Understanding Generative AI Trustworthiness

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Tung-Yen Wang, Xiaohan Wang, Yahui Zhang

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Agenda

01

Introduction

Introduction

Our project

This project works with Google cloud, aiming to evaluate the level of “trust” that customers have in GenAI products. We aim to find metrics representing customer “trust” in a GenAI product, how that metric differs across cohorts of customers, and the design factors contributing to that trust through survey data analysis.

Our team

User researchers:
Jingruo Chen, Zhuoer Lyu, Yahui Zhang

Data analysts:
Elisabeth Kam, Tung-Yen Wang, Xiaohan Wang

Executive Summary

We explored the multifaceted dimensions of customer trust in Generative AI (GenAI) in this study with methodologies including a sophisticated survey and interviews tailored to target specific user groups, including student developers and full-time employees, to identify and analyze critical trustworthy factors.

Our findings reveal that **Privacy**, **Accuracy**, **Reliability**, **Objectivity**, and **Security** are universally valued as the most important factors when evaluating GenAI trustworthiness. In addition, **Privacy** and **Accuracy** stand out among these five factors.

Based on the factors, we further provide recommendations on enhancement of user trust in GenAI products. Acknowledging its limitations in terms of potential biases and generalizability, this research provides foundational insights for future investigations into the trustworthiness of GenAI products and the impact of design elements on user preferences on GenAI systems.

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Background

User trust matters for GenAI products*

Trust matters in organizations

72%

of executives believe GenAI is key to fostering stakeholder trust

45%

warn of declining organizational trust in GenAI without proper risk management

User trust declines in the past year

82% ↘ **73%** of business buyers and **65%** ↘ **51%** of consumers

are receptive to AI enhancing their experiences, declining since 2022

68%

of customers emphasize increased AI advancements heighten the need for company trustworthiness

Source: KPMG Generative AI Survey

Source: Business Adopting AI Risk a 'Trust Gap' with Customers - Salesforce Report

Emphasizing younger generation users*

65% →

of generative AI users are Millennials or Gen Z

70% →

of Gen Z report using related technology

61% of GenZ and 56% of Millennials →

are aware of how AI works compared to only **24% of GenX** who said the same

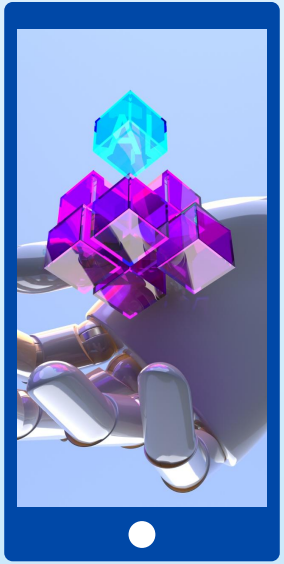
Source: Stat Library - Salesforce News, Trust in AI Survey

Product categories: Customer Support, Idea Generation, Coding Assistance*

Customer Support
GenAI chatbots that can **handle customer inquiries**, automate responses, and assist with support issues

Idea Generation
GenAI products that **generate creative and innovative ideas based on user prompts**, such as OpenAI GPT, IBM Watson Discovery, Google Bard.

Coding Assistance
GenAI products that **provide intelligent code suggestions**, **autocompletion**, **and assistance during the coding process**, such as GitHub Copilot and Microsoft Visual Studio IntelliCode.



Inherent difference between trust and trustworthiness

Trusting vs. Trustworthy Behaviors

Trust: a **subjective** response that can vary even when trustworthy factors are consistent

Trustworthiness: **measurable attributes** that an AI system presents (better indicators)

Challenges in Measuring AI Trustworthiness

- No standard criteria for AI trustworthiness
- Generative AI's rapid evolution complicates trustworthiness assessment
- Lack of measures impairs trust-building strategies

Source: Measuring Trust

Ten factors to break down the notion of trustworthiness*

Accuracy
The degree to which an AI system produces correct outputs or predictions based on the given inputs or data.

Objectivity
The impartiality of an AI system, ensuring that its decisions are free from biases and are based solely on the data it processes.

Safety
The condition of the system operating without causing unacceptable risk of physical injury or damage to the health of people.

Reliability/Robustness
The ability of a system to perform its required functions under stated conditions for a specified period of time.

Security
The protection of the AI system from unauthorized access, breaches, and potential cyber threats.

Accountability
The responsibility and answerability of the AI system for its actions and decisions.

Resilience
The ability to maintain its performance and recover quickly from disruptions or adversities.

Explainability/Transparency
The details and reasons a model gives to make its functioning clear or easy to understand.

Privacy
The ability to protect and handle user data without compromising the confidentiality and privacy of the user.

Anthropomorphism
The anthropomorphic characteristic of AI that contains features ranging from physical appearance to various mental states that characterize humans.

Source: Trust and Artificial Intelligence

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Methodology

Survey*

Why?

69.56% of studies create and employ their own questionnaires to assess user trust in generative AI products.

Advantages:
Broad Data Collection, Standardized Measurement, Quantitative Analysis, Anonymity and Privacy

How?

Experiences with GenAI products

Ranking statements of trustworthy factors

Experiences with Cloud-based products

Demographic questions

Pre-test

Modify the survey based on feedback from **16 users**

Distribution

Distributed through Qualtrics for 2 weeks

Student developers, Google employees

108 valid responses

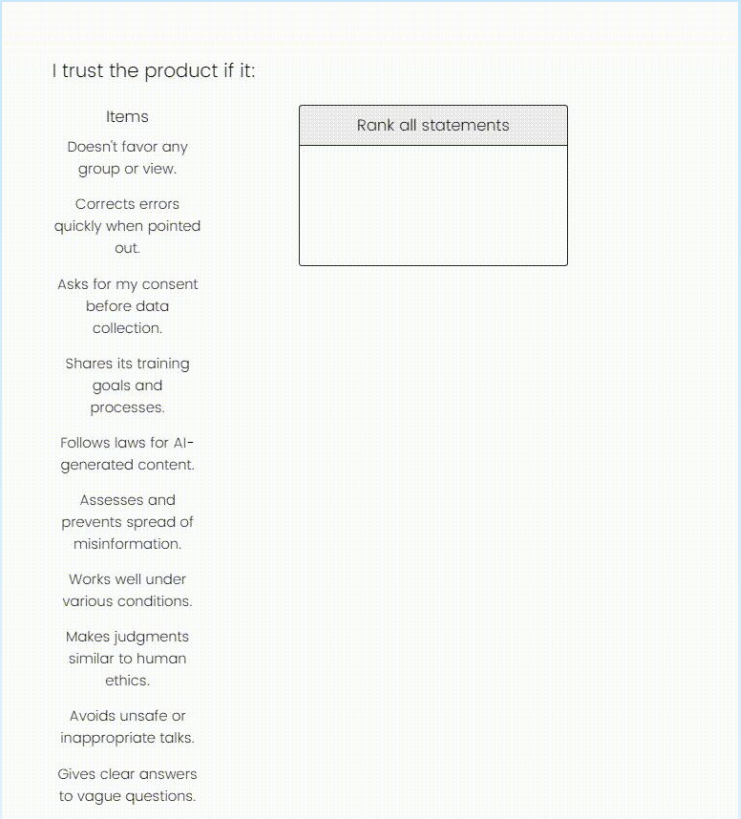
Source: A Systematic Literature Review of User Trust in AI-Enabled Systems

Survey*

Design:

- 10 trustworthy factors
- 3 statements per factor
- 10 factors per trial
- 1 statement per factor in each trial
- 3 trials in total

Instruction for participants:
Drag and order statements by how much they impact your trust in the GenAI product, from **most (1)** to **least (10)**



Data Analysis

Overall Raw Scores

Overview of participant usage, overall and subgroups top factors, and statement scores.

One-Way ANOVA

Performed to evaluate if there are significant differences between the means of the 10 trustworthy factors.

Post Hoc Test

Conducted to further investigate the significant differences in specific pairwise comparison among groups.

