# AI Awareness & Perception Among Youth in Academia

**Artificial Intelligence For Sustainable Societies [AISS]**
*Introduction to Data Science Project*


- Mohsen Hassan Nejad
- Baranaba Mudanyi Mugabane
- Hakeem Farouk Alavi



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*This report is a supplement to our analysis. All scripts and visualizations are implemented in a collaborative Google Colab notebook, referred to as our codebase. This codebase includes preprocessing steps, exploratory data analysis (EDA), and correlation analysis, and is available for verification and replication of results.*

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# 1. Introduction

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Artificial intelligence is everywhere nowadays, shaping how we live, work, and learn. Tools like ChatGPT have exploded, reaching 100 million weekly active users, with young adults leading the charge. Within universities, AI has become a go-to tool for research, problem-solving, coding, and writing assignments, with the majority of students already relying on it for coursework (NamePepper, 2024; Statista, 2024). With this rapid adoption, it's hard not to wonder: why do some people choose to embrace AI, while others hesitate or resist? And what factors shape these decisions?

For our team, this question felt personal and pressing. As students of Artificial Intelligence for Sustainable Societies, we ought to explore the potential for AI to create positive, lasting change. For that purpose, understanding the perceptions and usage patterns of AI is crucial, especially considering the risks involved. As individuals become more reliant on AI for everyday decisions, there is a risk of losing their sense of free will and autonomy, potentially limiting personal growth. Additionally, the delegation of tasks to AI systems, while beneficial in saving time and money, may lead to cognitive enfeeblement, reducing our ability to think critically and solve problems independently (Slattery et al., 2024). these are just a handful of hundreds of risks identified by the MIT AI risk repository. By studying people's perceptions, usage, and awareness of AI, we can pay closer attention to the research and development of sustainable AI solutions as well as help educate everyone to mitigate these risks.

What's more, the members of this team each also had other motivations to pursue this topic. You see, Hakeem and Baranaba, are already deeply involved in developing EdTech solutions at Tallinn University, building systems to empower educators, while Baranaba is also developing a no-code platform to help people create their own AI solutions. For Mohsen, this project ties into his aspirations for his master thesis about human-AI interaction—how people decide to engage with AI and what that means for them. Together, we realized that this isn't just a timely global question but also one deeply connected to our paths as researchers and developers. Even though it's a novel and evolving topic, we felt it was the right place to start.

## 1.1 Main Objectives & Vision

By investigating, analyzing, and visualizing survey data on *Students' Perceptions of AI in Education – Exploring the Attitudes and Perspectives of Cybernetics Students on AI*, we aim to explore the relationship between various factors that impact the awareness, knowledge, and perception of AI among young adults in academia.

**Hence our objective is twofold:**

i. Analyze the main variables influencing AI awareness and perception using statistical methods and visualization techniques.
ii. Explore possible relationships between the variables.

The project team consists of **Mohsen Hassan Nejad**, who has a social sciences background, **Baranaba Mudanyi Mugabane,** and **Hakeem Farouk Alavi**, who both have experience with programming and data management.

**Our vision** is that the use and adoption of AI at scale will influence all aspects of life but especially reshape the field of education with which millions of bright young minds engage. We hope this kind of analysis can pave the way towards more research and understanding of the factors shaping the relationship between the youth and AI. Enabling all stakeholders, including educators, researchers, and developers, to better navigate the age of Artificial Intelligence.

# 2. Project Scope

After selecting our topic, we searched for suitable datasets on Kaggle but encountered a few challenges. The first dataset we found (Klinger & Im, 2023) lacked sufficient variables to provide meaningful insights after some basic exploration, leading us to search for alternatives.

Given that this topic is at the forefront of research with limited available datasets, we considered changing our focus to a project idea based on data availability. However, our lecturers advised us to continue with our original theme.

Eventually, we discovered a dataset (Petrașcu, 2023) that, although more focused on AI awareness and perception than adoption, met the basic requirements for our project.

**Inclusions:**

- Analysis of survey data from Kaggle focusing on AI awareness and perceptions.
- The survey will include 2nd and 3rd-year undergraduate students.

- The project utilized **Pandas** for data cleaning and organization, **Matplotlib** and **Seaborn** for visualizations, and **Scikit-learn** for implementing the K-means clustering algorithm. These tools enabled efficient analysis and clear presentation of results.

**Exclusions:**

- No data collection or new dataset creation.
- Focus is limited to students in Cybernetics, Statistics, and Economic Informatics.

**Deliverables:**

- Statistical observations and visualizations illustrating trends in AI awareness & perceptions.
- Written analysis summarizing key findings and insights, including the codes.
- Final report including the details of our objectives, results, and conclusions.
- A PowerPoint presentation.

## 2.2 SWOT analysis:

| **Strengths** | **Opportunities** |
|---|---|
| Team expertise combining social sciences and technical skills. | Insights can guide education and policy strategies. |
| Access to a structured dataset from Kaggle. | AI in education is a growing research area. |
| Insights can guide education and policy strategies. | |
| **Weaknesses** | **Threats** |
| Potential bias in survey responses or low participation | Misinterpretation of data and results. |
| Limited to a single faculty; findings may not be generalized. | Dataset Size and Scope: A small dataset limits the ability to generalize results or make robust statistical inferences. |
| Limited diversity and scope of the dataset. | Data Collection Biases: The way data was collected may not fully represent the diversity of the student population. |

## 2.3 Milestones & Teamwork

| *Event and deliverables* | *Target Date* | *Responsibility* |
|---|---|---|
| Project Setup and Role Assignment | Oct 31- Nov 4, 2024 | Baranaba (Lead) |
| Data Collection and Preprocessing | Nov 4-10, 2024 | Baranaba, Hakeem, Mohsen |
| Exploratory Data Analysis (EDA) | Nov 10-15, 2024 | Bashy, Hakeem, Mohsen |
| Correlation Analysis for various features | Nov 15-28, 2024 | Bashy, Hakeem, Mohsen |
| Finalize and organize findings and connections | Nov 28- Dec 4, 2024 | Baranaba, Hakeem, Mohsen |
| Final Report Draft | December 4-12, 2024 | Mohsen, supported by Baranaba |
| Presentation Preparation | December 12-17, 2024 | Baranaba, Hakeem, Mohsen |
| Project Closure | December 20, 2024 | Baranaba (Lead) |

**Our teamwork** involved weekly meetings to coordinate, set directions, and agree on our approach, with time in between for each of us to work on our dedicated parts of the project. Most of the time, we each completed the same task, presented our work during meetings, and selected the best results. The exception was at the very beginning of the project, where we collaboratively reviewed the features (variables) in our dataset to determine which ones best fit our objectives and should be the focus of our analysis.

# 3. Results

Before diving into the exploratory analysis, it's worth noting that the dataset we used was sourced from Kaggle and required minimal preparation (Last link in the bibliography). This survey-based dataset, with 91 entries and 15 variables, was already well-structured. Verified using Python, we confirmed there were no missing values, duplicates, or outliers. The only adjustment we made was setting the "ID" column as the index and renaming it to "Student_ID" for clarity.

Although the variable names were somewhat cumbersome, we chose to leave them unchanged as they were still manageable. With these small modifications, the dataset was ready for exploration without further preparation.

Below, you will find a **dictionary of our focus variables**. You can find the full list in our codebase.

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**General Notes**:

- Agreement questions use the scale (1 = Strongly Disagree, 5 = Fully Agree).
- Numerical scales range from 1-10 unless specified otherwise.

