Federal Office for
Radiation Protection

Exploring the social perception of radon in Germany

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Outline

1. Results of the project “Impact of governmental support measures on implementing radon remediation measures in the housing sector – an assessment of potential”
2. Results of the project “Survey of the German population’s dealing with radon as a basis for risk communication and strengthening of protective behavior”
3. Overarching conclusions and way forward

Project state subsidies: aim and methodology

Research question:

To what extent would a governmental subsidy programme for radon remediation in residential buildings lead to additional radon remediation activities?

Methodology

- Literature analysis and expert interviews
- Qualitative interviews with home owners
- Potential assessment

Project state subsidies: results (1)

Starting points to motivate people to radon remediation:

- Health aspect, risk perception
- Willingness to renovate
- Cost-benefit trade-offs: a typical, but not the sole approach to radon testing and remediation decisions.
- Building renovation typically takes place for a number of reasons. This must be taken into account in the information work.

- **Promotional conditions:**
  - include statement on radon concentration in rental contracts.
  - With regard to real estate purchases, purchase contract templates could take into account the issue of radon.

- Effects are assumed for a funding rate range between 20% and 50 %
- An "optimal" funding rate is not a sufficient condition for extensive take-up and high effectiveness of the funding programme.

Project state subsidies: results (2)

- Lack of awareness of radon as a health risks would be main barrier to make use a funding programme
- Easy access and unbureaucratic application of funding is essential (application, proof of costs, proof of effects)
- Signalling effect: Effect of a funding programme would not only be the financial relief but also showing that radon is a risk that is taken seriously by the state
- A funding programme would require **continuous, active providing of information** on the topic of radon in living space.

Project state subsidies: baseline scenario for quantitative assessment

Assumption: 370,000 buildings in Germany with radon levels above 300 Bq/m³

Baseline scenario, without an information campaign and without a funding programme:

- 1% of the buildings are detected with a radon concentration above 300 Bq/m³ (about 3,700 residential buildings per year)
- 3% remediate (approx. 110 radon remediations per year).

- It is estimated that a subsidy programme can lead to 2,000 to 22,000 additional radon remediations yearly in Germany.

Project state subsidies: quantitative assessment

	Number of additional radon levels detected above 300 Bq/m³	**Number of additional radon levels detected above 300 Bq/m³**	**Number of additional yearly radon remediation**	**Number of additional yearly radon remediation**
Assumptions	Pessimistic	optimistic	pessimistic	optimistic
Scenario 1: information activities	7.400	14.800	400	1.200
Scenario 2: information activities + funded radon measurements	33.300	70.300	1.700	5.100
Scenario 3: information activities + support and counselling	14.800	33.300	1.700	5.400
Scenario 4: information activities + funding programme radon remediation	14.800	33.300	1.700	5.400
Scenario 5: Scenario 4 + funded radon measurements	33.300	70.300	3.600	11.000
Scenario 6: Scenario 4 + support and counselling	14.800	33.300	3.600	11.000
Scenario 7: Scenario 4 + funded radon measurements + support and counselling	33.300	70.300	7.300	22.100

Project state subsidies: Conclusion

- A subsidy programme for radon remediation can trigger a significant "push" among residential building owners
  - who already have a certain openness towards radon measurement or radon remediation
  - or who are not sure about radon remediation.
- A support programme rarely seems to cause a change of opinion or intention to act among people who do not consider radon measurement
- **Whether** the subsidy programme would be **effective**, depends on
  - supporting radon measurements in large numbers
  - offering independent, competent consultation services to home owners.
- **Challenges**:
  - very high number of radon measurements would be required;
  - need for training of radon experts and remediation companies

