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From Google Search to AI Search: A Study on Changing Search Behaviour among College Students in Vijayawada

Dogiparthi Venkata Sai Eshwar¹, Dr. T. Chandrasekhar Yadav²

¹[2400560359] BBA, KL Business School, Koneru Lakshmaiah Education Foundation

² Associate Professor, KL Business School, Koneru Lakshmaiah Education Foundation, Green Fields, Vaddeswaram Campus, Guntur District, A.P.

ORCID NO: 0009-0001-4694-9954

ABSTRACT

This study examines the evolving search behaviour of college students in Vijayawada, focusing on how Artificial Intelligence tools (such as ChatGPT and Gemini) are integrating with traditional search engines like Google. Based on a survey of 145 students, the research explores the dynamic relationship between AI adoption and traditional search habits. The findings reveal a highly symbiotic, hybrid approach to information retrieval. Although students widely expect AI to dominate the future of search, their current practices present an interesting paradox: utilizing AI actually increases their reliance on Google Search for fact-checking, source verification, and deeper academic research. Ultimately, this study demonstrates that AI and traditional search currently function as complementary tools, underscoring the critical need to embed digital literacy and source evaluation into modern educational frameworks.

Key Words: Artificial Intelligence Search, Google Search, Student Behaviour, Thematic Analysis, Information Seeking, Generative AI, Digital Literacy.

Introduction of the Study

Search behaviour online has changed considerably with the development of digital platforms and generative artificial intelligence. Traditional search engines generally present users with a list of webpages, allowing them to compare sources and select information. Artificial intelligence-assisted search tools, on the other hand, provide conversational explanations, summaries, and personalized responses. These differences influence how college students discover, understand, and evaluate information for academic and everyday purposes.

College students increasingly depend on digital tools for assignments, research activities, and general decision-making. Google Search remains an important information-retrieval tool because it provides access to multiple verifiable sources. At the same time, tools such as ChatGPT and Gemini offer a rapid, conversational method of obtaining direct answers. The growing availability of these tools raises essential questions regarding how students manage this dual ecosystem. Understanding how these tools interconnect in a student's daily routine is crucial in higher education, where the quality of sources and independent thinking are paramount. This research focuses on college students in Vijayawada, exploring how their traditional search habits and modern AI search practices intertwine.

Research Gap

Existing studies have examined students' use of ChatGPT and traditional search engines independently. However, the available literature provides limited evidence specifically focused on college students in Vijayawada and how these two paradigms interconnect. There is a pressing need to examine not just the adoption rates of AI, but how AI utilization directly impacts the volume and nature of traditional Google searching. This study addresses this gap by mapping the interconnected transition between traditional and AI-assisted search behaviours using detailed thematic visual analysis, incorporating pie charts, bar graphs, and tabular data.

Objectives of the Study

1. To examine the search habits of college students in Vijayawada.
2. To assess students' awareness and usage of artificial intelligence (AI)-based search tools.
3. To compare students' perceptions of Google Search and AI-based search tools.
4. To analyse the perceived benefits and limitations of AI-assisted searching.

5. To examine students' information-verification practices and their trust in search results.
6. To identify students' future preferences for traditional and AI-based search tools.
7. To analyse the collected data using charts, percentages, and statistical methods to understand students' search behaviour, awareness, usage patterns, satisfaction, trust, and preferences regarding Google Search and AI-based search tools.

Hypothesis

H0₁: There is no significant difference in students' reported preferences between Google Search and artificial intelligence-based search tools.

H1₁: There is a significant difference in students' reported preferences between Google Search and artificial intelligence-based search tools.

H0₂: There is no significant association between the use of artificial intelligence tools and reported changes in Google Search usage.

H1₂: There is a significant association between the use of artificial intelligence tools and reported changes in Google Search usage.

Research Methodology

Research Design: The study utilizes a descriptive research design with a quantitative survey approach, heavily relying on visual analysis (pie charts, bar charts, tables) to draw interconnected themes regarding search behaviour.

