

# gesis

Leibniz Institute  
for the Social Sciences



**Would electoral research show different findings  
if we replaced probability face-to-face surveys  
with other types of surveys?**

**JPSM MPSDS Seminar Series  
UMICH | 10/26/2022**

**Hannah Bucher**

GESIS - Leibniz Institute for  
the Social Sciences

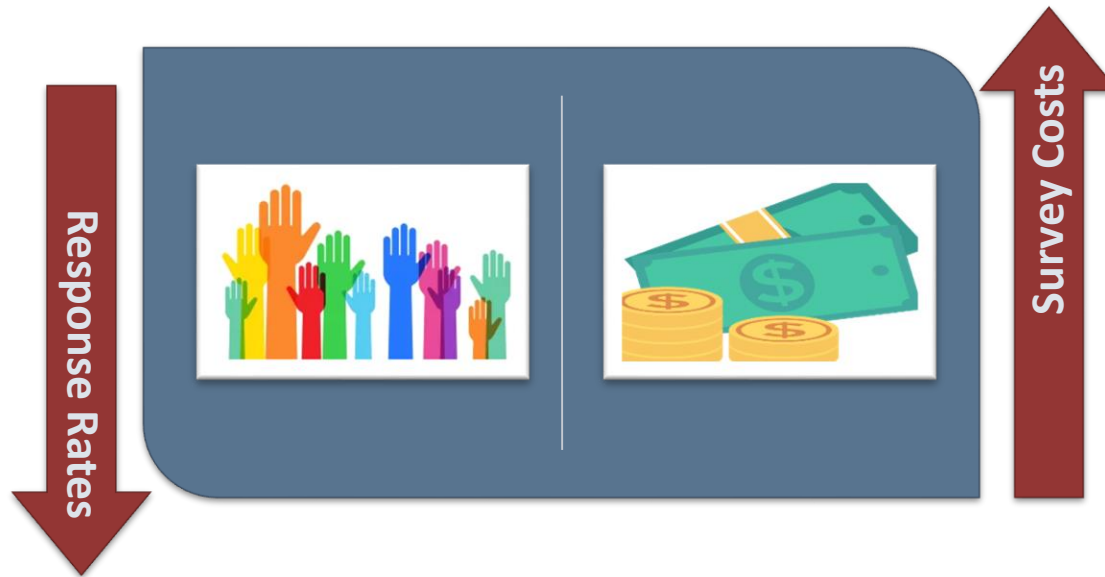
[Hannah.Bucher@gesis.org](mailto:Hannah.Bucher@gesis.org)

(she/her)

# Face-to-Face Probability Surveys: The >>Gold Standard<< in Survey Research



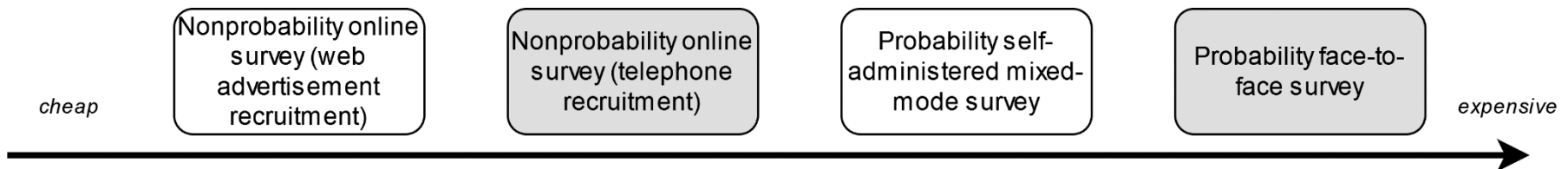
# F2F Survey Data Collection becomes increasingly challenging



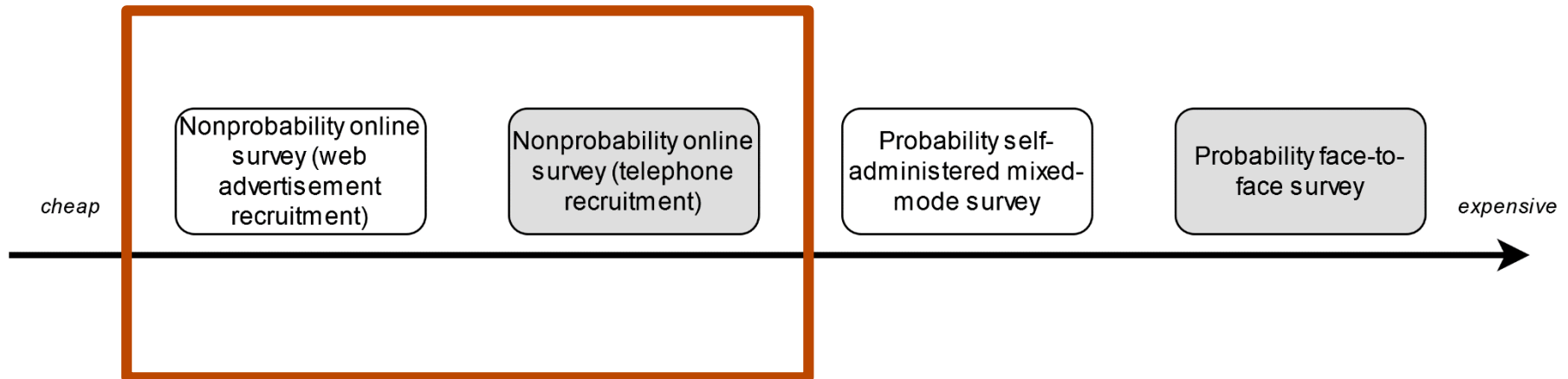
# F2F Survey Data Collection becomes increasingly challenging



# Using other types of surveys as alternative data collection approaches?



# Crucial Source of Error (I) Sampling



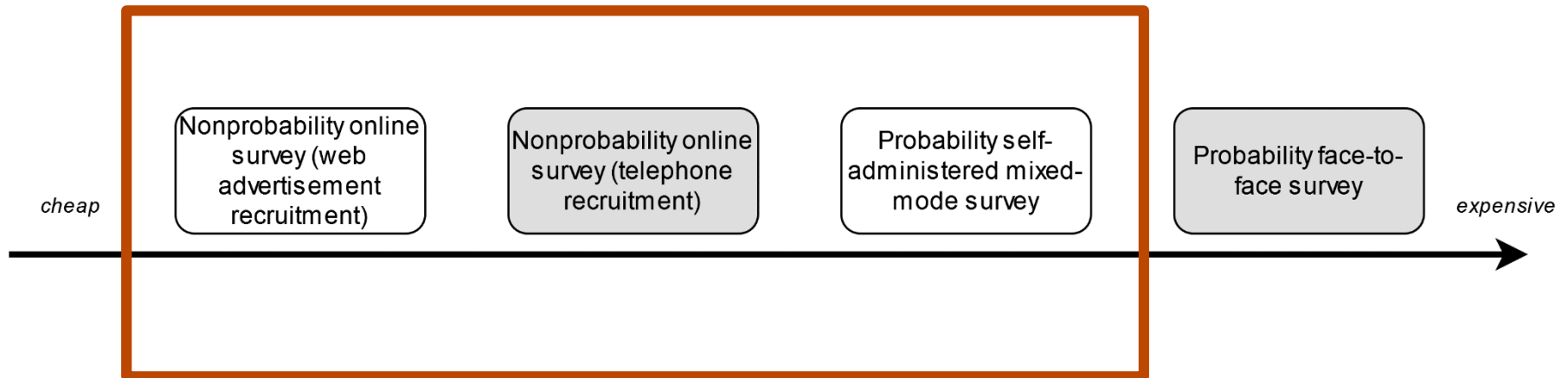
# Crucial Source of Error (I)

## Sampling



## Crucial Source of Error (II)

### Mode





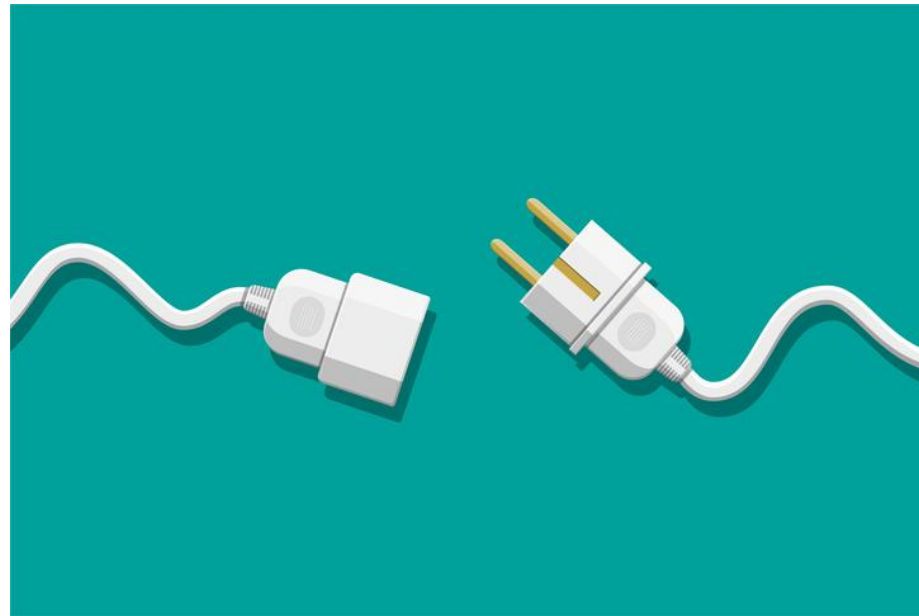
## Crucial Source of Error (II)