Cohen's Kappa

Employed to assess inter-rater reliability among user trials, gauging the degree of homogeneity in ratings across a group of evaluators.

Interview

Why?

- Validation of survey result
- Details and Depth
- Gathering qualitative insights
- Identifying trends

How?

- Semi-structured Interviews conducted online or In-person
- Survey Walk through and follow-up questions
- Questions regarding design factors and user behaviour

Scope

- Six participants – Two for each category
- Mixture of Professionals and students
- 45 minutes

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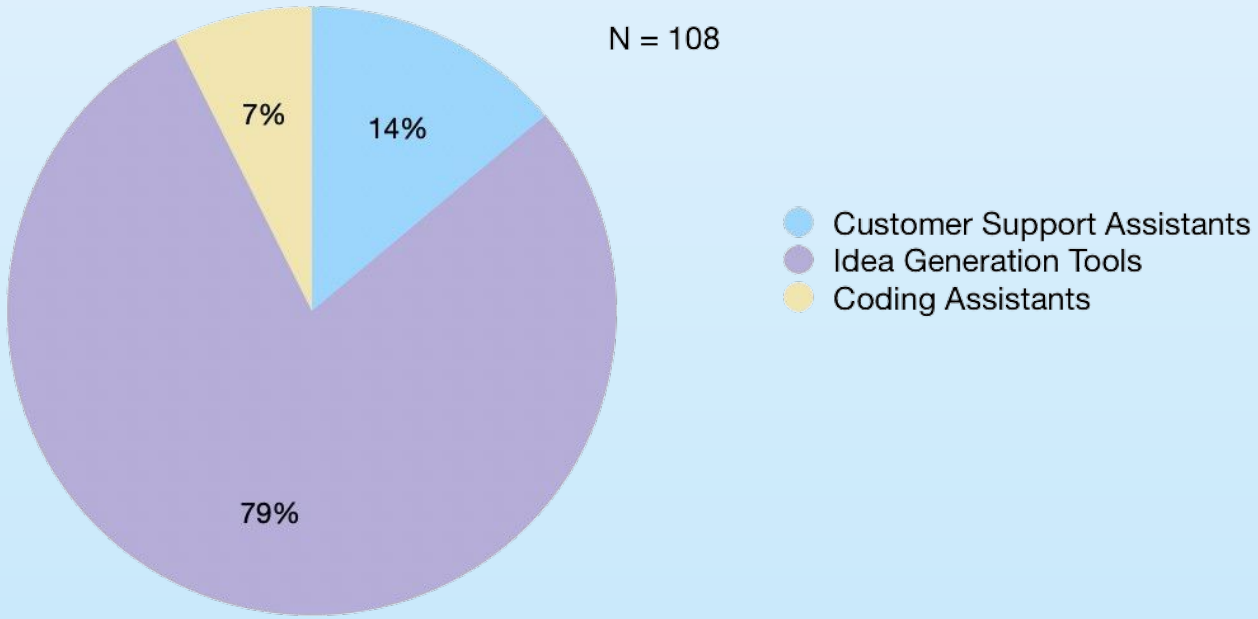
Results

Majority most frequently use Idea Generation Tools



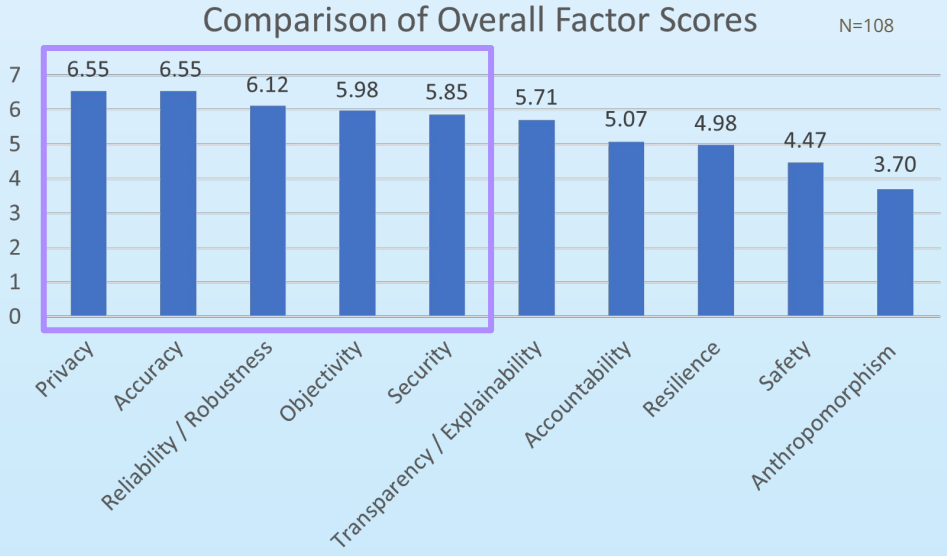
Top 5 factors emerge while scores are overall close

Ranking Score Calculation:

- Higher ranking assigned with higher score in calculation
- E.g. factor ranked 1st = 10 points

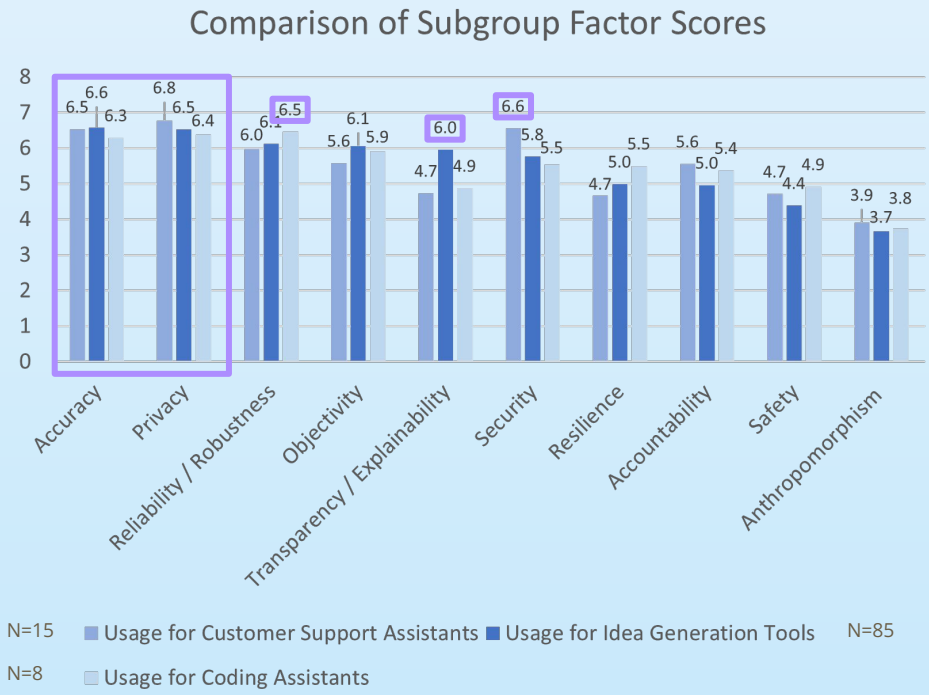
Top five factors:

1. Privacy
2. Accuracy
3. Reliability/Robustness
4. Objectivity
5. Security



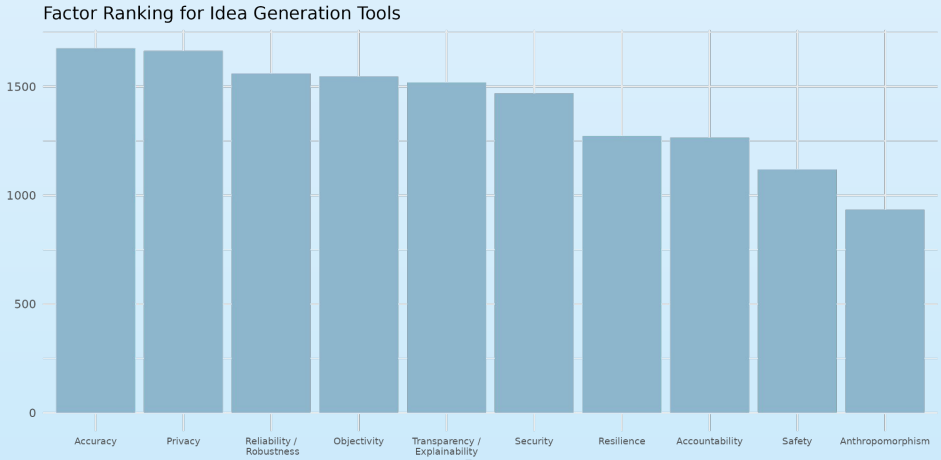
Consistent preference for top 5 factors across categories

