

Mobile Apps vs. Web Browsers: A User Perception Study with Android Apps and Google Chrome


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Perceptions of mobile apps vs. web browsers, focusing on security, privacy, usability, and design, with Android apps and Google Chrome browser as case studies

Participants: ~100 students using Android

Research Questions:


RQ1: What security concerns influence users' choice between mobile apps and web browsers for online services? 

RQ2: How do users' privacy concerns differ between mobile apps and web browsers? 


RQ3: What usability features do users prefer in mobile apps vs. web browsers?

Data Analysis:



Qualitative Analysis:

Immediate user concerns, reactions to security warnings and privacy permissions.  



Quantitative Analysis:

Statistical analysis of correlation between various factors, including concerns of malware and private information leakage, security warning frequencies, task completion times, navigation ease and demographic information. 




Expected Outcome:

- Key security concerns, such as worries about malware in mobile apps and web attacks. 
- Privacy concerns will center around permissions in mobile apps vs. control over privacy settings in web browsers. 
- *For example, e-shopping via web browser vs. a mobile app: the latter stores payment method by default → concerns of information theft in case of the device is lost/stolen.*

Experiment:

- Think-aloud protocol to capture real-time thoughts.
- Tasks:
 - Perform a banking transaction.
 - Purchase an item from an online store.
 - Read an article on a news website.
- Data Collection:
 - Verbalize thoughts and describe actions.
 -  ○ Note security warnings or alerts.
 - Record steps taken for security (e.g., biometrics, password entry).
 -  ○ Analyze recorded actions and difficulties.

Survey:

- Example of questions:
 1. How concerned are you about malware in mobile apps? 
 2. How effective are browser security warnings? 
 3. How comfortable are you with mobile app permissions?
 4. Do you feel more in control of privacy settings in mobile apps or web browsers?
 5. Which platform is easier to navigate: mobile apps or web browsers? 
 6. How important is offline access for online services?
 7. Does available storage influence your decision to download new apps?

Anticipated Contribution:

Informing developers on how to enhance security, privacy and usability of mobile apps and websites based on user concerns and preferences
Future work on other domains, such as iOS apps vs. the Safari browser.