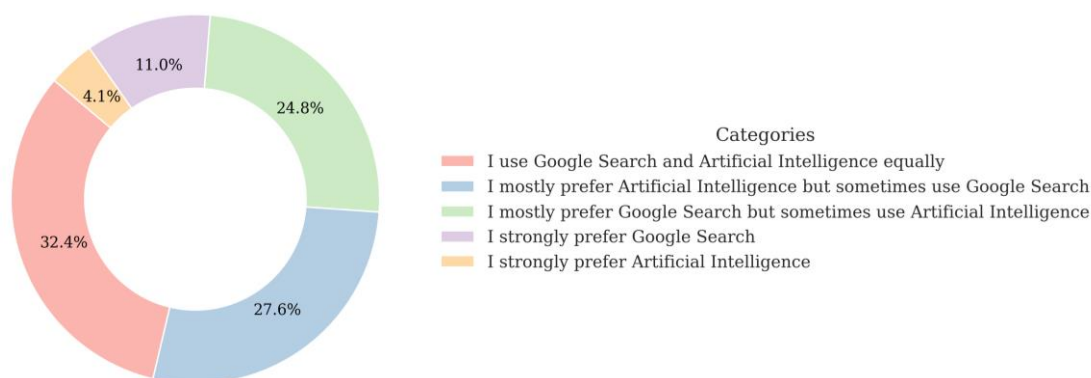
Sample Design: The target population consists of college students in Vijayawada. Convenience sampling was employed through an online questionnaire, yielding a final sample size of 145 valid responses.

Data Collection: Primary data was collected via a structured online questionnaire distributed among college students. Secondary information was sourced from published academic literature.

Questionnaire Preparation: The questionnaire was designed in Google Forms, containing sections on respondent profiles, general search behaviour, Google Search behaviour, AI Search behaviour, changing habits, and future expectations. Branching logic was used to ensure relevant data collection.

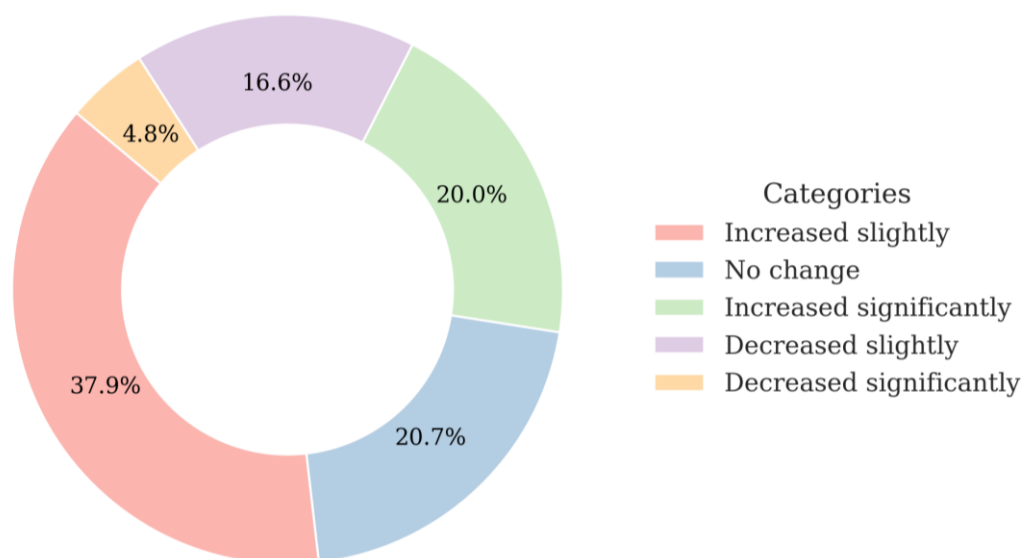
Data Analysis, Interpretations, Findings, Suggestions & Conclusion

The data analysis is based on 145 valid respondents (70.3% aged 18–20; 52.4% male, 46.9% female). To provide a cohesive and interconnected narrative, the analysis, interpretation, findings, suggestions, and conclusions are presented sequentially below each of the eight visual representations.