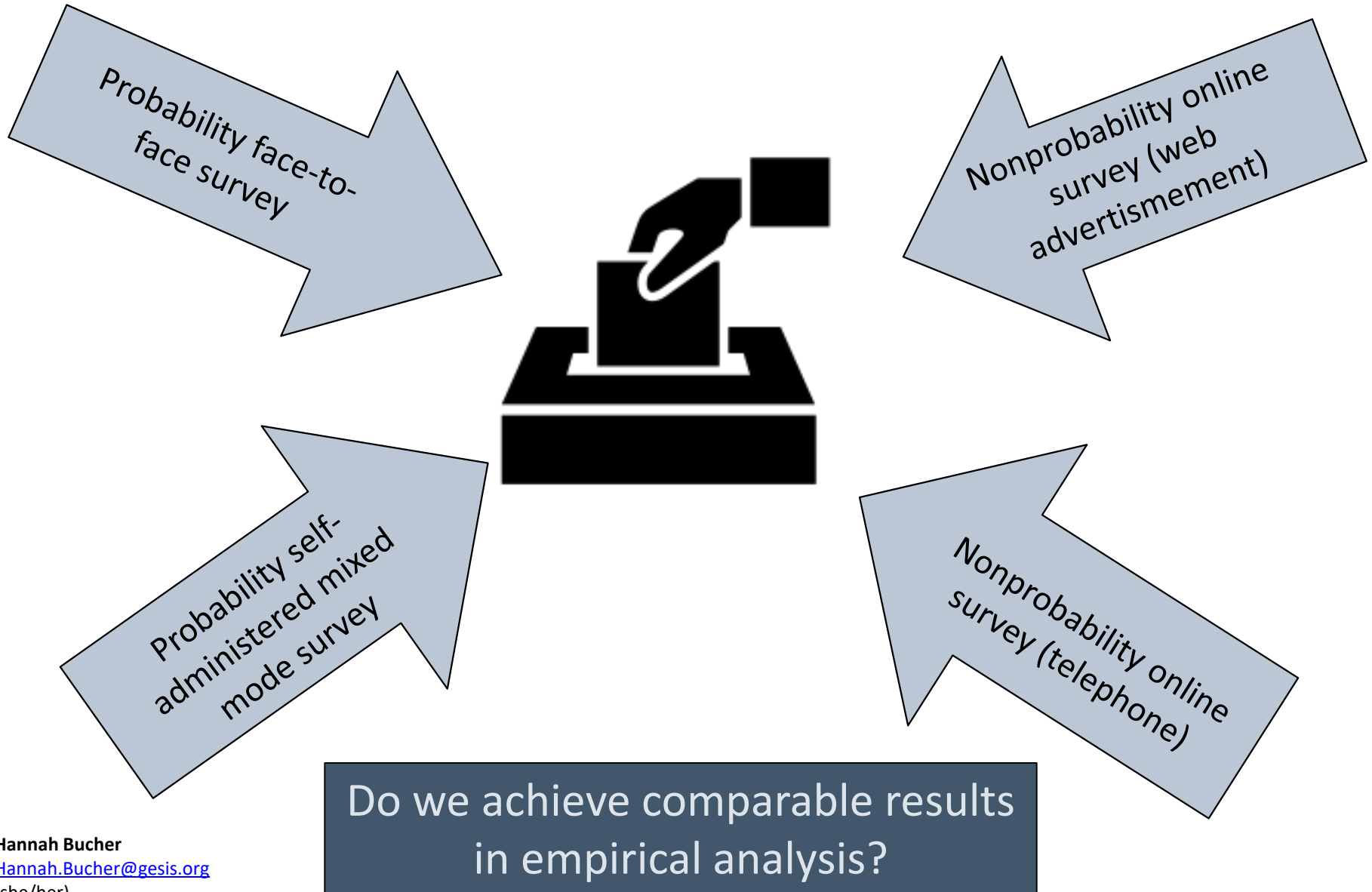
### Mode



## Crucial Source of Error (II)

### Mode





Data collection	<i>cheap</i> → <i>expensive</i>			
	Nonprobability online survey (web advertisement recruitment)	Nonprobability online survey (telephone recruitment)	Probability self-administered mixed-mode survey	Probability face-to-face survey
2017				
2021				
Field period	Sept. 15 - Sept. 24	Sept. 12 – Sept. 23	Aug. 26 – Sept. 24	July 31–Sept. 23
Target population	Population of the Federal Republic of Germany, aged 18+, eligible to vote in the German Federal Election.			
Sampling frame	RespondiAG panel members	forsa.Omninet panel members	Register	Register
Response rate (%)	8.6 (PR)	29.6 (PR)	28.7 (RR1)	28.3 (RR1)
Adjustment weights	Sociodemographic and regional characteristics			
Sample size (n)	1,688	1,085	5,166	2,179

Data collection	<div style="display: flex; justify-content: space-between; align-items: center;"> <span>cheap</span> <span>expensive</span> <span>→</span> </div>			
<div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;">2017</div> <div style="border: 1px solid black; padding: 2px;">2021</div>	Nonprobability online survey (web advertisement recruitment)	Nonprobability online survey (telephone recruitment)	Probability self-administered mixed-mode survey	Probability face-to-face survey
Field period	Sept. 15 - Sept. 24	Sept. 12 – Sept. 23	Aug. 26 – Sept. 24	July 31–Sept. 23
Target population	Population of the Federal Republic of Germany, aged 18+, eligible to vote in the German Federal Election.			
Sampling frame	RespondiAG panel members	forsa.Omninet panel members	Register	Register
Response rate (%)	8.6 (PR)	29.6 (PR)	28.7 (RR1)	28.3 (RR1)
Adjustment weights	Sociodemographic and regional characteristics			
Sample size (n)	1,688	1,085	5,166	2,179

Hannah Bucher  
[Hannah.Bucher@gesis.org](mailto:Hannah.Bucher@gesis.org)  
 (she/her)

	Nonprobability online survey (web advertisement recruitment)	Nonprobability online survey (telephone recruitment)	Probability self-administered mixed-mode survey	Probability face-to-face survey
Data collection				
2017				
2021				
Field period	Sept. 15 - Sept. 24	Sept. 12 - Sept. 23	Aug. 26 - Sept. 24	July 31 - Sept. 23
Target population	Population of the Federal Republic of Germany, aged 18+, eligible to vote in the German Federal Election.			
Sampling frame	RespondiAG panel members	forsa.Omninet panel members	Register	Register
Response rate (%)	8.6 (PR)	29.6 (PR)	28.7 (RR1)	28.3 (RR1)
Adjustment weights	Sociodemographic and regional characteristics			
Sample size (n)	1,688	1,085	5,166	2,179

Hannah Bucher  
[Hannah.Bucher@gesis.org](mailto:Hannah.Bucher@gesis.org)  
 (she/her)

Data collection	<i>cheap</i>				<i>expensive</i>			
2017 2021	Nonprobability online survey (web advertisement recruitment)	Nonprobability online survey (telephone recruitment)	Probability self-administered mixed-mode survey	Probability face-to-face survey	Sept. 15 - Sept. 24	Sept. 12 – Sept. 23	Aug. 26 – Sept. 24	July 31–Sept. 23
Field period	Population of the Federal Republic of Germany, aged 18+, eligible to vote in the German Federal Election.							
Sampling frame	RespondiAG panel members	forsa.Omninet panel members	Register	Register	8.6 (PR)	29.6 (PR)	28.7 (RR1)	28.3 (RR1)
Response rate (%)	Sociodemographic and regional characteristics							
Adjustment weights	1,688	1,085	5,166	2,179				
Sample size (n)								

Data collection	<i>cheap</i> <span style="float: right;"><i>expensive</i></span>			
<div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;">2017</div> <div style="border: 1px solid black; padding: 2px;">2021</div>	Nonprobability online survey (web advertisement recruitment)	Nonprobability online survey (telephone recruitment)	Probability self-administered mixed-mode survey	Probability face-to-face survey
Field period	Sept. 15 - Sept. 24	Sept. 12 – Sept. 23	Aug. 26 – Sept. 24	July 31–Sept. 23
Target population	Population of the Federal Republic of Germany, aged 18+, eligible to vote in the German Federal Election.			
Sampling frame	RespondiAG panel members	forsa.Omninet panel members	Register	Register
Response rate (%)	8.6 (PR)	29.6 (PR)	28.7 (RR1)	28.3 (RR1)
Adjustment weights	Sociodemographic and regional characteristics			
Sample size (n)	1,688	1,085	5,166	2,179

