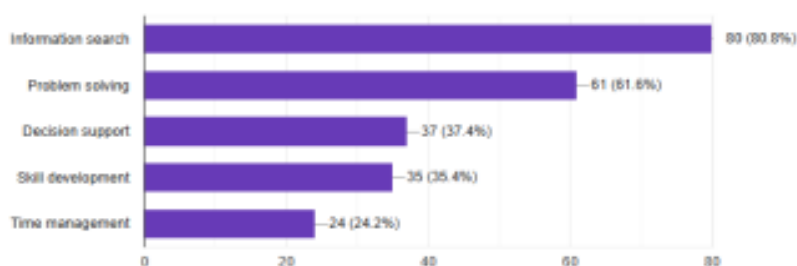
AI chat bots are most popular tool at 81.8%, far outpacing voice assistants and recommendation systems.

### 9. In which areas do you mainly use AI assistance?



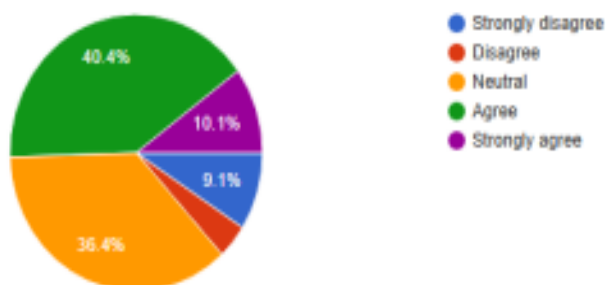
Education is primary field of use (82.8%), followed distantly by career guidance and entertainment.

### 10. For what purpose do you mainly use AI tools?



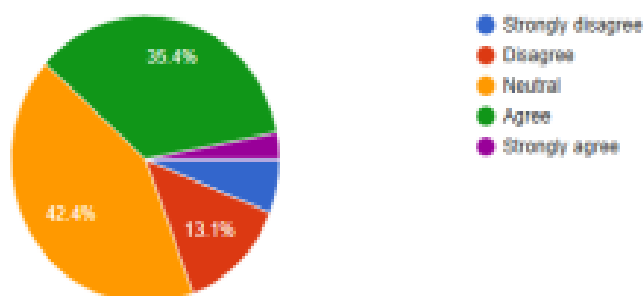
Users primarily utilize AI for information search (80.8%) and practical problem-solving tasks (61.6%).

### 11. AI tools help me make faster decisions.



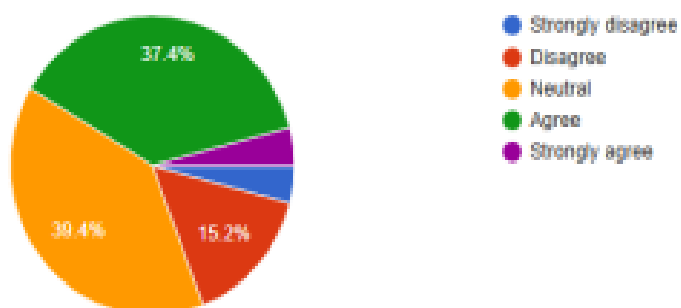
About 50.5% of users agree or strongly agree that AI tools help them reach decisions more quickly

### 12. AI recommendations influence my final decision.



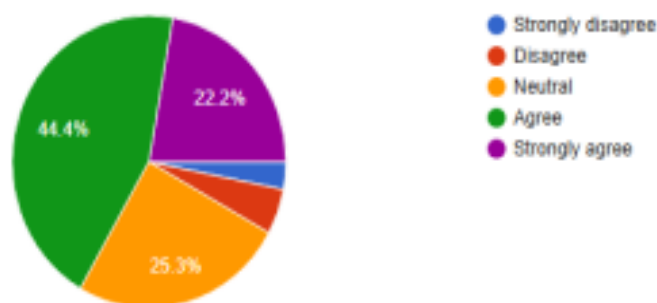
While used for speed, 42.4% users remain neutral on whether AI actually influences their final choice.

### 13. AI reduces the chances of human error in decision-making.



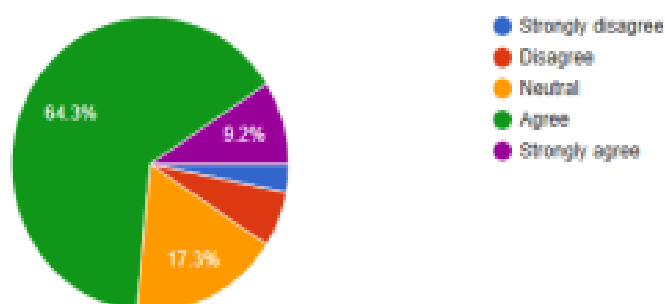
Roughly 41.4% believe AI reduces human error, though large 39.4% remain undecided on this benefit.

#### 14. Over-reliance on AI may weaken human critical thinking skills.



A significant 66.6% concern exists that over-reliance on AI could diminish human critical thinking skills.

#### 15. AI helps me analyse multiple options before making a decision.



Most users (73.5%) find AI helpful for analysing multiple options before committing to final decision.

#### AI Conclusion & Suggestions:

The study shows that AI-assisted tools are widely known and used, especially for activities like learning, searching information, and solving problems. Most users find AI helpful in analysing options and making decisions more quickly. However, many people are cautious and prefer to verify AI suggestions instead of accepting them blindly.

Although AI can reduce human errors and save time, several respondents expressed concern that too much dependence on AI may weaken their own thinking ability and judgment over time. Ethical issues such as bias, lack of transparency, accountability

problems, and data privacy risks were also highlighted as serious concerns by participants.

Overall, the findings indicate that AI works best as a supportive tool rather than a complete replacement for human decision-making. It can improve efficiency and assist in better decisions, but it cannot replace human intuition, experience, and critical thinking.

The study suggests that individuals should use AI as an aid in their decision-making process, while still applying their own reasoning and judgment. There should also be greater awareness about ethical issues and responsible use of AI systems, so that technology benefits society without reducing human independence.

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