Multi-Item Scale for Project:

FGZ Cohesion Panel: Wave 2 – Questions on climate change, antisemitism, and gender equality (English Version)

Question Text:

Would you agree or disagree if, as part of a climate-friendly energy policy in your area,... *[Würden Sie zustimmen oder nicht zustimmen, wenn im Zuge einer klimafreundlichen Energiepolitik in ihrer Umgebung...]*

Answer Categories:

Strongly disagree *[Stimme überhaupt nicht zu]*
Rather disagree *[Stimme eher nicht zu]*
Neither agree nor disagree *[Teils-teils]*
Rather agree *[Stimme eher zu]*
Strongly agree *[Stimme voll und ganz zu]*

Findings for Multi-Item Scale:

As shown in Table 9, there was no item nonresponse for question 8, that is, all five items were answered by the 240 subjects. The subjects used the full range of the response scale for all items. The majority of respondents agreed with the construction of wind turbines, an underground high-voltage line and a large-scale solar plant (item a: 62 %, item b: 59 %, item d: 67 %). In contrast, more re-spondents disagreed than agreed with the construction of a high-voltage transmission line with masts and a modern nuclear power plant (item c: 44 % vs. 22 %, item e: 55 % vs. 26 %). Furthermore, for items b and c, the proportion of respondents selecting the middle category was relatively high (item b: 28 %, item c: 34 %).
The aim of the pretest was to investigate whether the respondents were aware of the connection be-tween the infrastructure measures mentioned in items b, c and e and climate protection and whether the reasons given for their answers matched the selected scale values. The corresponding cognitive probes (N1_F8, see Appendix) were asked of the 116 subjects who were (randomly) assigned to Group 2. About one-third of these subjects received a probe on items b, c, and e, respectively.
The connection between the mentioned infrastructure measures and climate protection was only questioned by one test person (TP365) in item c (*"High-voltage lines with masts are the normal state, aren't they? Why in the context of a climate-friendly energy policy?"*, answer: neither agree nor disagree). No other test person commented on the connection between the items and climate protection.

With the exception of a few test persons who did not give evaluable answers to the cognitive follow-up questions, the respondents' justifications matched the respective selected scale values.

Recommendations for Multi-Item Scale:

The results of the pretest do not indicate any problems with the question. Nevertheless, we recommend that the response scale be adjusted to clarify that this question is about approval or disapproval of climate protection measures and not about agreement with specific statements:

Would you approve or disapprove if, as part of a climate-friendly energy policy in your area,...
Response options: Would I... strongly approve, rather approve, neither approve nor disapprove, rather disapprove, strongly disapprove

Cognitive Techniques:

General Probing

All Items for Question(Question Text):

Would you agree or disagree if, as part of a climate-friendly energy policy in your area,... *[Würden Sie zustimmen oder nicht zustimmen, wenn im Zuge einer klimafreundlichen Energiepolitik in ihrer Umgebung...]*

-> **Tested Items:**

Item Text:

b. ...a high-voltage line was to be laid underground? *[...eine Hochspannungsleitung in der Erde verlegt werden soll?]*

Recommendations:

The results of the pretest do not indicate any problems with the item, so it can be left in its current form.

Findings:

A negative attitude toward the laying of high-voltage lines underground (item b) was mostly justified by doubts about their safety, that they were less efficient than above-ground lines and not sustainable, or that the necessary construction measures were rejected. Respondents who were in favor of the infrastructure measures justified this by saying that undergrounding would be practical, safe, and not visually disruptive:

- *"I don't know if it's safe."* (TP231, response: rather disagree).
- *"Undergrounding is significantly more expensive, reduces efficiency, and probably takes long-er."* (TP345, response: rather disagree)
- *"Offers many advantages (e.g., safe from storms, better for the environment, nicer)."* (TP294, response: strongly agree).
- *"Is necessary for the future and underground it does not disturb the view in nature."* (TP382, Answer: strongly agree).