- The same five factors are still largely favored across the three groups
- **Accuracy** and **Privacy** stand out in all 3 subgroups
- **Transparency/Explainability** is relatively more important to idea generation
- **Security** is relatively more important to customer support
- **Reliability/Robustness** is relatively more important to coding assistants



Idea Generation has most impact on overall ranking

Factors	Ranking	Score
Accuracy	1	1676
Privacy	2	1664
Reliability / Robustness	3	1560
Objectivity	4	1546
Transparency / Explainability	5	1519
Security	6	1469
Resilience	7	1273
Accountability	8	1265
Safety	9	1119
Anthropomorphism	10	934



Significant difference in factor scoring in overall comparison and Idea Generation Tools

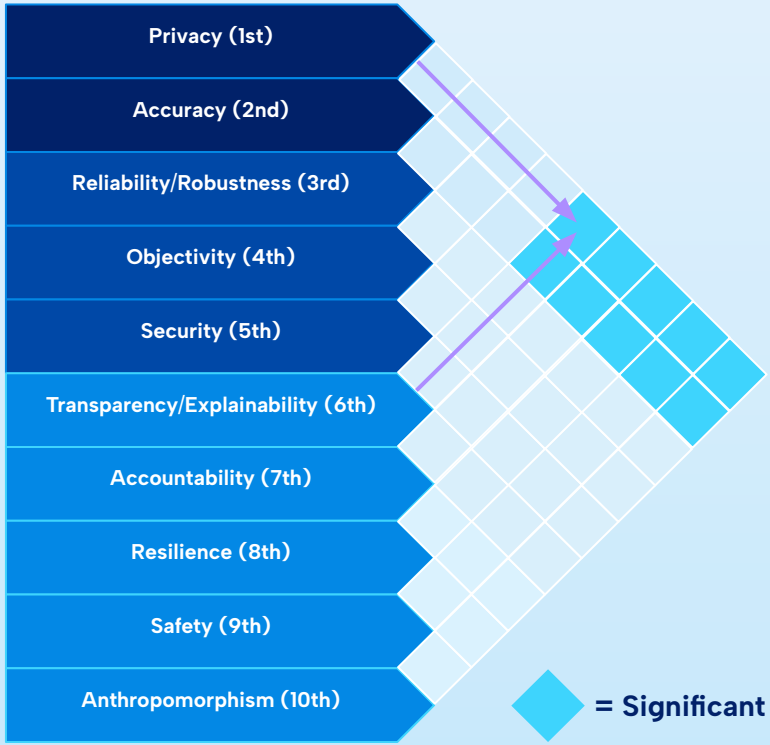
One-Way ANOVA

Table of p-values; alpha = 0.05

	All 10 Factors	Top 5 Factors
All 3 Categories	**$4.992e^{-43}$ *****	**0.012****
Customer Support Assistants	0.841	0.945
Idea Generation Tools	**$2.704e^{-11}$ *****	0.676
Coding Assistants	0.997	0.998

Privacy and Accuracy stood out in Post Hoc tests

Only **Privacy (1st)** and **Accuracy (2nd) differ significantly** from **Transparency/Explainability (6th)**, **Accountability (7th)**, **Resilience (8th)**, **Safety (9th)**, **Anthropomorphism (10th)**.



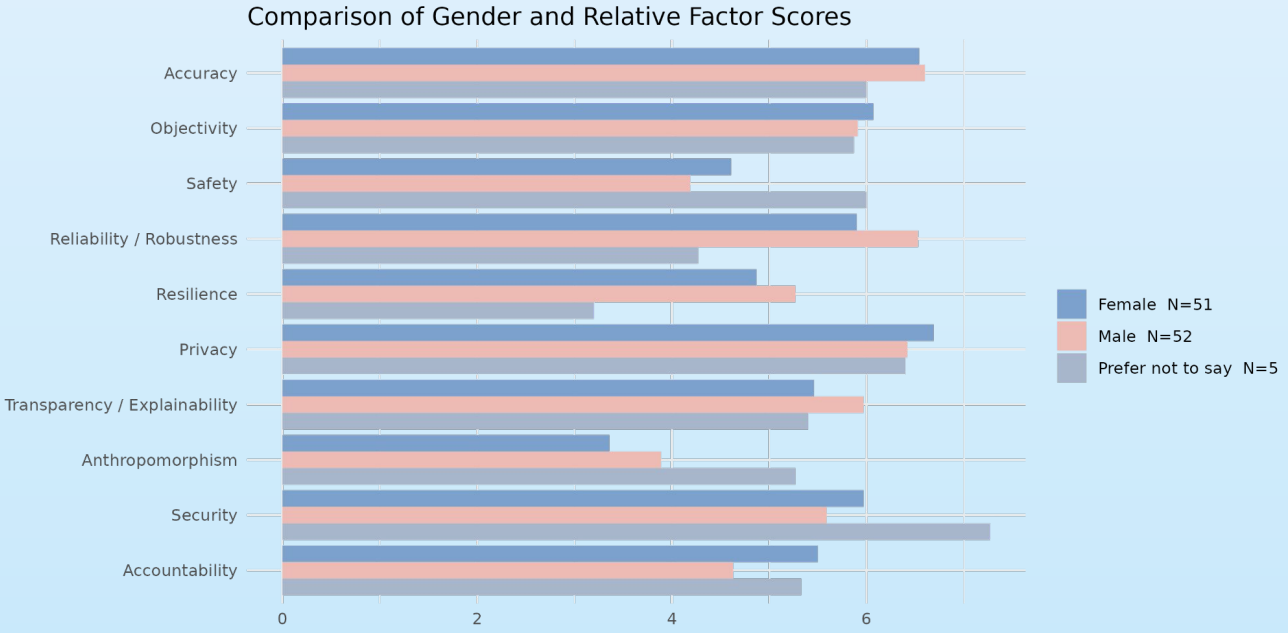
Privacy (1st) and **Accuracy (2nd)**, however, are **not significantly different** from **Reliability/Robustness (3rd)**, **Objectivity (4th)**, **Security (5th)**.

