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The Effect of "Pulsing" on Data Quality: Temporal Evidence on Accuracy, Coverage and Efficiency for European CATI Surveys from 2019 to 2021

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Pew Research Center

2021 Virtual ESRA Conference | July 16, 2021

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What Is “Pulsing”?

- Sample screening used to identify and flag working and nonworking numbers
- A dialer sends an electronic pulse to the sampled phone number, indicating whether the number is working or nonworking
- A process used on landline numbers only

Data Sources: 2019-2021 Global Attitudes Project

- Eight CATI, European countries
- Dual-frame RDD, 7-call designs
- Nationally representative samples
  - Most samples have ~1,000 interviews
- Fielded:
  - *Spring 2019:* May 31 to July 26, 2019
  - *Summer 2020*: June 10 to Aug. 3, 2020
  - *Fall 2020:* Nov. 12 to Dec. 23, 2020
  - *Spring 2021*: March 15 to May 26, 2021

- Topics included:
  - Politics
  - Social issues
  - Views of the United States
  - Special topics by year
    - 2019: Changes since fall of Berlin Wall
    - Summer 2020: Coronavirus pandemic
    - Fall 2020: U.S. Election and coronavirus pandemic
    - Spring 2021: Democracy and coronavirus pandemic

About the Experiment

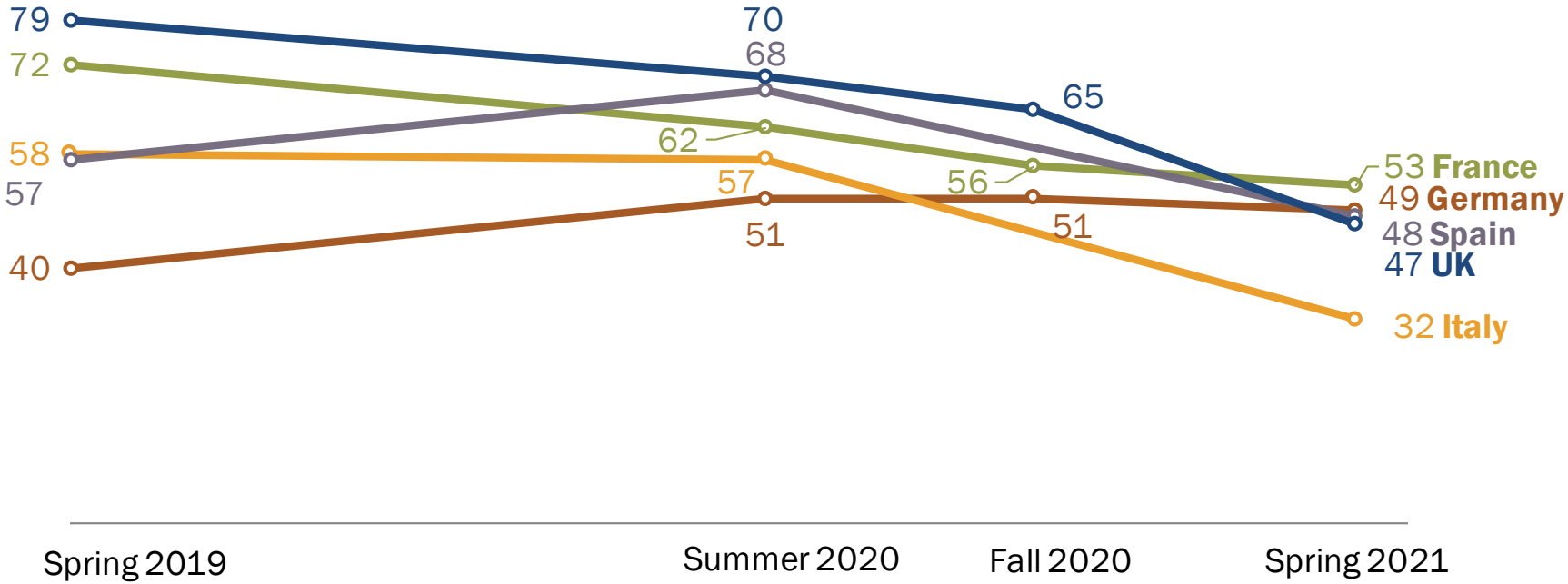
- Landline samples stratified by region and drawn proportionally to regional population figures

- Samples then pulsed and separated into “flagged working” and “flagged nonworking” samples

- Interviewers and dialers code **all** numbers as working or nonworking through call dispositions

Working Flags by Country, Survey

% of flagged, confirmed working numbers in the sample dialed



Source: Spring 2019, Summer 2020, Fall 2020 and Spring 2021 Global Attitudes Survey.

