# FIFTH INTERNATIONAL WORKSHOP ON BUSINESS DATA COLLECTION METHODOLOGY

19-21 SEPTEMBER 2018 – STATISTICS PORTUGAL, LISBON

## PRINTABLE DOCUMENTS

## PRESENTATIONS

INSTITUTO NACIONAL DE ESTATÍSTICA
STATISTICS PORTUGAL

Statistics Netherlands

Statistisk sentralbyrå
Statistics Norway

FACULTY OF ECONOMICS

United States Census Bureau

5th BDCM Workshop
19-21 September 2018
Statistics Portugal, Lisbon

# The response process in large businesses

Ger Snijkers and colleagues

Statistics Netherlands

# My statement

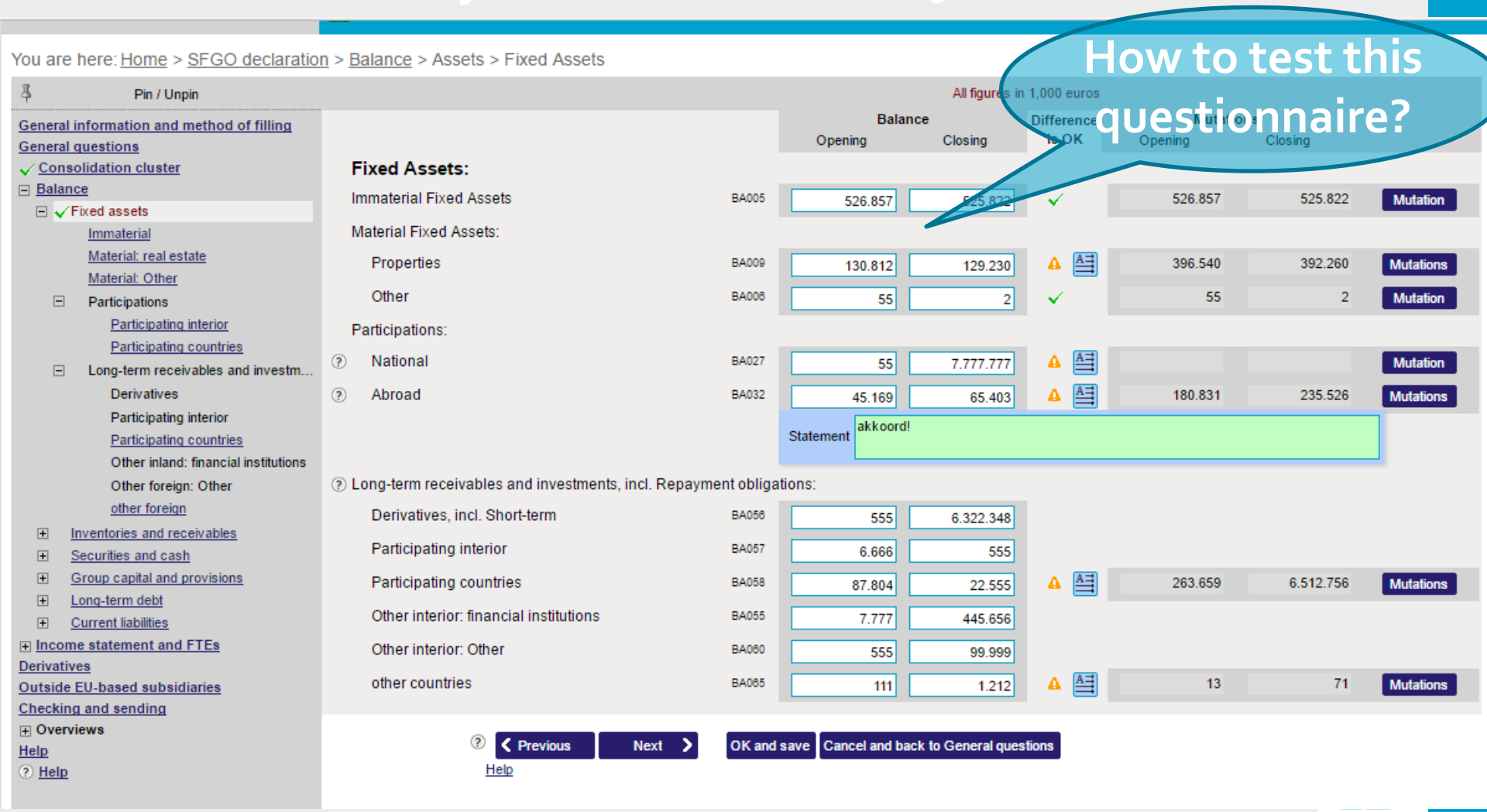
In business surveys, starting pre-tests at the stage when a draft questionnaire has been developed, is too late:

Conceptualisation > draft Q > pre-testing > adapting Q

Studying the business context should start earlier:

Conceptualisation **> study business context**
> draft Q > pre-testing > adapting Q

# CBS-DNB Survey on Finances of Enterprises & Balance of Payments: A new e-Questionnaire




www.cbs.nl/balanceofpayments

# Steps in the Q development process

1. Conceptual data model 2014-2015
2. **Feasibility study (business visits)** 2015
   - 5+5 businsess visits -> full response process
   - Results: - insights in response process,
     - Q design + survey comm. requirements (paper)
3. 'Paper' schedule of questionnaire 2016
4. Visual design 2015-2016
5. Web questionnaire design 2016-2017
6. **Testing (usability pre-tests)** 2017
   - Pre-testing -> usability testing
7. **Pilot year (incl. business visits)** 2018
   - business visits -> full response process
8. Start survey 2019

# General conclusion

- data according to the pre-defined **definitions**
- data about the right pre-defined **consolidated unit**
- in a **timely manner**

To get data of good quality:

what counts is:

- not just the questionnaire design itself,

but what is even more important:

- how businesses can work with the questionnaire
  - organising the response process
  - getting prepared

Insights in this process?

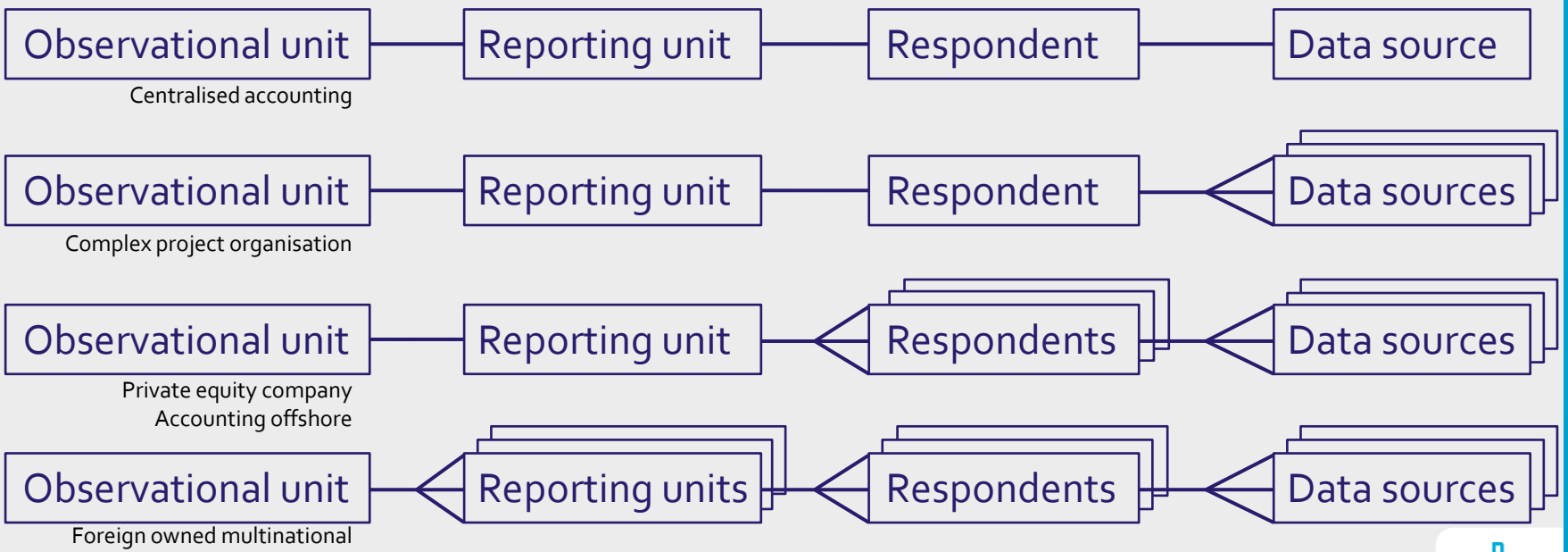
"Give me one year to get prepared"

# Complexity of response process

- Many data sources, at various locations
- Many people, at various locations
- Many sub-units
- Time: when data are available, and businesses have time

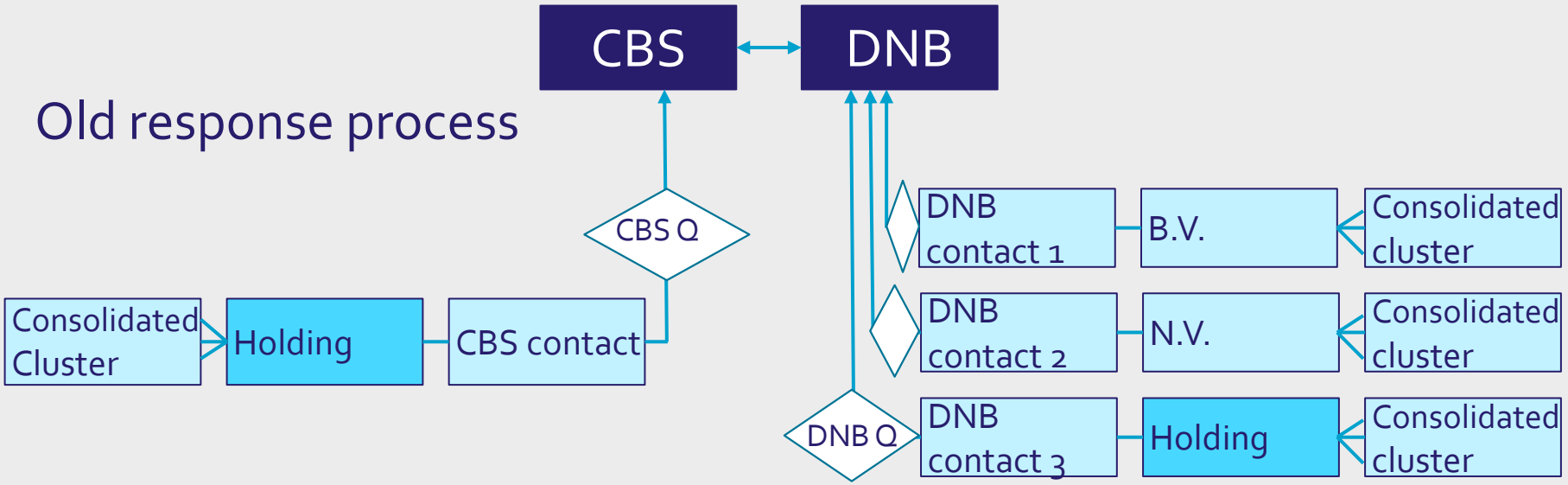
or a combination

**All structures apply!**

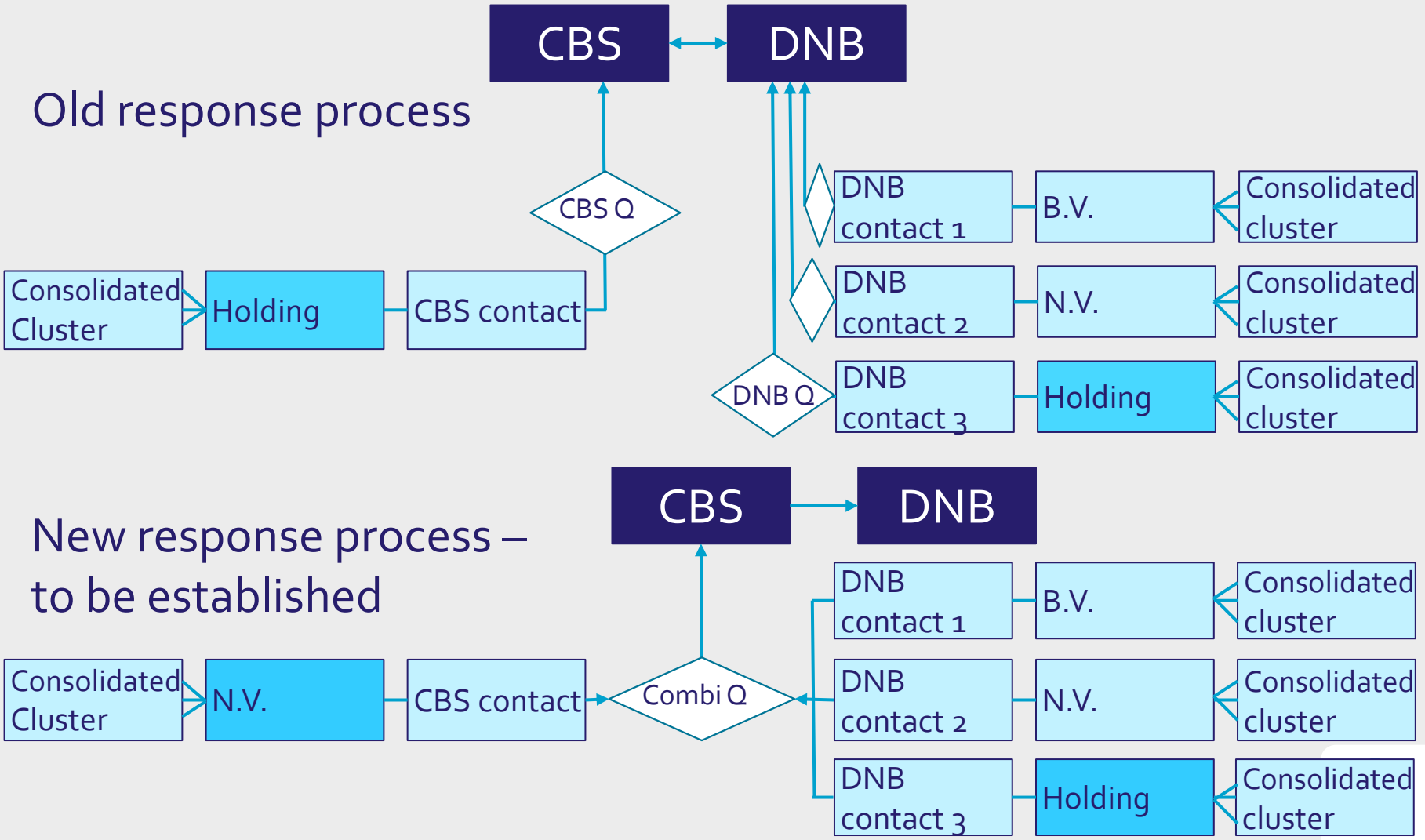


# Complex response process: example

Old response process



# Complex response process: example

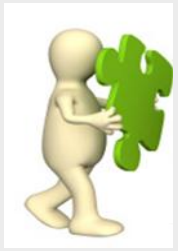


# Getting ready in 3 steps

## Business information day in Amsterdam

reporting CBS DCB

1. Get overview of requested information
   - Download list of variables and definitions
   - Match with own sources
   - Be aware of:
     - correct unit/entity: Consolidation cluster
     - differences in definitions
     - periodicity: quarterly data



✓ ✓
✓ ✓
✓ ✓

2. (If needed) Integrate the various individual rapporting processes for CBS and DCB using the new questionnaire

3. Implement one new rapporting process

# Complexity of response process

- Many data sources, at various locations
- Many people, at various locations
- Many sub-units

} or a combination

- Time: when data are available, and businesses have time

# My statement

In business surveys, starting pre-tests at the stage when a draft questionnaire has been developed, is too late:

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Studying the business context should start earlier:

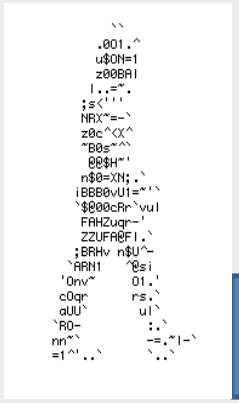
Conceptualisation **> study business context**
> draft Q > pre-testing > adapting Q

See: Snijkers, Haraldsen, Jones and Willimack, 2013,
Designing and Conducting Business Surveys. Wiley, Hoboken.

# Planning an effective Business Survey Communication Strategy

## 7-step approach to an optimal strategy

(Snijkers & Jones: Ch 9 in Snijkers et al., 2013)



7. Evaluate
6. Implement
5. Revise and finalize
4. Design, build and test the strategy
3. Define paradata and indicators for monitoring
2. Study contextual factors: a. business factors
   b. survey organization factors
1. Define objectives

# Adapt pre-testing methods to business context

Tucker (1997):

"Successful generalisation from the laboratory will depend upon the researcher's ability to create realistic conditions in the laboratory or, at least, take into account the differences when drawing conclusions from laboratory experiments."

Discussion on scientific characteristics of pre-testing, like generalizability, a decade after CASM (1984).

# Do we need adapted methods?

1. Methods (or a combination of methods) that take into account:
   - the complex response process
   - practical considerations
   - available quantitative (para)data
   - "new" methods used by other professionals, like web designers

   **- Rethink our practices**
   **- Start here; not with the methods**
   **- Collaborate in pre-testing**

2. Careful selection of businesses: representing the various situations in the field:
   - insights in these situations

   **- Study the complex response processes**

3. Analysis and reporting:
   - Quick-and-dirty, or
   - Slow-and-thorough ?

   (CIRF: Cognitive Interviewing Reporting Framework; Willis & Boeije, 2013)

   **- Meta-analysis of pre-test reports: What do we know?**
   **- Share results**

# AN INTERNATIONAL ESTABLISHMENT SURVEY AND THE COVERAGE OF MICRO ENTERPRISES – DOES ONE-SIZE FIT ALL?

## Fifth International Workshop on Business Data Collection Methodology

**Lisbon, 19 September 2018**

**Xabier Irastorza**

**Prevention and Research Unit, EU-OSHA**

European Agency for Safety and Health at Work

ESENER

# Content

1. EU-OSHA
2. ESENER-2
3. ESENER-2 Follow-up study
4. ESENER-3 Outlook

# 1. EU-OSHA - Who we are

*The European Union body responsible for the collection, analysis and dissemination of relevant information to serve the needs of those involved in safety and health at work.*

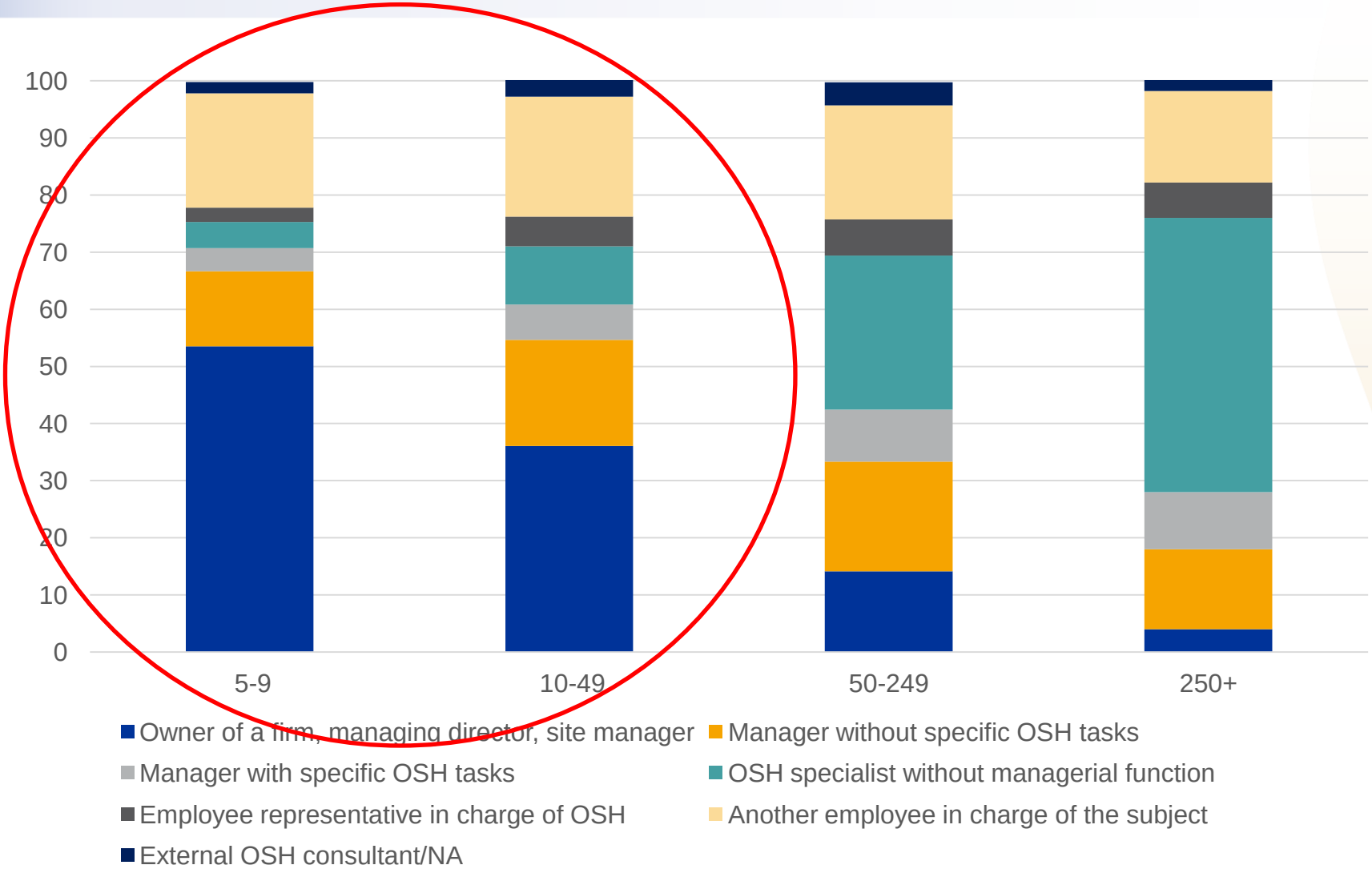
- One of the 40 **EU agencies**
- Governed by **European law**
- Mostly **financed** from the general EU budget
- Independent in the execution of its **mission/tasks**
- **A tripartite network organisation**, closely linked to EU actors and national networks through the national focal points

# 2. European Survey of Enterprises on New and Emerging Risks (ESENER) - changes

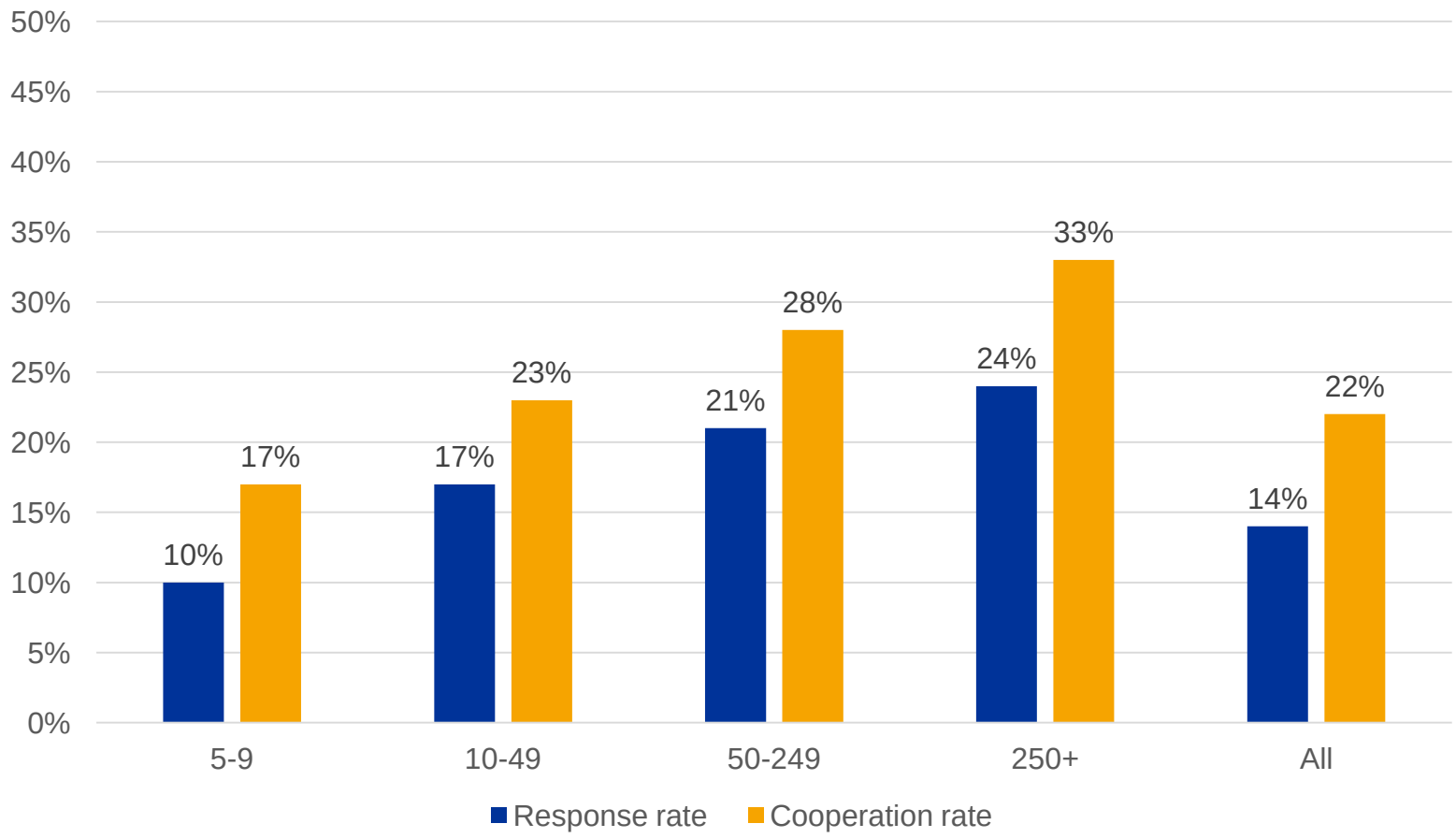
| Greater geographical coverage | ESENER-1 (2009) | ESENER-2 (2014) |
|---|---|---|
| Countries | Total of 31:<br>EU-28 + Turkey, Norway, Switzerland | Total of 36:<br>ESENER-1 + Albania, Iceland, FYROM, Montenegro and Serbia |
| Establishments surveyed | 30,000 | 49,320 |
| National versions of questionnaire<br>Adapted for language and national OSH terminology | 41 | 47 |
| **Increased proportion of workplaces covered** | **ESENER-1** | **ESENER-2** |
| Smallest business size | 10 workers | 5 workers |
| Sector | All, including public, except agriculture and fishing | All, including public and agriculture and fishing |

# 2. ESENER-2 Respondent EU28 (in %)

*'Person who knows most about safety and health at the workplace'*



# 2. ESENER-2 Response and cooperation rates, by establishment size.




Response rate: % completed interviews from all touched addresses

Cooperation rate: % completed interviews from eligible contacts

# 2. Response rates

- Little knowledge about self-selection effects (‘good OSH performers‘)
  - lack of information on non-participants or benchmark data

- Only indication from data:
  - All OSH provisions (risk assessments, information etc.) are taken less often by micro and small establishments (MSEs) than by larger workplaces
  - Notable country differences

**Non-response bias?**

# 3. ESENER-2 Follow-up study

- Impact of expansion of survey universe in ESENER-2
- Informed by and structured around the **TSE**
  - Focus on **measurement error -** inclusion of **micro** establishments.

- *Are the survey questions applicable to micro establishments (their respondents)?*
  i. review ESENER-1 and -2 questionnaires and relevant background information.
  ii. an initial assessment of capability based on ESENER-2 interview responses.
  iii. in-depth qualitative interviews (28) with respondents from micro establishments in Spain and Romania.

# 3. ESENER-2 Follow-up study

- More difficulties to reach micro establishments:
  - Partly **no regular office hours.**
  - Target persons in MSE is often the **boss** (very busy)
- **OSH in micro is handled differently:**
  - OSH often considered **not relevant** by micro (services):
    - **Uncertain** about OSH obligations.
    - **Less formalized** approach to OSH, measures taken **ad hoc/on demand**.
  - For most respondents in micro, OSH is **not their main task**, but an obligation (motivation?).
    - Often no person specialised on OSH within the establishment.
    - OSH frequently **outsourced.**
  - Small dependent units often **not allowed to participate.**
  - OSH committment highly dependent on **owner/site manager**

# 3. ESENER-2 Follow-up study

- *'Small establishments didn't know **who is in charge of health and safety**, sometimes it seemed that they hear about it for the first time. Even managers of such establishments sometimes didn't know about this topic'*

- *'Identification was more difficult in small companies, which rely on **external providers** for the health and safety at work issues. In some cases our study was treated as some kind of **inspection**, considering that the small companies are frequently unaware of the requirements for the health and safety at work and feel **uncomfortable** about the issue.'*

- *'In many institutions with multiple organisations there is only 1 person that is in charge for more organisations. Others are mostly not adequate to talk about the topic nor authorized'.*

Source: ESENER-2

# Conclusion and recommendations

- **One-size does NOT fit all - develop survey methods and content that are appropriate for the smallest as well as the largest businesses.**

- **Recommendations**
  - Details of the **supply chain** position of all establishments and the influences on their OSH decisions and procedures.
  - Respondents' **understanding** and **interpretation** of key concepts and terms, and its implications for survey development –prompts, hints, clarity,...
  - **Qualitative follow-up** for some establishments (micro) exploring survey answers and workplace practice – ideally including brief interview with a worker.
  - Collection of sufficient **contextual detail** for meaningful data analysis and interpretation.
  - Intensive efforts to **convert** micro establishment **refusals** during or after the survey.

# Next steps – ESENER-3

- **Cognitive test: done**
- **Master questionnaire (translation): Q4 2018**
- **Pilot test: Q1 2019**
- **Fieldwork: Q2-Q3 2019**
- **First findings: Q4 2019**
- **Launch event: Q1 2020**

**ESRA 2019, 15-19 July, Zagreb**

*'Business surveys and the changing data environment- how can we know best about businesses?'*

https://www.europeansurveyresearch.org/conferences/overview

# Discussion

- **How to develop survey methods for all business size classes?**
- **Comparative information,... by not asking exactly the same?**

# THANK YOU!

www.esener.eu

http://oshwiki.eu/wiki/Category:Statistics

# Exploring Responding Behavior Behind «Remain Unchanged» Answers: Case Study for the Business Tendency of Turkey

**Türknur Brand, Cevriye Aysoy, Burkay Genç**
**Central Bank of Turkey (CBRT),**
**Hacettepe University**

**5th International Workshop on Business Data Collection Methodology**
**19-21 September 2018**

*The views and opinions expressed are those of the presenter and not necessarily those of the CBRT & Hacettepe University

# Outline

- Research Question & Related literature
- Aim and Methods
- Business Tendency Survey (BTS) data and Business Confidence Index (BCI) calculated
- Ad hoc Interpolation Method and Results
- Decision Trees and Results
- Qualitative Research and Results
- Summary Remarks & Further Studies

# Research Question & Related Literature

- How is the decision on responding the general tendency on economic situations formed?
  - Hidden donot know (Bovi, 2009)
  - Satisficing behaviour (Krosnick, 1991)
  - Faces saving donot know (Sturgis, et al. 2014)
  - Overpessimistic or overoptimistic (Kahneman and Tversky, 1974)

# Aim in this Study

- **Core Q**: What is the attitude behind business managers responding ‘remain unchanged’ in general economic conditions question?

- **Supplementary Qs**:

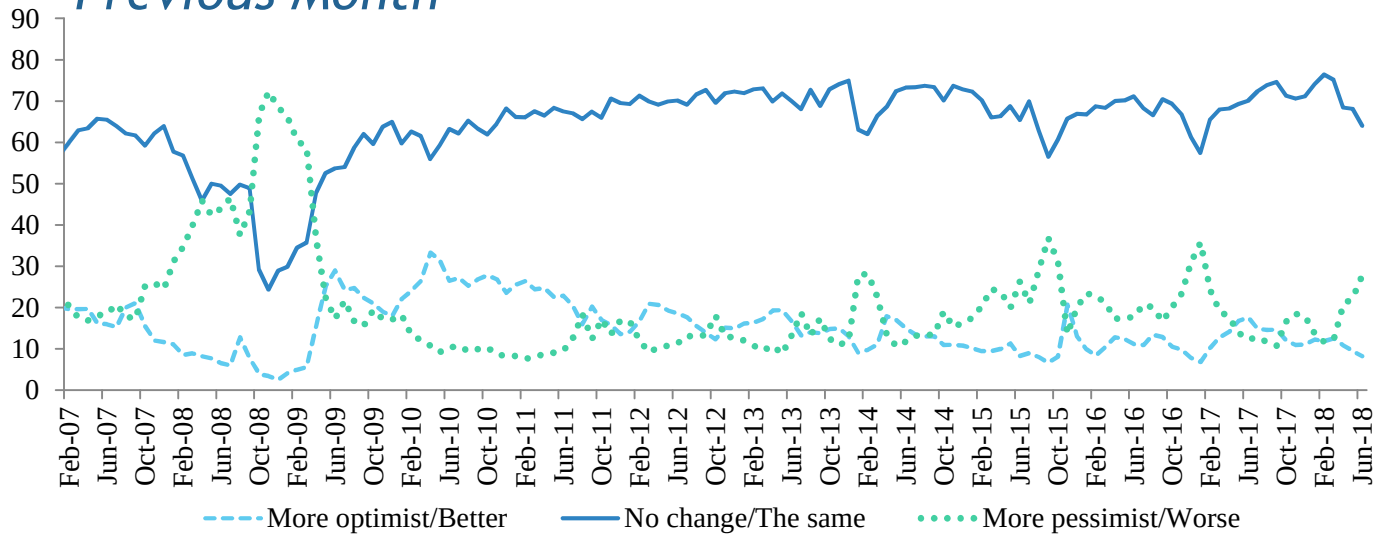
  1.How do they interpret their economic situation cognitively?

  2.Which economic indicators direct their economic situation expectations?

  3. Do they remember their answers from a previous period of the survey they responded (a month/2 months earlier or more)?

# **Aim**: Why are we curious about that?

- Response alternatives to *"Your Opinion About the General Course of Business in your Industry, Compared to Previous Month"*




- Whether high percent of «remain unchanged» is affecting the interpretation of Business Confidence Index or not/ indirectly policies developed?

# Methods

- **First:** Ad hoc interpolation method with assumptions

  (Note that **no intention to edit data**)

- **Second:** Decision trees models

- **Third:** Asking to the respondents, meetings with firms' business managers or accountants in depth interviews

# Business Tendency Survey

- Self administered mode via mail, web, email with around 80% response rate
- Sampling method nonprobability sampling
- Sampling unit senior managers, accountants
- Sampling size around 2000 firms in manufacturing industry
- Answers 3 point Likert scale, multiple choice, ranking some factors
- Sectors covered mining, food, textiles, forestry, paper products, chemicals, machinery, energy, metal

# Business Confidence Index Calculation

- The method that Sutanto (1999) used for Indonesia case is followed.
- The scales which are in the form of ´´more optimistic- remain unchanged- more pessimistic´´ or ´´up-the same- down´´ are coded.
- Answers indicating improvement are scored 1
- Answers indicating no change are scored 0
- Answers indicating a worsening condition are scored -1

# Business Confidence Index Calculation

Balance (diffusion index) =

(#of participants answered up - # of participants answered down)/N *100

N = Total number of firms participated to survey in related month

Balance > 100 : respondent is positive for related question

Balance < 100 : respondent is negative for related question

- Summing up those diffusion indices for some of the Qs calculates BCI

# Ad Hoc Interpolation Method

- How would you answer if you are to respond?

Possible Interpretations of ***'Remain Unchanged'***

1. Same as Before

   ⟹ arithmetically NULL

2. Not informative (Donot know)

   ⟹ arithmetically NULL

3. **Same change as before (Increase or Decrease)**

   ⟹ **not equal to NULL**

# Ad Hoc Interpolation Method

**Table 1 : Procedure for Interpolating "Remain Unchanged" ("2") Answer for Question 28**

| In Survey S-6, the Firm A Responded | In Survey S-5, the Firm A Responded | In Survey S-4, the Firm A Responded | In Survey S-3, the Firm A Responded | In Survey S-2, the Firm A Responded | In Survey S-1, the Firm A Responded | **In Survey S, the Firm A Responded** | Interpolated Response of Firm A in S Correspondingly |
|---|---|---|---|---|---|---|---|
| 0,1,3 | None, 2 | None, 2 | None, 2 | None, 2 | None, 2 | **2** | 0,1,3 |
| … | 0,1,3 | None, 2 | None, 2 | None, 2 | None, 2 | **2** | 0,1,3 |
| … | … | 0,1,3 | None, 2 | None, 2 | None, 2 | **2** | 0,1,3 |
| … | … | … | 0,1,3 | None, 2 | None, 2 | **2** | 0,1,3 |
| … | … | … | … | 0,1,3 | None, 2 | **2** | 0,1,3 |
| … | … | … | … | … | 0,1,3 | **2** | 0,1,3 |
| 2 | None, 2 | None, 2 | None, 2 | None, 2 | None, 2 | **2** | 2 |
| None, 2 | None, 2 | None, 2 | None, 2 | None, 2 | None, 2 | **2** | 2 |
| … | … | … | … | … | … | **None** | None |
| … | … | … | … | … | … | **0** | 0 |
| … | … | … | … | … | … | **1** | 1 |
| … | … | … | … | … | … | **3** | 3 |

**Notes:** "None": Unit Nonresponse (No participation in given month), "0": Item Nonresponse (No answer to this question in a given month), "1": More Optimistic, "2":Remain Unchanged, "3": More Pessimistic

# Ad Hoc Interpolation Method

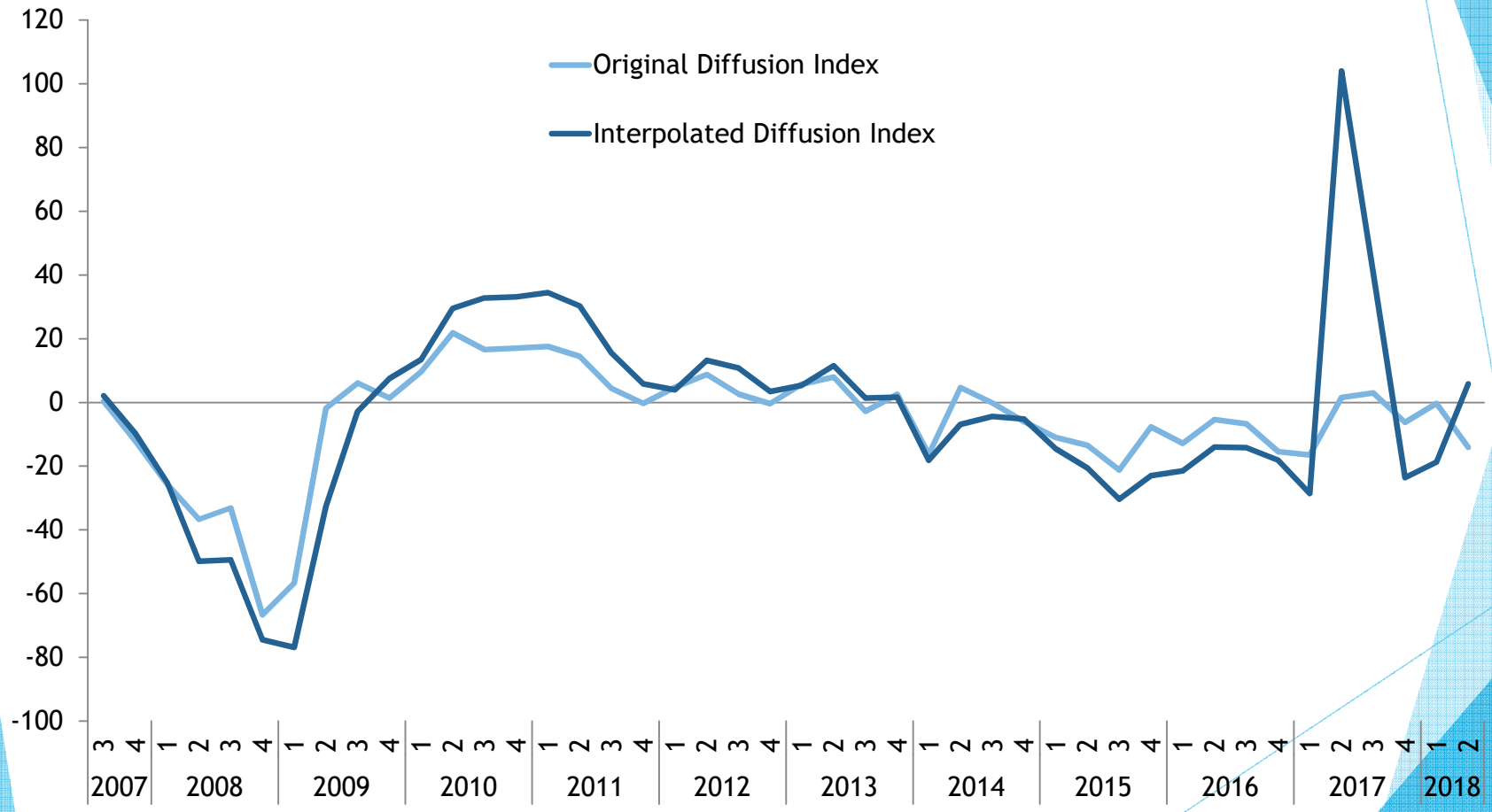
- Diffusion indices before and after interpolation are compared

- Calculated uncertainty measure (Bachman, et.al., 2010) as a tool;

$$U_t = Sqrt\,[Frac_t(+) + Frac_t(-) - \{Frac_t(+) - Frac_t(-)\}^2]$$

where Fract(-) is the fraction of “pessimistic” responses & Fract(+) is the fraction of “pessimistic” responses to a survey question at time t.

# Ad Hoc Interpolation Method



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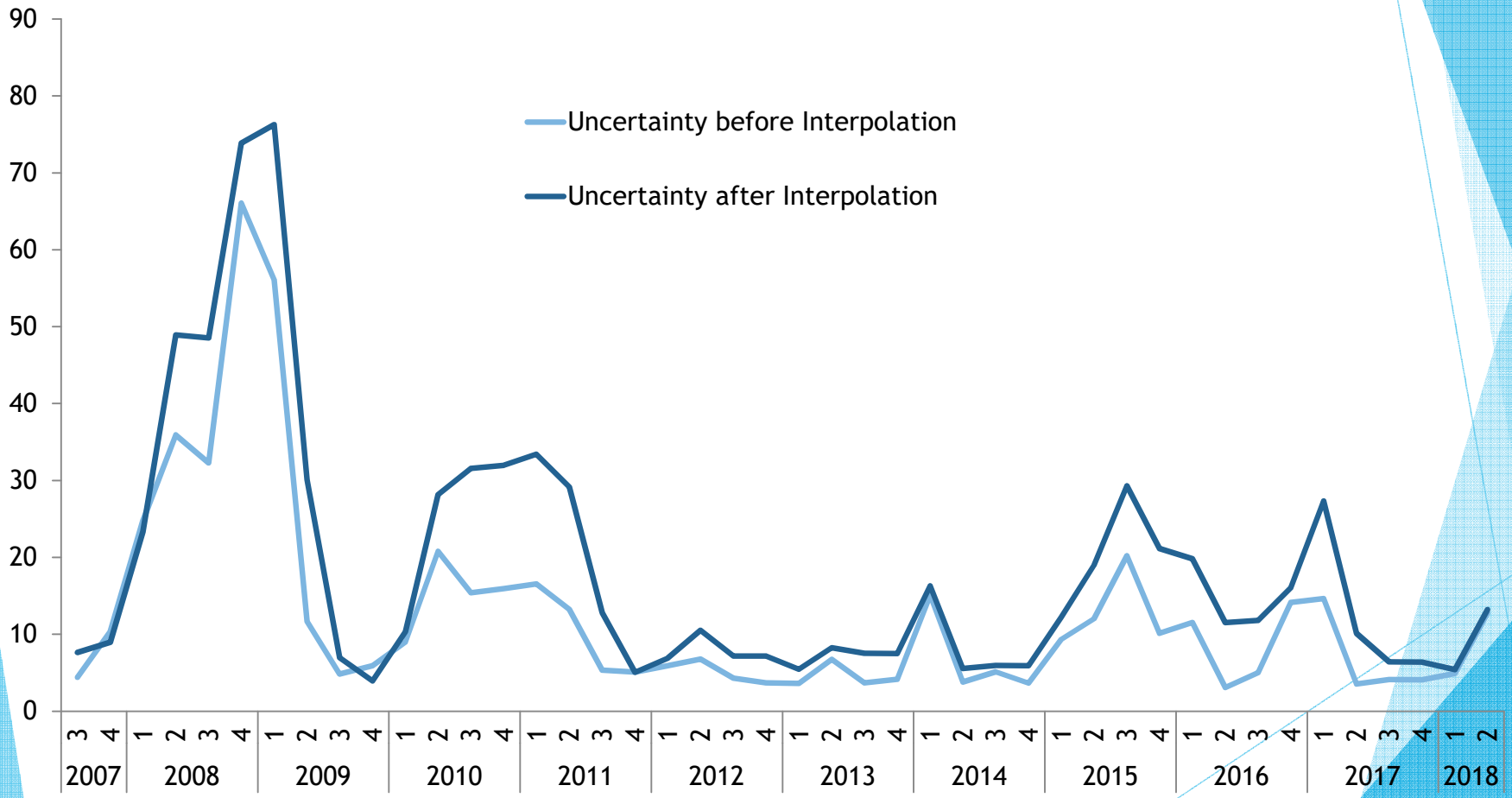
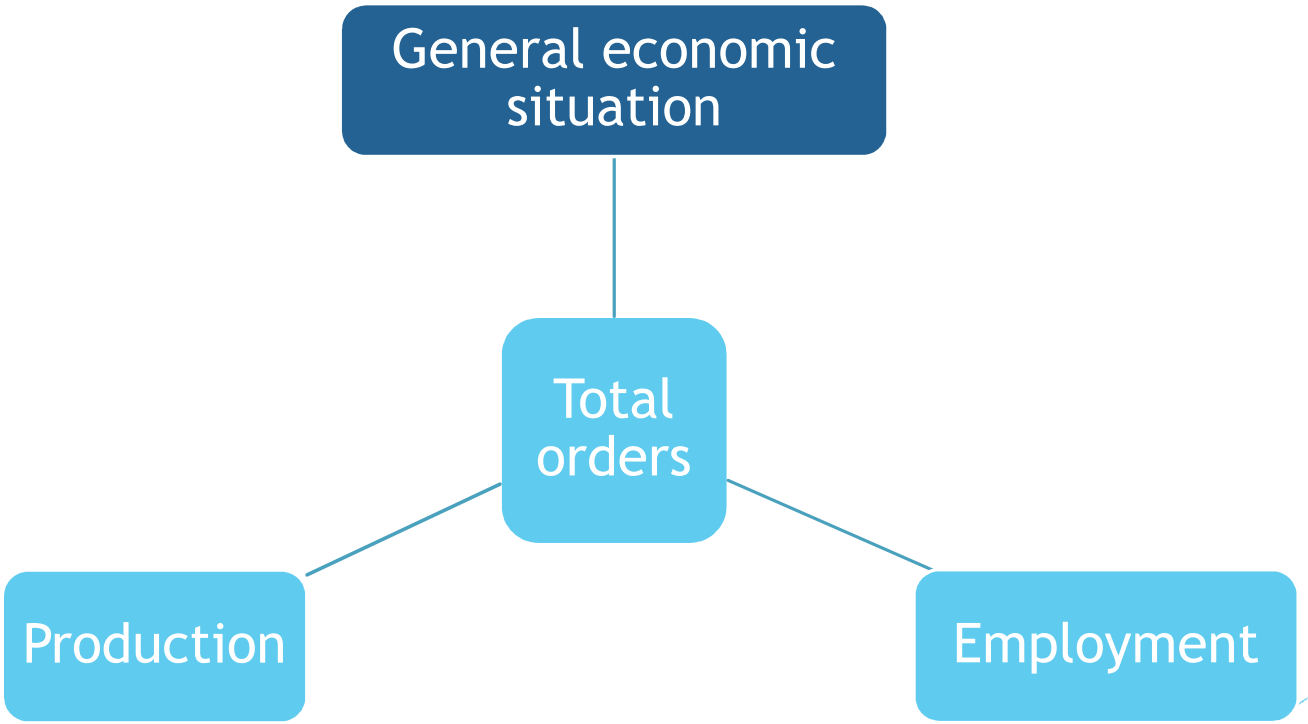


# Ad Hoc Interpolation Method Results

- After interpolation pessimistic times more pessimistic optimistic times more optimistic
- Time to time increasing amount of neutral responses reflects indecisive/ uncertain minds
- Addresses periods when economic activity slow down
- Cycle before and after goes a long, no information loss with the recent balance discussed in each month
- **In summary**, relatively increasing neutral choices are possibly representing sluggish periods in economy

# **Decision Trees;** Input and Target Variables



# Decision Trees Results

- Error rates between 0,24 and 0,29
- Some variables always effective in tree model & few pops up in certain sluggish times in economy
- Sometimes pessimism in past bring current pessimistic look or future pessimism holds with current
- As a result, not a single structure in decision tree to model, partly due to missing so much info under neutral answers

# Qualitative Research (QR)

- Indepth interviews with firms' business managers and accountants from different industries
- Participants responding «remain unchanged» for a long period are interviewed
- Interview guidelines used

# Qualitative Research Results

- Mostly interpreted as «same change as before», same level. Once worse/better than previous month, direction of answer changes to -/+.

  Hypothesis for Ad hoc method holds

- A few interprets «same as before», difference is zero /arithmetically null

- Business managers and accountants' evaluations for all survey Qs differ

# Summary Remarks & Further Studies

- 3 point Likert scale? (QR, decision tree)
- Confusion on meaning? (QR, decision tree)
- Confusion due to volatile economy?

Uncertain respondents? (AdHoc method, QR, decision tree)

- **Further:** Questionnaire design review?

  Scales and its size review?

  Necessary updates on data (reviewing profile's of firm respondents, revisiting the sampling frame, delete/add firms)

# THANK YOU

# Exploring Web Survey Paradata to Improve Survey Design

Réjean Doiron
Collection Planning and Research Division
Statistics Canada

Fifth International Workshop on Business Data Collection
Lisbon, Portugal
September 2018

# Acknowledgements

Support provided by Business Survey Methodology Division, Statistics Canada


- Susan Demedash (susan.demedash@canada.ca)
- Jessica Andrews (jessica.andrews@canada.ca)

# Purpose

- Highlight uses of paradata at Statistics Canada.
- Outline new research initiatives.

# What is paradata?

- Microsoft Internet Information Services (IIS) logs;
- Show actions taken in the web questionnaire by both respondents and interviewers;
  - E.g.: what pages were visited, in what order, time spent on a page, browser used.
- Do not contain response data or other websites visited by respondent.

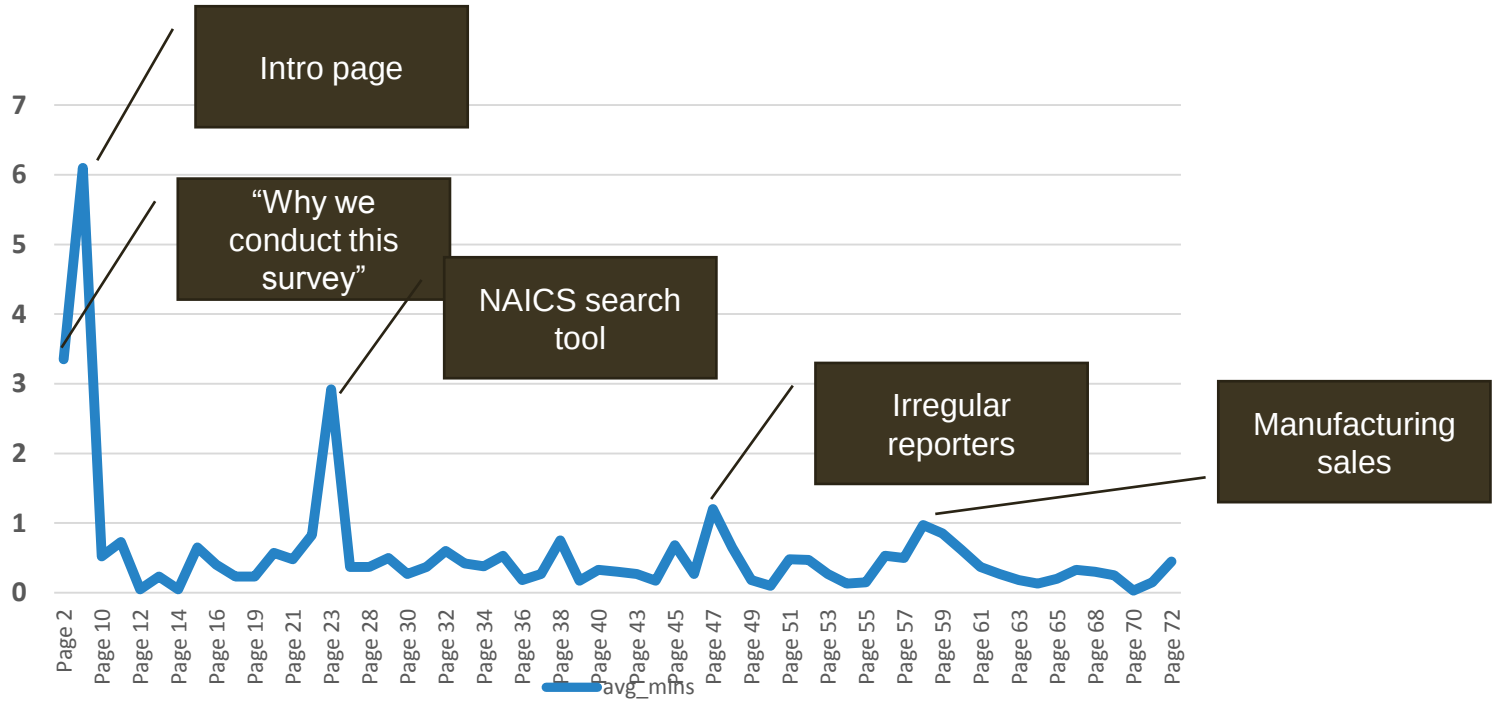
# Monthly Survey of Manufacturing

# Monthly Survey of Manufacturing

- “Mission Critical” Survey
- Collects information on the sale of manufactured goods, inventories, unfilled orders and production capacity.
- Monthly sample = 5,800
- Target response rate = 95%

# Time per page (mins)

- Overall EQ average = 14.26 mins.