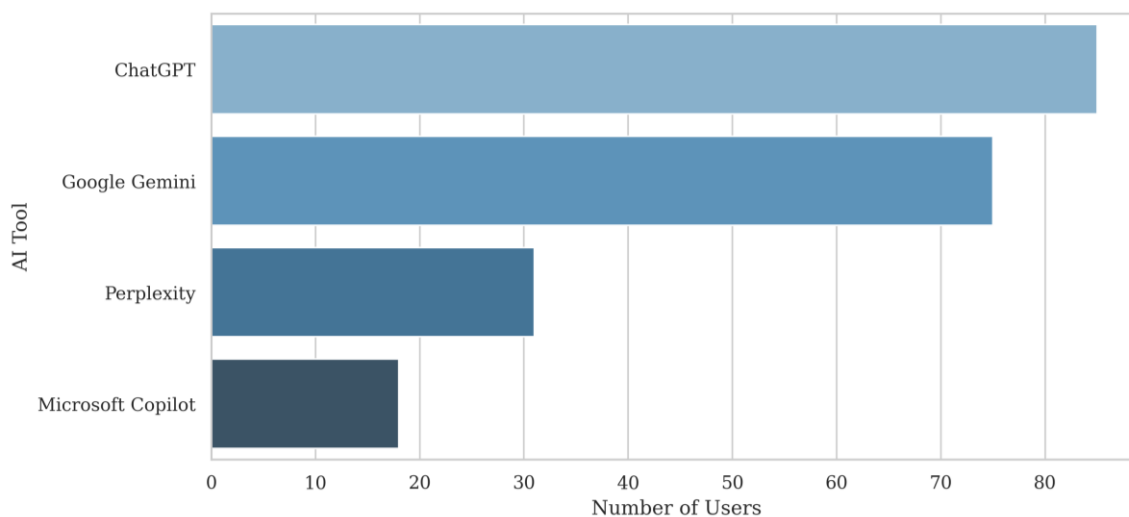
Thematic Analysis: The overarching theme identified here is "Hybrid Search Utilization." The data reveals that student preferences are not strictly binary. The largest segment (32.4%) uses both Google and AI equally. Furthermore, 27.6% mostly prefer AI but still use Google, while 24.8% mostly prefer Google but still use AI.

Interpretation: The fragmented distribution indicates that college students are in a transitional phase. Because no single method holds a dominant majority, it can be interpreted that students assess the specific requirements of their tasks and dynamically switch to the most appropriate tool.



Thematic Analysis: The primary theme for this chart is "AI-Driven Search Amplification." Counter-intuitively, the introduction of AI has not diminished traditional search. For 57.9% of respondents (37.9% slight increase + 20.0% significant increase), Google Search usage has actually increased since adopting AI.

Interpretation: This resolves a major paradox. AI-generated responses frequently require fact-checking, or they introduce new terminologies that students must verify using credible links. Therefore, AI acts as a prompt generator for Google Search, deeply interconnecting the two platforms in the student's workflow.



Thematic Analysis: The emergent theme is "Market Duopoly in AI Adoption." The graph demonstrates a heavy concentration of student usage within two primary tools: ChatGPT and Google Gemini.

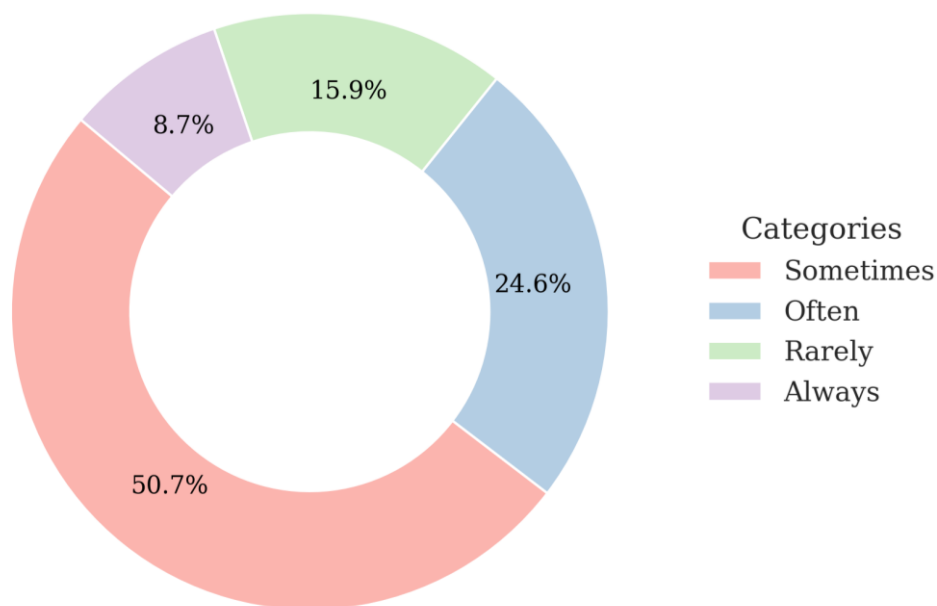
Interpretation: The dominance of these two platforms implies that students favour conversational reliability and brand recognition over specialized, niche AI research tools. They rely on the most accessible generative models to anchor their digital workflows.