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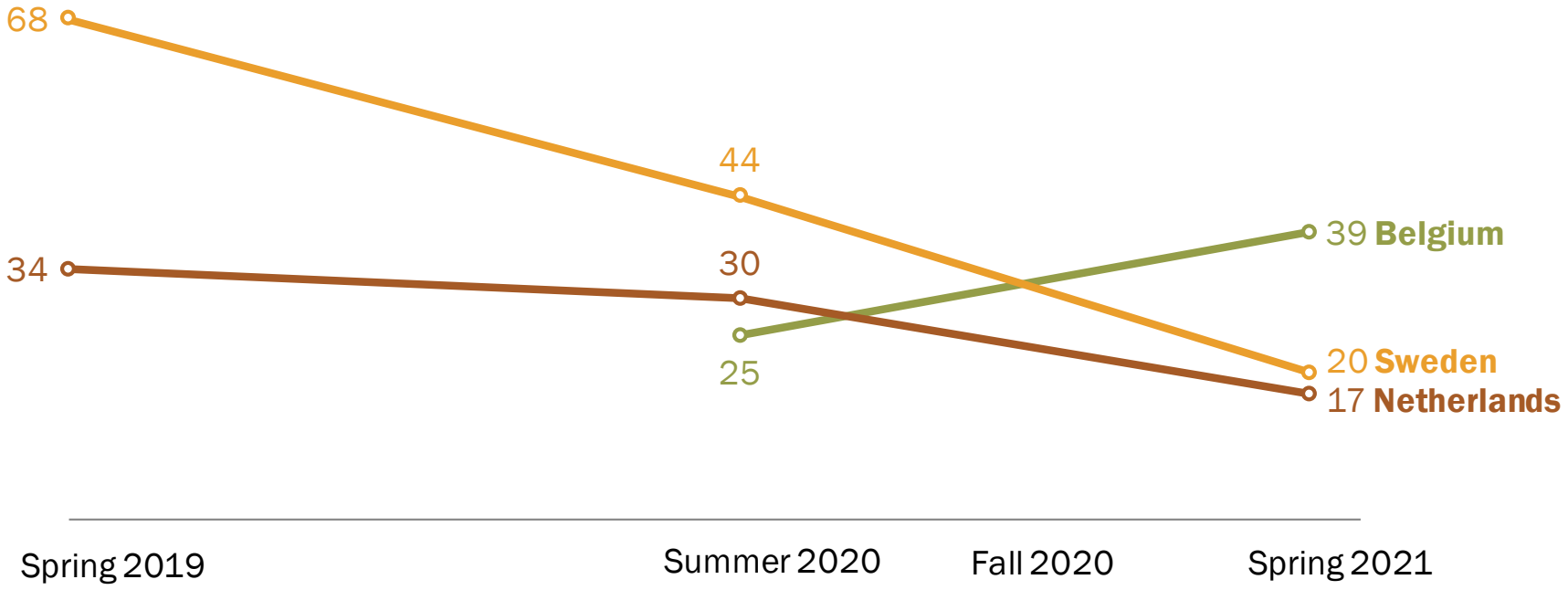

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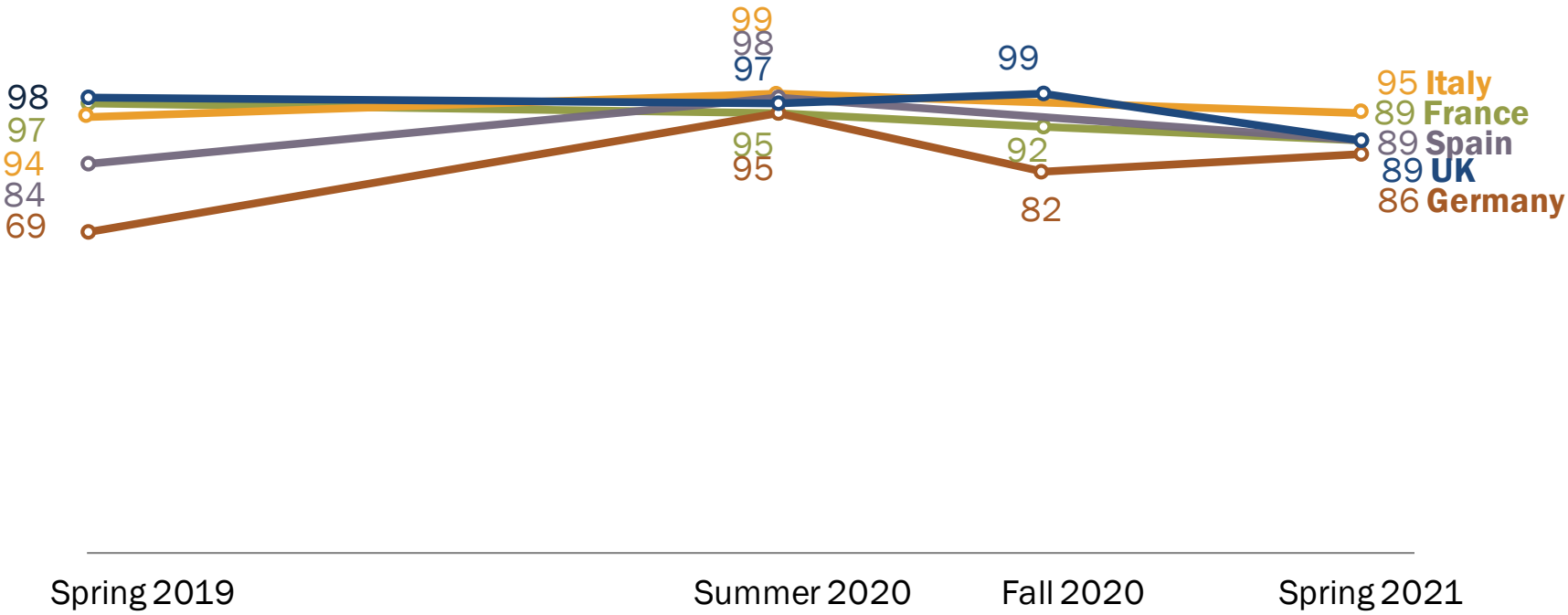
Completed Interviews by Working Flags by Country, Survey