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- **Q1_AI_knowledge**: On a scale of 1 to 10, how informed do you think you are about the concept of artificial intelligence?
  - **1**: Not informed at all
  - **10**: Extremely informed
- **Q2.AI_sources**: What sources do you use to learn about the concept of artificial intelligence? (1-Yes, 0-No):
  - **1**: Internet
  - **2**: Books/Scientific papers
  - **3**: Social media
  - **4**: Discussions with family/friends
  - **5**: I don't inform myself about AI
- **Q3: Perceptions of AI (Agreement Scale)**:
  - **Q3#1.AI_dehumanization**: AI encourages dehumanization.
  - **Q3#2.Job_replacement**: Robots will replace people at work.
  - **Q3#3.Societal_benefits**: AI helps solve problems in society (e.g., education, medicine).
  - **Q3#4.AI_rule_society**: AI will rule society.
- **Q5.Feelings**: Emotional response to AI:
  - **1**: Curiosity
  - **2**: Fear
  - **3**: Indifference
  - **4**: Trust
- **Q6.AI_impact_areas**: In which areas do you think AI would have a big impact?
  - **1**: Education
  - **2**: Medicine
  - **3**: Agriculture
  - **4**: Constructions
  - **5**: Marketing
  - **6**: Public administration
  - **7**: Art
- **Q7.Utility_grade**: On a scale of 1 to 10, how useful do you think AI would be in the educational process?
  - **1**: Not useful at all
  - **10**: Extremely useful
- **Q12.Gender**: Respondent gender:
  - **1**: Female
  - **2**: Male

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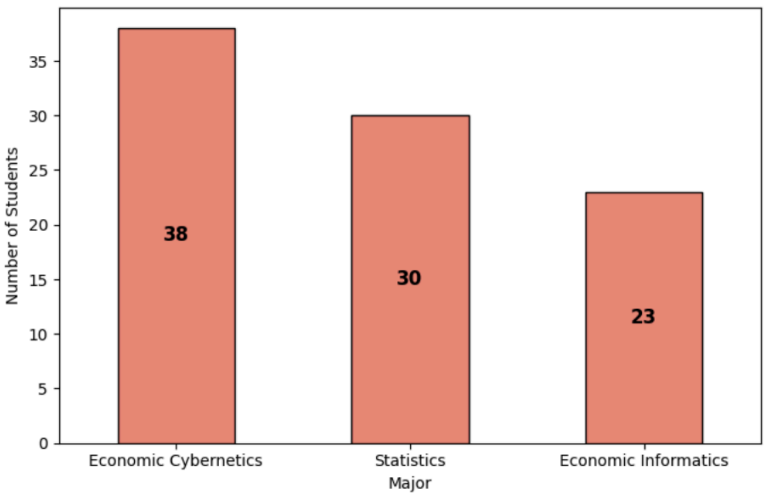
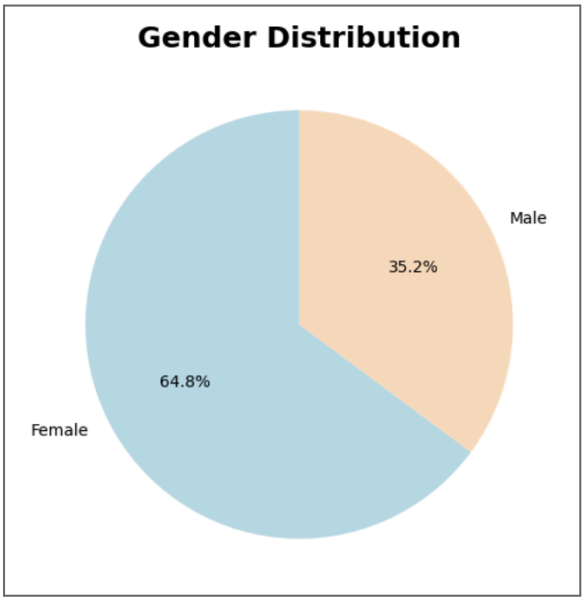
# 3.1 Exploratory Data Analysis

## Q12 & Q14: Basic Demographics

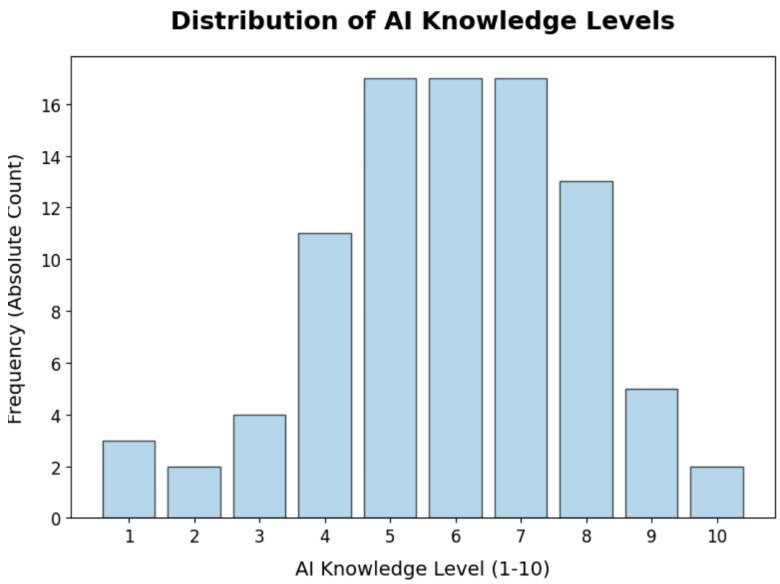



*The bar chart illustrates the distribution of students across different majors.*




*The pie chart illustrates the gender distribution among respondents.*

## Q1: AI Knowledge Among Students

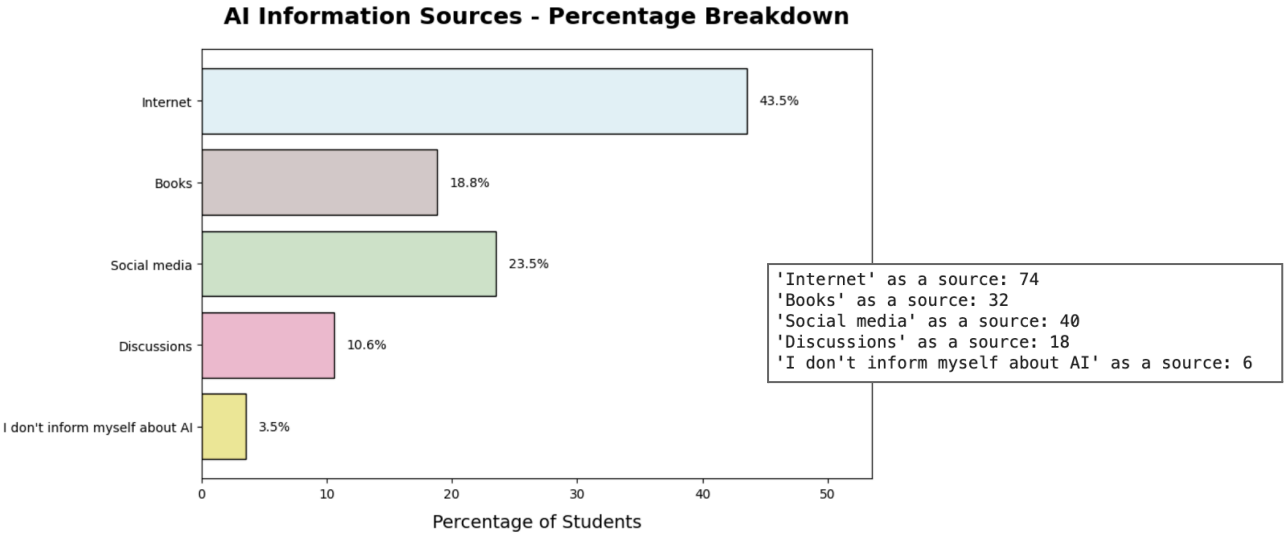



```
count    91.000000
mean      5.912088
std       1.970044
min       1.000000
25%       5.000000
50%       6.000000
75%       7.000000
max      10.000000
Name: Q1.AI_knowledge, dtype: float64
```

*The Bar-Chart illustrates the distribution of respondents' self-reported AI knowledge levels on a scale of 1 to 10.*

- The AI knowledge distribution peaks around levels 5 and 6, suggesting most respondents rate themselves as moderately knowledgeable about AI.
- The distribution approximates a normal distribution, forming a bell curve with peaks around levels 5 and 6, with fewer participants at the extremes (1 or 10), indicating a balanced understanding across the group.