# Help Pages

- 50 of 5400 (0.9%) cases accessed at least one help page.
- Pages that generated the most help page requests:

| Help Page | Number of Hits | % of Total |
|---|---|---|
| Page 62 - Production capacity | 26 | 34.2 |
| Page 58 - Report manufacturing sales | 14 | 18.4 |
| Page 59- Report book value of inventories | 9 | 11.8 |
| Page 19 - Confirm main business activity | 7 | 9.2 |
| Page 60 - Report value of unfilled orders | 7 | 9.2 |

# Edits

- Irregular reporters change answer >50% of the time.
- Edits on sales/inventory changed less frequently.

| Page Triggering Edit | Responses Received | Respondent - EQ Edit Did Not Trigger | Respondent - EQ Edit Triggered, Corrected | Respondent - EQ Edit Triggered, Not Corrected | Total Edits Triggered | Help Page? |
|---|---|---|---|---|---|---|
| **Page 45 - Reporting date wrong for irregular reporters** | 4,519 | 2,605 | 204 | 246 | 450 | No |
| **Page 58 - Sales value changed significantly** | 4,519 | 2,628 | 33 | 394 | 427 | Yes |
| **Page 58 - Total sales value changed significantly** | 4,519 | 2,648 | 45 | 362 | 407 | Yes |
| **Page 59 - Total value inventory changed significantly** | 4,519 | 2,116 | 53 | 223 | 276 | Yes |

# Respondents switching between collection modes

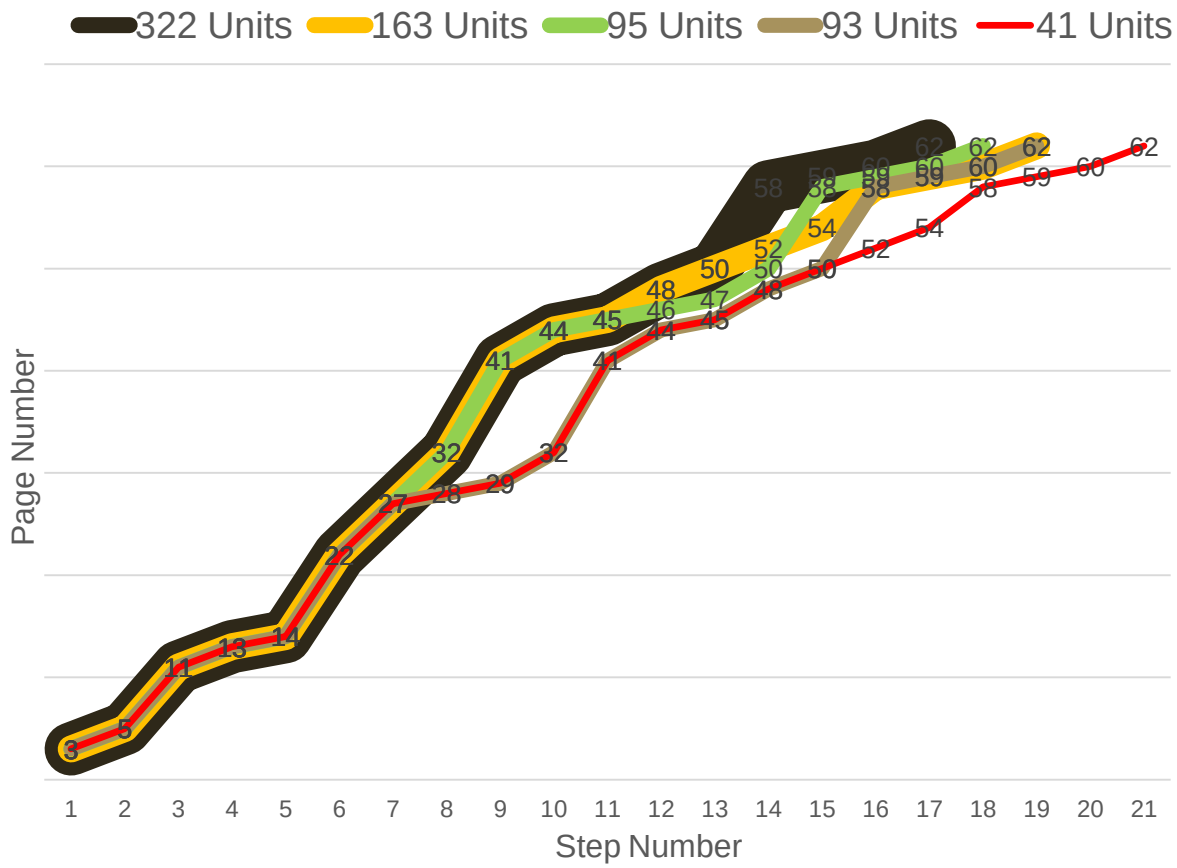
| | | Initial Collection Mode Sent | | | | | |
|---|---|---|---|---|---|---|---|
| | | Web | | Mail/Fax | | Telephone | |
| | | Units | % | Units | % | Units | % |
| Mode Received | Total | 4,213 | 100.0% | 17 | 100.0% | 644 | 100.0% |
| | Web | 2,950 | 70.0% | 0 | 0.0% | 6 | 0.9% |
| | Mail/Fax | 14 | 0.3% | 3 | 17.6% | 2 | 0.3% |
| | Telephone | 1,222 | 29.0% | 13 | 76.5% | 635 | 98.6% |
| | Non-response | 27 | 0.6% | 1 | 5.9% | 1 | 0.2% |

# Conclusions

- Time per page:
  - Production capacity questions not significantly more burdensome than other questions.
- Help pages:
  - Limited use of help pages: monthly respondents more used to the survey?
  - Consider adding a help page for irregular reporting period cases.
- Edits
  - Consider loosening the edit boundaries for key questions.

# Other uses of paradata at Statistics Canada

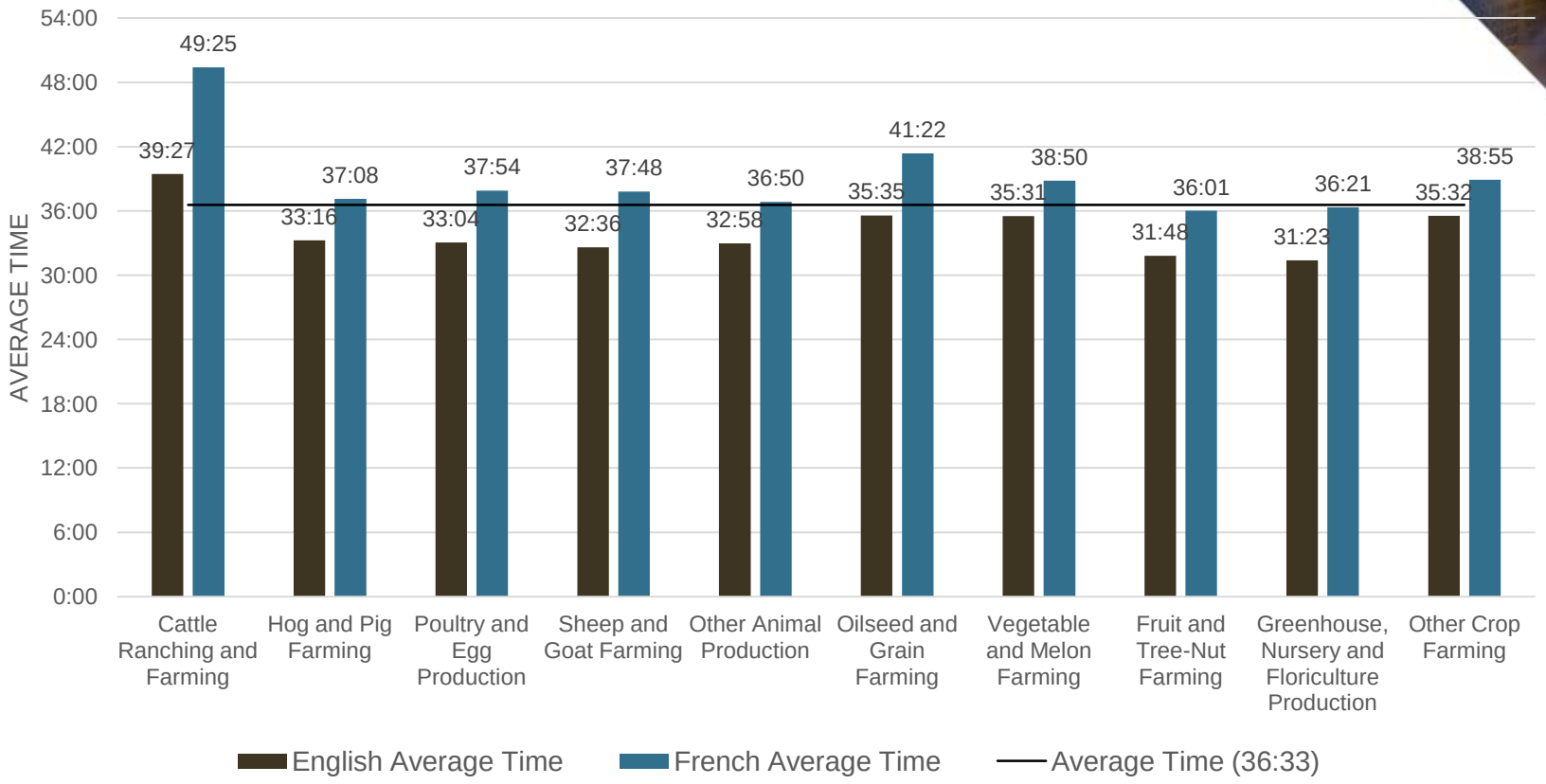
# Most Frequent Flow Patterns






Source: Jessica Andrews, Statistics Canada

# Time per Questionnaire (REQ) by Farm Type and Response Language



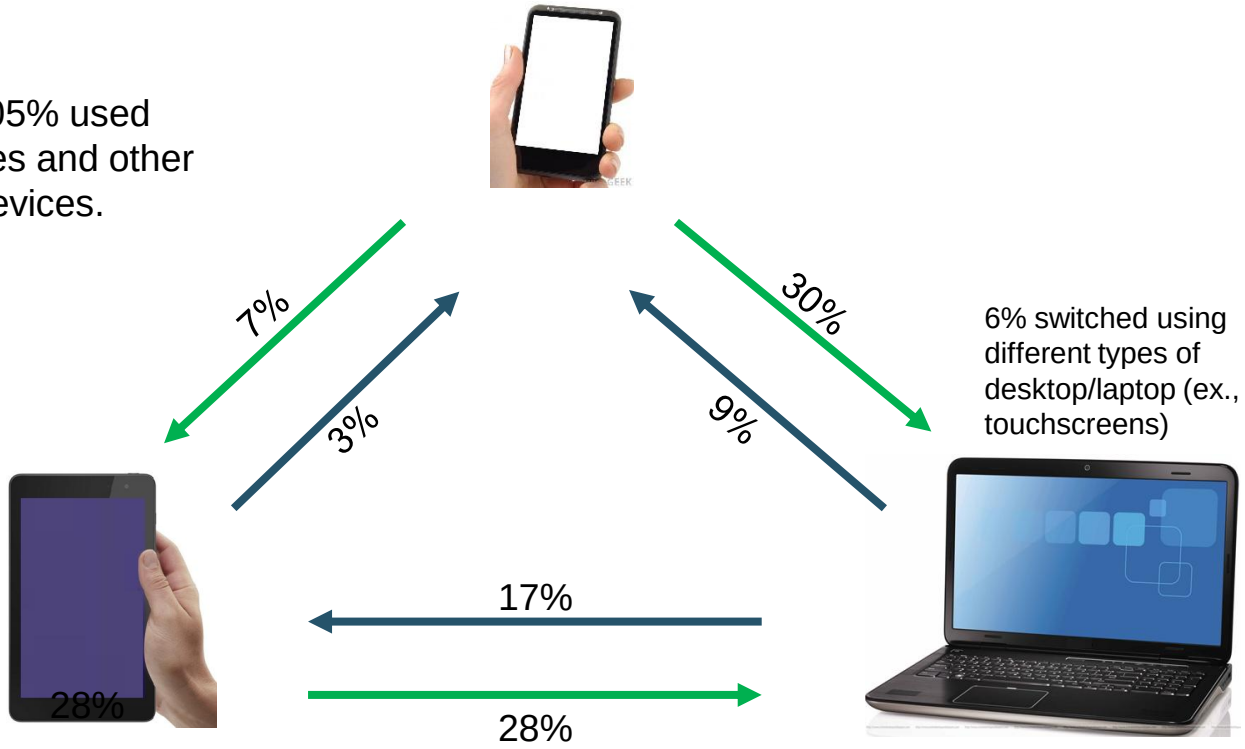



Source: Jessica Andrews, Statistics Canada

# Switching Devices: Long Form Census = 1.51%

- People were more likely to switch from a smaller device to a larger device.

*Less than 0.05% used gaming devices and other unidentified devices.

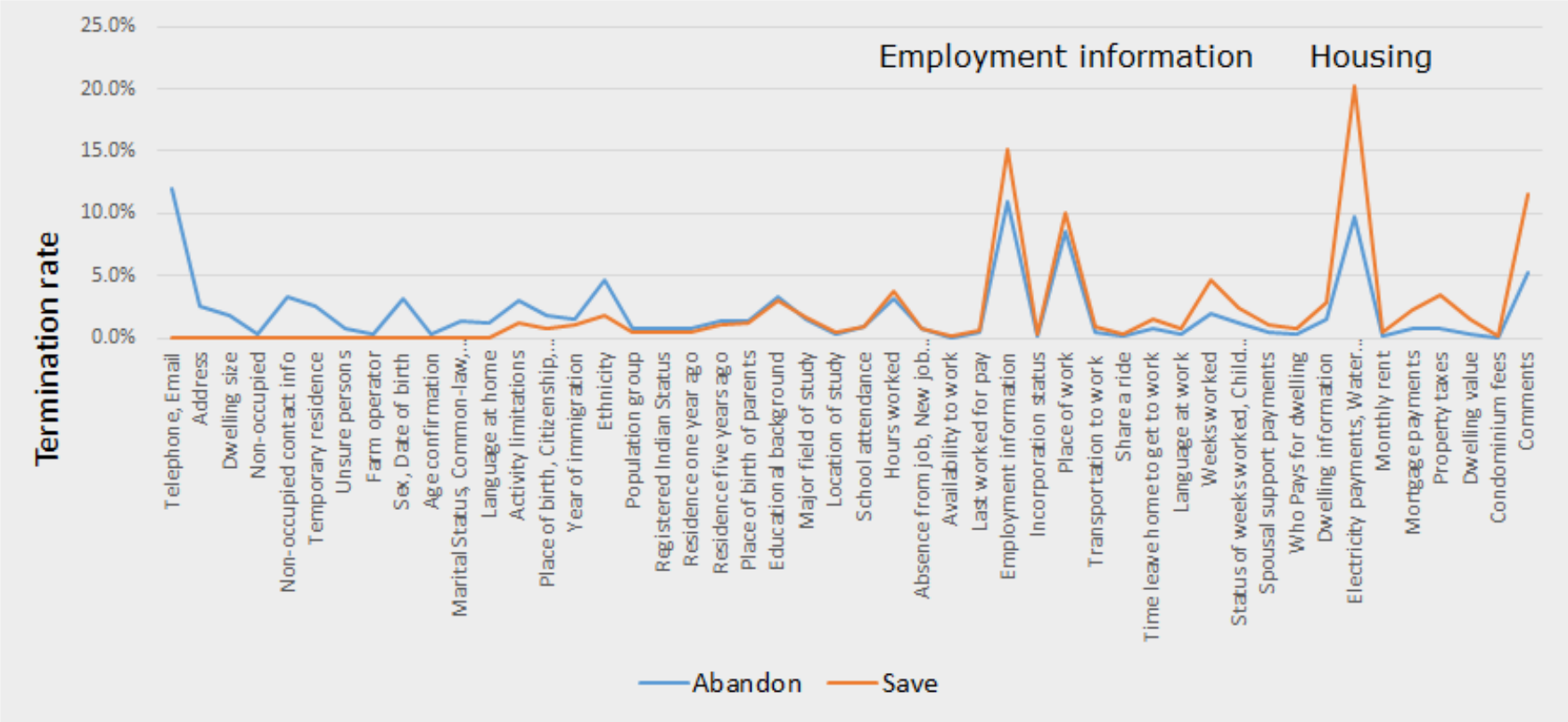





Source: Anthony Bremner, Statistics Canada

# Pages where respondents abandoned or saved (Long-form)

- People most often abandoned or saved the questionnaire when asked about Employment or Housing (bills).




Source: Anthony Bremner, Statistics Canada

# New directions for paradata use at Statistics Canada

# Improving Collection Strategies

Optimizing reminders:

- Does day of week or time of day matter for reminder?
- What is optimal number of reminders?
- What is optimal time between reminders?

# Predicting response to surveys using web logs and call history

- Aim is to build a model that can be used to predict if a respondent will reply by a certain point in collection
- Plan would be to move survey units who were predicted to respond lower on the list of prioritization for follow up calls

# Question

- What has been your experience using web questionnaire paradata?
- What new directions are you exploring that we can learn from?

# THANK YOU!

Réjean Doiron
Assistant Director, Collection Planning and Research Division
Statistics Canada
rejean.doiron@canada.ca

**For more information, please visit**
**www.statcan.gc.ca**

**#StatCan100**

# Subject matter edits in online forms:
## Problem definition, exploration, development and alternatives


by Tanya Price

tanya.price@abs.gov.au


Australian Bureau of Statistics

Informing Australia's important decisions

# ABS experience

- Error messages with intent
  - Respondents to self-edit
  - Reduce unnecessary editing work
- Character and some logic edits
- Few on subject matter
  - More on the way
- Are in-form edits at the question the answer?
- Alternatives

How to use this form

About this survey

Contact details

Preview of survey questions

Survey instructions and question help

Definitions

General information (Questions 1 - 2)

Electricity generation (Questions 3 - 8)

Energy consumption and expenditure (Questions 9 - 17)

Energy comments (Question 18)

Water consumption and expenditure (Questions 19 - 24)

Self-sourced water (Questions 25 - 28)

Water usage

# General information

## 1 Period covered by the data reported on this form

***Note***

- This form is for the financial year ended 30 June 2018.
- If this business/organisation has a different financial year, please report for a 12 month period which ends between 1 October 2017 and 30 September 2018 (e.g. a financial year ending 31 December 2017).

- ○ 1 July 2017 - 30 June 2018
- ○ 1 January 2017 - 31 December 2017
- ◉ Other

Please specify the period covered by the data reported on this form

From Day / Month / Year

Please report a complete date

To Day / Month / Year

Please report a complete date

If the period covered by this form is not 12 months, please explain below

**14 Did this business receive income from directly exporting any goods and/or services during the year ended 30 June 2017?**

| *Including* | *Excluding* |
| --- | --- |
| • Goods and/or services that were exported **directly** by this business, or by this business's agent | • Income received from:<br>- overseas visitors<br>- goods and/or services exported **indirectly** (i.e. through other businesses) |

| | | Select all that apply |
| --- | --- | --- |
| (a) | Income from **directly** exporting goods | ☐ |
| (b) | Income from **directly** exporting services | ☐ |
| (c) | **No** income received from exports | ☐ |

◄ Previous  Next ►

# Design guidelines

- Problem definition critical to implementation
- Statistical problems, workload, light cost benefit analysis
- Conditions for triggering edits
- Defined in respondent terms
- How to fix
- Not an IT user error message
- Specification is part of design and may lead to finding better solutions than edits

# Unexpected patterns

- Common patterns in response
- But, some businesses do things differently
- Soft edits to point to “unusual”
- For respondents, soft edits can look like hard edits
- Do they change data even though it is correct?
- Are in-form edits the best way to manage this?
- Requests for comment in forms?

# Hard edits for item non-response

- If high non-response on questions
- Temptation to put a hard edit “Mandatory question”
- Puts a barrier to initial form review
- Intent to improve response of non-responding few
- Impacts the responding many
- Dummy data produces unintended consequences?
- Is it worth it?

# Energy, Water and Environment Survey 2017-18



How to use this form
About this survey
Contact details
Preview of survey questions
Survey instructions and question help
Definitions
General information (Questions 1 - 2)
Electricity generation (Questions 3 - 8)
Energy consumption and expenditure (Questions 9 - 17)
Energy comments (Question 18)
Water consumption and expenditure (Questions 19 - 24)
Self-sourced water (Questions 25 - 28)
Water usage (Questions 29 - 31)

## Preview of survey questions

The Energy, Water and Environment Survey has a variety of questions. Before providing your answers in this secure online form, you can choose to preview the survey questions using our helpful PDF copy.

The PDF copy can be shared with others in your organisation to help gather answers to the survey questions. It can also be used to draft answers to enter directly into the online survey form later.

This PDF copy can be saved to your computer and/or printed. To access this page later use the 'Preview of survey questions' link on the left hand side navigation bar.

Preview a PDF of survey questions

This preview copy is for your assistance only and the ABS cannot accept survey responses submitted in a preview format.

**Background information for the water section of this survey**

The data you are providing in the water section of this survey is used to compile the *Water Account, Australia*. The focus of the *Water Account, Australia* is to represent the interactions between users of water within the economy and the environment. It compiles information from a range of sources, including this survey, into a series of tables that show the flow of water through the economy in both physical and monetary measures. The information presented in the *Water Account, Australia* informs water and environment government policy making.

View Survey Guide

# Economic Activity Survey 2016-17



How to use this form
About this survey
Contact details
Preview of survey questions
Survey instructions and question help
General information (Questions 1 - 2)
Employment (Question 3)
Income items (Questions 4 - 12)
Expense items (Questions 13 - 24)

## Form reconciliation

Please check that all figures have been correctly reported in the summary below. For dollar values please ensure they are reported in thousands of dollars ($'000), **not** whole dollars. Please follow the links to amend the values as necessary.

| | | | |
|---|---|---|---|
| Total number of persons working for this business/organisation | | | |
| Total income | | $ | ,000 |
| Total expenses | | $ | ,000 |
| Profit or loss before tax | | $ | ,000 |
| Total inventories | Opening | $ | ,000 |
| | Closing | $ | ,000 |
| Total capital expenditure and disposal of assets | Additions | $ | ,000 |
| | Disposals | $ | ,000 |

◄ Previous

Next ►

# Testing is tough

- Errors rarely occur naturally
- Hypothetical scenarios unrealistic

- Hard edits and soft edits
- If in test form, slow and complicated cognitive walk throughs
- Particularly hard for questions that respondents are reluctant to estimate on

# Edit use

- Does your organisation use in-form edits on question subject matter?
- How intensive are those edits? Selective or prolific?
- How much are hard edits used **on subject matter**?
- What have been the consequences for data quality and editing workload?
- How did you identify consequences (or, non-consequences)?
- Have there been any unintended positive or negative consequences of using subject matter edits?

# Hard edits in cognitive testing

- If a form needs testing and it has hard edits in it, how do you test it?
- When questions are complex and participants cannot enter in data (nor estimates?)
- How do you test the form and questions, without the hard edits getting in the way?
- How do you test the hard edits to see if they help or hinder response?

# Distributed user testing

- A type of unmoderated testing is to provide online forms to respondents for them to complete as they would normally and to provide feedback on their experience including on in-form edits
- This is helpful for systems testing
- But, test participants do not provide rich descriptions of experience in questionnaires
- **Do you know of any unmoderated testing of this type that has been effective for business surveys?**

# Paradata

- We've done some paradata analysis and we've found that character edits and other simple edits rarely triggered and, when they were triggered, respondents were able change their answers and to continue
- Since we have not implemented more invasive in-form edits, we do not have paradata for analysis. We have concerns about the ability of paradata to tell us any more than "edit triggered" and "respondent did or did not change answer."
- **What is your experience with using paradata to define how in-form edits are working in your forms?**

Australian Bureau of Statistics

# Other thoughts?

TALL
SOM FORTELLER

# Designing an instrument for collecting data from political organisations

**FIFTH INTERNATIONAL WORKSHOP ON BUSINESS DATA COLLECTION METHODOLOGY**

LISBON SEPTEMBER 2018

Statistisk sentralbyrå
Statistics Norway

# Agenda

Single question design vs. matrix design

Validations and controls

Prefill

Summary

# From single questions to a matrix format

## Before (2015):

**7** **Hadde partileddet kapitalinntekter i rapporteringsperioden?**

- For eksempel renter som er tekne imot for innskott i bank, utbyte frå aksjar og fondsplasseringar, gevinst ved sal av aksjar og fond.
- Ta ikkje med urealiserte inntekter. For meir informasjon om urealiserte inntekter, klikk på ?
- Tap ved sal av aksjar og fondsplasseringar skal førast som finanskostnad i spørsmål 33

○ Ja
○ Nei

**8** **Hadde partileddet inntekter frå sal av varer/tenester, utleige av eigedom eller anna forretningsverksemd i rapporteringsperioden?**

Rekn med alle inntekter. Kostnader eller tap skal du/de ikkje trekkje frå.

○ Ja
○ Nei

## After:

**Inntekter fra egen virksomhet**

| | | |
|---|---|---|
| 6 | Medlemskontingenter direkte innbetalt til partileddet | |
| 7 | Inntekter fra lotterier, innsamlingsaksjoner og lignende | |
| 8 | Kapitalinntekter (urealiserte inntekter tas ikke med) | |
| 9 | Inntekter fra forretningsvirksomhet | |
| 10 | Andre inntekter fra egen virksomhet | |

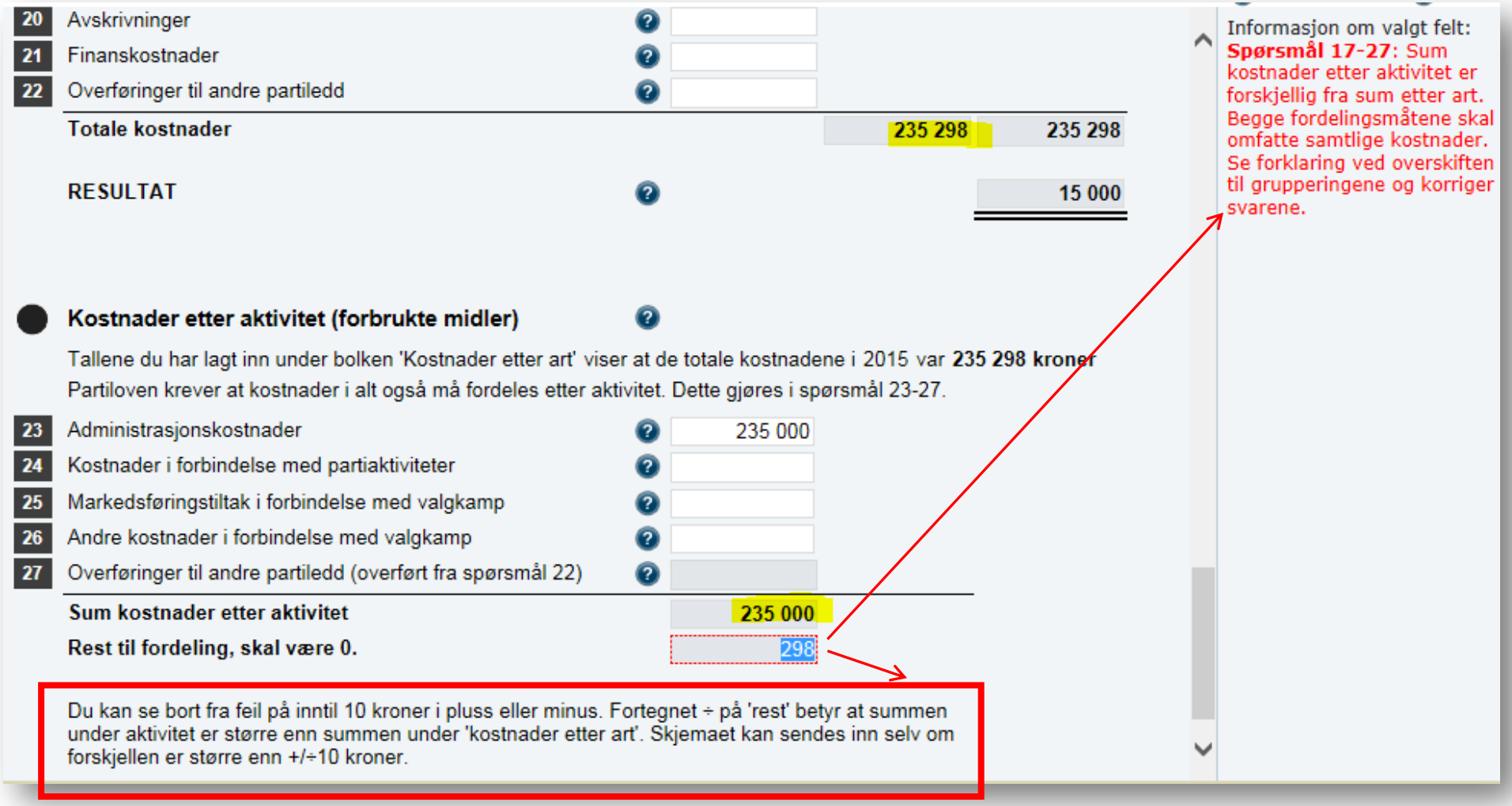
**Bidrag**

| | | |
|---|---|---|
| 11 | Fra privatpersoner | |
| | 11 a: Pengegaver, inkludert testamentariske | |
| | 11 b: Gaver og/eller ytelser i en annen form enn penger (dugnad tas ikke med) | |
| 12 | Fra kommersielle foretak (bedrifter) | |
| | 12 a: Pengegaver | |
| | 12 b: Gaver og/eller ytelser i en annen form enn penger | |
| 13 | Fra organisasjoner i arbeidslivet | |
| | 13 a: Pengegaver | |
| | 13 b: Gaver og/eller ytelser i en annen form enn penger | |

- Far less text (more hidden help text)
- Risk of item nonresponse (?)
- Better overview

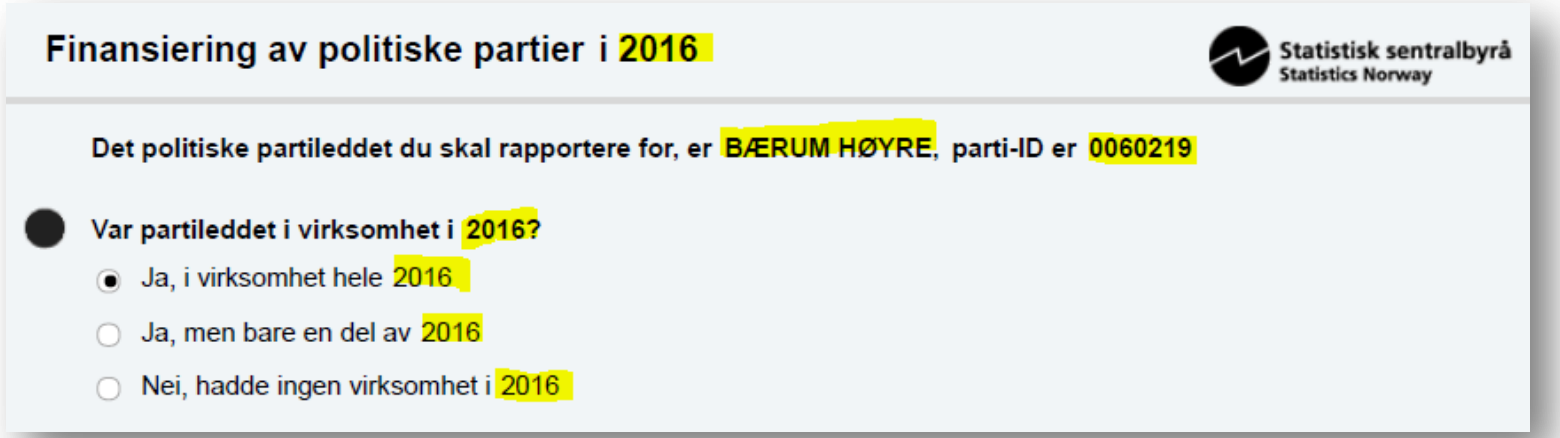
# Validations and controls

Made easier since most amounts are present on the same page



# Prefill

- Year and dates
- Name and ID
- Government subsidy amount
- Reported contributions (election years)



Finansiering av politiske partier i 2016

Statistisk sentralbyrå
Statistics Norway

Det politiske partileddet du skal rapportere for, er BÆRUM HØYRE, parti-ID er 0060219

Var partileddet i virksomhet i 2016?

- (•) Ja, i virksomhet hele 2016
- ( ) Ja, men bare en del av 2016
- ( ) Nei, hadde ingen virksomhet i 2016

Resultatregnskap 2016

Inntekter (anskaffede midler)

| | | |
|---|---|---|
| | **Offentlig støtte** | **17 958** |
| 3 | Statlig grunn- og stemmestøtte (I hht. utbetalende etat er beløpet 376 415 kroner. Hvis dette er feil, kan det overskrives i svarfeltet.) | 17 958 |
| 4 | Kommunal/fylkeskommunal partistøtte | |
| 5 | Annen offentlig støtte | |

# Summing up

- The main amounts and sums
- Indicates which questions to go back to if correction is needed

→ Helps the respondent to check her answers before the questionnaire is signed and sent in

**Det er rapportert følgende inntekter, kostnader og balansetall:**

| Inntektspost | Kr | Sum | Hvis feil, korriger svar i spørsmål nr. |
|---|---|---|---|
| a) Offentlig støtte | 17 958 | | 3, 4, 5 |
| b) Inntekt fra egen virksomhet | 17 957 | | 6, 7, 8, 9, 10 |
| c) Overføringer fra andre partiledd | 6 668 | | 16 |
| d) Bidrag fra privatpersoner | 159 836 | | 11a, 11b |
| e) Bidrag fra kommersielle foretak, ulike organisasjoner og andre, inkl. ev. lovstridige | 54 359 | | 12a - 15b, ev. 2 |
| **Sum inntekter** | **256 778** | 256 778 | |

| Kostnader etter art | | | |
|---|---|---|---|
| Lønnskostnader | 26 461 | | 17 |
| Andre driftskostnader | 256 859 | | 18, 18b, 19, 19b, 20 |
| Finanskostnader | 12 | | 21 |
| Overføringer til andre partiledd | 29 093 | | 22 |
| **Sum kostnader etter art inkl. overføring til andre** | **312 425** | 312 425 | |
| **Resultat** | | -55 647 | |

| Kostnader etter aktivitet | | | |
|---|---|---|---|
| Administrasjonskostnader | 51 335 | | 23 |
| Kostnader i forbindelse med partiaktiviteter | 14 399 | | 24 |
| Kostnader knyttet til valgkamp | 217 598 | | 25, 26 |
| Overføringer til andre partiledd | 29 093 | | 22 |
| **Sum kostnader etter aktivitet inkl. overføring til andre partiledd** | **312 425** | | |

| Balanse | 31.12.2016 (regnskapsperiodens slutt) | 31.12.2015 (regnskapsperiodens start) | |
|---|---|---|---|
| Omløpsmidler | 27 835 | 39 653 | 28 |
| Anleggsmidler | 19 023 | 10 614 | 29 |
| **Sum eiendeler** | **46 858** | **50 267** | |

# For discussion

- Pros and cons – single question design versus matrix design
  - When do we use what design (are there any rules of thumb or guidelines)?
  - What do we need to consider when we use..

    … a single question design?

    … a matrix design?

TALL SOM FORTELLER

# Takk!

ssb.no

Statistisk sentralbyrå
Statistics Norway

Statistical Office of the Republic of Serbia

# COMBINIG DATA FROM ADMINISTRATIVE AND STATISTICAL SOURCES IN PRODUCING LABOUR MARKET STATISTICS

Ljiljana Gavrić
Data Integration division

Lisbon, September 2018th

# Surveys on employees and their salaries and wages

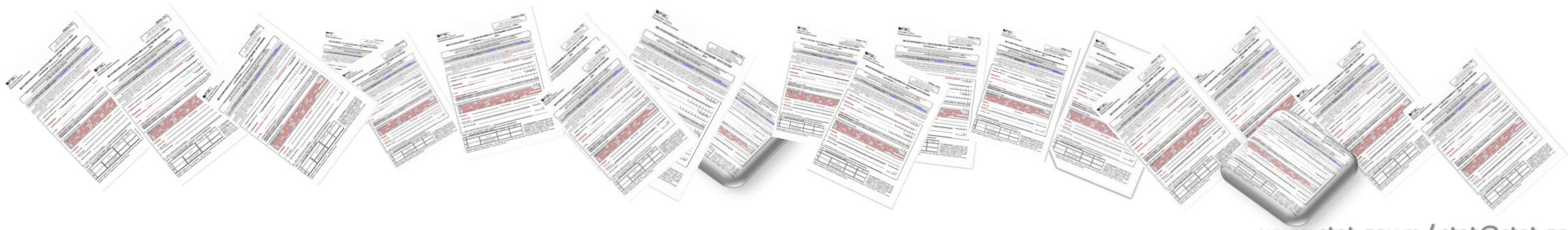
- **The Monthly survey** on employees and their salaries and wages (**RAD1**) has been carried out for decades on a purposive sample of legal entities (enterprises, institutions, cooperatives and other organisations), as well as their local units.

*The data collected at the level of observation units, were aggregated data on the total number of employees and the total mass of paid wages. The sample provided a data representativeness on municipality level (municipality of work)*

- **The Semi-annual survey** on employees and their salaries and wages (RAD1/P), carried out on enlarged sample. This survey provided the data on the level of education and gender.

Surveys, supplementing the semi-annual survey :

- (ARAD1/P) Sami-annual survey on the number of employees in small legal entities;
- (RAD15) Semi-annual survey on entrepreneurs and their employees;



# Surveys on employees and their salaries and wages

## The calculation of average wages:

- average wages and salaries were calculated by dividing the payroll paid during the reporting month (regardless of the month in which they were realized) by the number of employees from the human resources records at the end of the reporting month
- Sample did not include

- wages of employees in the Ministry of the Interior and the Ministry of Defence,
- salaries of employees under temporary employment contracts

## Formal employment statistics:

- employees - the persons who had a formal employment contracts with an employer for a fixed or indefinite time.

***Collection of monthly and semi-annual data :***

- ***response burden on Serbian businesses;***
- ***engagement of a significant number of employees in SORS;***
- ***substantial financial resources;***

# Registered employment

Since 2015. - Administrative data of Central Register of Compulsory Social Insurance (**CROSO**) became source for calculated registered employment

**Benefits:**

- better coverage of employees,
- including new the modalities of employment (temporary and occasional employment" and farmers)
- employees by categories in The Public Sector

**Shortcomings of CRCSI source**: (two important information are not available )

- municipality of working place
- NACE activity code.

# Registered employment - Combining data CROSO and SBR

Solution is in combining data from the **CROSO** and Statistical Business Register (**SBR**).

**SBR** creates two consultation databases every month .

- The first comprises of **all active enterprises**; this database is matched with the CROSO database.

Employees from CROSO, belonging to these matched enterprises, represents the base population for calculation.

- The second consultation database is a set of **all local units,** where the number of employees are segmented by activities.

***Structure file*** *is created based on this consultation database of local units .*

*Finally, that structure file is applied to the number of the employees from CROSO at the level of enterprise, in order to get the number the employees from CROSO broken down by municipalities and NACE activities*

# Registered employment - Combining data CROSO and SBR

1. Survey data from SBR → 2.Preparing the data for making the final structure for distribution → Structure of the employees → **4. Final number of employees by L-KAU level**

| ID of enterprise 99999999 | Predominant activity (NACE rev.2) 10.81 | Municipality | Nace Activity Rev.2 | Empl. Long T. | Empl. T.O | Municipality | Nace Activity Rev.2 | Empl. Long T. | Empl. T.O | Empl. Long T. % | Empl. T.O % | Empl. long-term | Empl. T.O |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 70033 | 10.81 | 500 | 10 | 70033 | 10.81 | 700 | 10 | 55.1 | 25.0 | 772 | 30 |
| | | 70033 | 10.81 | 200 | 0 | | | | | | | | |
| | | 70033 | 10.82 | 300 | 0 | 70033 | 10.82 | 300 | 0 | 23.6 | 0 | 331 | 0 |
| | | 70181 | 10.03 | 70 | 0 | 70181 | 10.03 | 70 | 0 | 5.5 | 0 | 77 | 0 |
| | | 70483 | 10.81 | 100 | 30 | 70483 | 10.81 | 100 | 30 | 7.9 | 75.0 | 110 | 90 |
| | | 70085 | 46.36 | 100 | 0 | 70085 | 10.81 | 100 | 0 | 7.9 | 0 | 110 | 0 |
| | | | | 1270 | 40 | | | | | 100 % | 100 % | 1400 | 120 |

**Total number** of employees in the enterprise from **SBR**

**Total number** of employees in the enterprise from **CROSO**

# Calculation of average salaries and wages

From **January 2018**, the SORS has started using the **Tax Administration** (**TA**) to calculate *average wages and salaries.*

*average wages and salaries*:

- payments to employees to which the corresponding taxes and social security contributions are paid;
- covers all the earnings for which an employer has submitted a tax form;

Number of **employees** for calculated average earnings are calculated for **the full-time equivalent**

Each employee is assigned a coefficient (between 0-1.5), and there is no multiplication if the employee works for several employers. The earnings are calculated for the NACE activity and in ownership type in which it had been realized.

**TA** data **lack** important **information** needed for earnings statistics:

NACE activities of the local unit (LKAU), municipality of working place, educational level etc.

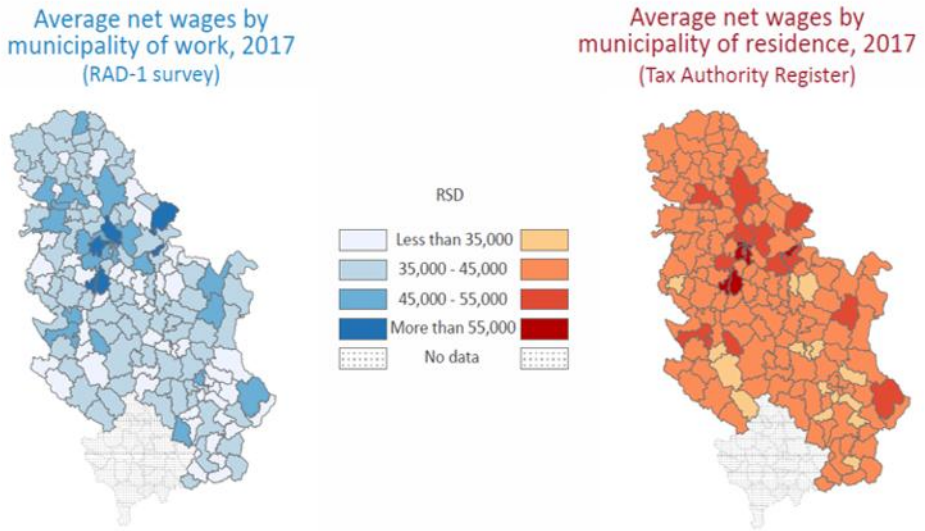
**New annual survey** on employees and their salaries and wages **RAD-1/G** aiming to obtain**:**

- average salary due to NACE activities and educational level,
- data needed for distribution of earnings and employees by units of observation, by the NACE activities.

# Average salaries and wages - Major differences (comparison between RAD-1 and TA) :

| Till 2018 | From 2018 |
|---|---|
| included wages paid **during the reporting month** (regardless of the month in which they were realized) | included all calculated wages **for the reporting month** |
| average wages was available at the level of the **municipality of work** of employees. | average wages by municipalities relates to the **municipality of residence** of employees. |
| payroll paid was divided by the number of **employees from the human resources records (**regardless of being remunerated**)** | payroll paid now is divided by the number of **employees calculated for the full-time equivalent** |
| average monthly wages reports were vailable **25 days after** the end of the reference month. | average wages will be available **55 days after** expiration of the reference month |
| ⊖ | include wages of employees in **the Ministry of the Interior and the Ministry of Defence** |
| ⊖ | include salaries of employees **under temporary and ocasionaly employment contracts** |
| ⊖ | **new statistical indicators**:<br>median wage, wage distribution, gender pay gap, average earnings by age, average earnings in public sector, etc. |

# Major difference comparison between TA and RAD-1:




The largest change in the values of average wages, due to changes in data source and methodology, was noted in the following municipalities:

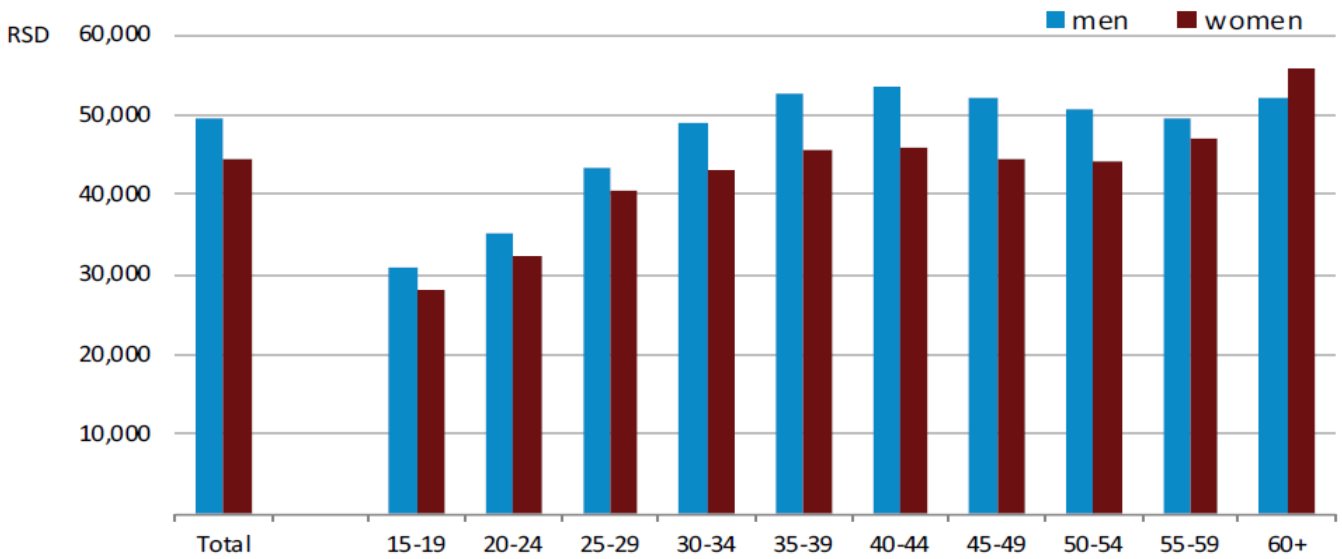
| Surčin | Trgovište | Ub | Crveni Krst - Niš | Pećinci | Ljig |
|---|---|---|---|---|---|
| 83,797 | 25,309 | 32,573 | 49,417 | 52,990 | 32,543 |
| 41,481 | 38,225 | 43,476 | 37,875 | 41,460 | 43,048 |

Average net wages – comparison between TA and RAD-1 data, 2017

| | Average net wages | | |
|---|---|---|---|
| | TA (RSD) | RAD-1 (RSD) | TA/RAD-1 (%) |
| **2017** | **46,600** | **47,893** | **-2.7** |
| January | 46,667 | 41,508 | 12.4 |
| February | 45,116 | 46,990 | -4.0 |
| March | 47,789 | 47,814 | -0.1 |
| April | 46,036 | 49,635 | -7.3 |
| May | 47,147 | 47,136 | 0.0 |
| June | 46,540 | 49,238 | -5.5 |
| July | 45,614 | 48,101 | -5.2 |
| August | 46,618 | 47,220 | -1.3 |
| September | 45,435 | 48,212 | -5.8 |
| October | 46,208 | 46,879 | -1.4 |
| November | 47,247 | 47,575 | -0.7 |
| December | 48,743 | 54,344 | -10.3 |

# Gender Pay Gap

## Average net wages by age and sex, November 2017



[ Average hourly net pay for men **281.7 RSD** — Average hourly net pay for women **252.4 RSD** ] ÷ Average hourly net pay for men **281.7 RSD** x 100 = Gender Pay Gap **10.4%**

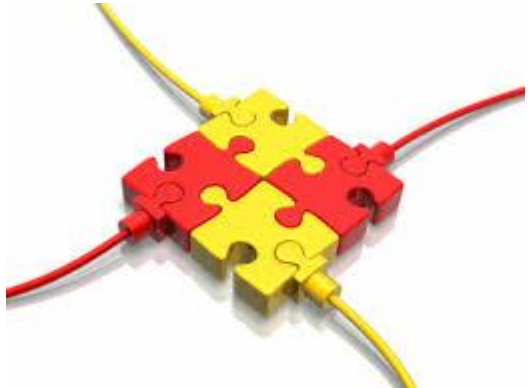
# Future plans

Establish the Activity Register.

This Register would be a link between the Business Registers and the Statistical Population Register.

The main types of activity registers are job registers.

