The effect of transparency in labeling of AI generated fact checks of social media posts on perceived credibility

HCI Group 18

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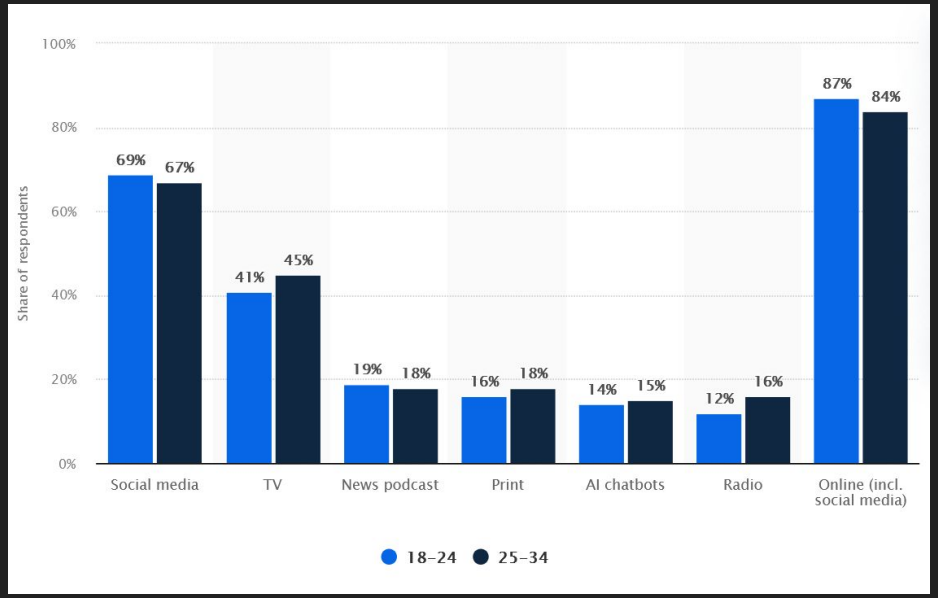
Motivation: Social Media

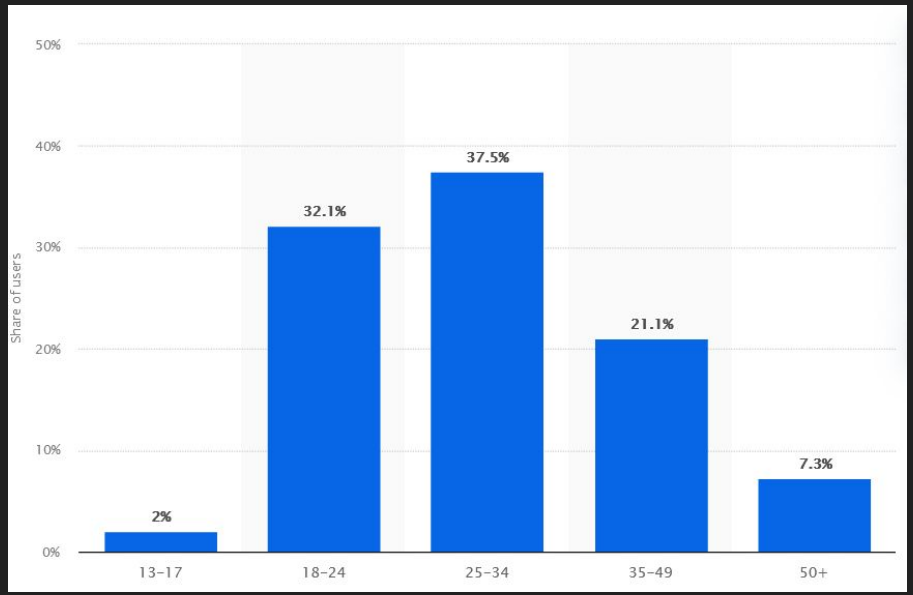
News sources used by US youth:



(https://www.statista.com/statistics/1500504/us-sources-news-young-people/ on 7.7.25)

