

# 7<sup>th</sup> MASS Workshop, jointly organised with WEB DATA OPP

*Barcelona, Spain*

4-5 June 2026



Universitat  
Pompeu Fabra  
*Barcelona*



# Context

Workshop jointly organised between:

## *Mobile Apps and Sensors in Surveys (MASS)*

Every year since 2019

Bring together researchers from different disciplines to discuss the current state of their work on the **use of mobile apps and sensors in survey data collection**

## *WEB DATA OPP project*



February 2020 - July 2026

New opportunities to enhance or extend (mobile) web survey data and get better insights

Funded by an ERC Starting Grant

# Acknowledgements



## WEB DATA OPP team

**Maria Paula** Acuña

Patricia Iglesias

Carlos Ochoa

**Leyre** Padilla

**Kieran** Sargeant Rivilla

**THANKS!**



## MASS organisers

**Jan** Höhne Leibniz University Hannover  
**Florian** Keusch University of Mannheim  
**Peter** Lugtig Utrecht University  
**Bella** Struminskaya Utrecht University

All of you!

Our **keynote speaker:**

**Matthias** Mehl University of Arizona



## Some practical points



Necessary that you all sign the attendance list **every day**



Free university **Wi-Fi** (network guest@upf) or Eduroam



Coffee breaks & lunch: just next to our room



# Looking Back, Moving Forward:

Lessons learned from an ERC Journey

*4 June 2026*

**Melanie Revilla | RECSM-UPF**

***Acknowledgments:***

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# Project's research questions



1. Can we **improve** web survey **data quality** by using new measurement opportunities?
2. Can we **replace** part of the web survey data by using new measurement opportunities?
3. Can we achieve a **more complete picture** of the reality by **combining** new measurement opportunities with web survey data?

# New data types considered

## VISUAL DATA



Screenshots, photos, videos taken during the survey or saved on (or accessible from) the device

## VOICE DATA



Dictation  
Voice recording

## METERED DATA



Obtained through a tracking application (“meter”) installed by the participants on their devices to register at least the URLs of the webpages visited

## GEOLOCATION DATA

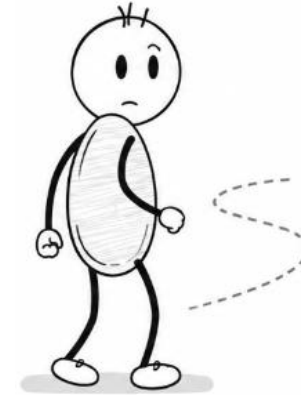


Obtained through a tracking application installed on participants’ mobile devices to register at least the GPS coordinates



**IN-THE-MOMENT SURVEYS (ITMS)** triggered by passively collected data

# Looking back...



Much has changed since I submitted the ERC proposal, almost 8 years ago...