*The personal information on an employed person (gender, age, place of residence, education etc.) as well as the basic information of an establishment (industry, location etc.) will be a part of the job register that would greatly facilitate the work of the labour market statistic producers.*



# THE END

# Extending the Use of Administrative Data in the Production of Business Statistics

# Content

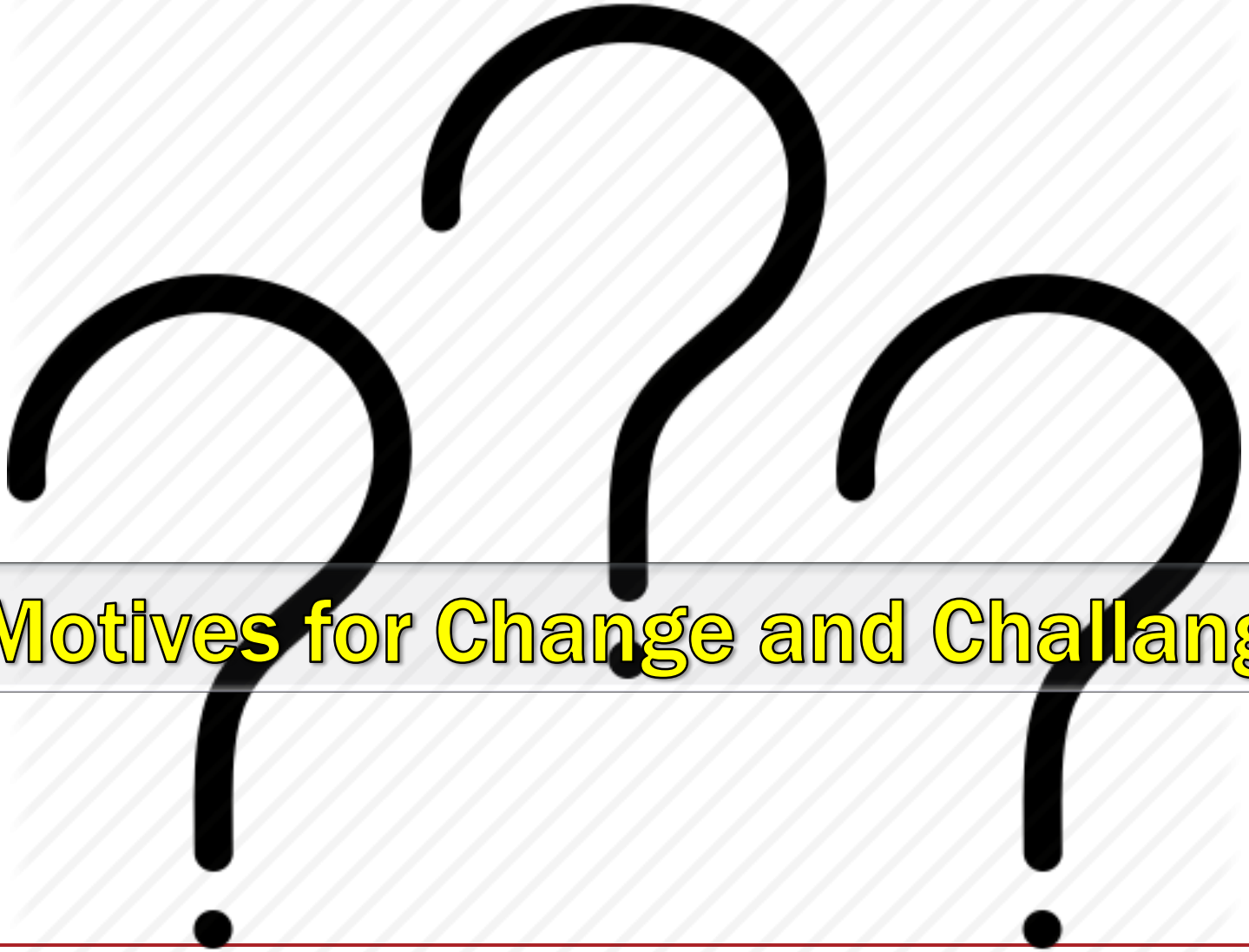
I Motives for Change and Challenges

II Integrated Administrative Sources

III Management of the Integration

IV Redesign of Business Statistics

V Conclusions and Discussion



# I. Motives for Change and Challanges

# Reasons for Need for Change

- Response burden
- Difficulties in direct collection from respondents
- Increasing costs
- Developments in technology
- Constantly growing data size and increasing demand for data
- Difficulties in measuring economy through primary data sources
- Measurement errors
- Good practices in other national statistical offices

# Challenges of Adapting Big Administrative Data into the Statistical System

- Uncertainty (Technical and Methodological)
- Data Storage
- Lack of Metadata
- New Employee Profile
- Organizational Culture

# II. Integrated Administrative Sources

# Administrative Data Sources Integrated into the System

- Revenue Administration
- Social Security Institution

# Main Data Sources Used in Business Statistics

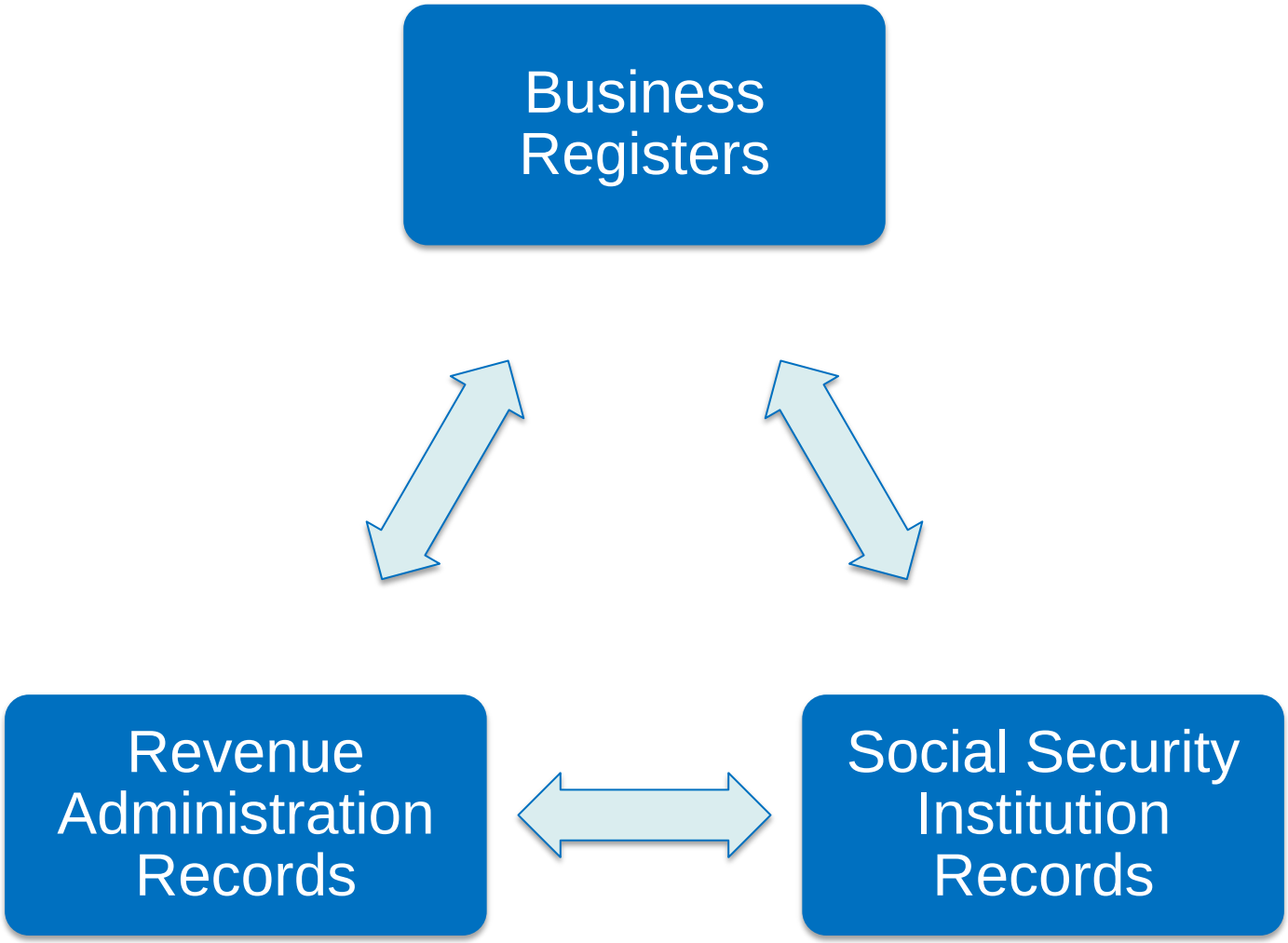
| Period | Tax Records | Social Security Records |
|---|---|---|
| Annual | Corporate and Income Tax Returns and supplements (balance sheets, income statements etc.) | Data on the insurance holders who are working<br>- under service contract<br>- on their own accounts<br>- as civil servants |
| Quarterly | Provisional Tax Return and Supplements | |
| Monthly | VAT, SCT, Withholding Tax Return; Buying and Selling Statements | |

# III. Management of Integration Process of Administrative Sources

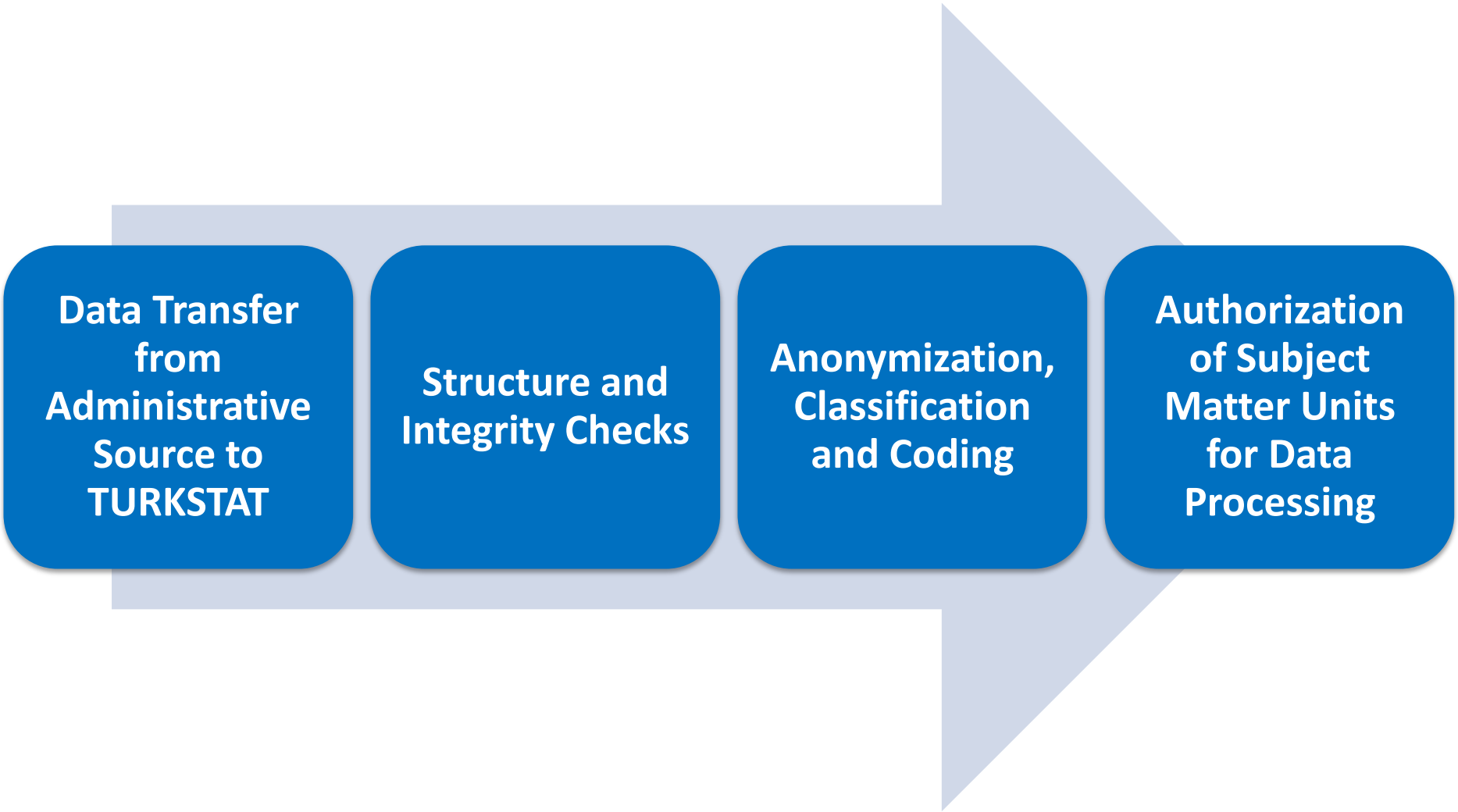
# Adaptation of Staff to New Situation and New Skills Acquired

- Data processing habits changed
- Process of learning and adaptation of new tools started immediately such as
  - Trainings
  - Working together (collaborative works between units)
- Database performance tuning and query optimization became an important issue such as;
  - Working with table views
  - Indexing/partitioning

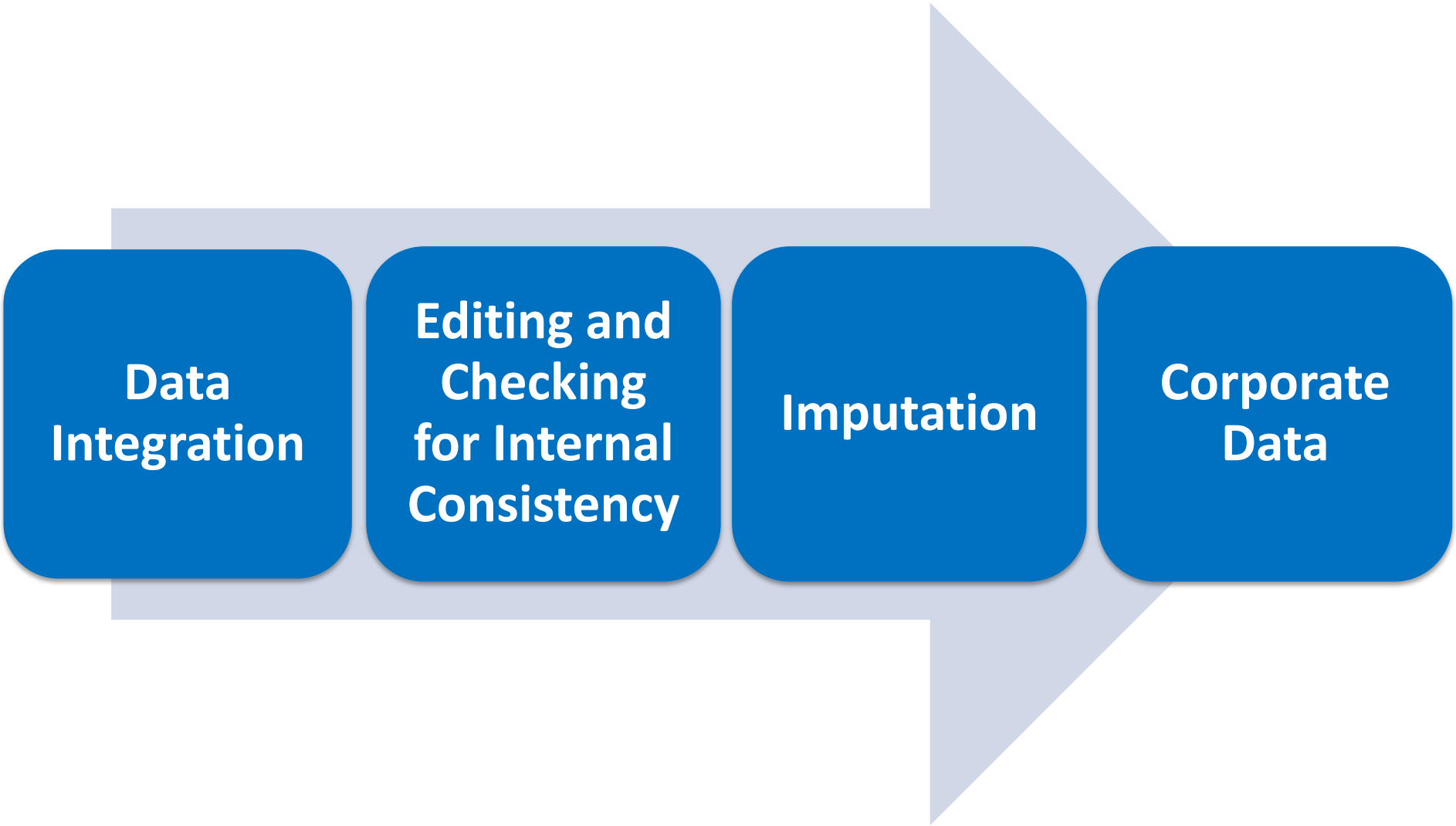
# Link to Business Registers

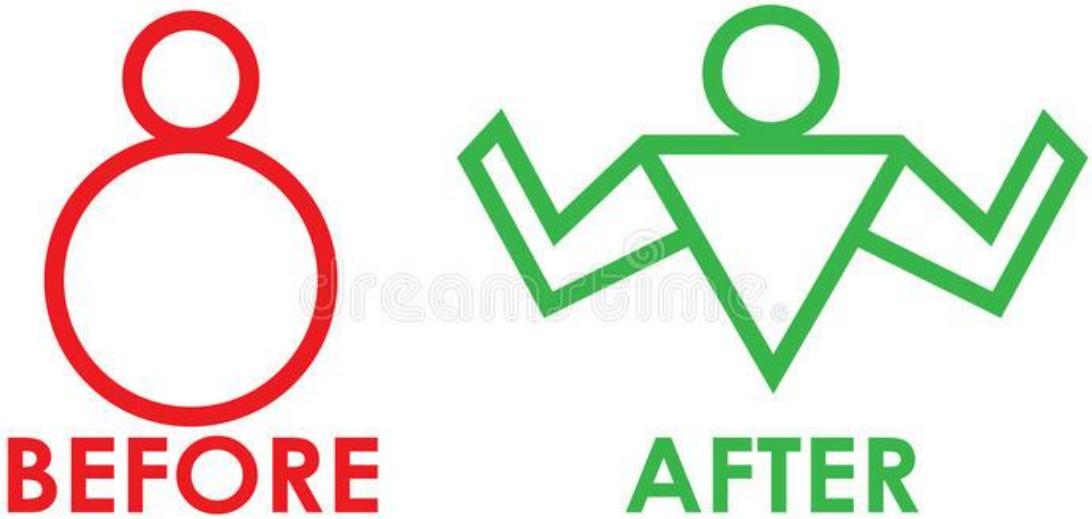


# Acquisition of Administrative Data



# Processing of Administrative Data



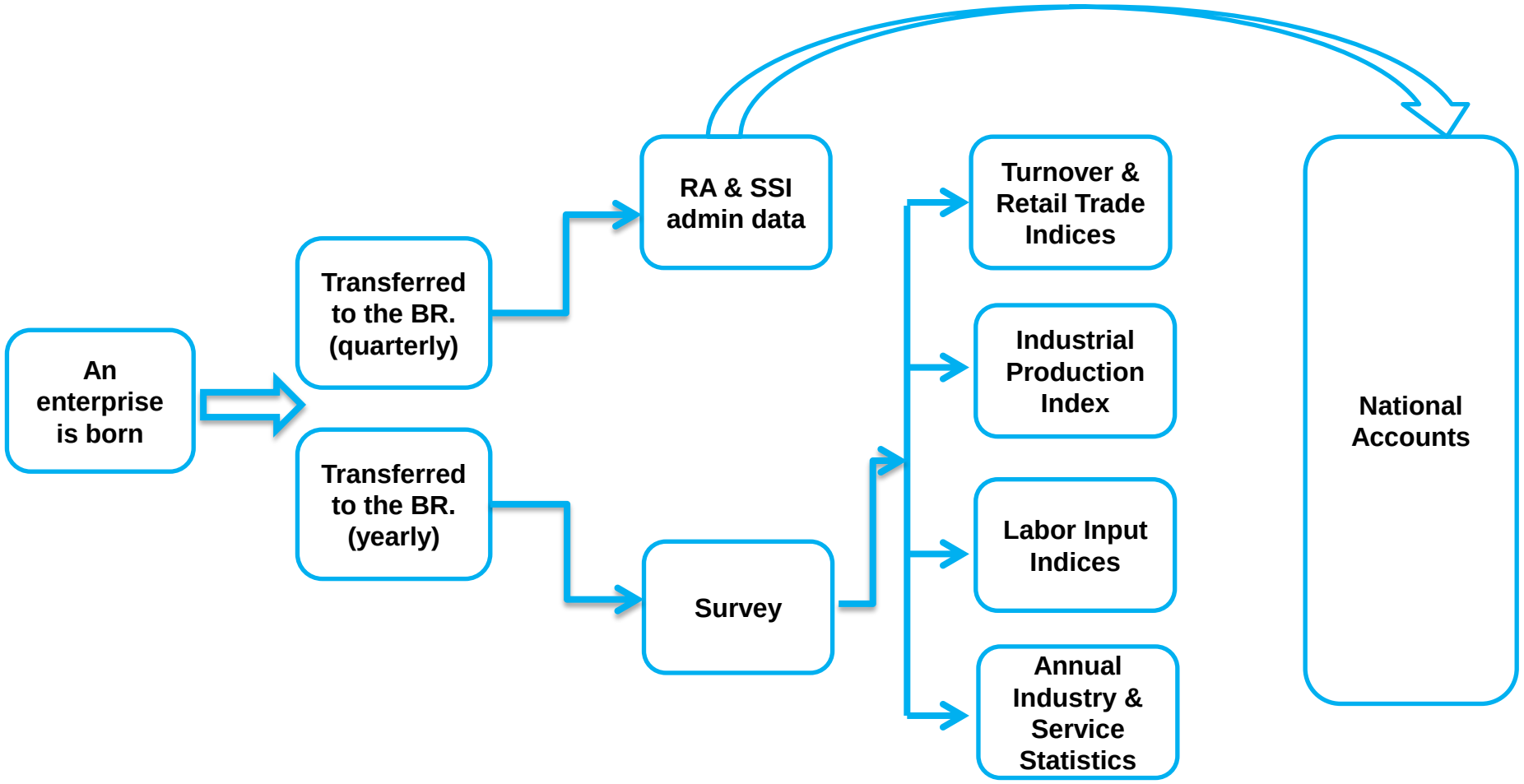



# IV. Redesign of Business Statistics

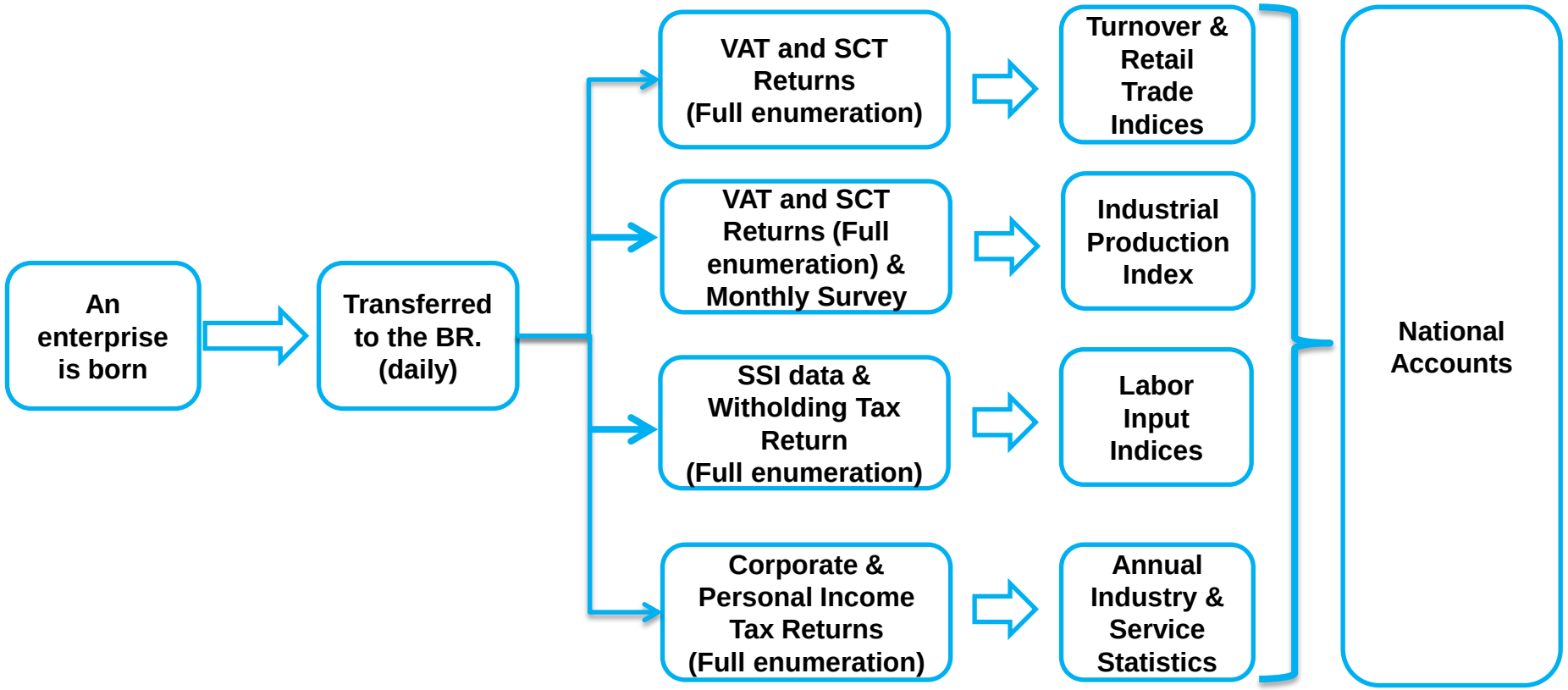
# Domains Affected Most By the Process of Extending the Use of Administrative Data

- Business Registers
- Short-Term Business Statistics
- Annual Business Statistics
- National Accounts

# Before Change in Business Statistics



# After Change in Business Statistics



# V. Conclusions and Discussion

# Use of Administrative Data in Statistical Production Contributes to:

- Reduce cost and reporting burden of businesses
- Improve data quality
- Development of the institutional culture in a positive way
- Improve internal cooperation & coordination between units
- Add new skills and mindset to the staff
- Establish strategic partnerships with admin data holders

# Discussion Questions

I

The existing administrative registers in data provider institutions are established for the purposes other than statistical production. Therefore, some differences occur in data regarding coverage, classifications, reference dates etc. In the meantime, we should continue our efforts to keep a sustainable cooperation with data providers in order to eliminate these issues by improving and upgrading administrative registers and to maintain continuity of data delivery. So what do you recommend about innovative ways to improve/build/sustain sound partnerships with administrative data owners.

II

What can we do more to reduce response burden while increasing (or at least maintaining) the level of data quality?

III

What new business statistics can we produce from administrative sources that we have not produced before?

bilal.kurban@tuik.gov.tr

HELLENIC STATISTICAL AUTHORITY

# INTRODUCTION OF A NEW PRODUCTION SYSTEM FOR THE COMPILATION OF BUSINESS STATISTICS

Vassiliki Benaki

FIFTH INTERNATIONAL WORKSHOP ON BUSINESS DATA COLLECTION METHODOLOGY
STATISTICS PORTUGAL - LISBON 19-21/9/2018

# Introduction of a new production system for the compilation of Business Statistics

Business Statistics are acknowledged as a major component for policy making .

The current economic circumstances create an urgent need for delivering more comprehensive data which in turn increase the response burden of enterprises and the cost of producing such statistics, due to general resources constraints.

# Traditional survey based method for the compilation of Business Statistics

The applied method for the compilation of business statistics in order to collect information for the Short Term BS, country level BS, Regional BS & statistics on International Activities up to 2014 in Greece, was based on large scale sample surveys to enterprises of various economic activities such as manufacturing, construction, trade and services

# Traditional survey based method for the compilation of Business Statistics

The problems encountered for the compilation of Business Statistics were:

- Low response rate impacting the quality of the statistical output in the domain of business statistics
- Delays in the production of statistics
- Burden on the enterprises for providing the relevant data
- Requirements for significant financial and human resources due to the large number of enterprises in the samples

# NEW SYSTEM FOR COMPILING BUSINESS STATISTICS

## Use of Administrative Data for Business Statistics

In the context of improving the quality of business statistics and addressing all the above mentioned issues Hellenic Statistical Authority (ELSTAT) explored the use of alternative sources, besides surveys, for the compilation of business statistics. To this end it was decided the use of administrative - mainly tax - data for the production of the main statistical characteristics of businesses in Greece.

# NEW SYSTEM FOR COMPILING BUSINESS STATISTICS

## WHY ?

to use administrative data

Administrative data are data kept either in public registers and files or other administrative data sources and bodies of the public sector, in printed, electronic or other form.

# Use of Administrative Data for Business Statistics

PROS

- Full coverage of the enterprises' population
- Overall improvement of the statistical output
- Reduction of the enterprises' administrative burden
- Significant reduction of the cost for the production of the statistical results
- Compilation of new statistical indicators in the domain of business statistics in order to meet the growing users' needs

# Use of Administrative Data for Business Statistics

CONS

- Admin data are collected for non-statistical purposes
- Administrative authorities control data collection and processing
- Changes in the regulatory framework may lead to breaks in data series
- Restrictions to access  due to technical and confidentiality issues

# NEW SYSTEM FOR COMPILING BUSINESS STATISTICS

**Strategy**

**to get access to administrative data**

1. Legal and Institutional Framework
2. Analysis of the structure of the administrative data
3. Regulation of ELSTAT for the use of data from administrative sources for the compilation of business statistics
4. Security Policy and development of a secure IT environment

# Legal and Institutional Framework

1. EU Legal Framework
   - Regulation 223/2009 of the European Parliament and of the Council as amended by Regulation 759/2015
   - Regulations 177/2008, 295/2008,696/1993,1165/98 716/2007 of the European Parliament and of the Council
2. National Legal Framework
   - Greek Statistical Law 3832/ 2010 as amended and in force
   - Greek Law 4174/2013 as amended by Law 4364/2015 providing ELSTAT with access to tax data

# Legal and Institutional Framework

## 3. Institutional Framework

- Memorandum of cooperation between the Hellenic Statistical Authority (ELSTAT), the Independent Authority of Public Revenue (IAPR), the General Secretariat for Information Systems (GSIS) and the Social Insurance Institution (IKA) on their responsibilities as regards the exchange of statistical information for the updating of Statistical Business Register, and the satisfaction of the needs of Structural Business Surveys and of Greek National Accounts

- Agreement of June 2016 between Hellenic Statistical Authority (ELSTAT) and the Independent Authority of Public Revenue (IAPR) to ensure the future regular transmission of the tax data as described in the relevant annex to the agreement

# Analysis of the structure of the administrative data

The new system for compiling BS was initially decided to be implemented for the compilation of Structural Business Statistics (SBS)

In this context an analysis of the structure of the administrative data was carried out at the first stage

# Analysis of the structure of the administrative data

**Aim of SBS**

- To provide an estimation: on the structure and development of enterprises activities, the production factors use, the performance and competitiveness of enterprises, the policy implemented by enterprises, the special characteristics and special distribution of the enterprises activities
- To be used as input for the compilation of GDP (from the side of production, expenditure and income) and of regional data on GDP, Gross Value Added, Employment and Investment

# Analysis of the structure of the administrative data

Variables to be compiled:

- Business demographic variables  i.e. number of enterprises, local units
- Input related variables
  - Labor input variables i.e.  number of persons employed, hours worked
  - Cost of input variables i.e. total purchases of goods and services and personnel costs
  - Capital input variables i.e. total investments in tangible goods
- Output related variables i.e. turnover and production value
- Variables related to specific expenses categories i.e. payments for agency workers and long-term rental and operational leasing

# Analysis of the structure of the administrative data

- Identification of the statistical variables that could be derived from the admin data
- Analysis of the administrative data in terms of their content
- Comparative analysis between statistical characteristics and characteristics from administrative sources in order to identify differences in definitions

  The results are grouped into 3 categories:

  - characteristics completely identical
  - characteristics partially identical
  - characteristics for which there is no available information
- Identification of missing variables
- Compilation of a transition table from administrative to statistical variables

# Analysis of the structure of the administrative data

## Transitional table from administrative to statistical variables

| Inde | Κωδικός | Περιγραφή Μεταβλητής | ΣΥΝΑΡΤΗΣΗ ΑΝΤΙΣΤΟΙΧΙΣΗΣ | ΠΗΓΗ ΠΛΗΡΟΦΟΡΙΑΣ | Τροποποίηση σε σχέση με προηγούμενα έτη |
|---|---|---|---|---|---|
| 1 | 11 11 0 | Αριθμός επιχειρήσεων | | Με άλλο τρόπο | Όχι |
| 2 | 11 21 0 | Αριθμός τοπικών μονάδων | E3_061 + E3_064 + E3_067 + E3_070 + E3_073 + 1 | E3 | Όχι |
| 3 | 11 31 0 | Αριθμός μονάδων οικονομικής δραστηριότητας | | Με άλλο τρόπο | Όχι |
| 4αα | 12 11 0 | Κύκλος εργασιών Γ' Κατηγορία | E3_459 + E3_488 + E3_863 + E3_864 + E3_865 + E3_86( | E3 | Όχι |
| 4ββ | | Κύκλος εργασιών Β' Κατηγορία | E3_560 + E3_547 + E3_283 | E3 | Όχι |
| 4ββ | | Εναλλακτική Β' Κατηγορία | E3_344 + E3_551 | E3 | Όχι |
| 5α | 12 12 0 | Αξία παραγωγής | SBS_12110 ± 13213 ±13211 - 13120 + E3_471 + E3_465* + E3_467 | SBS + E3 | Όχι |
| 5β | | Εναλλακτική Γ' Κατηγορία | SBS_12110 ± 13213 ±13211 - 13120 + Λογ/σμοί_78 + 74.03 + 74.98 + 7! | SBS + Ισοζύγιο | |
| 6 | 12 13 0 | Ακαθάριστο περιθώριο κέρδους για αγαθά προς μεταπώληση | SBS_18160 - 13120 ± 13211 | SBS | Όχι |
| 7 | 12 15 0 | Προστιθέμενη αξία σε τιμές κόστους συντελεστών παραγωγής | SBS_12110 ± 13210 + E3_471 + E3_465 + E3_467 - SBS_1311( | SBS + E3 | Όχι |
| 8 | 12 17 0 | Ακαθάριστο λειτουργικό πλεόνασμα | SBS_12150 - 13310 | SBS | Όχι |
| 9α | 13 11 0 | Συνολικές αγορές αγαθών και υπηρεσιών Γ' Κατηγορία | E3_421 + E3_422 + E3_423 + E3_ 442 + E3_445 + E3_448 + E3_451 + E3_456 + E3_45( | E3 | Όχι |
| 9β | | Συνολικές αγορές αγαθών και υπηρεσιών Β' Κατηγορία | E3_251 + E3_252 + E3_516 + E3_517 + E3_518 + E3_525 + E3_526 + E3_527 + E3_528 + E3_529 + E3_530 + E3_531 + E3_532 + E3_533 + E3_534 + E3_535 + E3_536 | E3 | |
| 10α | 13 12 0 | Αγορές αγαθών και υπηρεσιών που αγοράστηκαν με σκοπό τη μεταπώληση στην κατάσταση στην οποία παραλήφθηκαν Γ' | E3_401 + E3_402 + E3_403 | E3 | Όχι |
| 10β | | Αγορές αγαθών και υπηρεσιών που αγοράστηκαν με σκοπό τη μεταπώληση στην κατάσταση στην οποία παραλήφθηκαν Β' | E3_231 + E3_232 | E3 | |
| 11 | 13 13 1 | Πληρωμές για εργαζομένους από γραφεία διαμεσολάβησης | - | - | Όχι |
| 12α | 13 21 0 | Μεταβολές αποθεμάτων αγαθών και υπηρεσιών Γ' Κατηγορία | E3_450 - E3_449 | E3 | Όχι |
| 12β | | Μεταβολές αποθεμάτων αγαθών και υπηρεσιών Β' Κατηγορία | E3_521 - E3_520 | E3 | |
| 13α | 13 21 1 | Μεταβολές αποθεμάτων αγαθών και υπηρεσιών που αγοράστηκαν με σκοπό τη μεταπώληση στην ίδια κατάσταση στην οποία παραλήφθηκαν Γ' Κατηγορία | E3_427 - E3_426 | E3 | Όχι |
| 13β | | Μεταβολές αποθεμάτων αγαθών και υπηρεσιών που αγοράστηκαν με σκοπό τη μεταπώληση στην ίδια κατάσταση στην οποία παραλήφθηκαν Β' Κατηγορία | E3_257 - E3_256 | E3 | |
| 14α | 13 21 3 | Μεταβολή αποθεμάτων τελικών προϊόντων και προϊόντων υπό κατασκευή από την ίδια τη μονάδα Γ' Κατηγορία | E3_430 + E3_433 + E3_436 - E3_429 - E3_432 - E3_435 | E3 | Όχι |
| 14β | | Μεταβολή αποθεμάτων τελικών προϊόντων και προϊόντων υπό κατασκευή από την ίδια τη μονάδα Β' Κατηγορία | E3_260 + E3_268 - E3_259 - E3_267 | E3 | |
| 15α | 13 31 0 | Κόστος προσωπικού Γ' Κατηγορία | E3_439 | E3 | Όχι |
| 15β | | Κόστος προσωπικού Β' Κατηγορία | E3_522 + E3_523 + E3_524 | E3 | |
| 16 | 13 32 0 | Μισθοί και ημερομίσθια | Λογ/σμός 60.05 + E7_Γραμμή 4_Στήλη 2 | Ισοζύγιο + E7 | Όχι |
| 16α | | Εναλλακτική | Λογ/σμός 60.00+ Λογ/σμός 60.01 +Λογ/σμός 60.02+Λογ/σμός 60.05 | Ισοζύγιο | |
| 17α | 13 33 0 | Δαπάνες κοινωνικής ασφάλισης Γ' Κατηγορία | Λογ/σμός 60.03 + Λογ/σμός 60.04 | Ισοζύγιο | Όχι |
| 17β | | Δαπάνες κοινωνικής ασφάλισης Β' Κατηγορία | SBS 13310 - 13320 | SBS | |
| 18 | 13 41 1 | Πληρωμές για μακροπρόθεσμη μίσθωση και λειτουργική χρηματοδοτική μίσθωση αγαθών | Λογ/σμός 62.04.10 + Λογ/σμός 62.04.20 + Λογ/σμός 62.04.25 | Ισοζύγιο | Όχι |
| 19α | 15 11 0 | Ακαθάριστες επενδύσεις σε υλικά αγαθά Γ' Κατηγορία | E3_878 + E3_879 + E3_880+ E3_471 | E3 | Όχι |
| 19β | | Ακαθάριστες επενδύσεις σε υλικά αγαθά Β' Κατηγορία | E3_811 + E3_812 | E3 | |
| 20 | 15 12 0 | Ακαθάριστες επενδύσεις σε γη | - | - | Όχι |
| 21 | 15 13 0 | Ακαθάριστες επενδύσεις σε υπάρχοντα κτήρια και άλλες εγκαταστάσεις | - | - | Όχι |
| 22 | 15 14 0 | Ακαθάριστες επενδύσεις σε ανεγέρσεις και μεταπρατές κτηρίων | - | - | Όχι |
| 23 | 15 15 0 | Ακαθάριστες επενδύσεις σε μηχανολογικό εξοπλισμό | - | - | Όχι |
| 24 | 15 21 0 | Πωλήσεις υλικών επενδυτικών αγαθών | E3_195 + E3_870 + E3_871 + 872 + E3_873 | E3 | Όχι |
| 25 | 15 42 0 | Ακαθάριστες επενδύσεις σε εκχωρήσεις δικαιωμάτων, δημιούργημα ευρεσιτεχνίας, άδειες λειτουργίας, εμπορικές ονομασίες και συναφή δικαιώματα | - | - | Όχι |
| 26 | 15 44 1 | Επενδύσεις σε αγορές λογισμικού | Λογαριασμός 16.17.00 | Ισοζύγιο | Όχι |
| 27 | 16 11 0 | Αριθμός απασχολούμενων ατόμων | SBS_16120 + SBS_16130 | SBS | Όχι |
| 28 | 16 12 0 | Αριθμός ατόμων απασχολούμενων αμισθί | - | - | Όχι |
| 29 | 16 13 0 | Αριθμός μισθωτών Γ' Κατηγορία | E3_065 + E3_068 | E3 | Όχι |
| | | Α Εναλλακτική Γ' Κατηγορία | Φ01-10_905 | Φ01-10 | |
| | | Β Εναλλακτική Γ' Κατηγορία | E7_Γραμμή 4_Στήλη 1 | E7 | |
| 30 | 16 14 0 | Αριθμός μισθωτών σε ισοδύναμα πλήρους απασχόλησης | | - | Όχι |
| 31 | 16 15 0 | Αριθμός των δεδουλευμένων ωρών εργασίας από τους μισθωτούς | | - | Όχι |
| 32 | 17 32 0 | Αριθμός καταστημάτων λιανικού εμπορίου | E3_061+1 | E3 | Όχι |
| 33 | 17 33 1 | Επιφάνεια καταστημάτων λιανικής πώλησης | - | - | Όχι |
| 34 | 18 10 0 | Κύκλος εργασιών από γεωργικές, δασοπονικές, αλιευτικές και βιομηχανικές δραστηριότητες | SBS_18120 + E3_635 | SBS + E3 | Όχι |

# Analysis of the structure of the administrative data

## Pilot study

- Comparison between the survey data and the corresponding administrative data
  - ✓ Calculation of the SBS variables on the basis of the transitional table
  - ✓ Comparison between the SBS variables derived from the tax data and the corresponding survey variables, by economic sector (1, 2, 3 and 4-digit level of NACE Rev.2)
  - ✓ Comparison between the values of the SBS variables and the corresponding values from the administrative sources at micro level
  - ✓ Analysis and documentation of the discrepancies
  - ✓ Assessment of the new system

# Results of the first comparative analysis

A comparison was made on a basis of 12,426 common enterprises identified both in SBS sample survey data and tax data for the reference year 2014

| Variables | % of enterprises with zero difference |
|---|---|
| Turnover | 83% |
| Personnel Cost | 89% |
| Changes in stocks of goods and services | 78% |
| Gross investment in tangible goods | 69% |

NB: The above figures referred to the exercise performed before tax data cleaning

# Results of the first comparative analysis

| | Turnover | Personnel costs | Gross investments in tangible goods | Total purchases of goods and services | Changes in stock |
|---|---|---|---|---|---|
| Number of enterprises with zero difference | 10,348 | 11,103 | 8,539 | 7,580 | 9,637 |
| Number of enterprises with non-zero difference | 2,078 | 1,323 | 3,887 | 4,846 | 2,789 |
| Total difference in millions Euro (SBS-tax data) | -184.2 | 8.5 | 276.2 | 240.9 | 354.5 |

# Regulation of ELSTAT on the Use of Administrative Data

An internal document describing all procedures for the use of admin data was drafted based on the GSBPM which is structured in 4 stages.

STAGE A: COLLECTION OF TAX DATA

- Production phase
- Transmission phase
- Consumption phase

STAGE B: DATA PROCESSING

- Data editing for updating the Business Register (BR)
- Completeness checks and corrections
- Content checks and corrections

STAGE C: PRODUCTION

- Update of Business Register (BR)
- Compilation of SBS variables
- Estimation of missing variables

STAGE D: INTEGRATION IN THE PRODUCTION DATA BASE

Integration of data from different data files

# Regulation of ELSTAT on the Use of Administrative Data

## STAGE A: COLLECTION OF TAX DATA

The first stage refers to the transmission of all files from the Tax Administration to ELSTAT and their integration in a secure database. At this stage, data are encrypted and transformed to a form that can be read and processed by users (ELSTAT's staff). The received data are checked in terms of quality and completeness and follow "data cleaning", "standardization" and establishment of relations between the files (data controls of first stage).

This stage includes three phases:

- PRODUCTION PHASE

The data flow is directed from the Tax Authorities to ELSTAT

# Regulation of ELSTAT on the Use of Administrative Data

## STAGE A: COLLECTION OF TAX DATA

- TRANSMISSION PHASE

  Secure transmission of data via FTP (File Transfer Protocol) Server with SSH (Secure Shell) support, administrated by ELSTAT

- CONSUMPTION PHASE

  - Data transfer to another server connected to an isolated network protected by Firewall

  - Verification of digital signature of data

  - Saving of the received encrypted data

  - Decoding of data

# Regulation of ELSTAT on the Use of Administrative Data

SECURITY POLICY

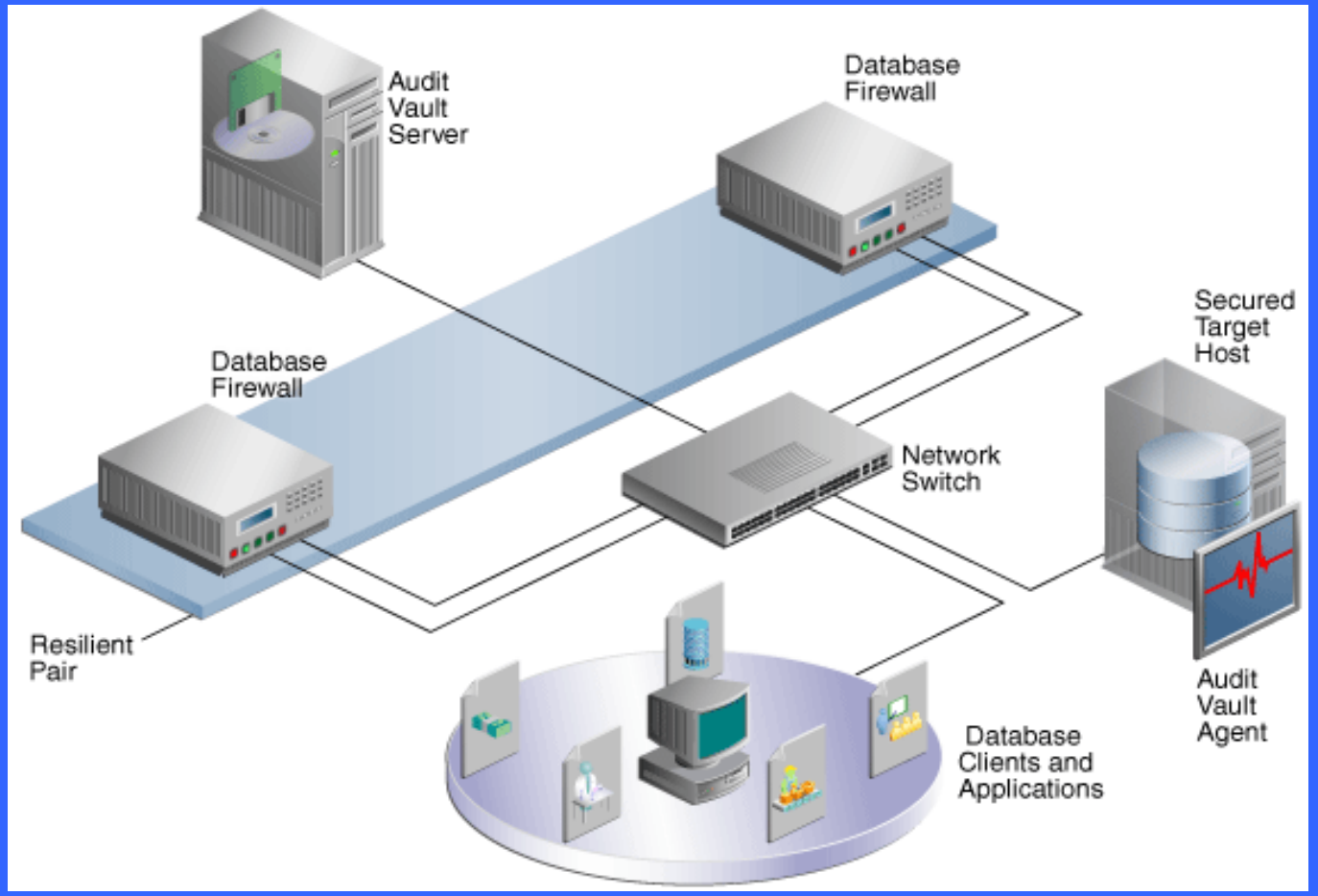
- Use of semi-automated data transmission method via File Transfer Protocol (FTP) Server with Secure Shell support and access only within the secure public administration network, *SYZEFXIS*
- Set up of the Firewall of ELSTAT with access only to authorized persons of the GSIS
- Provision of access to authorized persons for the transmission and the reception of the data from ELSTAT and GSIS

# Regulation of ELSTAT on the Use of Administrative Data

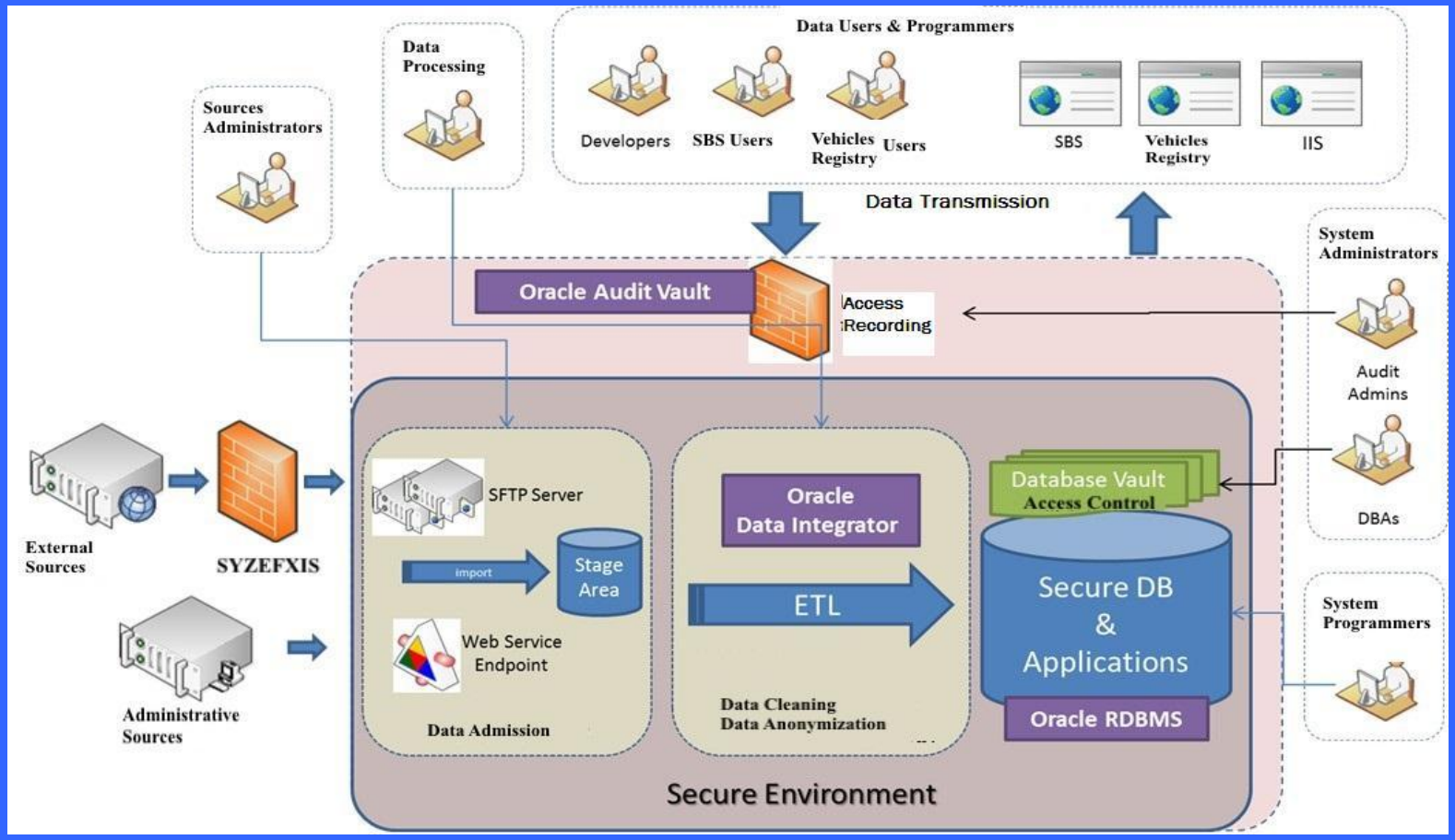
## SECURITY POLICY

- Encryption, signing, decoding and verification of transmitted files via the software GNU Privacy Guard
- Access of authorized users to the FTP Server
- Maintenance of complete and accurate list (log) of each action and access of the authorized users to the Server
- Data transfer to the intermediate database
- Creation of backup copies of the intermediate database
- Classified access of users to the intermediate database for data processing

# Secure Database Architecture



# Secure Database Architecture



# Regulation of ELSTAT on the Use of Administrative Data

## STAGE B: DATA PROCESSING

### PHASE A: Data Editing for error detection in order to update BR

- Technical checks
- Logical-Mathematical checks
- Quality controls

# Regulation of ELSTAT on the Use of Administrative Data

## QUALITY CONTROLS

a. Evident error controls at enterprise level and/or aggregated activity sector by employment level

**3(a)** Systematic error detection

**3(b)** Outlier detection

} (MAD method, etc)

Checks are based on:

$$\frac{\textit{Number of persons employed}}{\textit{Number of Establishments}}$$

$$\frac{\textit{Wages and salaries}}{\textit{Number of persons employed}}$$

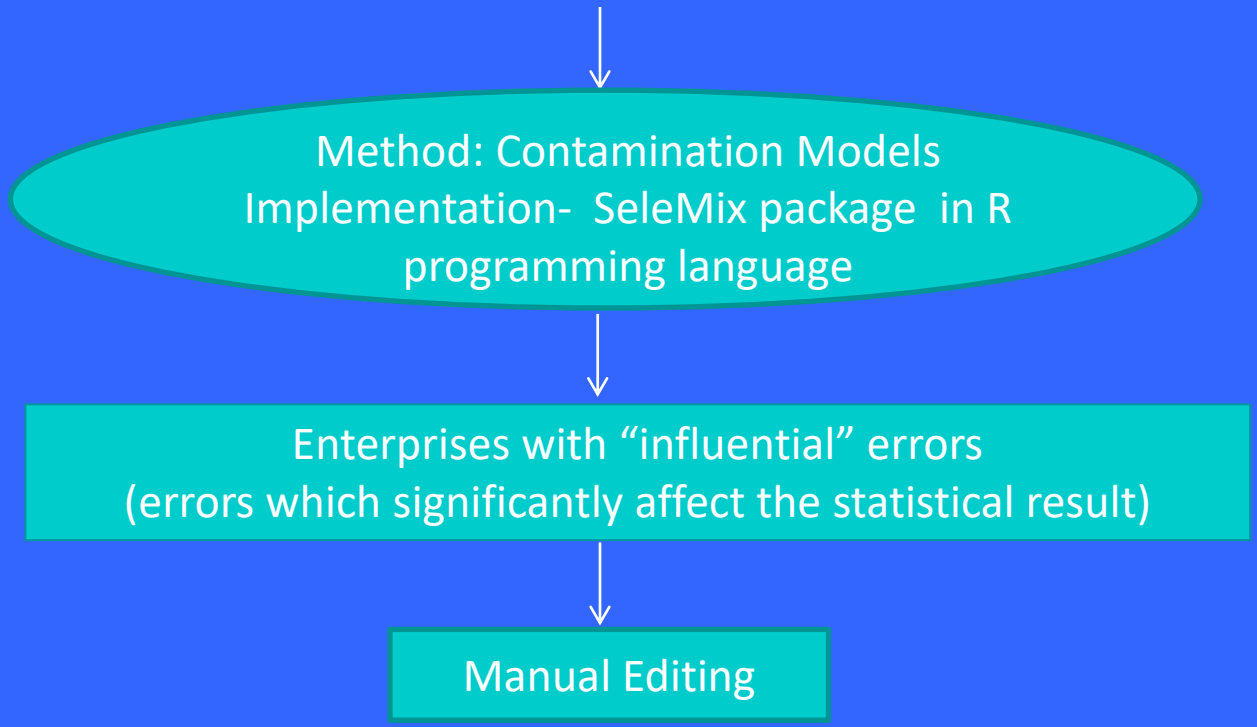
$$\frac{\textit{Turnover}}{\textit{Number of persons employed}}$$

**3(c)** Historical controls (year-to year)

# Regulation of ELSTAT on the Use of Administrative Data

## QUALITY CONTROLS

b. Selective Editing for the detection of Influential errors



# Regulation of ELSTAT on the Use of Administrative Data

STAGE B: DATA PROCESSING

PHASE B: Completeness checks and treatment of special cases

- Checks on the number of records received
- Checks on the number of fields received
- Checks on duplicate or multiple identical records
- Treatment of duplicate or multiple identical records

# Regulation of ELSTAT on the Use of Administrative Data

PHASE C: Content checks and corrections

- Logical and accounting-mathematical checks
- Top-down scaling of errors occurred
- Manual corrections (at enterprise level) of most significant errors (in terms of value and impact)
- Automated corrections

# Regulation of ELSTAT on the Use of Administrative Data

PHASE A: Update the Business Register

- Update the BR (births and deaths of enterprises, economic activity, turnover, employment)
- Compilation of a list of Active enterprises from the updated BR

PHASE B: Compilation of SBS variables

- Compilation of SBS variables from the administrative data
- Estimation of missing variables based on a small scale survey on large enterprises

# Estimation of missing variables

- The methodology applied for the estimation for the SBS variables that are not available in the administrative data is based on data derived from a small scale survey conducted on large enterprises by economic activity sector (4-digit level).
- Following the compilation of SBS variables from the administrative data advanced estimation techniques are applied for the compilation of missing variables:

✓ Proportions of a component variable

✓ Predictive Models : Regression models and two part models: decision trees in combination with multiple regression models.

✓ Simple Ratio Adjustment Method

# Regulation of ELSTAT on the Use of Administrative Data

STAGE D: Integration of data in the production data base for the compilation of the final results

In the context of the compilation of the SBS data base the files produced in the previous are integrated in the following order:

1. The file of active enterprises indicating the turnover and employment
2. The file with the rest SBS variables compiled from the administrative data
3. The estimated variables that are not available in the administrative data

# CONCLUSIONS

- The experience from the use of administrative data derived from the tax declarations submitted by the enterprises to the Tax Authorities for the compilation of SBS was positive.
- The overall quality of the statistical output in the domain of SBS was improved significantly due to the fact that full exhaustiveness was achieved
- Acceleration of the production time with a significant reduction of human and financial resources while on the same time a significant reduction burden to the enterprises has been achieved
- Enhance further the possibility to produce modernized indicators for business statistics in order to meet the growing needs of the users

THANK
YOU

Statistics Finland

# Response Burden Measurement Project in Statistics Finland

Anna Niemelä

Fifth International Workshop on Business Data Collection Methodology

Lisbon 19.-21.9.2018

# Contents of the presentation

- Response Burden Measurement Project in Statistics Finland
  - Goals
  - Implementation
  - Response burden questionnaire
  - Challenges faced in data collection

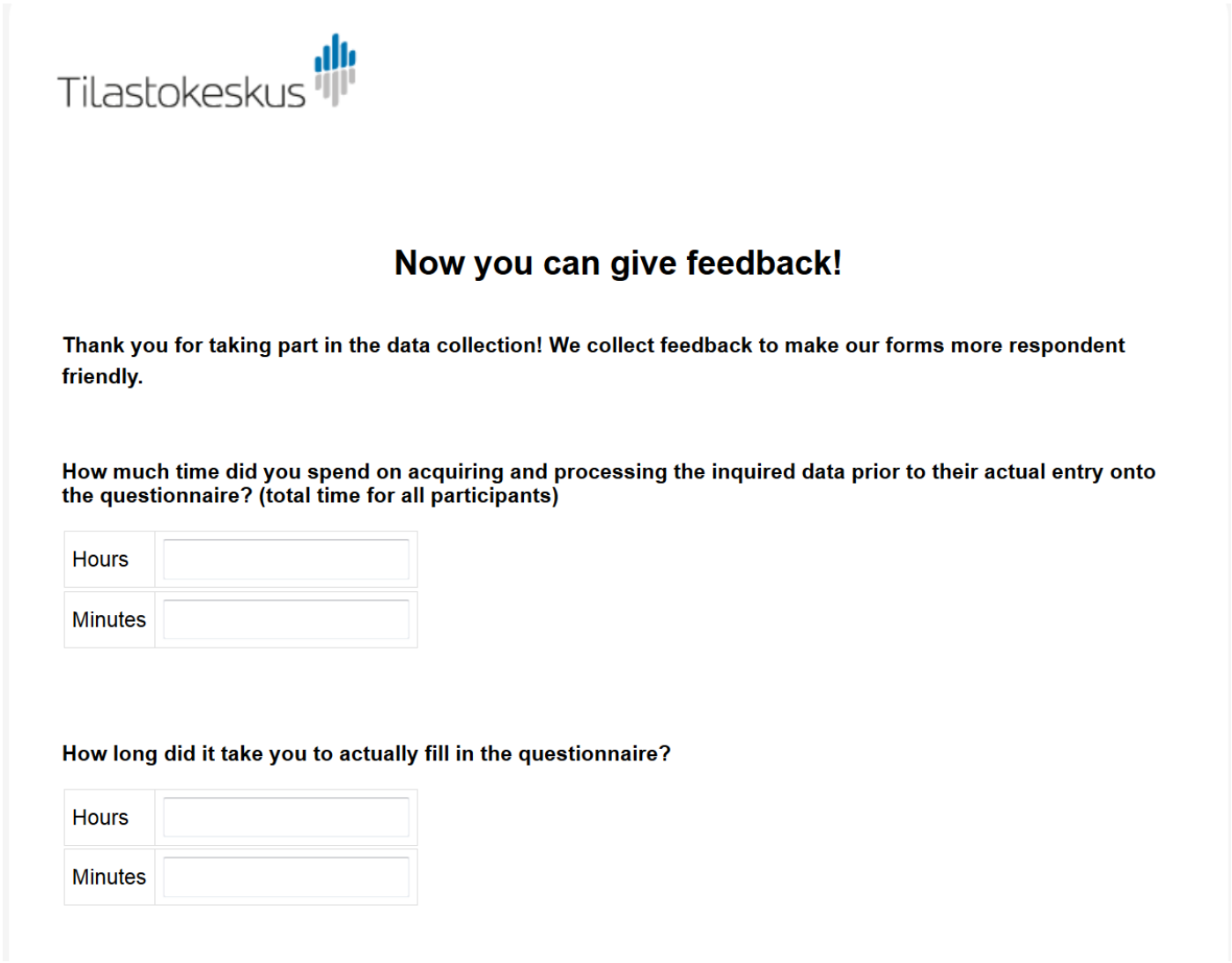
# Goals of the Response Burden Measurement Project

- To measure response burden in all direct enterprise collections in web
  - Time & experience
- To update the results from 2008-2009 measurement
  - 41 surveys, over 13 500 responses
- To prepare proposals to develop questionnaires and collection practices
- To plan a model to regular burden measurement and reporting

# Implementation

- During 2018 the response burden inquiry is attached to all business surveys in web
- Voluntary questionnaire after filling the actual inquiry
- Webropol online survey tool
- Questionnaire: based on core perceived response burden (PRB) questions (see Dale et. Al 2007)
- 30 surveys have been included up to the present
- Over 9500 responses so far
- Analysis going on

# Response burden questionnaire 1/2



Tilastokeskus

**Now you can give feedback!**

**Thank you for taking part in the data collection! We collect feedback to make our forms more respondent friendly.**

**How much time did you spend on acquiring and processing the inquired data prior to their actual entry onto the questionnaire? (total time for all participants)**

| | |
|---|---|
| Hours | |
| Minutes | |

**How long did it take you to actually fill in the questionnaire?**

| | |
|---|---|
| Hours | |
| Minutes | |

# Response burden questionnaire 2/2

**Did you find that answering to the inquiry was:**

- ○ Very burdensome
- ○ Fairly burdensome
- ○ Neither burdensome nor easy
- ○ Fairly easy
- ○ Very easy
- ○ Can't say

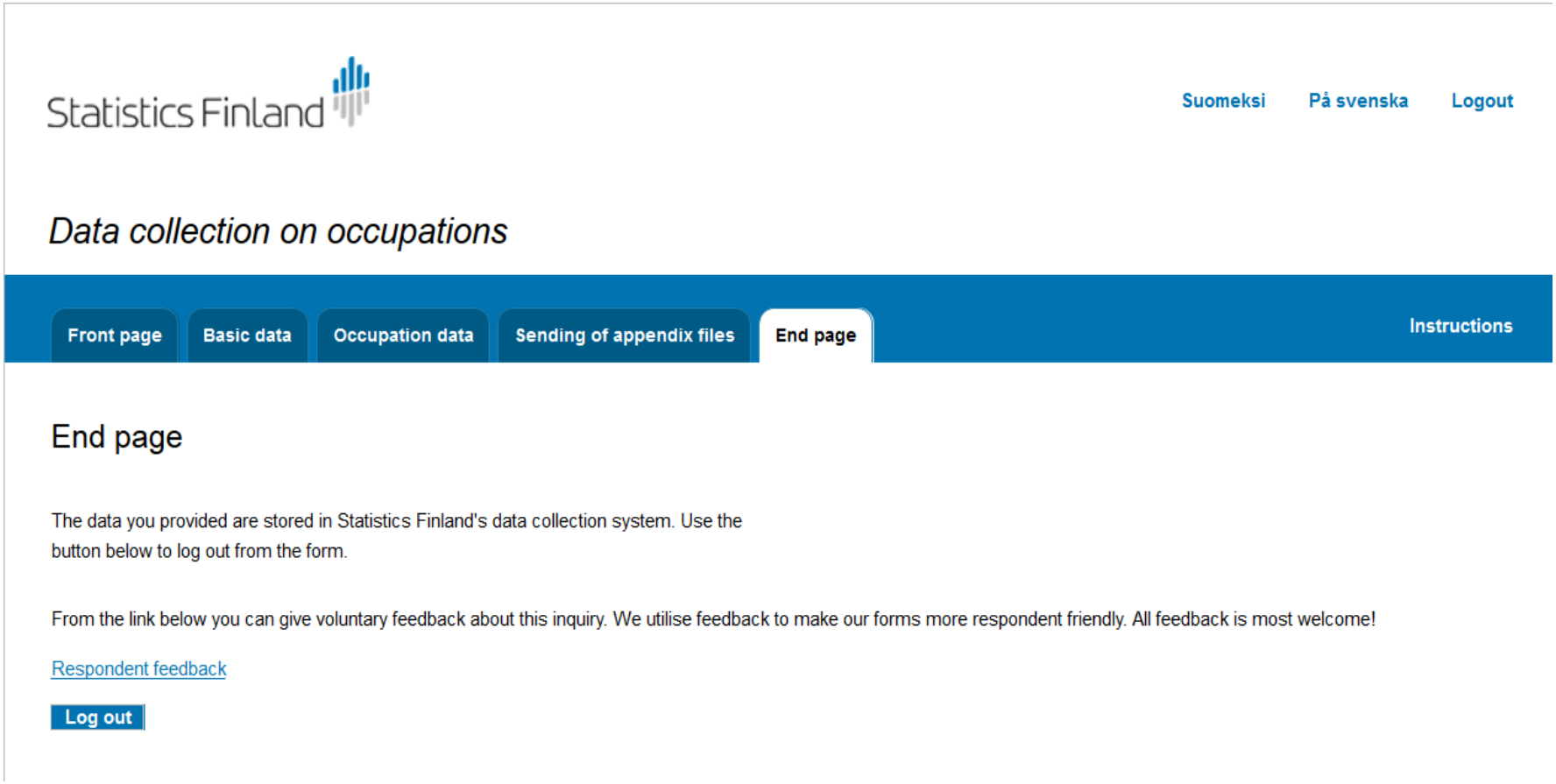
**General feedback and suggestions for improvement concerning e.g.:**

**a. survey content**
**b. instructions**
**c. customer service**
**d. technical implementation of the survey**
**e. other matters related to survey participation or the survey form**

Submit

0% Completed ( 1 of 1 )

# First attempt: ”Click the link if you like”




- A link in the last page of the actual survey & language menu
- Did not work at all - extremely low response rates!