Project social dealing with radon: research question and methodology

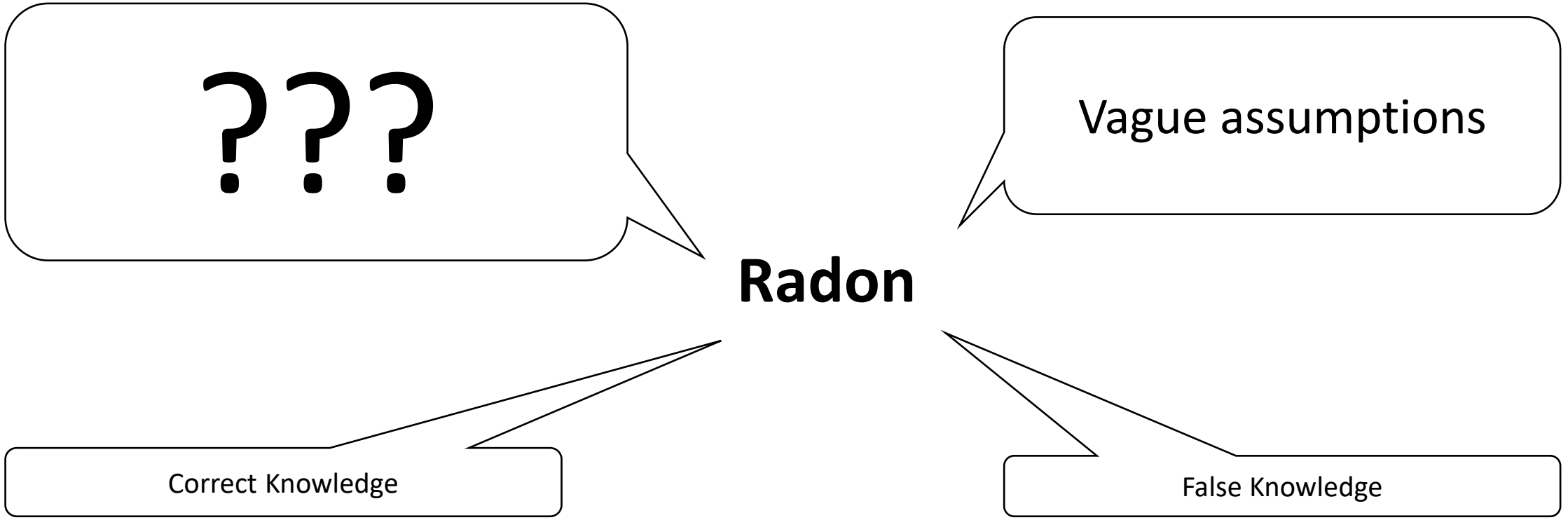
- **Research question**

  - What is the knowledge on radon and possible protective measures in Germany's general public?
  - How is the risk perception and information behaviour focused on radon?

- **Methodology**:

  - Qualitative Study: 30 individual interviews, 2 Focus groups
  - Quantitative study: online survey, n=3000, 20 min

Project social dealing with radon: results of the qualitative study



Project social dealing with radon: results of the qualitative study

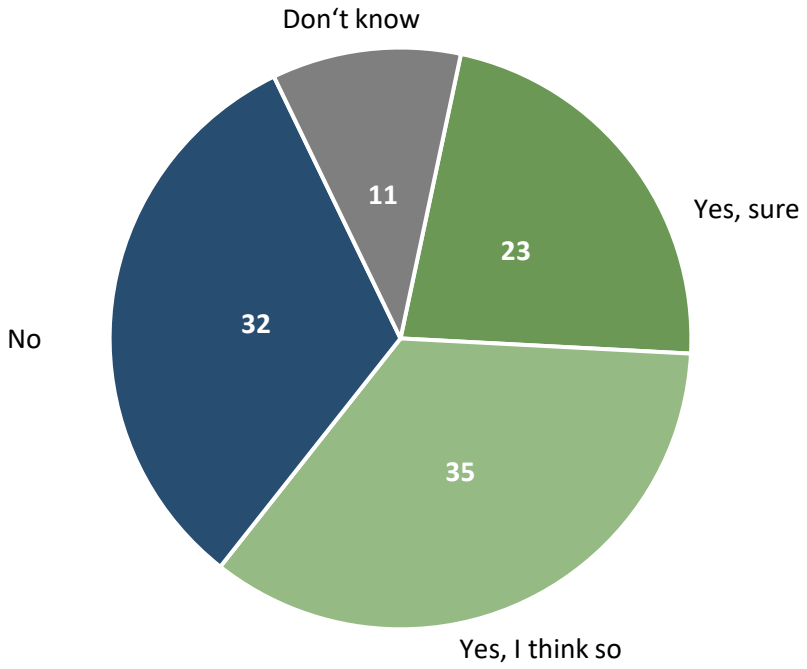
- In the qualitative study: Knowledge about radon and its health risks is very low across all respondents
- Only little false knowledge
- The majority shows itself to be in principle very amenable to the topic.
- However, the majority of respondents express surprise that they have not heard of such a relevant health risk before.
- Perception “if radon would be dangerous we would have heard about it”
- After dealing with information on radon risks and possible protective measures, the willingness to act depends above all on the assessment of personal concern.
- Here, different communication materials shown in the interviews have very different effects

