Public Perspectives on Nuclear Energy: Some Challenges and Opportunities

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Background: Public Perceptions About Nuclear Technology

Survey Research Analysis Program

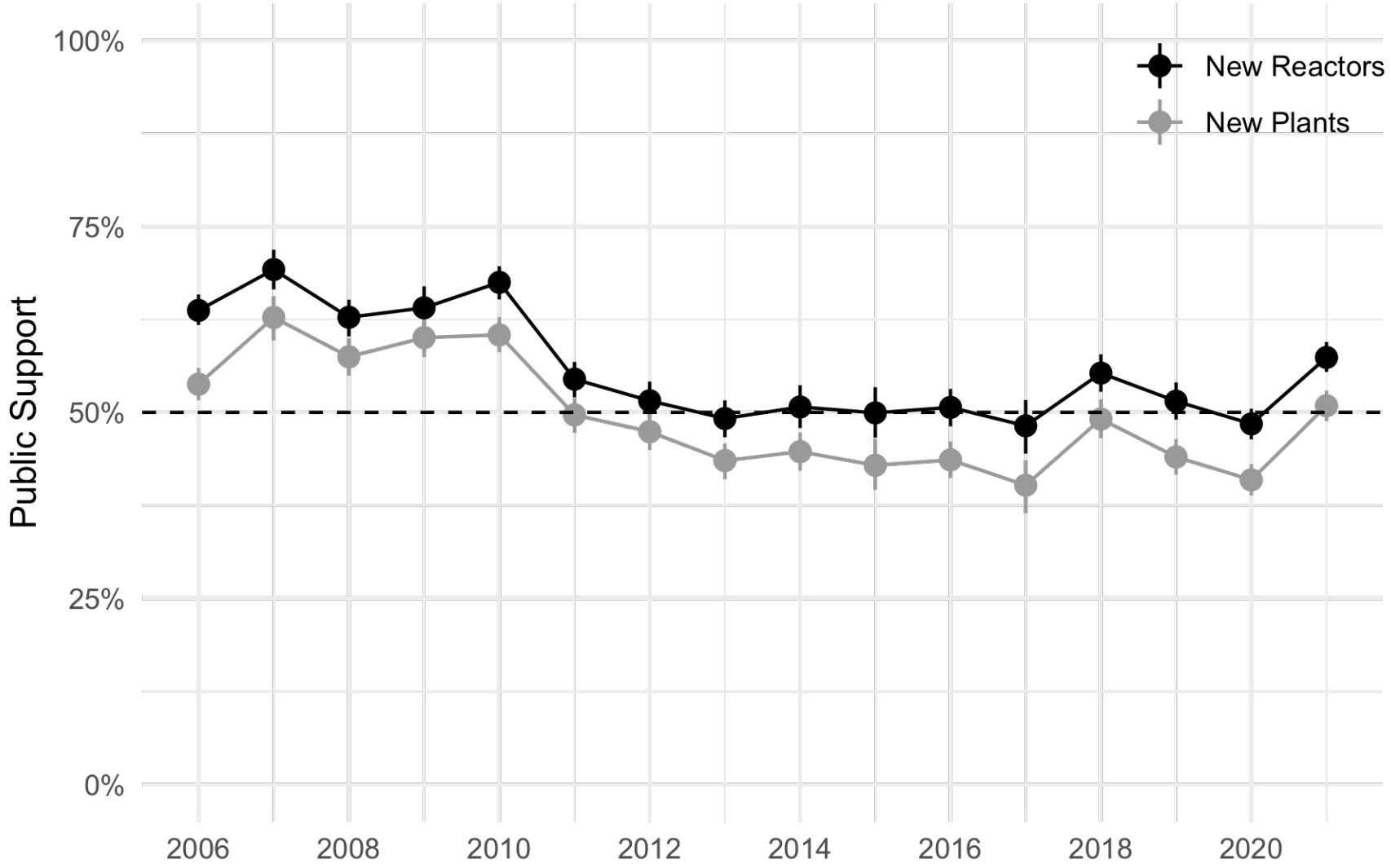
- Encompassing nuclear security, nuclear energy, and nuclear waste management
- Data on public attitudes using annual national internet/phone surveys since 1993
- Over 95,000 total research participants

- Basis for analysis of evolving context, key trends, and public perceptions of new technologies