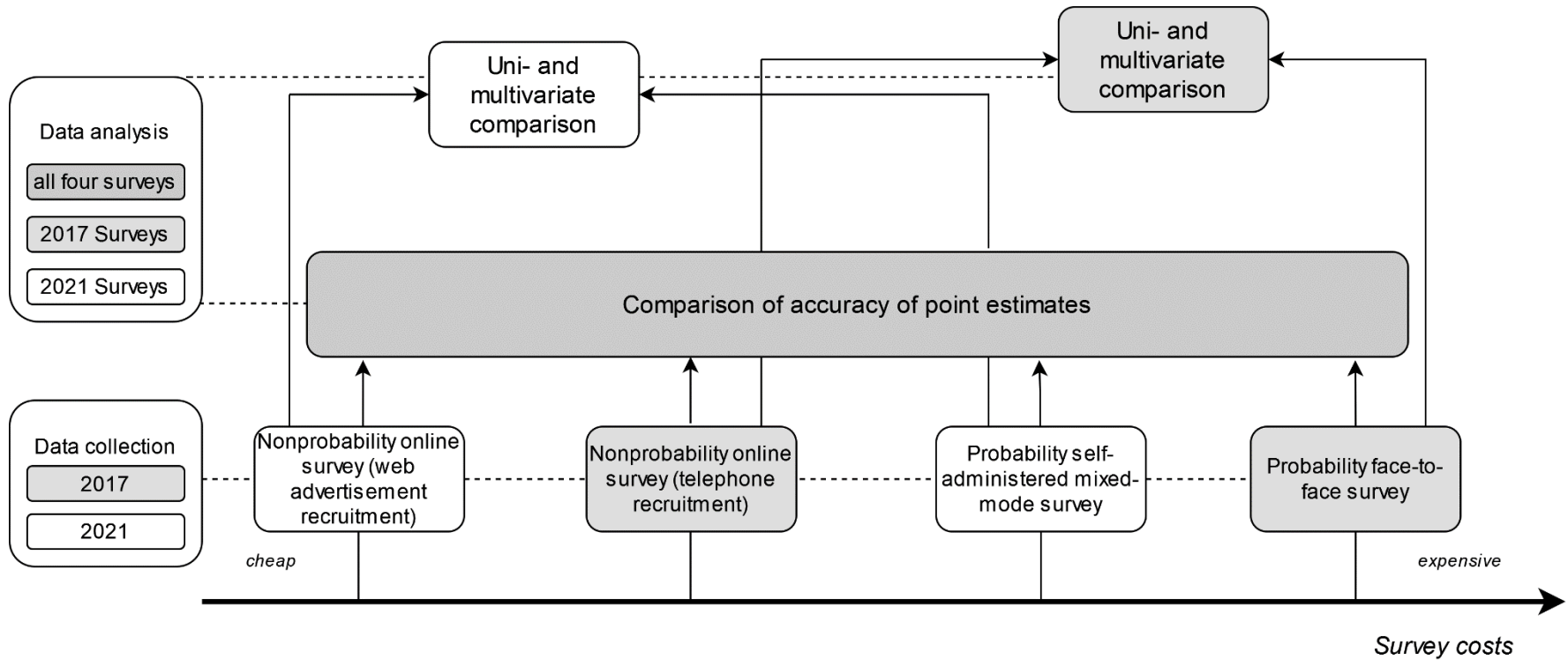


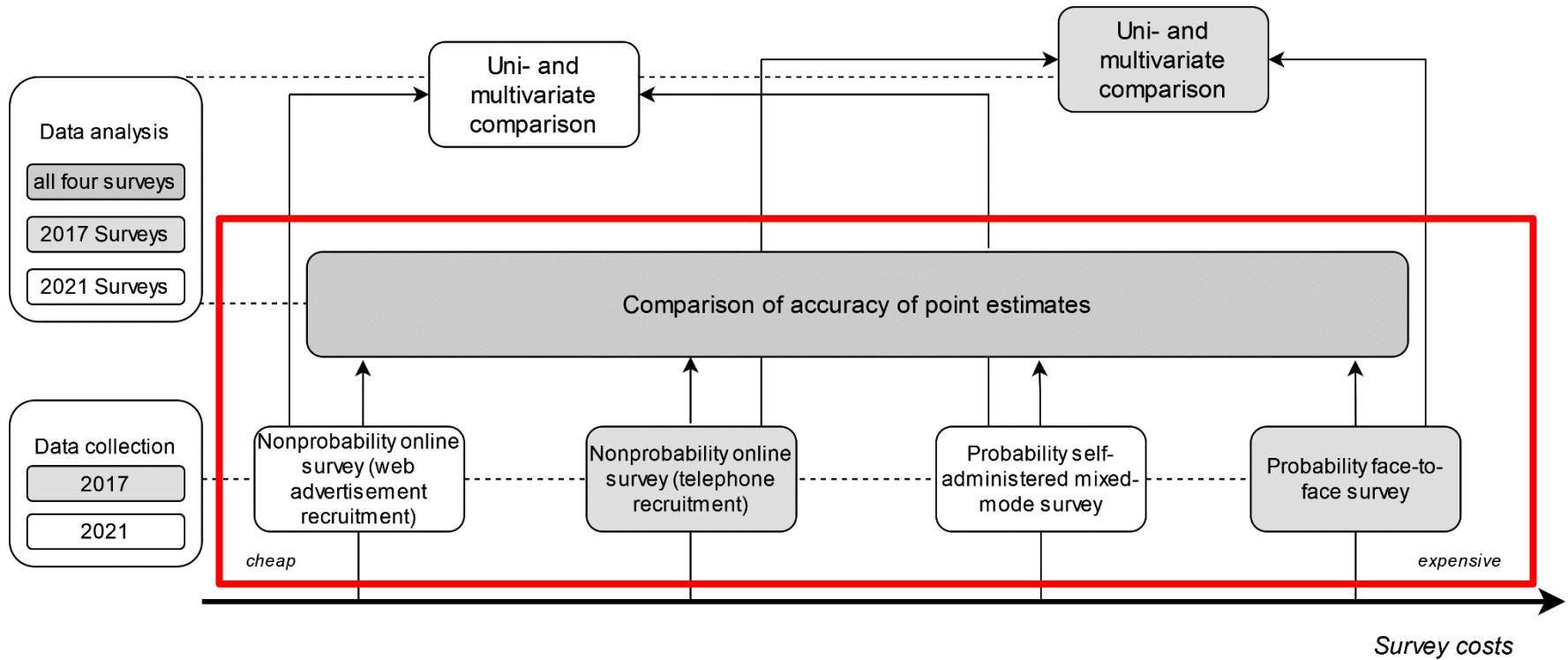
Data collection 2017 2021	<i>cheap</i> <span style="float: right;"><i>expensive</i></span>			
Field period	Sept. 15 - Sept. 24	Sept. 12 – Sept. 23	Aug. 26 – Sept. 24	July 31–Sept. 23
Target population	Population of the Federal Republic of Germany, aged 18+, eligible to vote in the German Federal Election.			
Sampling frame	RespondiAG panel members	forsa.Omninet panel members	Register	Register
Response rate (%)	8.6 (PR)	29.6 (PR)	28.7 (RR1)	28.3 (RR1)
Adjustment weights	Sociodemographic and regional characteristics			
Sample size (n)	1,688	1,085	5,166	2,179

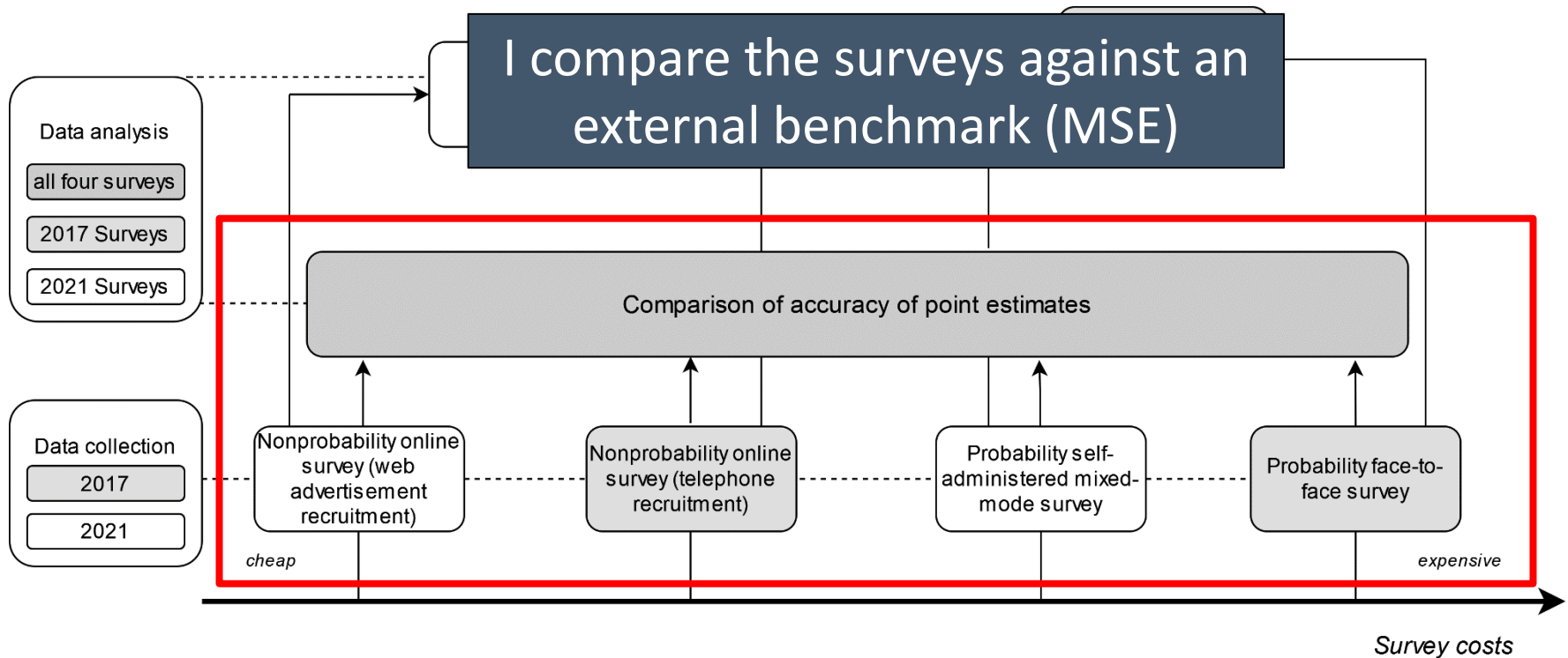
Data collection	cheap → expensive			
	Nonprobability online survey (web advertisement recruitment)	Nonprobability online survey (telephone recruitment)	Probability self-administered mixed-mode survey	Probability face-to-face survey
2017				
2021				
Field period	Sept. 15 - Sept. 24	Sept. 12 - Sept. 23	Aug. 26 - Sept. 24	July 31 - Sept. 23
Target population	Population of the Federal Republic of Germany, aged 18+, eligible to vote in the German Federal Election.			
Sampling frame	RespondiAG panel members	forsa.Omninet panel members	Register	Register
Response rate (%)	8.6 (PR)	29.6 (PR)	28.7 (RR1)	28.3 (RR1)
Adjustment weights	Sociodemographic and regional characteristics			
Sample size (n)	1,688	1,085	5,166	2,179

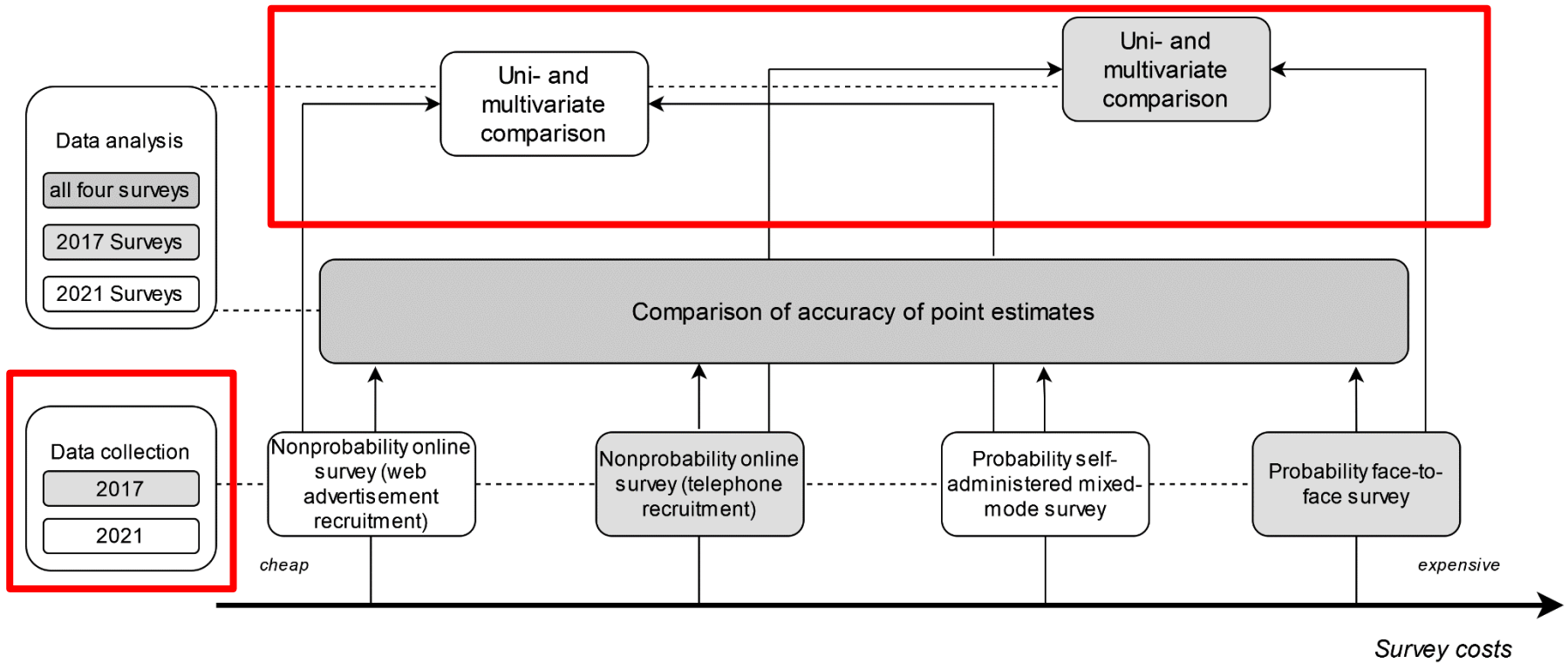
Data collection	cheap → expensive			
	Nonprobability online survey (web advertisement recruitment)	Nonprobability online survey (telephone recruitment)	Probability self-administered mixed-mode survey	Probability face-to-face survey
2017				
2021				
Field period	Sept. 15 - Sept. 24	Sept. 12 - Sept. 23	Aug. 26 - Sept. 24	July 31 - Sept. 23
Target population	Population of the Federal Republic of Germany, aged 18+, eligible to vote in the German Federal Election.			
Sampling frame	RespondiAG panel members	forsa.Omninet panel members	Register	Register
Response rate (%)	8.6 (PR)	29.6 (PR)	28.7 (RR1)	28.3 (RR1)
Adjustment weights	Sociodemographic and regional characteristics			
Sample size (n)	1,688	1,085	5,166	2,179

Data collection 2017 2021	<i>cheap</i> <span style="float: right;"><i>expensive</i></span>			
Field period	Sept. 15 - Sept. 24	Sept. 12 – Sept. 23	Aug. 26 – Sept. 24	July 31–Sept. 23
Target population	Population of the Federal Republic of Germany, aged 18+, eligible to vote in the German Federal Election.			
Sampling frame	RespondiAG panel members	forsa.Omninet panel members	Register	Register
Response rate (%)	8.6 (PR)	29.6 (PR)	28.7 (RR1)	28.3 (RR1)
Adjustment weights	Sociodemographic and regional characteristics			
Sample size (n)	1,688	1,085	5,166	2,179