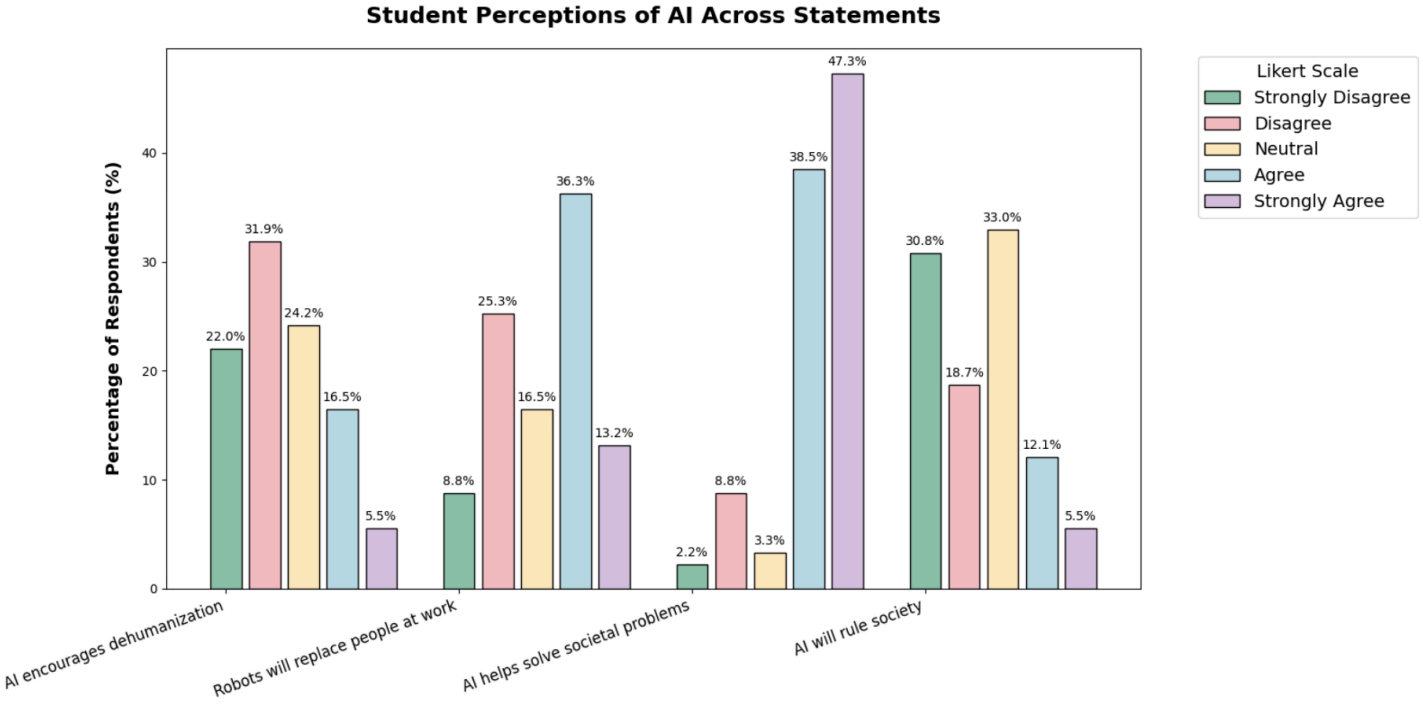
## Q2: Sources Of Knowledge For Students




*The bar chart shows the percentage breakdown of AI information sources among students.*

- Indicates a strong reliance on digital platforms for AI education. Perhaps enhancing online resources and social media engagement could further improve AI literacy among students.
- Books/Papers and Social Media are secondary sources, highlighting mixed preferences for formal and informal learning channels.

## Q3: Perception Of AI Among Students




*The bar chart depicts student perceptions of AI across four key statements.*

- AI as a problem solver: A rather strong agreement that AI can solve societal problems suggests optimism about its potential benefits.
- Concerns about AI: Rather surprising general disagreement with "AI encourages dehumanization" which might be an interesting insight to explore further.

- Diverging sentiments: "Robots replacing people at work" showcases a split response, hinting at a need for further exploration of job-related fears.

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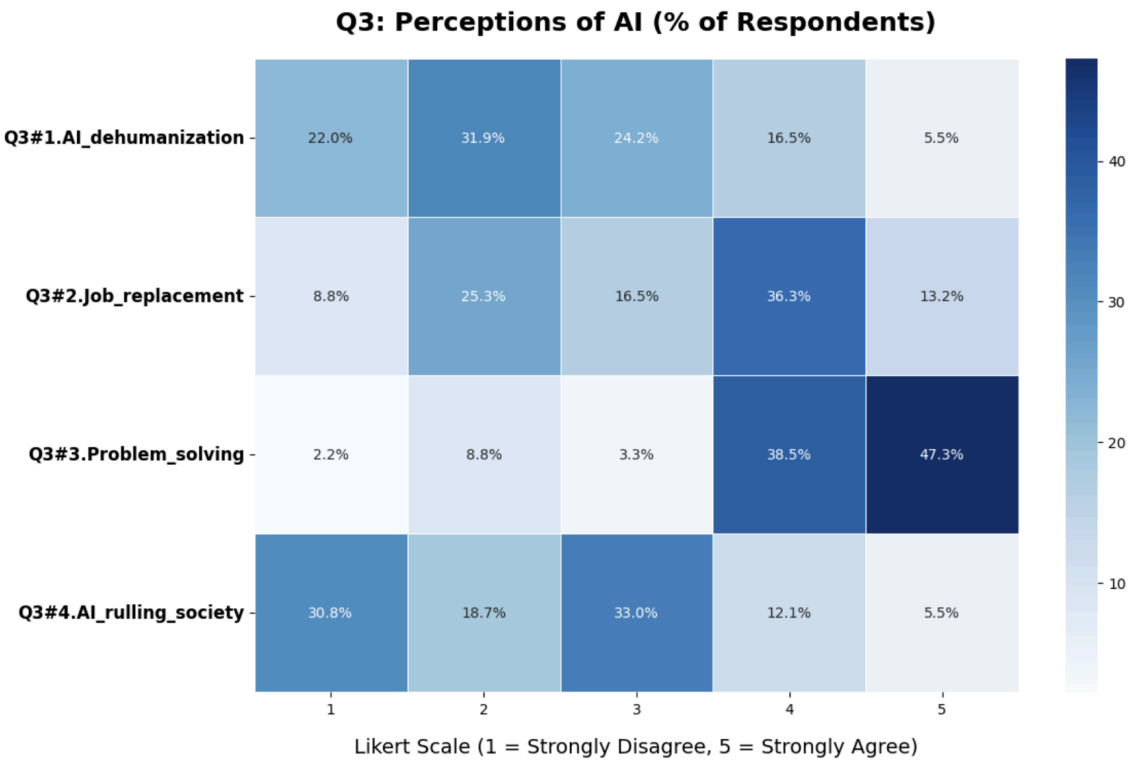


*The heatmap illustrates the distribution of respondents' perceptions across four statements.*

- Polarized responses: Statements like "AI helps solve societal problems" show clear polarization with the majority strongly agreeing.
- Mixed agreement: Statements such as "AI will rule society" exhibit a more balanced distribution, indicating less consensus.

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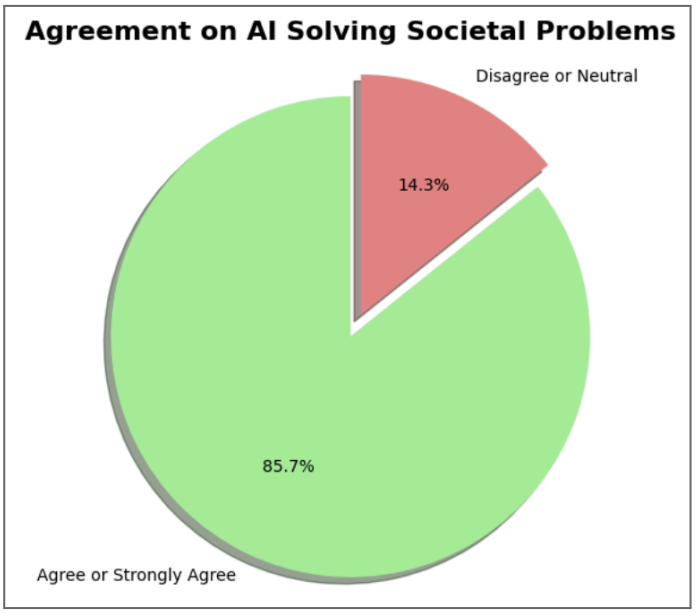


*The pie chart shows the percentage of students who agree or strongly agree that AI helps solve societal challenges:*

- Surprisingly, a good majority of the students demonstrate a belief in AI's potential to address societal problems. Only 14.3% of students are neutral or disagree, indicating minimal skepticism.