% of interviews achieved on flagged working numbers



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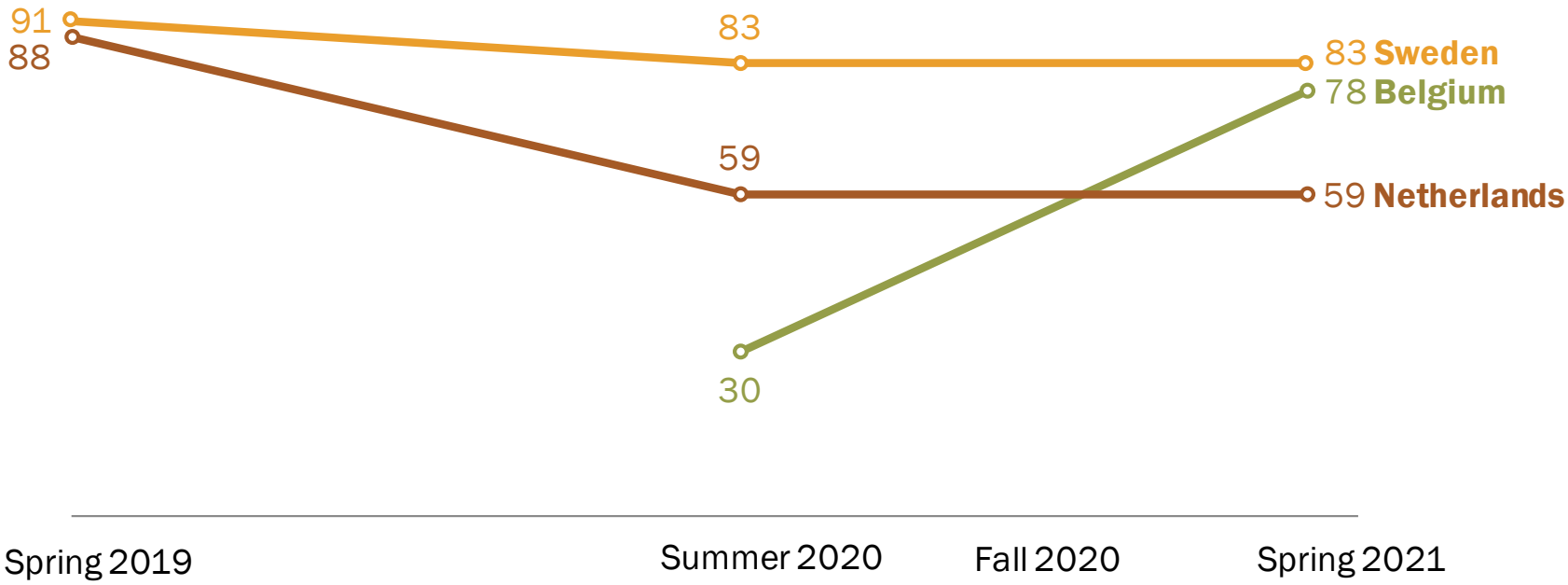

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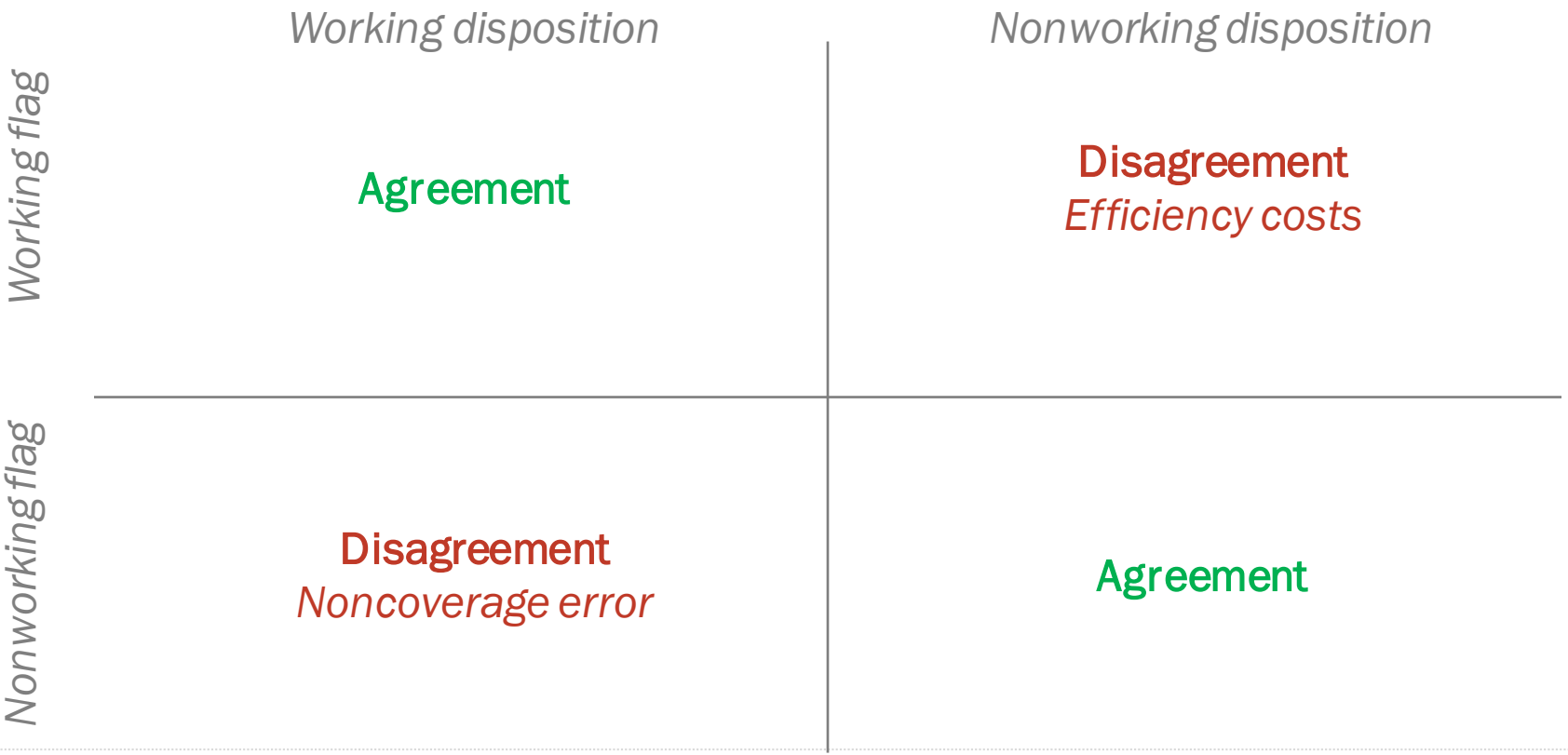
Analytic Framework