# Much has changed since I submitted the ERC proposal



2018 2020 2022 2023 2026

**NEW DATA**

**PRE-TEEN DATA**

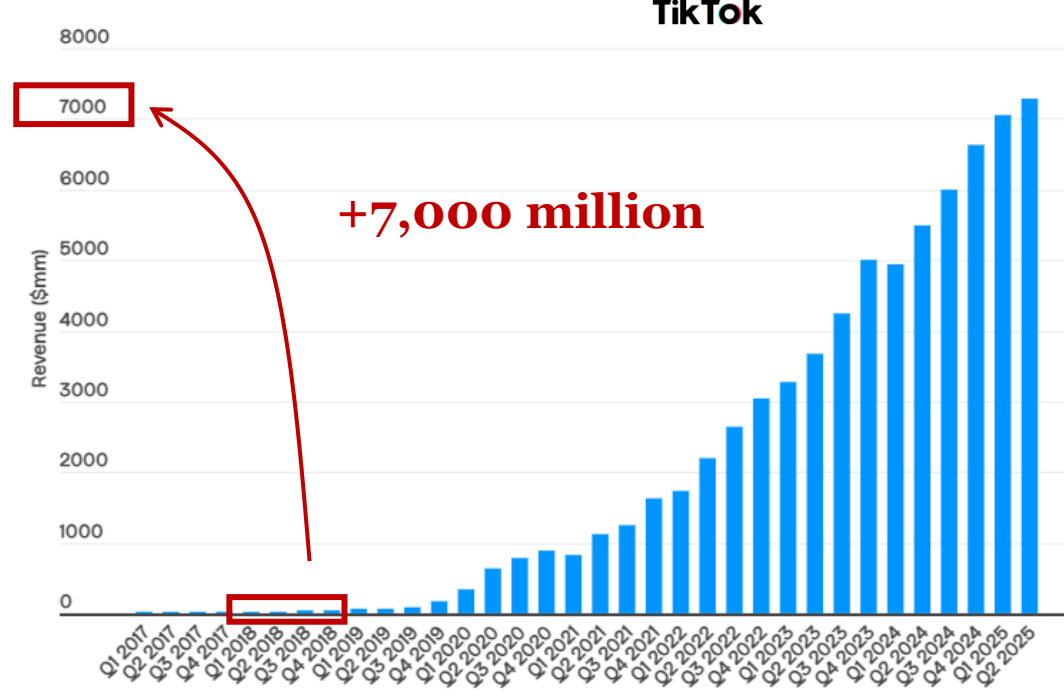


# Much has changed since I submitted the ERC proposal

Internet penetration worldwide from 2014 to October 2025



TikTok revenues 2017 to 2025 (\$mm)



2018 2026

**NEW DATA**

**PRE-TEEN DATA**





# Key takeaways



# 1. It is feasible



This was **not clear** when the project started

**Voice data:** existing tools had important technical limitations

- Mobile-only solutions + differences across operating systems
- In a previous study, we had to use dictation only for iOS and voice recording only for Android (Revilla et al., 2020)

**ITMS:** no adequate tools available → previous pop-up approach was not successful, with only 18 ITM participants achieved (Revilla & Ochoa, 2018)

**Lack of  
tools**

**Lack of  
infrastructure**

**No** geolocated panel available in Spain

- We thought we would need to recruit/build a geolocated panel first

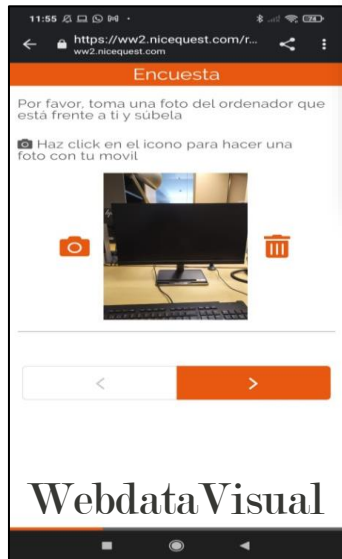
# 1. It is feasible



Tools  
successfully  
developed

Sufficient  
sample sizes  
achieved

Rich &  
relevant  
information  
collected



**>10 data collections**  
involving new data types



In all cases, we achieved  
sufficient sample sizes for  
our analytical objectives

Most participants provided  
**valid information**



Photos generally in line with  
the requests, most voice  
responses adequately  
addressed the questions, etc.

## 2. It is *already* happening



Several companies but also research institutes collect **metered online data** continuously

Ipsos

Netquest

RealityMine

YouGov

GESIS



Started in 2014

At the start of 2015: 13,500 members

Now: ≈ **20,000** only in Spain



>**10 years** of such data collected

Some also have **geolocated** panels

Netquest

RealityMine

Many can handle **visual data** requests

**We need to make the best possible use of all these rich existing data**

### 3. It can benefit a broad range of topics



Books at home



Job search



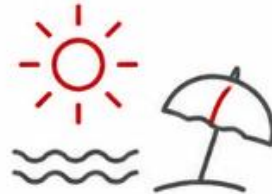
News media consumption



Remote working conditions



Beach visitors



ChatGPT adoption



Living room furniture



Attitudes towards nursing homes



Parental digital behaviours



# 3. It can benefit a broad range of topics



1

More detailed information



Type of chair

2

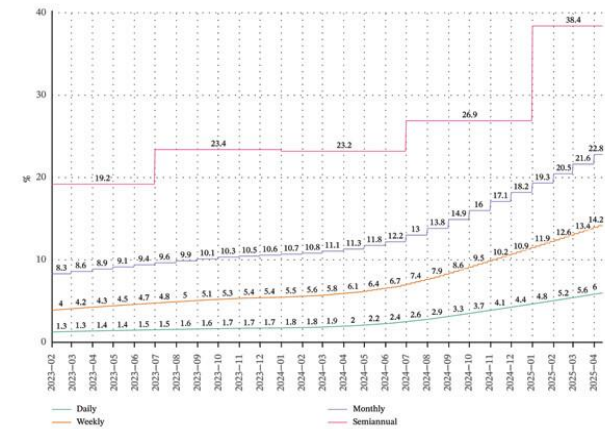
Measure new concepts



Books' titles

3

Study evolution



ChatGPT usage

## 4. However, it is time and resource consuming



We had to geolocate almost 2,500 mainland beaches in Spain manually...