Project social dealing with radon: results of the quantitative study

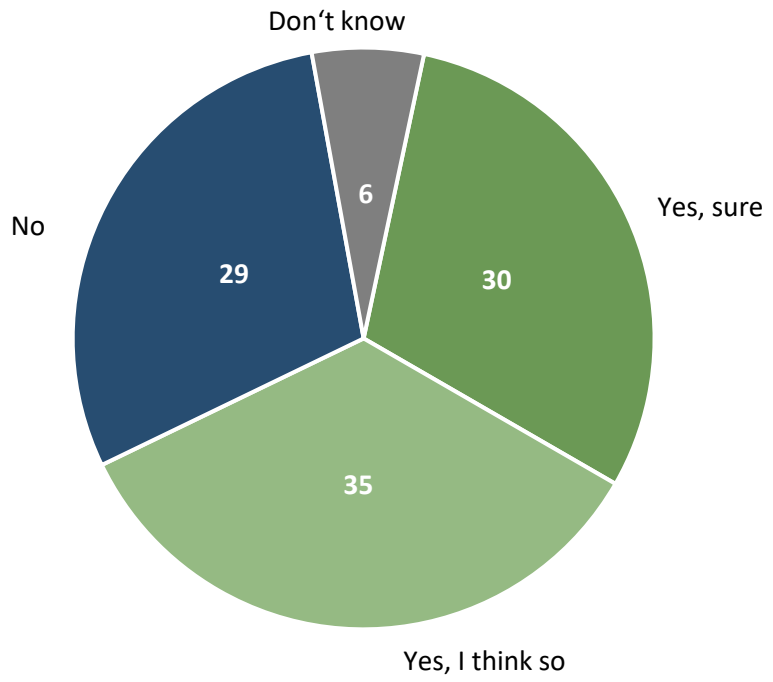
(not yet published)

Without explanation 58% of the respondents know radon, with explanation about 65% of the respondents say they know radon.

Awareness radon



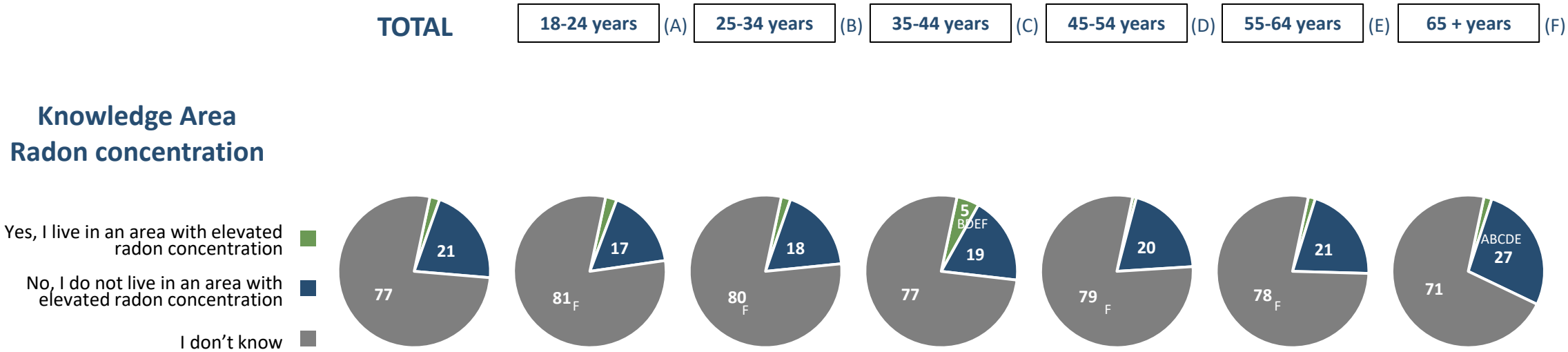
Awareness radon suppported



Q1: Have you ever heard or read about radon? Would you say...
Q8: Radon is a natural gas that occurs in rocks and soil in varying concentrations, even in Germany. Radon can accumulate in houses, especially in the basement and the lower floors, and can cause lung cancer if the concentration is high enough over a long period of time. Have you ever heard or read about the noble gas radon?

Base: Total, n=3.000, in %

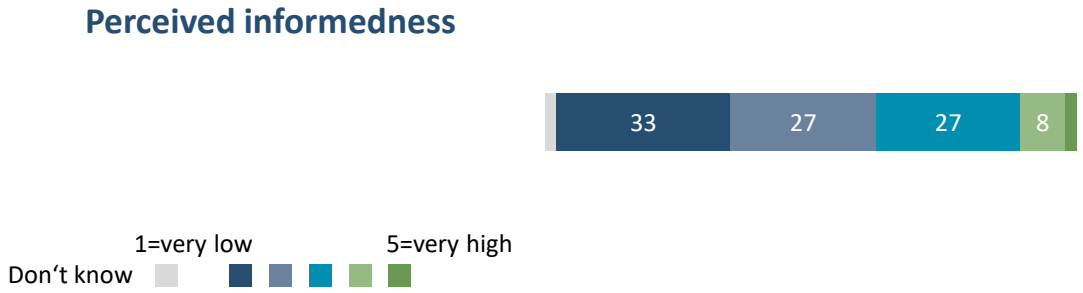
77% of respondents who know about radon do not know if they live in an area with elevated radon concentration.