Motivation: Social Media

Age distribution on X/Twitter:



(https://www.statista.com/statistics/283119/age-distribution-of-global-twitter-users/ on 7.7.25)

Motivation: AI Fact Checking

- X/Twitter: ≈500 million posts daily
  (https://www.dsayce.com/digital-marketing/tweets-day/ on 7.7.25)
- Too many for human fact checking
  - Alternative to Expert fact checking: Community driven fact checking
- AI fact checking offers scalability

Motivation: Research Gap

- Exploratory: Emerging adults (18-15) generally welcome automated labeling, but rely on clear explanations of purpose and sources

  “Trust and Transparency: An Exploratory Study on Emerging Adults’ Interpretations of Credibility Indicators on Social Media Platforms” https://dl.acm.org/doi/full/10.1145/3613905.3650801

- Trust and distrust are separate and can be felt at the same time

  “Profiling the Dynamics of Trust & Distrust in Social Media: A Survey Study” https://dl.acm.org/doi/abs/10.1145/3613904.3642927

- In a 320 participant experiment, natural language explanations attached to an AI fact-checker doubled the willingness trust compared to no explanation (≈63-68 % vs 27 %)
- “boomerang” reactions when users already distrusted AI

  “Effect of Explanation Conceptualisations on Trust in AI-assisted Credibility Assessment” https://dl.acm.org/doi/abs/10.1145/3686922

Hypotheses

Hypothesis 1:

The addition of a transparent "Automated Fact Check" label results in higher trust than if the fact check is AI generated, but the label is not transparent about the author, being labeled only as a "Fact Check".

Hypothesis 2:

Trust in the fact check is negatively impacted by the retrospective learning of the automated nature of said fact check.

Research Method

Design – Two-group, between-subjects experiment

Group 1: no “Automated Fact Check” label → told afterward that the warning was AI-made

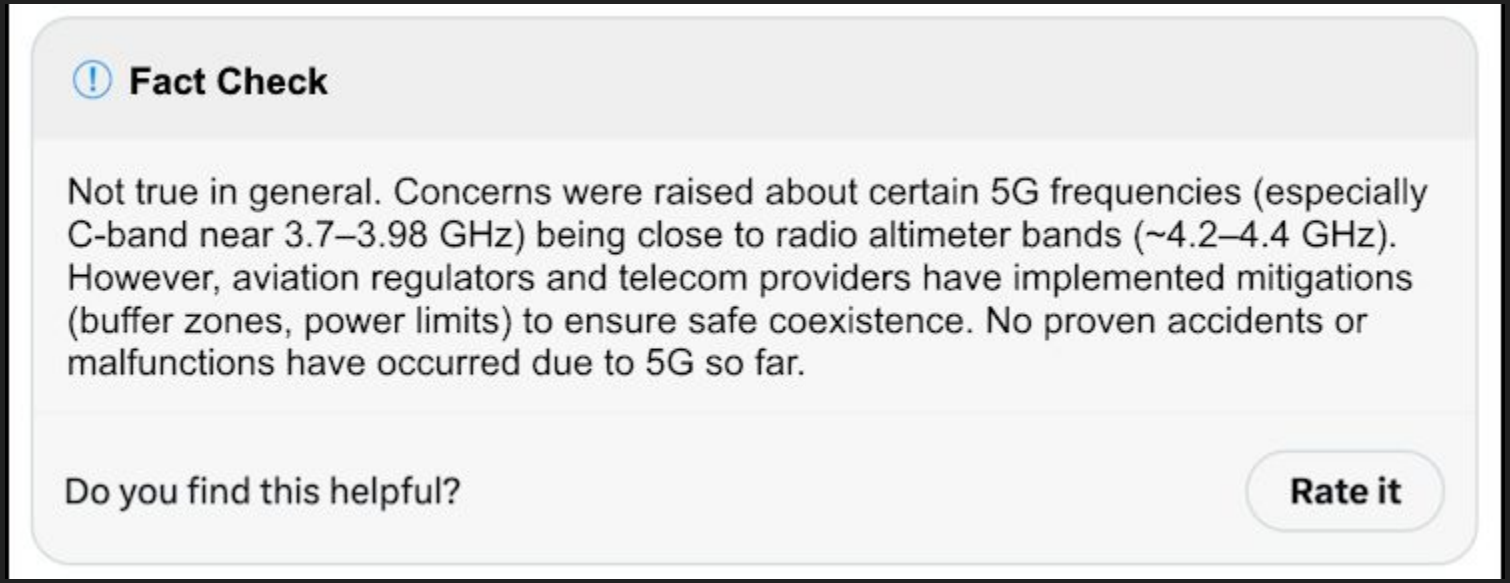
Group 2: “Automated Fact Check” label shown from the start