# New attempt: automatic/compulsory direction

- When logged out, the respondents continued direct to the response burden questionnaire

- The language menu was removed, replaced with directing to language versions based on the language of the actual questionnaire

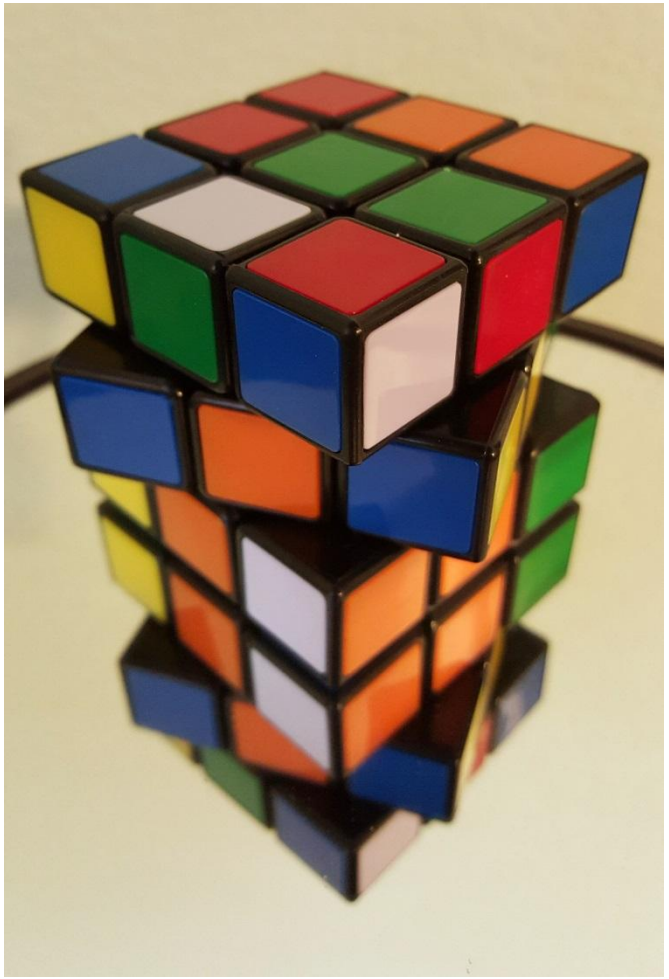
- Essentially better results
  - E.g. **Quarterly Road Freight Survey**: 54 responses in the 1. quarter, 293 in the 2. quarter after changing to the automatic direction (sample: 2500)

# Experiment: Email invitation

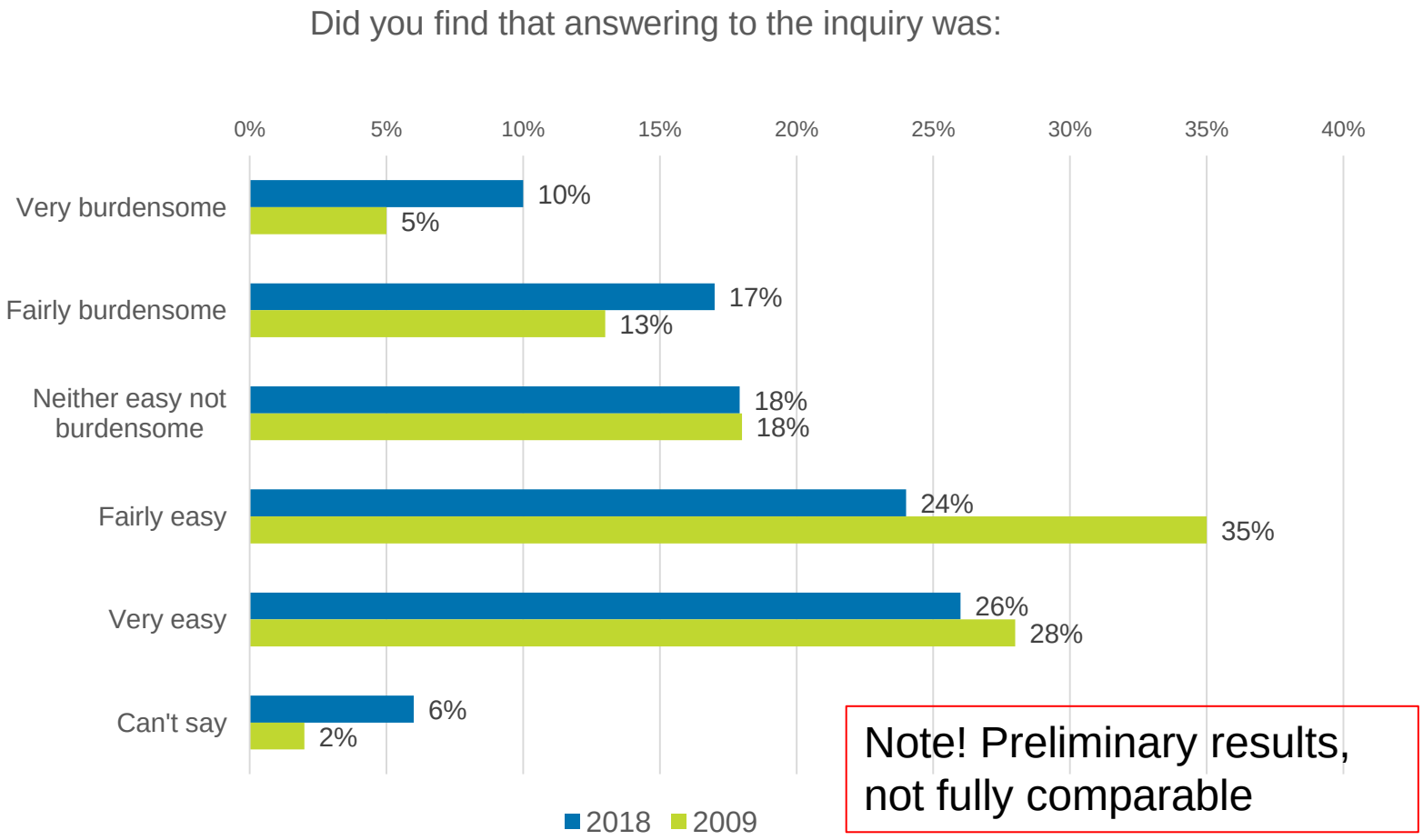
- Used in one monthly survey: **New orders in manufacturing**
  - Sample 406, response rate ca. 95%
- An email in the due date to respondents
  - Thanks for participation, a request to give feedback and a link to the response burden questionnaire
- Result: the number of feedback givers raised from 39 to 97 within a couple of days
- A good practice in some cases, but not applicable to collections where emails are not used/available

# Still challenges to solve…

- The response rate to PRB questionnaire varies between 3-37 % of the sample
  - Average 15 %
  - In most surveys: lower rates compared to 2008-2009
- The response rate does not seem to be clearly related neither to response rates of the actual surveys nor the perceived response burden
- More detailed analysis is needed



# Is responding perceived more burdensome than before?




Note! Preliminary results, not fully comparable



Statistics Finland

# Some perceived causes of burden in the light of open feedback

- Answering required calculation or other manual work or using many information sources
- The questions were difficult to understand or regarded as not relevant, not applying
- The data collection is considered useless extra work, no motivation to participate
- Too many compulsory collections annually/at the same time

**-> similar findings as in previous responde burden studies**

- Usability or functionality of survey forms appeared **less frequently** in the critical feedback

# Questions for further discussion

- How to activate the business survey respondents to participate the PRB survey?
- Any experiences of using a raffle or other intencives with PRB/other feedback surveys?

# Sources

Trine Dale, Johan Erikson, Johan Fosen,Gustav Haraldsen Jacqui Jones and Øyvin Kleven: Handbook for Monitoring and Evaluating Business Survey Response Burdens. Eurostat 2007.

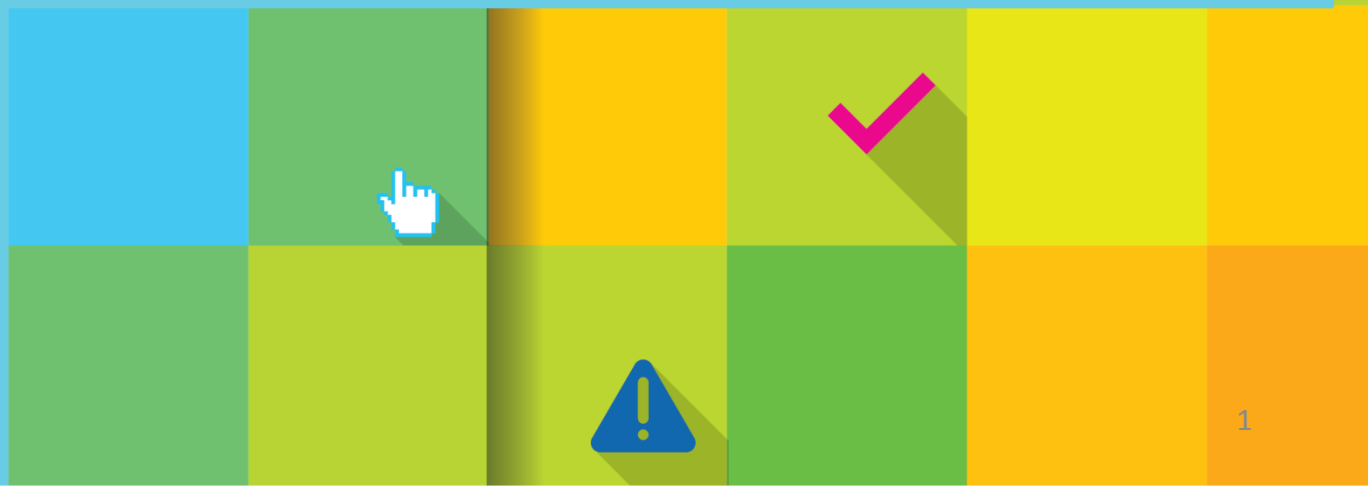
Statistics Finland

anna.niemela@stat.fi

INSTITUTO NACIONAL DE ESTATÍSTICA
STATISTICS PORTUGAL

# FIFTH INTERNATIONAL WORKSHOP ON BUSINESS DATA COLLECTION METHODOLOGY

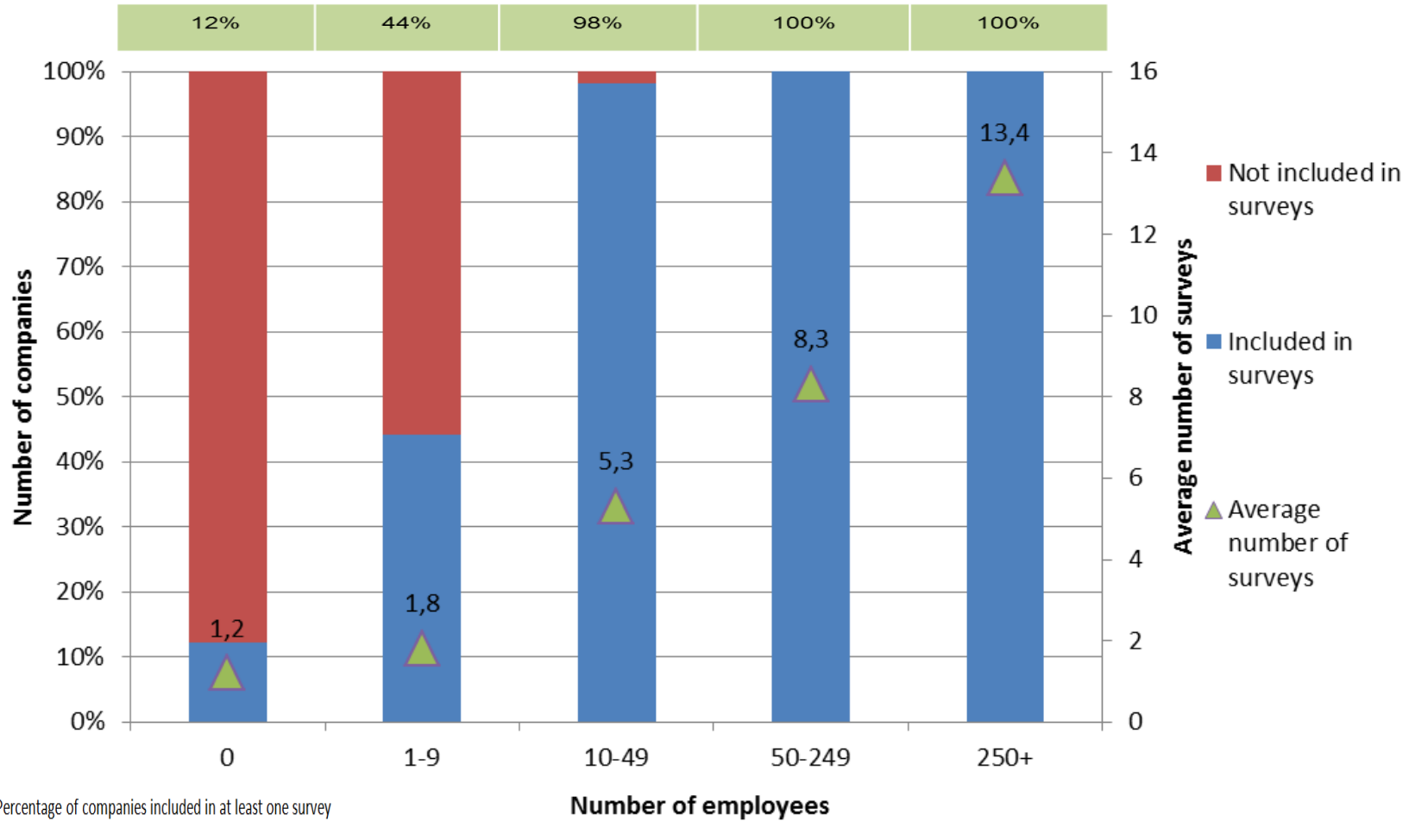
## 19-21 SEPTEMBER 2018 – STATISTICS PORTUGAL, LISBON



# SHOULD WE APPROACH DIFFERENTLY TO DATA COLLECTION FROM LARGE BUSINESSES?

Vojko Šegan, Statistical Office of the Republic of Slovenia

# Inclusion in surveys by size, SURS, 2016

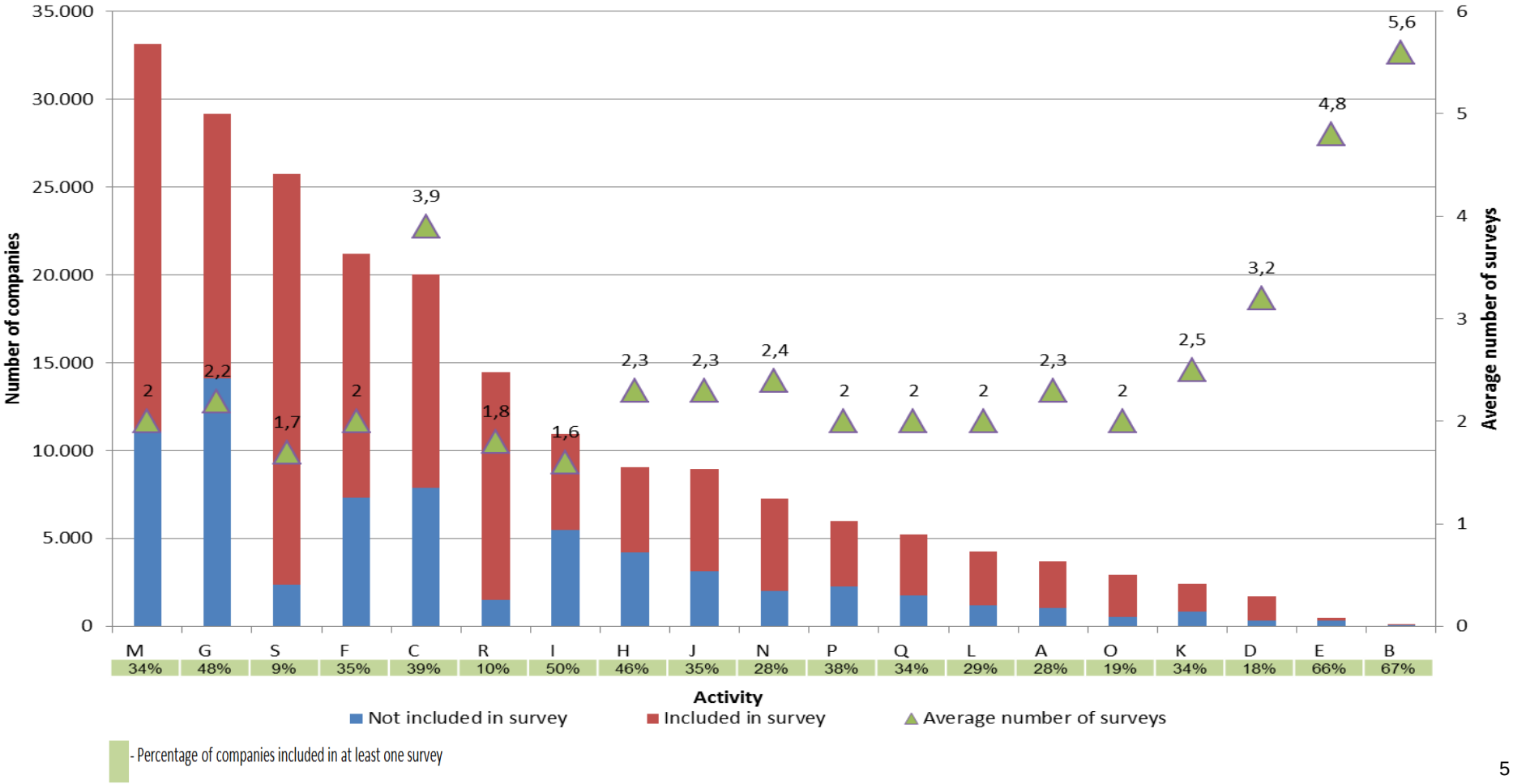


# Special approach to different businesses at SURS

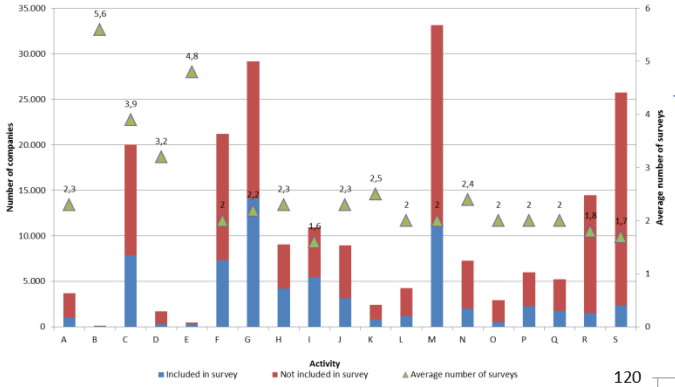
- Key reporters - greater importance in the data collection and the data control.
- Partial coordinated sampling.
- System for measuring actual burden of reporting units.
- Central help desk.
- Special project for selective data editing is currently underway in which larger units will have special attention in data editing.

- SURS does not use a special management system for the overall treatment of large businesses.

# Inclusion in surveys by activity, SURS, 2016



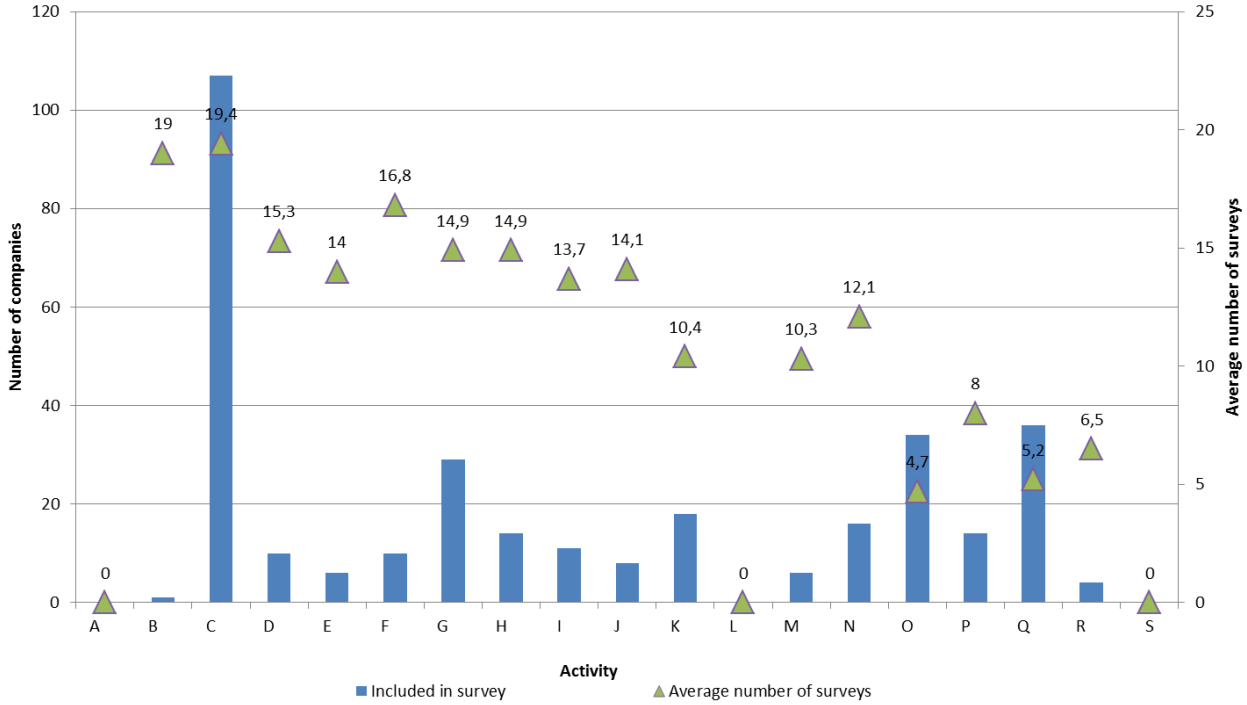
All companies

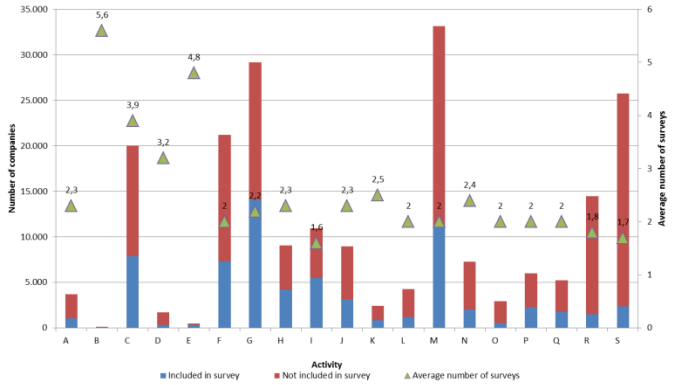



All companies

# Inclusion in surveys by activity, SURS, 2016

Large companies 250 + employees

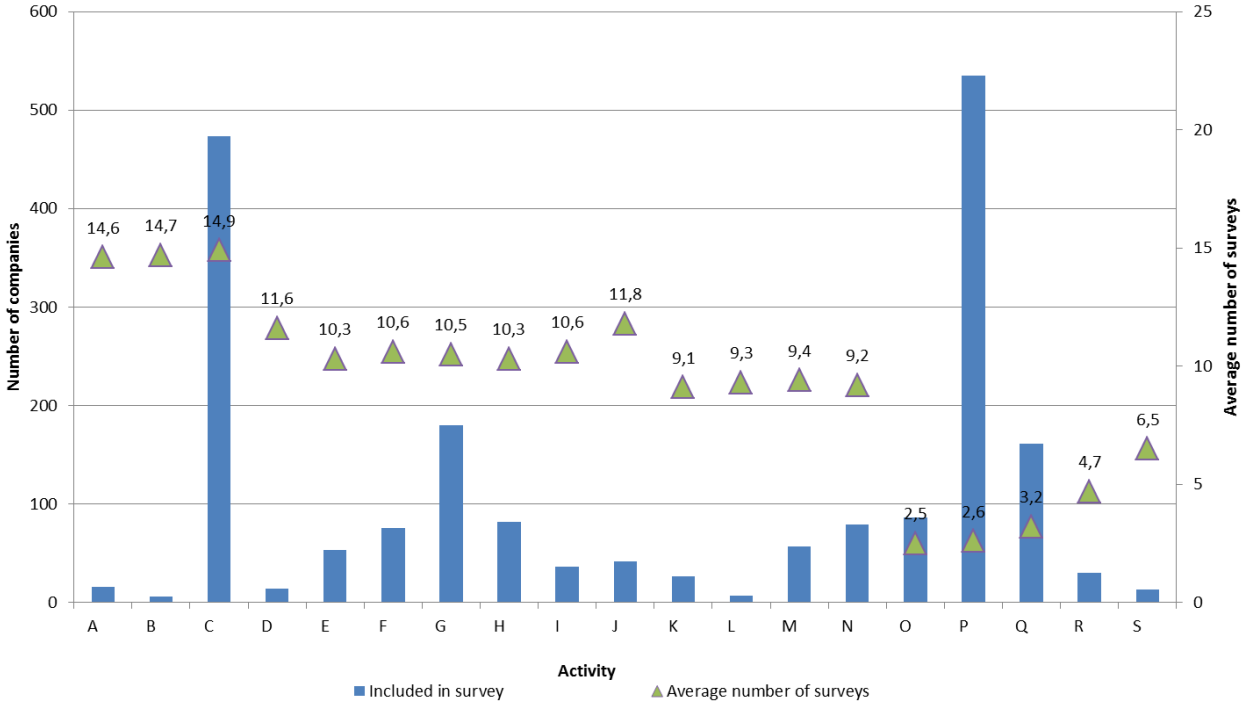


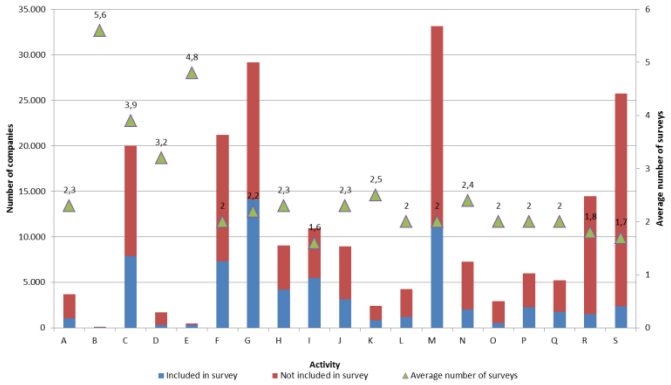



All companies

# Inclusion in surveys by activity, SURS, 2016

Medium companies 50 – 249 employees

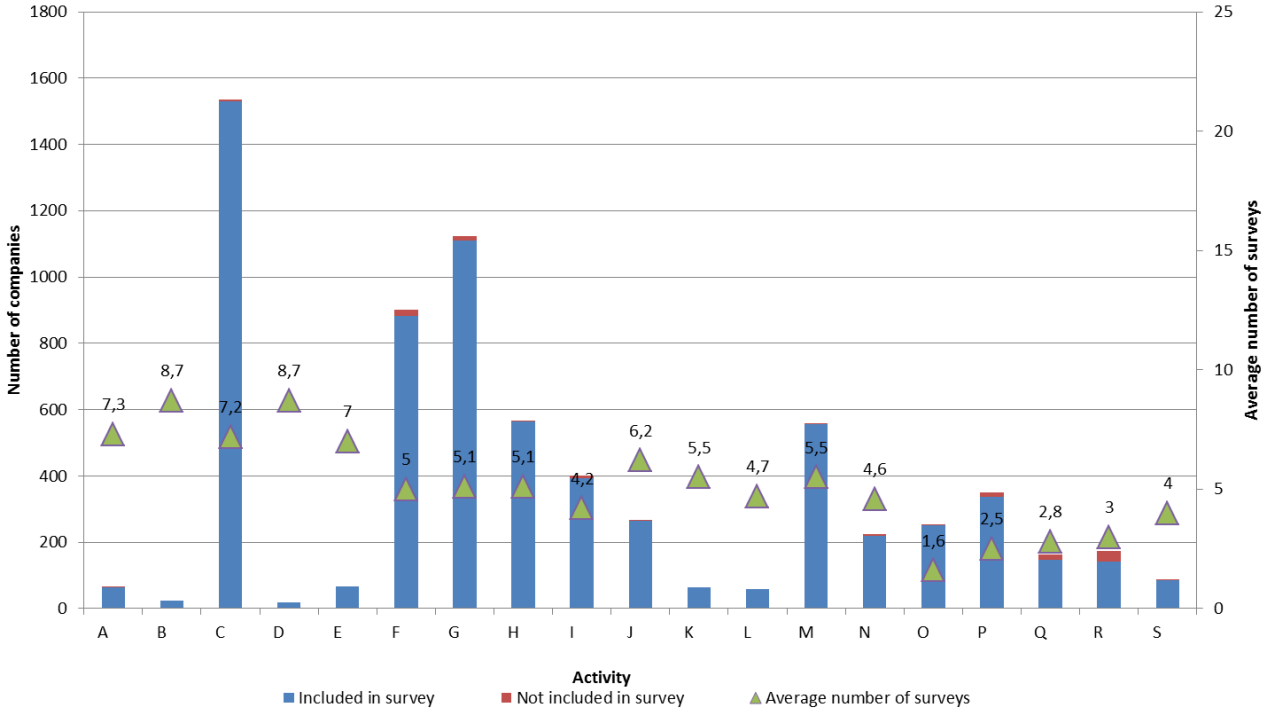


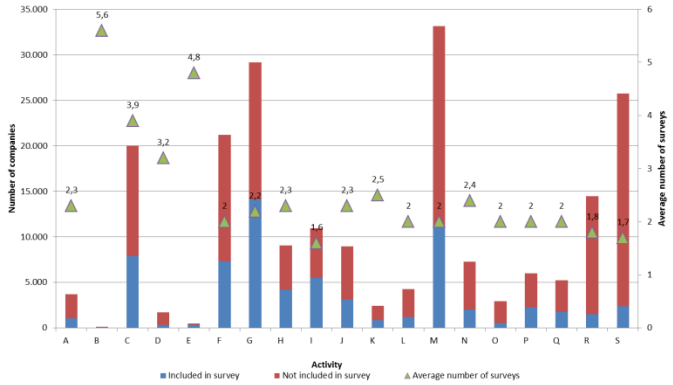



All companies

# Inclusion in surveys by activity, SURS, 2016

Small companies 10 – 49 employees

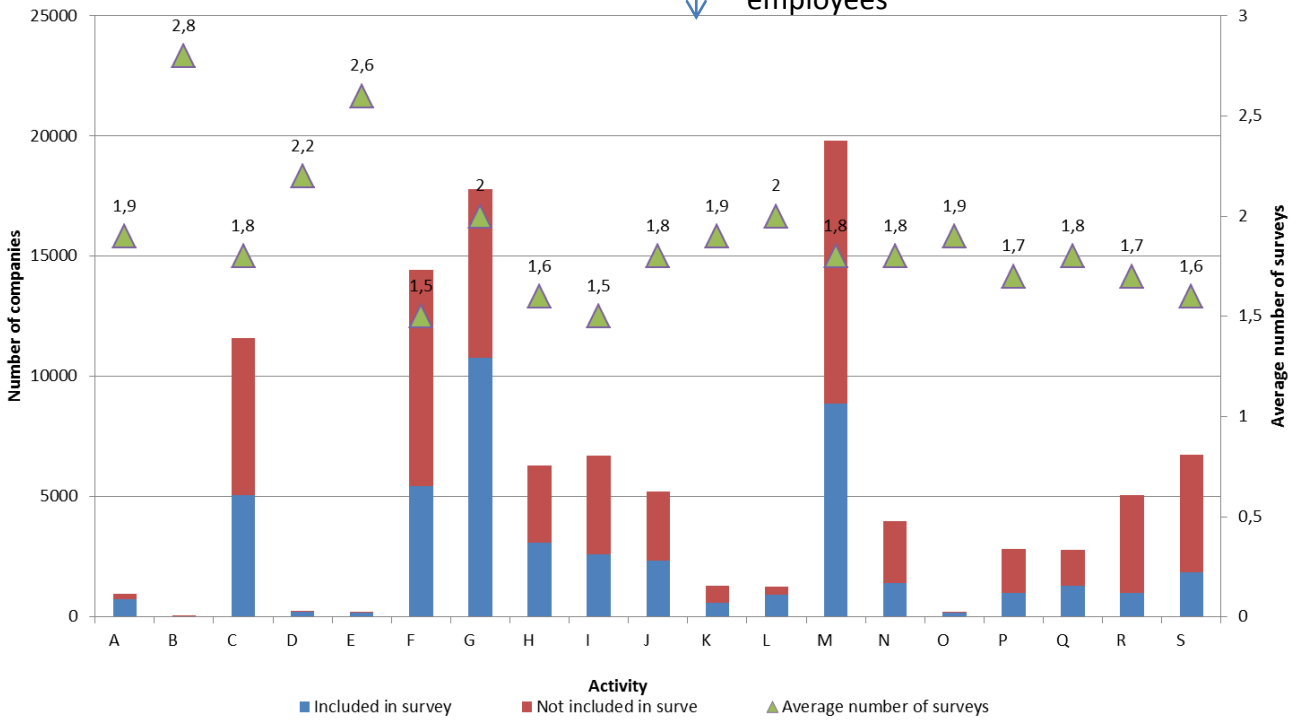




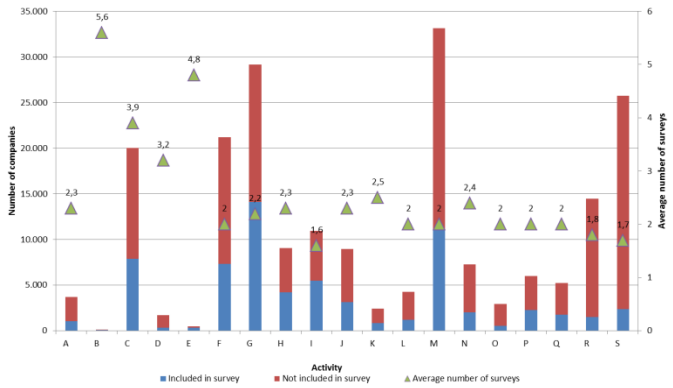

All companies

# Inclusion in surveys by activity, SURS, 2016

Mikro companies 1 – 9 employees

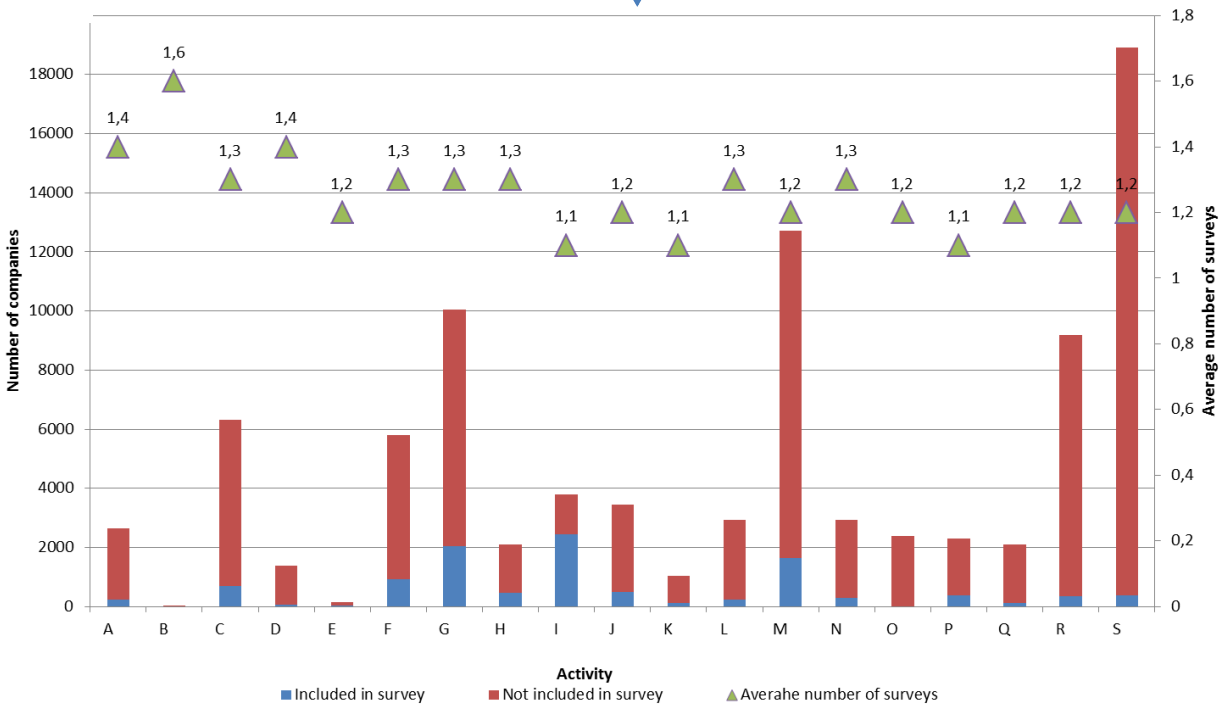


All companies




# Inclusion in surveys by activity, SURS, 2016

Companies without employees



# Discussion (1/2)

- Identifying large reporters.
  - Should a different categorization of important companies be considered?
- Coordinated approach in communicating with key respondents.
  - Can one person efficiently manage different subject areas for which data are collected?
- Wider approach to reporting units
  - Can we address this topic without consideration of other issues (confidentiality, non-response, etc.)?

# Discussion (2/2)

- Further development of coordinated sampling.
  - Is complete coordinated sampling possible (including also non probability samples)?
- Using predefined datasets instead of web questionnaires (Push).
  - Useful for businesses that are involved in statistical survey with certainty.
- Use of data from reporters' information systems (Pull).
  - Large effort to adjust to different systems.

# Harmonizing Economic Surveys

**Jessica Wellwood[1], Erica Marquette[2]**

[1]*Census Bureau (USA)*

[2]Census Bureau (USA)

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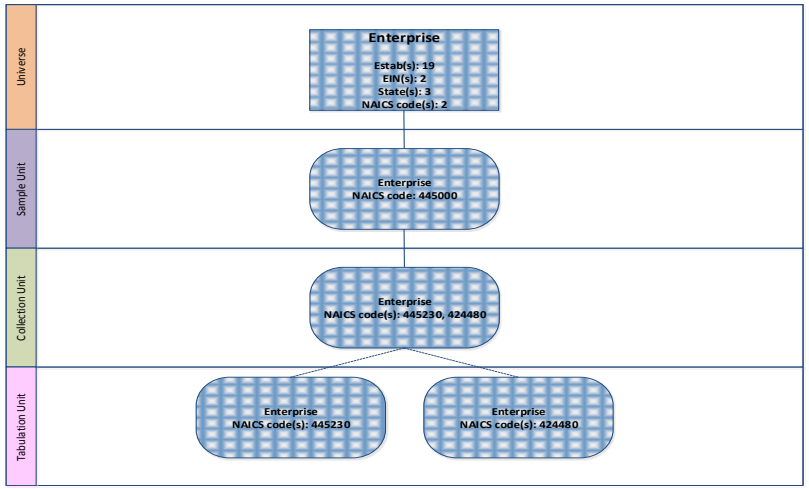
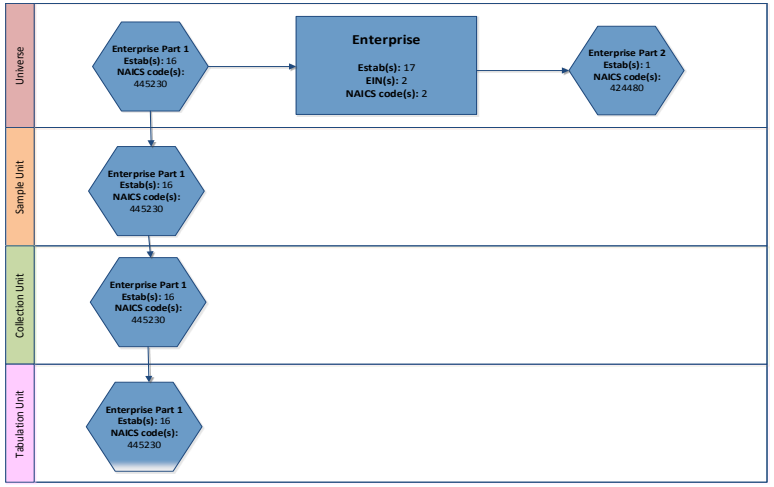
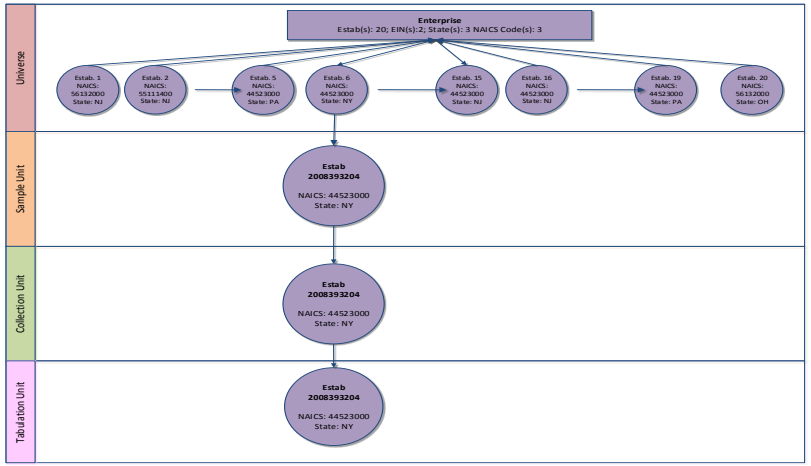
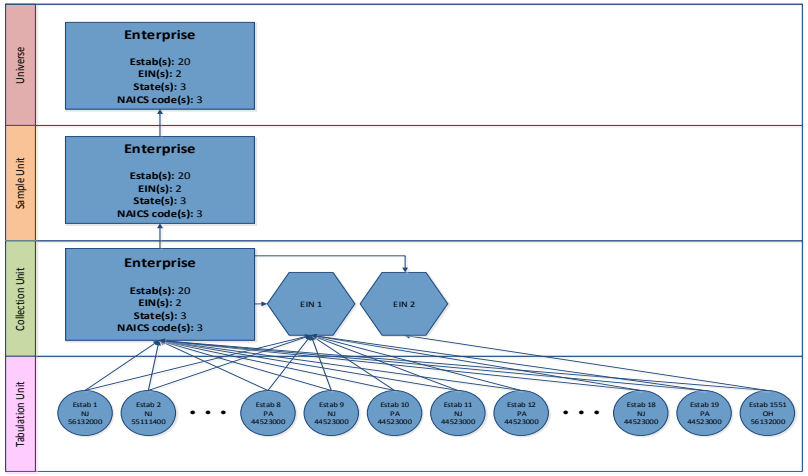
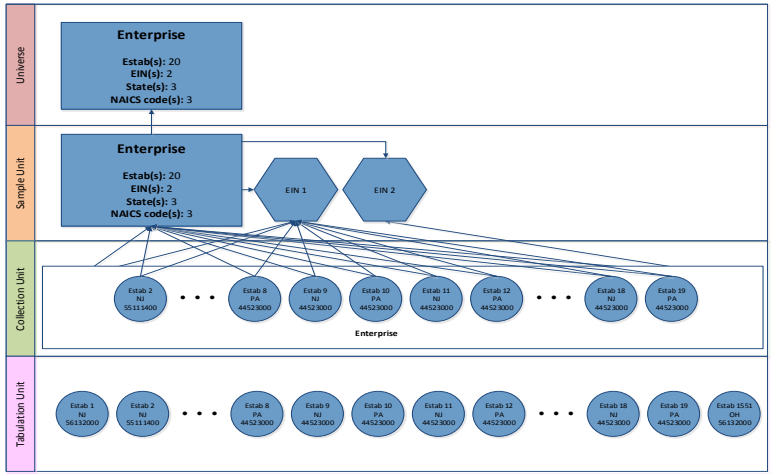
# Why Business Unit Harmonization?