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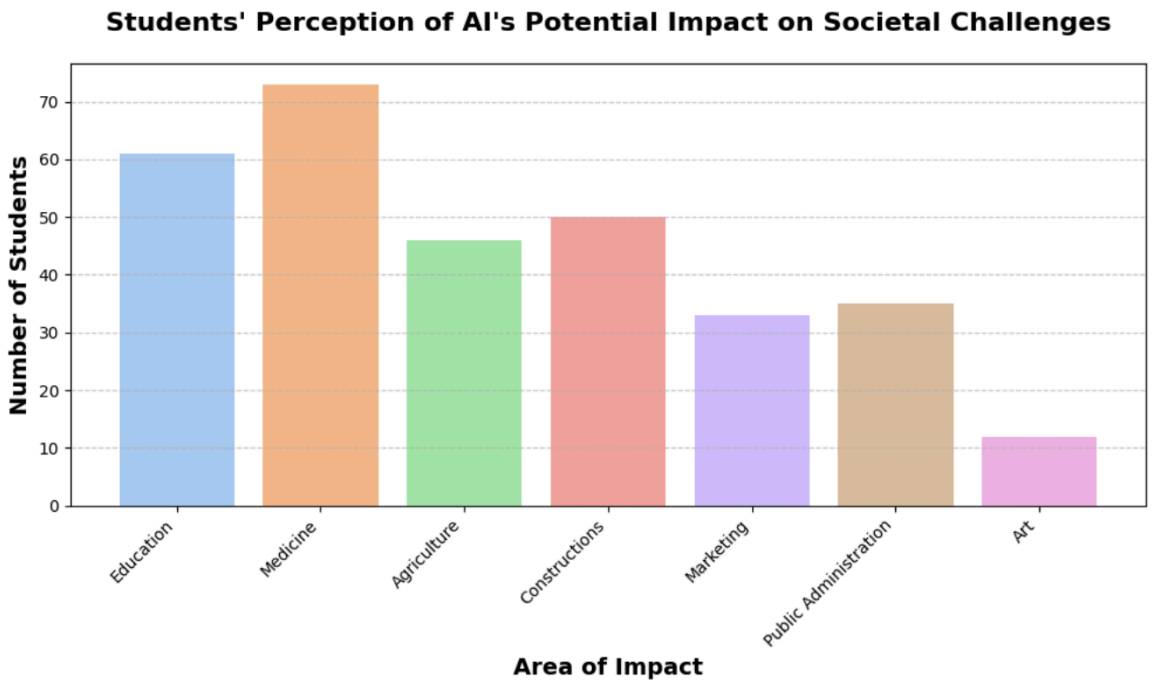


*The bar chart illustrates the number of students who associate AI with various societal domains:*

- ➢ Students identify AI's relevance in healthcare and education, suggesting their perception aligns with the focus of ongoing AI advancements.

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## Q5: Sentiment Towards AI Among Students

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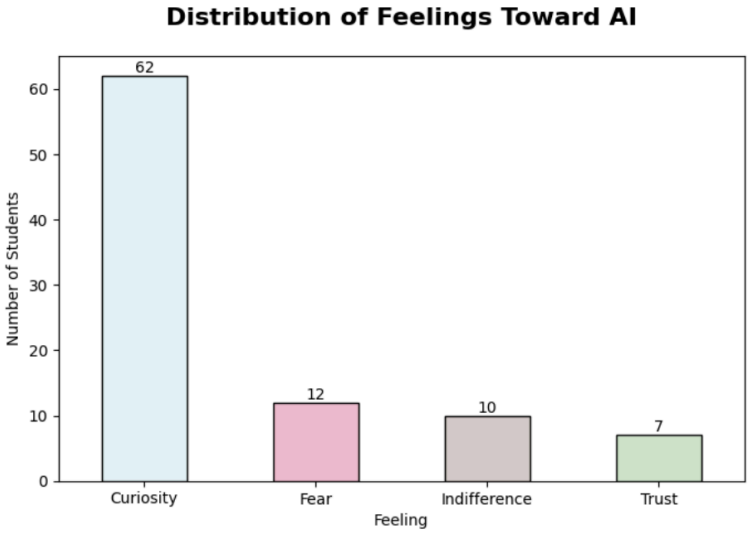
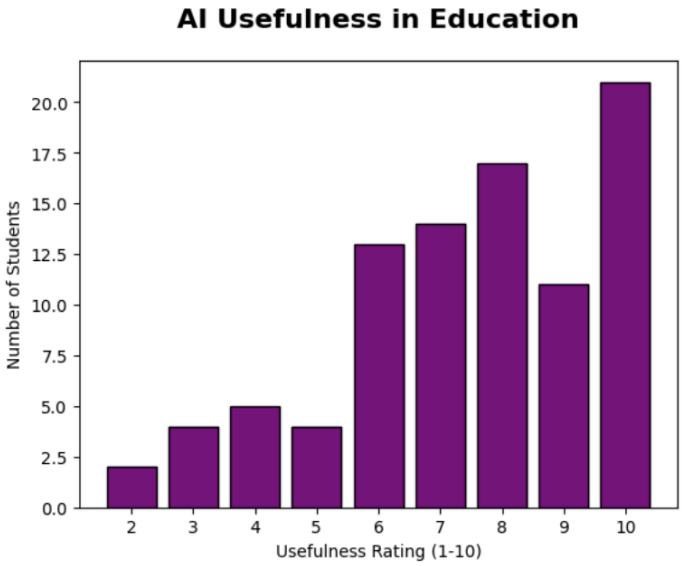



*The bar chart illustrates the distribution of students' feelings toward AI, revealing the following insights:*

- ➢ Curiosity: The most dominant sentiment, expressed by 62 students, reflects a strong interest and eagerness to explore AI, suggesting both intrigue and perhaps a healthy dose of skepticism.
- ➢ Trust and Fear: Only 7 students reported trust, while 12 expressed fear, indicating a lack of confidence or apprehension, which could influence adoption rates.
- ➢ Indifference: 10 students expressed indifference, pointing to a segment of the population that may feel disengaged from AI-related topics

## Q7: How Useful Do Students find AI in education?




```
count    91.000000
mean      7.439560
std       2.161321
min       2.000000
25%       6.000000
50%       8.000000
75%       9.000000
max      10.000000
Name: Q7.Utility_grade, dtype: float64
```

*The bar chart illustrates students' ratings of AI's usefulness in education on a scale of 1 to 10.*

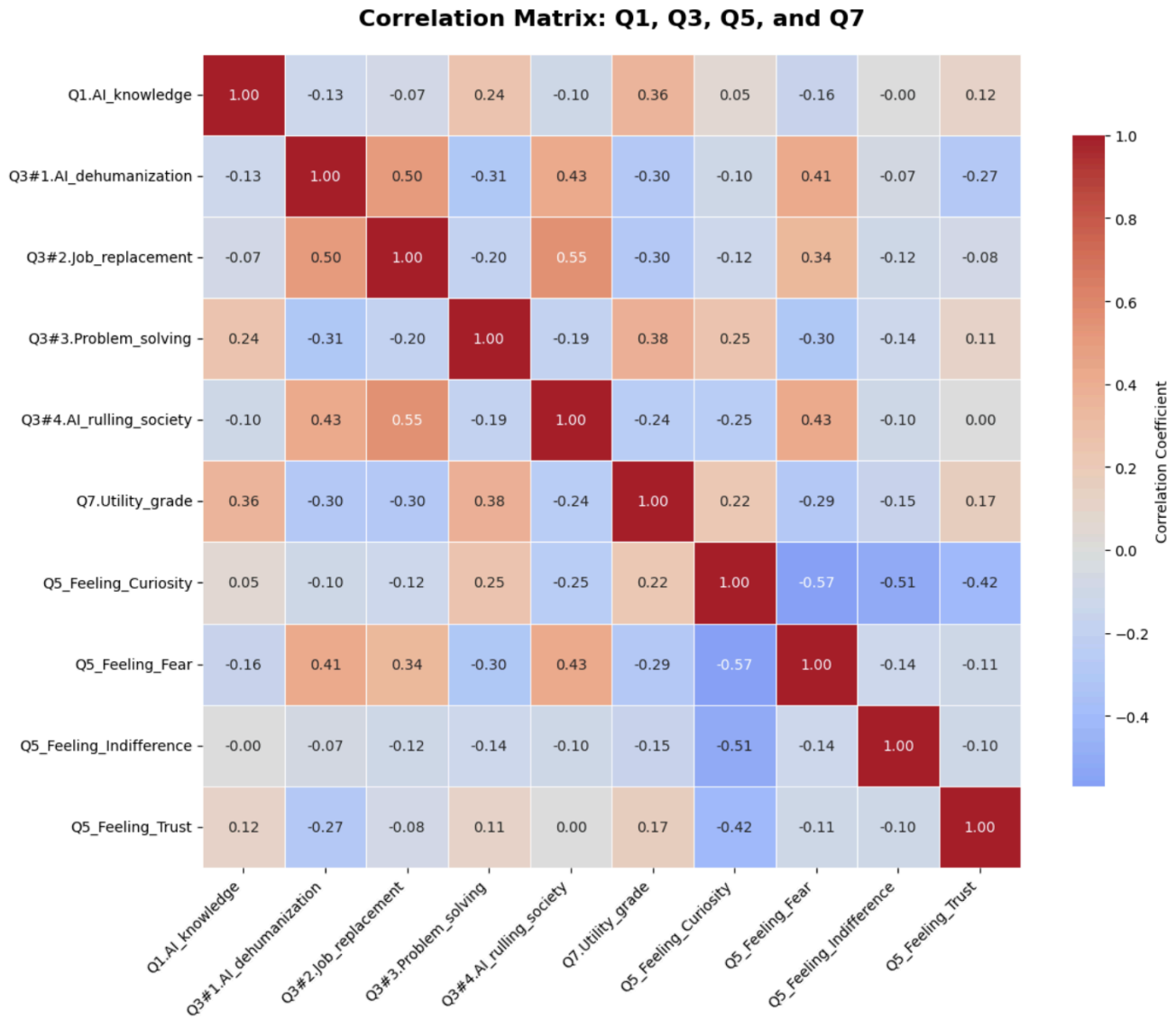
- Positive Perception: Most students rated AI's usefulness highly, with a notable peak at 10, and the majority of responses clustering between 6 and 10.
- Balanced Insights: Despite the overall positive sentiment, lower ratings (2-5) highlight a small portion of students who may perceive limitations or challenges in AI's educational utility.