Materials & Tasks

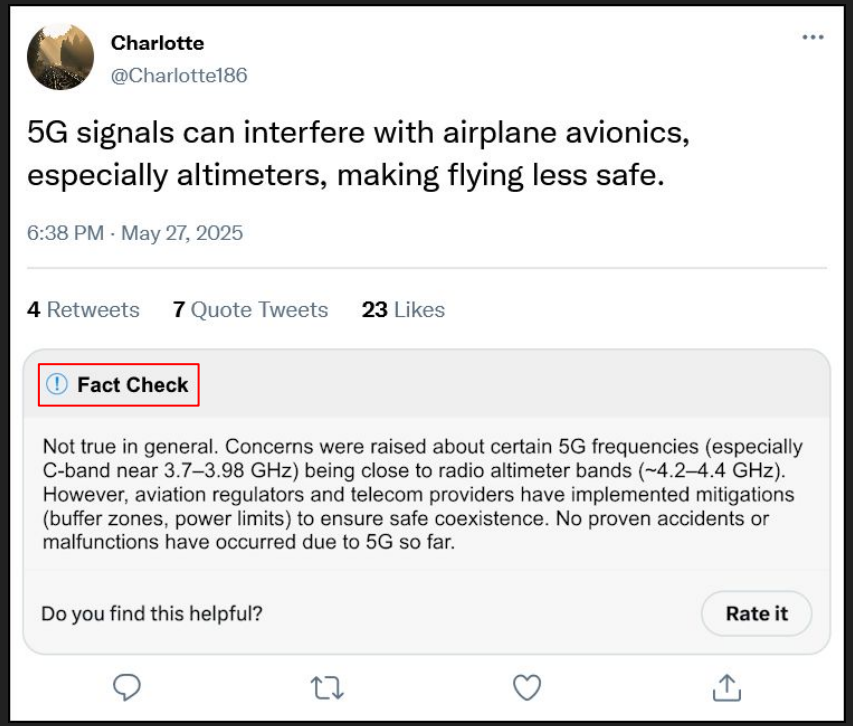
- Baseline media-credibility survey
  (Bachmann, I., & Valenzuela, S. (2023). *Social Media + Society, 9(2).*)
- 5 social-media posts with AI-generated fact-check warnings
- After each post: rate Warning Trust, Post Trust (1–5) + like/share intention