Pulsing flags by final dispositions



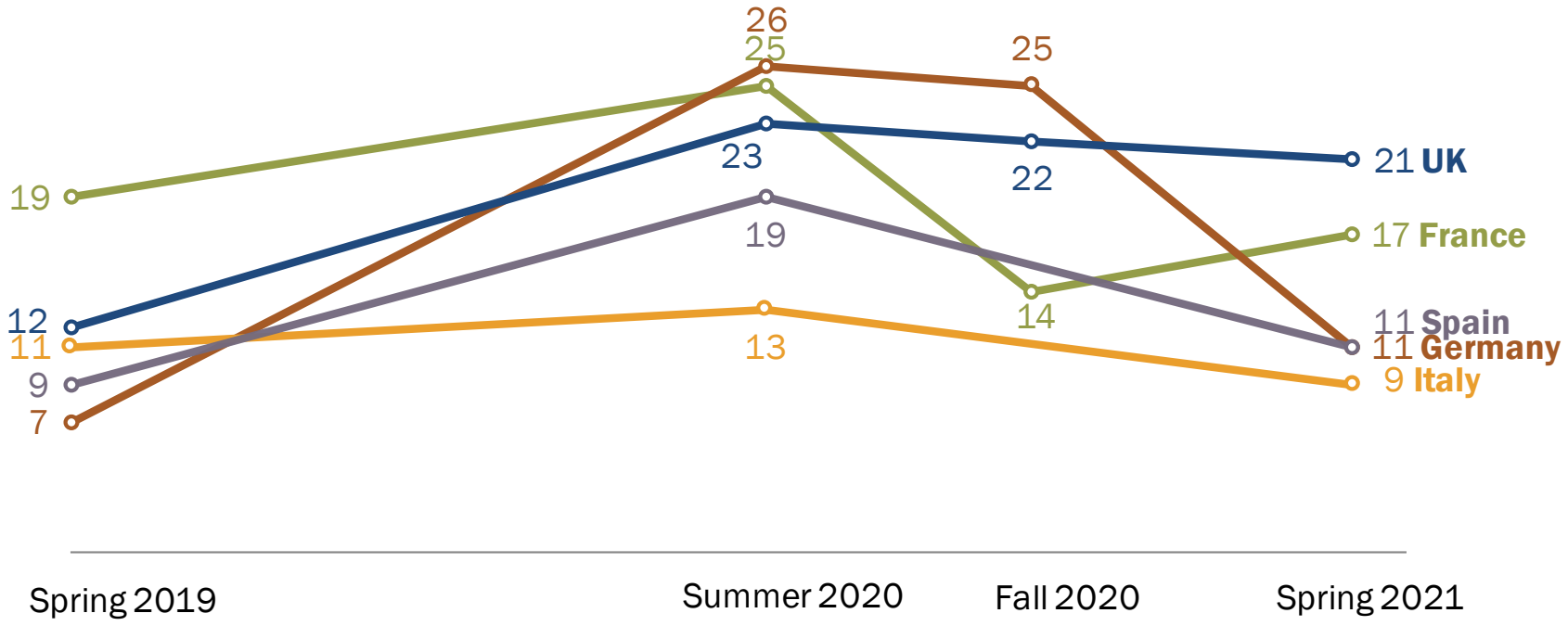
Average Agreement and Disagreement Rates by Survey

	Agreement		Disagreement	
	Working flag – working disposition	Nonworking flag – nonworking disposition	Working flag – nonworking disposition	Nonworking flag – working disposition
	%	%	%	%
Spring 2019*	42	39	11	8
Summer 2020	39	34	20	7
Fall 2020**	36	37	21	6
Spring 2021	28	52	12	9

*Spring 2019 does not include Belgium.
**Fall 2020 only includes France, Germany and the UK.
Source: Spring 2019, Summer 2020, Fall 2020 and Spring 2021 Global Attitudes Project.