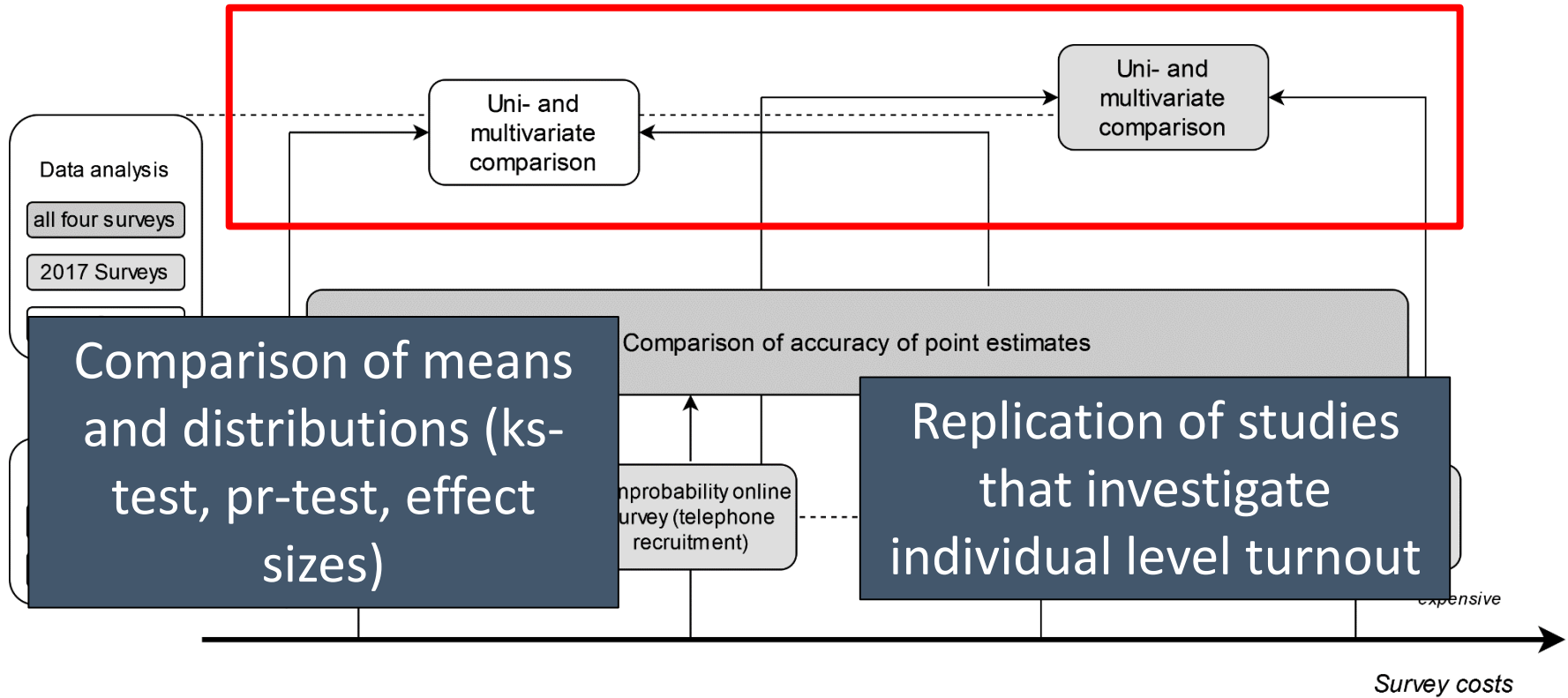








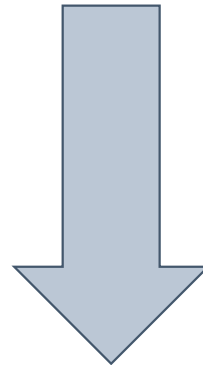




## Contribution

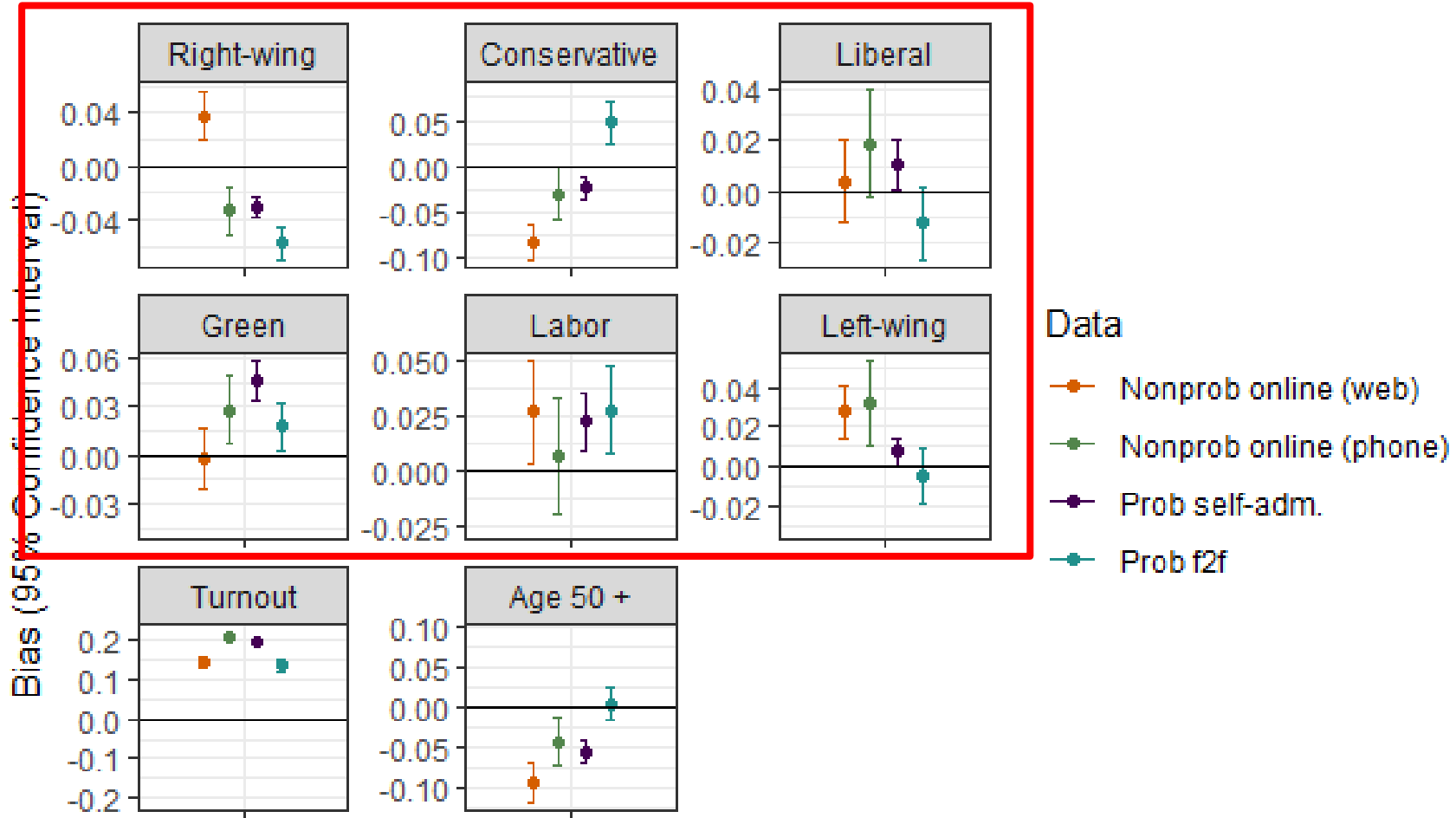
I. Quantifying differences

II. Collectively analyzing different sources of error

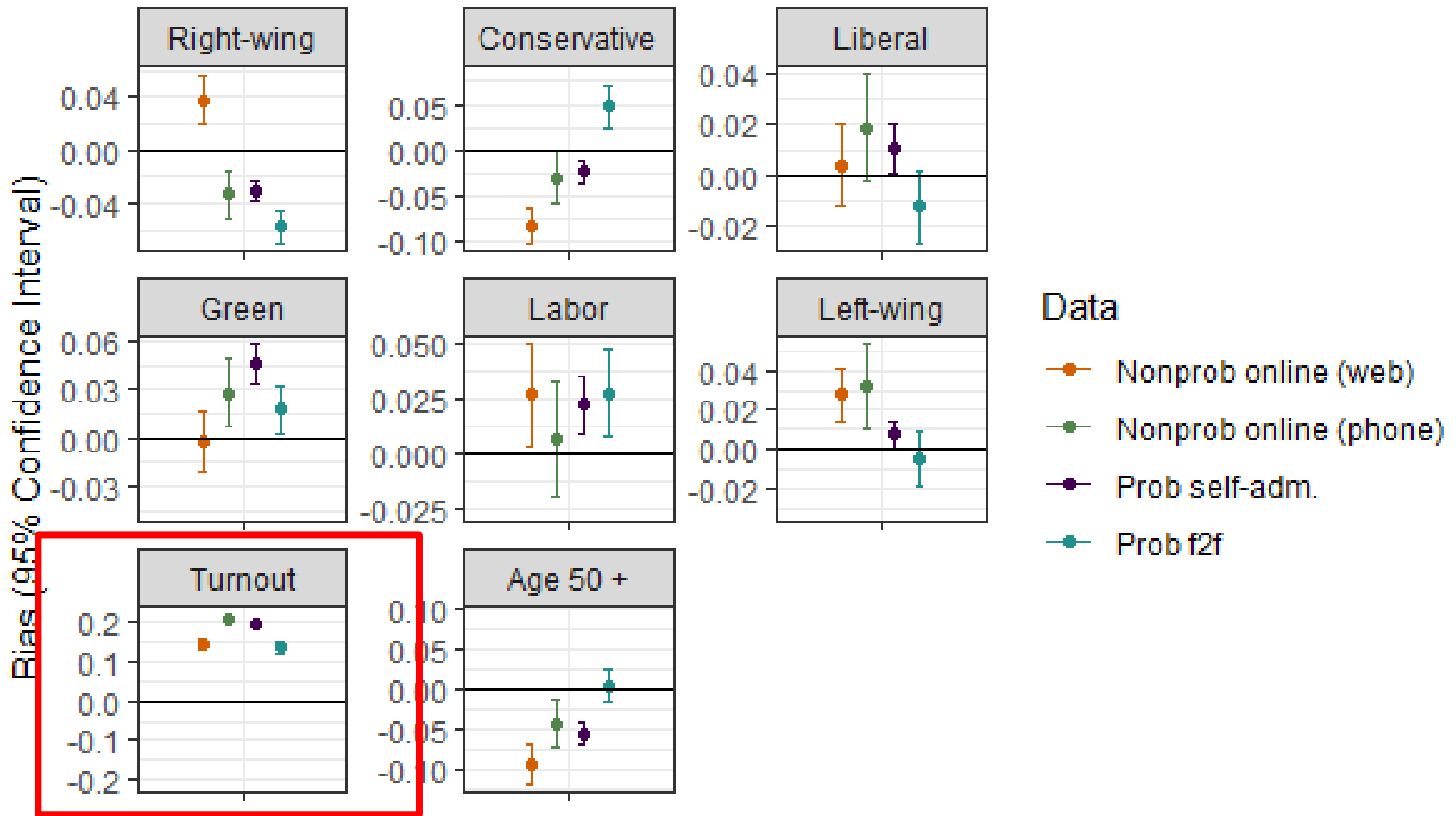


To what extent do results of analysis of individual-level voter turnout differ between surveys in different modes/samples?