# 3.2 Correlation Analysis

After conducting EDA, we decided to explore the relationships between the following variables based on appropriate questions:

- **Q1 vs. Q2:** Do students who use specific sources (e.g., Internet, Books, Social Media) report higher levels of AI knowledge?
- **Q1 vs. Q3**: Does higher AI knowledge correlate with stronger agreement (or disagreement) on perceptions of AI (e.g., dehumanization, job replacement)?
- **Q1 vs. Q5:** Does AI knowledge correlate with emotional responses like curiosity, fear, indifference, or trust?
- **Q1 vs. Q7:** Are students who perceive AI as more useful in education (Q7) also more knowledgeable about AI?
- **Q1 vs. Q12/Q14:** Are there differences in AI knowledge by gender (Q12) or major (Q14)?
- **Q3 vs. Q12/Q14:** Do perceptions of AI vary significantly between genders or across different majors?
- **Q3 vs. Q7:** Are perceptions of AI (e.g., societal benefits, dehumanization) linked to how useful students find AI in education?

## Correlation Matrix: Q1, Q3, Q5, and Q7




*The heatmap visualizes the correlation coefficients between various variables such as AI knowledge (Q1), perceptions (Q3), utility grade (Q7), and feelings (Q5)*

- **AI Knowledge (Q1) and Utility Grade (Q7)** have a moderate positive correlation (0.36), indicating that as AI knowledge increases, the perceived utility of AI also rises.
- **AI Knowledge (Q1) and Problem-Solving (Q3#3)** show a moderate positive correlation (0.24), suggesting that higher AI knowledge is linked to perceiving AI as better at problem-solving.
- **AI Dehumanization (Q3#1) and Job Replacement (Q3#2)** have a strong positive correlation (0.50), indicating that concerns about AI dehumanization are closely tied to fears of job replacement.
- **Job Replacement (Q3#2) and AI Ruling Society (Q3#4)** show a strong positive correlation (0.55), suggesting that fears of job replacement are associated with concerns about AI ruling society.
- **Feelings (Q5)** such as curiosity, fear, indifference, and trust show varying but weaker correlations with other variables. This suggests that emotional responses to AI are less influenced by perceptions of AI's knowledge or utility but may reflect personal attitudes or experiences. (to be explored further)

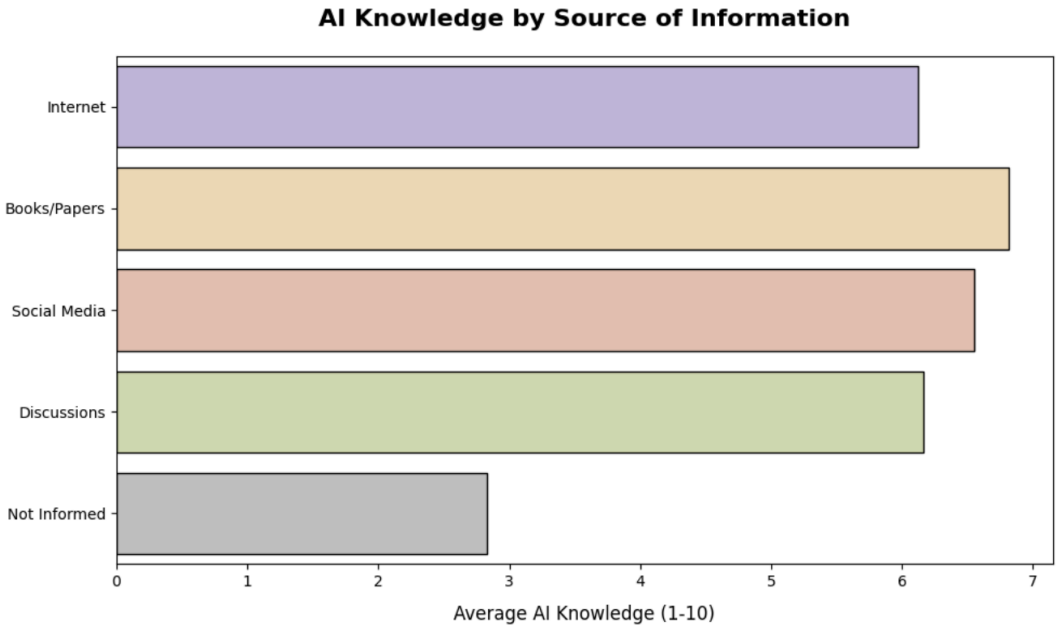
## AI Knowledge Scores (Q1) — Source of Information (Q2)

| Q2.AI_sources | Q1.AI_knowledge |
|---|---|
| Books/Scientific papers (physical/online format) | 7.000000 |
| Books/Scientific papers (physical/online format);Social media;Discussions with family/friends | 7.000000 |
| Discussions with family/friends | 2.000000 |
| I don't inform myself about AI | 2.833333 |
| Internet | 5.280000 |
| Internet;Books/Scientific papers (physical/online format) | 6.800000 |
| Internet;Books/Scientific papers (physical/online format);Discussions with family/friends | 6.500000 |
| Internet;Books/Scientific papers (physical/online format);Social media | 6.666667 |
| Internet;Books/Scientific papers (physical/online format);Social media;Discussions with family/friends | 7.000000 |
| Internet;Discussions with family/friends | 4.500000 |
| Internet;Social media | 6.500000 |
| Internet;Social media;Discussions with family/friends | 6.428571 |
| Social media | 6.000000 |

**dtype:** float64

*The table summarizes the average self-reported AI knowledge level (on a scale of 1-10) for students grouped by their sources of AI information.*

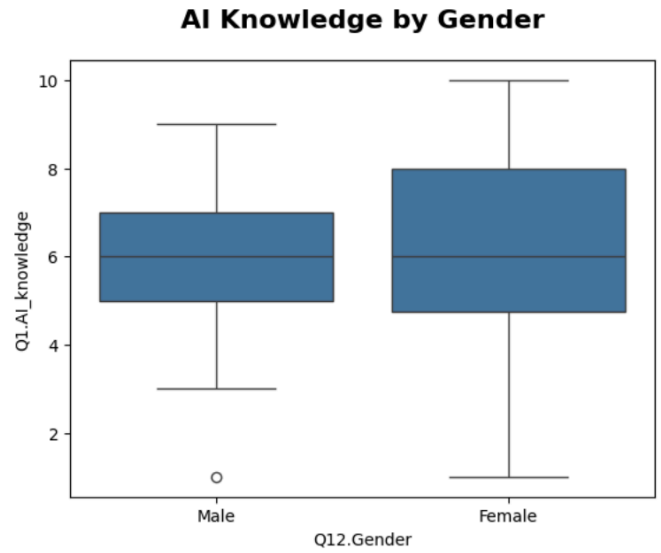
- **Books and Comprehensive Sources Lead:** Using Books/Scientific Papers alone or in combination with other sources (e.g., Internet, Social Media) consistently have an average AI knowledge of 7.0. This indicates that books may provide deeper or more structured learning about AI.
- **Internet Alone:** Relying solely on the Internet for AI information has an average score lower than books but still moderate. This might suggest that while the internet is popular, it may lack depth compared to books.
- **Mixed Sources Are Better:** Combinations like Internet + Books + Social Media yield higher averages, often approaching 7.0, suggesting that diversified sources provide a well-rounded understanding.