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# Business Unit Harmonization

**Goal:**

Determine a harmonized unit across Business Register programs that aligns best with the operating structure for the majority of companies while maintaining existing measurement objectives

Step 1

# Assess High Impact Companies

**Objective:** Find a standard unit for largest, high impact companies

**Process:** Study the 52 most impactful companies

**Conclusion:** This is impossible!

One reporting unit would not meet the needs of all companies researched

Step 2

# Review Universe

**Objective:** Understand the make up of our universe

**Process:** Develop objective measures to understand the universe

**Conclusion:** We can do this!

Step 2

# Review Universe: Objective Measures

## Complexity Score

- Size Measure - Payroll
- Structural Complexity
  - Number of establishments
  - Number of unique 8-digit NAICS
  - Number of unique EINs
  - Number of unique states with business activity

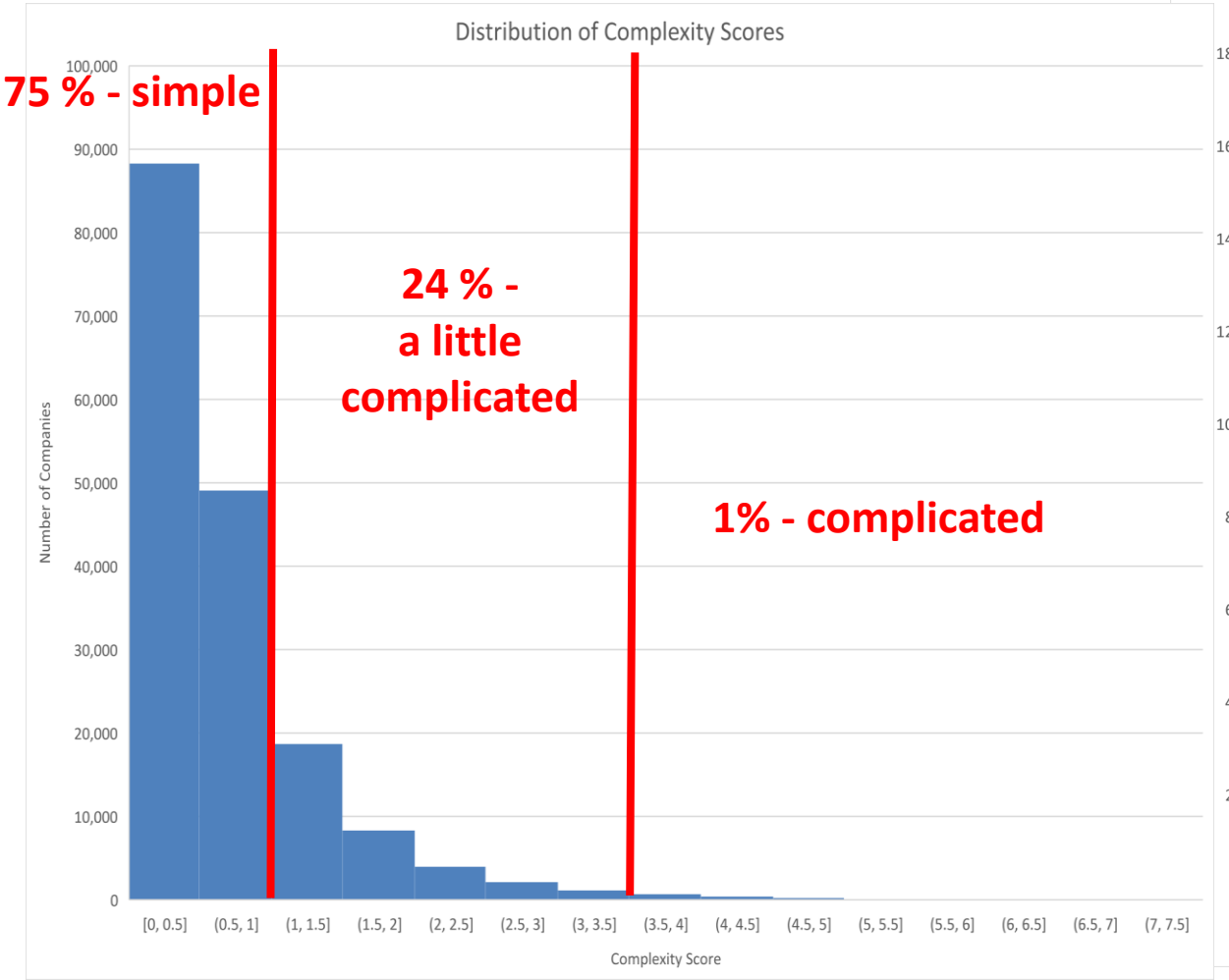
Used Shannon's Entropy to measure complexity, by evaluating annual payroll's distribution across four partitions

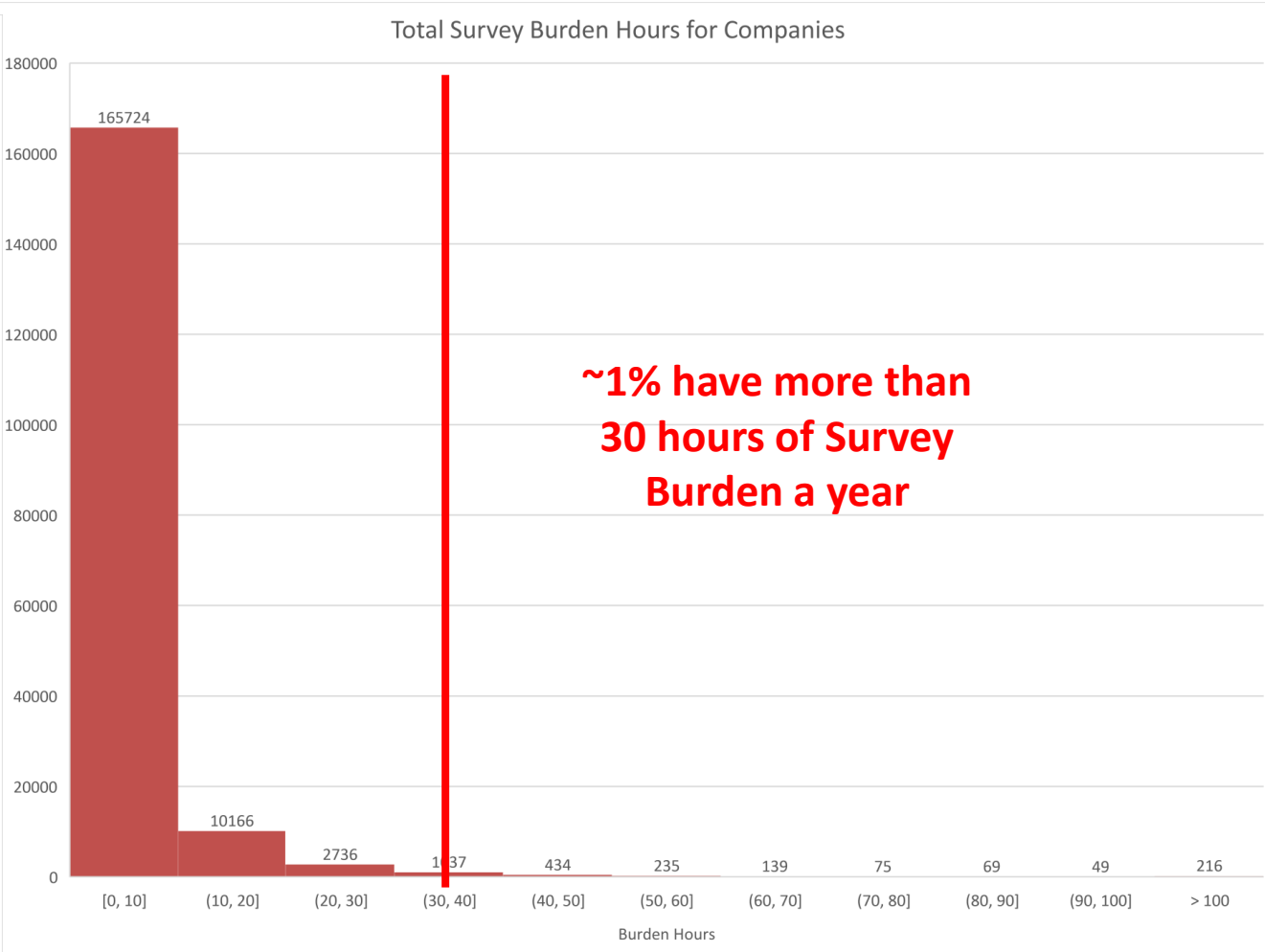
## Accumulated Burden

- Total burden of a company across all program they are sampled in

Step 2

# Review Universe: Objective Measures

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Step 2

# Review Universe: Top 1%

**99th Percentile:**

- Contains: 1,809 Enterprises (1%) covering 867,816 (44%) establishment
- Burden: 20% of total burden
- Coverage: 14 % of business register payroll

**Too** complicated for a harmonized unit

**Too** important to ignore

**SOLUTION:** Assign an account manager

# Step 3 Determine Harmonized Unit

**Universe:** The other 99% of companies

**Constraint:** The unit will support existing tabulation levels;

**Conclusion:** Lowest common denominator prevails & must be NAICS Based

| Survey | Highest NAICS Publication Level |
|---|---|
| Annual Capital Expenditures Survey (ACES) | 4-digit |
| Business R&D and Innovation Survey (BRDIS) | 4-digit |
| Quarterly Services Survey(QSS) | 4-digit |
| Annual Retail Trade Survey (ARTS) | 6-digit |
| Annual Wholesale Trade Survey (AWTS) | 5-digit |
| Manufacturers' Shipments, Inventories, and Orders (M3) | 3-digit |
| Monthly Retail Trade Survey (MRTS) | 6-digit |
| Services Annual Survey (SAS) | 6-digit |
| Monthly Advanced Retail Trade Survey (MARTS) | 6-digit |
| Monthly Wholesale Trade Survey (MWTS) | 4-digit |

**DECISION**: Create 6-digit NAICS based unit called the Kind of Activity Unit (KAU)

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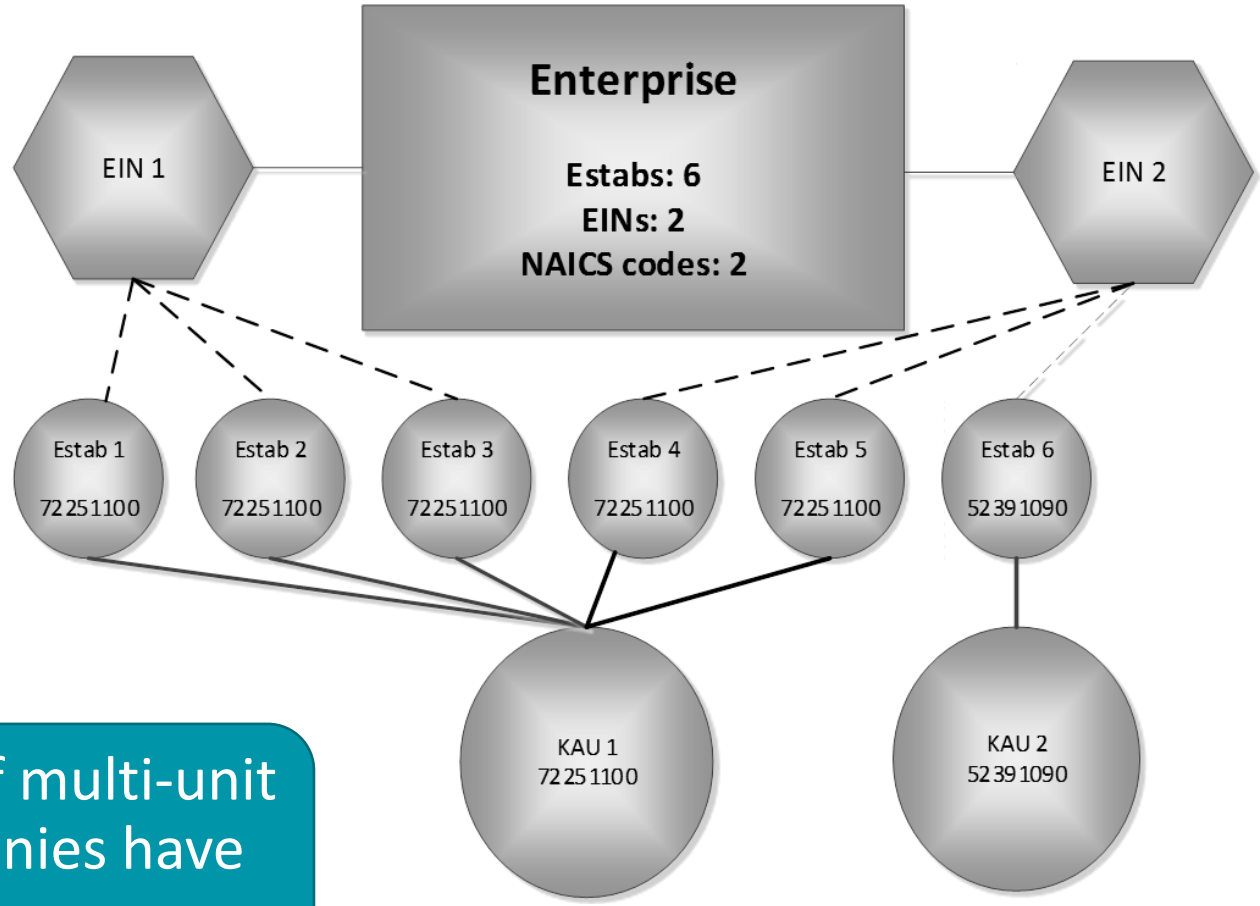
# Step 3

# Determine Harmonized Unit: Kind of Activity Unit (KAU)

| Number of KAUs | 6-digit NAICS | | |
|---|---|---|---|
| | Number of Companies | Percentage | Number of Estabs |
| 1 | 110,291 | 60% | 378,462 |
| 2 | 45,979 | 25% | 302,065 |
| 3 | 13,072 | 7% | 228,134 |
| 4 | 5,436 | 3% | 188,757 |
| 5 | 2,738 | 1% | 124,683 |
| 6 | 1,581 | 1% | 86,765 |
| 7 | 964 | 1% | 84,672 |
| 8 | 660 | 0% | 45,309 |
| 9 | 420 | 0% | 55,008 |
| 10 | 313 | 0% | 46,541 |
| 11+ | 1,207 | 1% | 389,761 |
| **Total** | **182,661** | **100%** | **1,930,157** |




60% of multi-unit companies have only one KAU

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Step 4

# Research Methodology Issues

- Inability to share status changes across programs
- NAICS codes are assigned independently across programs
- Difficult to maintain the relationship between the sample unit and collection unit
- Programs independently create collection units
- Need to maintain time series

Step 5

# Implement Harmonized Unit

# Content Harmonization

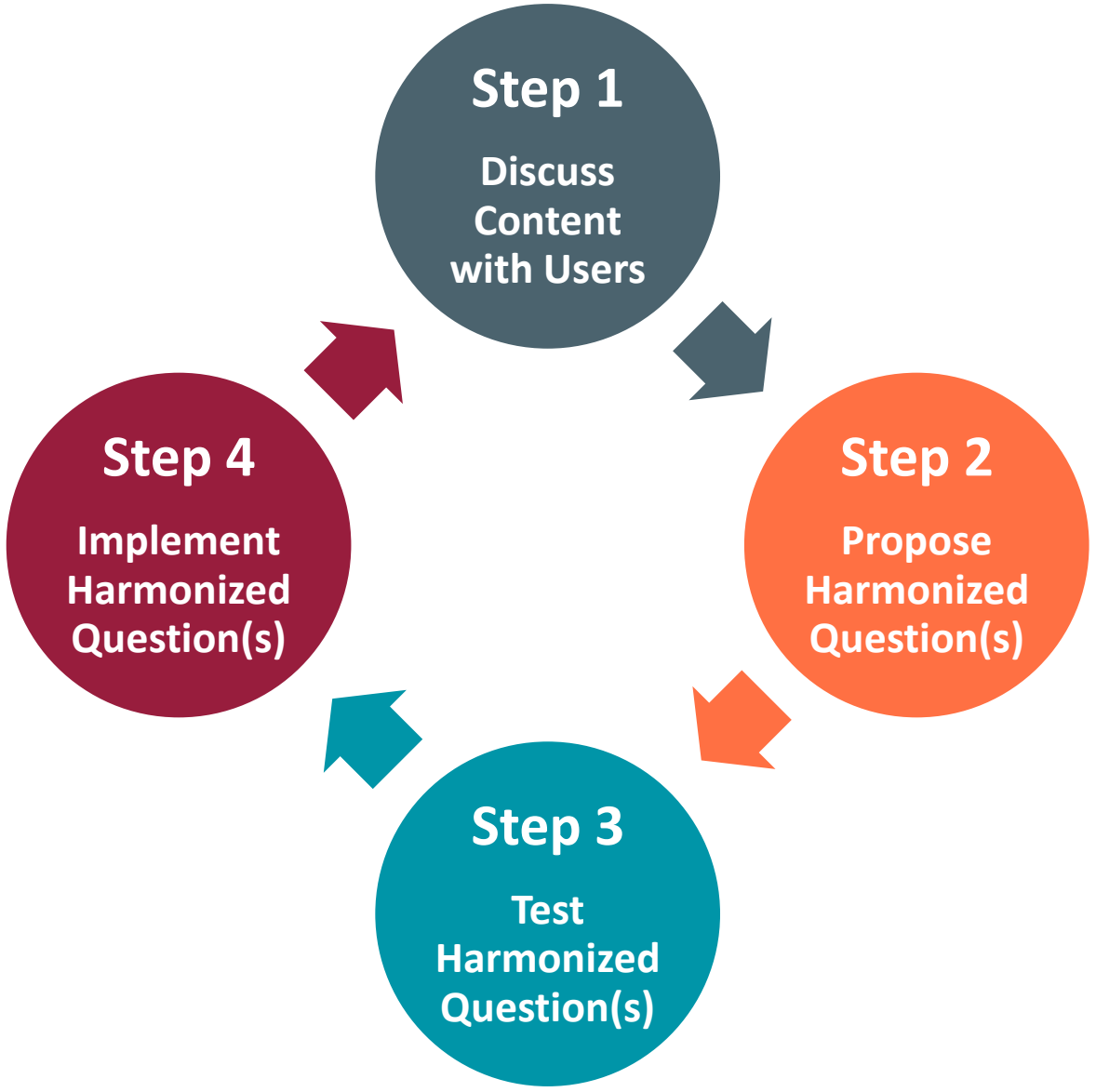
**GOAL:**

Harmonize definitions, questions, and instructions across all Economic programs

**Process:**

Repeat these steps for each of the following concepts:

- Inventory
- Payroll
- Sales/Receipts/Net Shipments
- Control Data
- Expenses



# Content Harmonization: Complications

**Step 1: Discuss Content with Users**

- Failure to understand the ‘why’ behind content

**Step 2: Propose Harmonized Question(s)**

- Different collection instrument approaches and styles
- Resistance from subject matter experts

**Step 3: Test Harmonized Question(s)**

- Lack of funding and resources for testing

# Content Harmonization: Example

| Program | Question Wording | Proposed Harmonized Wording |
|---|---|---|
| **Monthly- Advanced Retail** | What was the value of merchandise Inventories, regardless of where held, owned as of the end of the month? | What was the value of inventories (if applicable, before Last-in, First-out (LIFO) adjustment) owned by this (establishment/firm) as of XX/XX/XXXX. |
| **Monthly- Retail** | What was the value of inventories (before Last-in, First-out (LIFO) adjustment) as of the end of the month? | |
| **Monthly- Wholesale Trade** | What was the value of inventories (before Last-in, First-out (LIFO) adjustment)? | |
| **Annual- Retail, Wholesale, Services** | What was the value of merchandise inventories as of December 31 in 20XX? | |
| **Annual Manufacturing** | What was the value of inventories owned by this establishment as of December 31 before Last-in, First-out (LIFO) adjustment (if any) for: | |
| **Economic Census-Mining** | What were the value of mined products and supplies owned by this domestic reporting unit as of December 31 before Last-In, First- Out (LIFO) adjustment (if any) for: | |
| **Economic Census- Island Area's** | What was the total value of merchandise inventories owned by this establishment? | |
| **Economic Census- Manufacturing** | What were the value of inventories owned by this establishment as of December 31 before Last-in, First-out (LIFO) adjustment (if any) for | |
| **Economic Census- Information** | Report inventories owned by this establishment as of December 31 before Last-in, First-out (LIFO) adjustment (if any). | |
| **Economic Census- Construction** | Using current cost, what was the value of inventories owned by this establishment as of December 31? (If using Last-In, First-Out (LIFO) method of evaluation, adjust to obtain First-In, First-Out (FIFO) or current cost.) | |
| **Economic Census- Wholesale, Transportation** | What were the inventories and Last-in, First-out (LIFO) adjustment, if any, for products owned by this establishment as of December 31? | |
| **Economic Census-Mining Sector** | Report inventories and Last-in, First-out (LIFO) adjustment, if any, for products owned by this establishment as of December 31. | |
| **Economic Census- Information** | Report inventories owned by this consolidated reporting unit as of December 31 before Last-in, First-out (LIFO) adjustment (if any). | |

# Discussion Questions

- What are challenges, successes and opportunities that others have experienced during harmonization efforts?
- How are business units defined for data collection purposes in your organizations? What is their relationship with statistical units?
- Are they consistently defined across survey programs? Why or why not?
- What benefits do you see in harmonizing survey content and collection units? What are some (potential or realized) obstacles to harmonization?

Statistical Office of the Republic of Serbia

# STATISTICAL BUSINESS REGISTER SURVEY ON THE LOCAL UNITS OF LARGE AND MEDIUM SIZED ENTERPRISES

Siniša Cimbaljević

Lisbon, September 2018th

# SBR briefly

- Statistical Business register (SBR) has been founded in 2006

**It consists of (roughly):**

- Legal Units: 454 thousands
- Enterprises: 448 thousands (relation of LU to ENT is 1:1)
- Local Units:  500 thousands
- Enterprise Groups: more than 8500 (New-born statistical unit)

**The most important administrative sources:**

- Serbian Business Registers Agency (SBRA)
- Register of classification units (RJR)
- Tax office
- Central Register of Compulsory Social Insurance Payers (CROSO)

# SBR survey

- The need of performing SBR survey
- Beginnings...
- Targeted data
- Framework
- Survey duration
- Responsible persons in SBR for the survey
- Instruments
- Web questionnaire and IT application for survey monitoring
- Work with bigger Enterprises
- Methodological papers and FAQ
- Predefined survey reports
- Approving collected data
- Response rate

# SBR survey, part of a questionnaire referring employees in local units

## Local unit (principal)

а) Назив _____ Employees (total) _____

б) Општина _____ Насеље _____

в) Улица и кућни број _____ ПАК _____

г) Телефон _____ И-мејл _____

д) Делатност (навести по значају)

| | Activity | Шифра | Број запослених | Индикатор помоћне делатности *) |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |

*) Уколико је реч о помоћној делатности ставити знак (+).

# SBR updating using administrative and statistical sources

- Labour force survey connection
- Updating SBR considering priority issues
- Adopted procedure for updating SBR with the data collected conducting statistical surveys
- Plans, future tasks...

# Thank you for your attention!

# Wait!
# Before you go, just a few more questions:
# Pilot test of a piggyback survey

**Jennifer Edgar, Michael Dalton**
**& Emily Thomas**
Bureau of Labor Statistics

2018 Business Data Collection Methods Workshop

# Piggyback Surveys

- Leverage existing data collection structure to conduct a second survey
- Can be immediate or follow up
- Can screen on responses to original survey or not
- Shown to be effective in low cost data collection and to reach small target populations

# Annual Refiling Survey (ARS)

- SHORT: 2 to 3 simple questions
- HUGE: 1.2 million establishments per year
- FAST: Over 200,000 responses in first 3 weeks

# Annual Refiling Survey (ARS) - Details

- ARS EXCLUDES:
  - Establishments with ≤ 3 employees
  - Establishments in low change industries (e.g., cemeteries) are surveyed less frequently
- ARS has TWO web collection systems:
  - Multi-establishment firms or Single-establishment firms
    - System for single-establishment firms is simpler so it was used for this pilot

# BLS Piggyback Survey

- Can BLS set up an infrastructure to host Quick Business Surveys (QBS) following the ARS?

- The first pilot test was conducted in 2018 by hosting the Business Research Survey.

- Asked respondents questions about the types of information that they could provide about their business.

# Pilot Test Goals

- How many ARS respondents will click through to the QBS?
- How many ARS respondents will complete the QBS?
- Who is the ARS respondent?
- What can the ARS respondent answer questions about?

# Pilot Test Goals

- How mar…QBS?
- How mar…
- Who is t…
- What car…t?

AND….

Can we use modified sampling techniques to get similar results faster?

Can we supplement the ARS sample to get more complete coverage (e.g., small businesses, multi-units)?

# Questions for the Business Research Survey

1. What company do you work for?
2. In what department do you work?

Can you answer questions about? (Yes or No)

3. How job openings are advertised?
4. How many job openings you are trying to fill?
5. Total revenue from sales or receipts?
6. Top three revenue producing products?
7. Number of 1099-MISC filed in the last year?
8. Permanent layoffs in the last three months?

Average: 2.4 min

Median: 1.9 min

# Tested Two Different Sampling Methods

## Proportional Random Sample

1. Establish sampling criteria
2. Pull sample
3. Solicit respondents
4. Wait for response
5. Non-response follow up
6. Wait for response
7. Non-response follow up
8. Etc.

## Open-to-All Collection

1. Show QBS invitation screen to all ARS respondents
2. Monitor collection
3. Close collection once target is met

# Open-to-All Collection Results

- Goal: Collect 7,000 Responses
  - No stratification by industry or size class in initial test
    - This can be added and tested at a later date
- Goal was met in 3 days of collection
- 69% Click through rate
  - 9,494 ARS responses → 6,549 QBS Responses

# Open-to-All Collection Coverage

| Quota | Size | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| NAICS Sector | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Total |
| 11 | 23 | 46 | 19 | 10 | 1 | 1 | 1 | | | 101 |
| 21 | 10 | 5 | 4 | 5 | 1 | 1 | 1 | 1 | | 28 |
| 22 | 4 | 2 | 2 | 3 | | | | | | 11 |
| 23 | 197 | 205 | 123 | 65 | 23 | 8 | 1 | 1 | | 623 |
| 31 | 25 | 19 | 14 | 16 | 5 | 5 | | 2 | | 86 |
| 32 | 17 | 24 | 20 | 14 | 12 | 10 | 6 | 1 | | 104 |
| 33 | 48 | 38 | 46 | 35 | 20 | 15 | 6 | 5 | 1 | 214 |
| 42 | 146 | 128 | 101 | 54 | 18 | 10 | 3 | | | 460 |
| 44 | 119 | 159 | 110 | 52 | 22 | 15 | | | | 477 |
| 45 | 67 | 57 | 18 | 9 | 4 | | | | | 155 |
| 48 | 57 | 34 | 32 | 19 | 5 | 1 | | | | 148 |
| 49 | 8 | 12 | 10 | 7 | 1 | | | | | 38 |
| 51 | 58 | 30 | 19 | 12 | 5 | | | | | 124 |
| 52 | 83 | 66 | 44 | 19 | 11 | 3 | | 1 | | 227 |
| 53 | 90 | 70 | 38 | 15 | 3 | 6 | 1 | | | 223 |
| 54 | 351 | 205 | 105 | 83 | 38 | 14 | 1 | | 1 | 798 |
| 55 | 15 | 7 | 11 | 5 | | 2 | 1 | | | 41 |
| 56 | 135 | 113 | 73 | 50 | 19 | 13 | 5 | 2 | | 410 |
| 61 | 29 | 30 | 21 | 12 | 8 | 7 | 3 | | | 110 |
| 62 | 161 | 184 | 130 | 78 | 33 | 33 | 6 | 5 | 2 | 632 |
| 71 | 45 | 37 | 20 | 24 | 15 | 3 | 1 | | | 145 |
| 72 | 127 | 165 | 210 | 169 | 45 | 10 | 3 | | | 729 |
| 81 | 153 | 121 | 63 | 40 | 7 | 4 | | | | 388 |
| 92 | 2 | | | | | | | | | 2 |
| 99 | 258 | 13 | 3 | 1 | | | | | | 275 |
| Total | 2228 | 1770 | 1236 | 797 | 296 | 161 | 39 | 18 | 4 | 6549 |

# Random Sample Results

- 2,782 ARS respondents selected for QBS (ARS Prompted)
  - 750 emailed invitation → 44% response rate
  - 2,032 mailed invitation → 42% response rate
  - Total 43% response rate

- 7,062 non-ARS respondents selected (QBS-only)
  - Only used mailed letters (email is only available for ARS)
  - Total 19% response rate

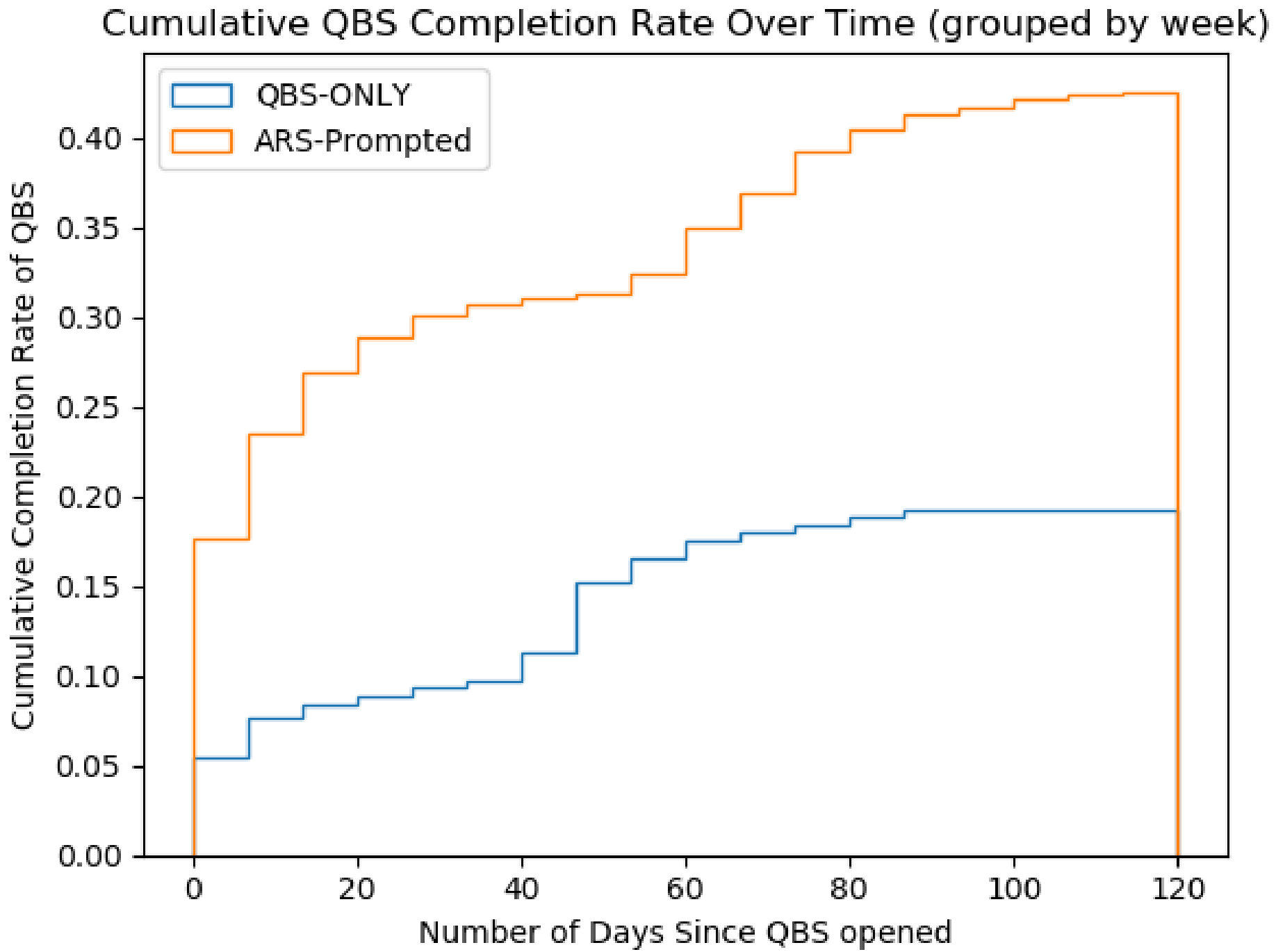
# Proportional Random Sample Results

| | Sample Size | Click Through Rate | Response Rate |
|---|---|---|---|
| **Total** | | | |
| ARS-prompted | 2,782 | 46.0% | 42.7% |
| QBS-only | 6,538 | 20.3% | 19.2% |
| **Conditional on completing ARS** | | | |
| ARS-prompted | 1,662 | 76.7% | 71.2% |
| QBS-only | 1,526 | 87.0% | 82.2% |

# Random Sample Results
# First 7 days

| | Sample Size | Click Through Rate | Complete RR |
|---|---|---|---|
| ARS-prompted | 2,782 | 19.1% | 17.8% |
| QBS-only | 6,538 | 6.4% | 6.0% |

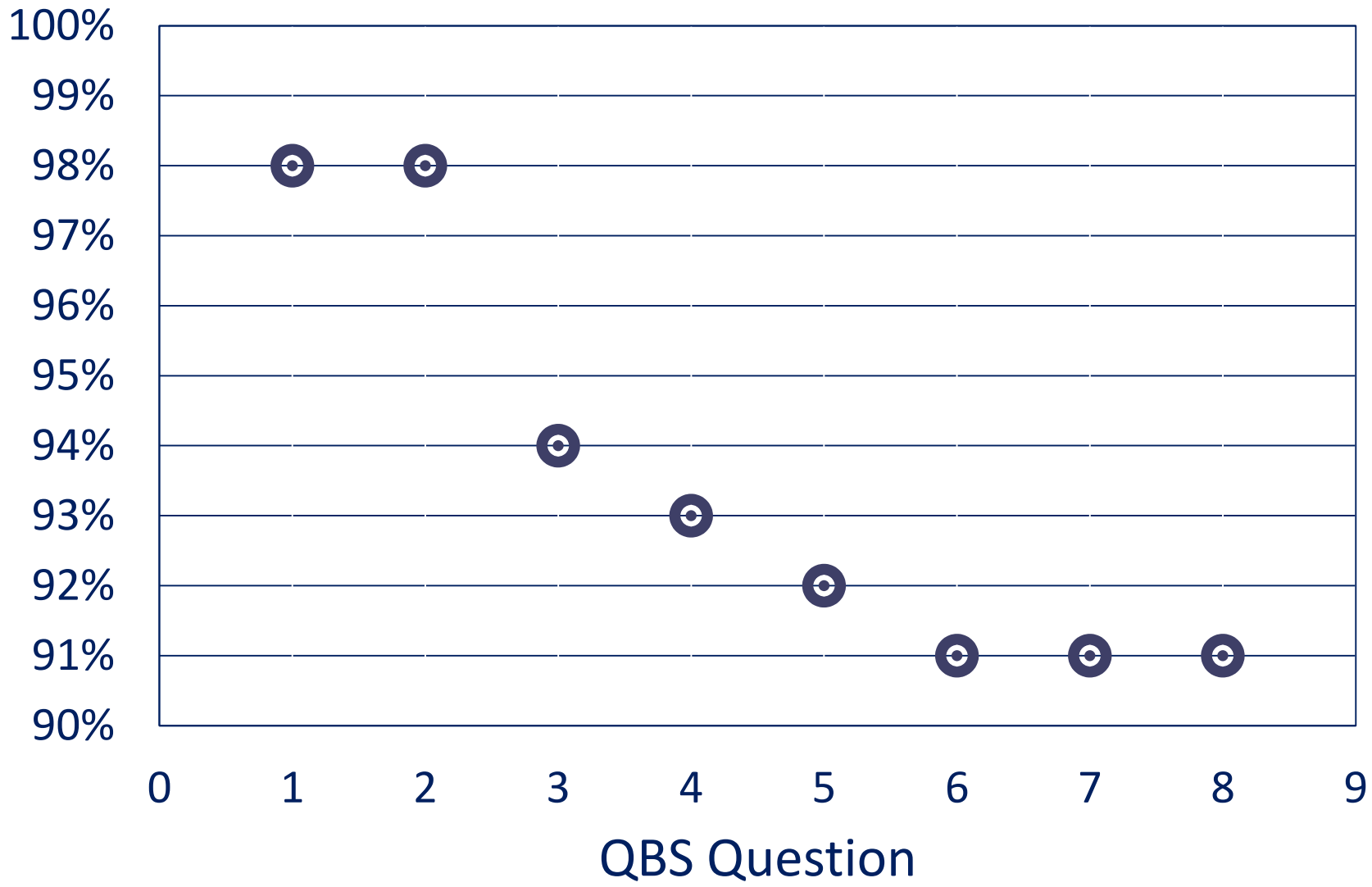
ARS 7-day response rate by mail is 10.7%


Cumulative QBS Completion Rate Over Time (grouped by week)
QBS-ONLY
ARS-Prompted
Cumulative Completion Rate of QBS
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0.35
0.40
0
20
40
60
80
100
120
Number of Days Since QBS opened

# Random Sampling Coverage

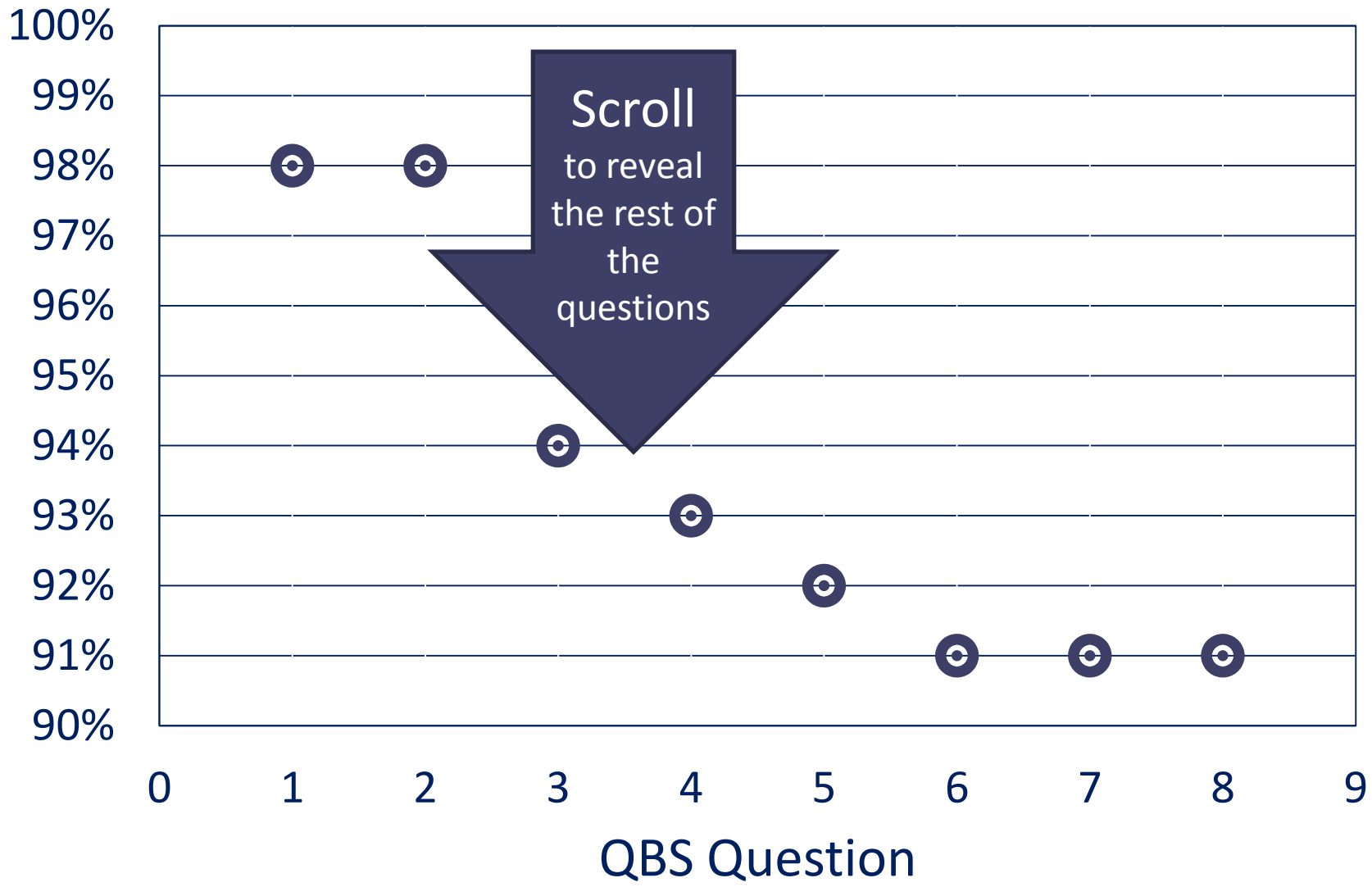
| Random | Size | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| NAICS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Total |
| 11 | 10 | 5 | 6 | 2 | 5 | 3 | 5 | | | 36 |
| 21 | 7 | 1 | 5 | 3 | 6 | 2 | 5 | 3 | 1 | 33 |
| 22 | 4 | 4 | 4 | 1 | 7 | 2 | 1 | 2 | | 25 |
| 23 | 80 | 47 | 37 | 20 | 7 | 4 | 2 | 4 | 1 | 202 |
| 31 | 5 | 5 | 7 | 5 | 6 | 2 | 3 | 4 | 2 | 39 |
| 32 | 9 | 4 | 8 | 5 | 2 | 4 | 2 | 2 | 1 | 37 |
| 33 | 17 | 11 | 14 | 13 | 6 | 4 | 3 | 3 | 1 | 72 |
| 42 | 115 | 33 | 27 | 17 | 3 | 5 | 1 | 2 | 3 | 206 |
| 44 | 45 | 54 | 32 | 16 | 4 | 3 | 4 | 1 | 1 | 160 |
| 45 | 27 | 12 | 8 | 3 | 2 | | 3 | 3 | 3 | 61 |
| 48 | 23 | 10 | 9 | 10 | 3 | 2 | 4 | 1 | 4 | 66 |
| 49 | 2 | 5 | 2 | 3 | 2 | 3 | 1 | | 1 | 19 |
| 51 | 26 | 11 | 6 | 4 | 1 | 2 | 4 | | 2 | 56 |
| 52 | 59 | 34 | 16 | 10 | 5 | 4 | 4 | 2 | 2 | 136 |
| 53 | 55 | 18 | 7 | 8 | 5 | 3 | 3 | 3 | | 102 |
| 54 | 197 | 63 | 38 | 19 | 8 | 5 | 1 | 5 | 3 | 339 |
| 55 | 10 | 6 | 7 | 3 | 3 | 4 | 2 | 2 | | 37 |
| 56 | 65 | 24 | 16 | 13 | 7 | 5 | 2 | 2 | 1 | 135 |
| 61 | 9 | 9 | 7 | 4 | 2 | 5 | 4 | 6 | 4 | 50 |
| 62 | 85 | 50 | 42 | 33 | 11 | 15 | 3 | 3 | 2 | 244 |
| 71 | 22 | 10 | 7 | 5 | 3 | 3 | 3 | 5 | 3 | 61 |
| 72 | 36 | 45 | 56 | 52 | 15 | 5 | 2 | 1 | 2 | 214 |
| 81 | 47 | 31 | 21 | 10 | 4 | 3 | 4 | 2 | 1 | 123 |
| Total | 955 | 492 | 382 | 259 | 117 | 88 | 66 | 56 | 38 | 2453 |

# Item Completion Rates




Of the Rs who started the QBS, 87% completed all 8 questions

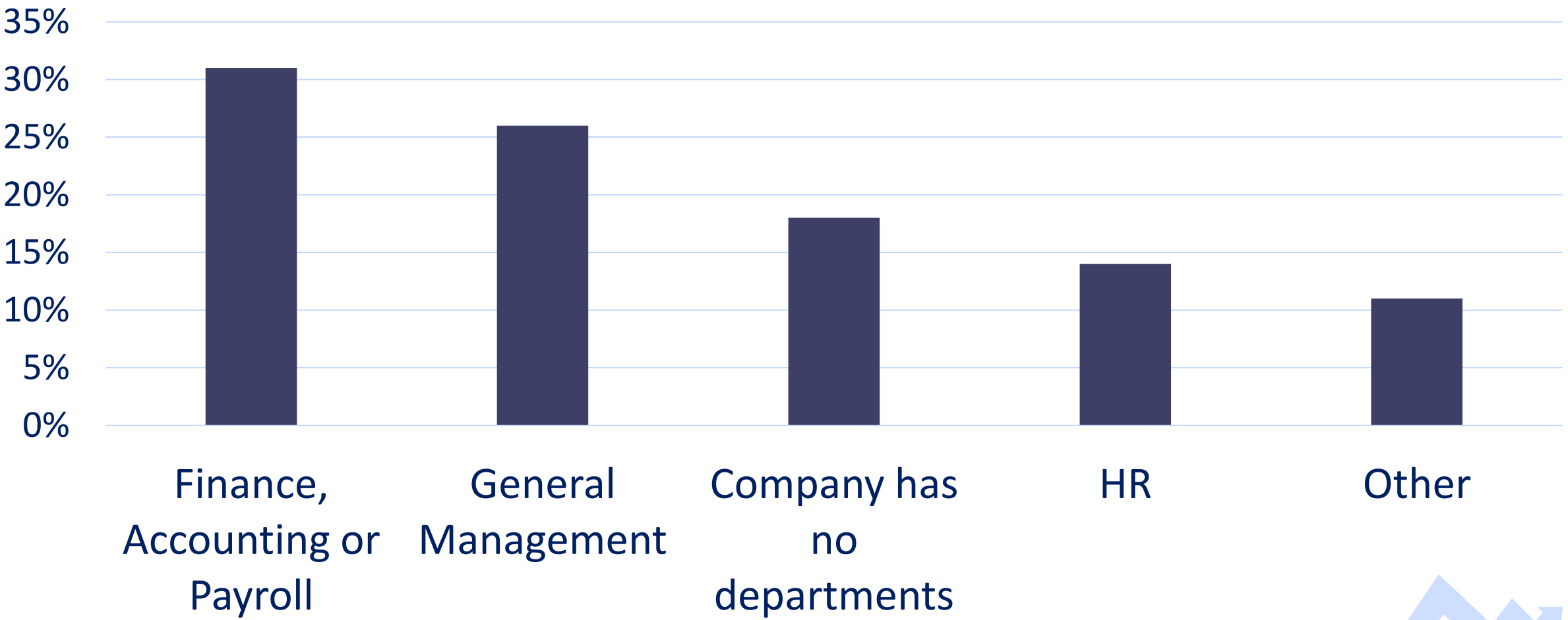
# Item Completion Rates



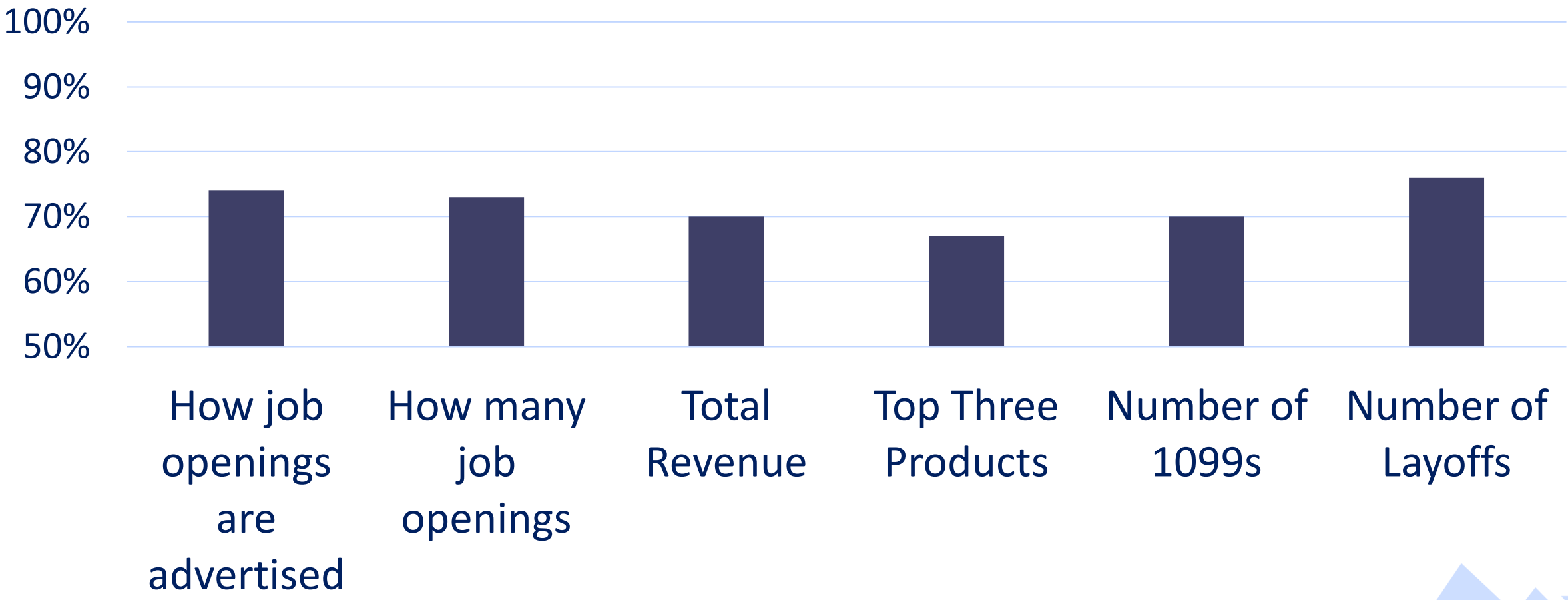

Of the Rs who started the QBS, 87% completed all 8 questions

# 87% of Rs work in the company sampled

Rest worked in a firm doing accounting, payroll or law *for* that firm



# % of Respondents Who Can Report



# Pilot Test Findings

- Can we use open-to-all collection to get similar results faster:  Yes, but…
- Can we supplement the ARS sample to get more complete coverage: Kind of…
- Click through rates: 46% of ARS respondents (20% of QBS only)
- Completion rates : 43% of ARS respondents (19% of QBS only)
- Who the ARS respondent is
- What the ARS respondent can answer questions about

# Limitations → Next Steps

- Collection-for-all method did not include any stratification for industry or size class.
  - Try again with industry and size quotas
  - Add randomness to system open times in ARS cycles (early respondents are probably different than late responders)
- QBS-only had a low response rate; need to understand why that is and improve
- 2 minute survey seemed to work, little drop off.  Is that enough to collect useful information? Would item response drop if more questions were added?

# Contact Information

**Emily Thomas**
Bureau of Labor Statistics
www.bls.gov/cew
202-691-6441
Thomas.Emily@bls.gov

Statistics Poland

# DATA COLLECTION AND INFORMATION FLOW MANAGEMENT IN STATISTICAL SURVEYS CONDUCTED WITH THE USE OF REPORTING PORTAL

Paweł Szymankiewicz

Statistics Poland

Lisbon, 19-21 September 2018, Fifth International Workshop on Business Data Collection Methodology

# REPORTING PORTAL AS A CHANNEL OF COMMUNICATION WITH RESPONDENTS

"(…) The President of Statistics Poland shall run a tele-information system comprising an electronic platform for statistical data collection *(i.e. the Reporting Portal)*. (…) The eletronic platform for statistical data collection shall enable in particular (…) **maintaining communication between the official statistics services and respondents (…)**."

*(Article 28a of the Law of 29 June 1995 on Official Statistics)*

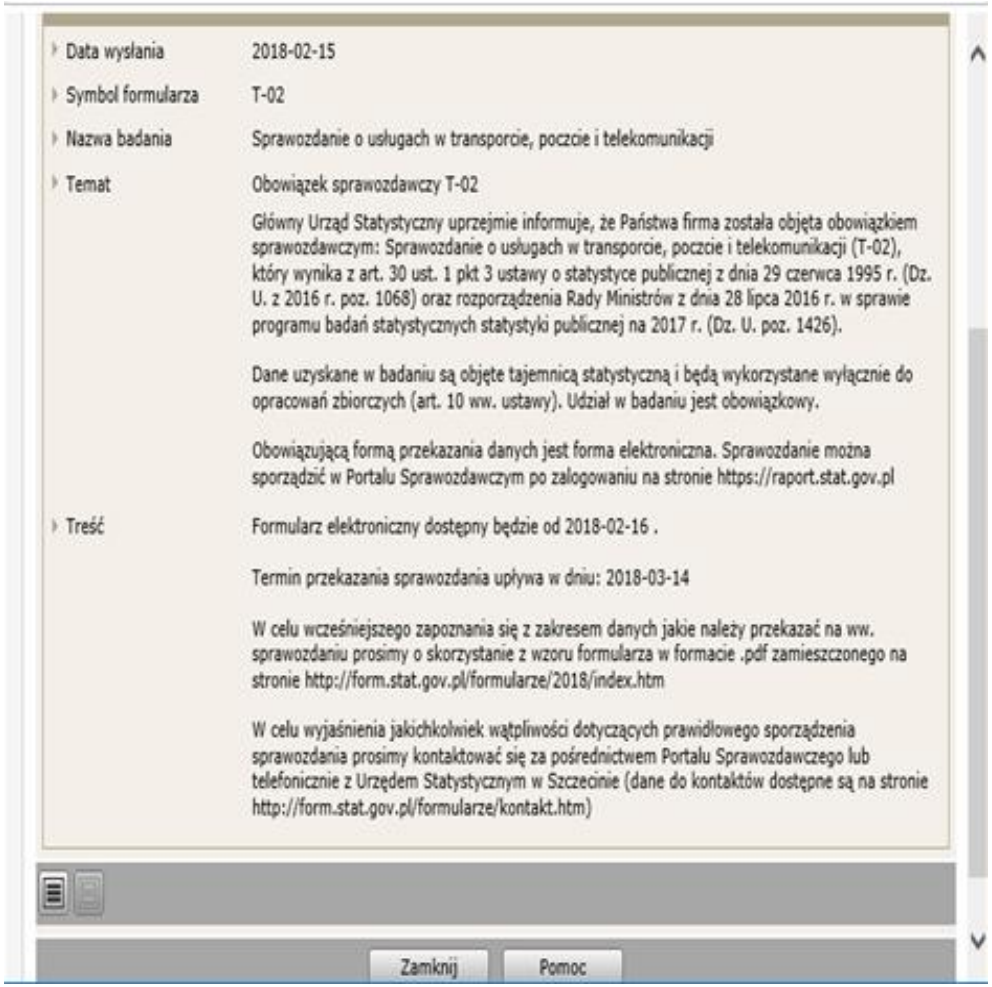
# ANNOUNCEMENTS SENT AUTOMATICALLY BY THE REPORTING PORTAL

letter informing about statistical obligation

information about the forthcoming deadline for submitting the data

admonition letter for those who missed the deadline

# LETTER INFORMING ABOUT STATISTICAL OBLIGATION

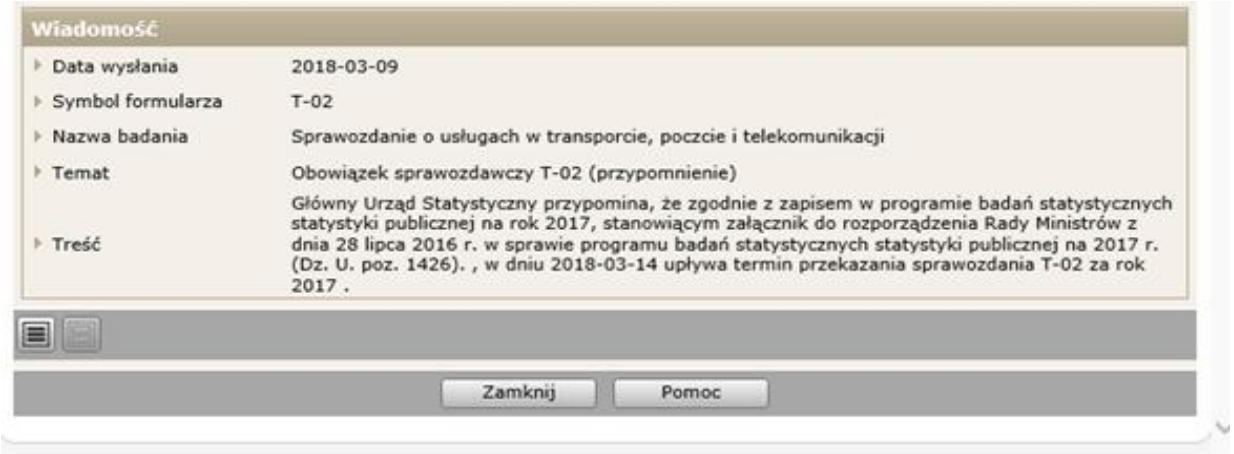


| | |
|---|---|
| Data wysłania | 2018-02-15 |
| Symbol formularza | T-02 |
| Nazwa badania | Sprawozdanie o usługach w transporcie, poczcie i telekomunikacji |
| Temat | Obowiązek sprawozdawczy T-02 |
| Treść | Główny Urząd Statystyczny uprzejmie informuje, że Państwa firma została objęta obowiązkiem sprawozdawczym: Sprawozdanie o usługach w transporcie, poczcie i telekomunikacji (T-02), który wynika z art. 30 ust. 1 pkt 3 ustawy o statystyce publicznej z dnia 29 czerwca 1995 r. (Dz. U. z 2016 r. poz. 1068) oraz rozporządzenia Rady Ministrów z dnia 28 lipca 2016 r. w sprawie programu badań statystycznych statystyki publicznej na 2017 r. (Dz. U. poz. 1426).<br><br>Dane uzyskane w badaniu są objęte tajemnicą statystyczną i będą wykorzystane wyłącznie do opracowań zbiorczych (art. 10 ww. ustawy). Udział w badaniu jest obowiązkowy.<br><br>Obowiązującą formą przekazania danych jest forma elektroniczna. Sprawozdanie można sporządzić w Portalu Sprawozdawczym po zalogowaniu na stronie https://raport.stat.gov.pl<br><br>Formularz elektroniczny dostępny będzie od 2018-02-16 .<br><br>Termin przekazania sprawozdania upływa w dniu: 2018-03-14<br><br>W celu wcześniejszego zapoznania się z zakresem danych jakie należy przekazać na ww. sprawozdaniu prosimy o skorzystanie z wzoru formularza w formacie .pdf zamieszczonego na stronie http://form.stat.gov.pl/formularze/2018/index.htm<br><br>W celu wyjaśnienia jakichkolwiek wątpliwości dotyczących prawidłowego sporządzenia sprawozdania prosimy kontaktować się za pośrednictwem Portalu Sprawozdawczego lub telefonicznie z Urzędem Statystycznym w Szczecinie (dane do kontaktów dostępne są na stronie http://form.stat.gov.pl/formularze/kontakt.htm) |

Zamknij Pomoc

- sent once, one working day/a few days before the electronic questionnaire is made available for respondents
- contains: legal basis concerning statistical obligation, date of beginning of questionnaire's availability for respondents, deadline for data provision, address of help desk etc.

# REMINDER




- as a rule, sent once (in some cases twice) during the survey
- reminds of the obligatory date of data provision specified in the programme of surveys
- sent a few days before this date

# ADMONITION LETTER

- delivered only to respondents who missed the deadline for data provision arising from the programme of surveys
- as a general rule, sent one working day after this deadline
- contains **request for immediate sending the outstanding data**, address of help desk webpage, information about legal basis for the survey (once again) etc.
- up to 4 admonition letters (depending on the length of the period of data collection and data-processing etc.) can be sent to one respondent during one survey
- in most cases, admonition letter is sent twice during the survey

# REPORTING PORTAL AS A CHANNEL OF COMMUNICATION WITH RESPONDENTS

More than 1500 announcements are planned to be sent by the Reporting Portal in 2018.

In addition, it is possible to sent a message from the Portal to respondents who started to fill in the questionnaire, but didn't finished (in some surveys).

Every dispatch of announcement (or message mentioned above) should be planned in advance. Date of dispatch must be set in the data collection schedule for the particular survey.

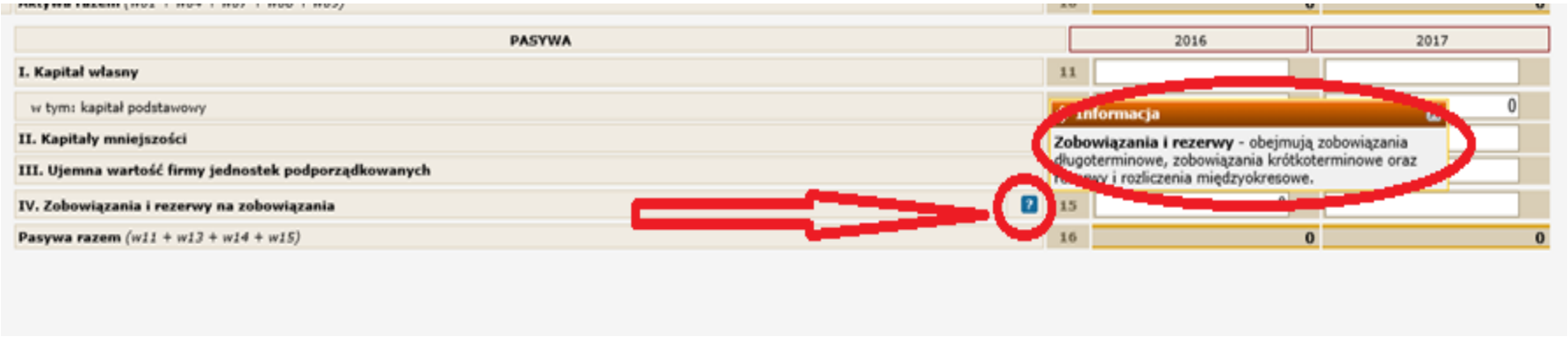
# REPORTING PORTAL AS A CHANNEL OF COMMUNICATION WITH RESPONDENTS

Aside from sending typical announcements (automatically and according to the schedule), other functions of the Reporting Portal include e.g. exchanging letters/messages between statisticians and respondents.

Respondent can make use of the Portal to send a message to the statistician responsible for the survey (for example: to ask a question about the questionnaire), and get an answer.

Announcements and other messages are delivered directly to the respondent's account on the Portal and to his/her e-mail box.