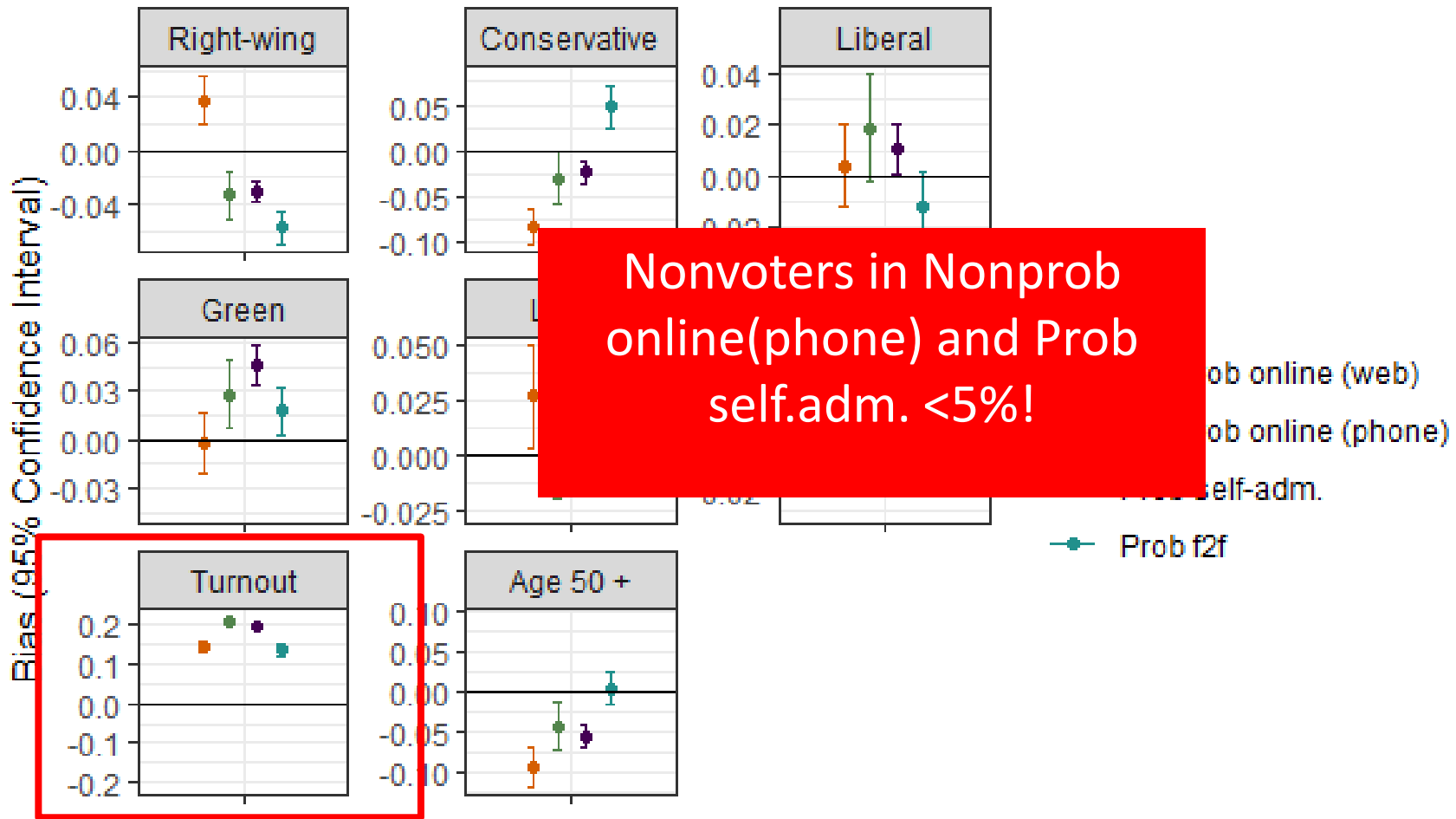
# I. Accuracy of Point Estimates



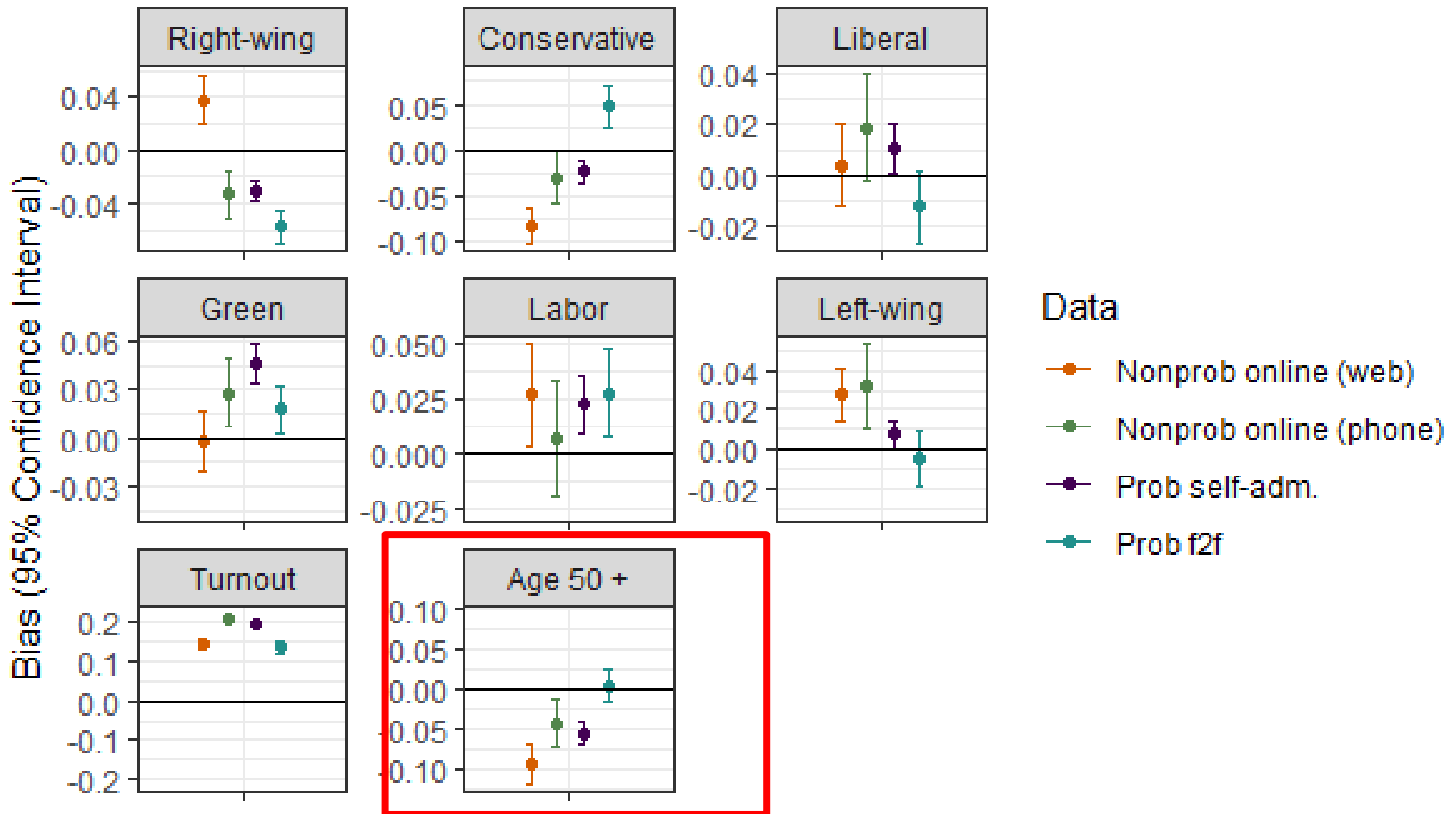
# I. Accuracy of Point Estimates



# I. Accuracy of Point Estimates



# I. Accuracy of Point Estimates



# I. Accuracy of Point Estimates

## Differences Between Samples and Benchmarks

Variable	Nonprob online (web)	Nonprob online (phone)	Prob self-adm.	Prob f2f
Total Average Difference	0.0407	0.0379	0.0399	0.0293
Total MSE	0.0037	0.0046	0.0042	0.0023