- Core focus areas:
  - Risk and benefit perceptions surrounding nuclear issues
  - Implications of events on nuclear energy views (e.g. Fukushima, WIPP)
  - Implications of facility designs
  - Evolving patterns of institutional trust
  - Preferences for advanced reactor designs (e.g. SMR's and micro-reactors)

Public Support for Nuclear Energy

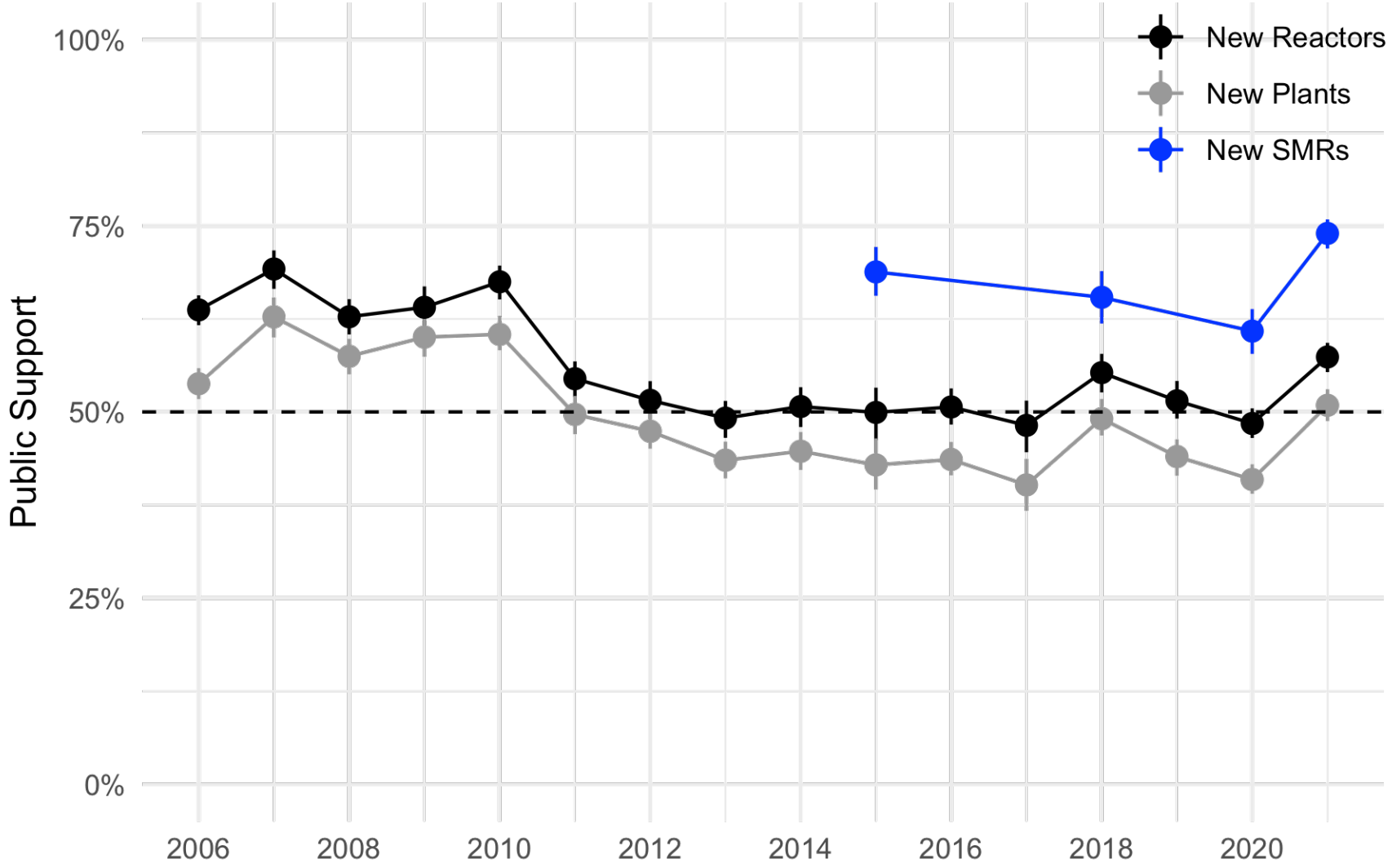
- How do you feel about constructing:
  - Additional nuclear reactors at the sites of **existing** nuclear power plants in the US?
  - Additional nuclear power plants at **new** locations in the US?
- Public support decreased significantly after Fukushima and never fully recovered
- Support is higher for new reactors at existing locations than new plants