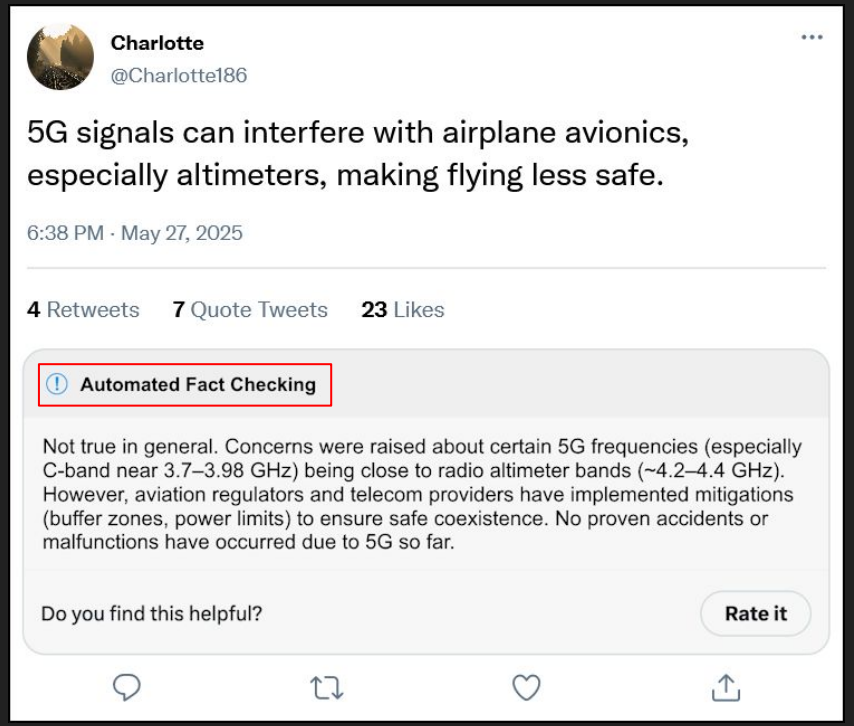
Study Procedure: Example Post

Study Procedure: Example Fact Check



Study Procedure: Example Automated Fact Check





Study Procedure: Interview

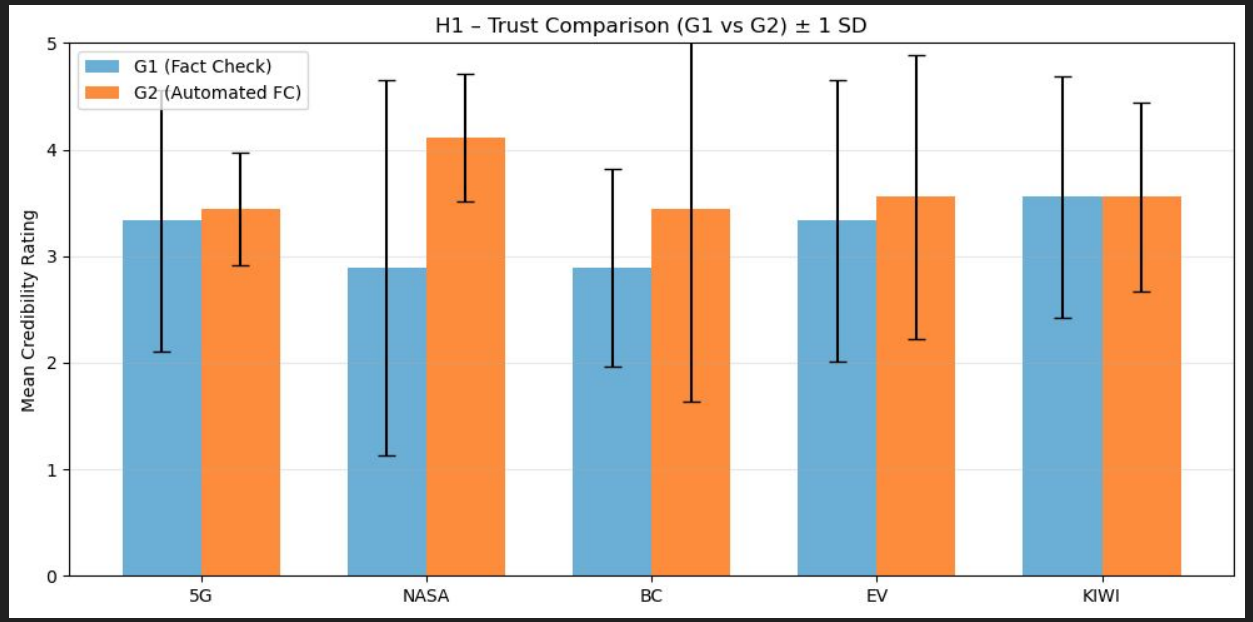
Questions:

1. What would you want/expect from a fact check in general? What criteria makes it trustworthy for you?
2. Do you have any presentation preferences for automated/AI fact checkers? (to make it as trustworthy as possible)

Results: H1

Topic	p-Value
5G	0.807
NASA	0.078
BC	0.429
EV	0.727
KIWI	1.000

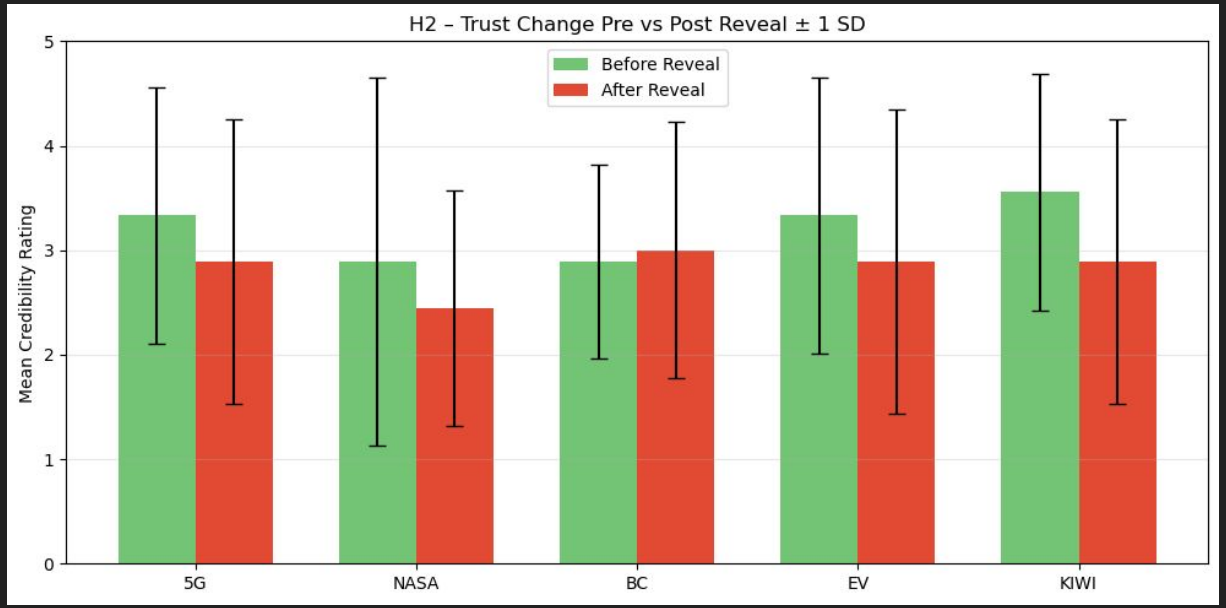
Results: H1 Mean Grouping



Results: H2

Topic	p-Value
5G	0.250
NASA	0.625
BC	1.000
EV	0.375
KIWI	0.250

Results: H2 Mean Grouping



Results: Interview Codes

- **Sources:**
  - Credible Sources
  - Source Links
  - Checkable Sources
  - Scientific studies
- **Presentation**
  - Label “AI generated”
  - Well formulated Justification
- **General AI**
  - AI imperfect

Results: Interview Quotes

Credible sources:
“The answer should be rational and based on trustworthy sources.” ~ ID 10

AI generated Label:
“And there should be a clear AI label on it.” ~ ID 12

AI imperfect:
“AIs are known to hallucinate and write texts that sound very convincing and factual but they are not.” ~ ID 3

Limitations

- Participant group too homogenous
  - Highly educated
  - Age mostly between 20-29 years
- Knowledge of topic has big impact on trust
- Topic could influence results
  - E.g.: Different emotional attachment
- Post formulation could change user opinion