Method

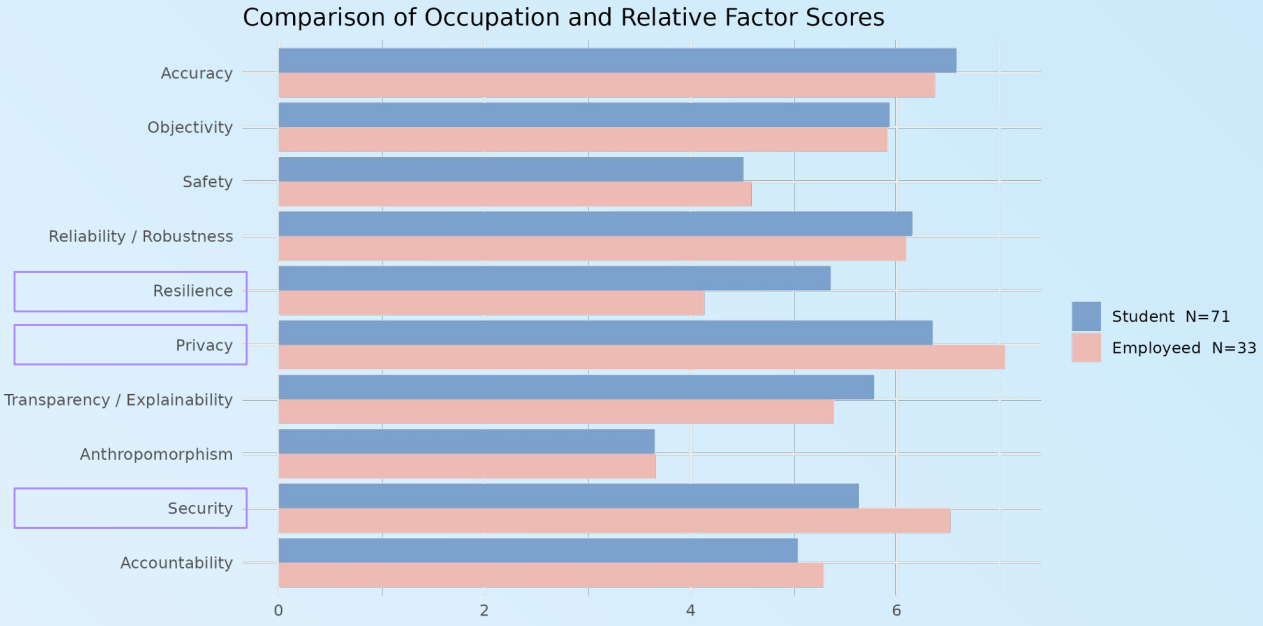
Conducted Tukey's Test to pair and test all 10 factors for significance.

= Significant pairwise difference in factor scoring

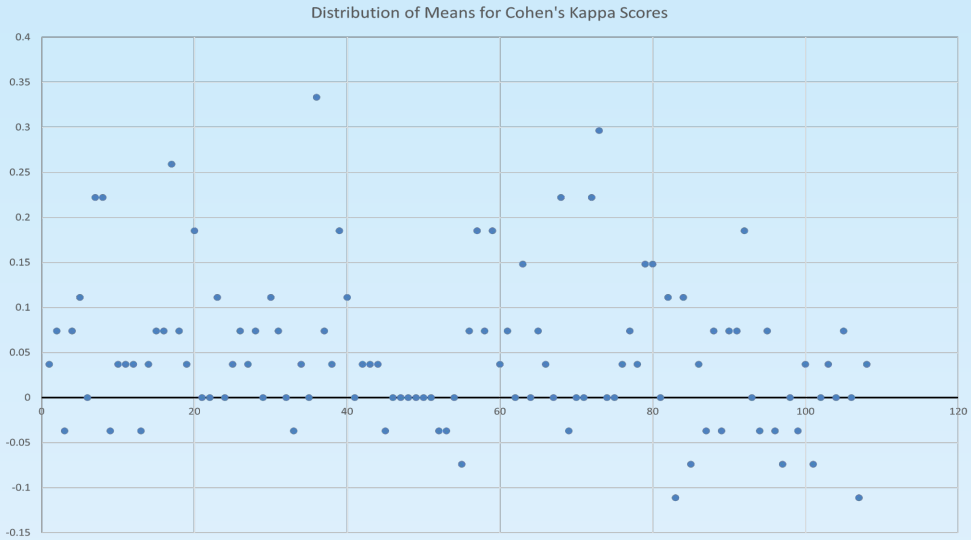
No significant divide of trustworthy factors between males and females



Full-time employees value Privacy and Security more while students value Resilience more



Agreement within a user's response is at most fair



X-axis: user number, e.g. 20 = 20th user

Y-axis: scale of Kappa values

Higher value = stronger agreement

Lower value = weaker agreement

- As shown by the dark line, most values fall around 0, indicating that agreement is due to chance.
- At best, agreement between a participant and themselves is fair.
- Overall, **varying degrees of preferences exist within the same factor for a single user**.

Statement-level analysis aligns with factor-level analysis

Factors	Statements	Score	Average Rating Score
Accuracy	*Checks its own answers carefully.*	766	7.10
Privacy	*Keeps my interactions confidential.*	741	6.86
Objectivity	*Answers using only facts and logic.*	731	6.77
Transparency/Explainability	*Shows step-by-step solution breakdown.*	730	6.76
Security	*Protects my personal data from hackers.*	721	6.68
Reliability/Robustness	*Works well under various conditions.*	719	6.67
Privacy	*Asks for my consent before data collection.*	693	6.42
Accuracy	*Gives clear answers to vague questions.*	692	6.41
Privacy	*Lets me manage and delete my data.*	688	6.37
Resilience	*Corrects errors quickly when pointed out.*	669	6.19

Subgroup statement ranking aligns with overall ranking

Accuracy: The statements chosen are both within the top 10 statements; the “Idea Generation” group focuses more on correctness while other groups focus more on clarity.
Privacy: The same applies here; the “Coding Assistant” group focuses more on data privacy while other groups focus more on interaction privacy.

Subgroup	Factor	Top 1 Statement of that Factor	Statement Subgroup Ranking	Average Rating Score
Idea Generation	Accuracy	*Checks its own answers carefully.*	1	7.26
	Privacy	*Keeps my interactions confidential.*	4	6.86
Customer Support	Accuracy	*Gives clear answers to vague questions.*	3	7.07
	Privacy	*Keeps my interactions confidential.*	2	7.27
Coding Assistant	Accuracy	*Gives clear answers to vague questions.*	4	6.63
	Privacy	*Asks for my consent before data collection.*	3	6.75

Individual statements provide further insights

Users focus more on solution breakdown when generating ideas, personal data security when asking for customer support, and smooth operations when coding.

Subgroup	Factors	Statements	Statement Subgroup Ranking	Average Rating Score
Idea Generation	Transparency/ Explainability	*Shows step-by-step solution breakdown.*	2	7.15
Customer Support	Security	*Protects my personal data from hackers.*	1	7.33
Coding Assistant	Reliability/Robustness	*Works well under various conditions.*	2	6.88

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Recommendation

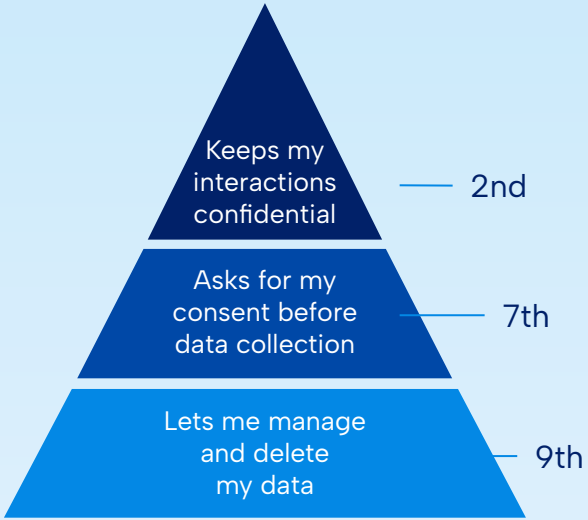
Conclusion*

- Top five factors would be the most important ones when evaluating GenAI product trustworthiness: **Privacy, Accuracy, Reliability/Robustness, Objectivity,** and **Security**

- Top two factors stand out from the five: **Privacy** and **Accuracy**

Privacy*

Statement ranking



Data analysis insights

- More important for customer support
- Employees value privacy more than students

Industry practices

- OpenAI ChatGPT: has an option for users to turn off Chat history & training

Interview quotes

"Privacy is not that important to us, but if I speak from the perspective of a student, but if I am, for example, making my personal project, then I might set it a lot higher."
– Student, 22 y/o

"I saw recent news about how GenAI generates images that looks like a particular user because the user fed his own image. This makes me worry."
– Student, 26 y/o

Recommendations

Give users control over their data by providing clear options for opting in or out of data collection, personalized experiences, and sharing of their information.