Data: 2006-2021

Public Support for Nuclear Energy

- How do you feel about constructing:
  - Additional nuclear reactors at the sites of **existing** nuclear power plants in the US?
  - Additional nuclear power plants at **new** locations in the US?
  - Small modular reactors to generate electricity in the U.S.?
- Public support is significantly higher for SMRs



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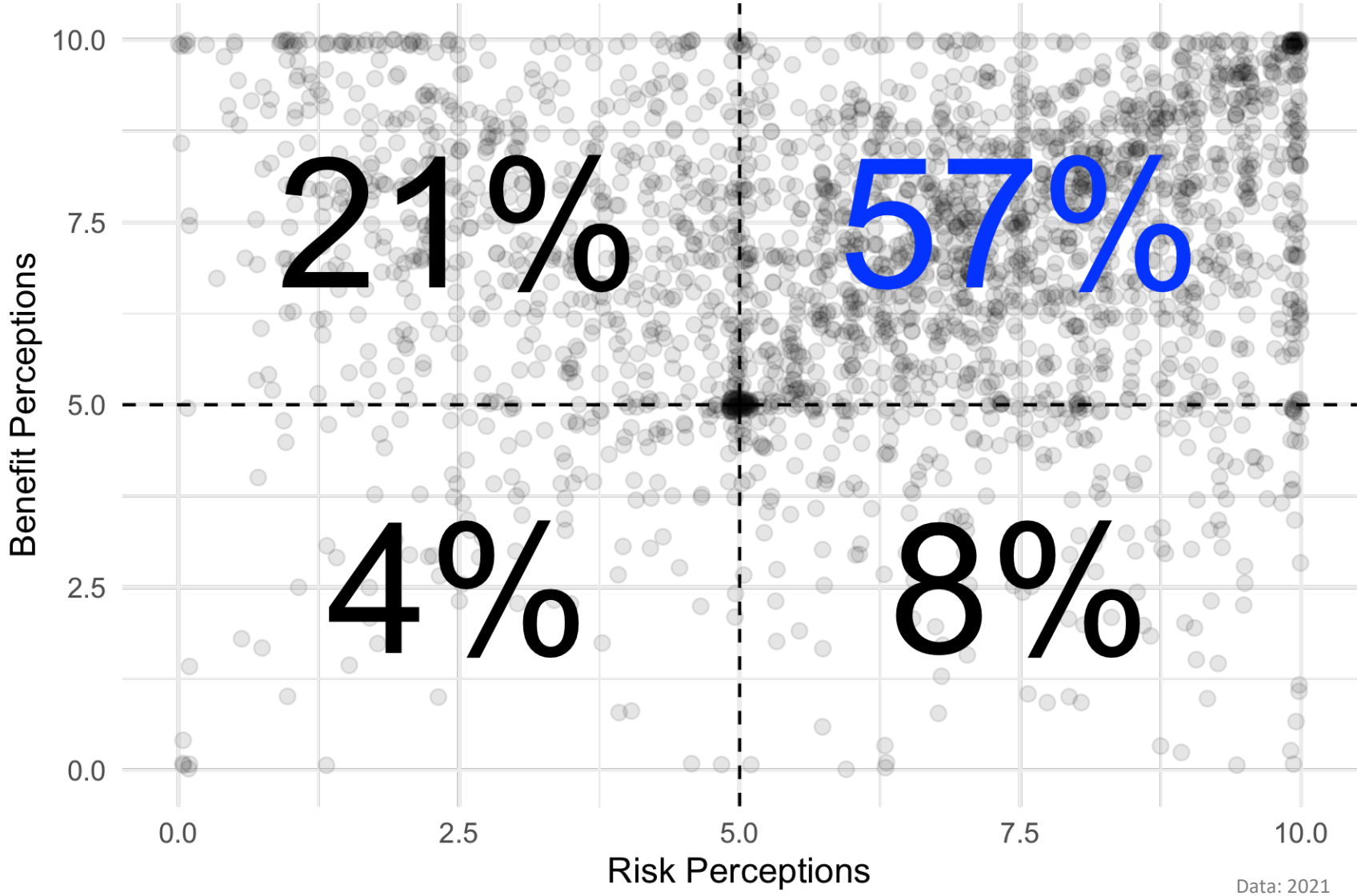
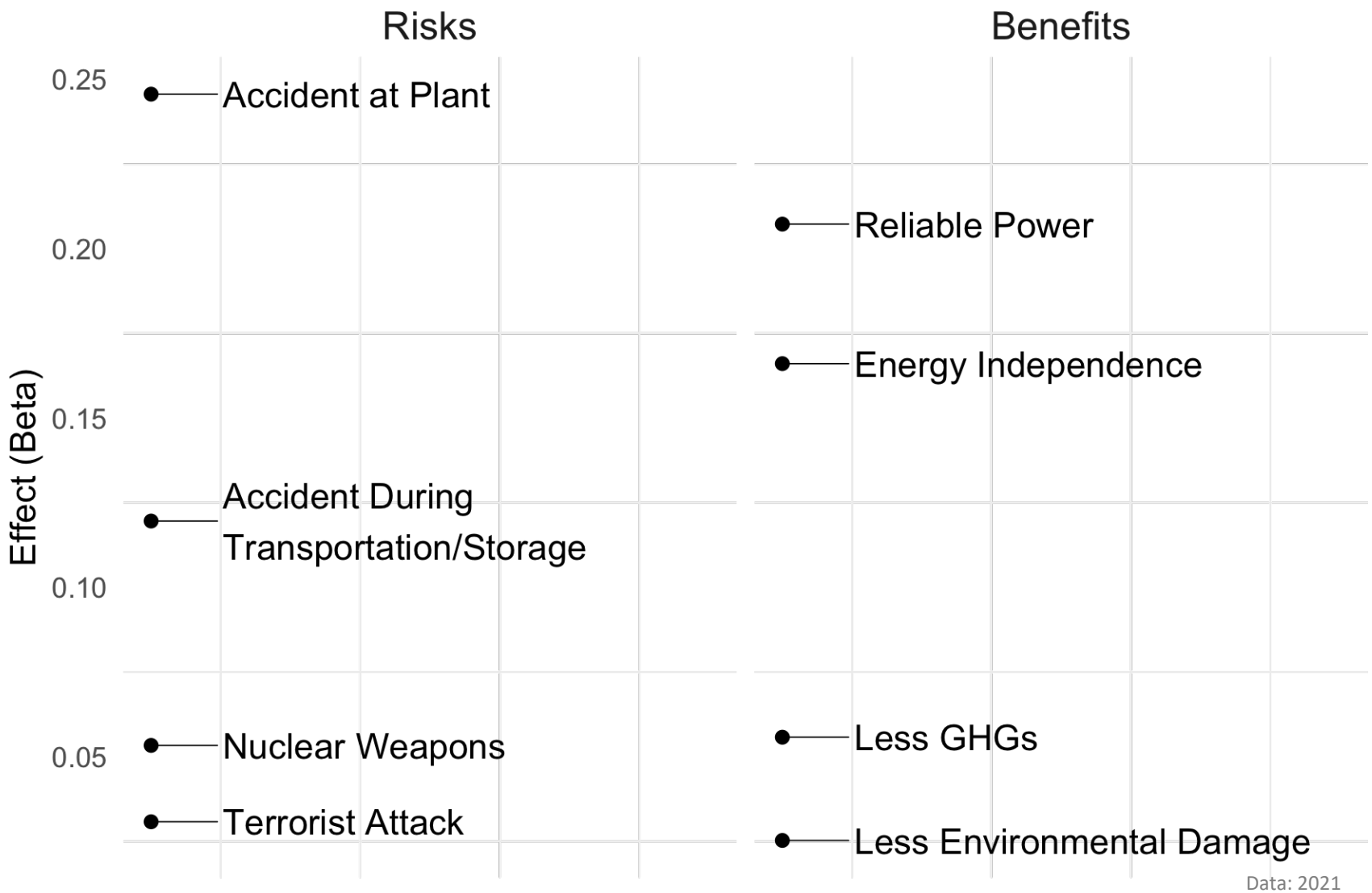
Drivers of Public Support for Nuclear Energy