# HELP FOR RESPONDENT DURING FILLING-IN THE QUESTIONNAIRE




- For some questionnaires: definitions of some difficult terms on the questionnaire. In order to display the definition, it is enough to click on the symbol (in this case: question mark).
- Preliminary control of input data in the process of filling-in the questionnaire (system displays the list of errors).

# HELP FOR RESPONDENT DURING FILLING-IN THE QUESTIONNAIRE

- In case of any problem connected with filling-in the questionnaire, respondent can contact the authorized employees of appropriate statistical office and ask for help.
- Direct links to lists of employees involved in providing respondents with explanations are published on the website of Statistics Poland.

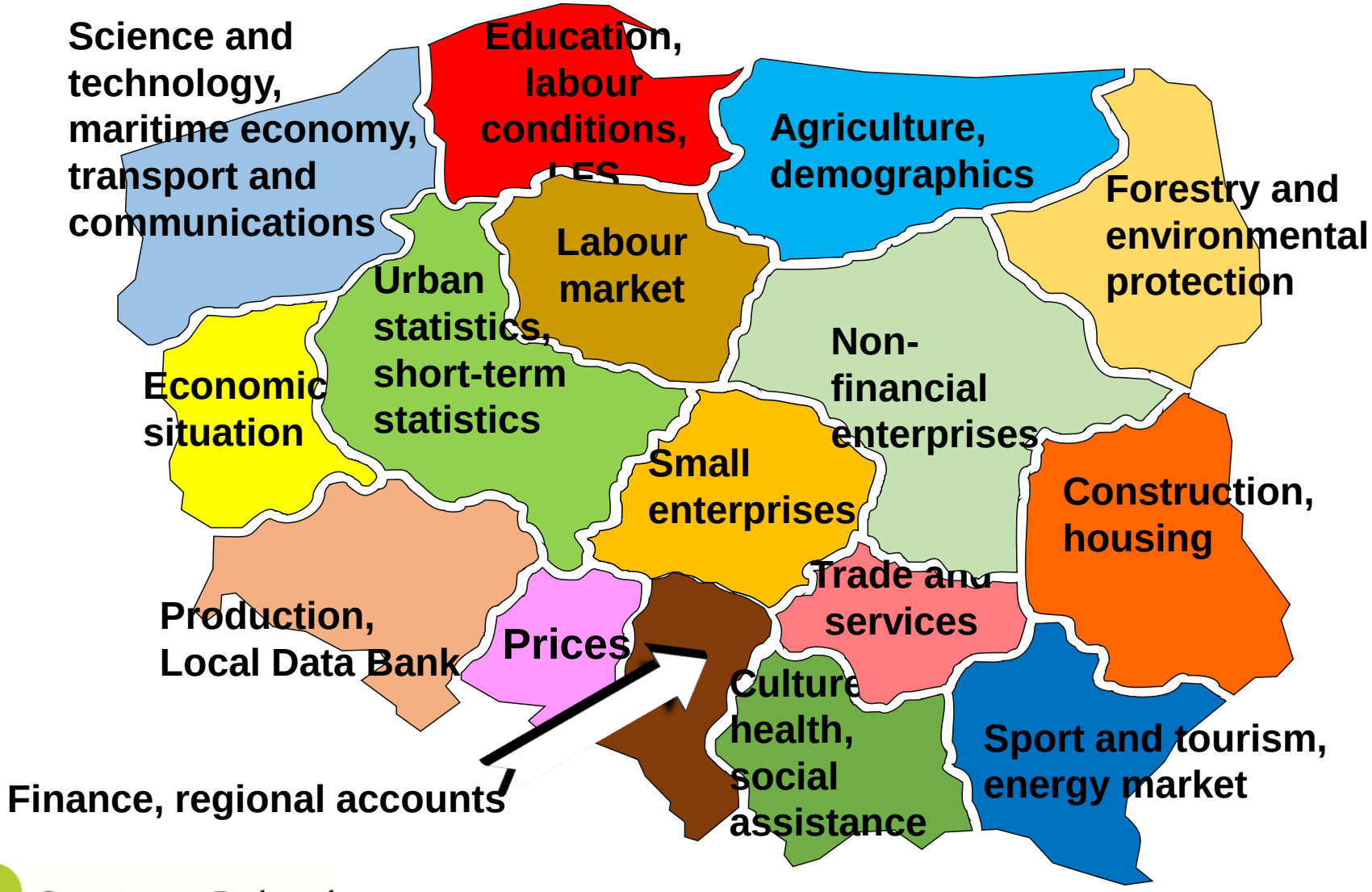
# HELP FOR RESPONDENT DURING FILLING-IN THE QUESTIONNAIRE

od A do E | od F do I | od K do O | od P do S | od T do Z | Inne

| Symbol formularza | Lista kontaktowa |
|---|---|
| K-01 | Lista kontaktowa » |
| K-02 | Lista kontaktowa » |
| K-03 | Lista kontaktowa » |
| K-05 | Lista kontaktowa » |
| K-06 | Lista kontaktowa » |
| K-07 | Lista kontaktowa » |
| K-08 | Lista kontaktowa » |
| K-09 | Lista kontaktowa » |
| K-10 | Lista kontaktowa » |
| KFT-1 | Lista kontaktowa » |
| KFT-2 | Lista kontaktowa » |
| KFT-OBa | Lista kontaktowa » |
| KFT-OBb | Lista kontaktowa » |
| KT-1 | Lista kontaktowa » |
| KT-2 | Lista kontaktowa » |
| KZ | Lista kontaktowa » |
| KZZ | Lista kontaktowa » |
| L-01 | Lista kontaktowa » |

- Lists of employees (together with their phone numbers and e-mail addresses) are displayed for respective questionnaires.
- Number of experts in the field of statistical questionnaires involved in providing explanations depends, first of all, on the size of statistical population covered by the survey.
- Explanations are provided by employees of statistical offices responsible for conducting particular surveys (according to their specialization).

# STATISTICAL OFFICES SPECIALIZED IN SELECTED AREAS OF STATISTICS



# HELP DESK FOR RESPONDENTS

- Nationwide statistical helpline *(Infolinia Statystyczna)*: the same phone number for entire country (22 279 99 99) and assistance available from Monday to Friday, 8am to 3pm.
- Users of the Reporting Portal who encountered any technical problem (lost authentication data, difficulties connected with logging in to the account etc.) can also send an e-mail to the appropriate employee from the list attached to the website, and ask for help.

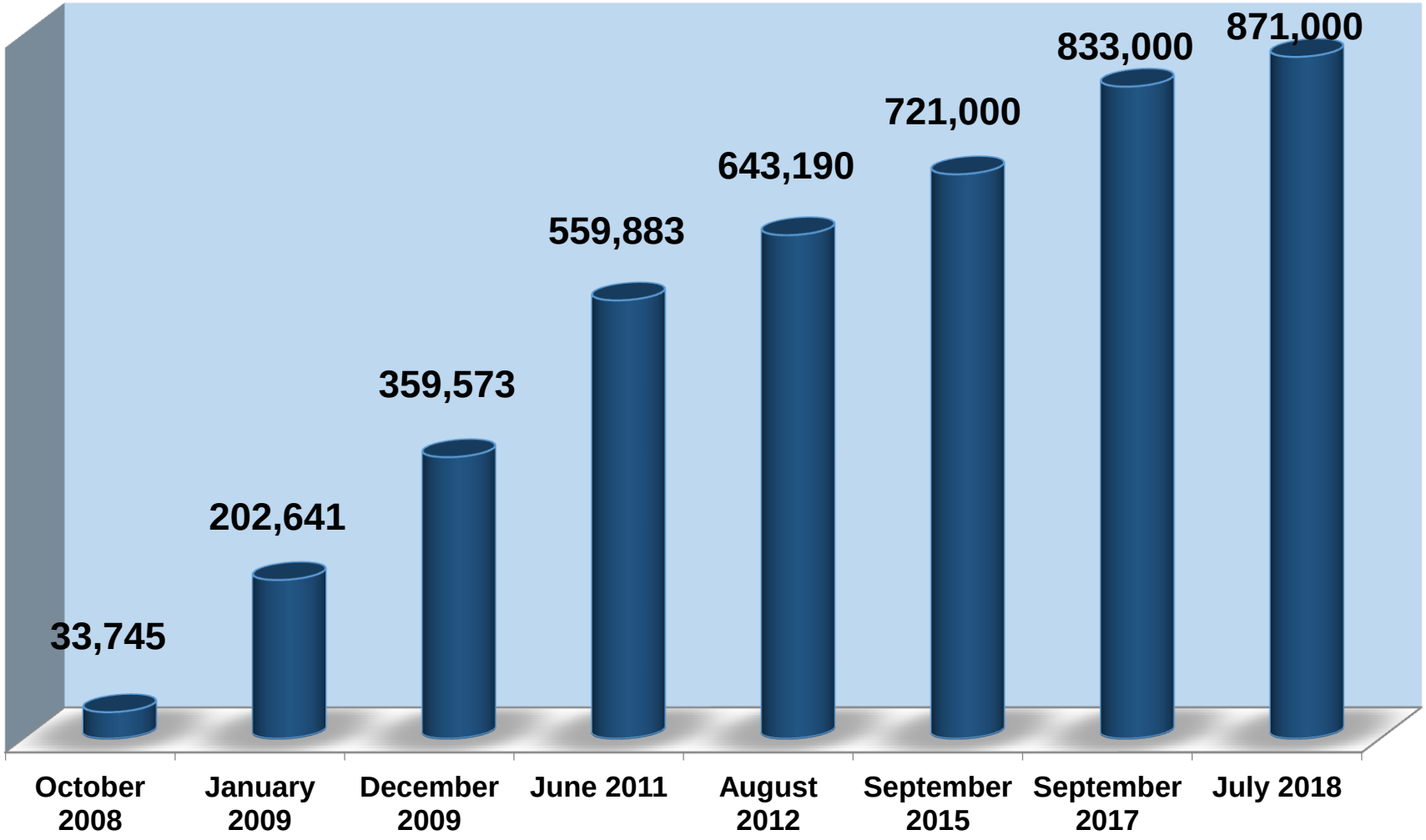
# OTHER FUNCTIONS OF THE REPORTING PORTAL

Information for respondent about next statistical obligations (in the current year), available after logging in to the user's account.

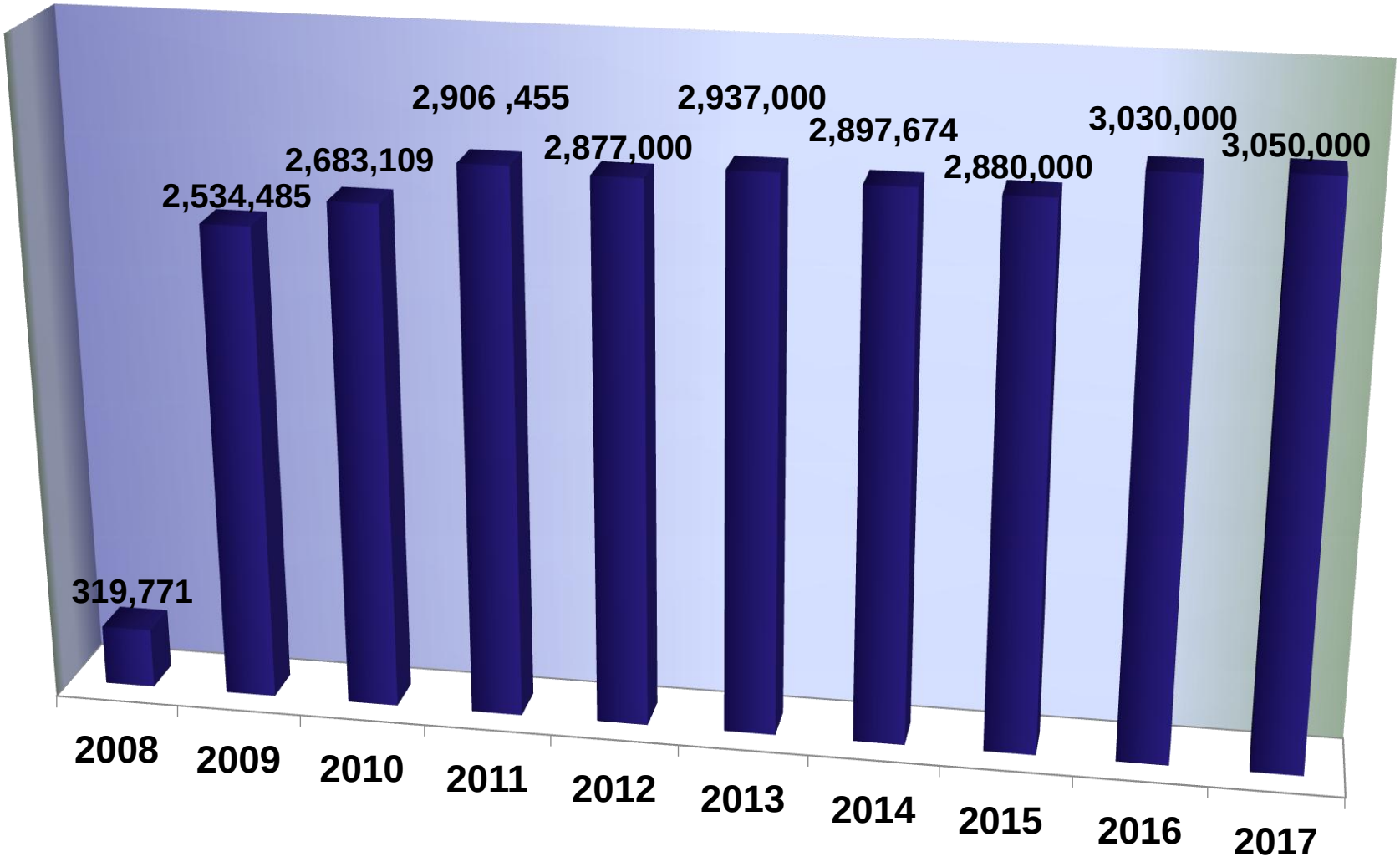
Instructions, guidelines etc. necessary for users, available (for every user and visitor) on the webpage of the Portal.

Models of all statistical questionnaires (in PDF format) used by Statistics Poland, along with guidelines concerning their filling-in, deadlines for data provision and dates of availability of every questionnaire on the Reporting Portal, are also published on the webpage of the Portal.

# THE REPORTING PORTAL OF STATISTICS POLAND – NUMBER OF USER ACCOUNTS



# THE REPORTING PORTAL OF STATISTICS POLAND – NUMBER OF COLLECTED QUESTIONNAIRES



Statistics Poland

# Thank you for your attention.

**Paweł Szymankiewicz**

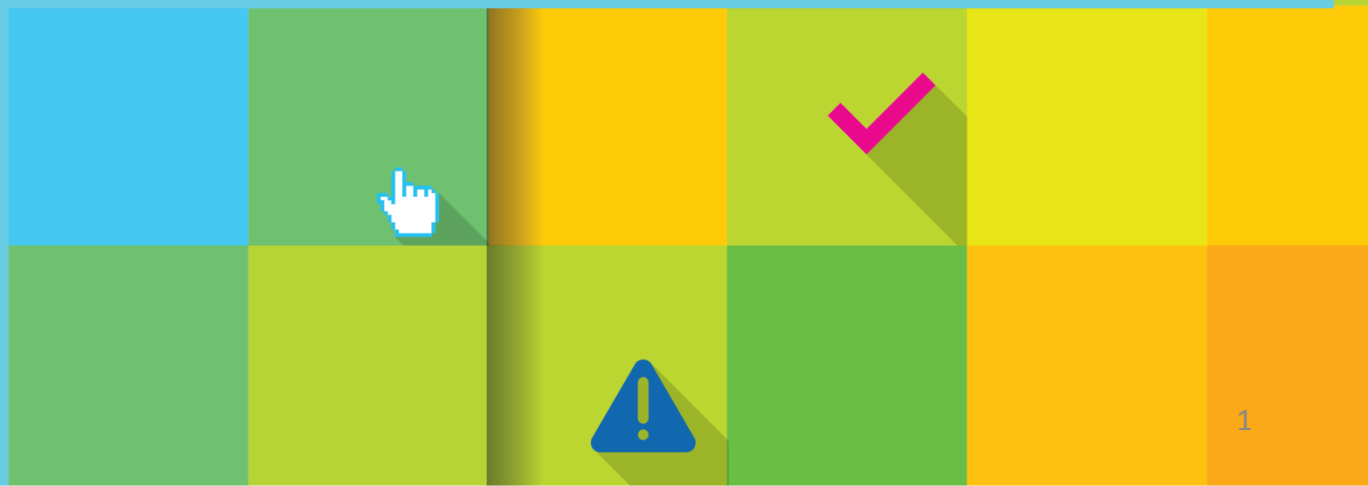
**Statistics Poland**

E-mail: P.Szymankiewicz@stat.gov.pl

INSTITUTO NACIONAL DE ESTATÍSTICA
STATISTICS PORTUGAL

# FIFTH INTERNATIONAL WORKSHOP ON BUSINESS DATA COLLECTION METHODOLOGY

## 19-21 SEPTEMBER 2018 – STATISTICS PORTUGAL, LISBON



# STANDARDIZATION OF THE DATA COLLECTION OF BUSINESS STATISTICS IN BELGIUM

Vanhoucke Sem, Statistics Belgium

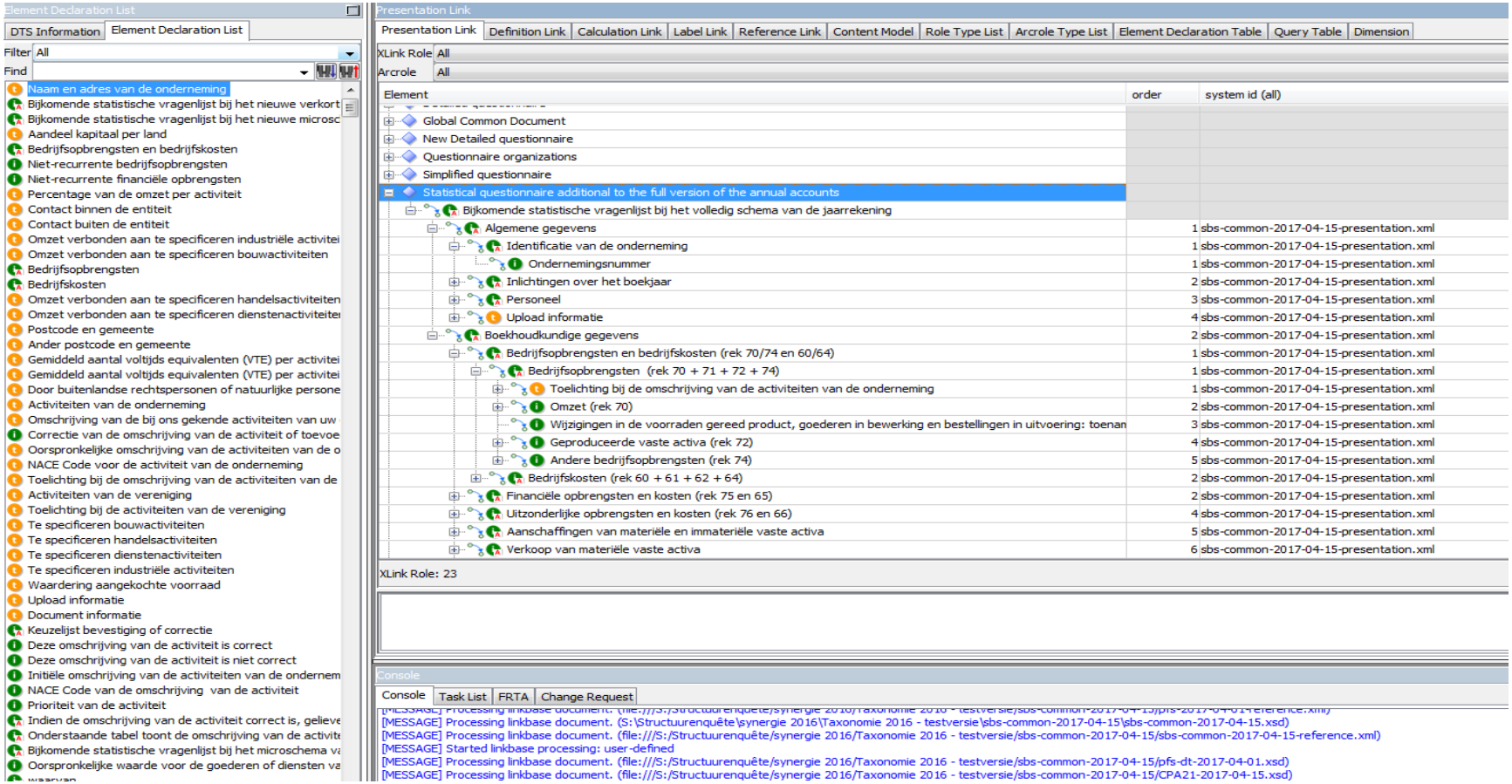
# Data collection until 2010

- Vertical production of statistics – Stovepipes
- A great variety of data collection tools and software
- Inefficient use of means (knowledge monopolized by developer & users, licences for software, access to (production)data not always clear

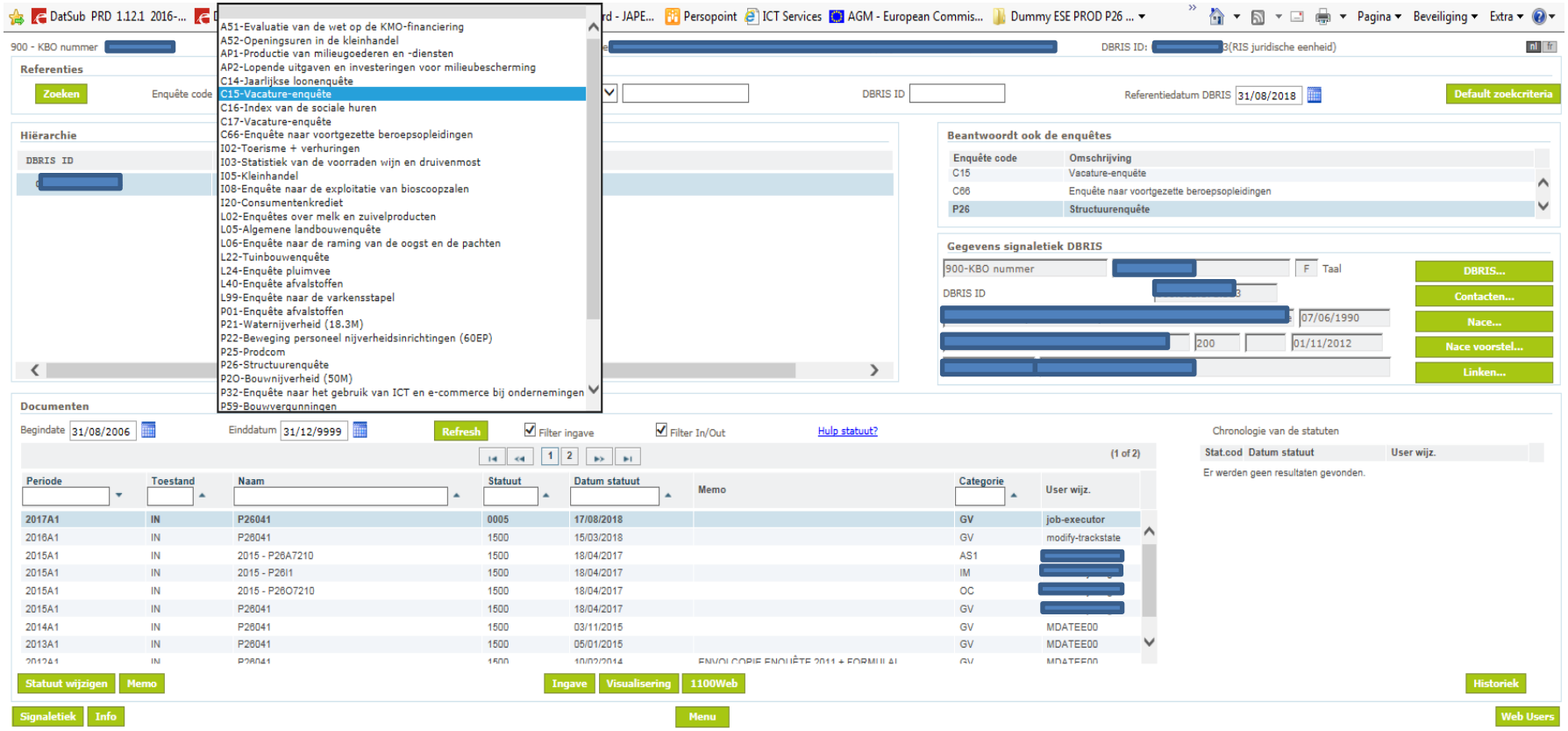
# Towards a single standardized system

- Webbased questionnaires : Xbrl – forms
- One single platform Statdata (internal/external)
- Connected to Business Register
- All data exported to Datawarehouse
- Automation of preparation process

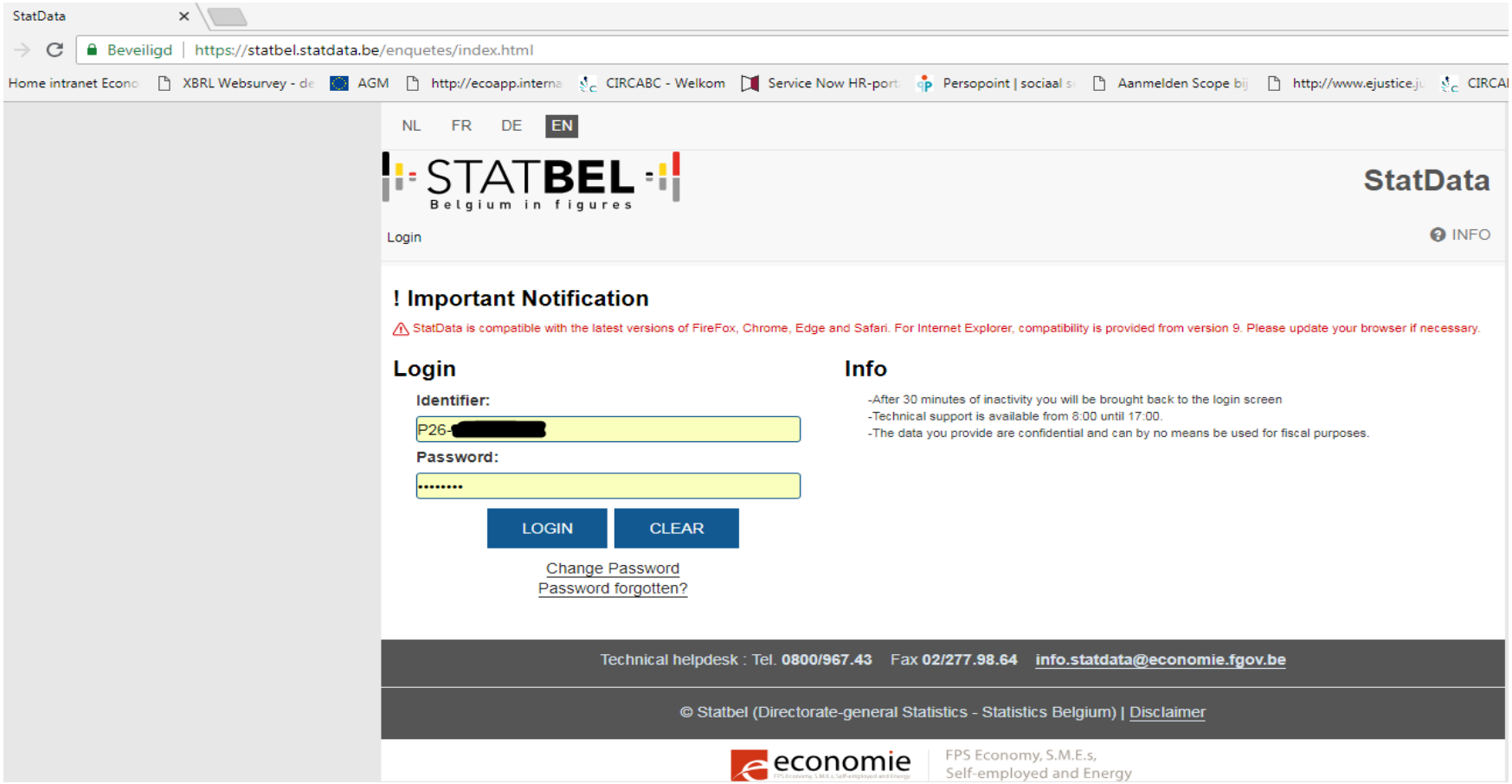
# Xbrl - forms


Element Declaration List
DTS Information
Element Declaration List
Filter All
Find
Naam en adres van de onderneming
Bijkomende statistische vragenlijst bij het nieuwe verkort
Bijkomende statistische vragenlijst bij het nieuwe microsc
Aandeel kapitaal per land
Bedrijfsopbrengsten en bedrijfskosten
Niet-recurrente bedrijfsopbrengsten
Niet-recurrente financiële opbrengsten
Percentage van de omzet per activiteit
Contact binnen de entiteit
Contact buiten de entiteit
Omzet verbonden aan te specificeren industriële activitei
Omzet verbonden aan te specificeren bouwactiviteiten
Bedrijfsopbrengsten
Bedrijfskosten
Omzet verbonden aan te specificeren handelsactiviteiten
Omzet verbonden aan te specificeren dienstenactiviteite
Postcode en gemeente
Ander postcode en gemeente
Gemiddeld aantal voltijds equivalenten (VTE) per activitei
Gemiddeld aantal voltijds equivalenten (VTE) per activitei
Door buitenlandse rechtspersonen of natuurlijke persone
Activiteiten van de onderneming
Omschrijving van de bij ons gekende activiteiten van uw
Correctie van de omschrijving van de activiteit of toevoe
Oorspronkelijke omschrijving van de activiteiten van de o
NACE Code voor de activiteit van de onderneming
Toelichting bij de omschrijving van de activiteiten van de
Activiteiten van de vereniging
Toelichting bij de activiteiten van de vereniging
Te specificeren bouwactiviteiten
Te specificeren handelsactiviteiten
Te specificeren dienstenactiviteiten
Te specificeren industriële activiteiten
Waardering aangekochte voorraad
Upload informatie
Document informatie
Keuzelijst bevestiging of correctie
Deze omschrijving van de activiteit is correct
Deze omschrijving van de activiteit is niet correct
Initiële omschrijving van de activiteiten van de ondernem
NACE Code van de omschrijving van de activiteit
Prioriteit van de activiteit
Indien de omschrijving van de activiteit correct is, gelieve
Onderstaande tabel toont de omschrijving van de activite
Bijkomende statistische vragenlijst bij het microschema va
Oorspronkelijke waarde voor de goederen of diensten va
Presentation Link
Presentation Link
Definition Link
Calculation Link
Label Link
Reference Link
Content Model
Role Type List
Arcrole Type List
Element Declaration Table
Query Table
Dimension
XLink Role All
Arcrole All
Element
order
system id (all)
Global Common Document
New Detailed questionnaire
Questionnaire organizations
Simplified questionnaire
Statistical questionnaire additional to the full version of the annual accounts
Bijkomende statistische vragenlijst bij het volledig schema van de jaarrekening
Algemene gegevens 1 sbs-common-2017-04-15-presentation.xml
Identificatie van de onderneming 1 sbs-common-2017-04-15-presentation.xml
Ondernemingsnummer 1 sbs-common-2017-04-15-presentation.xml
Inlichtingen over het boekjaar 2 sbs-common-2017-04-15-presentation.xml
Personeel 3 sbs-common-2017-04-15-presentation.xml
Upload informatie 4 sbs-common-2017-04-15-presentation.xml
Boekhoudkundige gegevens 2 sbs-common-2017-04-15-presentation.xml
Bedrijfsopbrengsten en bedrijfskosten (rek 70/74 en 60/64) 1 sbs-common-2017-04-15-presentation.xml
Bedrijfsopbrengsten (rek 70 + 71 + 72 + 74) 1 sbs-common-2017-04-15-presentation.xml
Toelichting bij de omschrijving van de activiteiten van de onderneming 1 sbs-common-2017-04-15-presentation.xml
Omzet (rek 70) 2 sbs-common-2017-04-15-presentation.xml
Wijzigingen in de voorraden gereed product, goederen in bewerking en bestellingen in uitvoering: toenan 3 sbs-common-2017-04-15-presentation.xml
Geproduceerde vaste activa (rek 72) 4 sbs-common-2017-04-15-presentation.xml
Andere bedrijfsopbrengsten (rek 74) 5 sbs-common-2017-04-15-presentation.xml
Bedrijfskosten (rek 60 + 61 + 62 + 64) 2 sbs-common-2017-04-15-presentation.xml
Financiële opbrengsten en kosten (rek 75 en 65) 2 sbs-common-2017-04-15-presentation.xml
Uitzonderlijke opbrengsten en kosten (rek 76 en 66) 4 sbs-common-2017-04-15-presentation.xml
Aanschaffingen van materiële en immateriële vaste activa 5 sbs-common-2017-04-15-presentation.xml
Verkoop van materiële vaste activa 6 sbs-common-2017-04-15-presentation.xml
XLink Role: 23
Console
Console
Task List
FRTA
Change Request
[MESSAGE] Processing linkbase document. (S:\Structuurenquête\synergie 2016\Taxonomie 2016 - testversie\sbs-common-2017-04-15\sbs-common-2017-04-15.xsd)
[MESSAGE] Processing linkbase document. (file:///S:/Structuurenquête/synergie 2016/Taxonomie 2016 - testversie/sbs-common-2017-04-15/sbs-common-2017-04-15-reference.xml)
[MESSAGE] Started linkbase processing: user-defined
[MESSAGE] Processing linkbase document. (file:///S:/Structuurenquête/synergie 2016/Taxonomie 2016 - testversie/sbs-common-2017-04-15/pfs-dt-2017-04-01.xsd)
[MESSAGE] Processing linkbase document. (file:///S:/Structuurenquête/synergie 2016/Taxonomie 2016 - testversie/sbs-common-2017-04-15/CPA21-2017-04-15.xsd)

# Statdata platform internal

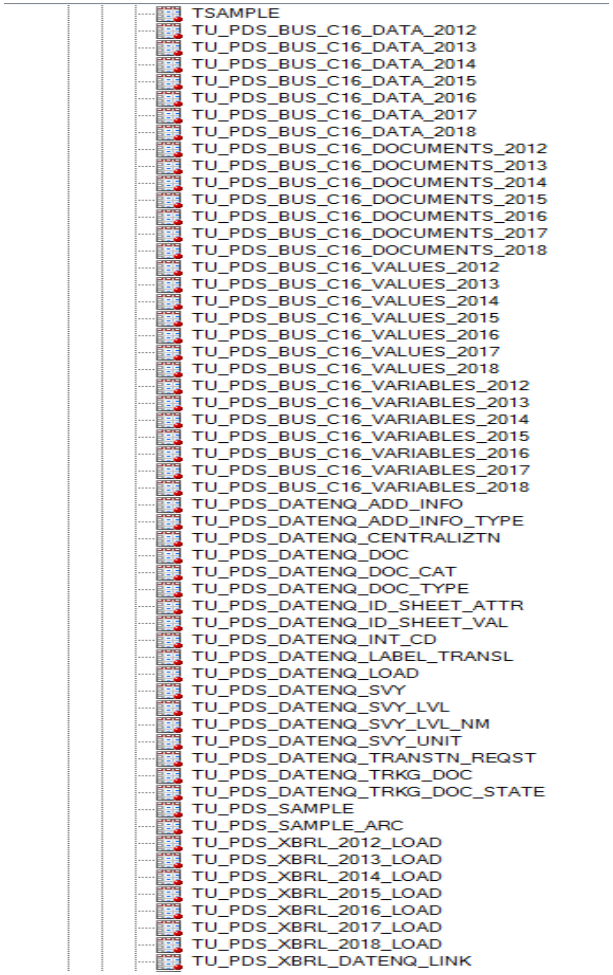


# Statdata platform external



# Export data to DWH

- General libraries (BR, Nace, Geocodes,...)
- Surveyspecific libraries
- Datacollection libraries
  - Each survey has its own library
  - All libraries have the same structure / tables
  - Survey variables, document status, webusers, ...



# Automation jobs

nl fr

Monitoring Job

economie

DatSub

Home - Monitoring Job

**Applicaties**

| Actie | Applicatie |
|---|---|
| Jobs | DatEnq (1) |

**Systemen**

| Actie | Systeem | Omschrijving |
|---|---|---|
| Jobs | 211044 (10100) | C16 - Index van de sociale huren |
| Jobs | 211075 (10101) | P26 - Structuurenquête |
| Jobs | 219341 (10131) | P59 - Bouwvergunningen |

**SubSystemen**

| Actie | SubSysteem | Omschrijving |
|---|---|---|
| Jobs | SIGNALETIQUE (10117) | Signaletique |
| Jobs | SUIVI (10116) | Suivi |
| Jobs | XBRL (10422) | XBRL |

**Batchen**

| Actie | Batch | Omschrijving |
|---|---|---|
| Jobs | P26.createWebUsersAndAuthorizations2 (11714) | Creatie van identificaties en paswoorden |
| Jobs | P26.datenq.LoadFromSas_Sample (10701) | datenq.LoadFromSas_Sample |
| Jobs | P26.listInactiveSample (11016) | CD00 - Synchronisatie Datenq / DBRIS - enquêtes per steekproef |

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# Advantages

- eGovernment
- More control/process ownership/insight for the data-collection section
- Cost-reduction
- Standardized process
  - More flexibility deployment of employees
  - More shared knowledge

# Critical reflections

- Does the data collection system influences the content a survey? Are data-collectors statisticians?
- Limited time for other work as a consequence of Process ownership
- Can one generic system be the best system for every survey

# SIMPLIFIED BUSINESS INFORMATION

today and tomorrow

INSTITUTO NACIONAL DE ESTATÍSTICA
STATISTICS PORTUGAL

September 2018

# SUMMARY

(1/2)

## 1. IES - SIMPLIFIED BUSINESS INFORMATION - TODAY

**WHAT IS IES?**
**HOW WAS IT POSSIBLE?**
**HOW DOES IT WORK?**
**WHAT WERE THE RESULTS?**

# SUMMARY

(2/2)

## 2.IES - SIMPLIFIED BUSINESS INFORMATION - TOMORROW

**MAIN IMPROVEMENTS**
**MAIN CHALLENGES**

# 1.IES - SIMPLIFIED BUSINESS INFORMATION TODAY

Informação Empresarial Simplificada

# WHAT IS IES?

Entities

Legal requirements to businesses

# MINISTRY OF FINANCE

## Annual accounting and fiscal information

AT autoridade tributária e aduaneira

# MINISTRY OF JUSTICE

## Settlement of accounts to the Public Register of Annual Reports

MINISTÉRIO DA JUSTIÇA

# STATISTICS PORTUGAL

## Statistical data

INSTITUTO NACIONAL DE ESTATÍSTICA
STATISTICS PORTUGAL

# BANK OF PORTUGAL

## Economic and financial information

And since 2015

MINISTRY OF ECONOMY

Information on local units

# IES

Informação Empresarial Simplificada

AT autoridade tributária e aduaneira

INSTITUTO NACIONAL DE ESTATÍSTICA
STATISTICS PORTUGAL

MINISTÉRIO DA JUSTIÇA

UCMA
Unidade de Coordenação da Modernização Administrativa

BANCO DE PORTUGAL
EUROSISTEMA

# HOW WAS IT POSSIBLE?

# POLITICAL COMMITMENT

## Simplex Programme

## USE OF EXISTING INFRASTRUCTURES

**IT Platform from Ministry of Finance**

## CREATION OF A WORKING GROUP

**Strong colaboration among all entities**

# HOW DOES IT WORK?

# A DECREE LAW WAS ISSUED

DL 8-2007

# INPUTS

DATA PROVIDED
**BY BUSINESSES**

**FINANCIAL STATEMENTS**
(BALANCE SHEET; PROFIT AND LOSS ACCOUNTS; ANNEX)

**OTHER RELEVANT INFORMATION**
(PERSONS EMPLOYED; ENTERPRISE GROUPS…)

# SCOPE

**NON-FINANCIAL, FINANCIAL AND INSURANCE COMPANIES**

**LEGAL UNIT AND LOCAL UNIT INFORMATION**

# 2 WAYS OF SUBMISSION:

**ELECTRONIC DECLARATION: on-line or off-line**

**UPLOAD OF XML FILE THROUGH A SPECIFIC SOFTWARE TOOL**

# 1

**SINGLE PROCESS**

**SINGLE MOMENT**

**SINGLE BODY**

# PROCESS

**BUSINESSES**

SUBMISSION OF DATA

**2000 editing rules**

VALIDATION PROCESS

**Ministry of Finance**

ELECTRONIC COLLECTION
(Tax System)

**Ministry of Justice**

PUBLIC REGISTER OF ANNUAL REPORTS

**Statistics Portugal**

Statistical data

**Bank of Portugal**

Economic and financial information

48 H

| 2015 | 2016 | 2017 | 2018 |
| --- | --- | --- | --- |
| 430.842 | | | |

Companies have
to deliver
information in
**6,5 months**

The system is
Updated **daily**

# WORKING GROUP

**REGULAR MEETINGS**

**EXTRAORDINARY MEETINGS WHEN NECESSARY**

What were the

**RESULTS?**

# FOR COMPANIES

# COSTS AND BURDEN REDUCTION

# PAPER FREE

# FOR STATISTICS PORTUGAL

MORE ACCURACY
SIMPLIFIED COLLECTION
LESS TIME
MORE INFORMATION
REDUCTION OF COSTS AND BURDEN

# UNITS COVERED

**MORE ACCURACY**
SIMPLIFIED COLLECTION
LESS TIME
MORE INFORMATION
REDUCTION OF COSTS

50.000 (≈15%)

400.000 (≈100%)

# COLLECTION

MORE ACCURACY
**SIMPLIFIED COLLECTION**
LESS TIME
MORE INFORMATION
REDUCTION OF COSTS

Paper format /
Web surveys

Manual /
Semi-automatized

Eletronic means

Fully automatic

# AVAILABILITY

MORE ACCURACY
SIMPLIFIED COLLECTION
**LESS TIME**
MORE INFORMATION
REDUCTION OF COSTS

12 Months

6,5 Months

# NUMBER OF VARIABLES

MORE ACCURACY
SIMPLIFIED COLLECTION
LESS TIME
**⏩ MORE INFORMATION**
REDUCTION OF COSTS

800
Variables

5 000
Variables

# BURDEN REDUCTION

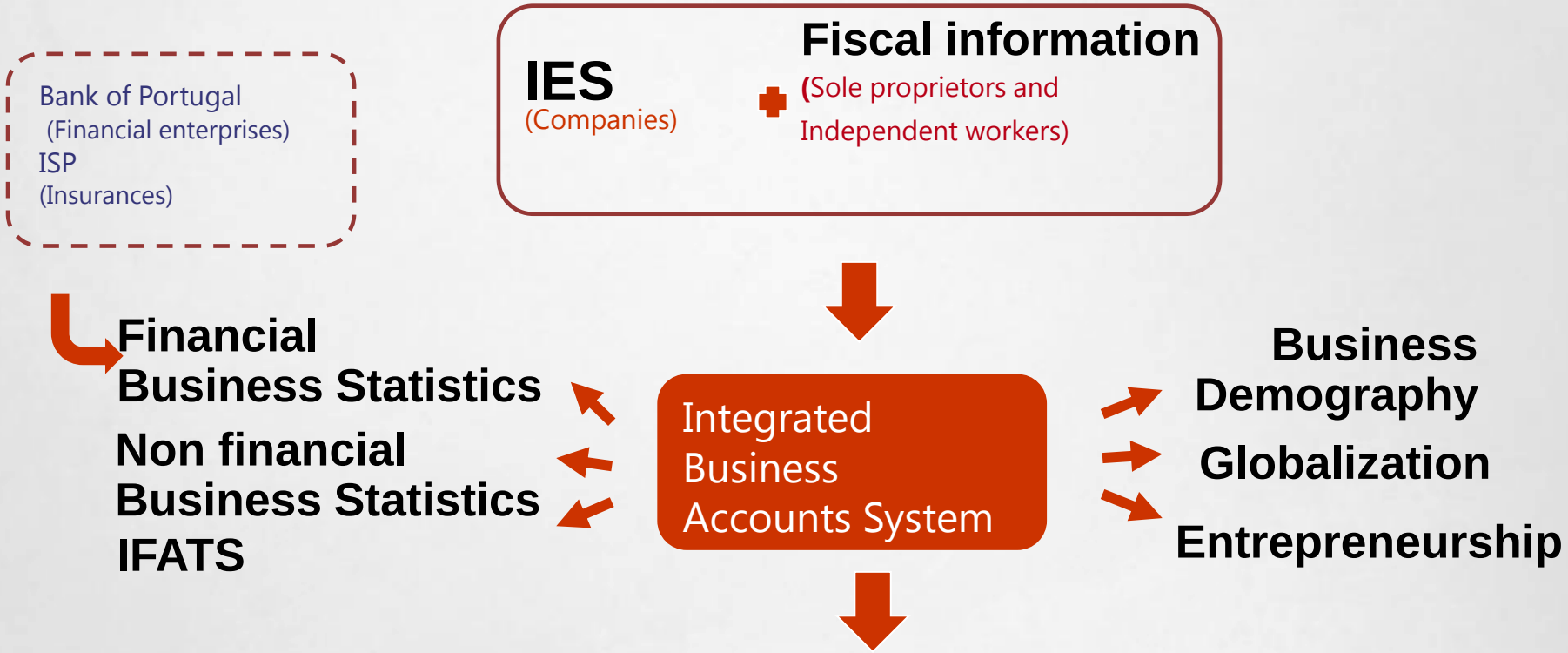
MORE ACCURACY
SIMPLIFIED COLLECTION
LESS TIME
MORE INFORMATION
**⏩ REDUCTION OF COSTS AND BURDEN**

# Structural business survey was dropped out

50.000 enterprises

# REENGINEERING OF BUSINESS STATISTICS

# Structural Business Statistics
# Full integration of business statistics' domains




**MAIN INPUT FOR NATIONAL ACCOUNTS**

# 2.IES - SIMPLIFIED BUSINESS INFORMATION TOMORROW

# PROCESS

## First Moment

**Validation (10 days)**

SAF-T
SUBMISSION

**BUSINESSES**

SUBMISSION OF DATA

**Ministry of Finance**

ELECTRONIC COLLECTION
(Tax System)

## Second Moment

**2000 validation rules**

IES
SUBMISSION

# SAFT-T APPROVED IN 2007 (TAX PURPOSES)

# ALL COMPANIES OBLIGED TO GENERATE THIS FILE

## STANDARDIZED FORMAT

# IN ORDER TO ALLOW AUTOMATIC COMPLETION OF FINANCIAL STATEMENTS…

# ADJUSTMENTS ON FILE STRUCTURE WERE MADE

# CREATION OF TAXONOMIES

**Accounts** **Accounting Systems**

# AUTOMATIC PREFILLMENT,

## WHENEVER POSSIBLE

# MORE THAN 2000
# VALIDATION RULES

# TOTAL COHERENCE,

## BETWEEN SAF-T AND IES

# TECHNICAL WORKING GROUP

MORE THEN 50 MEETINGS WERE HELD

# MAJOR IMPROVEMENTS

**40%**

REQUESTED FIELDS

# 2

MONTHS ANTICIPATION

ANNUAL INFORMATION,
BROKEN DOWN BY

# QUARTERS

GREATER

# ACCURACY

IN DETAIL VARIABLES

# MAIN CHALLENGES

# REENGINEERING OF BUSINESS STATISTICS (AGAIN)

**REENGINEERING**
HUMAN RESOURCES
INVESTMENT

# COMPLETE REDESIGN OF DB INFRASTRUCTURE

# DEEP CHANGE IN THE PROGRAMMING

- REENGINEERING
- HUMAN RESOURCES INVESTMENT

# ADAPTATION OF THE THECNICIANS

- REENGINEERING
- HUMAN RESOURCES INVESTMENT

# TRAINING

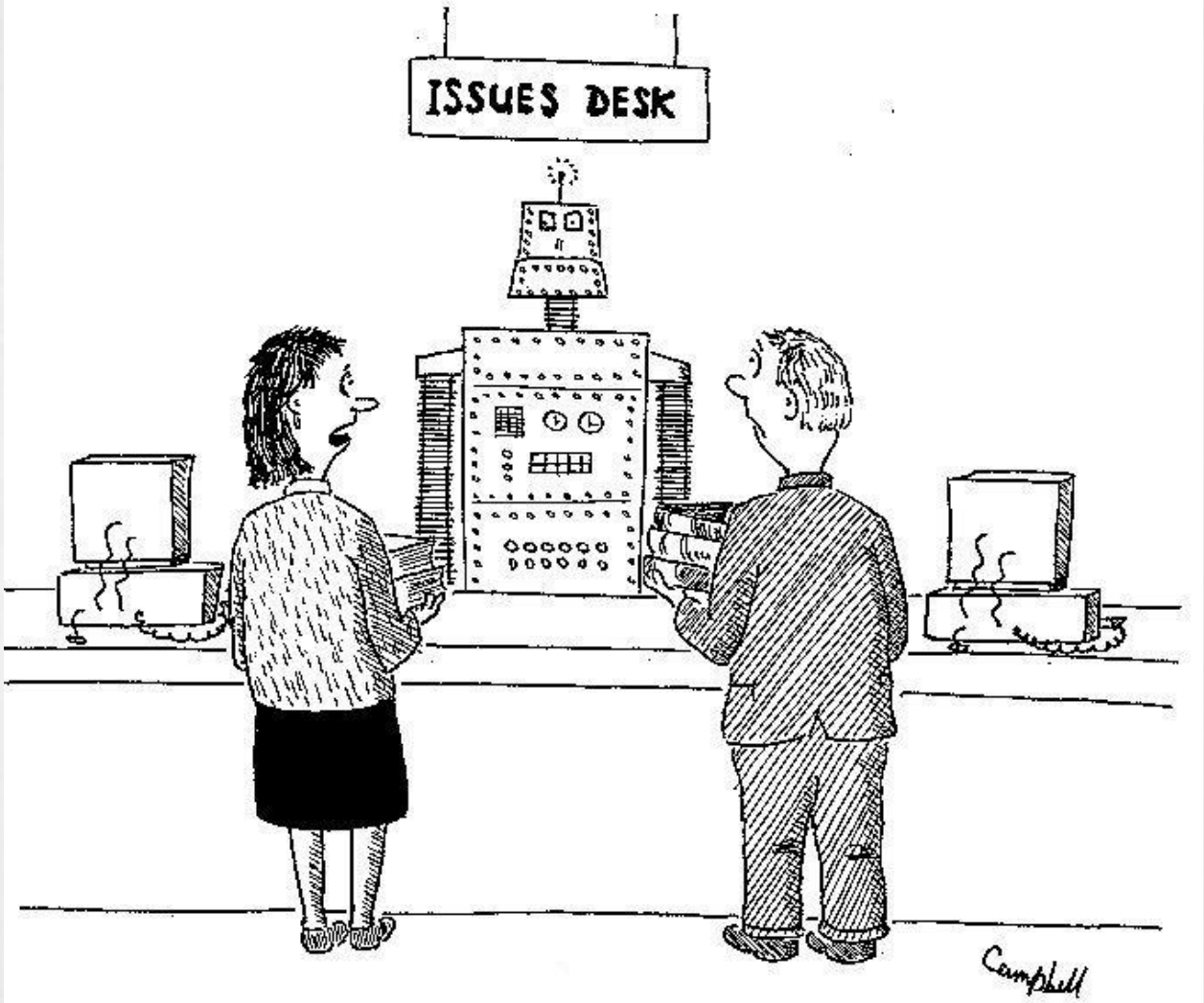
# THE WAY FORWARD

# INFRA-ANNUAL ADMINISTRATIVE INFORMATION

INDUSTRIAL PRODUCTION STATISTICS

# SAF-T: INFORMATION ABOUT PRODUCTS

# CREATION OF OTHER SAF-T MODULES




"Personally I think they went a step too far in making the library electronic"

Some

# QUESTIONS

How to deal with administrative data

**DEPENDENCY?**

# THANK YOU FOR YOUR ATTENTION

sofia.rodrigues@ine.pt

20th September 2018

INSTITUTO NACIONAL DE ESTATÍSTICA
STATISTICS PORTUGAL

# Smartphone Usage in Establishment Surveys: Case Studies from Three U.S. Federal Statistical Agencies

Rebecca L. Morrison
(703) 292-7794; rlmorris@nsf.gov

National Center for Science and Engineering Statistics

Heather Ridolfo
Robyn Sirkis

National Agricultural Statistics Service

Jennifer Edgar
Robin Kaplan

Bureau of Labor Statistics

Business Data Collection Methods Workshop
Lisbon, September 2018

The Findings and Conclusions in This Preliminary Publication Have Not Been Formally Disseminated by the U.S. Department of Agriculture and Should Not Be Construed to Represent Any Agency Determination or Policy.

This material in this presentation is the represents the opinion of authors and not their respective agencies.

# Background

- Online surveys are now a given in establishment surveys
- When putting a survey online, questionnaire designers have some control over look, feel and function
- However there is variation by browser and device type
- Little research done on the percent of establishment respondents who use mobile devices to complete surveys
  - Much research on household surveys
- Mobile device usage can dramatically impact the response experience

# Research Questions

1. How often are establishment respondents using mobile devices to complete government surveys?

2. Does this vary by survey complexity? Agency?
   Respondent type?

We will attempt to answer by analyzing paradata.