Q18: Do you know if you live in an area with increased radon concentration?

Base: Total, n=1.929/130/331/299/337/380/452, in %

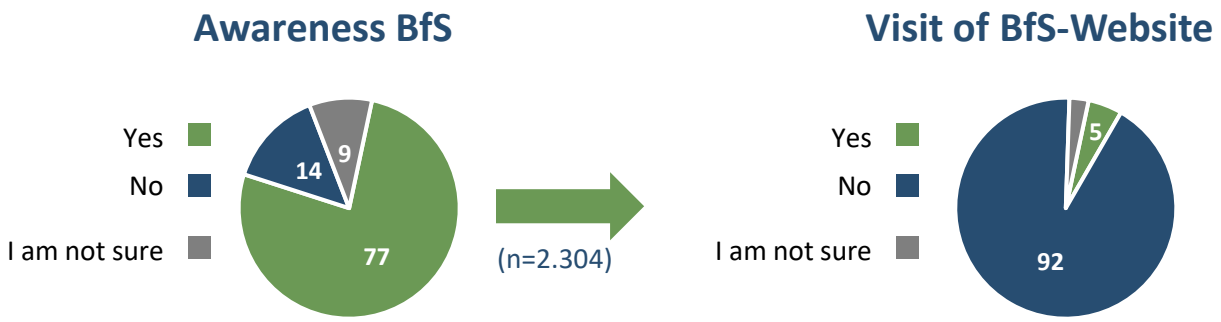
Only very few of the respondents (about 10%) who know radon in a aided way consider their knowledge to be (very) great.



Q8: Have you ever heard or read about the noble gas radon?
Q9: How much do you know about radon and its effects? Please answer on a scale of 1 to 5, where 1 means "very little" and 5 means "very much".

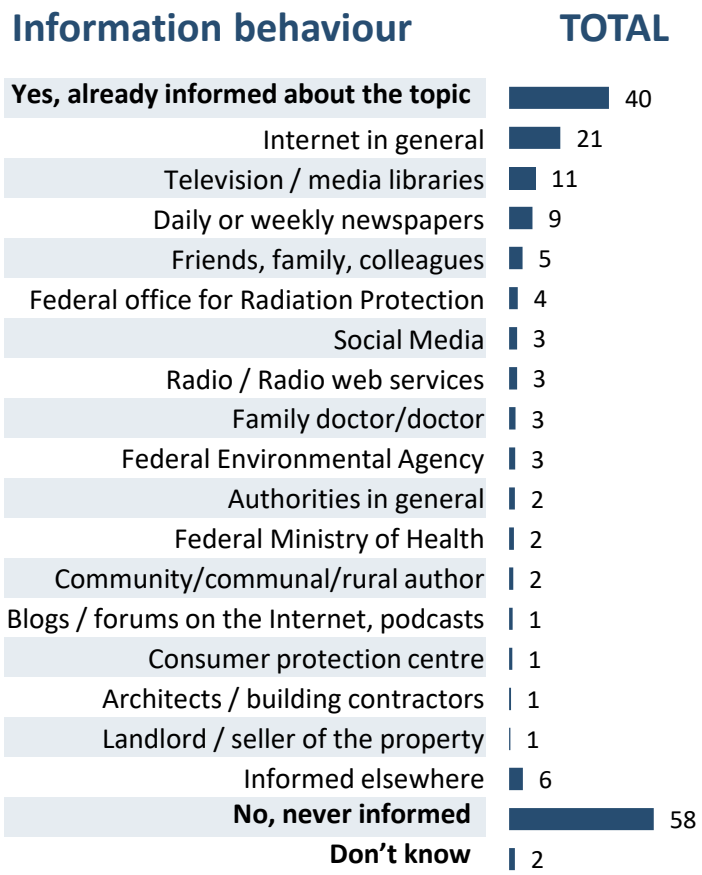
Base: n=1.929/ %

77% of respondents are familiar with the BfS, but only about 5% of them have ever visited the BfS website.



Q10: Do you know the Federal Office for Radiation Protection, even if only by name?
Q11: What exactly do you think the Federal Office for Radiation Protection does?
Q12: Have you ever visited the website of the Federal Office for Radiation Protection?