# I. Accuracy of Point Estimates

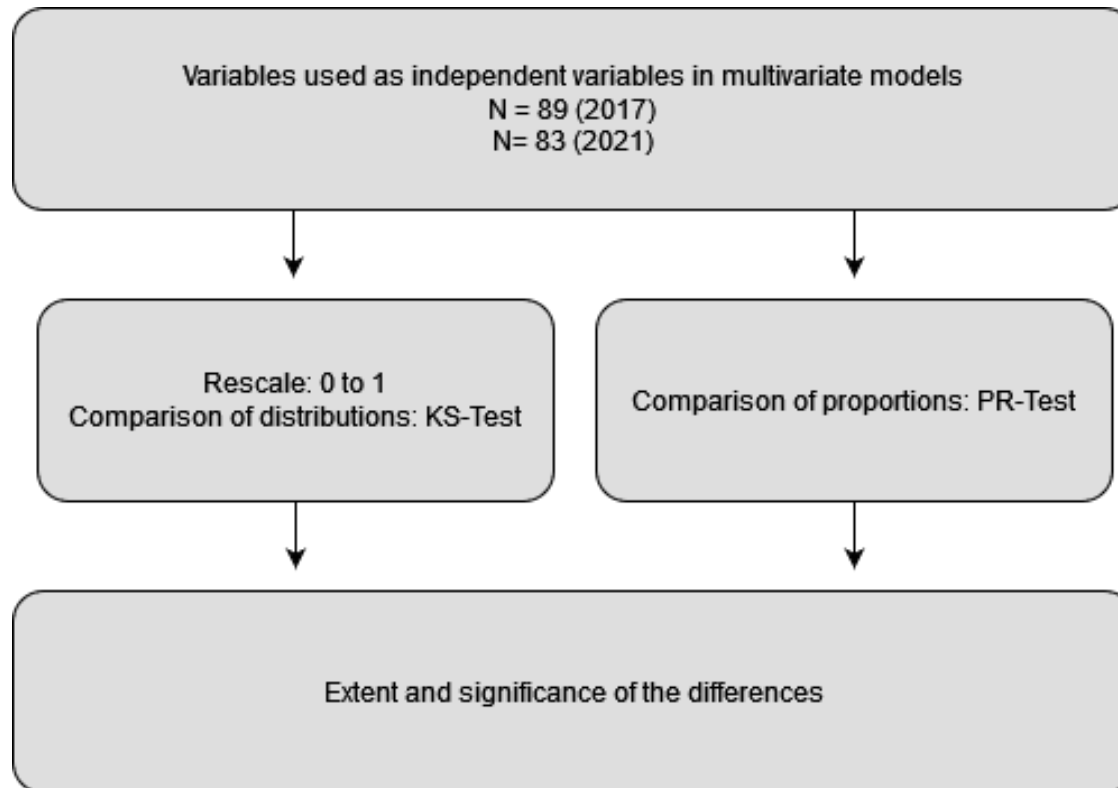


## Differences Between Samples and Benchmarks

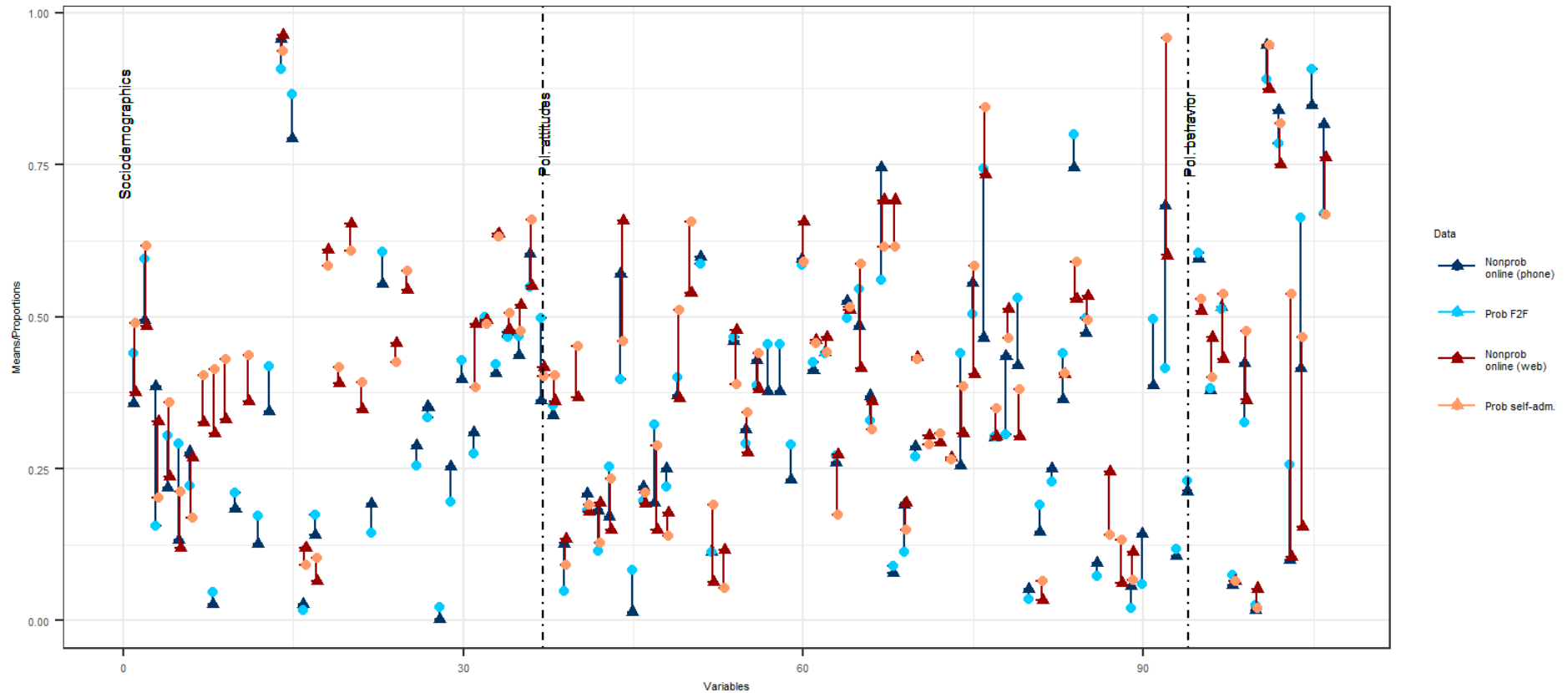
Variable	Nonprob online (web)	Nonprob online (phone)	Prob self-adm.	Prob f2f
Total Average Difference	0.0407	0.0379	0.0399	0.0293
Total MSE	0.0037	0.0046	0.0042	0.0023



## II. Means and distributions



## II. Means and distributions



## II. Means and distributions

### 2017 Data (Nonprob Online (phone) & Prob F2F)

### 2021 Data (Nonprob Online (web) & Prob self-adm.)

Variable	significant difference (in %)	Effect size			n
		small (in %)	medium (in %)	large (in %)	
Sociodemographic Variable	58.3	66.7	30.6	2.8	36
Political Attitudes	72.5	67.5	27.5	5.0	40
Political Behavior	76.9	61.5	15.4	23.1	13
total	67.4	66.3	27.0	6.7	89

Variable	significant difference (in %)	Effect size			n
		small (in %)	medium (in %)	large (in %)	
Sociodemographic Variable	84.8	42.4	48.5	9.1	33
Political Attitudes	90.5	64.3	33.3	2.4	42
Political Behavior	100.0	0.0	33.3	66.7	6
total	88.9	50.6	39.5	9.9	81

## II. Means and distributions

### 2017 Data (Nonprob Online (phone) & Prob F2F)

### 2021 Data (Nonprob Online (web) & Prob self-adm.)

Variable	significant difference (in %)	Effect size			n
		small (in %)	medium (in %)	large (in %)	
Sociodemographic Variable	58.3	66.7	30.6	2.8	36
Political Attitudes	72.5	67.5	27.5	5.0	40
Political Behavior	76.9	61.5	15.4	23.1	13
total	67.4	66.3	27.0	6.7	89

Variable	significant difference (in %)	Effect size			n
		small (in %)	medium (in %)	large (in %)	
Sociodemographic Variable	84.8	42.4	48.5	9.1	33
Political Attitudes	90.5	64.3	33.3	2.4	42
Political Behavior	100.0	0.0	33.3	66.7	6
total	88.9	50.6	39.5	9.9	81

## II. Means and distributions

### 2017 Data (Nonprob Online (phone) & Prob F2F)

### 2021 Data (Nonprob Online (web) & Prob self-adm.)

Variable	significant difference (in %)	Effect size			n
		small (in %)	medium (in %)	large (in %)	
Sociodemographic Variable	58.3	66.7	30.6	2.8	36
Political Attitudes	72.5	67.5	27.5	5.0	40
Political Behavior	76.9	61.5	15.4	23.1	13
total	67.4	66.3	27.0	6.7	89

Variable	significant difference (in %)	Effect size			n
		small (in %)	medium (in %)	large (in %)	
Sociodemographic Variable	84.8	42.4	48.5	9.1	33
Political Attitudes	90.5	64.3	33.3	2.4	42
Political Behavior	100.0	0.0	33.3	66.7	6
total	88.9	50.6	39.5	9.9	81

## II. Means and distributions

### 2017 Data (Nonprob Online (phone) & Prob F2F)

### 2021 Data (Nonprob Online (web) & Prob self-adm.)

Variable	significant difference (in %)	Effect size			n
		small (in %)	medium (in %)	large (in %)	
Sociodemographic Variable	58.3	66.7	30.6	2.8	36
Political Attitudes	72.5	67.5	27.5	5.0	40
Political Behavior	76.9	61.5	15.4	23.1	13
total	67.4	66.3	27.0	6.7	89

Variable	significant difference (in %)	Effect size			n
		small (in %)	medium (in %)	large (in %)	
Sociodemographic Variable	84.8	42.4	48.5	9.1	33
Political Attitudes	90.5	64.3	33.3	2.4	42
Political Behavior	100.0	0.0	33.3	66.7	6
total	88.9	50.6	39.5	9.9	81

## II. Means and distributions

### 2017 Data (Nonprob Online (phone) & Prob F2F)

### 2021 Data (Nonprob Online (web) & Prob self-adm.)

Variable	significant difference (in %)	Effect size			n
		small (in %)	medium (in %)	large (in %)	
Sociodemographic Variable	58.3	66.7	30.6	2.8	36
Political Attitudes	72.5	67.5	27.5	5.0	40
Political Behavior	76.9	61.5	15.4	23.1	13
<b>total</b>	<b>67.4</b>	<b>66.3</b>	<b>27.0</b>	<b>6.7</b>	<b>89</b>

Variable	significant difference (in %)	Effect size			n
		small (in %)	medium (in %)	large (in %)	
Sociodemographic Variable	84.8	42.4	48.5	9.1	33
Political Attitudes	90.5	64.3	33.3	2.4	42
Political Behavior	100.0	0.0	33.3	66.7	6
total	88.9	50.6	39.5	9.9	81

## II. Means and distributions

### 2017 Data (Nonprob Online (phone) & Prob F2F)

### 2021 Data (Nonprob Online (web) & Prob self-adm.)

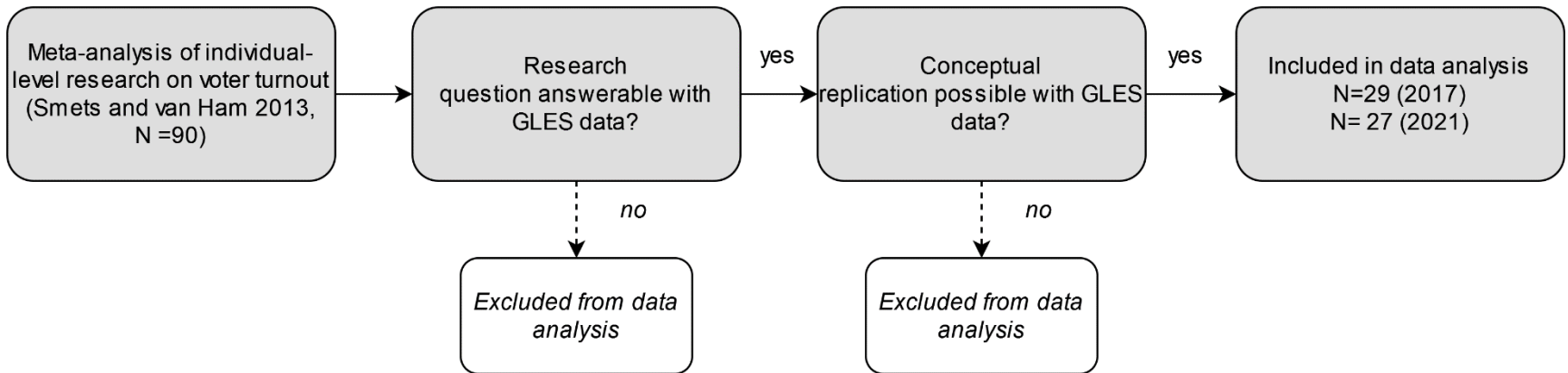
Variable	significant difference (in %)	Effect size			n
		small (in %)	medium (in %)	large (in %)	
Sociodemographic Variable	58.3	66.7	30.6	2.8	36
Political Attitudes	72.5	67.5	27.5	5.0	40
Political Behavior	76.9	61.5	15.4	23.1	13
total	67.4	66.3	27.0	6.7	89

Variable	significant difference (in %)	Effect size			n
		small (in %)	medium (in %)	large (in %)	
Sociodemographic Variable	84.8	42.4	48.5	9.1	33
Political Attitudes	90.5	64.3	33.3	2.4	42
Political Behavior	100.0	0.0	33.3	66.7	6
total	88.9	50.6	39.5	9.9	81