**Bureau of Labor Statistics**

- Common online survey platform
- Coded to render all surveys appropriately, regardless of browser and screen size

**National Agricultural Statistics Service**

- New online platform for some surveys
- All surveys are mobile optimized

**National Center for Science and Engineering Statistics**

- Surveys contracted out – they all look different
- Not mobile optimized

**Annual Refiling Survey:**

- 1.2 million estabs annually
- 3 questions
- Online only

**Job Openings and Labor Turnover Survey:**

- 16,000 estabs a month
- Just report a few elements
- Online, web, fax or phone

**Census of Agriculture:**

- Census of 3 million farmers
- 24 pages in paper
- Web with paper and phone and in-person follow up

**Crops APS:**

- 70k farmers quarterly
- 9 pages in paper
- Web and paper; phone and in-person follow up

**Higher Education Research & Development Survey:**

- 900+ colleges and universities annually
- Web almost exclusively; phone and email follow-up
- Standard to institutions with $1m or more in R&D
- Short to smaller institutions

# Not Mobile-Optimized (HERD)

National Science Foundation
WHERE DISCOVERIES BEGIN

# Higher Education Research and Development (HERD) Survey

Home | Welcome Standard Form Test Reference 10 | Change Password | Sign Out

## FY 2017 Survey

= not started = completed = warning = please resolve

| | | | |
|---|---|---|---|
| Due Date | January 31, 2018 | Errors | None |
| Survey Status | Not submitted | Unexplained Trend Variances | None |
| Progress | 0 out of 28 questions completed | Unresolved Data Quality Issues | None |

When all questions are completed without errors your survey will be ready to submit. Submit Final Survey

### FY 2017 Survey Changes and Definitions

- What's New
- Survey Definitions and Instructions

### Contact information and login accounts

Status

- Contact information and login accounts

### R&D expenditures by source and type

Status

- 1. R&D expenditures by source of funds
- 1.1. Institutionally financed R&D expenditure sources
- 2. Foreign funding for R&D
- 3. Contracts and grants
- 4. R&D at medical schools
- 5. Clinical trial R&D
- 6. Types of R&D: basic research, applied research, and experimental development

### Pass-through and subrecipient R&D expenditures

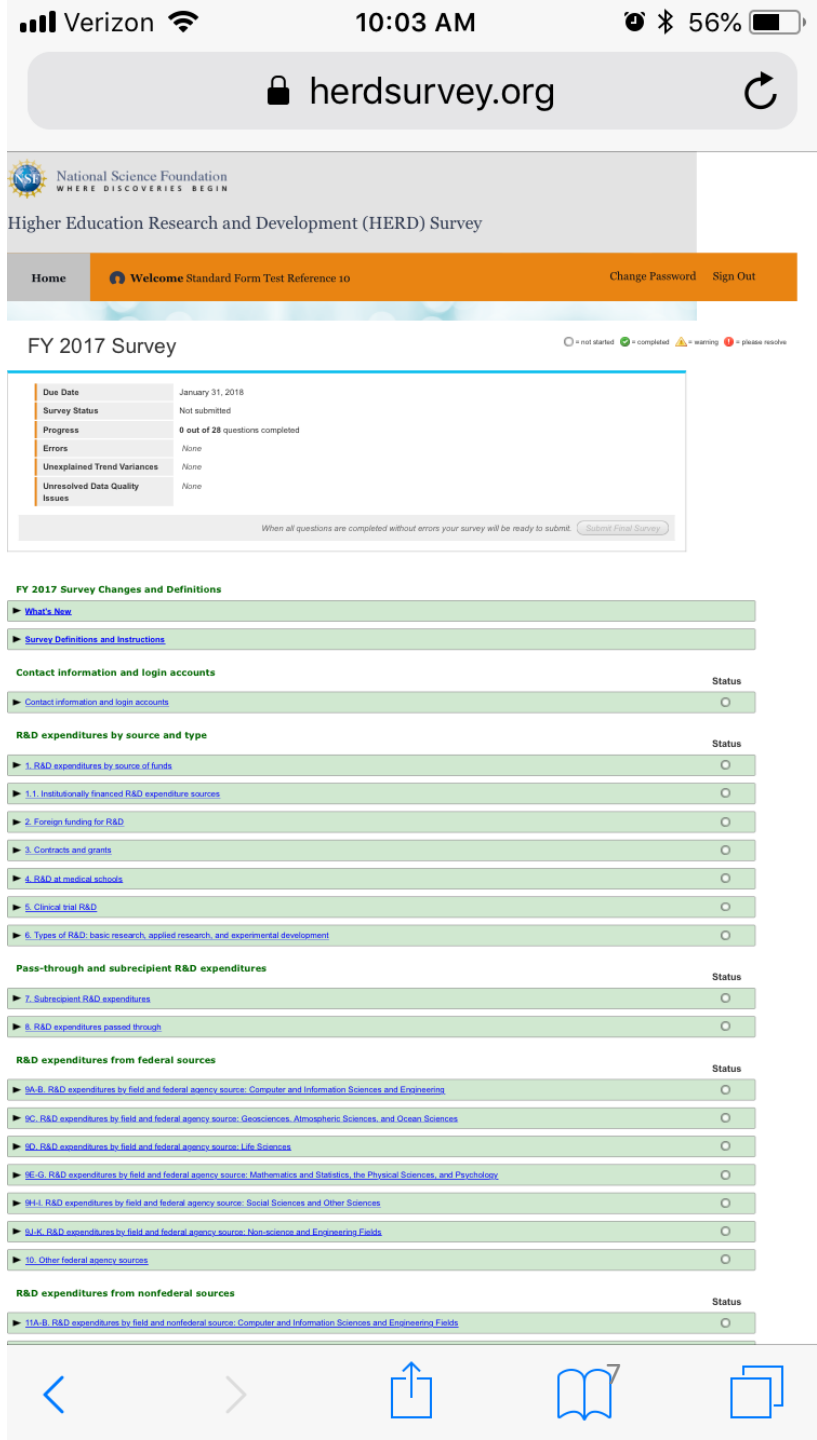
Status

- 7. Subrecipient R&D expenditures
- 8. R&D expenditures passed through

### R&D expenditures from federal sources

Status

- 9A-B. R&D expenditures by field and federal agency source: Computer and Information Sciences and Engineering
- 9C. R&D expenditures by field and federal agency source: Geosciences, Atmospheric Sciences, and Ocean Sciences



▼ Survey Definitions and Instructions [collapse]

### Fiscal year (FY)

Please report data for your institution's 2017 fiscal year.

### Research and Development (R&D)

R&D is creative and systematic work undertaken in order to increase the stock of knowledge — including knowledge of humankind, culture, and society — and to devise new applications of available knowledge. R&D covers three activities defined below — basic research, applied research, and experimental development.

- **Basic research** is experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundations of phenomena and observable facts, without any particular application or use in view.
- **Applied research** is original investigation undertaken in order to acquire new knowledge. It is directed primarily towards a specific, practical aim or objective.
- **Experimental development** is systematic work, drawing on knowledge gained from research and practical experience and producing additional knowledge, which is directed to producing new products or processes or to improving existing products or processes.

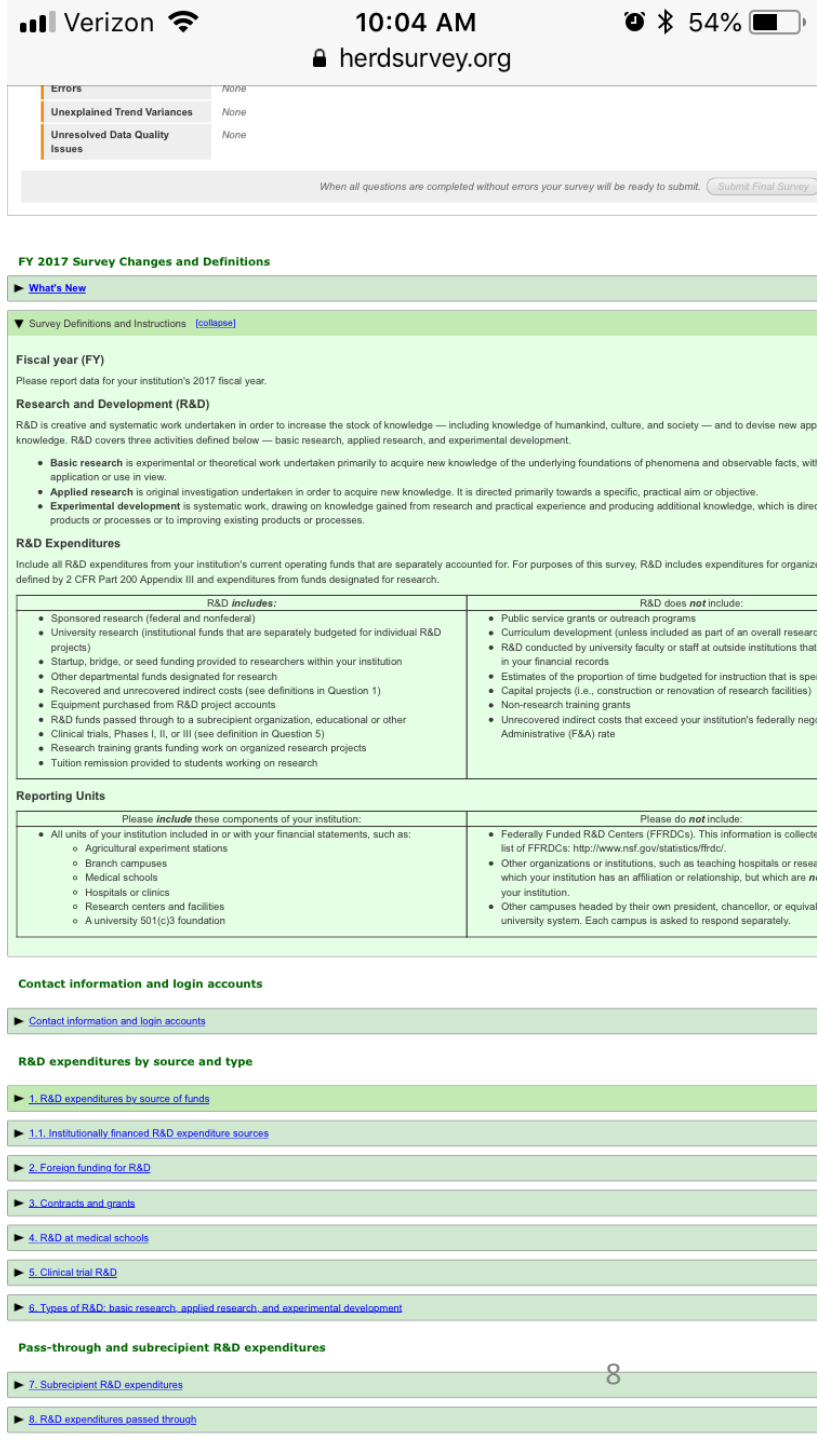
### R&D Expenditures

Include all R&D expenditures from your institution's current operating funds that are separately accounted for. For purposes of this survey, R&D includes expenditures for organized research as defined by 2 CFR Part 200 Appendix III and expenditures from funds designated for research.

| R&D ***includes:*** | R&D does ***not*** include: |
|---|---|
| • Sponsored research (federal and nonfederal)<br>• University research (institutional funds that are separately budgeted for individual R&D projects)<br>• Startup, bridge, or seed funding provided to researchers within your institution<br>• Other departmental funds designated for research<br>• Recovered and unrecovered indirect costs (see definitions in Question 1)<br>• Equipment purchased from R&D project accounts<br>• R&D funds passed through to a subrecipient organization, educational or other<br>• Clinical trials, Phases I, II, or III (see definition in Question 5)<br>• Research training grants funding work on organized research projects<br>• Tuition remission provided to students working on research | • Public service grants or outreach programs<br>• Curriculum development (unless included as part of an overall research project)<br>• R&D conducted by university faculty or staff at outside institutions that is not accounted for in your financial records<br>• Estimates of the proportion of time budgeted for instruction that is spent on research<br>• Capital projects (i.e., construction or renovation of research facilities)<br>• Non-research training grants<br>• Unrecovered indirect costs that exceed your institution's federally negotiated Facilities and Administrative (F&A) rate |

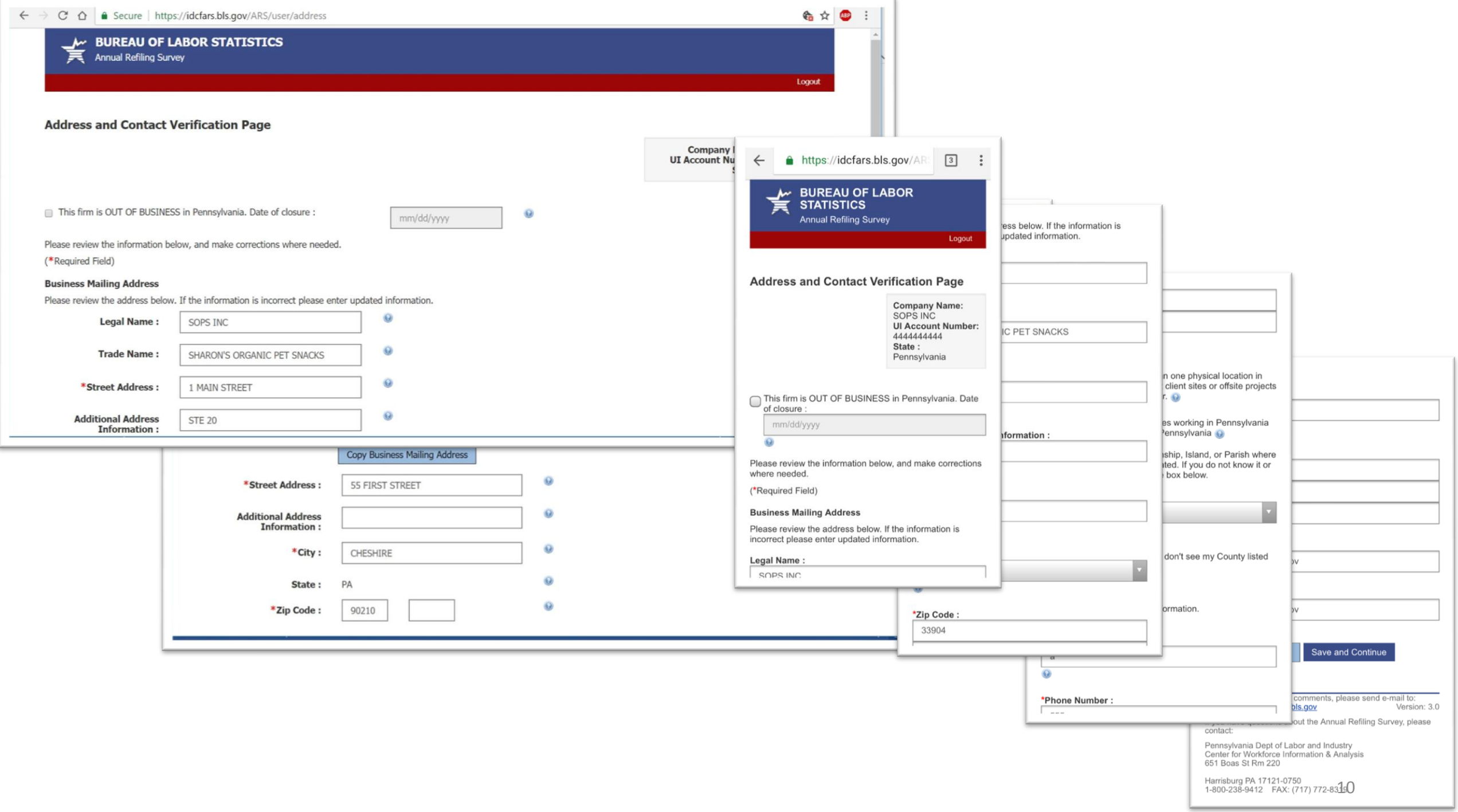
### Reporting Units

| Please ***include*** these components of your institution: | Please do ***not*** include: |
|---|---|
| • All units of your institution included in or with your financial statements, such as:<br>  ○ Agricultural experiment stations<br>  ○ Branch campuses<br>  ○ Medical schools<br>  ○ Hospitals or clinics<br>  ○ Research centers and facilities<br>  ○ A university 501(c)3 foundation | • Federally Funded R&D Centers (FFRDCs). This information is collected separately. See the list of FFRDCs: http://www.nsf.gov/statistics/ffrdc/.<br>• Other organizations or institutions, such as teaching hospitals or research institutes, with which your institution has an affiliation or relationship, but which are ***not*** components of your institution.<br>• Other campuses headed by their own president, chancellor, or equivalent within your university system. Each campus is asked to respond separately. |



# Mobile-Optimized:

# Annual Refiling Survey
# Census of Agriculture
# Crops APS


Secure https://idcfars.bls.gov/ARS/user/address
BUREAU OF LABOR STATISTICS
Annual Refiling Survey
Logout
Address and Contact Verification Page
This firm is OUT OF BUSINESS in Pennsylvania. Date of closure :
mm/dd/yyyy
Please review the information below, and make corrections where needed.
(*Required Field)
Business Mailing Address
Please review the address below. If the information is incorrect please enter updated information.
Legal Name : SOPS INC
Trade Name : SHARON'S ORGANIC PET SNACKS
*Street Address : 1 MAIN STREET
Additional Address Information : STE 20
Copy Business Mailing Address
*Street Address : 55 FIRST STREET
Additional Address Information :
*City : CHESHIRE
State : PA
*Zip Code : 90210
https://idcfars.bls.gov/ARS
BUREAU OF LABOR STATISTICS
Annual Refiling Survey
Logout
Address and Contact Verification Page
Company Name:
SOPS INC
UI Account Number:
4444444444
State :
Pennsylvania
This firm is OUT OF BUSINESS in Pennsylvania. Date of closure :
mm/dd/yyyy
Please review the information below, and make corrections where needed.
(*Required Field)
Business Mailing Address
Please review the address below. If the information is incorrect please enter updated information.
Legal Name :
SOPS INC
*Zip Code :
33904
*Phone Number :
Save and Continue
Pennsylvania Dept of Labor and Industry
Center for Workforce Information & Analysis
651 Boas St Rm 220
Harrisburg PA 17121-0750
1-800-238-9412 FAX: (717) 772-8395

USDA CENSUS OF AGRICULTURE
United States Department of Agriculture

Print | Help | Save & Return Later

- Introduction
- Acreage in 2017
- Land use in 2017
- Land Use Practices
- Crop Insurance and Government Programs
- Type of Organization
- Personal Characteristics
- Crops
- Hay and Forage Crops
- Cultivated Christmas Trees, Short Rotation Woody Crops, and Maple Syrup
- Field Crops

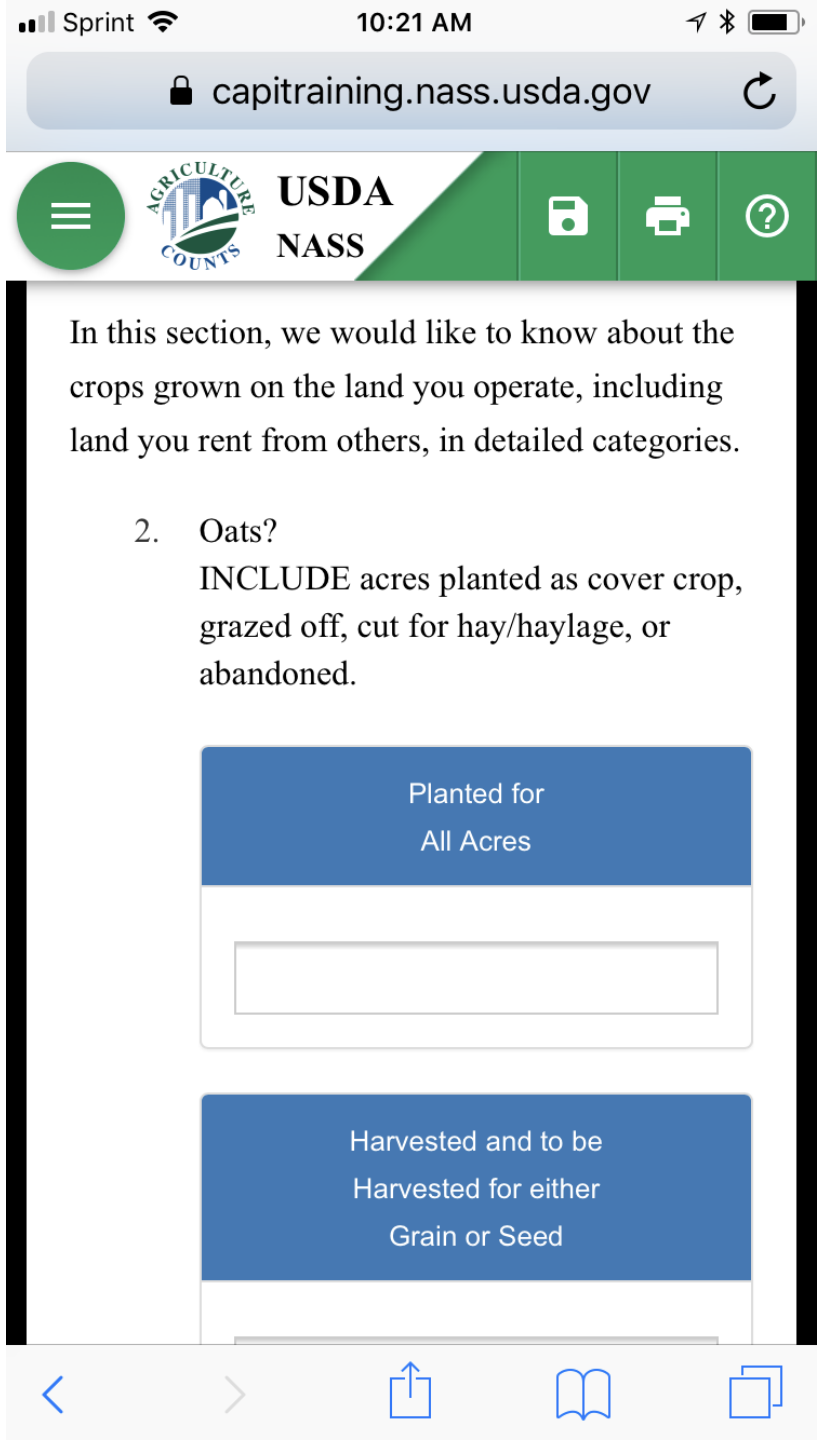
## Introduction

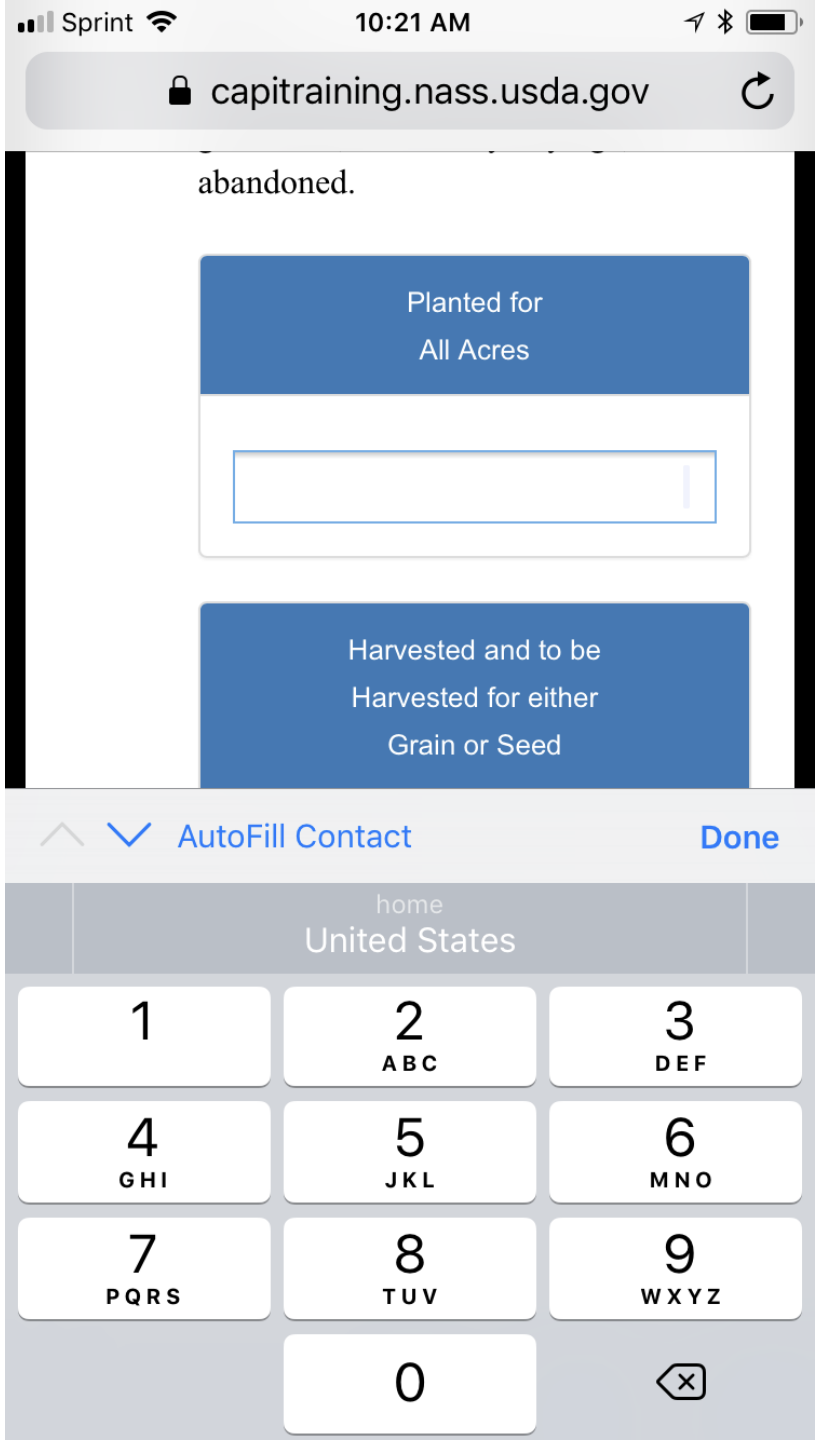
1. At any time during 2017, were you farming or ranching?

Yes No

Previous Next

Sprint 11:03 AM
capitraining.nass.usda.gov
USDA CENSUS OF AGRICULTURE
United States Department of Agriculture
Introduction
1. At any time during 2017, were you farming or ranching?
Yes No
Previous Next


Sprint
10:21 AM
capitraining.nass.usda.gov
USDA
NASS
In this section, we would like to know about the crops grown on the land you operate, including land you rent from others, in detailed categories.
2. Oats?
INCLUDE acres planted as cover crop, grazed off, cut for hay/haylage, or abandoned.
Planted for All Acres
Harvested and to be Harvested for either Grain or Seed


Sprint
10:21 AM
capitraining.nass.usda.gov
abandoned.
Planted for All Acres
Harvested and to be Harvested for either Grain or Seed
AutoFill Contact
Done
home
United States
1
2 ABC
3 DEF
4 GHI
5 JKL
6 MNO
7 PQRS
8 TUV
9 WXYZ
0

# Response by Mode

| | Overall Response Rate | % Web | % Mail | % Interviewer (CAPI, CATI, etc.) | % Other |
|---|---|---|---|---|---|
| BLS: ARS | 79% | 100% | Not offered | Not offered | Not offered |
| BLS: JOLTS | 65% | 59% | Not offered | 34% | 5% (email) |
| NASS: Census | 67%* | 24% | 68% | 3% | 3% (email, fax, incoming call) |
| NASS: Crops APS | 54% | 3% | 23% | 72% | 1% (email & Fax) |
| NCSES: HERD Short | 97% | 100% | 0% | Not offered | 0% |
| NCSES: HERD Standard | 98% | 100% | 0% | Not offered | 0% |

*Response checked in as of 8/20/18

# Paradata

- Not trivial!
- Decisions had to be made about what got pulled
  - Exact dates – particularly important for panel surveys
  - Unique users vs. total users
  - Handle skip patterns and multiple pages
- Differences among paradata systems (even within agencies)
- Define devices, e.g., what is a smart phone? Is a Kindle a tablet?
  - Some systems gave more specificity than others (may or may not mean there were more types of devices)

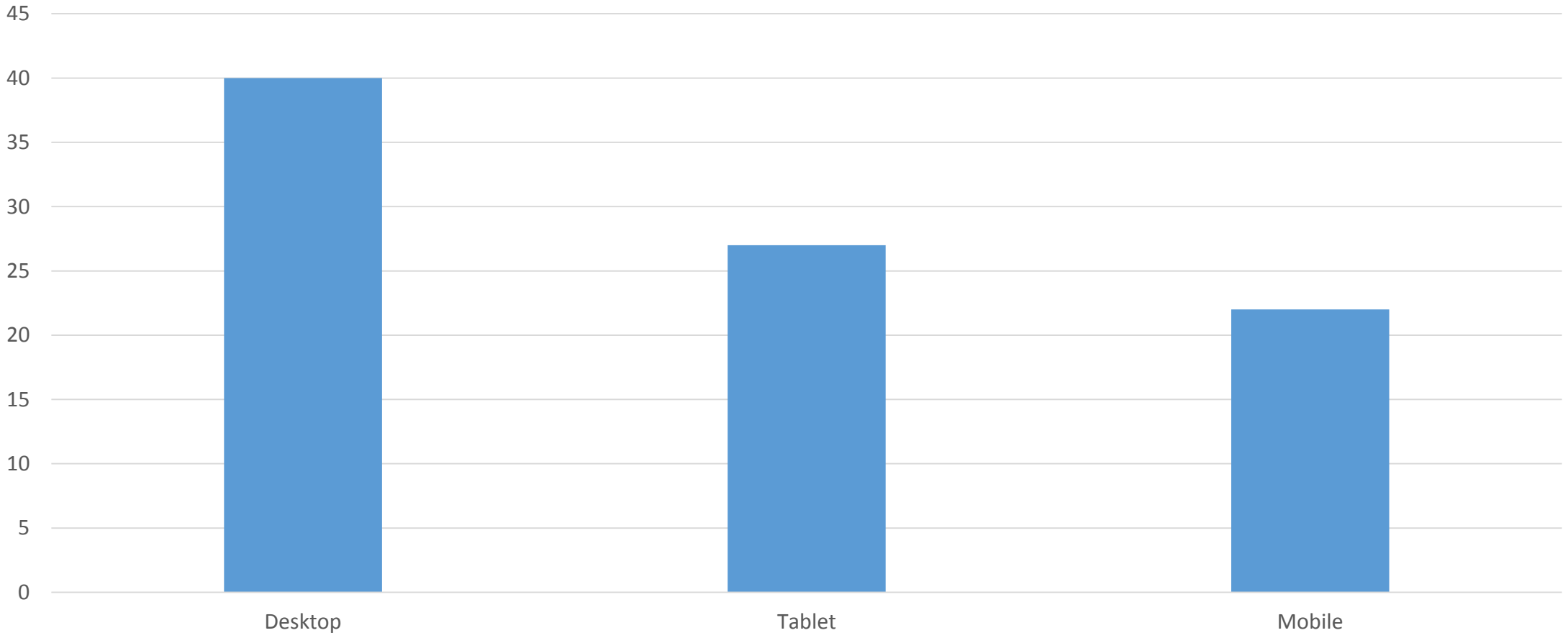
# Starting and ending on a smartphone

| | Started on a Smartphone | Ended on a Smartphone |
|---|---|---|
| BLS: ARS | 1.4% | 1.0% |
| BLS: JOLTS | 0.5% | 0.4% |
| NASS: Census | 6% | 6% |
| NASS: Crops APS | 2% | 2% |
| NCSES: HERD Short & Standard | 0.2% | 0.1% |

# HERD Results

- Almost no one tried with a smart phone
- Why?
  - Ongoing annual survey with repeat respondents
  - Respondents at colleges and universities likely at desks
  - Respondents contacted at their offices

# NASS: Census of Agriculture, average session duration (minutes)



# NASS: Census of Agriculture, device switching in users with 2+ sessions

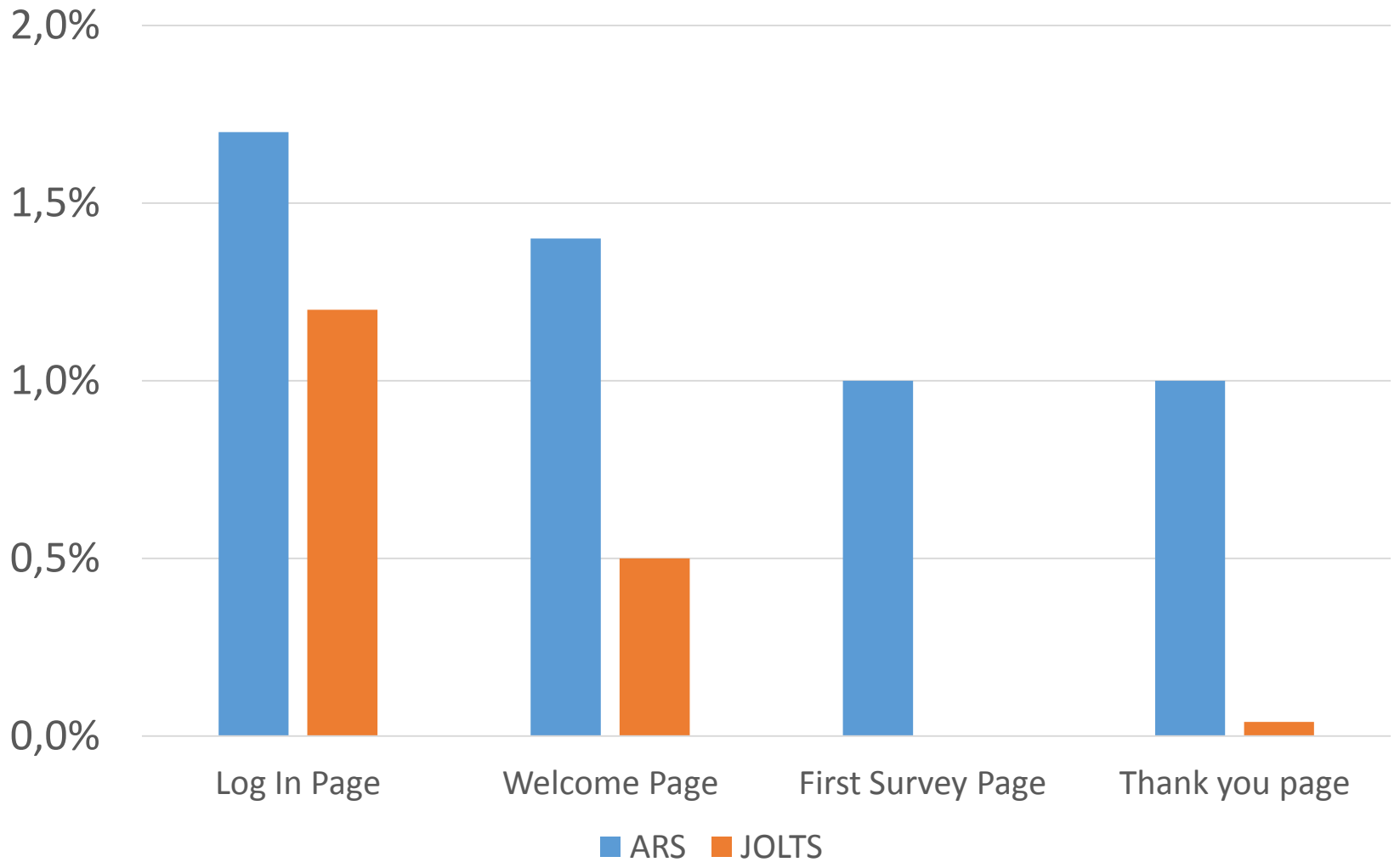
| First Device | Last Device | Number | Percent |
|---|---|---|---|
| Desktop | Phone | 296 | 0.33 |
| Desktop | Tablet | 1018 | 1.13 |
| Desktop | Desktop | 225 | 0.25 |
| Phone | Desktop | 1025 | 1.14 |
| Phone | Tablet | 225 | 0.25 |
| Phone | Phone | 26 | 0.00 |
| Tablet | Desktop | 1707 | 1.90 |
| Tablet | Phone | 101 | 0.11 |
| Tablet | Tablet | 106 | 0.12 |
| Did not switch devices | | 85,321 | 94.75 |
| Total | | 90,500 | 100% |

# NASS: Census of Agriculture, breakoffs by device

| Total breakoffs: 9,222 | | |
|---|---|---|
| | Count | Percent |
| Desktop | 7307 | 1.6% |
| Tablet | 971 | 0.2% |
| Phone | 942 | 0.2% |
| Did not break off | 456,788 | 98.0% |
| Total | 466,008 | 100 |

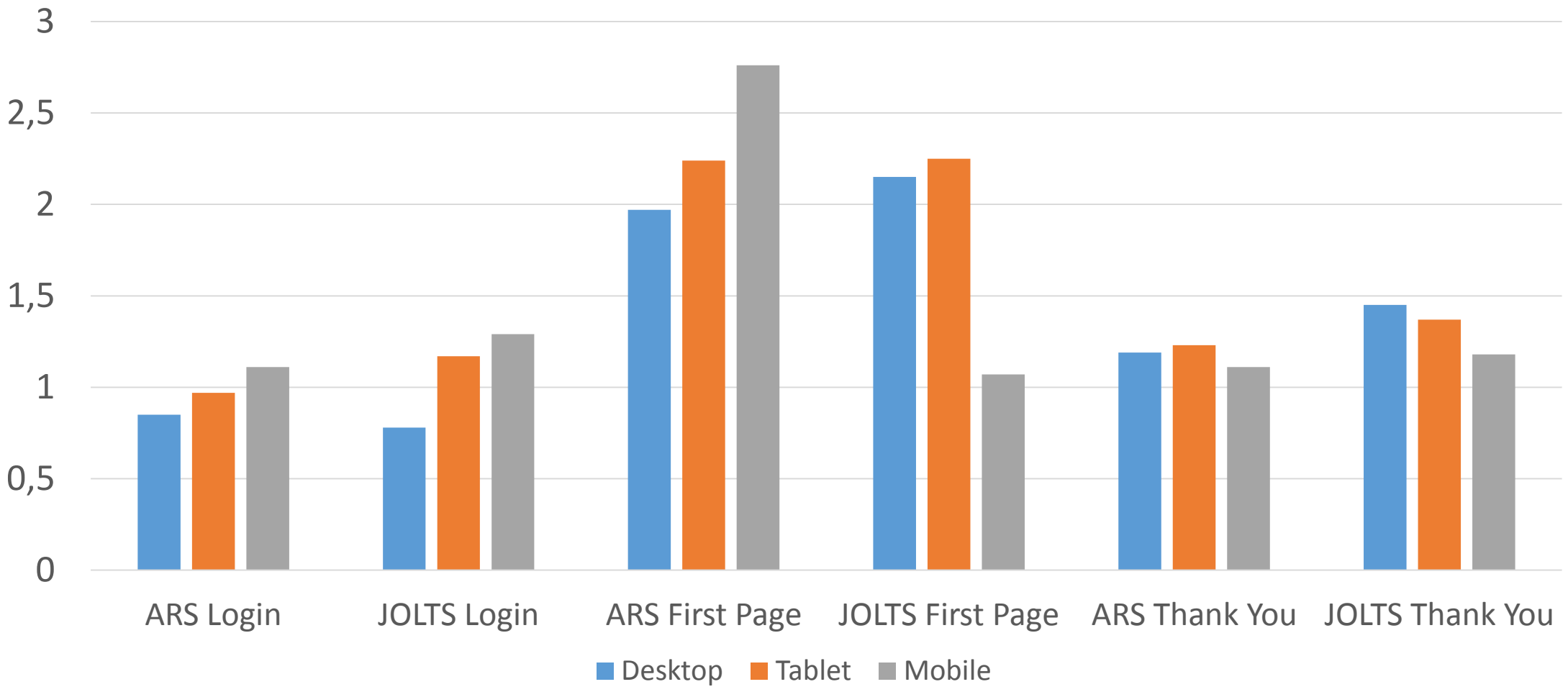
- Crops APS had only 67 breakoffs, and showed a similar pattern by device.

# BLS: % using mobile devices at different points in ARS and JOLTS



# BLS: Bounce rates in ARS and JOLTS

# BLS: Time on page (in minutes)



# Summary

- Not a lot of response coming in on smartphones
- BLS and NCSES have higher percentage of web response, but lower percentage of mobile response, compared to NASS
- Use of mobile devices seems to depend on the population

# Research Questions

1. How often are establishment respondents using mobile devices to complete government surveys?
   - Not very often.

2. Does this vary by survey complexity? Agency? Respondent type?
   - No evidence it varies by complexity.
   - Respondent type may play a role, e.g., colleges/universities vs. farms/ranches.

# Final Thoughts on Paradata

- Beautiful theories murdered by gangs of brutal facts
  - Beautiful theories: ease of pulling paradata
  - Brutal facts: time, multiple datasets
- Paradata is important, useful, and great in theory. But also extremely hard to collect and analyze.
- As you build data collection instruments, think through *what* paradata you want and *how* you want it, to minimize complexity of analyzing it later.

# Discussion Questions

1. What patterns, if any, have you seen in mobile device usage in your establishment surveys?
2. Is mobile optimization needed for establishment surveys?
3. What metrics have you built into your paradata systems that have been especially useful to you? If someone is building a system from scratch, what would you recommend including?

# Extra screenshots

National Science Foundation
WHERE DISCOVERIES BEGIN

# Higher Education Research and Development (HERD) Survey

Home | Welcome Standard Form Test Reference 10 | Change Password | Sign Out

Please submit survey data by
January 31, 2018

**Open Your FY 2017 HERD R&D Survey**

## What's New for the FY 2017 Survey

### Changes to Questions

- **Questions 1, 7, and 9**: Instructions were updated to clarify that funding from Federally Funded Research and Development Centers (FFRDCs) should be treated as direct federal funding from the sponsoring agency.
- **Questions 1 and 12**: The confidentiality statement on Questions 1 and 12 was revised. The new text is in italics:
  Information from confidential items is not published or released for individual institutions; only aggregate totals will appear in publications. In accordance with the National Science Foundation Act of 1950, as amended, and other applicable federal laws, your responses will not be disclosed in identifiable form to anyone other than agency employees or authorized persons. *Per the Federal Cybersecurity Enhancement Act of 2015, your data are protected from cybersecurity risks through screening of the federal information systems that transmit your data.*
- **Questions 7 and 8**: Row d instructions were updated to clarify that foreign universities and colleges should be reported on row d.

## FY 2017 Survey Tools

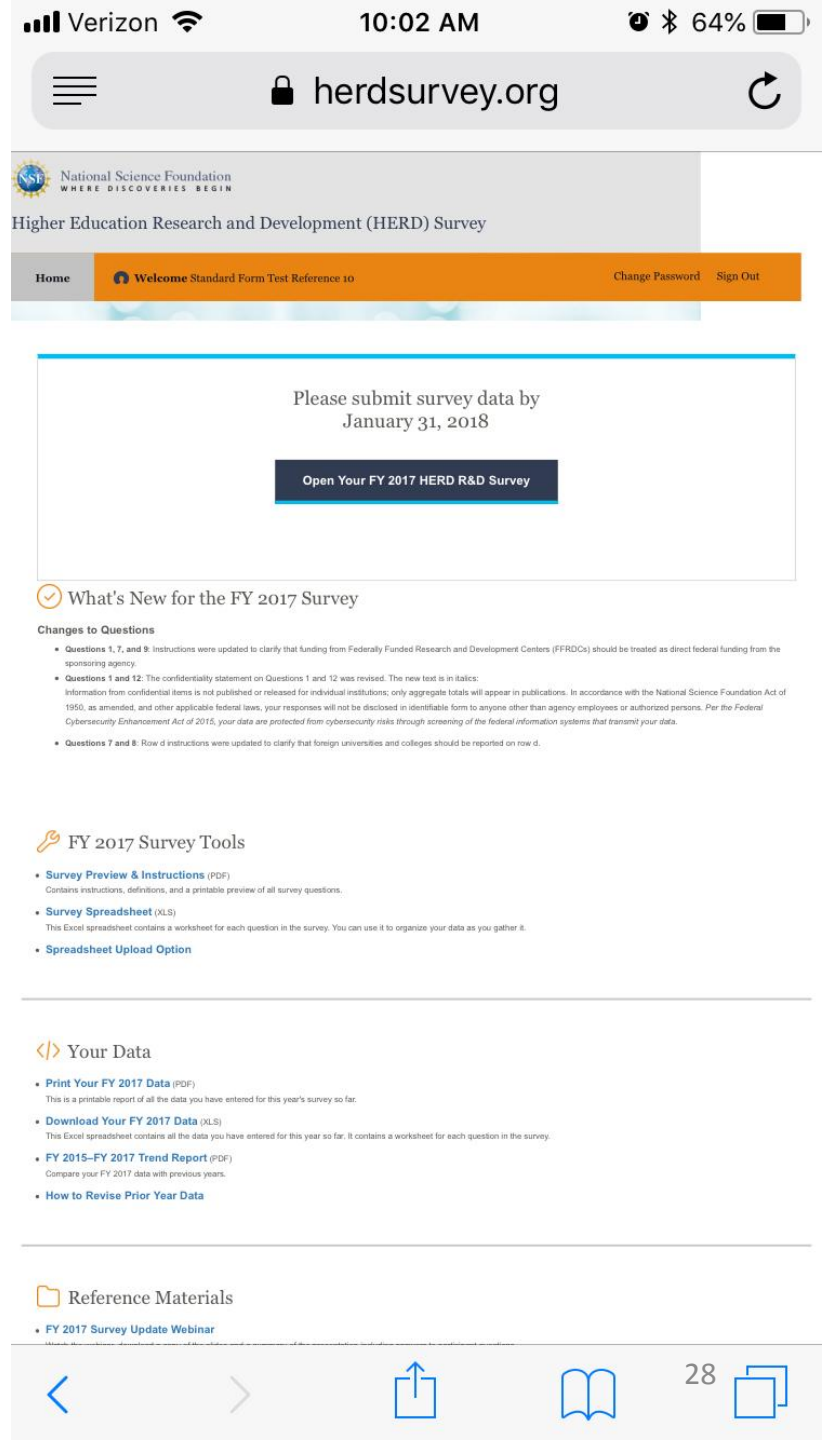
- **Survey Preview & Instructions** (PDF)
  Contains instructions, definitions, and a printable preview of all survey questions.
- **Survey Spreadsheet** (XLS)
  This Excel spreadsheet contains a worksheet for each question in the survey. You can use it to organize your data as you gather it.
- **Spreadsheet Upload Option**

## Your Data

- **Print Your FY 2017 Data** (PDF)
  This is a printable report of all the data you have entered for this year's survey so far.
- **Download Your FY 2017 Data** (XLS)
  This Excel spreadsheet contains all the data you have entered for this year so far. It contains a worksheet for each question in the survey.
- **FY 2015–FY 2017 Trend Report** (PDF)
  Compare your FY 2017 data with previous years.
- **How to Revise Prior Year Data**

## Reference Materials

- **FY 2017 Survey Update Webinar**
  Watch the webinar, download a copy of the slides and a summary of the presentation including answers to participant questions.
- **Fields of R&D**
  - **List with Example Disciplines** (PDF)
  - **Detailed FY 2015 to FY 2016 crosswalk** (XLS)
  - **Fields with CIP Codes** (XLS)



▼ 1. R&D expenditures by source of funds [collapse]

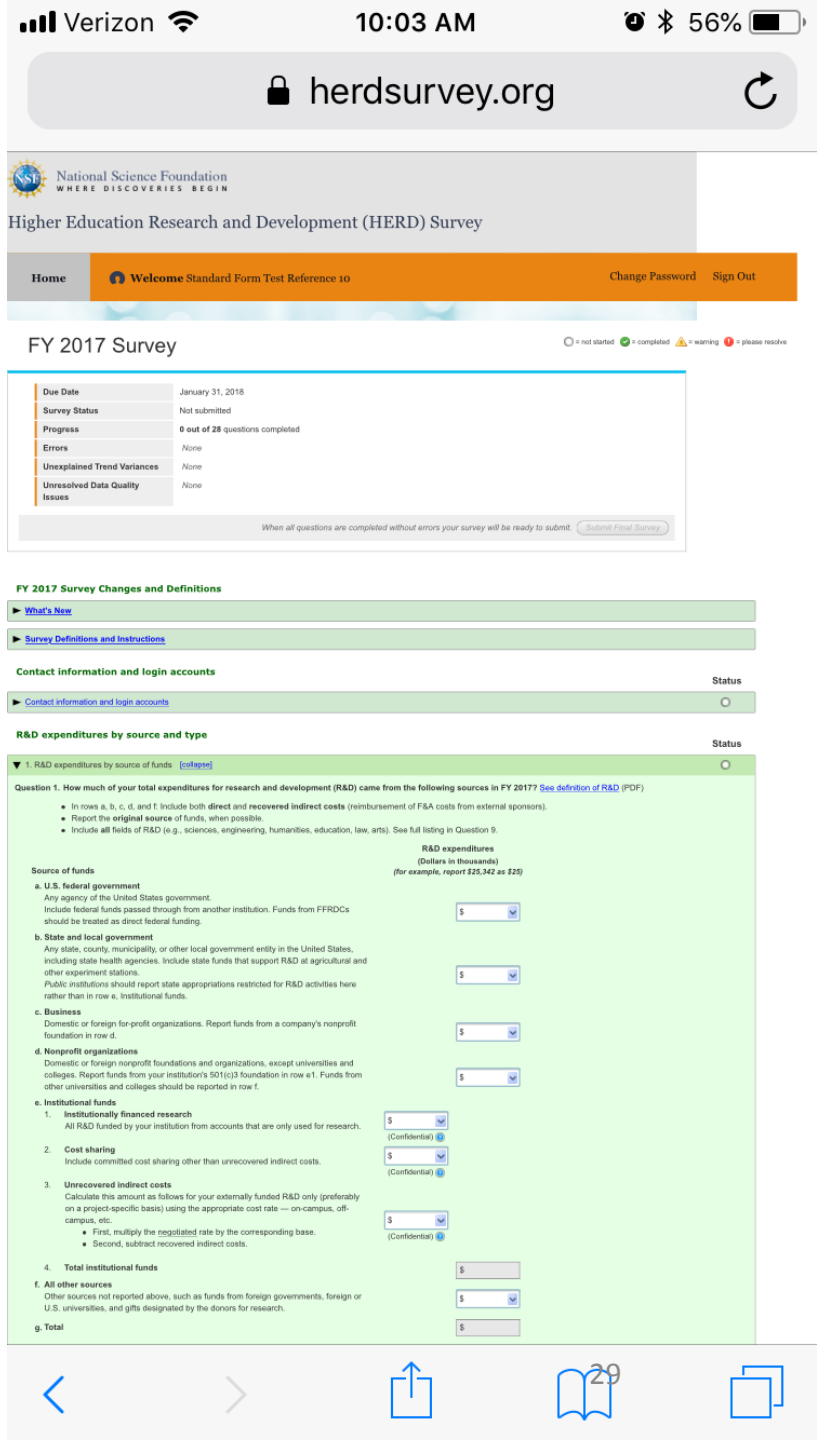
**Question 1. How much of your total expenditures for research and development (R&D) came from the following sources in FY 2017?** See definition of R&D (PDF)

- In rows a, b, c, d, and f: Include both **direct** and **recovered indirect costs** (reimbursement of F&A costs from external sponsors).
- Report the **original source** of funds, when possible.
- Include **all** fields of R&D (e.g., sciences, engineering, humanities, education, law, arts). See full listing in Question 9.

| Source of funds | R&D expenditures (Dollars in thousands) *(for example, report $25,342 as $25)* |
|---|---|
| **a. U.S. federal government**<br>Any agency of the United States government. Include federal funds passed through from another institution. Funds from FFRDCs should be treated as direct federal funding. | $ |
| **b. State and local government**<br>Any state, county, municipality, or other local government entity in the United States, including state health agencies. Include state funds that support R&D at agricultural and other experiment stations. *Public institutions* should report state appropriations restricted for R&D activities here rather than in row e, Institutional funds. | $ |
| **c. Business**<br>Domestic or foreign for-profit organizations. Report funds from a company's nonprofit foundation in row d. | $ |
| **d. Nonprofit organizations**<br>Domestic or foreign nonprofit foundations and organizations, except universities and colleges. Report funds from your institution's 501(c)3 foundation in row e1. Funds from other universities and colleges should be reported in row f. | $ |
| **e. Institutional funds** | |
| 1. **Institutionally financed research**<br>All R&D funded by your institution from accounts that are only used for research. | $ (Confidential) |
| 2. **Cost sharing**<br>Include committed cost sharing other than unrecovered indirect costs. | $ (Confidential) |
| 3. **Unrecovered indirect costs**<br>Calculate this amount as follows for your externally funded R&D only (preferably on a project-specific basis) using the appropriate cost rate — on-campus, off-campus, etc.<br>• First, multiply the negotiated rate by the corresponding base.<br>• Second, subtract recovered indirect costs. | $ (Confidential) |
| 4. **Total institutional funds** | $ |
| **f. All other sources**<br>Other sources not reported above, such as funds from foreign governments, foreign or U.S. universities, and gifts designated by the donors for research. | $ |
| **g. Total** | $ |

**Comments:**

provide comments about this question



# NASS screenshots

United States Department of Agriculture
National Agricultural Statistics Service

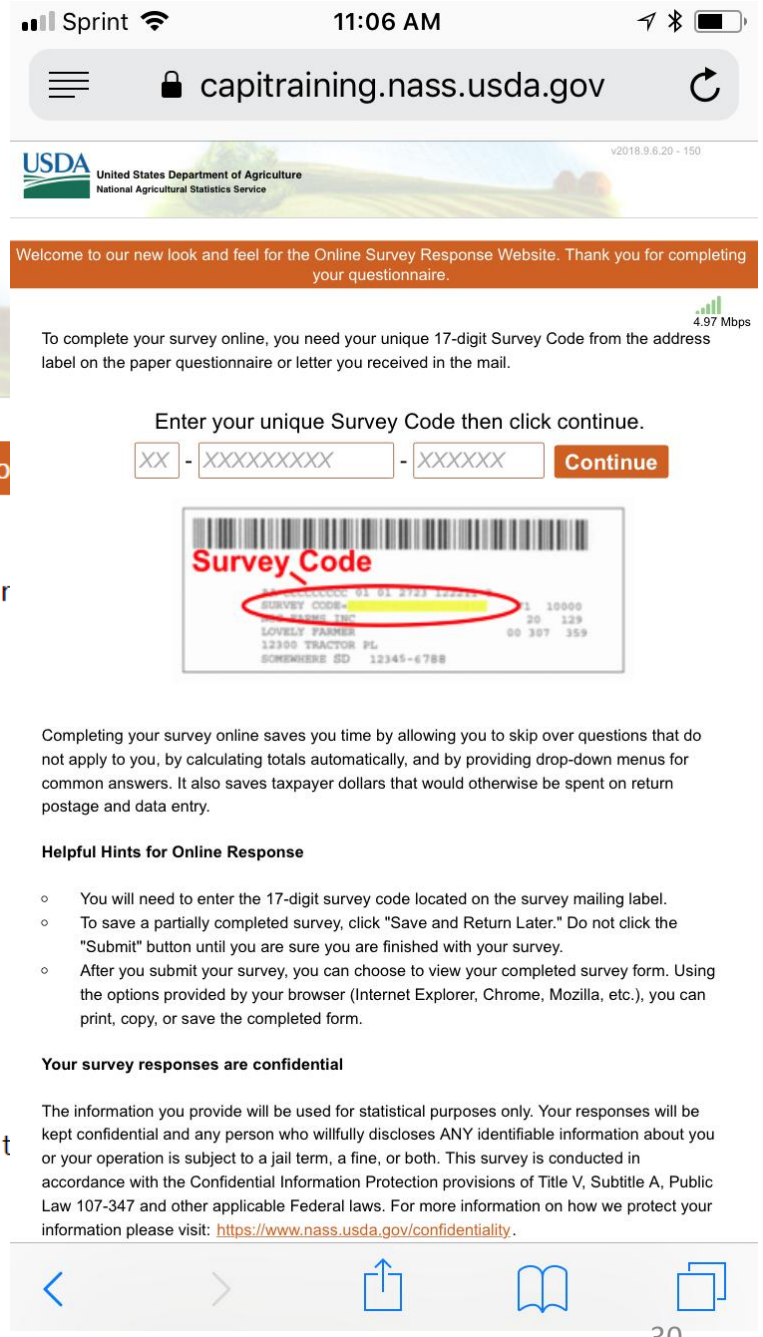
Welcome to our new look and feel for the Online Survey Response Website. Thank you for completing your questio

To complete your survey online, you need your unique 17-digit Survey Code from the address label on the paper questionnair
received in the mail.