- Risk and and benefit perceptions account for most of the variation in support/opposition
  - Exert roughly the same impact, push (pull) opposite directions
- Many people have high risk and high benefit perceptions, so a large portion of the population is torn in their views about nuclear energy



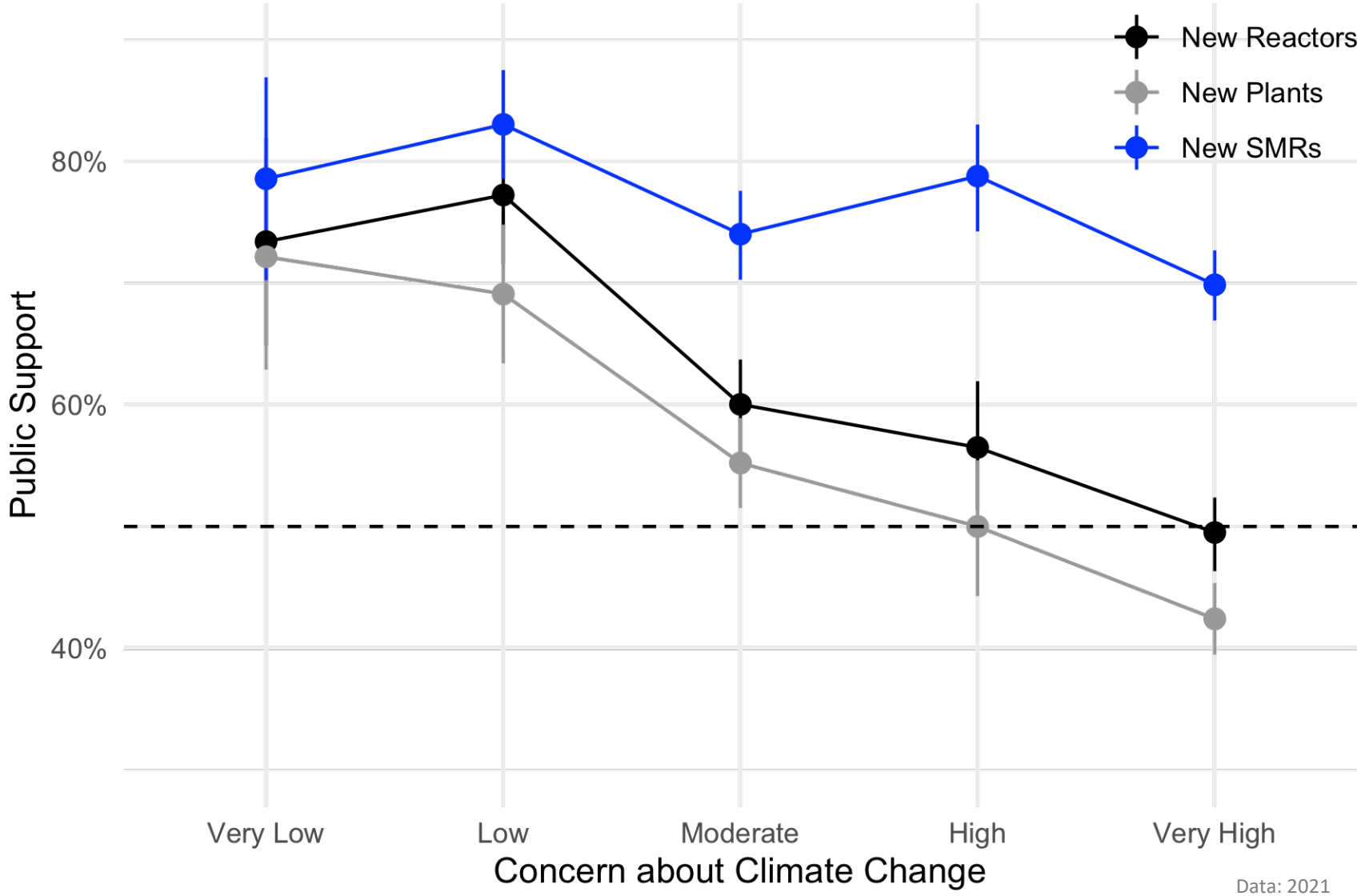
Drivers of Public Support for Nuclear Energy