Efficiency Disagreements by Country, Survey

% of numbers flagged as working by pulsing, confirmed non-working by final disposition



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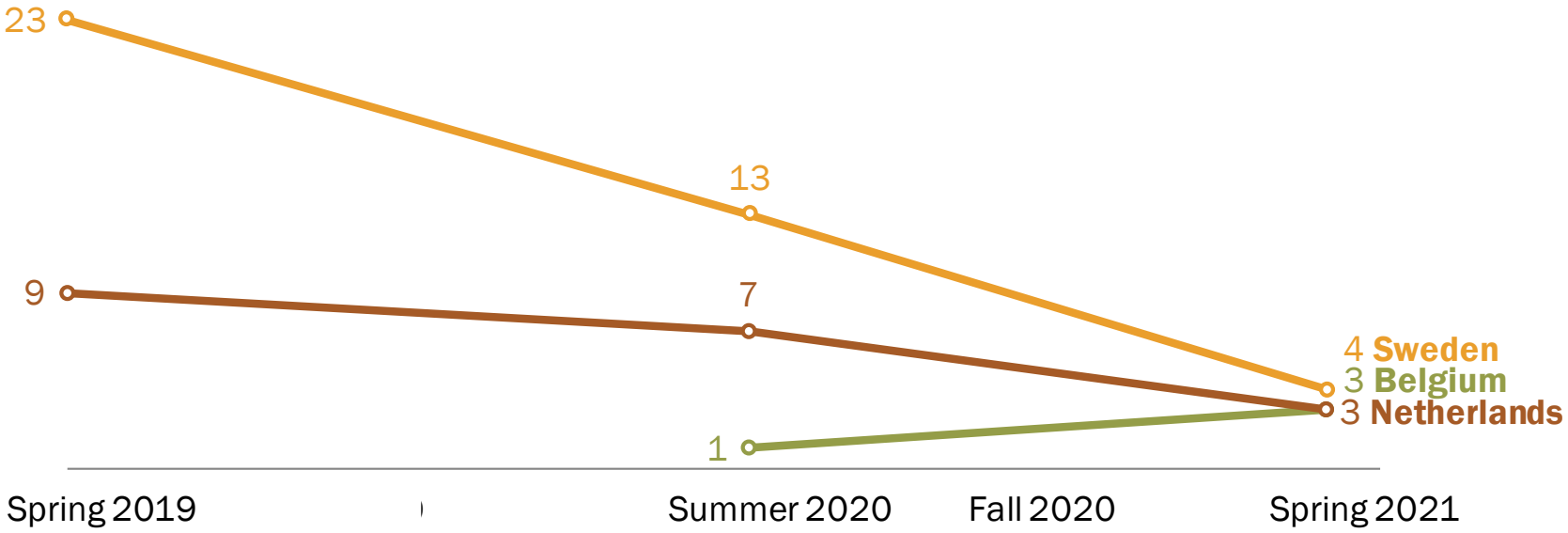
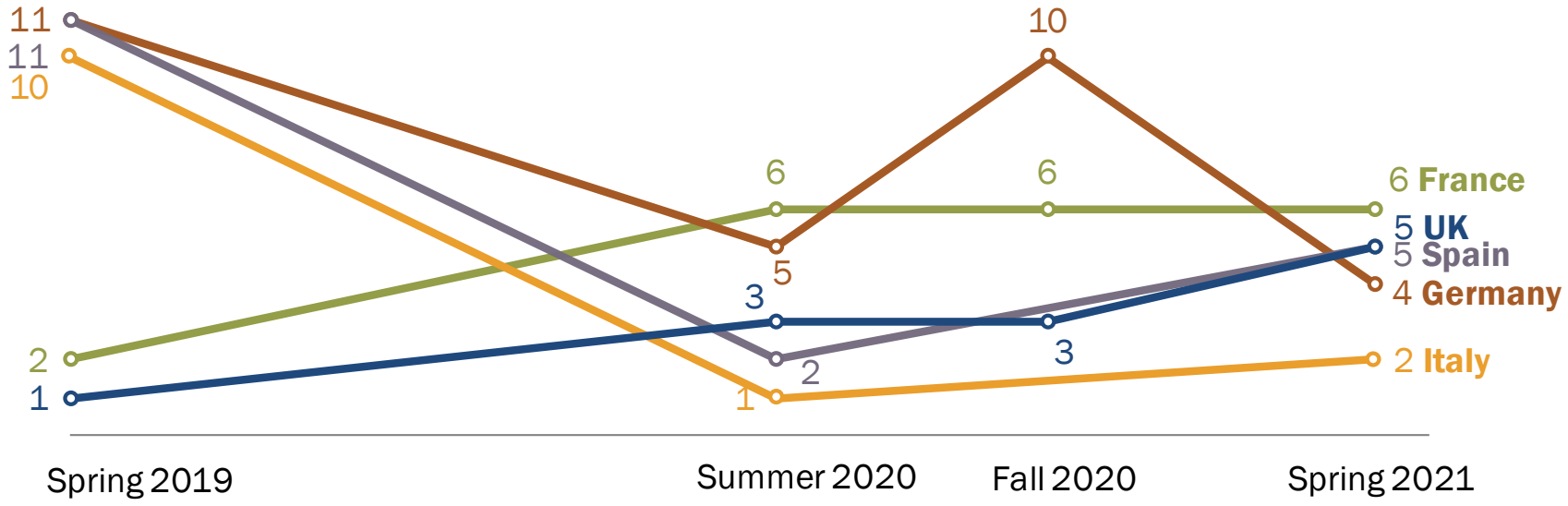


Source: Spring 2019, Summer 2020, Fall 2020 and Spring 2021 Global Attitudes Survey.