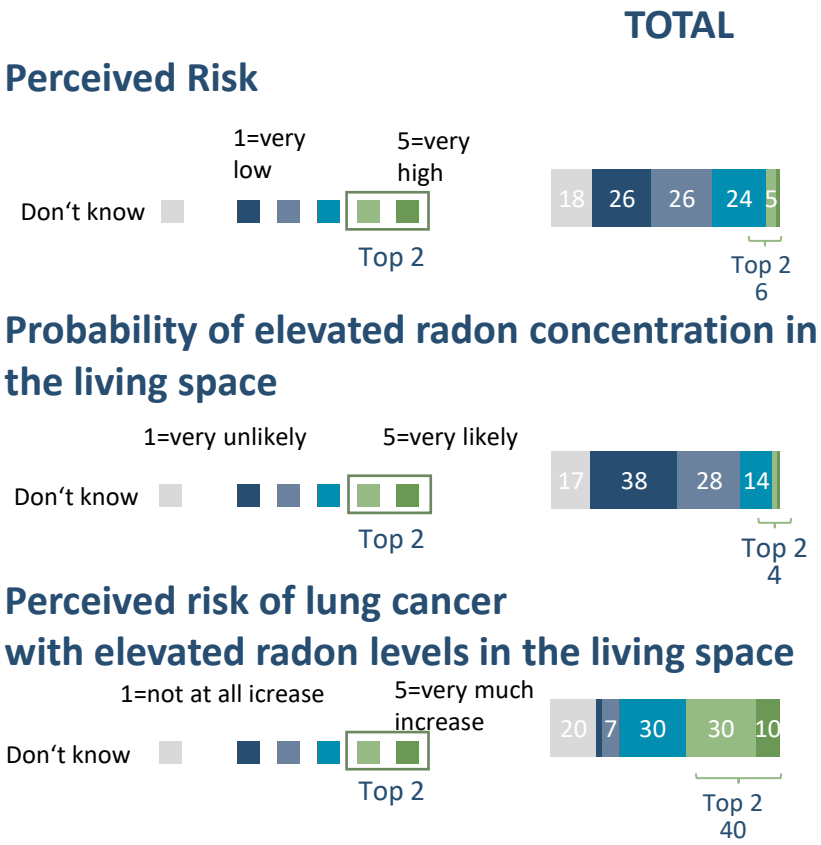
More than half of the respondents who know radon (aided) have not yet informed themselves about the topic of radon. The most common source of information is the internet.



Q13: Have you ever read up on the subject of radon?

Base: n=1.929 in %

The vast majority of respondents see hardly any risk for themselves personally from radon / consider an increased radon concentration in the living space unlikely.

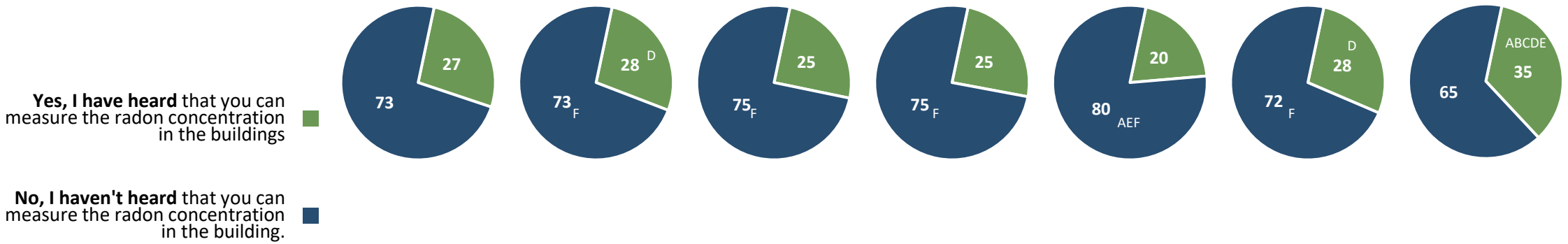


Q14: How high do you estimate the health risk to you personally from radon?
Q15: How likely do you think it is that your living space has elevated radon levels?
Q16: If your home had elevated radon levels, do you think this would increase your personal risk of getting lung cancer?

Base: Total, n=3.000 in %

27% of respondents have heard that radon concentrations can be measured inside buildings, and among people aged 65 and over, the figure is as high as 35%.