- People weigh multiple risks and benefits when formulating opinions about nuclear energy
- Fear of an accident at a plant has the largest negative impact on support
- Viewing nuclear power as a reliable source of electricity has the largest positive impact on support



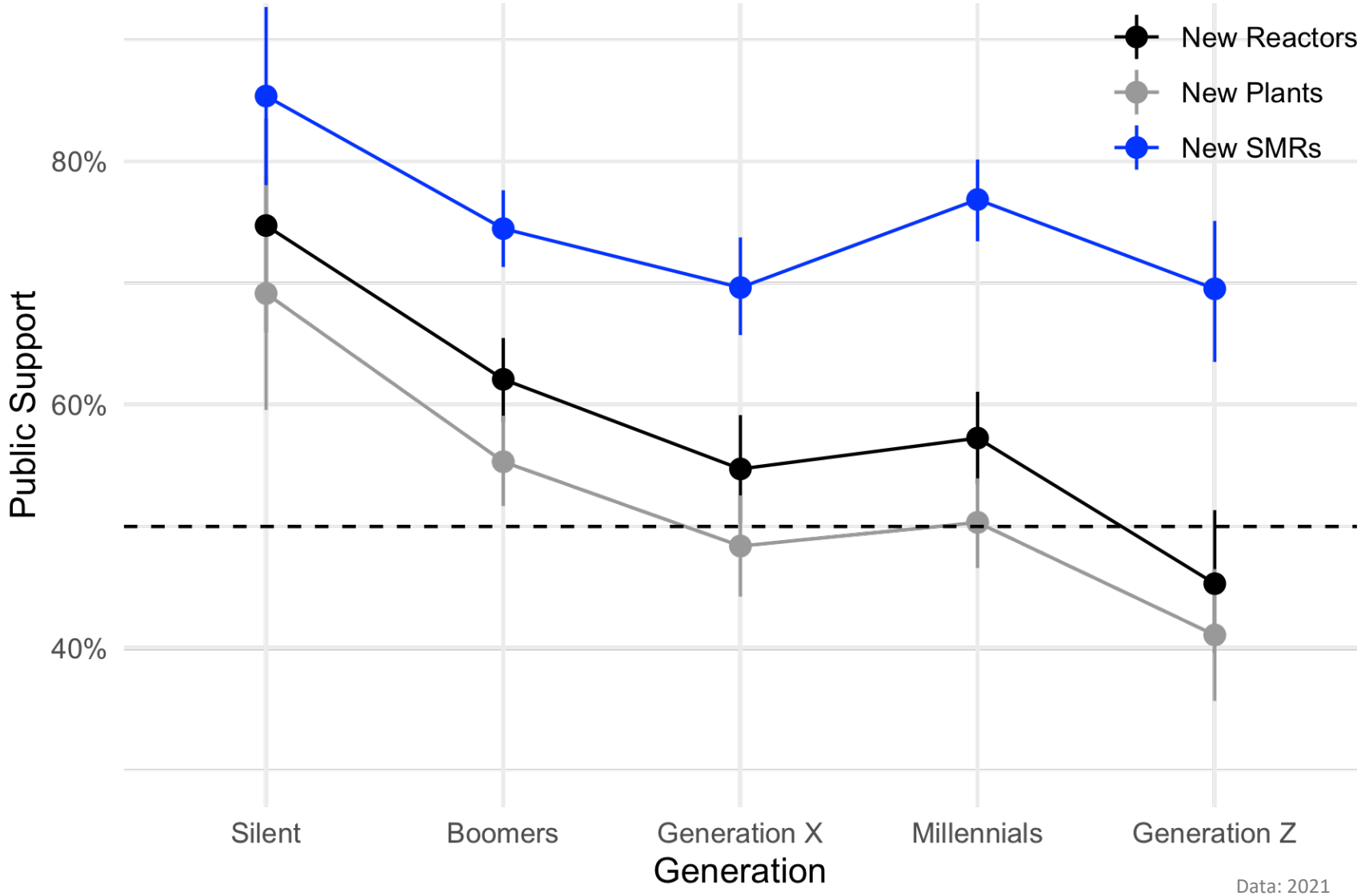
Key Challenge 1: Climate Change

- On average, people who worry about climate change are less supportive of nuclear energy
- Unable (yet) to convince this growing portion of the population that nuclear energy is an essential ingredient in decarbonization and the fight against climate change
- Support for SMRs seems to be more consistent; substantial support even among those who worry about climate change