Primary Search Factor	Number of Respondents
Accuracy	50
Relevant results	41
Detailed information	24

Primary Search Factor	Number of Respondents
Speed	21
Ease of use	9

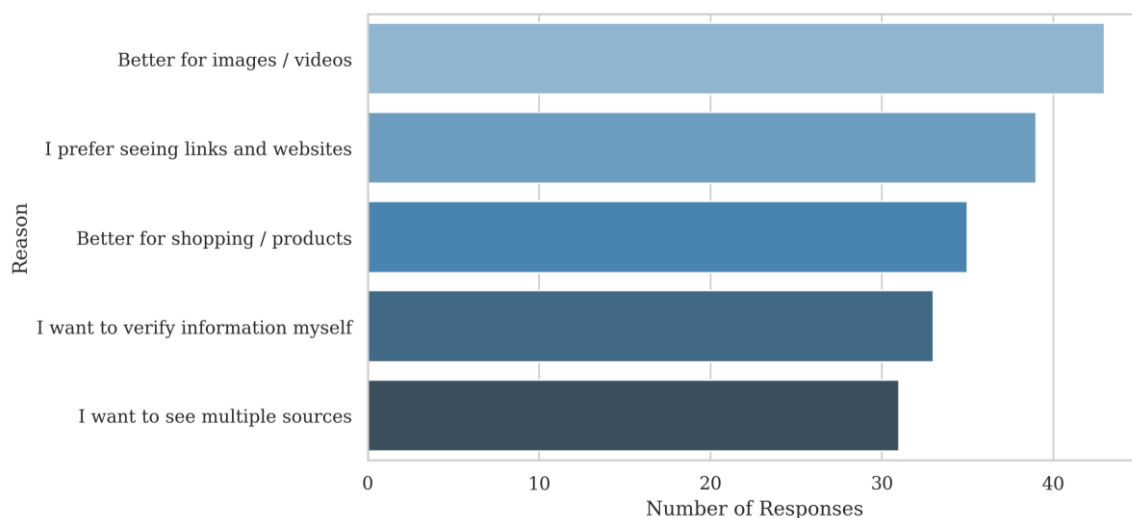
Thematic Analysis: The central theme is "Accuracy Over Speed." Despite the immediate conversational speed that AI offers, the highest proportion of students (50 respondents) still prioritize accuracy above all else.

Interpretation: Because accuracy outranks speed, it proves that students are not merely seeking shortcuts; they are deeply aware of the academic requirement for factual correctness. This interconnected reality explains why the hybrid model persists.



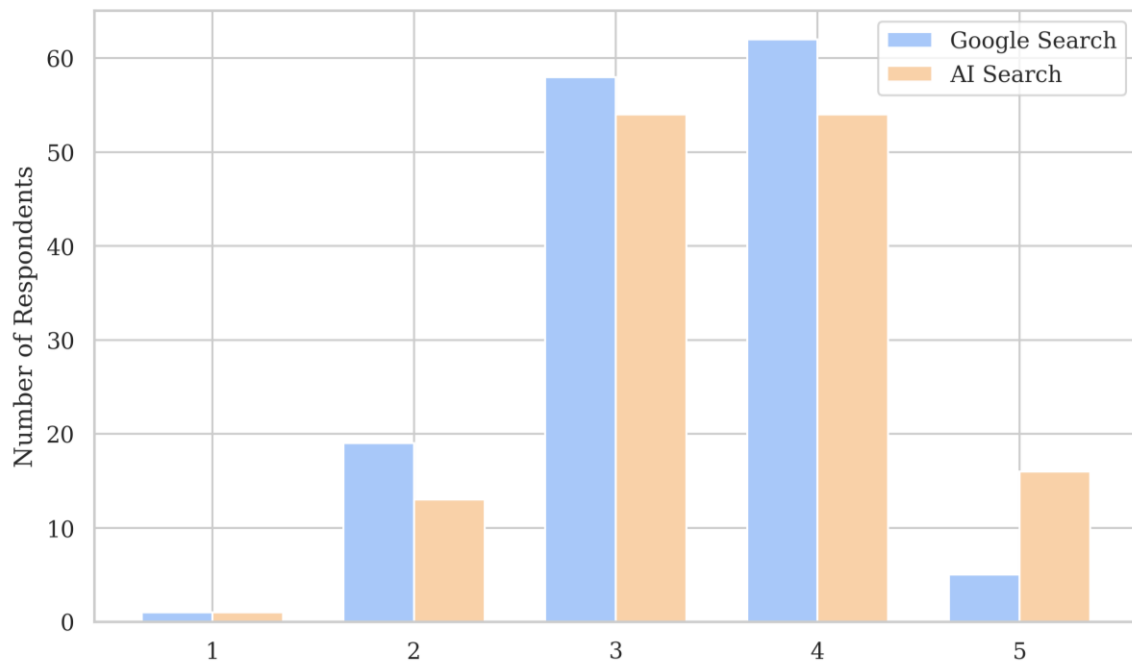
Thematic Analysis: The prominent theme is "The Verification Gap." While students recognize AI can "hallucinate," their verification habits remain highly inconsistent.