Knowledge radon measurement

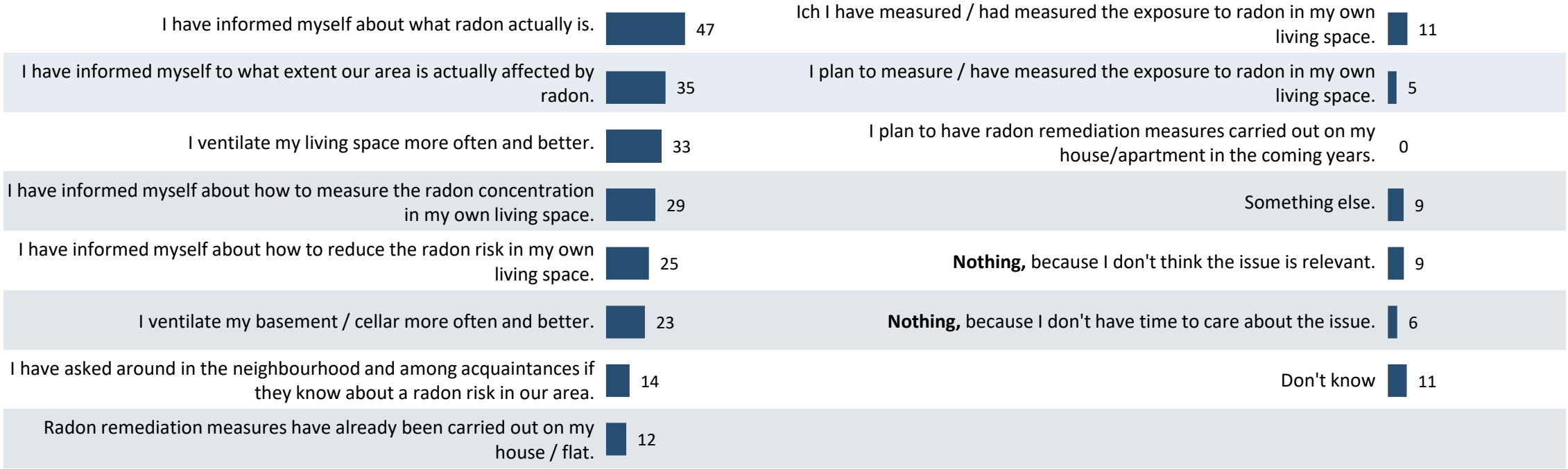


Q17: Have you ever heard that you can have the radon concentration inside buildings measured?

Base: Total, n=3.000/236/569/509/511/582/593, in %

The most frequently mentioned countermeasure is to find out more about what radon actually is and to what extent one's own area is affected.

People who know that they live in an area with elevated radon concentration:
Potential countermeasures for radon concentration

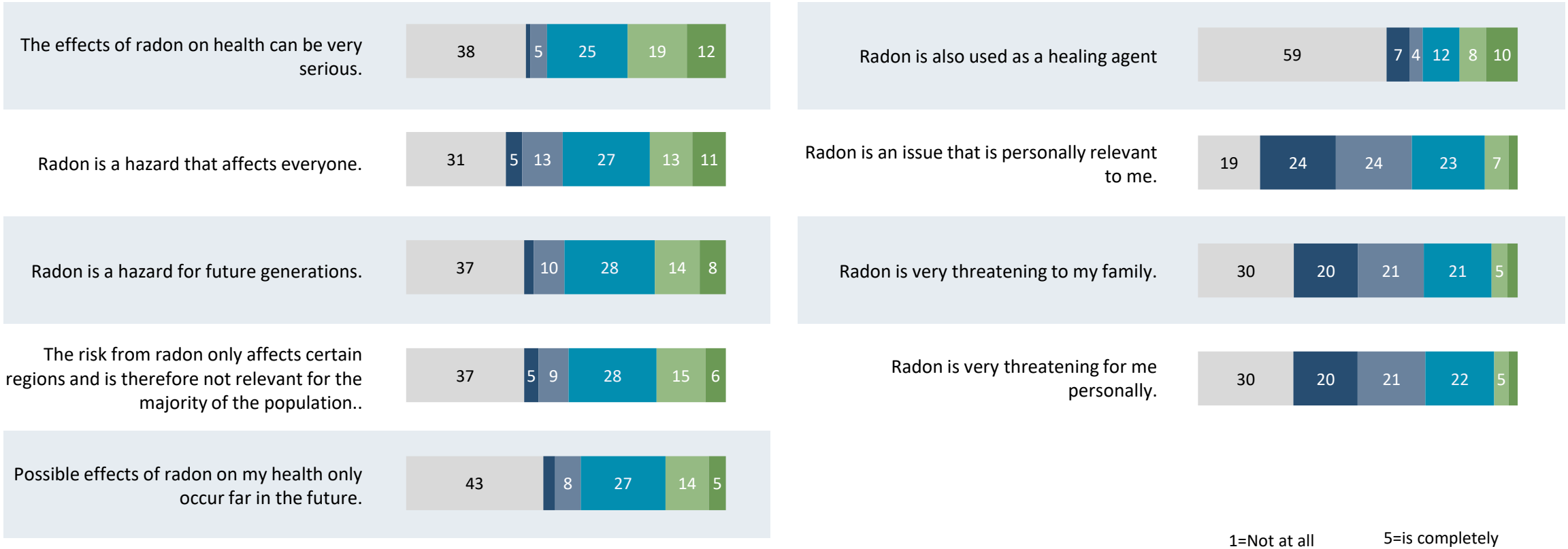


Q20: What have you done / are you doing since you know that you live in an area with elevated radon concentrations?