Accuracy*

Statement ranking

Data analysis insights

- High across all categories
- Chosen as the top by students

Industry practices

- Grammarly: allows users to ignore suggestions and adjusts the system to improve accuracy and relevance

Interview quotes

"Check its own answers carefully is the most important because all I care about is that the product can help me most effectively."
– Student, 24 y/o

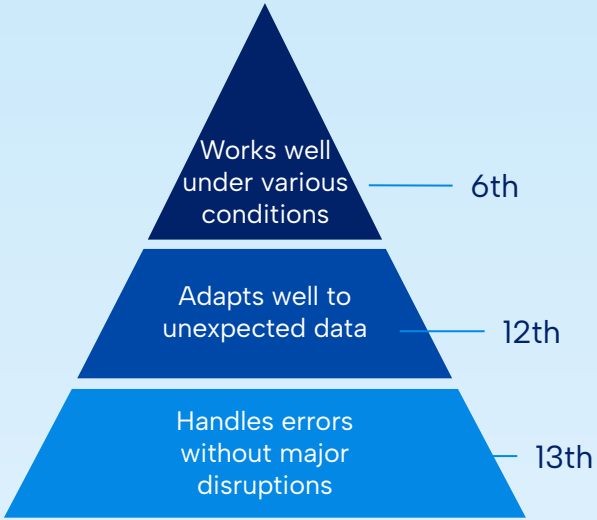
"Other factors do not matter at all when I am urgent in completing the task, as long as it can provide the correct answer."
– Student, 22 y/o

Recommendations

Let users verify its answers and utilize user feedbacks, provides an indication of the system's confidence level for each generated response, marketing accuracy feature with product iterations.

Reliability/Robustness*

Statement ranking



Data analysis insights

- Important for coding assistance
- Students value privacy more than employees

Industry practices

- Oracle Database: regularly verifies data integrity, ensuring that the database remains reliable over time

Interview quotes

"I ranked this first because it is important that the system can handle unexpected situations and changes of prompts. "
– Student, 24 y/o

"This is very crucial when I am using Copilot. It should be able to autocomplete different types of functions or algorithms. "
– Student, 23 y/o

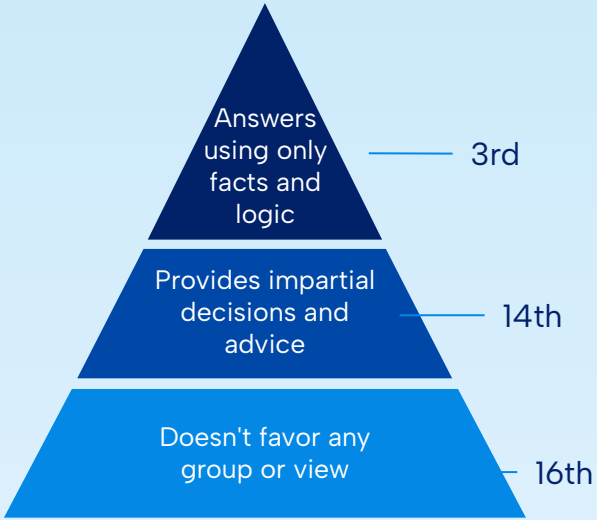
"I care about the effectiveness of the product the most in terms of completing tasks"
– Student, 26 y/o

Recommendations

Provides clear error messages to users, suggests alternative solutions for errors, enable the system to recognize and adapt to different prompt variations, regularly verify the integrity of the data, conduct extensive stress testing to evaluate the system's performance.

Objectivity*

Statement ranking



Data analysis insights

- Most important for Idea generation tools
- Equally important for both students and employees

Industry practices

- IBM Watson: offers features to monitor AI models for bias, fairness, and trust, adding transparency to how AI models make decisions

Interview quotes

“I don’t care about impartial decisions or favoring over groups as I am coding, not asking for opinions. “

– Student, 23 y/o

“I ranked this statement first because I want the answer to be accurate, I do not want biased answers when I am asking a question. “

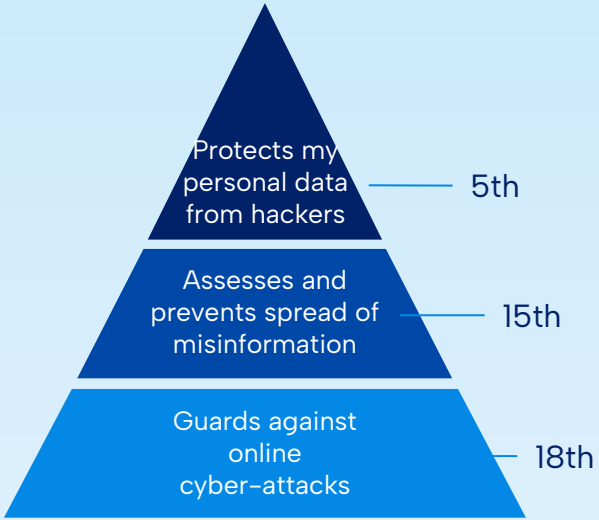
– Student, 25 y/o

Recommendations

Transparently disclose the sources of information used by the generative AI product, provide explanations, reasoning or sources for its answers, conduct regular evaluation and auditing of the system's performance to identify and mitigate any biases.

Security*

Statement ranking



Data analysis insights

- Most important for Customer support assistant tools
- More important for employees than students

Industry practices

- AWS: has identity and access management, data protection, privacy and compliance, application security, and threat modeling

Interview quotes

"Protection of my personal data is important as leaking it has caused me so many troubles, like phone scams. But online cyber-attacks don't seem like something that will actually happen to me."

– Student, 23 y/o

Recommendations

Use cases for emerging defense techniques, Alignment of LLM-enabled code generation to secure-coding practices, Repository and service of state-of-the-art attacks and defenses.

Source: Identifying and Mitigating the Security Risks of Generative AI https://arxiv.org/abs/2308.14840

06

Limitations

Limitations

Survey

- Misinterpretation of trustworthy statements
- Limited behavioral Insights
- Sampling bias

Data Analysis

- Limited generalizability and statistical significance
- Factors overlapping in meanings

Interview

- Confirmation bias
- Limited number of participants

07

Future Study

Future Study

Customer Support

- Examine preferences for human-like features in design

Design Factors

- Analyze how design factors affect user choices: easy-to-use interfaces, direct solutions, progressive updates, multi-platform compatibility, etc.

Coding assistance

- Explore varying coding approaches: using AI tools like ChatGPT vs. GitHub Copilot

Market Opportunities

- Assess coding assistance specific to platforms like Colab
- Evaluate Google's edge in web browsing and information sourcing

Thank you!

Feel free to reach out to us with any questions:

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08

Appendix

Post-Hoc Results

Red = Reject Null
Blue = Failed to Reject

Multiple Comparison of Means - Tukey HSD, FWER=0.05

group1	group2	meandiff	p-adj	lower	upper	reject
Accountability	Accuracy	4.4167	0.001	2.039	6.7944	True
Accountability	Anthropomorphism	-4.1111	0.001	-6.4888	-1.7334	True
Accountability	Objectivity	2.7315	0.0106	0.3538	5.1092	True
Accountability	Privacy	4.4259	0.001	2.0482	6.8036	True
Accountability	Reliability/Robustness	3.1481	0.0012	0.7704	5.5258	True
Accountability	Resilience	-0.2685	0.9	-2.6462	2.1092	False
Accountability	Safety	-1.8056	0.3221	-4.1833	0.5721	False
Accountability	Security	2.3426	0.0575	-0.0351	4.7203	False
Accountability	Transparency/Explainability	1.8981	0.253	-0.4796	4.2758	False
Accuracy	Anthropomorphism	-8.5278	0.001	-10.9055	-6.1501	True
Accuracy	Objectivity	-1.6852	0.4284	-4.0629	0.6925	False
Accuracy	Privacy	0.0093	0.9	-2.3684	2.387	False
Accuracy	Reliability/Robustness	-1.2685	0.7743	-3.6462	1.1092	False
Accuracy	Resilience	-4.6852	0.001	-7.0629	-2.3075	True
Accuracy	Safety	-6.2222	0.001	-8.5999	-3.8445	True
Accuracy	Security	-2.0741	0.1496	-4.4518	0.3036	False
Accuracy	Transparency/Explainability	-2.5185	0.0279	-4.8962	-0.1408	True
Anthropomorphism	Objectivity	6.8426	0.001	4.4649	9.2203	True
Anthropomorphism	Privacy	8.537	0.001	6.1593	10.9147	True
Anthropomorphism	Reliability/Robustness	7.2593	0.001	4.8816	9.637	True
Anthropomorphism	Resilience	3.8426	0.001	1.4649	6.2203	True
Anthropomorphism	Safety	2.3056	0.0665	-0.0721	4.6833	False
Anthropomorphism	Security	6.4537	0.001	4.076	8.8314	True
Anthropomorphism	Transparency/Explainability	6.0093	0.001	3.6316	8.387	True