Interpretation: The reliance on "Sometimes" verifying data suggests cognitive fatigue. Students are willing to trust AI for low-stakes information to save time, but they risk carrying that lack of verification into high-stakes academic work.



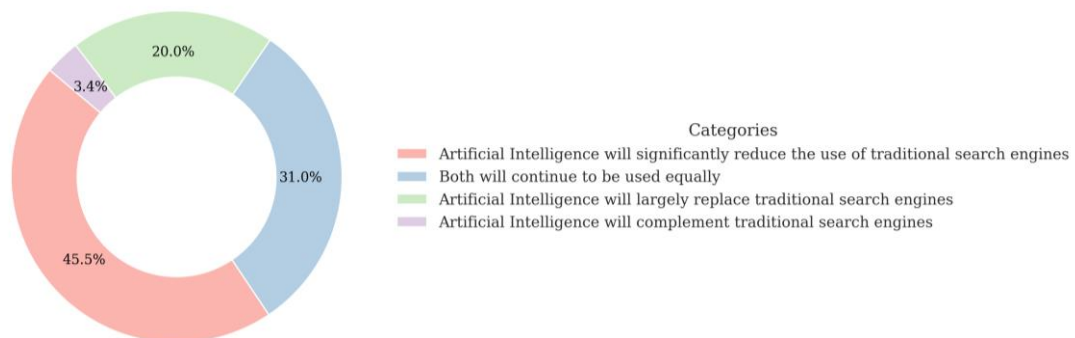
Thematic Analysis: The defining theme is "Source Transparency." Students actively pivot to Google specifically because they want to see "links and websites" and "verify information" themselves.

Interpretation: The visual interface of Google, which provides a transparent list of competing sources, fulfills a structural need that AI's single-block text responses cannot. The structural layout of Google is interpreted not as outdated, but as essential for trust.



Thematic Analysis: The overarching theme is "Equally High Efficacy." The side-by-side distribution shows that students are highly satisfied with both platforms, with scores heavily concentrated in the 3 and 4 range.

Interpretation: High mutual satisfaction proves that one tool is not destroying the other. Instead, they are satisfying different, complementary needs in the user's workflow.



Thematic Analysis: The emergent theme is "Anticipated AI Dominance." Despite current habits reflecting hybrid usage and increased Google searching, students strongly believe the future belongs entirely to AI.

Interpretation: Students separate their current practical behaviour from their future expectations. They expect AI technology to rapidly evolve and eliminate current limitations (like hallucinations), eventually making traditional search obsolete.

Overall Findings, Suggestions, and Conclusion

Findings

- College students in Vijayawada have not abandoned traditional search engines; instead, they utilize a hybrid approach anchored by mainstream tools like ChatGPT and Google Gemini.

- Contrary to expectations, adopting AI actually increases Google Search usage rather than replacing it.
- Students prioritize accuracy over speed, utilizing AI for quick summaries but pivoting to Google to verify sources and review actual links.
- Despite acknowledging the need to fact-check AI outputs, only a small minority (approximately 9%) do so consistently, creating a significant risk to academic integrity.
- While users are currently highly satisfied with utilizing both platforms concurrently, roughly 65% anticipate that AI will eventually replace traditional search entirely.

