Age differences in adoption and use of smartphone apps

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Study background & research question

- Little is known about the drivers of app usage, characteristics of users, and patterns of app adoption
- Association between user traits (e.g., nationality, native language, religious identity, household characteristics, socio-economic status) and usage behavior (Lim et al. 2015; Seneviratne et al. 2014; Rahmati et al. 2012)
- Unexplored topics: How age differences impact the awareness, consideration, adoption and purchase, and long-term usage of apps

- How do different generations adopt and use smartphone apps?
- What are the similarities and differences between various age groups?

Data collection through online survey

- Overall smartphone usage: time of first smartphone purchase, adoption of advanced functions, time spent using smartphone
- Overall app usage: total number of apps, perceived usefulness
- Apps downloaded earlymost and recentmost, and favorite apps: name of apps (coded into types based on app store categorization)
- Demographics

Overall smartphone & app usage

<table>
<thead>
<tr>
<th>Year they started using smartphone</th>
<th>18-24</th>
<th>25-44</th>
<th>45-64</th>
<th>65+</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010 or before</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2011-2012</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2013 or later</td>
<td></td>
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</tbody>
</table>

→ Across ages, participants were self-reported experienced smartphone users

Adoption of advanced functions

- Started with basic features then moved to additional functions
- Used advanced functions quickly after getting first smartphone

→ Many quickly adopted advanced functions, especially younger adults

Perceived importance of advanced functions

- Integral
- Very useful for a lot of things
- Pretty useful for many things
- Occasionally useful
- Not useful at all

→ Majority of sample highly value usefulness of advanced smartphone functions

Amount of time spent using smartphone

- ~30 minutes/day
- 30-60 minutes/day
- 1-2 hours/day
- 2-3 hours/day
- 3+ hours/day

→ Younger adults generally spend more time using their smartphone

Number of apps added to smartphone

- ~10
- 11-20
- 21-30
- 31-50
- 51+

→ Older adults have fewer apps installed, and those aged 25-44 have the most

Types of apps used

<table>
<thead>
<tr>
<th>Early apps</th>
<th>Recent apps</th>
<th>&quot;Top 5&quot; apps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication</td>
<td>Social networking</td>
<td>Transportation</td>
</tr>
<tr>
<td>Games</td>
<td>Music</td>
<td>Weather</td>
</tr>
<tr>
<td>Entertainment</td>
<td>Finance &amp; banking</td>
<td>Photo</td>
</tr>
<tr>
<td>News</td>
<td>Shopping</td>
<td>Health &amp; fitness</td>
</tr>
<tr>
<td>Utilities</td>
<td>Travel</td>
<td>Search engine</td>
</tr>
<tr>
<td>Productivity</td>
<td>Books &amp; references</td>
<td>Education</td>
</tr>
<tr>
<td>Search engine</td>
<td>Food &amp; drink</td>
<td>Lifestyle</td>
</tr>
<tr>
<td>Business</td>
<td>Medical</td>
<td></td>
</tr>
</tbody>
</table>

→ Early app downloads (early smartphone usage)
- Younger adults got communication and social networking apps mostly
- Older adults’ selections are more evenly spread across different categories

→ Recent app downloads (experienced usage)
- Transportation moves up for all ages, but communication still popular among young adults
- More widely distributed across categories compared to selections early in use

→ Favorite apps (overall usage and preference)
- Communication apps favored across generations
- Younger adults’ preferences are more focused, and older adults were more likely to pick a wider variety as their favorite

Sample profile

- Sample size = 923
- Age: max 89

<table>
<thead>
<tr>
<th>Age range</th>
<th>Sample size</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-24</td>
<td>111 (12.0%)</td>
</tr>
<tr>
<td>25-44</td>
<td>314 (34.0%)</td>
</tr>
<tr>
<td>45-64</td>
<td>243 (26.3%)</td>
</tr>
<tr>
<td>65+</td>
<td>255 (27.6%)</td>
</tr>
</tbody>
</table>

- Gender: 66.2% female
- Ethnicity: 84.7% White
- Residential environment: mostly non-rural (46.5% urban, 48.6% suburban)
- Education: highly educated with 84.8% holding at least a college degree

Future research

- Analysis of system logs, download records and daily usage reports, rather than relying on self-reports and user memory, to improve accuracy
- A more diverse and generalizable sample