group1	group2	meandiff	p-adj	lower	upper	reject
Objectivity	Privacy	1.6944	0.42	-0.6833	4.0721	False
Objectivity	Reliability/Robustness	0.4167	0.9	-1.961	2.7944	False
Objectivity	Resilience	-3.0	0.0027	-5.3777	-0.6223	True
Objectivity	Safety	-4.537	0.001	-6.9147	-2.1593	True
Objectivity	Security	-0.3889	0.9	-2.7666	1.9888	False
Objectivity	Transparency/Explainability	-0.8333	0.9	-3.211	1.5444	False
Privacy	Reliability/Robustness	-1.2778	0.7668	-3.6555	1.0999	False
Privacy	Resilience	-4.6944	0.001	-7.0721	-2.3167	True
Privacy	Safety	-6.2315	0.001	-8.6092	-3.8538	True
Privacy	Security	-2.0833	0.1451	-4.461	0.2944	False
Privacy	Transparency/Explainability	-2.5278	0.0268	-4.9055	-0.1501	True
liability/Robustness	Resilience	-3.4167	0.001	-5.7944	-1.039	True
liability/Robustness	Safety	-4.9537	0.001	-7.3314	-2.576	True
liability/Robustness	Security	-0.8056	0.9	-3.1833	1.5721	False
liability/Robustness	Transparency/Explainability	-1.25	0.7895	-3.6277	1.1277	False
Resilience	Safety	-1.537	0.5548	-3.9147	0.8407	False
Resilience	Security	2.6111	0.0185	0.2334	4.9888	True
Resilience	Transparency/Explainability	2.1667	0.1101	-0.211	4.5444	False
Safety	Security	4.1481	0.001	1.7704	6.5258	True
Safety	Transparency/Explainability	3.7037	0.001	1.326	6.0814	True
Security	Transparency/Explainability	-0.4444	0.9	-2.8221	1.9333	False

Statements

Factors	Statements	Overall	Average Rating Score	Group 1	Percentage of Overall	Average Rating Score	Group 2	Percentage of Overall	Average Rating Score	Group 3	Percentage of Overall	Average Rating Score
Accuracy	Checks its own answers carefully.	766	7.092592593	98	0.127937337	6.533333333	617	0.805483029	7.258823529	51	0.066579634	6.375
Privacy	Keeps my interactions confidential.	741	6.861111111	109	0.147098516	7.266666667	583	0.786774629	6.858823529	49	0.066126856	6.125
Objectivity	Answers using only facts and logic.	731	6.768518519	86	0.117647059	5.733333333	601	0.822161423	7.070588235	44	0.060191518	5.5
Transparency/Explainability	Shows step-by-step solution breakdown.	730	6.759259259	84	0.115068493	5.6	608	0.832876712	7.152941176	38	0.052054795	4.75
Security	Protects my personal data from hackers.	721	6.675925926	110	0.152565881	7.333333333	551	0.764216366	6.482352941	60	0.083217753	7.5
Reliability/Robustness	Works well under various conditions.	719	6.657407407	97	0.134909597	6.466666667	567	0.788595271	6.670588235	55	0.076495132	6.875
Privacy	Asks for my consent before data collection.	693	6.416666667	103	0.148629149	6.866666667	536	0.773448773	6.305882353	54	0.077922078	6.75
Accuracy	Gives clear answers to vague questions.	692	6.407407407	106	0.153179191	7.066666667	533	0.770231214	6.270588235	53	0.076589595	6.625
Privacy	Lets me manage and delete my data.	688	6.37037037	93	0.135174419	6.2	545	0.792151163	6.411764706	50	0.072674419	6.25
Resilience	Corrects errors quickly when pointed out.	669	6.194444444	83	0.12406577	5.533333333	538	0.804185351	6.329411765	48	0.071748879	6
Accuracy	Lets me verify its answers.	663	6.138888889	90	0.135746606	6	526	0.793363499	6.188235294	47	0.070889894	5.875
Reliability/Robustness	Adapts well to unexpected data.	643	5.953703704	80	0.124416796	5.333333333	515	0.800933126	6.058823529	48	0.074650078	6
Reliability/Robustness	Handles errors without major disruptions.	622	5.759259259	92	0.147909968	6.133333333	478	0.768488746	5.623529412	52	0.083601286	6.5
Objectivity	Provides impartial decisions and advice.	620	5.740740741	74	0.119354839	4.933333333	489	0.788709677	5.752941176	57	0.091935484	7.125
Security	Assesses and prevents spread of misinformation.	591	5.472222222	92	0.155668359	6.133333333	462	0.781725888	5.435294118	37	0.062605753	4.625
Objectivity	Doesn't favor any group or view.	588	5.444444444	91	0.154761905	6.066666667	456	0.775510204	5.364705882	41	0.069727891	5.125
Accountability	Is overseen by a responsible authority.	586	5.425925926	82	0.139931741	5.466666667	468	0.798634812	5.505882353	36	0.061433447	4.5
Security	Guards against online cyber-attacks.	585	5.416666667	93	0.158974359	6.2	456	0.779487179	5.364705882	36	0.061538462	4.5
Transparency/Explainability	Translates technical terms to simple language.	580	5.37037037	69	0.118965517	4.6	472	0.813793103	5.552941176	39	0.067241379	4.875
Accountability	Follows laws for AI-generated content.	568	5.259259259	92	0.161971831	6.133333333	430	0.757042254	5.058823529	46	0.080985915	5.75
Resilience	Works well during high-demand times.	556	5.148148148	73	0.131294964	4.866666667	432	0.776978417	5.082352941	51	0.091726619	6.375
Safety	Warns about risky answers.	545	5.046296296	85	0.155963303	5.666666667	426	0.781651376	5.011764706	34	0.062385321	4.25
Transparency/Explainability	Shares its training goals and processes.	539	4.990740741	60	0.111317254	4	439	0.814471243	5.164705882	40	0.074211503	5
Accountability	Allows me to report its malfunctions.	490	4.537037037	76	0.155102041	5.066666667	367	0.748979592	4.317647059	47	0.095918367	5.875
Anthropomorphism	Makes judgments similar to human ethics.	484	4.481481481	82	0.169421488	5.466666667	358	0.739669421	4.211764706	44	0.090909091	5.5
Safety	Blocks harmful information.	463	4.287037037	74	0.159827214	4.933333333	347	0.749460043	4.082352941	42	0.090712743	5.25
Safety	Avoids unsafe or inappropriate talks.	441	4.083333333	53	0.120181406	3.533333333	346	0.784580499	4.070588235	42	0.095238095	5.25
Resilience	Resumes tasks after long inactivity.	390	3.611111111	54	0.138461538	3.6	303	0.776923077	3.564705882	33	0.084615385	4.125
Anthropomorphism	Mimics human emotions and understanding.	363	3.361111111	52	0.143250689	3.466666667	295	0.812672176	3.470588235	16	0.044077135	2
Anthropomorphism	Mirrors human emotional responses.	353	3.268518519	42	0.11898017	2.8	281	0.796033994	3.305882353	30	0.084985836	3.75

Statements

Accuracy
1. Gives clear answers to vague questions.
2. Lets me verify its answers.
3. Checks its own answers carefully.

Objectivity
1. Provides impartial decisions and advice.
2. Doesn't favor any group or view.
3. Answers using only facts and logic.