Noncoverage Disagreement by Country, Survey

% of numbers flagged as non-working by pulsing, confirmed as working by final disposition



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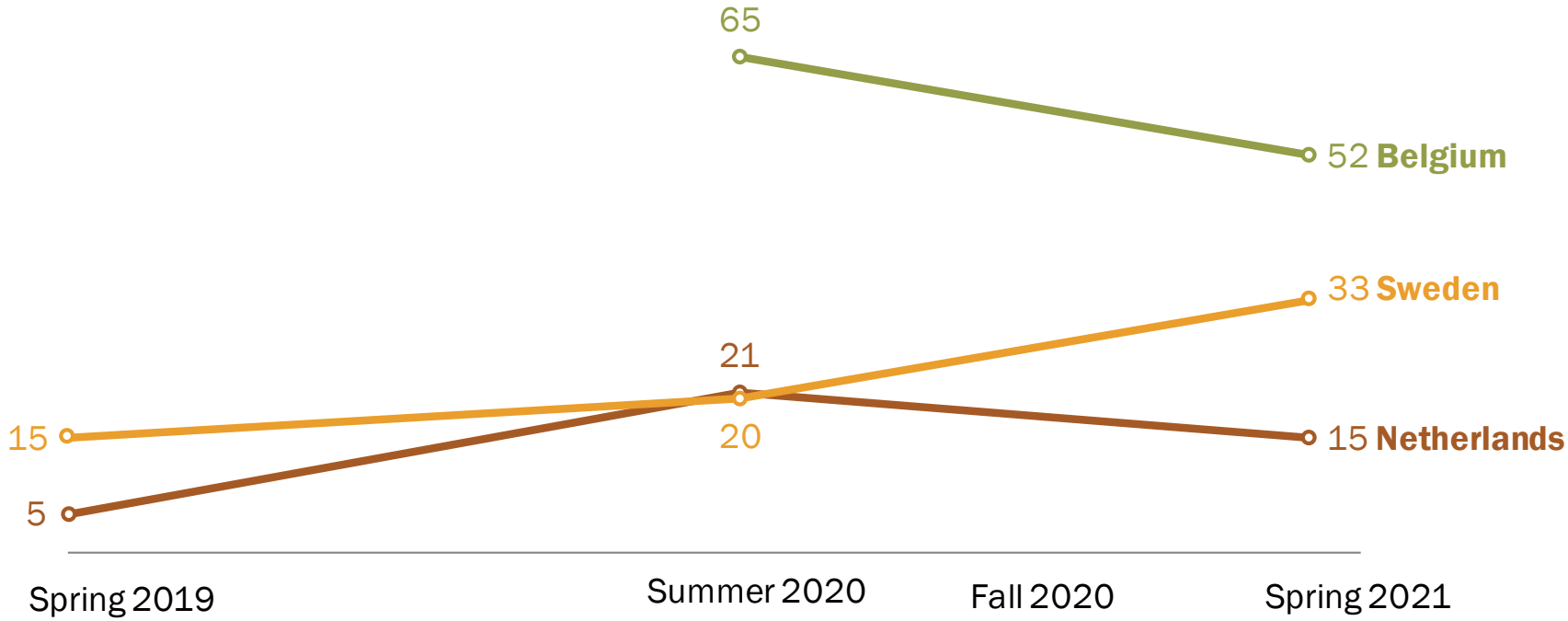
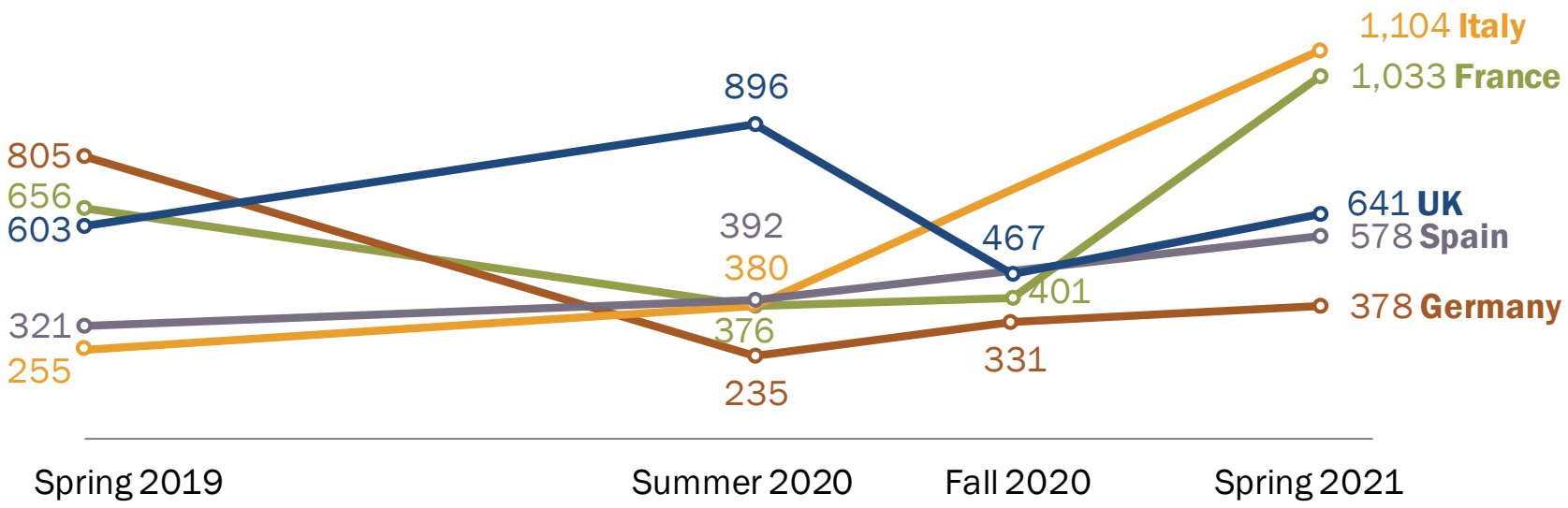