*The bar chart depicts the average AI knowledge levels (on a scale of 1 to 10) based on the sources of information used by students.*

- Books/Papers lead with the highest average AI knowledge scores, showcasing their deep and reliable content.
- Internet (including Social Media) emerges as a strong second, demonstrating the combined power of digital platforms for AI education.

## AI Knowledge (Q1) by Gender (Q12) and Major (Q14)

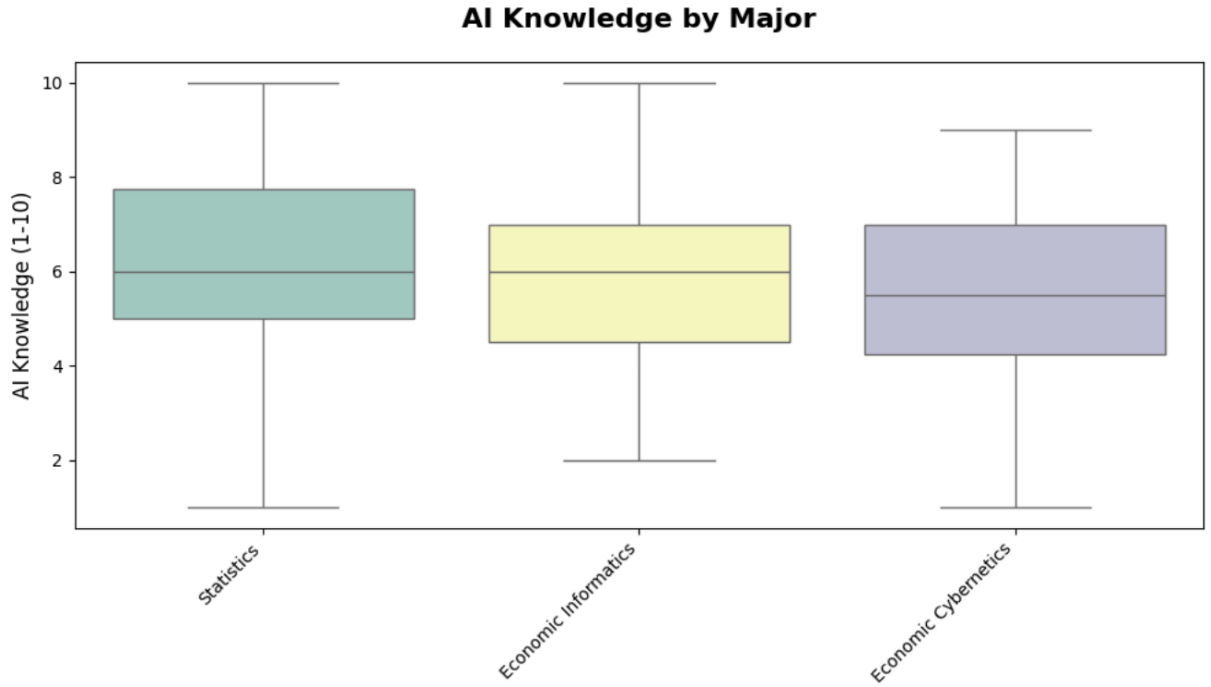



```
T-statistic: -0.20098263986334788, P-value: 0.8411707529940903
```

*The box plot compares the self-reported AI knowledge levels between male and female students.*

- The median AI knowledge levels are nearly identical for both genders, with slightly more variability observed in the responses from female participants.
- One outlier is present among male respondents, indicating a significantly lower reported knowledge level.

- The t-test results indicate that there is no statistically significant difference in AI knowledge levels between males and females.
- The high p-value (0.841) suggests that any observed differences in the box plot are likely due to random variation rather than a true difference between the groups.
- Therefore, based on this analysis, **we cannot conclude that females have more knowledge of AI than males.**




```
T-test Results for comparisons:
Statistics vs Economic Informatics: t = 0.05, p = 0.957
Statistics vs Economic Cybernetics: t = 1.52, p = 0.133
Economic Informatics vs Economic Cybernetics: t = 1.25, p = 0.216
```

*The box plot visualizes the distribution of AI knowledge levels among students across three majors*

- **Lack of Statistically Significant Differences:** The p-values for all t-tests are greater than 0.05, indicating that there are no statistically significant differences in AI knowledge scores across the three majors. This suggests that the majors are relatively homogeneous in terms of students' AI knowledge.

- **Uniform Knowledge Levels:** This might indicate that students across all three majors are exposed to similar levels of education regarding AI knowledge.

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## AI Knowledge (Q1) – AI Utility (Q7)

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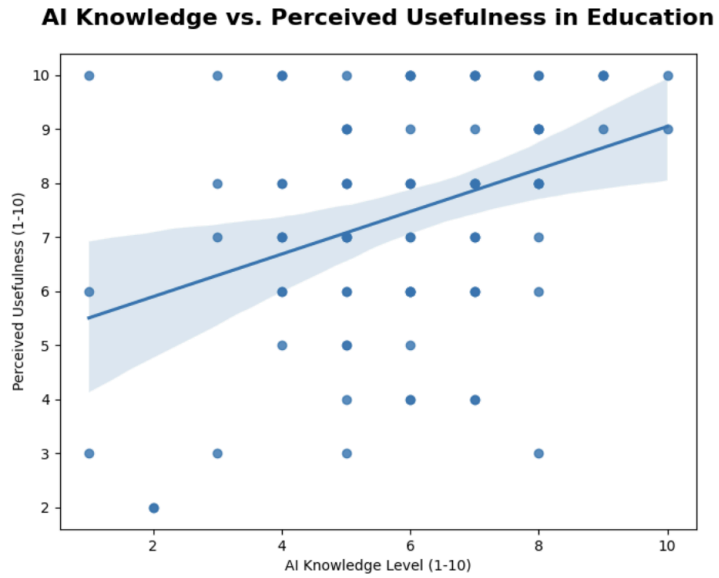


```
Pearson's correlation: 0.36
P-value: 0.000
```

*The scatter plot illustrates a positive relationship between AI knowledge levels (1-10) and the perceived usefulness of AI in education (1-10).*

- There is a **moderate positive correlation** between AI knowledge and perceived usefulness in education, with an upward trend indicating that greater AI awareness aligns with higher perceived utility.
- While variability in the data suggests other influencing factors, this highlights the potential of improving AI literacy/awareness to enhance acceptance and adoption in academia.

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## AI Knowledge (Q1) – AI Sentiments/Feelings (Q5)

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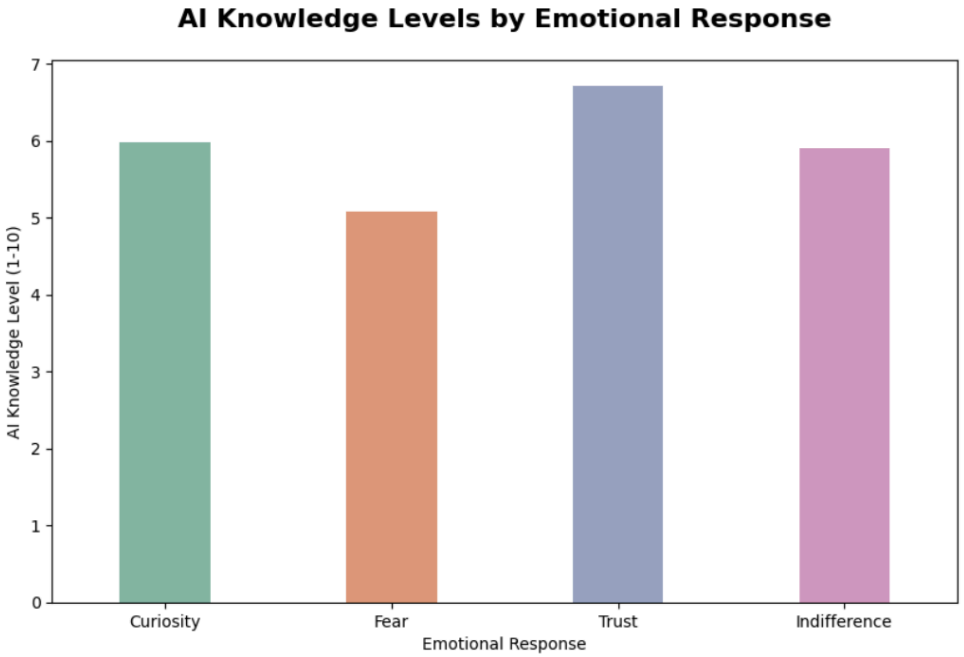


```
ANOVA Test Results
F-statistic: 1.127089304772213
p-value: 0.34264578558472786
No statistically significant differences between groups.
```

*The box plot displays AI knowledge levels (1-10) across emotional responses*

- The high p-value (0.343) exceeds the standard threshold of 0.05, suggesting that any observed differences in the box plot are likely due to random variation rather than true differences among the groups.
- Therefore, based on this analysis, we cannot conclude that emotional responses strongly impact AI knowledge levels.