Safety
1. Warns about risky answers.
2. Blocks harmful information.
3. Avoids unsafe or inappropriate talks.

Reliability/Robustness
1. Adapts well to unexpected data.
2. Works well under various conditions.
3. Handles errors without major disruptions.

Security
1. Guards against online cyber-attacks.
2. Protects my personal data from hackers.
3. Assesses and prevents spread of misinformation.

Accountability
1. Follows laws for AI-generated content.
2. Allows me to report its malfunctions.
3. Is overseen by a responsible authority.

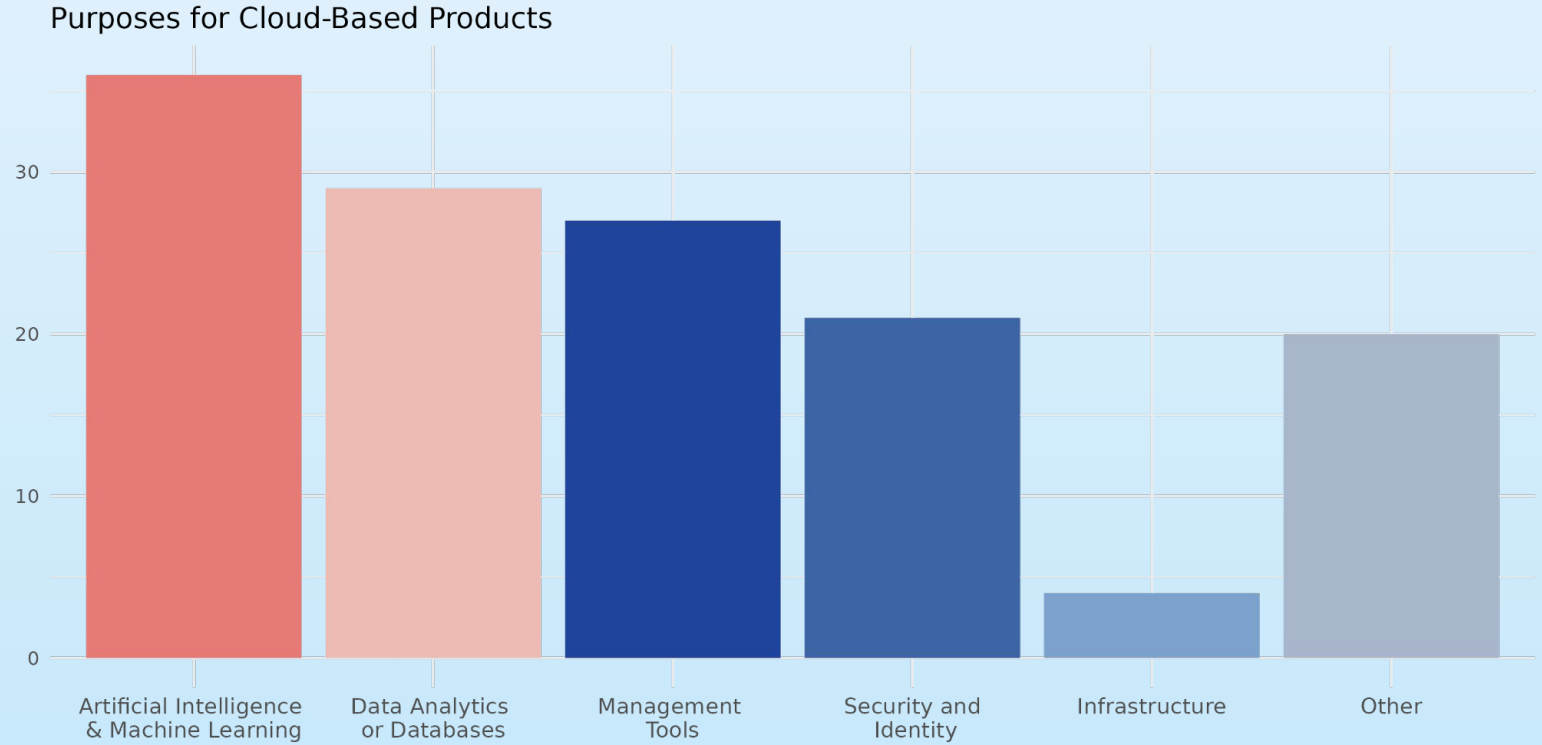
Resilience
1. Works well during high-demand times.
2. Resumes tasks after long inactivity.
3. Corrects errors quickly when pointed out.

Explainability/Transparency
1. Shares its training goals and processes.
2. Shows step-by-step solution breakdown.
3. Translates technical terms to simple language.

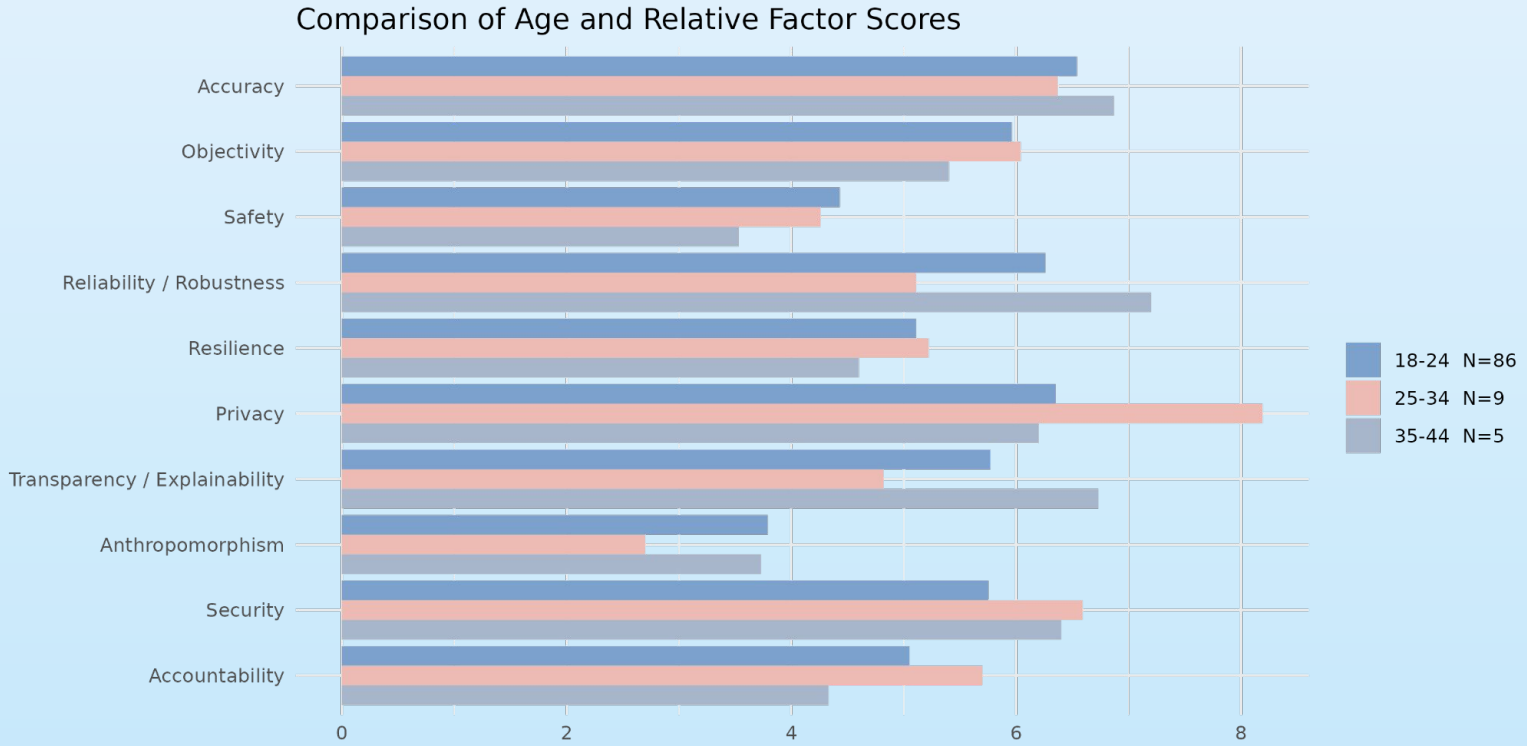
Privacy
1. Asks for my consent before data collection.
2. Keeps my interactions confidential.
3. Lets me manage and delete my data.