We had to classify thousands of photos, counting books, classifying languages, and much more...

*A dying man said as he received the last rites, 'Don't worry, son, you're going to a better place... you'll have everything, good food, drink, etc.' To which the dying man responded, opening one eye... 'Father, there's no place like home'*

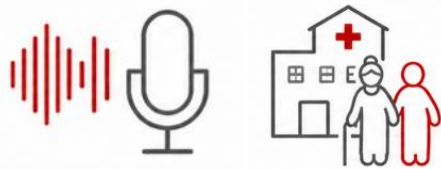
We had to extract information from thousands of voice transcriptions...

Still, it can be done with a relatively small team and for prices between 3,000 € and 15,000 €

## 5. Participation is still a clear problem



Around **40%** of participants sent photos of their books at home (Iglesias, 2024)



Around **20-25%** of participants used the voice options when given a choice, and **48-80%** in the push-to groups (Revilla & Couper, 2026)



To obtain 177 complete surveys (Ochoa, 2025a):

**ITM:** 315 panellists invited; among those who participated, **57.1%** yielded valid participations

**Conventional:** 2,080 panellists invited; only **16.3%** provided valid responses

However, the improved sample utilisation comes at the cost of an **extended fieldwork** period: **207 vs. 5 days**

# 5. Participation is still a clear problem

## Some strategies implemented to increase it were *unsuccessful*

Research Note

International Journal  
of Market Research

### Framing Effects on Willingness to Participate in Geolocation-Based Research

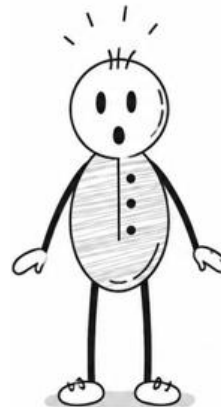
Carlos Ochoa  and Melanie Revilla   
Universitat Pompeu Fabra, Spain.

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#### Abstract

The Internet's widespread adoption and recent technological developments have provided researchers with the opportunity to capture new data types (e.g., images, passively collected data), which offer several advantages over conventional survey data. Nevertheless, the limited participation rate in projects requiring to share such data may limit their benefits, and even their feasibility. To estimate the willingness to participate in such projects in advance, researchers frequently rely on surveys. However, the way researchers describe what data should be shared and how, and the phrasing of questions asked to participants to obtain their agreement may result in different estimates. This study presents the results of a conjoint experiment that estimates the hypothetical willingness of participants to engage in two research activities that require sharing geolocation data. Three different descriptions of the activities were presented to participants: a neutral one, one emphasizing the necessity to commit to participate, and one emphasizing safe handling of shared data. The three descriptions elicited different levels of willingness, with a maximum effect of 7.0 percentage points (statistically significant). Additionally, the importance given by participants to the attributes of the activities (e.g., project duration or incentives) differed depending on the description. **Notably, the description that emphasized data safety produced lower levels of willingness compared to the neutral one. This suggests that researchers should avoid overly emphasizing safety assurances when requesting the sharing of sensitive data, beyond the necessary information required for obtaining informed consent from participants.**

Emphasising **data safety**  
produced **lower** willingness levels



#### Providing extra incentives for voice answers to open narrative questions in web surveys

Jan Karem Höhne (DZHW, Leibniz University Hannover)  
Melanie Revilla (RECSM-Universitat Pompeu Fabra)  
Mick P. Couper (University of Michigan)  
Joshua Claassen (DZHW, Leibniz University Hannover)