Base: Total, n=41, in %

31% of respondents (top 2 box) think that the effects of radon on health can be very serious. However, only a few think that radon affects them personally.

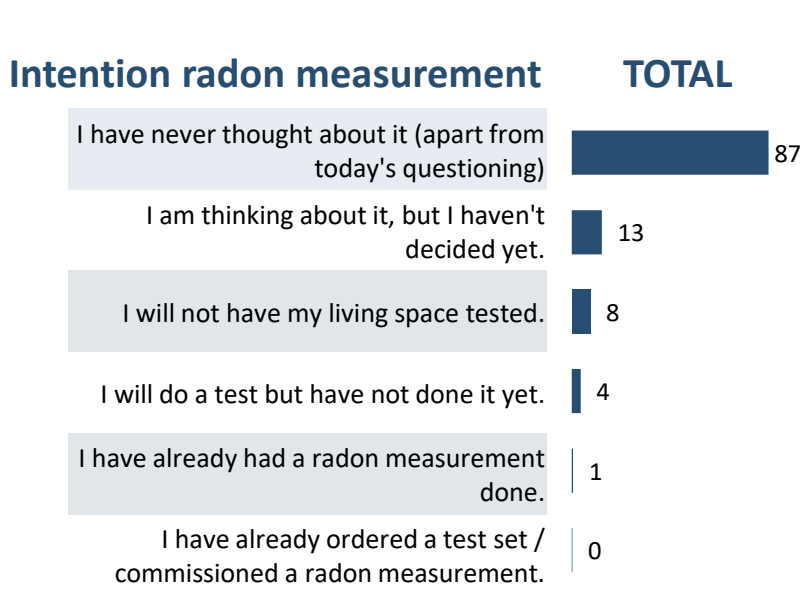
Radon perception

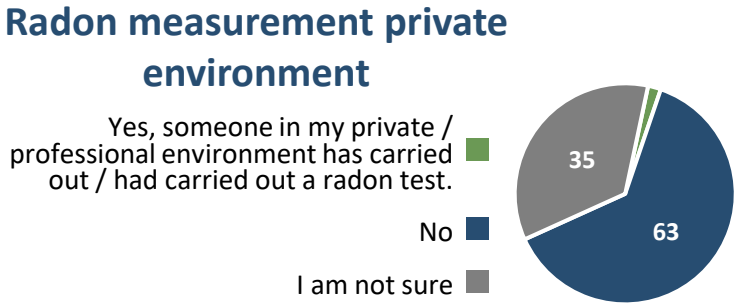


Q23: How much do you think the following statements are true? Please use the scale from 1 "not at all true" to 5 "completely true".

Base: Total, n=3.000, in %

The vast majority have never thought about radon measurement.