Anthropomorphism
1. Mimics human emotions and understanding.
2. Makes judgments similar to human ethics.
3. Mirrors human emotional responses.

Purposes for Cloud-Based Products



Demographics



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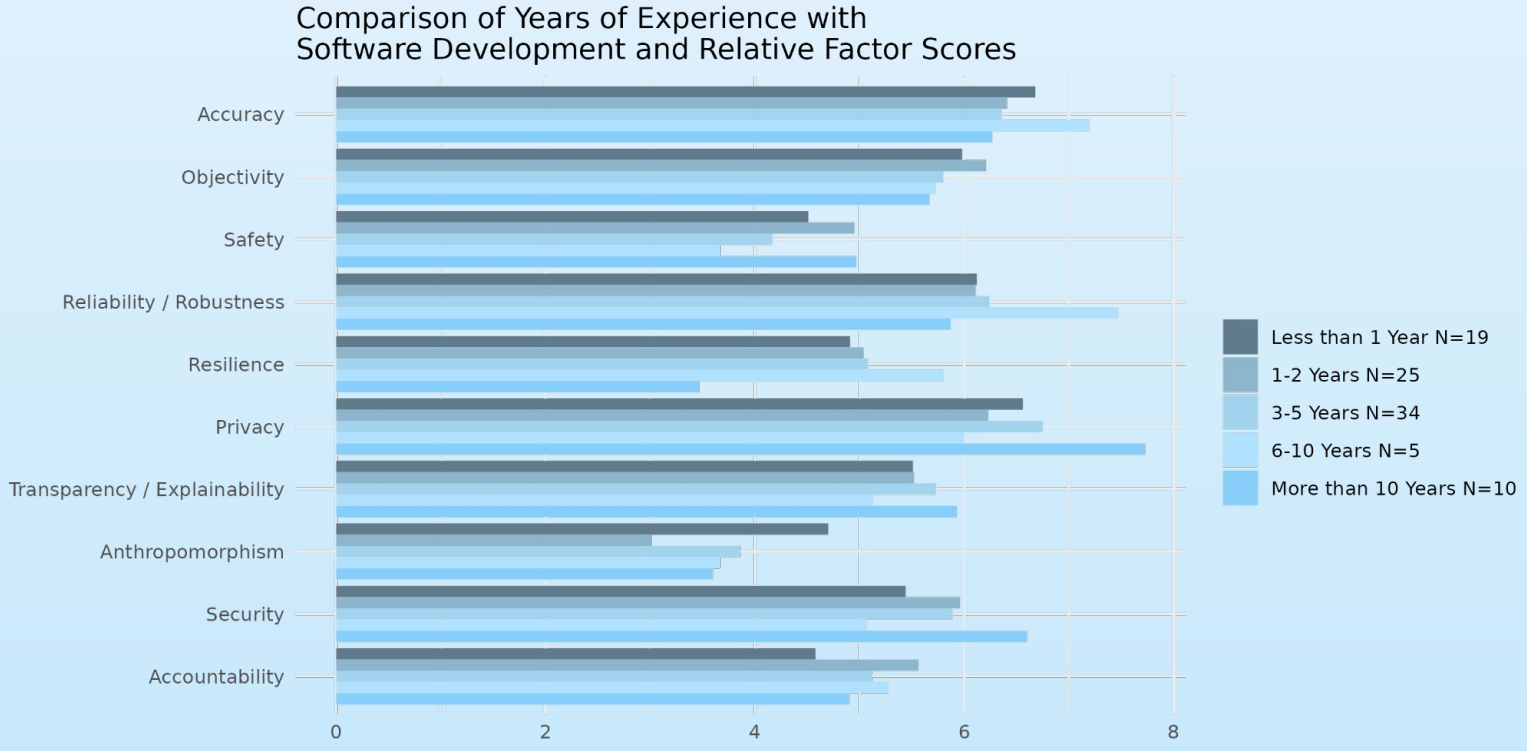
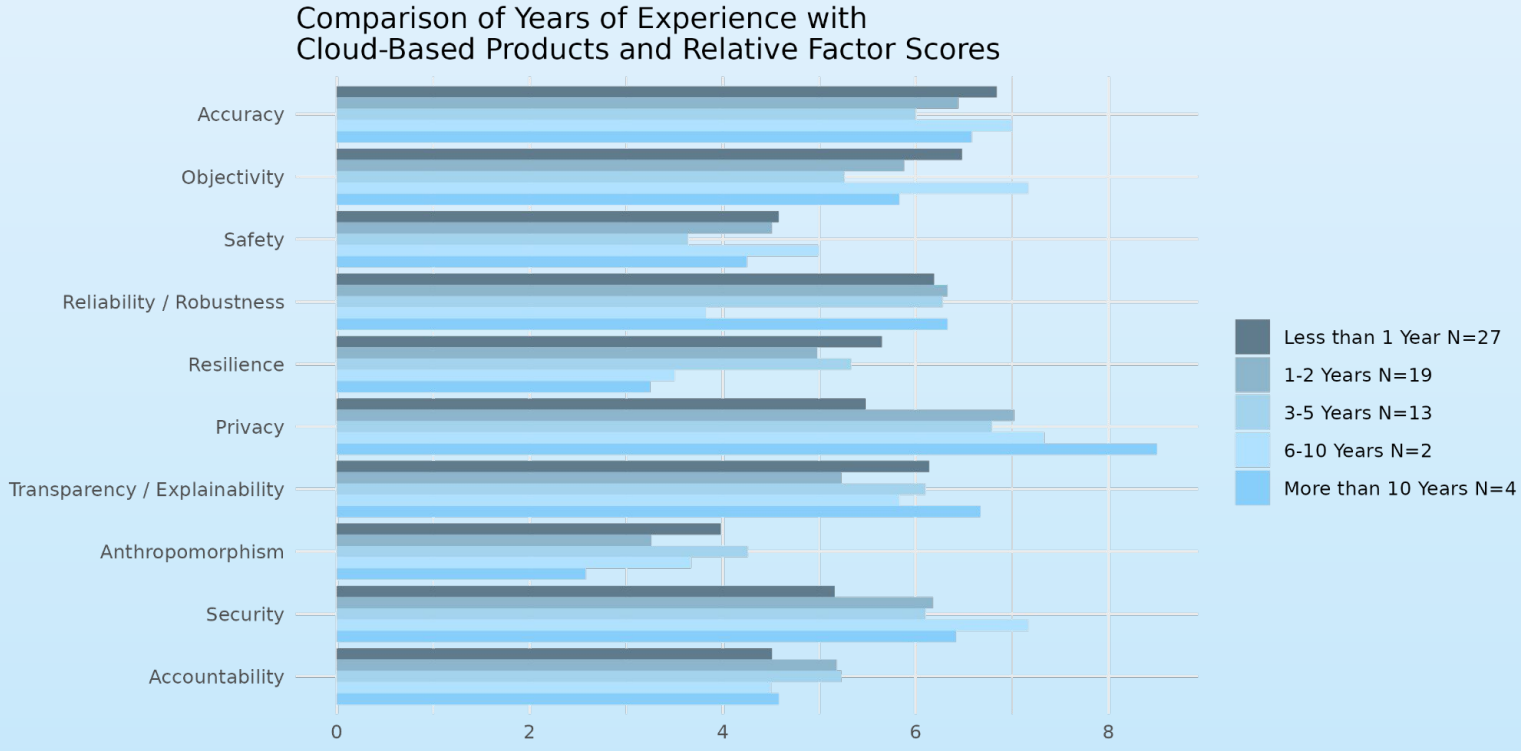


Demographics



Demographics