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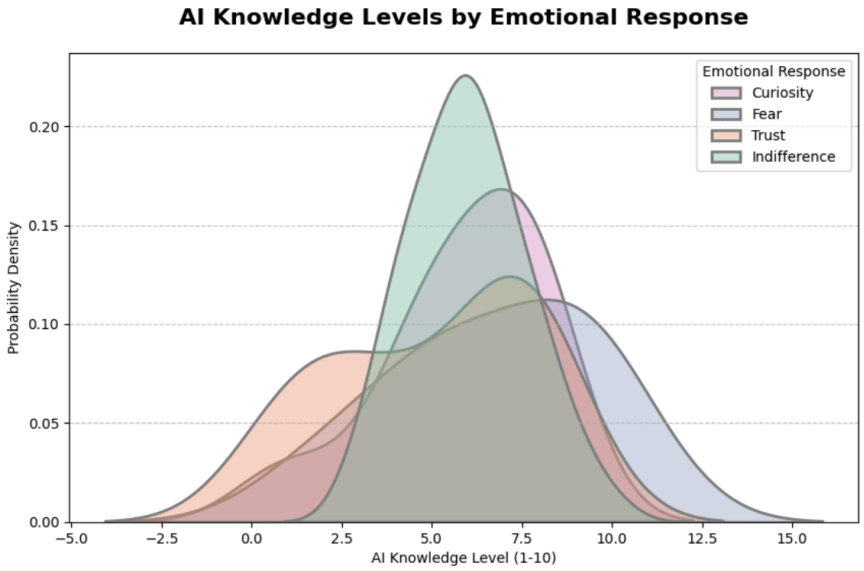
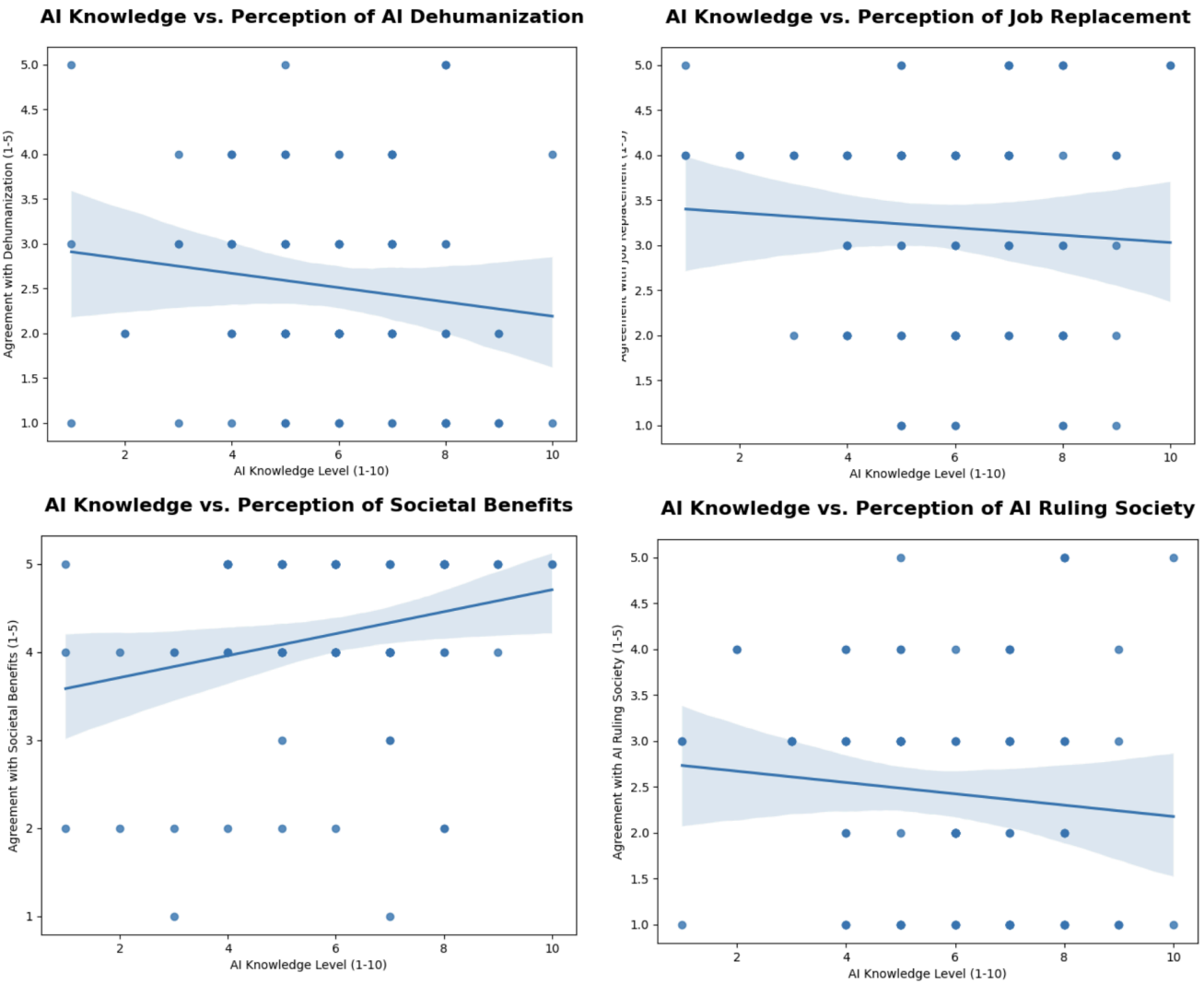



*The graph illustrates the distribution of AI knowledge levels by emotional responses.*

- The overlap and similarity in distributions across emotional responses also suggest that Emotional responses and AI knowledge appear largely independent of each other.
- High Variability: The wide spread of data within categories indicates that emotional responses may not predict or align meaningfully with knowledge levels.

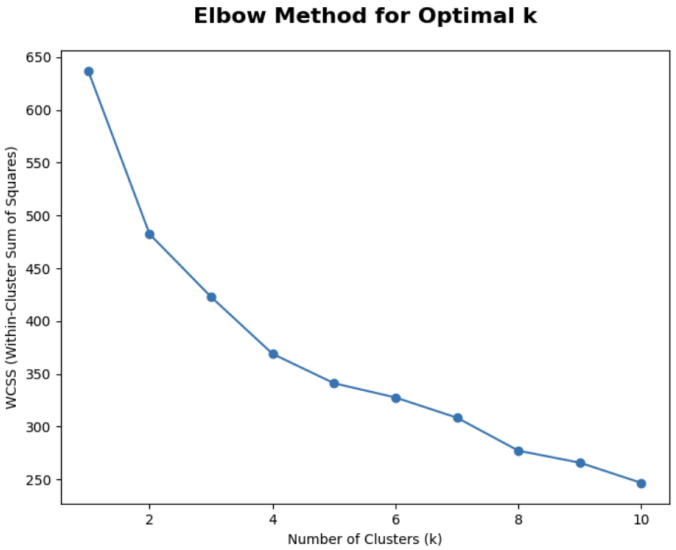
## AI Knowledge (Q1) – AI perception (Q3)




*The four scatter plots display the relationship between students' AI knowledge levels (1-10) and their perceptions across four key areas: AI dehumanization, job replacement, societal benefits, and AI ruling society.*

