Research Questions

A. App Usage, Popularity & Market Dynamics

1. How strongly do app install counts correlate with actual user engagement (active usage), and which categories show the largest mismatch?

2. To what extent do app ratings reflect genuine user satisfaction, and how much are they influenced by marketing or network effects?

3. Which smartphone app categories (e.g., Games, Social, Finance, Health) have shown the most growth in user adoption trends over recent years?

4. How do monetization models (Free vs. Freemium vs. Paid apps) impact app rating trends and user feedback behavior?

5. Are cultural or regional factors associated with differences in app category popularity (e.g., India prefers Entertainment while US prefers Finance apps)?

B. Data Quality, Reviews & Consumer Perception

6. How do user reviews reveal changing concerns over time (e.g., privacy, intrusive ads, performance issues, in-app purchases)?

7. Can we identify patterns linking app size, required permissions, or update frequency to higher user satisfaction and retention?

C. Security, Fraud & Trustworthiness

8. What signals (e.g., abnormal rating spikes, repetitive review patterns, suspicious install counts) can indicate fraudulent or manipulated app popularity?

9. How effective are machine learning models in detecting fraudulent or malicious apps based on metadata (permissions, reviews, app behavior)?

10. How should app stores improve transparency and security measures to reduce the spread of deceptive or harmful applications?