Key Challenge 2: Young People

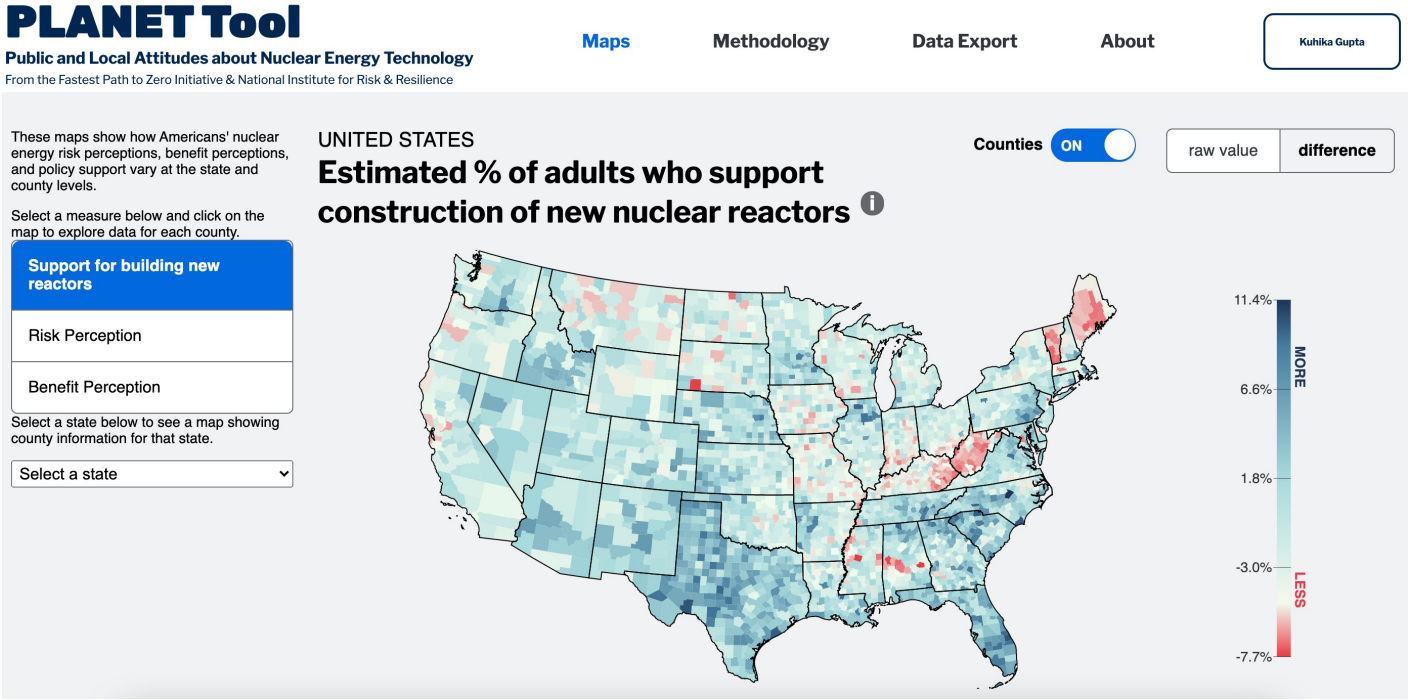
- On average, younger generations are less supportive of nuclear energy
- Millennials and Zoomers are generally less knowledgeable about nuclear energy, especially it's benefits
- Again, support for SMRs is more consistent across generations – young people are drawn to innovation and new technology!



Opportunities for Innovation

- Relatively high levels of support for new technologies such as SMRs, MSRs, and micro-reactors
- Many people are torn in their views about nuclear energy, so they may be open to new types of information
- People who worry about climate change don't see nuclear as part of the solution, but this can change?
- Young people are less knowledgeable about and supportive of nuclear energy, but this can change too?

- States, cities, and towns across the US are increasingly attentive to their energy portfolios
  - Decarbonization
  - Energy reliability
  - Grid modernization
- Many of them may be open to conversations about new nuclear technology
- Communities are the laboratories of democracy and innovation!



Questions

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