Suggestions

- Educational institutions must adapt to the shifting digital landscape by moving away from standard, recall-based assignments.
- Universities should integrate "hybrid search literacy" into their curricula to train students to navigate both AI and traditional platforms safely.
- Academic training must actively focus on developing critical thinking skills, spotting AI hallucinations, and properly evaluating primary sources.
- To close the verification gap, assignment rubrics should be updated to heavily penalize unverified AI claims, thereby enforcing the habit of fact-checking among students.

Conclusion

Ultimately, the current search landscape isn't a zero-sum game where AI is simply killing off Google. Instead, this study reveals a complex, interconnected transition in student search behaviour. While Artificial Intelligence has revolutionized the speed and personalization of information retrieval, it has concurrently reinforced the necessity of Google Search for validation. College students in Vijayawada are currently navigating a hybrid era, balancing the convenience of AI with the reliability of traditional search. To prepare for the future that students anticipate, academia must focus on enhancing digital literacy, ensuring students can critically navigate and verify information across both AI and traditional platforms.

Future Scope of the Study

While this study provides comprehensive insights into the current state of search behaviour among college students in Vijayawada, there are several avenues for future research. Future studies could expand the geographical scope to compare search behaviours across multiple Tier-1 and Tier-2 cities in India, mapping out how regional digital penetration affects AI adoption and digital literacy. Additionally, a longitudinal study could be conducted to assess how search behaviours shift as these students transition from academic environments into the professional workforce, where the stakes for information accuracy and verification may differ significantly.

Further research could also explore the specific psychological impacts of AI conversational interfaces on critical thinking skills over time. There is a critical need to understand how continuous exposure to highly personalized, instant AI summaries affects the overall cognitive research capabilities and independent source evaluation skills of university students. Finally, cross-generational studies comparing the AI search adoption rates and trust levels between Generation Z students and older academic faculty could provide deeper insights into the continuous evolution of digital information systems in education.

Annexures

Annexure I: Questionnaire

The complete structured Google Forms questionnaire covers Section A (Respondent Profile), Section B (General Search Behaviour), Section C (Google Search Behaviour), Section D (Artificial Intelligence Search Behaviour), Section E (Changing Search Behaviour), and Section F (Optional Open-Ended Question).

Section A — Respondent Profile

Q1. What is your age?

- Below 18
- 18–20
- 21–23
- 24–26
- Above 26

Q2. What is your gender?

- Male
- Female
- Prefer not to say
- Other

Q3. What is your current level of study?

- Undergraduate – 1st Year
- Undergraduate – 2nd Year
- Undergraduate – 3rd Year
- Undergraduate – 4th Year
- Postgraduate
- Other

Q4. What is your field of study?

- Business / Management
- Engineering / Technology
- Science
- Arts / Humanities
- Commerce / Finance
- Medicine / Health Sciences
- Law
- Other

Q5. What type of institution do you study in?

- University
- Autonomous College
- Affiliated College
- Private College
- Government College
- Other

Section B — General Search Behaviour

Q6. How frequently do you search for information online?

- Several times a day
- Once or twice a day
- A few times a week
- A few times a month
- Rarely

Q7. What do you usually search for online? (Multiple choice)

- Academic information
- News/current affairs
- Entertainment

- Products/services
- Reviews/recommendations
- Travel/places
- Events/activities/things to do
- Food/restaurants/café
- Career/jobs
- Tutorials/how-to
- Health
- Personal interests/hobbies
- Other

Q8. Which device do you most frequently use for online searches?

- Smartphone
- Laptop
- Desktop
- Tablet
- Other

Q9. Approximately how much time do you spend searching for information online each day?

- Less than 30 minutes
- 30 minutes–1 hour
- 1–2 hours
- 2–3 hours
- More than 3 hours

Q10. What is the most important factor for you when choosing a search tool?

- Speed
- Accuracy
- Reliability
- Ease of use
- Detailed information
- Relevant results
- Personalized responses
- Other

Q11. What do you usually do when your usual search method does not give you a satisfactory answer?

