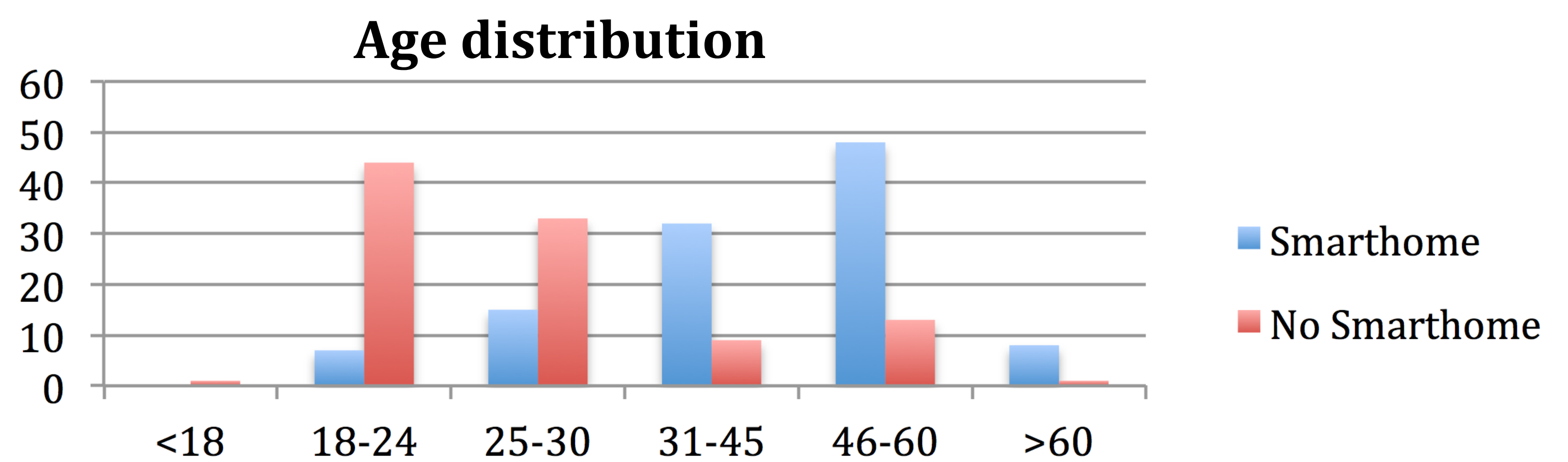


Acceptance of Autonomy and Cloud in the Smart Home and their Concerns

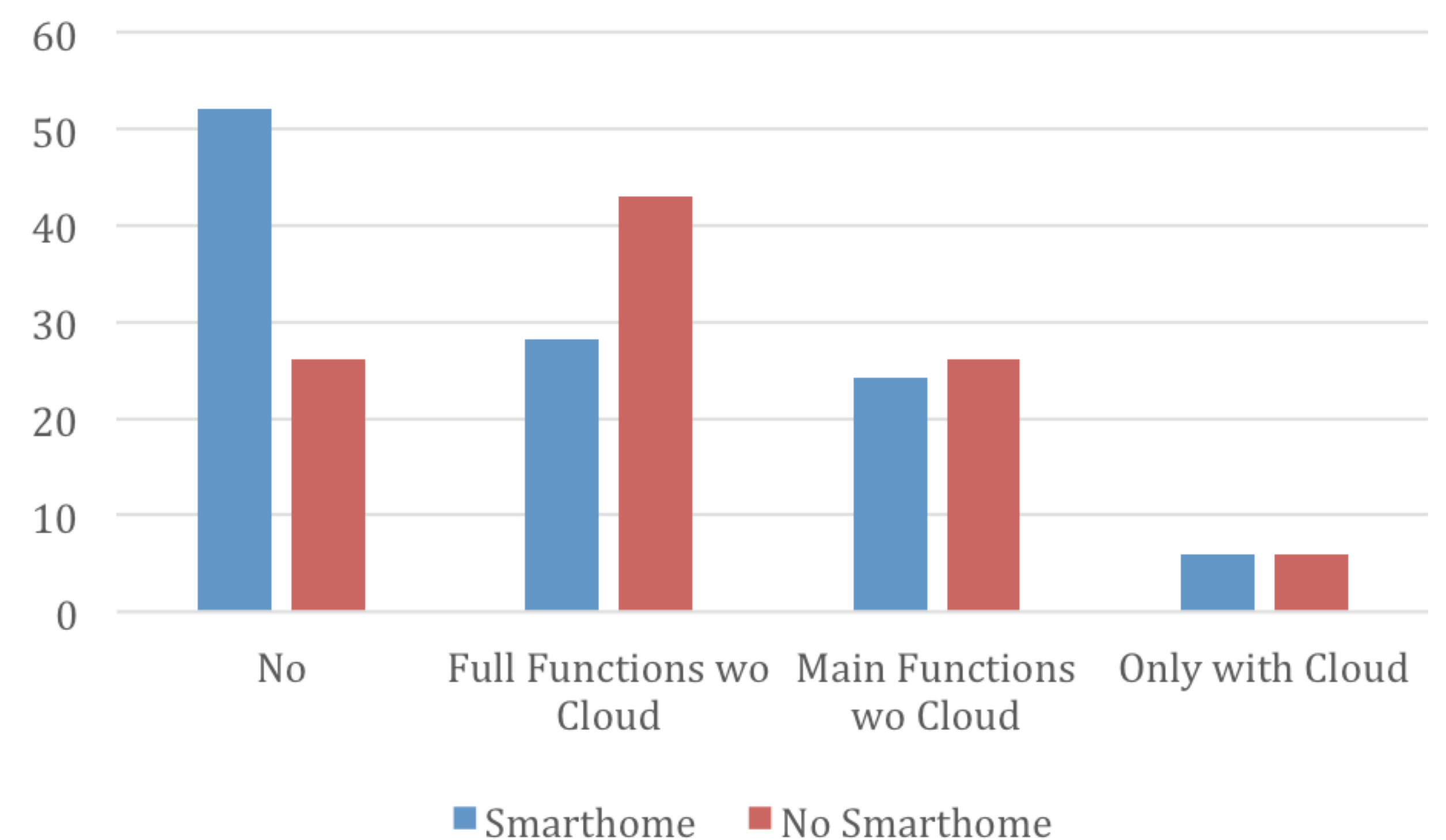
Online Survey

- **Groups:** German smarthome users with daily experiences and people interested in making their home smart or smarthome technology.
 - German smarthome forums and social network groups
- **Respondents:** 6 weeks, December 2017
 - 211 respondents, 73% male
 - 52% (66% male) had daily experience with smarthomes
- **Occupations:** developer, managing director, designer, police officer, motorcar mechanic, electrician, nurse, teacher, and more.



Cloud

- To what degree do respondents accept that smarthome devices depend on cloud-based services?
- **4 levels of dependency**
 - No dependency
 - Device must not have a cloud dependency.
 - Full functions
 - Without cloud connection, there will be no remote / advanced functions. However, all local functions must work, e.g. cleaning robot.
 - Main functions
 - Without cloud connection, no control through network. However, main functions are available, e.g. switch a power plug by physical button.
 - Only with cloud
 - Device works only with a cloud connection, e.g. Smart speakers.
- Significant association
 - $\chi^2(3)=11.55, p<.05$
- **Most frequent concerns**
 - Security (33.65%)
 - Privacy of data (23.7%)
 - Privacy (12.32%)
 - Reliability (11.85%)
 - Availability (8.53%)
 - Dependency on internet (6.64%)



Autonomy

- Do respondents accept that smarthomes learn inhabitants' behavior and adapt its behavior automatically?
- **3 levels of autonomy**
 - Not autonomous
 - Fully end-user driven. Explicit control of the smarthome, e.g. smartphone, voice commands.
 - Semi-autonomous
 - Behavior is based on rulesets. Smarthome does not learn inhabitant's behavior, i.e. state-of-the-art smarthomes.
 - Fully autonomous
 - The smarthome learns inhabitant's behavior and adapts or creates rules by itself.
- Significant association
 - $\chi^2(2)=30.04, p<.001$
- **Most frequent concerns:**
 - Malfunction (33.65%), Loss of control (30.33%), Privacy of data (8.06%), Security (8.06%), Flexibility (8.06%)