#### Abstract

Building on advancements in communication technology to reduce respondent burden and increase data quality, survey researchers have started to employ open questions with requests for voice instead of text answers. Respondents can record their answers through their device's microphone by pushing a recording button facilitating narrations. Research indicates that voice answers, compared to text answers, have some data quality benefits, such as being longer and including more topics. However, a key challenge remains the high rate of item nonresponse associated with voice answers (between 20% and 60%). Therefore, we investigate whether and to what extent extra incentives help to increase the voice answer rate and data quality. We conducted a web survey (N = 2,271) in the Netquest online panel in Spain, stratifying respondents into three groups (low, medium, and high) based on their likelihood of providing voice answers. This grouping was based on respondents' answers to two questions related to their 1) use of voice input in daily life and 2) trust in the confidential treatment of their answers. Within each of these three groups, respondents were randomly assigned to either receive an extra incentive for providing voice answers to two open questions or not. The results indicate that using voice input to answer open questions does differ between the three likelihood groups, as expected. **The extra incentives offered do not increase the answer rate but do appear to have some data quality benefits.**

Providing **extra incentives** did  
**not** increase the answer rate

# 5. Participation is still a clear problem

## Others helped but *moderately*

### A New Experiment on the use of Images to Answer Web Survey Questions

Oriol J. Bosch , Melanie Revilla, Danish Daniel Qureshi, Jan Karem Höhne

[Author Notes](#)

*Journal of the Royal Statistical Society Series A: Statistics in Society*, Volume 185, Issue 3, July 2022, Pages 955–980, <https://doi.org/10.1111/rssa.12856>

#### Abstract

Images might provide richer and more objective information than text answers to open-ended survey questions. Little is known, nonetheless, about the consequences for data quality of asking participants to answer open-ended questions with images. Therefore, this paper addresses three research questions: (1) What is the effect of answering web survey questions with images instead of text on breakoff, noncompliance with the task, completion time and question evaluation? (2) What is the effect of including a motivational message on these four aspects? (3) Does the impact of asking to answer with images instead of text vary across device types? To answer these questions, we implemented a 2 × 3 between-subject web survey experiment ( $N = 3043$ ) in Germany. Half of the sample was required to answer using PCs and the other half with smartphones. Within each device group, respondents were randomly assigned to (1) a control group answering open-ended questions with text; (2) a treatment group answering open-ended questions with images; and (3) another treatment group answering open-ended questions with images but prompted with a motivational message. Results show that asking participants to answer with images significantly increases participants' likelihood of noncompliance as well as their completion times, while worsening their overall survey experience. Including motivational messages, moreover, moderately reduces the likelihood of noncompliance. Finally, the likelihood of noncompliance is similar across devices.

A **motivational message** had a small positive effect



### Improving Participation and Data Quality in Remote Workstation Photo Requests

Leyre Padilla, Melanie Revilla, Kieran Sargeant Rivilla

RECSM - Universitat Pompeu Fabra

This study contributes to the literature by testing several **practical strategies** to improve participation in visual data requests while maintaining data quality. Our findings suggest that:

- **Within-survey follow-ups are effective tools for increasing participation**, adding around 9% of respondents with little cost to photo quality.
- **Email reminders recover a further share of non-participants** (up to 8% across groups), with usability holding up well for workspace photos and a small drop for the device-label photo.
- **Extra incentives do not increase participation but do improve photo quality**, with the effect strongest when the incentive is announced upfront.
- **The type of photo has a greater impact than prompting strategy**: workspace photos perform well across conditions, whereas device-label photos remain difficult, except in the reminder condition, where *IncentiveReminder* outperforms *Control* (81.2% vs. 63.6%), despite the small sample.

Including a **follow-up** prompt & sending a **targeted reminder** increased participation

## 6. It can improve data quality...

*Example: Longer/richer answers for voice (Revilla & Couper, 2026)*



		Control	Choice	PushDictation	PushRecording
<b>No. themes (avg.)</b>	<i>OQ1</i>	1.5	1.6	1.6	<b>1.7</b>
	<i>OQ2</i>	2.2	2.4	<b>2.5</b>	<b>2.8*</b>
<b>No. characters (avg.)</b>	<i>OQ1</i>	109	<b>177</b>	<b>181</b>	<b>227*</b>
	<i>OQ2</i>	93	<b>135</b>	<b>144</b>	<b>227*</b>

*Note:* Stars denote a significant difference (5% level) compared to the group immediately in the previous column.