Even though the proportion of subjects who selected the middle category for item b was comparatively large, their responses to the probe did not indicate comprehension problems, but rather corresponded to "medium" agreement, that is, the measure was neither unambiguously rejected nor endorsed:

- *"I am in favor if it is reasonable and well isolated and if the excavations do not use too much area. It is important that the original condition is restored if possible or well compensated by power companies."* (TP384, response: neither agree nor disagree)
- *"I think repair work is costly, roads need to be opened, etc."* (TP392, response: neither agree nor disagree)

Question Topic:

Environment/ Climate protection

Construct:

Acceptance of infrastructural climate protection measures

Item Text:

c. ...a high-voltage power line with masts was to be built? *[...eine Hochspannungsleitung mit Masten gebaut werden soll?]*

Recommendations:

The results of the pretest do not indicate any problems with the item, so it can be left in its current form.

Findings:

For item c, a negative attitude was justified by the fact that high-voltage lines with masts (especially during storms) posed a danger and were visually disturbing. Those who agreed with the item mainly justified this with the necessity of masts for the power supply or with the fact that they were the rule and people had already become accustomed to them:

- *"I think that doesn't look good, there are other options today. And for health it is not good to have them near you either."* (TP410, response: strongly disagree)
- *"Because there are these in my environment and across fields. And when there are orcan winds blowing like right now, they fling around dangerously in the air. I'm not sure that these don't come down one time or even a mast falls down."* (TP318, strongly disagree)
- *"In the area where I live, there are power lines with masts, so we're used to them and I wouldn't mind."* (TP314, response: rather agree)
- *"Everyone needs electricity, so there needs to be power lines."* (TP422, response: rather agree)

Sporadically ($n = 4$), the possibility of building high-voltage power lines with masts at the test persons' place of residence was doubted, since they lived in a large city or the inner city:

- *"Everything here is densely built-up, where should there be room for high-voltage lines?"* (TP258, response: rather disagree).
- *"Doesn't happen downtown."* (TP506, response: rather agree)
- *"The question is actually not relevant for me, because it is not feasible to lay a high-voltage line through a residential area. On the contrary, existing high-voltage lines are being deconstructed because of construction of apartments."* (TP296, response: neither agree nor disagree)
- *"What nonsense. The space in residential areas does not even begin to allow high-voltage lines to be built there. Are residential buildings to be demolished for this?"* (TP325, response: strongly disagree).

For item c, the responses of the subjects who selected the middle category also did not indicate comprehension problems, but rather corresponded to a neutral or ambivalent attitude:

- *"I remember that from my youth and didn't think it was dramatic."* (TP390, response: neither agree nor disagree)
- *"Because I don't know enough about the advantages or disadvantages."* (TP340, response: neither agree nor disagree)

Question Topic:

Environment/ Climate protection

Construct:

Acceptance of infrastructural climate protection measures

Item Text:

e. ...a modern nuclear power plant was to be put into operation? *[...ein modernes Kernkraftwerk in Betrieb genommen werden soll?]*

Recommendations:

The results of the pretest do not indicate any problems with the item, so it can be left in its current form.

Findings:

For item e, test persons who disagreed with the statement mostly justified their answers with the danger of nuclear accidents or with the fact that nuclear power is an outdated and environmentally harmful technology. In contrast, test persons who agreed with the statement argued that nuclear power is clean energy, that modern nuclear power plants are safe, or that nuclear energy is necessary because the exclusive supply of green electricity is not sufficient:

- *"I am afraid of an accident, whether material or manmade."* (TP367, response: strongly disagree).

- *"Even though nuclear energy is green energy on paper, there is the question of final storage, which is anything but sustainable."* (TP407, response: strongly disagree)
- *"Nuclear power is a good contribution to becoming climate neutral. Modern nuclear power plants are safe."* (TP339, response: rather agree)
- *"Nuclear power plants, like them or not, are among the largest suppliers of electricity there are. Shutting them down creates such a big gap, which means you have to import electricity from other countries that have nuclear power plants as well."* (TP472, response: strongly agree)

Question Topic:

Environment/ Climate protection

Construct:

Acceptance of infrastructural climate protection measures

-> Not Tested Items:

Item Text:

a. ... wind turbines were to be built? *[...Windräder gebaut werden sollen?]*

Recommendations:

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Findings for Item:

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Question Topic:

Environment/ Climate protection

Construct:

Acceptance of infrastructural climate protection measures

Item Text:

d. ...a large-scale solar plant was to be built? *[...eine großflächige Solaranlage gebaut werden soll?]*

Recommendations:

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Findings for Item:

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Question Topic:

Environment/ Climate protection

Construct:

Acceptance of infrastructural climate protection measures