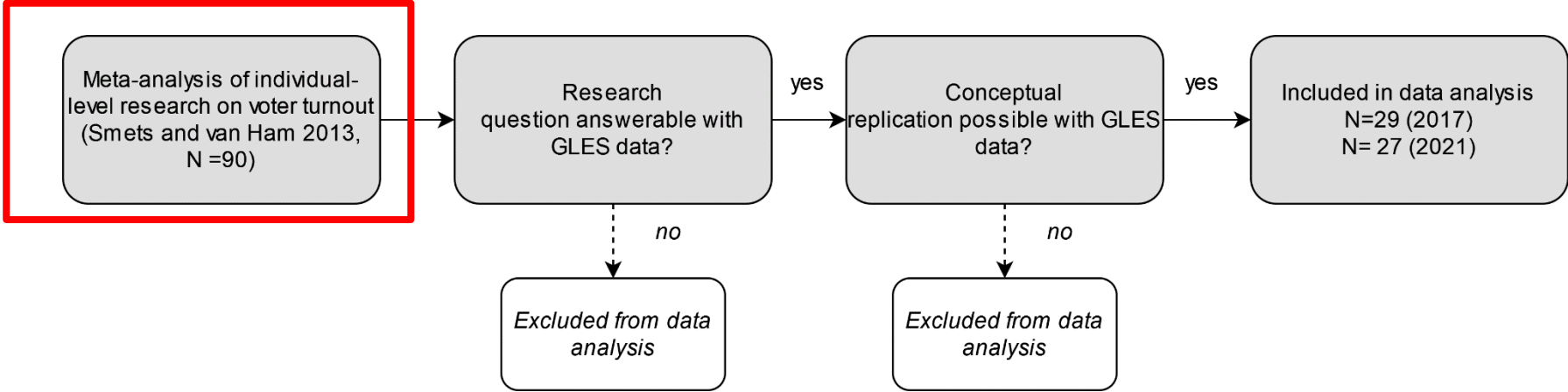
# III. Multivariate Analysis

## Model Selection Process



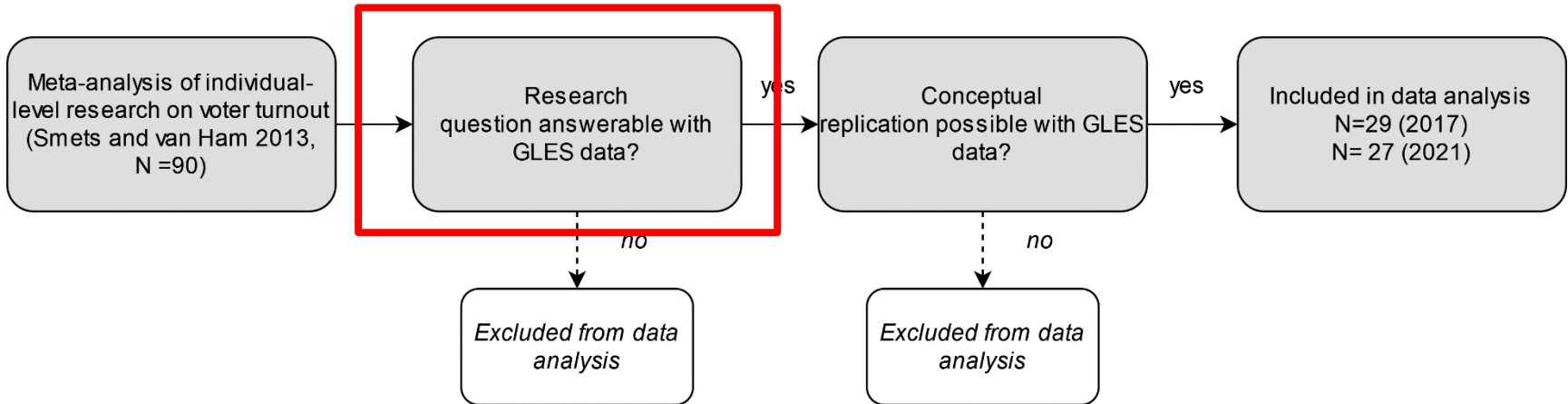
# III. Multivariate Analysis

## Model Selection Process



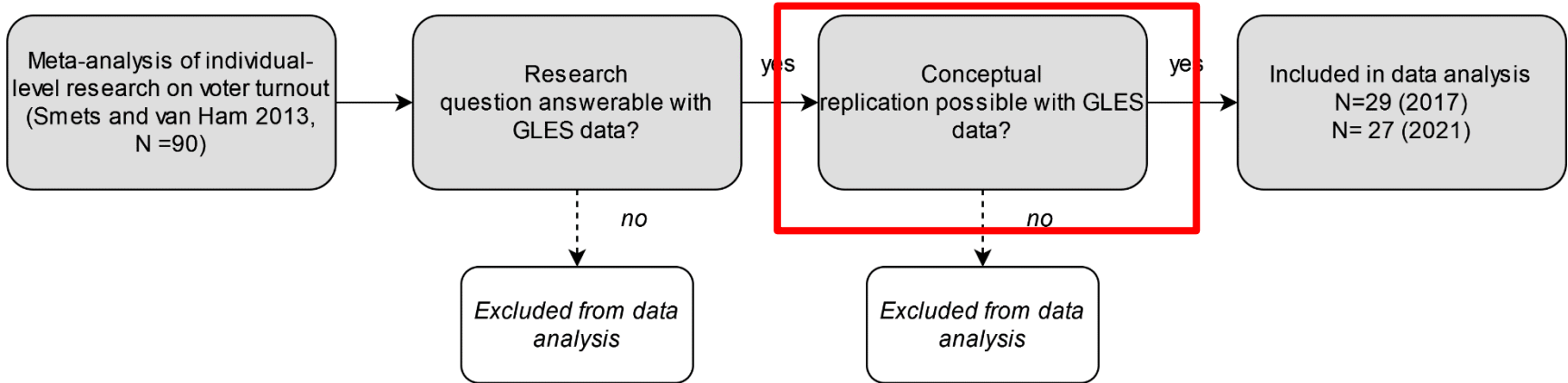
# III. Multivariate Analysis

## Model Selection Process



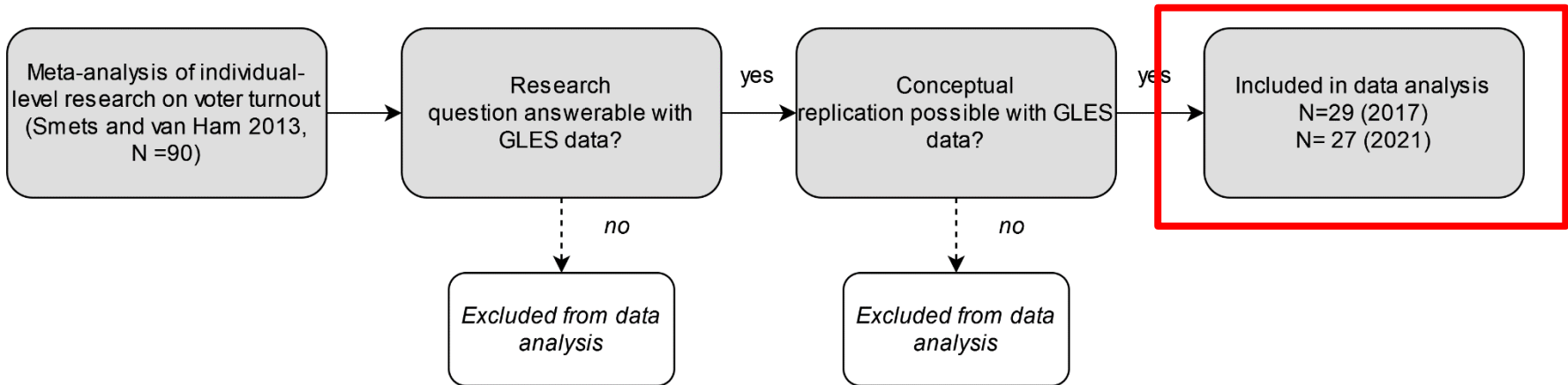
# III. Multivariate Analysis

## Model Selection Process



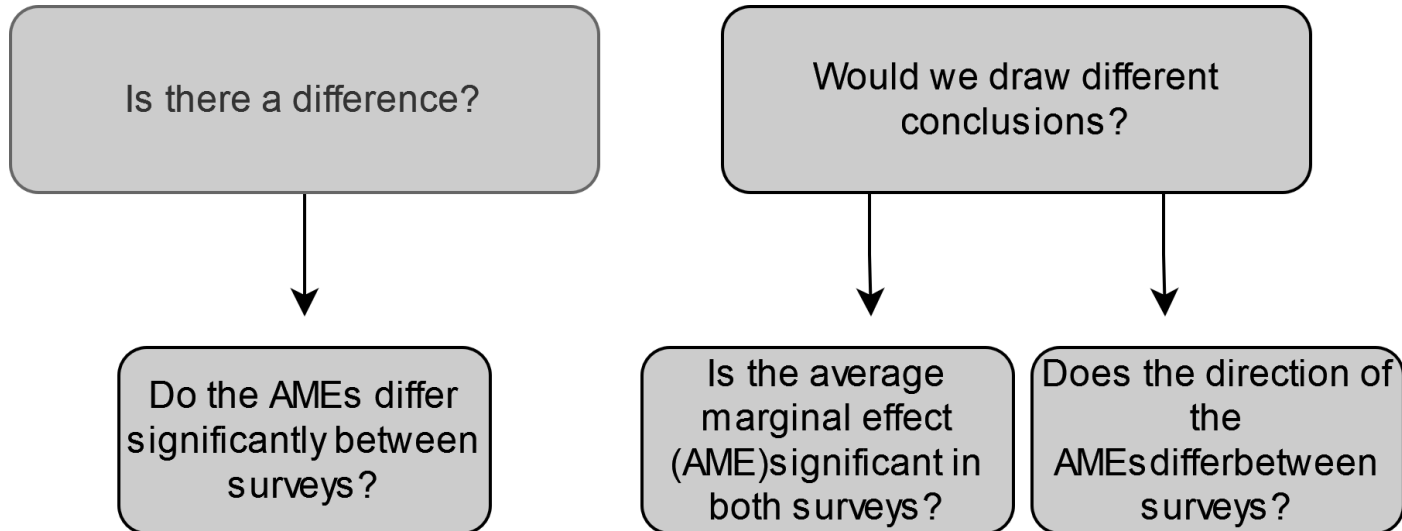
# III. Multivariate Analysis

## Model Selection Process



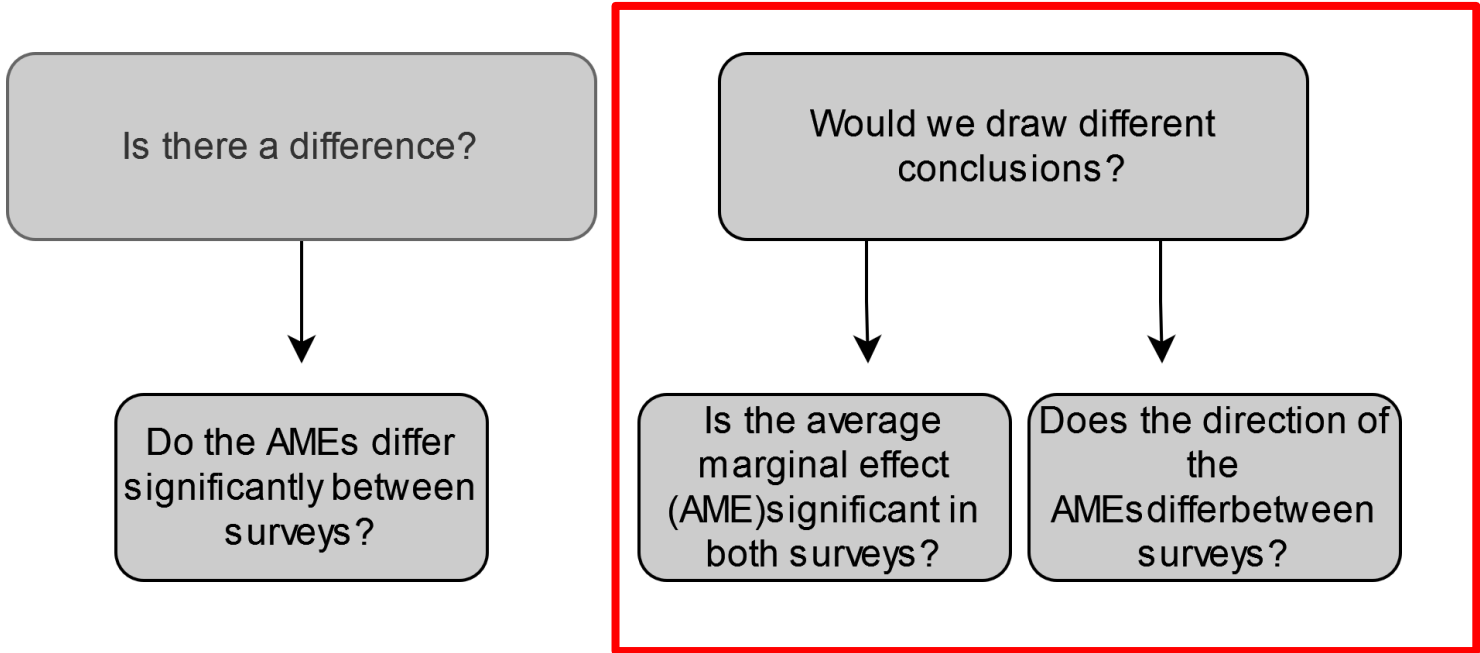
## III. Multivariate Analysis

### Statistical analysis

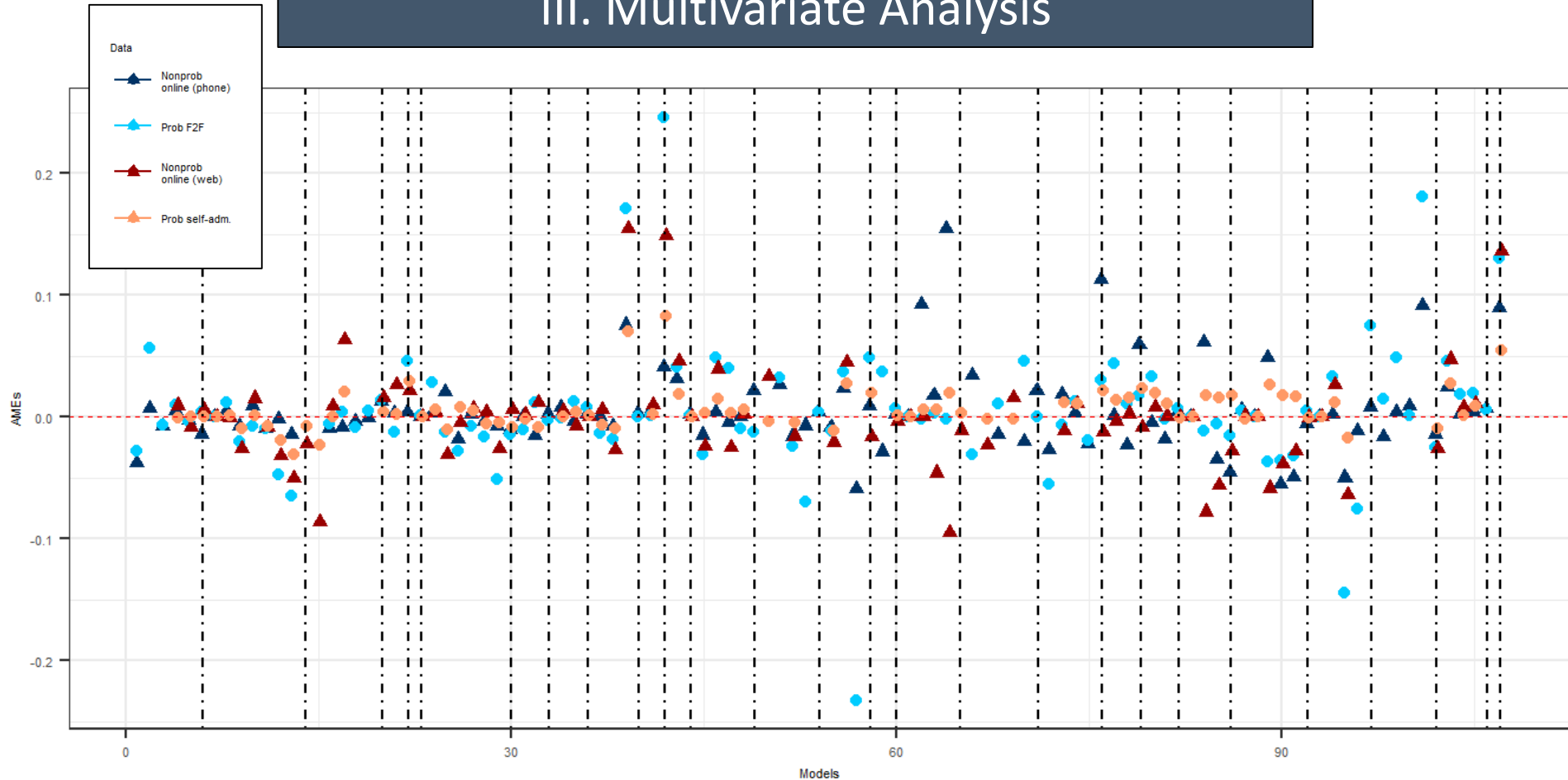


# III. Multivariate Analysis

## Statistical analysis



# III. Multivariate Analysis





### III. Multivariate Analysis

Is there a difference?

2017 Data  
(Nonprob Online (phone) & Prob F2F)

2021 Data  
(Nonprob Online (web) & Prob self-adm.)

58.4%\*

54.3%\*

\*Result of significance-test,  $p = 0.05$

### III. Multivariate Analysis

Would we draw different conclusions?

2017 Data  
(Nonprob Online (phone) & Prob F2F)

2021 Data  
(Nonprob Online (web) & Prob self-adm.)

AME significant in...					
no survey	one survey	both surveys	AME change	direction	n
54.46	36.63	8.91	25.74		101

AME significant in...					
no survey	one survey	both surveys	AME change	direction	n
61.73	30.86	7.41	45.68		81

### III. Multivariate Analysis

Would we draw different conclusions?

2017 Data  
(Nonprob Online (phone) & Prob F2F)

2021 Data  
(Nonprob Online (web) & Prob self-adm.)

AME significant in...					
no survey	one survey	both surveys	AME change direction	n	
54.46	36.63	8.91	25.74	101	