**Bold** numbers highlight significant differences when compared to the *Control* group.

More characters + more themes in voice groups than Control group

→ Suggests **improved data quality**

## 6. ...but *not* always and *not* as much as expected

*Example: limited improvements in data quality for ITMS (Ochoa, 2025b)*

*“The results do not support beneficial effects of in-the-moment surveys on reducing non-recall (no support for H3a) or improving most other quality indicators (support for H3c). The only beneficial effect supported by the data is an increase in the number of uploaded inline pictures (support for H3b).”*

*“For the only question that could be compared to an external source (temperature), in-the-moment responses align more closely with true values.”*



**Limitations:** lack of access to “true” values + usual data quality indicators may not be well suited for the new data types, but developing alternative ones is challenging



Additional data quality improvements may exist beyond what we were able to detect

# 7. Researchers need to take many decisions



*Example: measure Online Job Search Intensity* (Ochoa & Revilla, 2025a)

- 1 Determine a list of URLs and apps associated with job search
- 2 Select **measurement type** + **Measurement target** → 8 core metrics (M1-M8)
  - Time spent
  - Number of visits
  - Browsing sessions on job search platforms
  - Pages within platforms
  - Job offer pages
  - Application pages
- 3 Apply **operationalisation factors** (e.g., platform type, search spell separation time, min. & max. time)
  - To session-based measures (M1, M5) → 1,296 measures
  - To page-based measures (M2-M4 and M6-M8 ) → 1,248 measures
- 4 **Summarise** across individuals → Final output:
  - Mean
  - Median
  - **2,592** session-based measures (M1, M5)
  - **2,496** page-based measures (M2-M4, M6-M8)

## 8. Ethical & data privacy challenges remain



**Informed consent** is essential, but leads to non-negligible loss of participants

*Example:* Iglesias & Revilla (2023) collected data using a conventional web survey (no special request) → **1,376** panellists started the survey, but **80** did not provide consent, despite having already consented to be in an online panel



Even when **instructions** are clear, we cannot assume that all participants will follow them

*Example:* in Ochoa & Revilla (2025b), between **22%** and **32%** of participants, depending on the group, shared private information (e.g., faces) despite being asked not to do so



**Unintended disclosure of third-party information** must be considered

*Example:* in Ochoa (2025a), the ITMS informed participants that they were invited because they were detected looking at a job offer (specific website & approximate time) → a screening question on recent online activities including “reading job offers” was added to reduce disclosure risk



# 9. Panellists do *not* like it much

Despite the rapid growth in the use of voice messages in daily life and the widespread use of visual content in social media & messaging apps, participants do *not* seem to like these formats as much in survey contexts

*Example:* Iglesias (2024) found that only **4%** chose to submit photos of their books at home instead of answering standard questions on the same topic

Besides, **53.5%** of the respondents liked answering the conventional questions, versus only **24.4%** for image-based formats



Table 5 Easiness/Difficulty and Like/Dislike by Response Format and Group (in %)

Categories	Response formats		Groups			
	Conventional (n=891)	Image-based (n=135)	Text (n=632)	TextChoice (n=259)	Images (n=112)	ImagesChoice (n=23)
Easy	64.4	66.7	<b>61.4</b>	<b>71.8</b>	63.4	82.6
Not easy nor difficult	27.2	26.7	29.0	22.8	28.6	17.4
Difficult	8.4	6.7	9.7	5.4	8.0	0
Like	53.5	24.4	52.2	56.8	21.4	39.1
Not like nor dislike	44.8	60.7	45.9	42.1	61.6	56.5
Dislike	1.7	14.8	1.9	1.2	17.0	4.3

Note: Bold notes statistically significant differences among formats or groups answering through the same format.

## 10. The specific topic, task and target population matter

Participation & quality vary substantially across studies, even when the data are collected within the same panel and country



Around **40%** of participants sent photos of their books at home (Iglesias, 2024)

Around **55%** sent photos of their remote workstation initially (Padilla et al., in progress)

Even within the same survey, results can vary largely, for example, because some elements are harder to classify than others: in Iglesias (2026), the percentages of photos where books could be counted are much higher than those in which languages could be identified (n = 648)



Potential of classification	% total	% partial
# of books	<b>69</b>	31
Categorisation of books	64	36
Languages	<b>39</b>	59
Storage	95	3

# Moving forward...

What's next?



