

255. RESEARCH ON THE USE OF WI-FI VS. THE MOBILE INTERNET

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This research addresses user preferences when choosing between Wi-Fi and mobile Internet (4G/5G) based on a survey of 1st year students of BSUIR. Key factors analyzed: subjective perception of speed, mobile plan limitations, and network quality assessment by location. The analysis was carried out using data from reputable industry sources.

In the digital age, users constantly switch between Wi-Fi and cellular networks. Wi-Fi offers high speeds within a limited range, while mobile networks provide broader coverage and seamless connectivity while moving.

To assess Internet usage habits, a survey was conducted among BSUIR students. According to Ookla, fixed broadband remains faster than mobile Internet in most regions [1]. The survey results show that 55.6% of respondents said home Wi-Fi is faster than mobile Internet, while 27.8% noted it depends on the situation.

According to the survey results, many users have access to high-speed home Internet (50% of respondents have speeds exceeding 100 Mbit/s), making Wi-Fi preferable for resource-intensive tasks. However, 16.7% of respondents are unaware of their plan's specifications, revealing a gap between technical capabilities and digital literacy.

OpenSignal found that public Wi-Fi in crowded places often underperforms compared to 4G/5G due to congestion [2], a finding confirmed by our survey, in which 51.9% of respondent's report that public Wi-Fi is slower than their mobile Internet, with universities and shopping malls most frequently cited as poor-performance locations.

The Ericsson Mobility Report highlights the dominance of video traffic [3]. Our research shows user adaptation: 51.9% of respondents download large files only via Wi-Fi to conserve data, demonstrating an offloading strategy. While most watch videos while traveling when they have a good mobile plan, nearly a third pre-download videos at home to save traffic.

The assessment of communication quality (questions 9 and 10) shows that home Wi-Fi received the highest average scores (4–5 points), while public Wi-Fi in universities and cafes was rated significantly lower (2–3 points), as shown in Figure 1. Mobile Internet in transport and outside the city received lower ratings than at home due to coverage problems, illustrated in Figure 2.

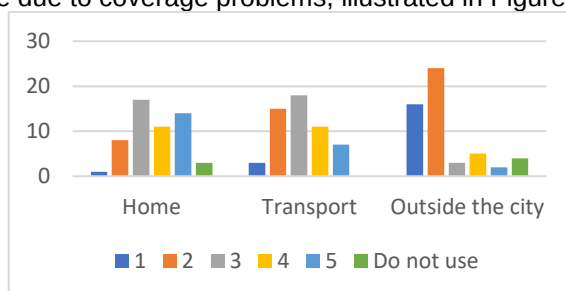


Figure 1. Wi-Fi the quality assessment across location

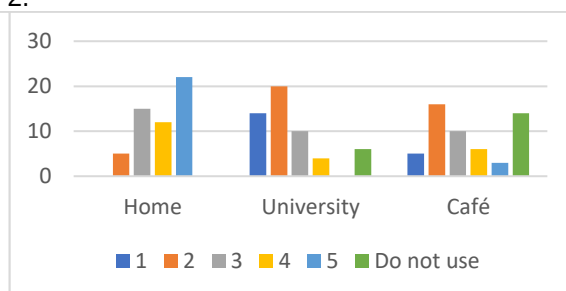


Figure 2. Mobile Internet quality assessment across location

The survey results, analyzed alongside three major industry reports, the results confirm that users strategically choose the best connection depending on context. Wi-Fi is preferred for stationary, high-bandwidth tasks due to higher speeds and no data caps, while mobile Internet is indispensable for reliable communication in public places and on trips. It can be concluded that Wi-Fi and mobile Internet are complementary rather than competing technologies.

References:

1. Speedtest Global Index. – URL: <https://www.speedtest.net/global-index> (date of access: 10.03.2026).
2. Mobile Network Experience Report. – URL: <https://www.opensignal.com/reports> (date of access: 10.03.2026).
3. Ericsson Mobility Report. – URL: <https://www.ericsson.com/en/reports-and-papers/mobility-report> (date of access: 10.03.2026).

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