Source: Spring 2019, Summer 2020, Fall 2020 and Spring 2021 Global Attitudes Survey.

Dials Per Completed Interview by Country, Survey and Working Flags

Number of dials per completed interview by working flags



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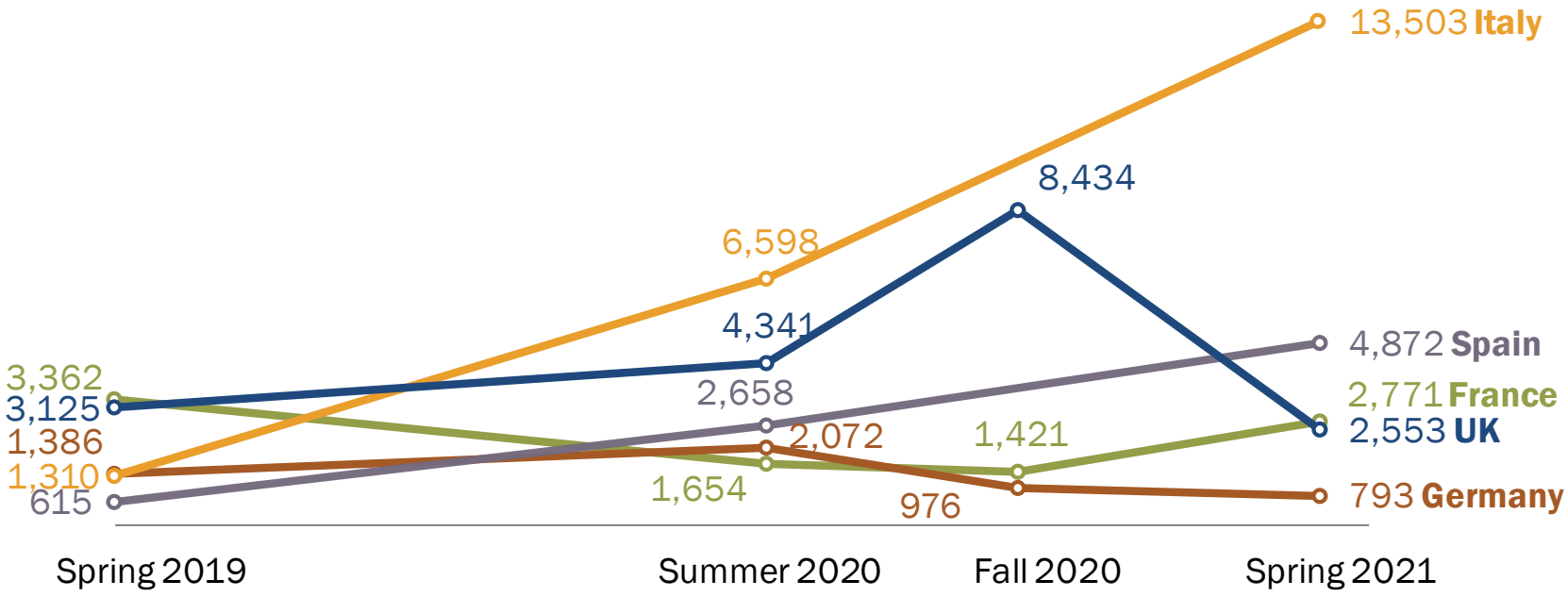
Dials Per Completed Interview by Country, Survey and Nonworking Flags