- Try different keywords
- Search on Google
- Ask AI
- Check Instagram/YouTube
- Check reviews/ratings
- Ask friends
- Visit different websites/apps

- Stop searching
- Other

Section C — Google Search Behaviour

Q12. How frequently do you use Google Search?

- Several times a day
- Once or twice a day
- A few times a week
- A few times a month
- Rarely
- Never

Q13. What do you mainly use Google Search for? (Multiple choice)

- Academic research
- Finding websites
- News
- Product research
- Shopping
- Maps/locations
- Entertainment
- Tutorials
- Career/jobs
- General information
- Other

Q14. How satisfied are you with the results provided by Google Search?

- 1 – Very Dissatisfied
- 2
- 3
- 4
- 5 – Very Satisfied

Q15. How often do you visit multiple websites after searching on Google to find the information you need?

- Always
- Often
- Sometimes
- Rarely
- Never

Q16. What is the biggest limitation you experience when using Google Search?

- Too many results
- Ads affect results
- Takes time to find the exact answer
- Need to visit multiple websites

- Information may be outdated
- Difficult to compare information
- No major limitations
- Other

Section D — AI Search Behaviour

Q17. Have you ever used an Artificial Intelligence tool for searching or obtaining information?

- Yes
- No

Q18. Which AI tools have you used? (Multiple choice)

- ChatGPT
- Gemini
- Copilot
- Perplexity
- Claude
- Meta AI
- Other

Q19. How frequently do you use AI tools for searching or obtaining information?

- Several times a day
- Once or twice a day
- A few times a week
- A few times a month
- Rarely

Q20. What do you mainly use AI tools for? (Multiple choice)

- Academic work/research
- Explaining difficult concepts
- Summarizing
- Writing/generating content
- News/current information
- Product recommendations
- Travel planning/recommendations
- Finding places
- Finding activities
- Restaurants/café/food recommendations
- Career information
- Programming/technical assistance
- Personal advice/general questions
- Other

Q21. If you want to discover a new place, activity, event, or experience in or around Vijayawada, which platform would you most likely use?

- Google Search

- ChatGPT/AI
- Instagram
- YouTube
- Google Maps
- Travel/booking sites/apps
- Friends/family
- Multiple platforms
- Other

Q22. How satisfied are you with the answers provided by AI tools?

- 1 – Very Dissatisfied
- 2
- 3
- 4
- 5 – Very Satisfied

Q23. How often do you verify information provided by AI using other sources?

- Always
- Often
- Sometimes
- Rarely
- Never

Section E — Changing Search Behaviour

Q24. How has your use of Google Search changed after you started using AI tools?

- Increased significantly
- Increased slightly
- No change
- Decreased slightly
- Decreased significantly
- Never used AI

Q25. When you want a quick answer, which do you prefer?

- Google
- AI
- Both equally
- Depends on the question

Q26. When you need information for academic/research purposes, which do you prefer?

- Google
- AI
- Both equally
- Depends on the question

Q27. Please indicate your level of agreement with the following statements:

Scale:

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

1. **AI search saves time compared to Google Search.**
2. **AI answers are easier to understand than Google Search results.**
3. **AI is more convenient than visiting multiple websites.**
4. **I use Google Search less after starting to use AI.**
5. **AI has changed the way I search for information.**
6. **I prefer asking follow-up questions to AI rather than performing multiple Google searches.**
7. **I trust Google Search results more than AI-generated answers.**
8. **I verify important AI-generated information before using it.**
9. **I am likely to use AI search more frequently in the future.**
10. **AI search is becoming an alternative to traditional search engines.**

Q28. What are the main reasons you would choose Google Search over AI? (Multiple choice)

- Multiple sources
- I can verify the information myself
- Latest information
- I need a specific website
- I don't fully trust AI
- Google is familiar to me
- Links/websites
- Shopping/products
- News
- Images/videos
- Other

Q29. Which best describes your overall current preference?

- Strongly Google
- Mostly Google but sometimes AI
- Equal
- Mostly AI but sometimes Google
- Strongly AI

Q30. In your opinion, how will AI affect traditional search engines in the future?

- AI will largely replace traditional search
- AI will significantly reduce traditional search
- Both will remain equally important
- Traditional search will remain more important

- Not sure

Section F — Respondent Opinion <optional>

Q31. What is the biggest difference you have noticed between Google Search and Artificial Intelligence search?