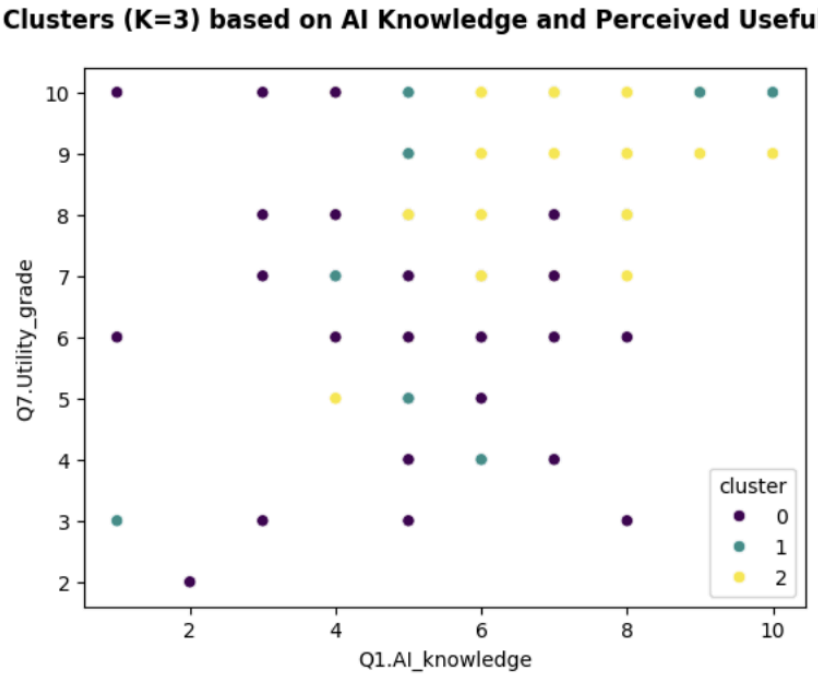
- **AI Knowledge vs. Perception of AI Dehumanization**: Higher AI knowledge correlates weakly with lower agreement on AI dehumanization. This suggests that individuals who are more knowledgeable about AI might be less likely to view it as a threat to human uniqueness or values, but the trend is not strong.
- **AI Knowledge vs. Perception of Job Replacement**: A slight negative trend indicates that higher AI knowledge might reduce concerns about job replacement by AI. However, the relationship is weak, implying that fear of job loss persists across knowledge levels.
- **AI Knowledge vs. Perception of Societal Benefits**: A positive correlation indicates that individuals with higher AI knowledge are more likely to agree on the societal benefits of AI. This is the strongest trend among the plots, perhaps suggesting that knowledge improves the perception of AI's positive potential.
- **AI Knowledge vs. Perception of AI Ruling Society**: Higher AI knowledge is weakly associated with reduced concerns about AI ruling society. This suggests that individuals with a greater understanding of AI view it as less of a societal control threat, though variability is high.

## **K-means Clustering :** AI Knowledge (Q1) – AI perception (Q3) – Utility grade (Q7)




*The graph plots the Within-Cluster Sum of Squares (WCSS) against the number of clusters (k). WCSS measures the total variance within clusters, with lower values indicating tighter clustering. The goal is to find a balance between reducing WCSS and keeping the number of clusters manageable.*

- The "elbow point" represents the optimal number of clusters. This is where adding more clusters no longer results in a significant reduction in WCSS. Beyond this point, additional clusters may overfit the data without meaningful improvement in the clustering.
- In this case, the "elbow" is observed at **k=3**, suggesting three is the optimal number of clusters. However, k=2 was also tested due to the similarity in AI knowledge means between Clusters 1 and 2 in the three-cluster model. This decision-making process ensures the model's simplicity while maintaining meaningful segmentation.




*The scatter plot visualizes clusters based on AI Knowledge and Perceived Usefulness, while the accompanying table summarizes the average scores for additional variables, providing insight into the characteristics of each cluster.*

**K=3 Observations**

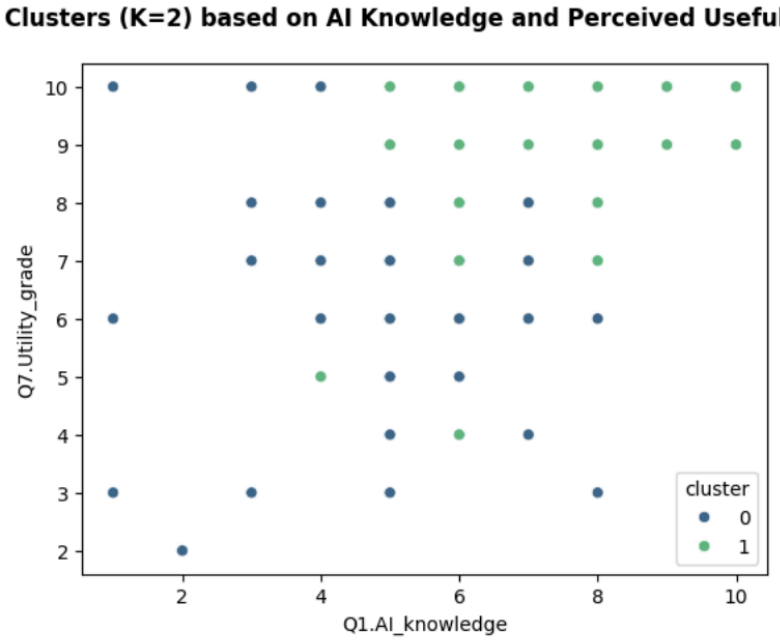
**Cluster 0:** Moderately knowledgeable, somewhat cautious, mid-level on usefulness.

**Cluster 1:** Higher knowledge, lower concerns about dehumanization, strong optimism.

**Cluster 2:** Similar to Cluster 1 but just a bit more reluctant to accept that AI will rule over societies.

**Cluster Means (K=3):**

| cluster | Q1.AI_knowledge | Q3#1.AI_dehumanization | Q3#2.Job_replacement | Q3#3.Problem_solving | Q3#4.AI_rulling_society | Q7.Utility_grade |
|---|---|---|---|---|---|---|
| 0 | 5.102564 | 3.282051 | 4.076923 | 3.769231 | 3.25641 | 6.333333 |
| 1 | 6.600000 | 1.800000 | 2.666667 | 4.266667 | 2.00000 | 7.800000 |
| 2 | 6.486486 | 2.000000 | 2.486486 | 4.621622 | 1.72973 | 8.459459 |




*The scatter plot with K=2 illustrates two clusters differentiated by AI Knowledge and Perceived Usefulness, while the table outlines the average variable scores for each cluster, highlighting distinctions in attitudes and perceptions between the groups.*

**K=2 Observations**

**Cluster 0:** Moderate knowledge, lower perceived usefulness, more caution.

**Cluster 1:** Stronger knowledge and a more positive stance on AI's potential.

**Cluster Means (K=2):**

| cluster | Q1.AI_knowledge | Q3#1.AI_dehumanization | Q3#2.Job_replacement | Q3#3.Problem_solving | Q3#4.AI_rulling_society | Q7.Utility_grade |
|---|---|---|---|---|---|---|
| 0 | 5.022727 | 3.181818 | 3.977273 | 3.704545 | 3.090909 | 6.227273 |
| 1 | 6.744681 | 1.893617 | 2.468085 | 4.659574 | 1.808511 | 8.574468 |

**Conclusion (K=2 Perspective)**

In the scatter plot, the blue cluster 0 leans toward lower AI knowledge and lower perceived usefulness—indicating a more cautious stance. In contrast, green cluster 1 displays higher AI knowledge and higher perceived usefulness, reflecting a notably more optimistic view. This visual split underscores how greater familiarity with AI might coincide with stronger confidence in its utility.

# 5. CONCLUSION

Our analysis of AI awareness and perception among students reveals a strong curiosity and optimism toward AI, particularly in its potential to solve societal challenges and enhance education. The dataset, sourced from Kaggle, was clean and required minimal preprocessing, but it primarily represented students from analytical majors like Economic Cybernetics, Statistics, and Economic Informatics.

Statistical tests showed no significant differences in AI knowledge levels based on gender, emotions, or majors, indicating a consistent understanding across the group. Emotional responses highlighted curiosity as the dominant sentiment, with trust showing weaker associations with AI knowledge. Concerns about job replacement and dehumanization were recurring themes, suggesting that emotional responses to AI might stem from broader personal beliefs rather than educational exposure.

Digital media (Internet/social media) were the most used sources for learning about AI, followed by books and papers. Students accessing diverse sources, particularly papers and books, reported higher AI knowledge, emphasizing the importance of varied educational materials.

Correlation analysis revealed a moderate positive relationship ($r=0.36$) between AI knowledge and the perceived usefulness of AI in education, indicating that familiarity with AI enhances its perceived value. Clustering analysis using K-means identified distinct groups of students based on their AI knowledge and perceived usefulness, highlighting varying levels of trust and skepticism.

Our study had limitations, including a homogeneous participant group and a small sample size, making this a preliminary exploration. Future research should include participants from diverse majors, institutions, and cultural backgrounds to draw more generalizable conclusions.

These findings provide a foundation for future work, including our projects and potential theses. By working with larger and more diverse datasets, we can explore why students engage or hesitate to engage with AI, the types of AI they find valuable, and how AI can better meet their academic and personal needs. This line of research underscores the importance of developing AI models to align with students' perceptions, needs, emotional responses, and educational goals, ensuring the sustainable integration of AI into academic environments.

# 6. BIBLIOGRAPHY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