Number of dials per completed interview by nonworking flags



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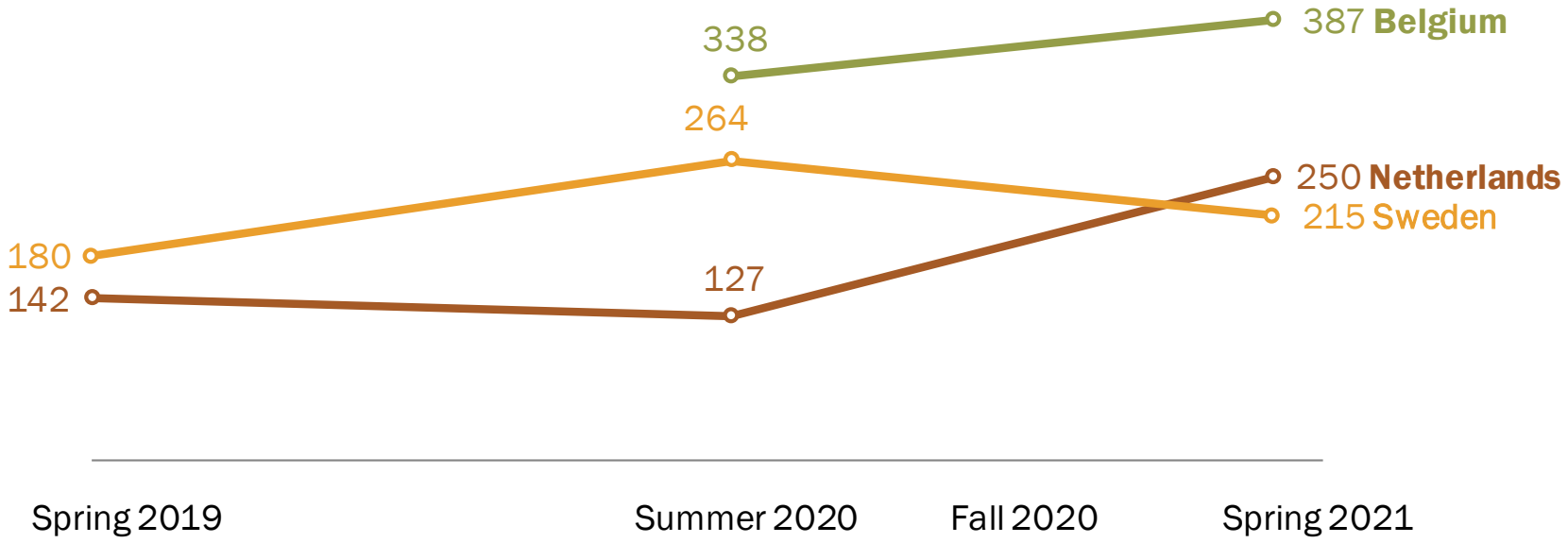

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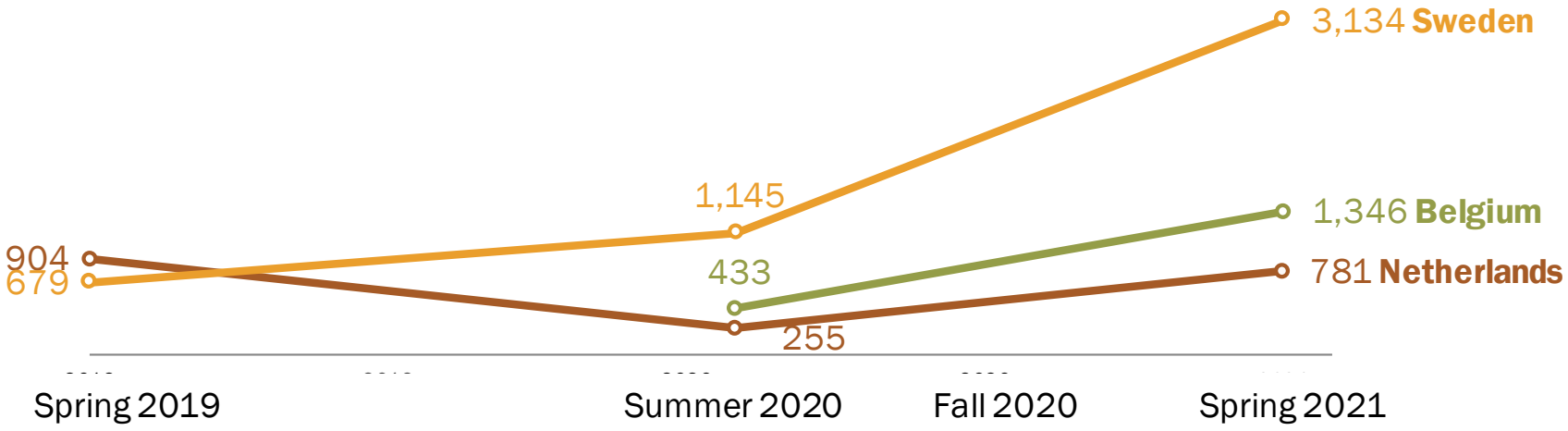

Source: Spring 2019, Summer 2020, Fall 2020 and Spring 2021 Global Attitudes Survey.

Limitations

- Called higher rates of flagged working sample than flagged nonworking sample compared to a typical sample draw and pulsing rates
- Small sample sizes for noncoverage disagreements in most countries
- Potential error introduced by interviewer-coded and dialer-coded dispositions

Conclusions

- Overall, pulsing across the European countries surveyed was over 70% accurate across all four waves

- Around 10% or more of landline interviews were achieved on numbers that pulsing flagged as nonworking in all years
  - Efficiency disagreement were highest in Summer 2020 and Fall 2020 samples
  - Noncoverage disagreements were relatively stable
  - The flagged working sample was more efficient than the flagged nonworking sample

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