Conclusion

- No significant differences in favour of H1 or H2, BUT:
  - Trends visible
  - 9 participants (50%) wished for a label “AI generated”
- Future Work:
  - Test effect of Interview findings
  - Build Fact Check specific AI models

Summary

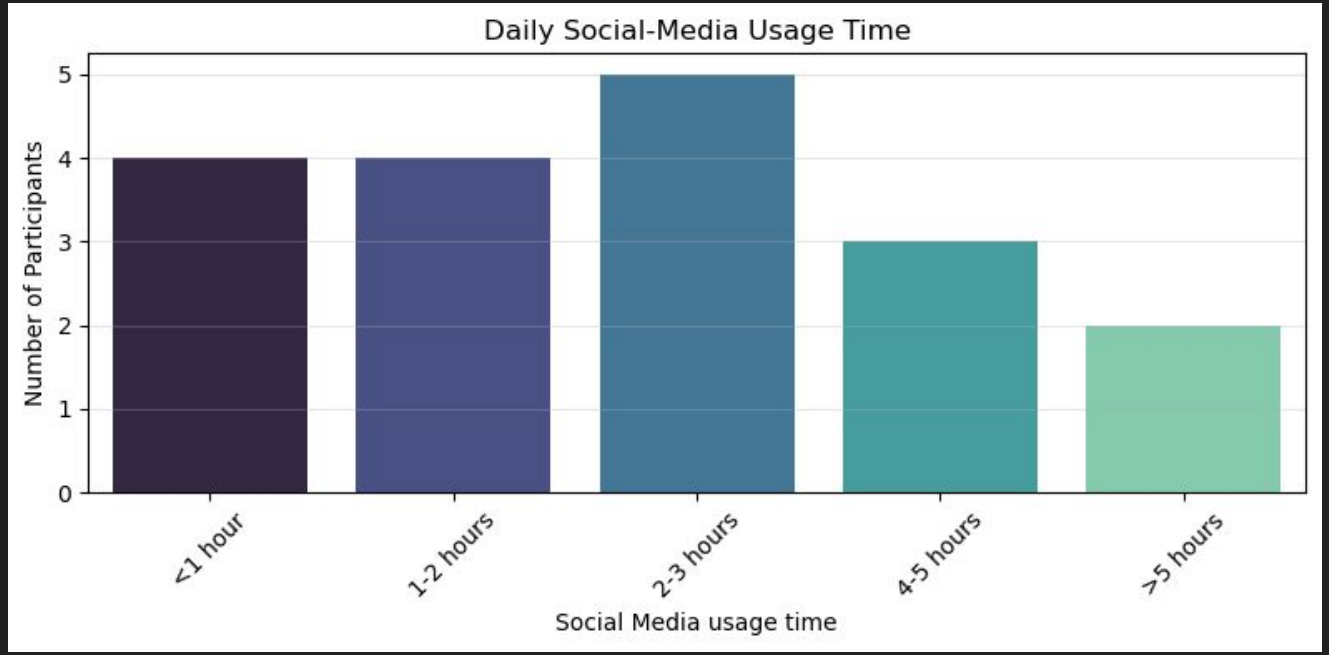
- Social Media usage today
- Study Procedure
  - Questionnaire
  - Rate Post/Fact Check credibility
  - G1 rating again, after AI generation reveal
- p-values for both not significant
  - Trends in means visible
- Interview: 19 codes
  - Credible Sources
  - AI Generated Label
  - AI Imperfect

Appendix

Interview Results:

Source		Presentation		General AI	
Credible Sources	14	AI Generated Label	9	AI imperfect	7
Source Links	11	Well Formulated Justification	8	Consider Bias	4
Checkable Source	7	AI Train of Thought	2	Fitting AI Model	3
Scientific Studies	7	Error Transparency	2	Humans > AI Preference	2
Direct Quotes	5	Rate Button	1	AI > Humans Preference	2
Newspaper Articles	3	Report Button	1		
		Fact Check Clearly Visible	1		
		Summary + Further Details Sections	1		

Baseline Statistics



Baseline Statistics