# Can AI help?



**Probably, but what we have tried so far suggests it is *not* sufficient**

## Classifying images



Not possible yet to get much of the information we wanted without a lot of effort in developing/tuning existing tools + ethical considerations

## Transcribing and coding



Important differences across automatic speech recognition (ASR) tools

Differences between human and ChatGPT coding can be substantial

## Geolocating places of interest



Not sure if this could be done, but training data, validation, and human oversight will surely remain necessary

## Classifying URLs



In some cases, the volume of elements to be classified is so high (e.g., parental digital behaviour study), that AI seems the only way

**More research is needed on how to integrate AI → could help a lot in the coming years**

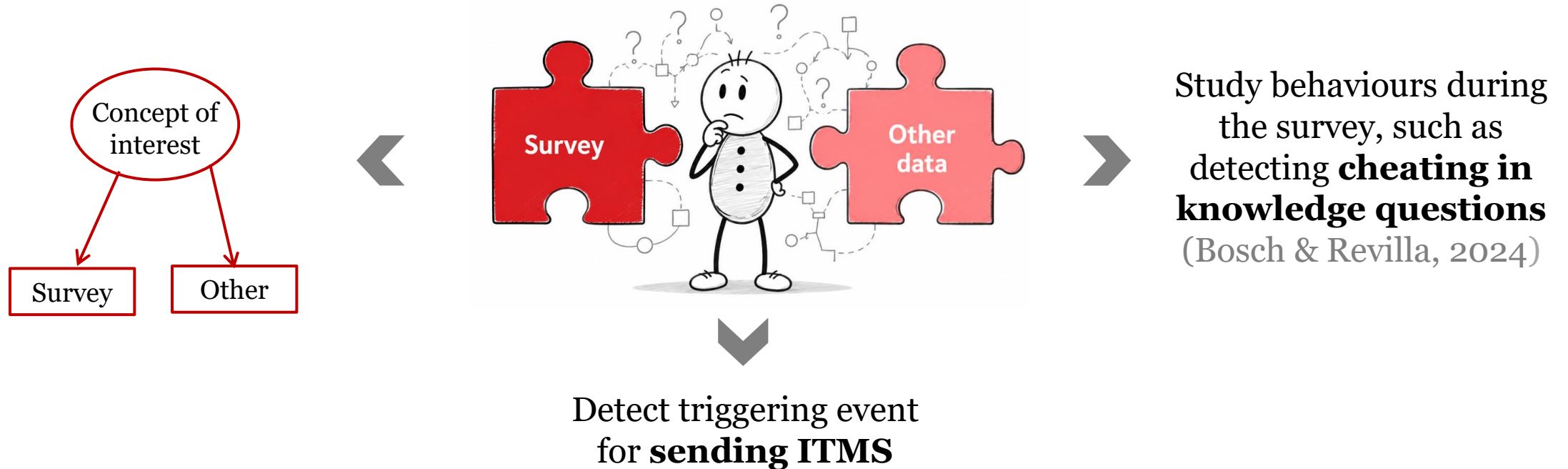
# Investigating further how to best combine different data

## My conclusion:

We are **not** yet at a stage where new types of data can replace conventional survey questions.

Instead, they should be viewed as **a complement**.

However, **how best to combine them** remains an open question that requires further research.



# Implement it in *cross-national* research

All our research has been done in **only one country**



**Cross-national** research adds substantial **complexity**: fieldwork companies are *not* consistently available across countries + using different providers across countries risks **non-comparable data**

*Example*: Claassen (in progress) uses metered data to study 166 pregnant participants → feasible in Spain due to sufficient metered panel size, but would not be possible in other countries with Netquest

**Additional problem for voice recordings**: ASR tools' **performance varies across languages** (Höhne et al., 2025; Revilla et al., 2026) → may introduce systematic cross-country differences in data quality

# Should we continue?

Or should we continue in this direction?

We have now spent years learning how to collect, process, and understand these data



Is it time to shift our focus towards other issues?

But perhaps just as children grow into teenagers and become increasingly independent, these *pre-teen* data no longer require the same attention from methodologists

# Thanks!

## *Questions?*



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<https://www.upf.edu/web/webdataopp>

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