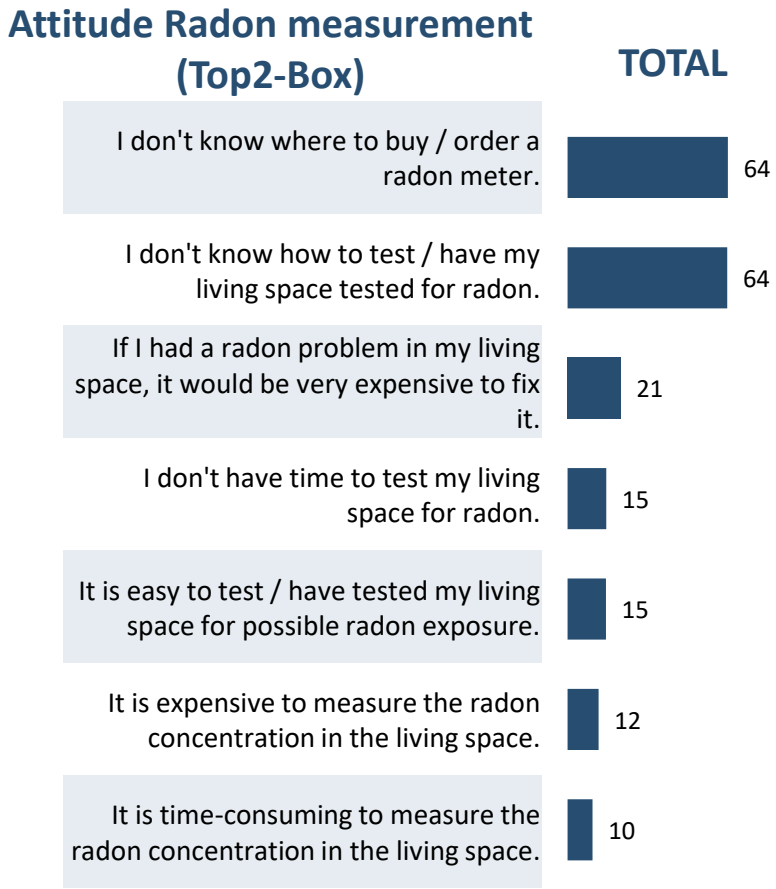




Q26: What is your attitude towards the issue of radon measurement in the home? Please select the statement that applies most to you. (multiple answer)
Q27: Has anyone in your private or professional environment already carried out / had carried out a radon test?

Base: Total, n=3.000/236/569/509/511/582/593, in %

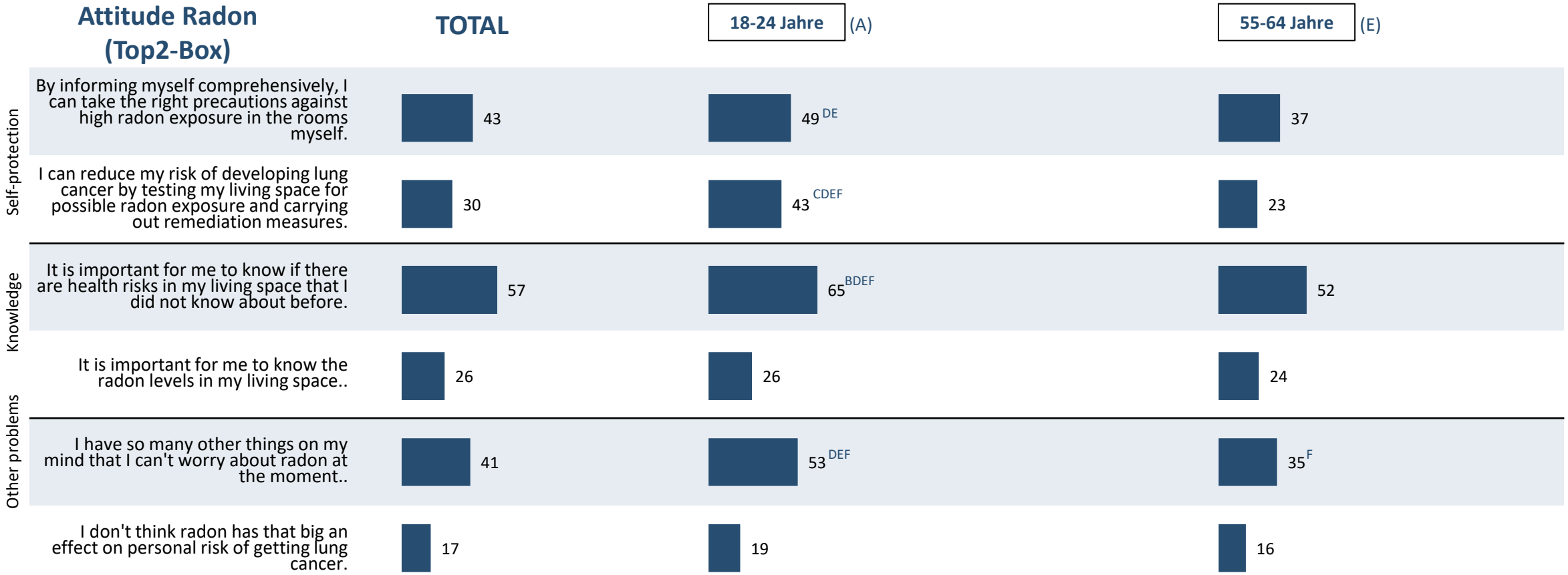
21% of respondents think it would be very expensive to fix a radon problem in their own home



Q33: Putting together everything you now know about radon, how much do you agree with the following statements?
Please use the scale from 1 "strongly disagree" to 5 "strongly agree".

Base: Total, n=3.000, in %

In particular, people aged 18-24 agree with the statement that it is important to know if there are health risks in the living space that one did not know about before.



Q33: If you put together everything you now know about radon, how much do you agree with the following statements?
Please use the scale from 1 "strongly disagree" to 5 "strongly agree".

Base: Total, n=3.000/236//582, in %

Overall Conclusion

- German population: Diffuse awareness of and knowledge on radon
- Qualitative and quantitative approaches show slightly different pictures of radon awareness in Germany
- Combination of both methodological approaches provides a good overall impression

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