AME significant in...					
no survey	one survey	both surveys	AME change direction	n	
61.73	30.86	7.41	45.68	81	

### III. Multivariate Analysis

Would we draw different conclusions?

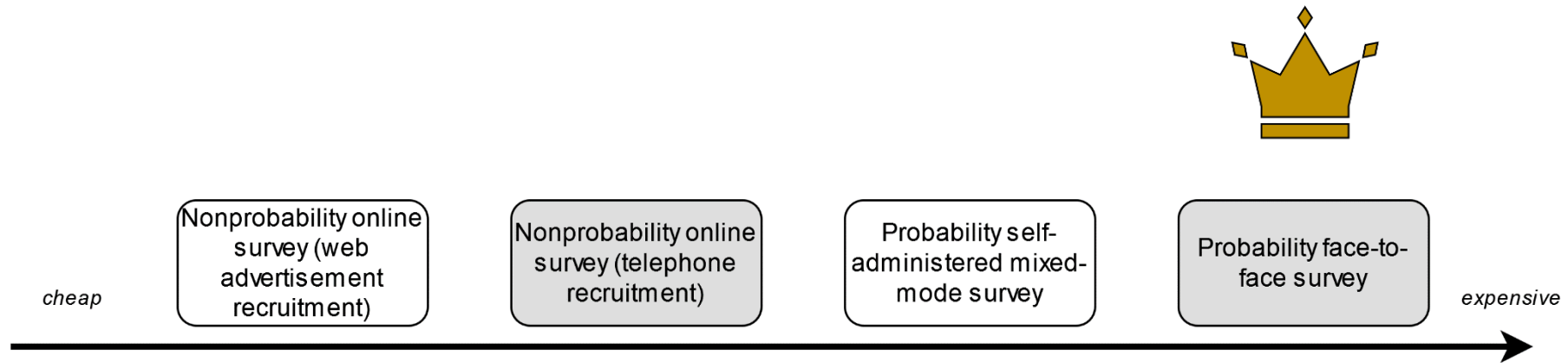
2017 Data  
(Nonprob Online (phone) & Prob F2F)

2021 Data  
(Nonprob Online (web) & Prob self-adm.)

AME significant in...					
no survey	one survey	both surveys	AME change	direction	n
54.46	36.63	8.91	25.74		101

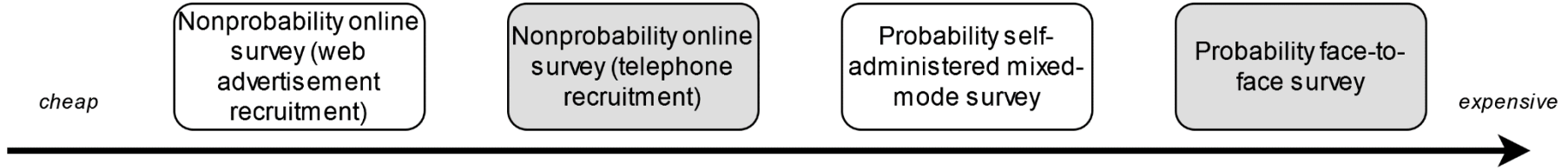
AME significant in...					
no survey	one survey	both surveys	AME change	direction	n
61.73	30.86	7.41	45.68		81

## I. Accuracy of Point Estimates



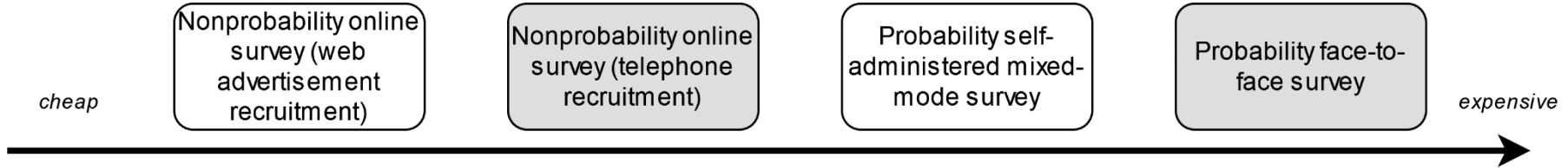
- Probability F2F Survey clear winner
- Other 3 surveys comparable in absolute size
- Large differences between surveys with regard to party vote

## II. Means and distributions



- Differences in majority of variables
- extent larger in 2021 data especially for political behavior

### III. Multivariate Analyses



- Significant differences in ~50% (both comparisons)
- 25% - 45% AMEs changed direction different conclusions
- Extent larger in 2021 data

## II. Take away message



Hannah Bucher  
[Hannah.Bucher@gesis.org](mailto:Hannah.Bucher@gesis.org)  
(she/her)



## Limitations

- Collective analysis of potential sources of error
- No direct comparison of all 4 surveys (2017-2021)
- Unconsidered sources of error?

OSF project link: <https://osf.io/c54pz/> (will be updated soon)

Thank you 😊

gesis

Leibniz Institute  
for the Social Sciences

Leibniz  
Leibniz  
Association

**Hannah Bucher**  
[Hannah.Bucher@gesis.org](mailto:Hannah.Bucher@gesis.org)  
(she/her)