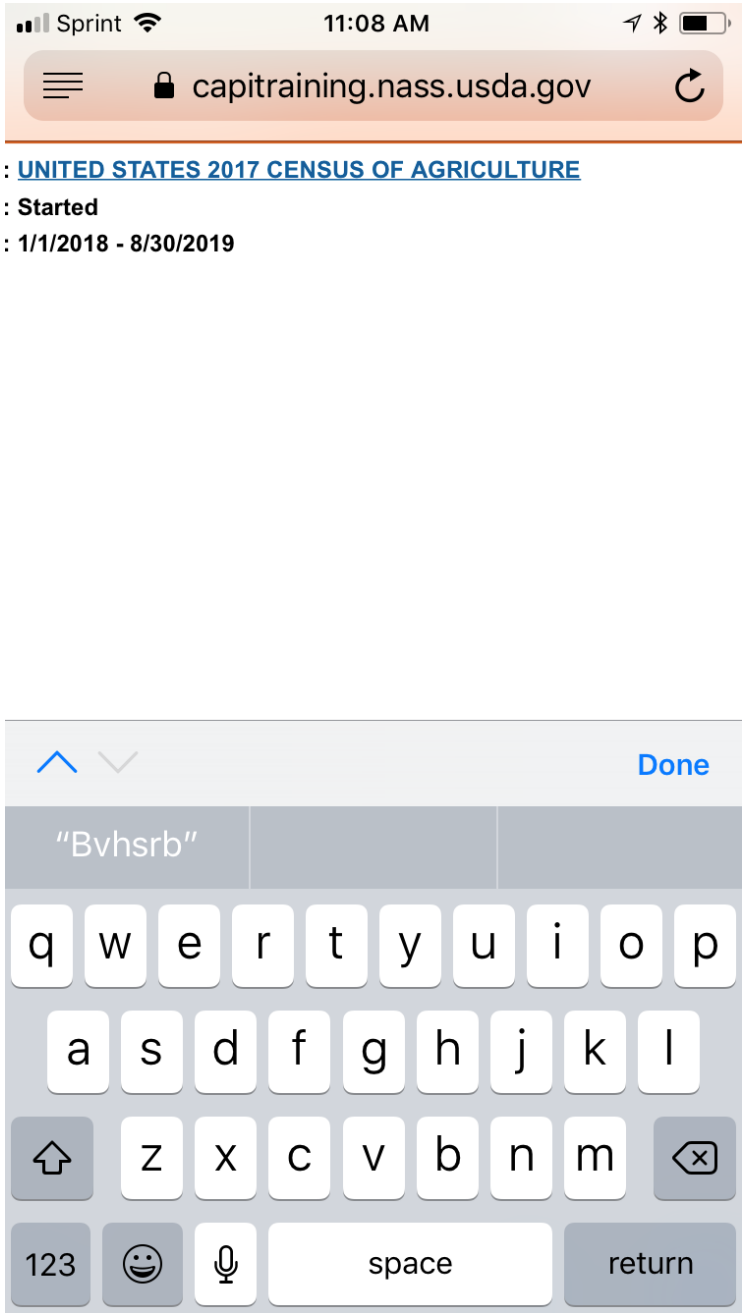
Enter your unique Survey Code then click continue.

XX - XXXXXXXXX - XXXXXX Continue

Completing your survey online saves you time by allowing you to skip over questions that do not apply to you, by calculating t



USDA
United States Department of Agriculture
National Agricultural Statistics Service
v2018.9.7.1 - 001
Logout
Current Surveys For:
DOE FARMS 1 INC / JOHN DOE - ID
Status
Available
UNITED STATES 2017 CENSUS OF AGRICULTURE
Started
From 1/1/2018
To 8/30/2019


Sprint
11:08 AM
capitraining.nass.usda.gov
: UNITED STATES 2017 CENSUS OF AGRICULTURE
: Started
: 1/1/2018 - 8/30/2019
Done
"Bvhsrb"
q w e r t y u i o p
a s d f g h j k l
z x c v b n m
123
space
return

USDA CENSUS OF AGRICULTURE
United States Department of Agriculture

Print | Help | Save & Return Later

- Introduction ✓
- Acreage in 2017
- Land use in 2017
- Land Use Practices
- Crop Insurance and Government Programs
- Type of Organization
- Personal Characteristics
- Crops
- Hay and Forage Crops
- Cultivated Christmas Trees, Short Rotation Woody Crops,

## Introduction

**Welcome to the 2017 Census of Agriculture.**
The 2017 Census of Agriculture collects information about agricultural activity in the U.S. and the people involved in it. It is estimated to take about 50 minutes to complete, depending on the size and complexity of your operation.

Before you begin, please note the following :

- **Saving your answers:** If you need to stop, press the "Save & Return Later" icon at the top of the page. When you log back into the system it will take you to the last page you visited.
- **Need help?** If you need help, press the "Help" icon at the top of the page. If you have further questions or need help completing the 2017 Census of Agriculture, please call our toll-free help line at 1-866-294-8560 between the hours of 7:30 a.m. and 4:00 p.m. ET or click here to access the Frequently Asked Questions and email feedback form.

The 2017 Census of Agriculture is ***Your Voice, Your Future, Your Opportunity.*** Thank you for your response.

Next

Sprint 11:03 AM

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USDA CENSUS OF AGRICULTURE
United States Department of Agriculture

## Introduction

**Welcome to the 2017 Census of Agriculture.**
The 2017 Census of Agriculture collects information about agricultural activity in the U.S. and the people involved in it. It is estimated to take about 50 minutes to complete, depending on the size and complexity of your operation.

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USDA CENSUS OF AGRICULTURE
United States Department of Agriculture

Print | Help | Save & Return Later

- Introduction
- Acreage in 2017 ✓
- Land use in 2017
- Land Use Practices
- Crop Insurance and Government Programs
- Type of Organization
- Personal Characteristics
- Crops
- Hay and Forage Crops
- Cultivated Christmas Trees, Short Rotation Woody Crops, and Maple Syrup
- Field Crops

## Acreage in 2017

Report land owned, rented, or used by you, your spouse, or by the partnership, corporation, or organization named on the letter you received. Include ALL LAND, REGARDLESS OF LOCATION OR USE - cropland, Conservation Reserve Program (CRP) and Wetlands Reserve Program (WRP) land, pastureland, rangeland, woodland, idle land, farmsteads, etc.

1. Number of acres OWNED?

☐ None | | Acres

2. Total number of acres RENTED or LEASED **FROM** OTHERS?

INCLUDE

- Land worked by you on shares
- Land used rent free in exchange for services, payment of taxes, etc.
- Federal, State, and railroad land leased on a per acre basis
- Land rented or leased by you for cash

EXCLUDE

- Land used on a fee per-head or animal unit month (AUM) basis

☐ None | | Acres

Sprint 11:08 AM

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United States Department of Agriculture

## Acreage in 2017

Report land owned, rented, or used by you, your spouse, or by the partnership, corporation, or organization named on the letter you received. Include ALL LAND, REGARDLESS OF LOCATION OR USE - cropland, Conservation Reserve Program (CRP) and Wetlands Reserve Program (WRP) land, pastureland, rangeland, woodland, idle land, farmsteads, etc.

1. Number of acres OWNED?

☐ None | | Acres

2. Total number of acres RENTED or LEASED **FROM** OTHERS?

INCLUDE

USDA CENSUS OF AGRICULTURE
United States Department of Agriculture

Print | Help | Save & Return Later

## Conclusion

You have reached the end of the 2017 Census of Agriculture. **Thank you for your participation!**

- If you would like to review and/or save your answers prior to submission, press the **"Print"** icon above.
- Otherwise, click the **"Submit Survey"** button to submit your responses to the 2017 Census of Agriculture.

Previous | Submit Survey


Sprint 11:05 AM

capitraining.nass.usda.gov

USDA CENSUS OF AGRICULTURE
United States Department of Agriculture

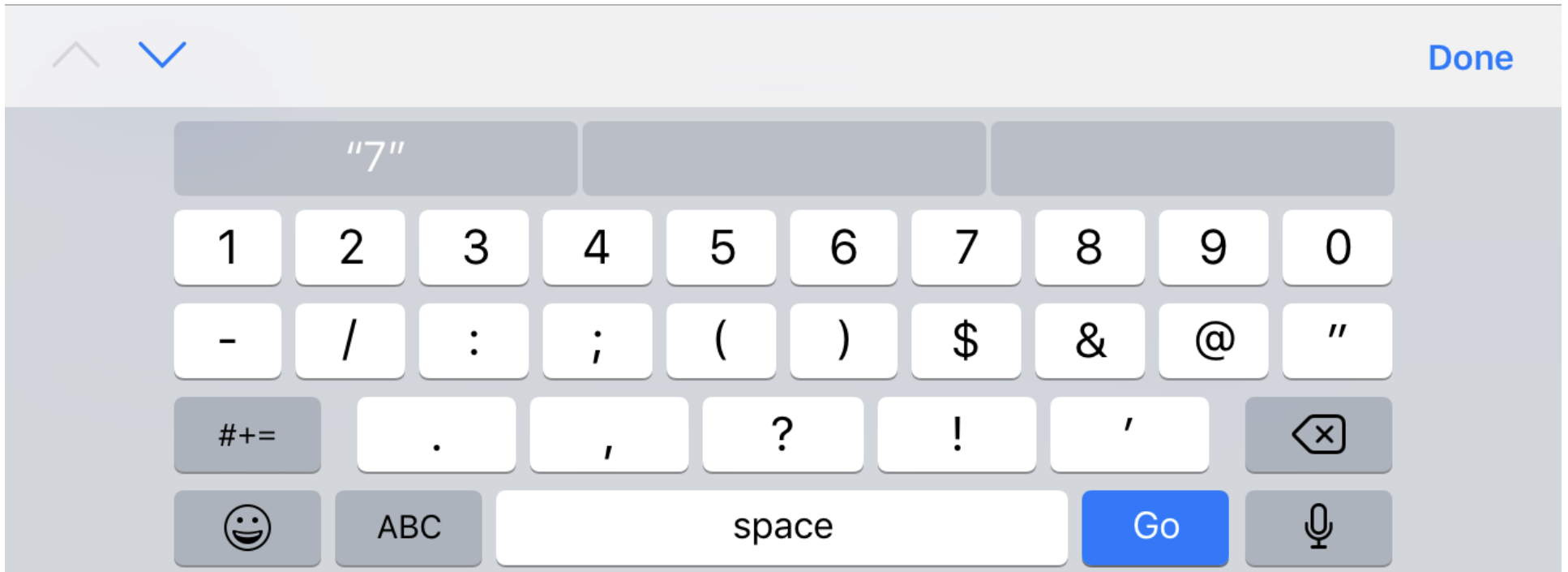
## Conclusion

You have reached the end of the 2017 Census of Agriculture. **Thank you for your participation!**

- If you would like to review and/or save your answers prior to submission, press the **"Print"** icon above.
- Otherwise, click the **"Submit Survey"** button to submit your responses to the 2017 Census of Agriculture.

Previous | Submit Survey

| | Total Employment | Job Openings | Hires | Quits | Layoffs and Discharges | Othe Separat |
|---|---|---|---|---|---|---|
| May 2018 | 7 | 0 | 0 | 0 | 0 | 0 |



INSTITUTO NACIONAL DE ESTATÍSTICA
STATISTICS PORTUGAL

# FIFTH INTERNATIONAL WORKSHOP ON BUSINESS DATA COLLECTION METHODOLOGY

## 19–21 SEPTEMBER 2018 – STATISTICS PORTUGAL, LISBON

# Use of computing mobile devices in the Economic Censuses for updating the Mexican Statistical Business Register and georeferencing establishments

INEGI, Mexico
20 september 2018

# Economic Censuses: the most complete and detailed source of basic economic information of Mexico

Censos económicos

It contains, in high detail, the characteristics of the national economy

Data on all the economic activities, at any level of geographical detail

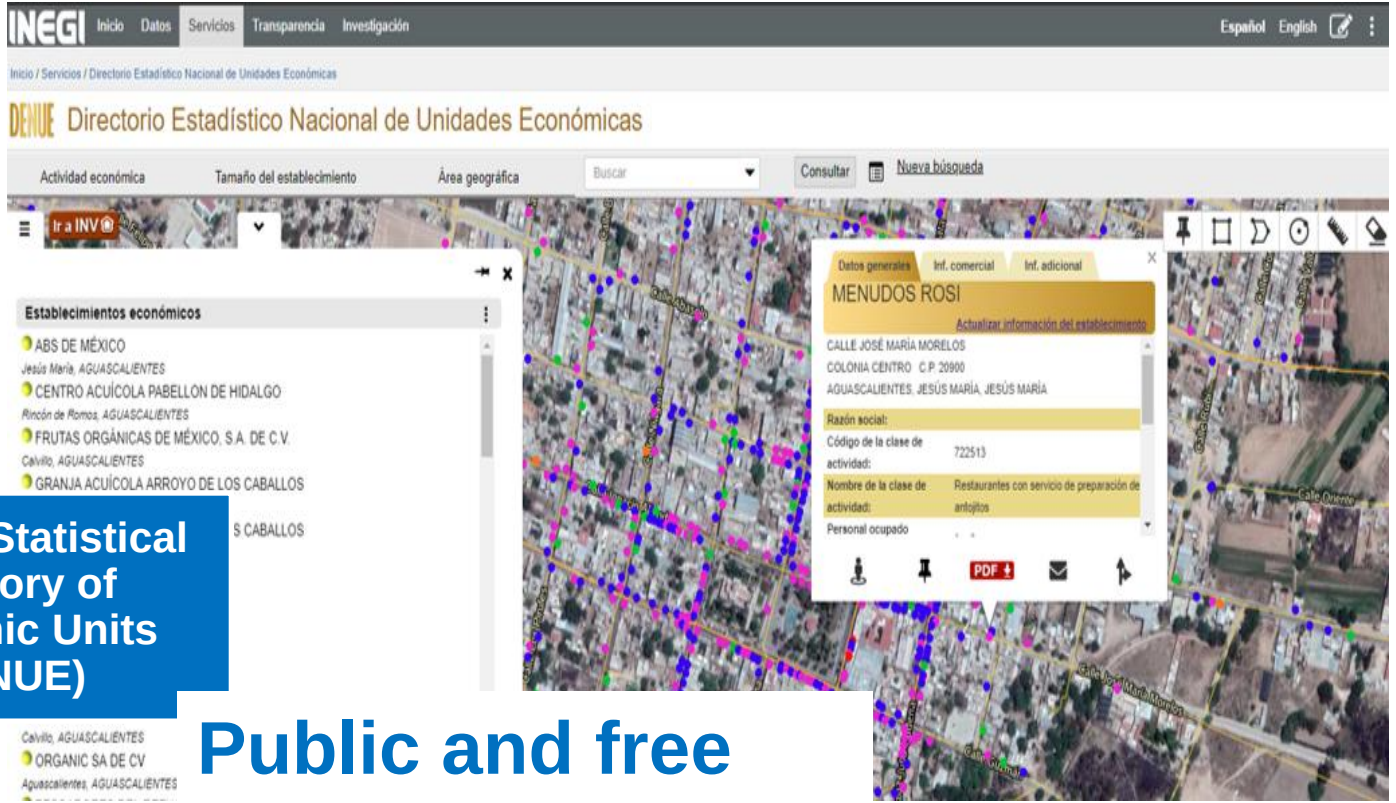
It is used in several public, private, academic and social projects

# DENUE, a product of the Economic Censuses

**Economic Censuses every 5 years**

**Updating the whole SBR every 5 years**

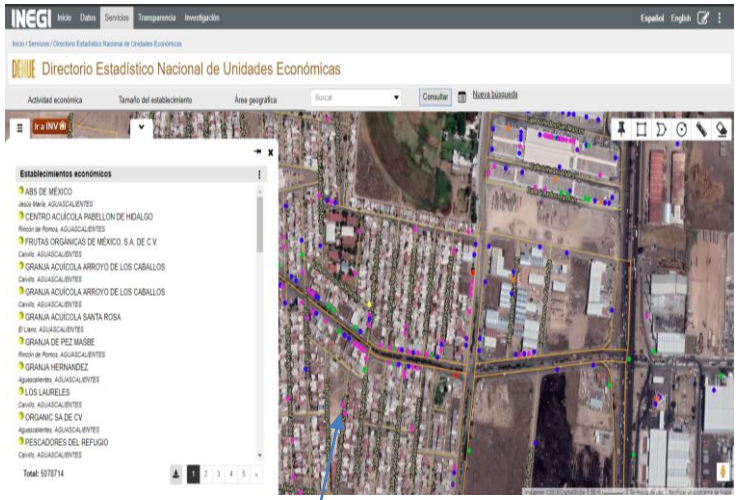
**National Statistical Directory of Economic Units (DENUE)**




**Public and free**

# The DENUE is a highly demanded product due to its characteristics :

**All businesses** of the country are located there, assembled in a GIS




Every establishment appears represented in the digitized cartography, at the exact corresponding place, **identified by means of a dot**

Businesses are classified according to **economic activity** based on an international classification system (NAICS)

It contains **business data on identification, location and size**, of every single business of the country

COMEX INDUSTRIAL COATINGS SA DE CV

Actualizar información del establecimiento

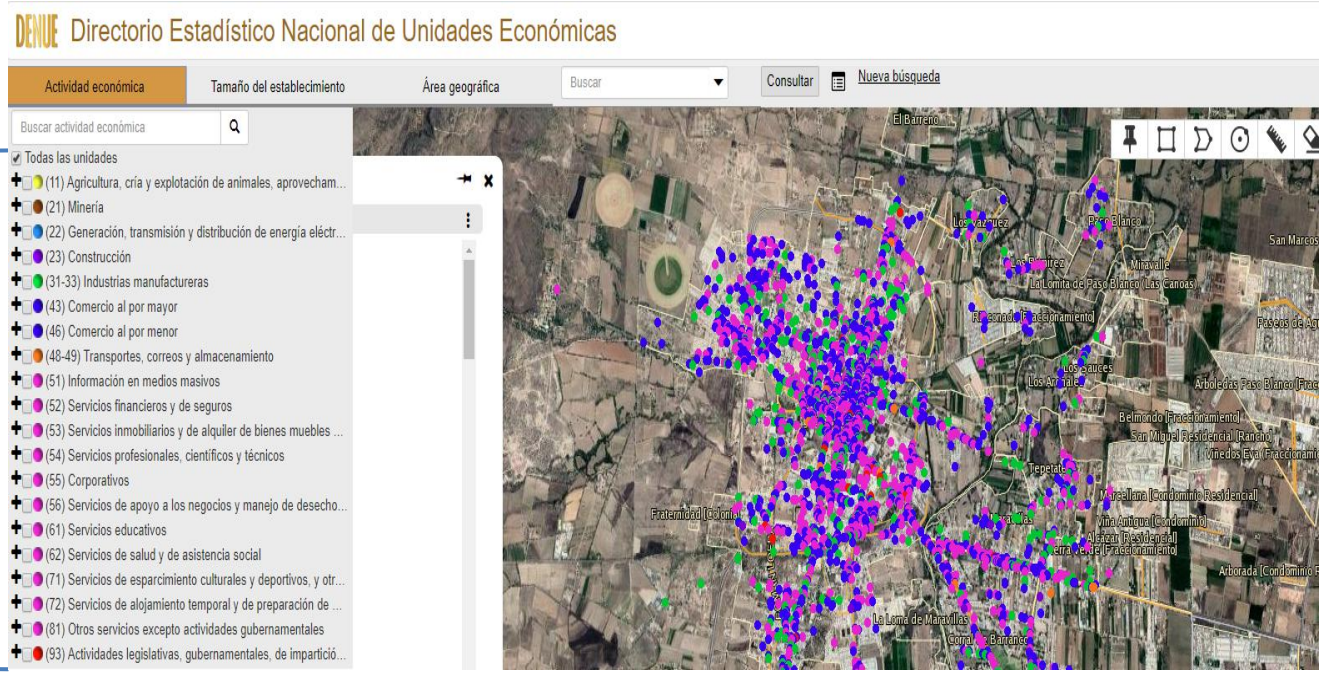
VÍA GUSTAVO BAZ #3999
SAN ANDRÉS ATENCO C.P. 54030
MÉXICO , TLALNEPANTLA DE BAZ, TLALNEPANTLA

| | |
|---|---|
| Actividad económica: | Fabricación de pinturas y recubrimientos |
| Personal ocupado: | 101 a 250 personas |
| Teléfono: | |
| Correo electrónico: | |
| Sitio en internet: | |
| Tipo de unidad económica: | Fijo |
| Fecha de incorporación al denue: | JULIO 2010 |

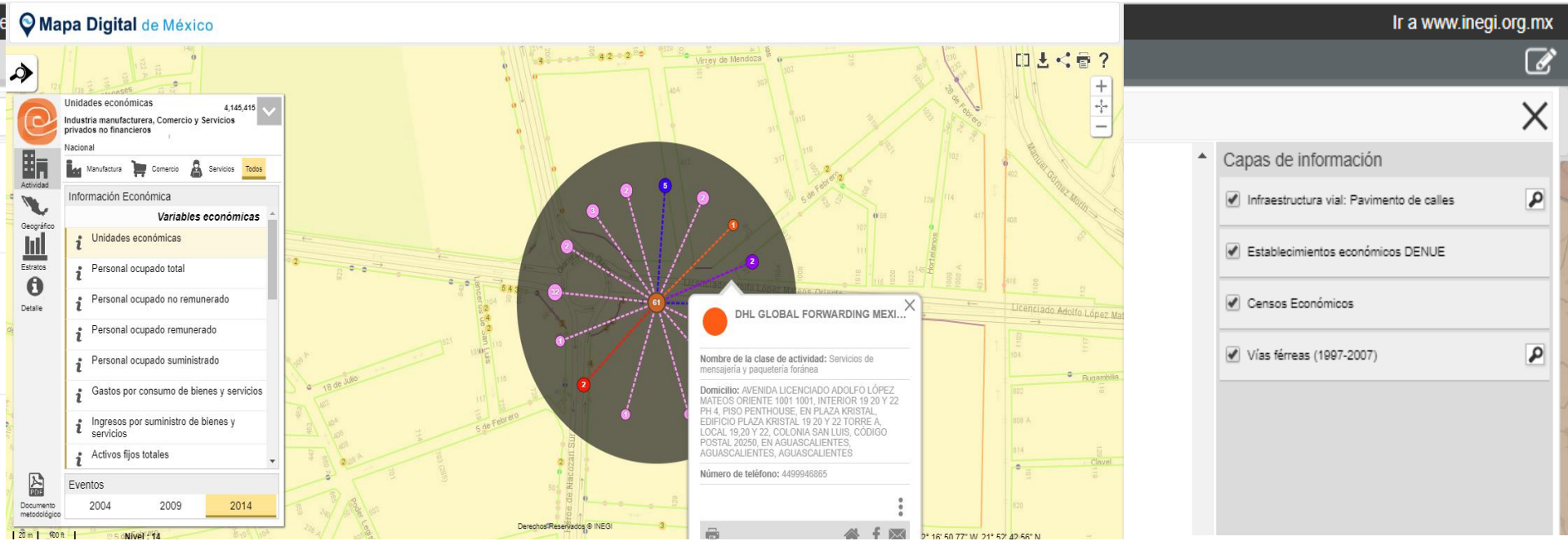
Inf. comercial | Inf. adicional | PDF

**More than 60 thousand searches per month**

With all these characteristics, **the user can search exactly the universe of his or her interest**, by choosing the specific activities he or she wants to search

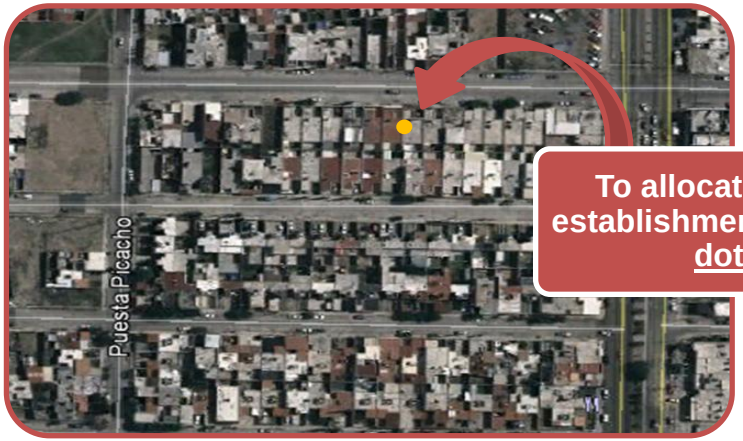


**The DENUE is in a GIS, developed by INEGI, where the user can visualize more than 240 layers of information:**




In this example, the chosen layers are: the DENUE, Economic Censuses, railways, and paved streets

## But first of all, it is necessary…

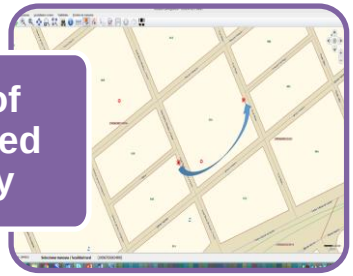



**To allocate each establishment with its dot**

## By means of two esencial elements:

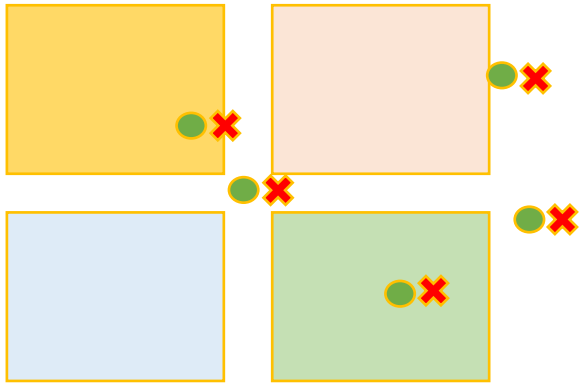
**A Computing Mobile Device (DCM, its acronym in Spanish)**

**and inside of it...the digitized cartography**

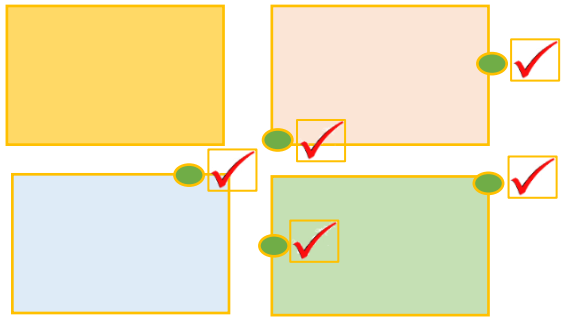


# Why not allocating the dot with a GPS?

- The error with GPS could get as far as 30 meters, therefore the dot could be located even in a different block



- With digitized cartography in DCM, and satellite images, the interviewer established himself in the right location and more easily, and allocated the dot in the correct place, at least in the correct block and front of block



# DCM for capturing census data: first steps

A PDA was used for CE2004

First “experiment”, Economic Censuses 2004

10% of geographical areas in EC2004 were covered with a DCM

Limited capacity, but it allowed to capture street names and, during the interview, to allocate them automatically

The objective of the experiment was achieved: to prove that the use of the DCM was feasible and convenient for census data collection

# In CE2009, the DCM was used for the whole census data collection

Before 2014, INEGI concluded the digitalization of the cartography, including street names, and it was incorporated into the DCM

Both blocks and streets keys were automatically allocated into the questionnaires

The interviewer could locate the exact location of each establishment and to assign it in the digitized cartography, as a dot

# In EC2014 a more advanced DCM was used

**With the development of technology, the DCM acquired for EC2014 was substantially better. The conditions searched for were:**

- A bigger screen that enabled the inclusion and visualization of long texts
- Higher capacity of memory and processing
- **That the DCM were still light, but with "heavy duty" characteristics**

## Tools added to DCM, for EC2014:

- Systems: cartographic module, operational routine, questionnaire's validation, automatic classification and data safety protocol
- Digitized cartography
- Satellite images
- Workload
- Catalogues and operative manuals
- Registration of progress per blocks and establishments
- Questionnaire and validation system
- Directory of economic units
- Portable keyboard, help with concepts, calculator, warning messages

## By using these tools, INEGI obtained:

- ✓ Lesser time of interview and less re-enquiries
- ✓ Full updating of DENUE
- ✓ Exact location of each establishment in the geographical space
- ✓ Higher speed, agility, efficiency and quality in data processing and transmission, when compared to a PDA
- ✓ Longitudinal follow up of each DENUE's establishment

# This way, in EC2014, more than 5 million establishments in the country were georeferenced, as well as 26 million of dwellings, and all the empty properties

# From paper to DCM…

**Defining highly in advance the census questionnaire, validation criteria, operative strategy and detailed planning**

**Establishing, beforehand, the logistics for data collection, supervisions, and training strategies**

**Preparing all capturing and follow up systems, also ahead of time**

# Savings in Census data collection through DCM

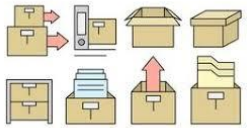
- Paper (and trees), printing of questionnaires and transport

- Wages of data “validators”

- Wages of data transcribers

- Wages of supervisors of capturing

- Leasing spaces and buying computers



- Storage of questionnaires

- Reduction in the number of re-visits to the respondent

- **Using DCM represents saving of 20% in relation to previous data collection conducted in paper**

# Other benefits of using the DCM

- ✓ Homogeneity during the development of the interview
- ✓ Faster and more accurate data collection and data updating
- ✓ More timely data release
- ✓ Immediate data transmission
- ✓ Easier control and follow up of the census data collection activities
- ✓ Easier staff training

# Conclusions

## Using Computing Mobile Devices has enabled:

- Saving resources
- Improving data quality
- More control during data collection
- More control in data revision
- Improving training processes for interviewers

- More timely data release
- Creating new products such as the directory of establishments in the digitized cartography
- To have the support of the geography in the DCM to locate data in the place where they occur:

**Georeferenced Statistics**

**Changing from paper to DCM is a complex process, but it worths it**

# A couple of questions for the audience:

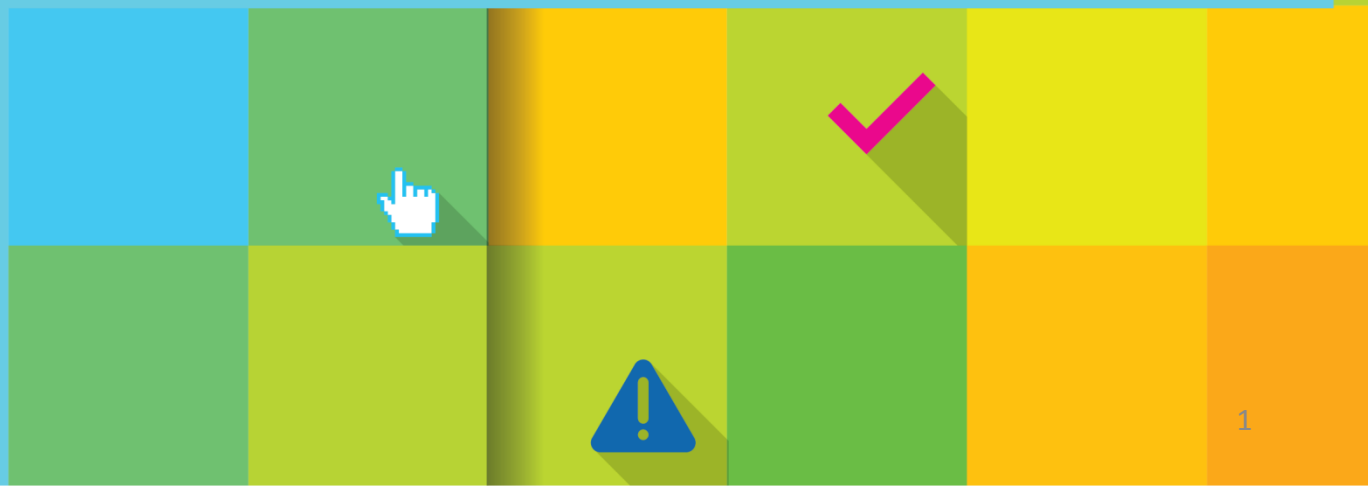
## 1. What problems have you had concerning the use of the DCM in census data collection?

## 2. What advantages have you had concerning the use of the DCM in census data collection?

INSTITUTO NACIONAL DE ESTATÍSTICA
STATISTICS PORTUGAL

# FIFTH INTERNATIONAL WORKSHOP ON BUSINESS DATA COLLECTION METHODOLOGY

## 19-21 SEPTEMBER 2018 – STATISTICS PORTUGAL, LISBON



# The Migration of the Canadian Census of Agriculture to an Integrated Business Program without Contact with Respondents

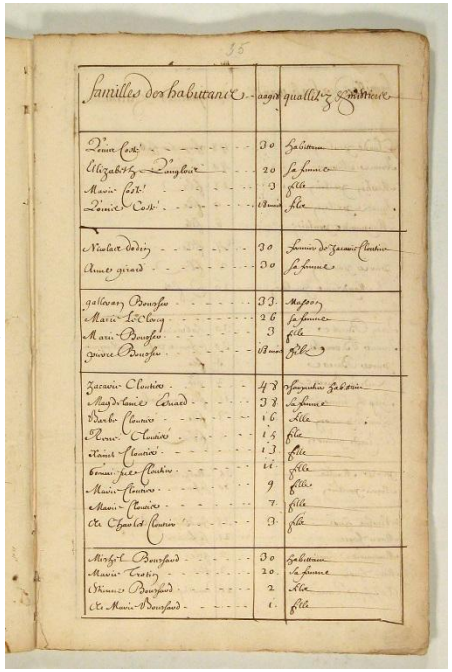
**Mathieu Thomassin**
Director of the Retail and Service Industries Division
Statistics Canada
mathieu.thomassin@canada.ca

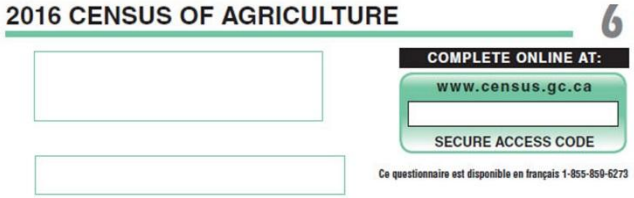
# Agenda

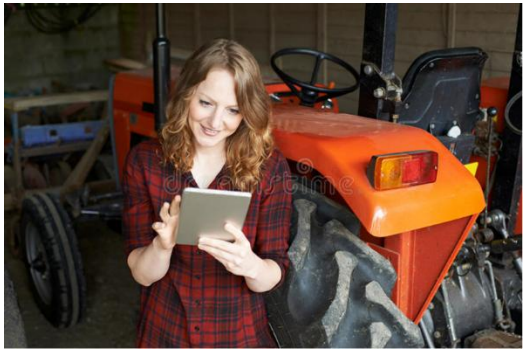
- Evolution of the Canadian Agriculture Industry and the Data Collection Method
- Vision of the Census of Agriculture (CEAG)
- Changes to the 2021 CEAG (progressive transition to a model eliminating contact with respondents)
- 2026 and beyond: CEAG-Zero
- Future Work
- Discussion Questions

# Evolution of the Canadian Agriculture Industry

# Data Collection has Evolved





# Agriculture Data at StatCan

*Agriculture surveys*

*Census of Agriculture*

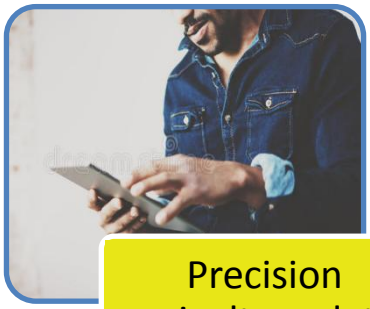
*Satellite data*

*Administrative data*

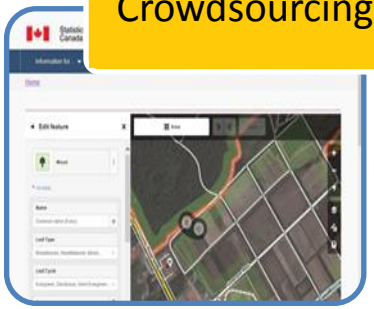
# Future Opportunities for Innovation at STC

Nano-satellites

Drones



Precision agriculture data



Crowdsourcing

# Vision for the CEAG

## Adapting the program to a rapidly changing context

*Through **partnerships** with Canadians, businesses, associations, institutions and government entities and other information centers…*

*...comprehensive, relevant and **integrated** farm data (with trade, food processing, transportation, health, environment, etc.) is produced:*

- Without contacting farmers (CEAG-Zero project);
- In a very timely fashion;
- At macro and micro level;
- At a very fine level of geographic granularity;
- Through **modern user-centric** dissemination channels.

# Vision for the CEAG

## Adapting the program to a rapidly changing context

The foundations remain unchanged

**Content** is modified based on consultations with stakeholders:

- Consultations completed for the 2021 cycle.

**Collection:** Electronic questionnaire (EQ); paper, on demand only:

- Planning assumption: 70% EQ take-up rate.
- Maximize the use of EQ functionalities to reduce the time required to complete the questionnaire.
- Use interactive web mapping application for geo-coding.

**Census day**: May 11, 2021 – same as Census of Population:

- Cost efficiencies for sharing CPOP infrastructure.

# Vision for the CEAG

## Adapting the program to a rapidly changing context

- Increased availability of administrative and alternative sources of data;
- Increased access to quality satellite imagery;
- Refinement of large dataset processing techniques;
- Information needs go beyond the primary sector;
- Farms are increasingly integrated and complex businesses;
- Statistics Canada's modernization agenda;
- It is imperative to modernize the Census of Agriculture to adapt to this new context. The Census of Agriculture 2021 is seen as one that will transition towards a new business model.

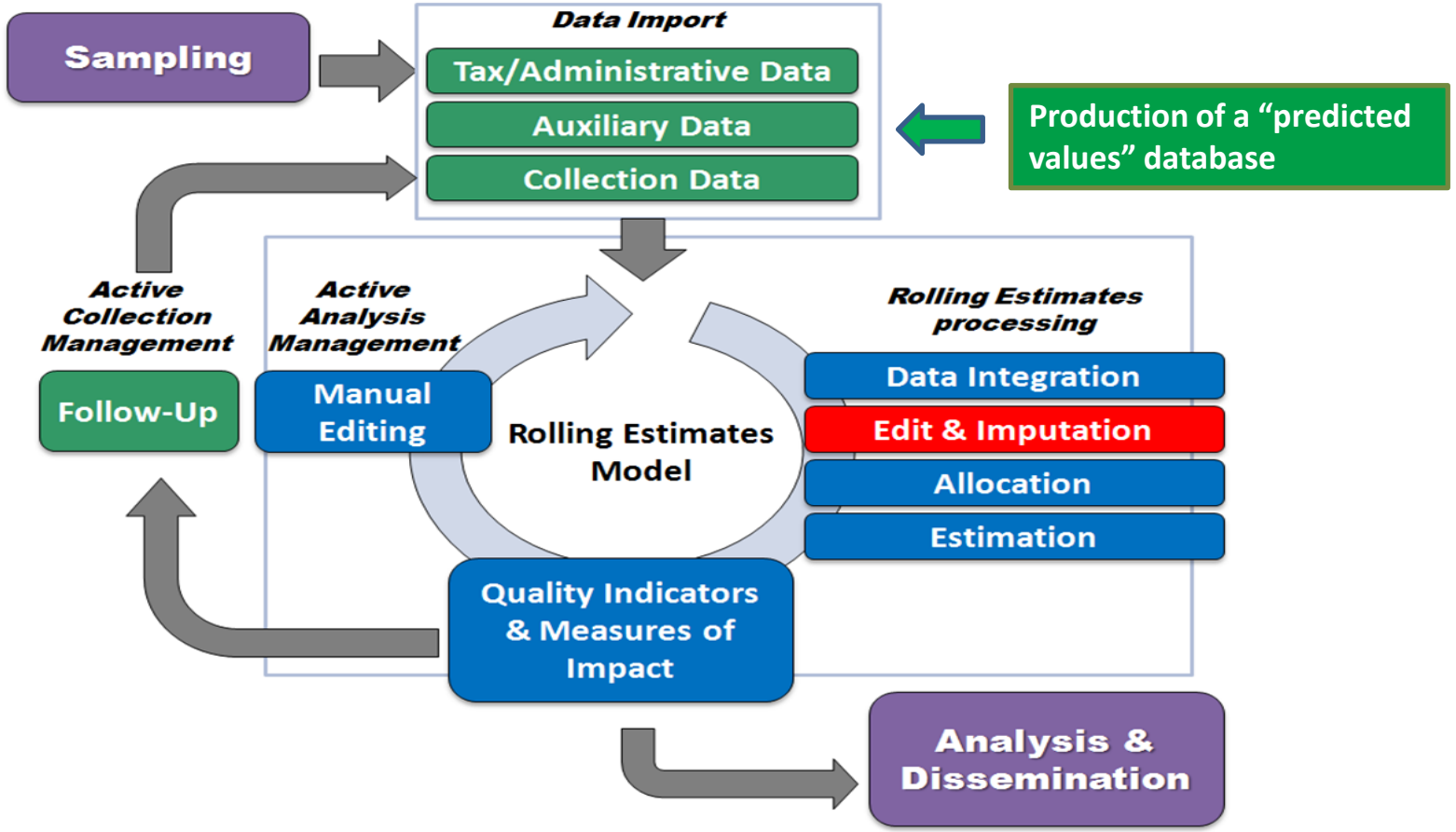
# Changes to the 2021 CEAG

## Progressive transition to a model eliminating contact with respondents

- CEAG will maximize its integration with existing platforms and tools used in the Economic Statistics Field (Governance, BR, Collection, IBSP, Disclosure Avoidance, IT support).
  - Use of corporate services / generalized systems;
  - Better integration with other business statistics programs (e.g. Environment, Manufacturing, Trade);
  - Harmonized content between CEAG and other surveys / programs;
  - Modular approach for the questionnaire;
  - Common data repository and analytical tools;
  - Rolling Estimates ➡ An opportunity to improve the timeliness of the releases

# Changes to the 2021 CEAG

## Rolling Estimates



# Changes to the 2021 CEAG

## *Feasibility / Proof of Concept*

Production of a test environment: Predicted Values Database.

- Feasibility study - produce the results from the 2021 Census of Agriculture in parallel using administrative files, survey and satellite data and models;
- Proof of concepts / parallel run;
  - ✓ Used for both Census and survey programs .
  - ✓ Assessment of the real cost and effort to move to an administrative data driven Census of Agriculture.
- Use for validation and imputation.

# Changes to the 2021 CEAG

***Progressive transition to a model with no contact with respondents - CEAG-Zero.***

- Modular approach;
- Use of auxiliary sources of information to replace selected data;
- Increased uses of satellite imagery and other administrative files for validation and frame management;
- Develop new partnerships with data providers;
- Assessment of the transferability to survey programs.

# Changes to the 2021 CEAG

## Full Replacement versus Smart Replacement

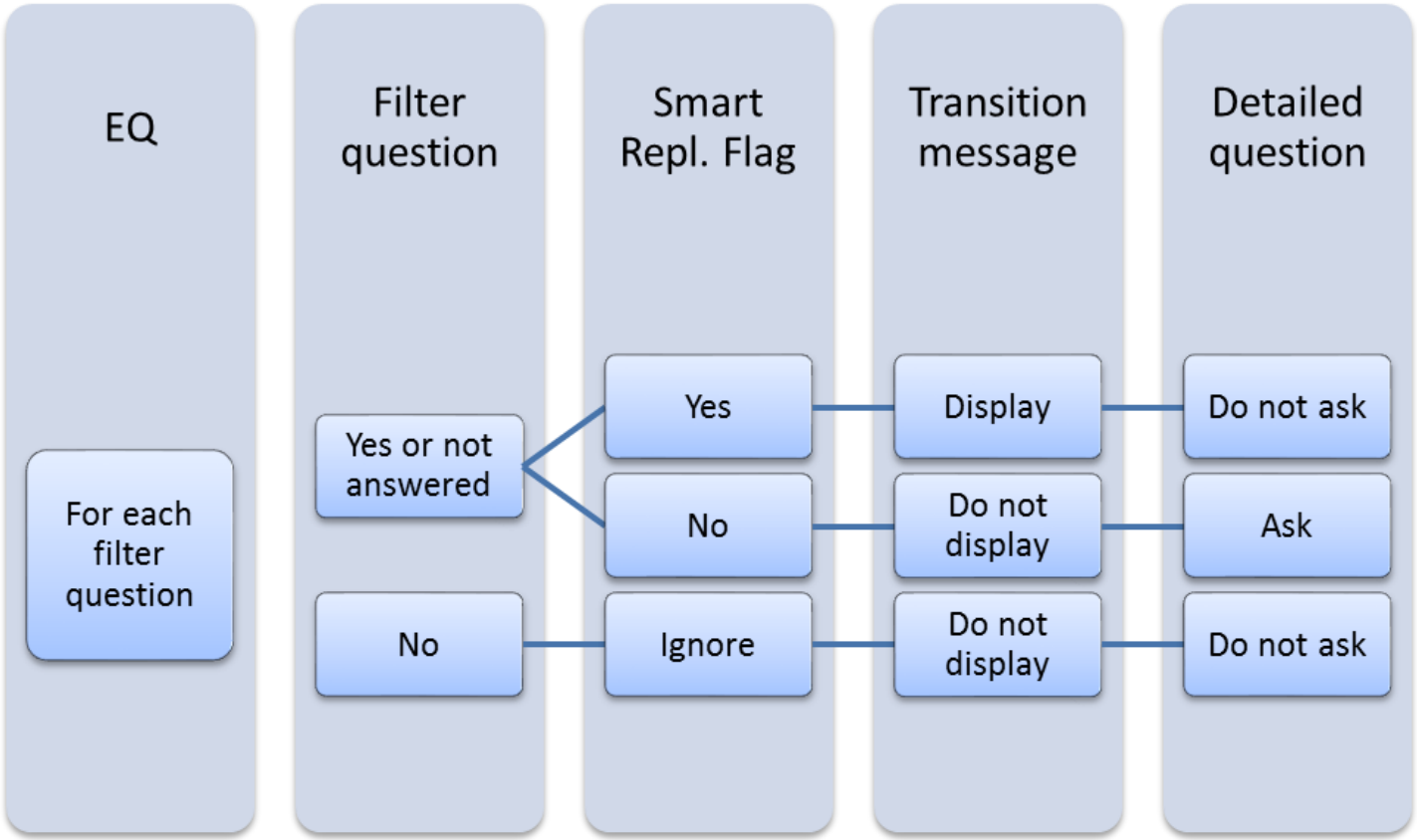
| Variables | Full Replacement | Smart Replacement | Data source |
|---|---|---|---|
| Gender | ✓ | | Census of Population |
| Greenhouse & Mushroom | | ✓ | Survey |
| Maple | ✓ | | Administrative |
| Dairy cattle | | ✓ | Model |
| Cannabis | ✓ | | Administrative |
| Operating Arrangement | ✓ | | Administrative |
| Detailed Operating Revenues & Expenses | ✓ | | Administrative (same as in 2016) |

**Full replacement:** variables are excluded from respondent collection.

**Smart replacement:** Collection is customized for each respondent based on the availability of a reliable auxiliary source of information.

# 2021 CEAG

## EQ flow for Smart Replacement



# Changes to the 2026 CEAG

- CEAG 2026: From the classical approach to “CEAG-Zero” (0 or minimal contact with respondents)
  - The Census team is aiming at producing an annual census where most of the info will be derived from administrative, alternative and modelled data.
  - Data gaps will be addressed via the survey programs.

# CEAG-Zero Challenges

- New and varied data sources and methods:
  - ✓ Misalignment of reference periods / Breaks in the series.
- Quality: administrative or modelled data versus respondent data.
- Privacy.
- Effort and Infrastructure required for record linkages:
  - ✓ Multiple sources / limited number of records.
  - ✓ Large volume of transactions (e.g., precision agriculture data).
- HR: availability of the right skillsets.
- Resistance to change (internal and external).

# Future Work

| Efforts continue to be deployed to: |
| --- |
| • seek ways to maximize the use of alternate data sources |
| • identify and evaluate the use of other potential administrative/alternate data sources from the public and private sectors |
| • develop partnerships with potential data providers |
| • enhance the processing and analysis of these various data sources to transform them into data that are fit for survey/census use or more appropriate for statistical use |
| • improve the statistical methods that can be used for combining data from different sources (record linkage) |
| • harmonize the concepts and definition from different data sources (i.e., improve data coherence) |

# Discussion Questions

1. What are your experiences in the use of multi-source data? What are the main challenges that your organization have faced?
2. What are your experiences and lessons learned in working with the data providers/owners (e.g., building partnerships with them, collaborating in a mutually beneficial way, etc.)? Have you made any attempts to standardize and harmonize some concepts and definitions?
3. What are your experiences in measuring the quality of the estimates coming from a hybrid of survey and administrative data sources?

# THANK YOU!

**For more information regarding the CEAG-Zero project, please contact Mathieu Thomassin or Étienne Saint-Pierre:**

*etienne.saint-pierre@canada.ca*; *mathieu.thomassin@canada.ca*

**For more information related to the Census of Agriculture and other data products please visit:** *www.statcan.gc.ca*

**#StatCan100**

# Appendix a – Modernization at Statistics Canada

## Pushing the limits

| Pillar | Vision |
|---|---|
| User-centric Service Delivery | Users have the information and data they need, when they need it, in the ways they want to access it, with the tools and knowledge to make full use of it. |
| Leading-edge Methods & Data Integration | Access to new or untapped data; modify the role of surveys; greater reliance on modelling and integration; capacity through R&D environment. |
| Statistical Capacity Building & Leadership | Integrated approach to collection, sharing, analysis and use of data. To be leaders in identifying, building and fostering savvy information and critical analysis skills beyond our own perimeters. |
| Sharing & Collaboration | Statistics Canada has developed and nurtured strategic, innovative partnerships that allow for the open sharing of data, expertise and best practices. We are proactive, flexible and responsive to partner needs. |
| Modern Workforce and Flexible Workplace | Have the talent and environment required to fulfill our business needs at the time and be open and nimble to continue to position ourselves for the future. |

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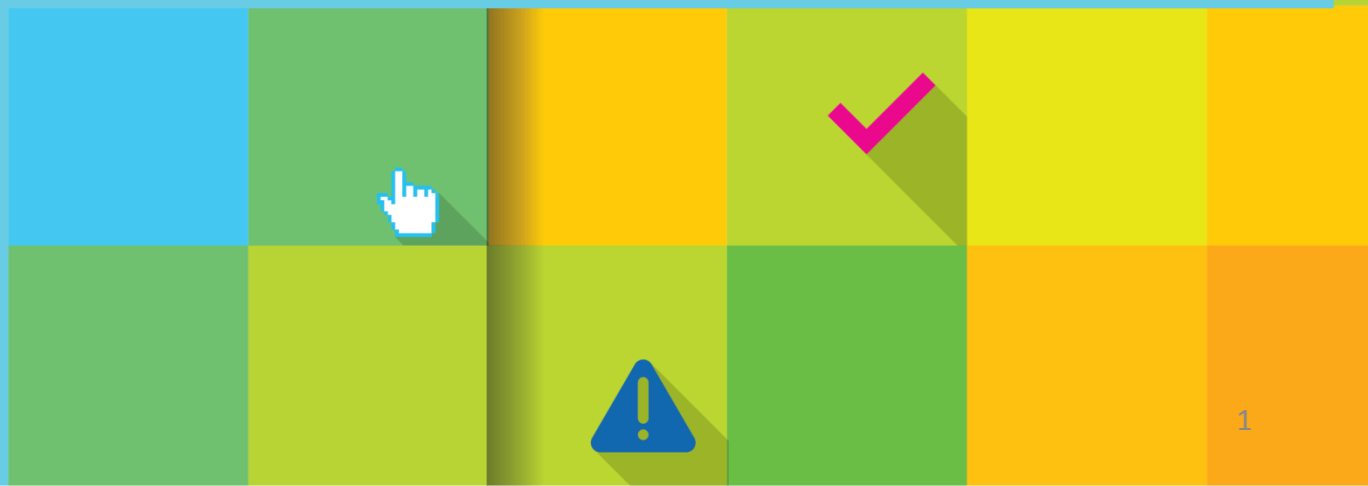
# FIFTH INTERNATIONAL WORKSHOP ON BUSINESS DATA COLLECTION METHODOLOGY

## 19-21 SEPTEMBER 2018 – STATISTICS PORTUGAL, LISBON



# EMPLOYMENT AND COMPENSATIONS OF EMPLOYEES SURVEY

Ashraf Alhajaj

## 1. General Background of the Survey

### 1.1 Introduction

- The Employment Survey is an annual national survey conducted by the Department of Statistics (DoS). The principal aim of the survey is to provide up-to-date statistical data on the number of establishments, number of employees and their basic socio-economic characteristics, volume of compensations in both the public and the private sectors, as well as basic data that allow measuring the development of the salaries and wages according to various occupations.
- Due to the fact that some of the workers do not work all year round, the data are collected annually with October serving as the reference month

### 1.2 Objectives of the Survey

The Employment Survey aims at providing the following data:

- Number of establishments operating in the public and the private sectors by various economic activities.
- Number of employees in the public and the private sectors and their characteristics, such as sex, nationality, educational level and specialization.
- Levels of cash salaries and wages paid to different occupation categories as well as regular and irregular cash allowances and remunerations.
- Compensations of employees by major occupation categories.
- Usual work hours during the month except week end days by occupation categories in both the public and the private sectors.
- Size of employment in both the public and the private sectors.

## 1.3 Survey Coverage

- The survey covered all operating establishments in the public sector (except for military and security establishments) and all establishments of the private sector regardless of the number of employees (except for the agricultural sector). The Department of Statistics has included establishments employing less than five workers since 1999.

## 1.4 Sample Design

- The sample of the 2016 survey was designed to include:
- All establishments of the public sector excluding military and security establishments, with a total number of 284 establishments.
- All establishments of the private sector engaging 50 workers and more excluding the agricultural sector.
- A sample was drawn from the remaining establishments.
- The total sample size of the survey was 7960 establishments.

## 2. Preparatory Stage

### 2.1 Survey Main Documents

The documents used in this survey included the survey questionnaire, the instructions manual and the coding manual.

### 2.1.1 Survey Questionnaire

At the beginning of the year, the survey questionnaire was thoroughly revised to make sure that it meets the objectives of the survey. The questionnaire consists of the following topics:

- Identification and general information of the establishments.
- Number of employees and their characteristics.
- Employees' compensations.

### 2.1.2 Instructions Manual

The manual contained definitions and concepts used in the survey as well as detailed instructions for the office and the field staff at various supervisory and executive levels. It also included detailed explanation of items on the questionnaire and how to complete the data in a way that ensures high quality and accuracy. Further, the manual included basic edit rules that should be followed by enumerators and editors when checking the consistency of data on the questionnaire. The duties and responsibilities of various levels of the survey staff were also included in this manual. In addition, the necessary edit rules were also prepared for electronic processing of data.

- **2.1.3 Coding Manual**
- The coding manual was revised and prepared after designing the survey questionnaire. The International Standard Industrial Classification of all Economic Activities, Third Revision (ISIC4) was used to code activity, the Jordanian Standard Classification of Education (JISCED) which is based on the International Standard Classification of Education (ISCED) was used to code the educational level and specialization, and Standard Classification of Occupation (ISCO-08) was used to code the occupation

- **2.2 Definitions and Classifications**
- **Statistical Unit:** The establishment is considered to be the statistical unit for this survey. It should have a financial autonomy and might practice one or more economic activities, where one of which is considered the main activity and the rest are considered secondary activities

- **Main Activity:** It is the principal activity practiced by the establishment, where it could be identified by the volume of production, revenue or the value added of its main produce of goods and /or services. This activity should be recorded in detail according to the ISIC4

- **Reference Month:** It is the month for which the data are collected from all establishments of the sample. For the purposes of this survey the reference month is October.
- **Work Hours:** The calculation of work hours was amended on the basis of usual work hours and the work hours of the week end are not calculated as of the survey of 2009.
- **Compensations of Employees:** Total salaries and wages paid or due to employees either in cash or in kind. It also includes the contribution of the establishment in the social security plus any other cash or in kind benefits paid or due to employees.
- **Establishment Ownership:** All economic establishments in which the government owns 51% and more of their capital or has the right to interfere in their internal policies and decisions are considered public sector, otherwise they are private

- **Cash Salaries and Wages:** The total amount of money paid in cash by the employer directly and regularly to the employee in return of his work in the establishment for normal daily work hours, this includes:
  - The basic salary or the wage.
- The family and cost of living allowance.
- The academic certificate allowance.
- Any other allowances related to difficulty of occupation such as doctors, engineers…etc.
- **Regular and Irregular Cash Grants, Remunerations and Allowances:** Regular (almost all year round) and irregular (some months of the year) grants, remunerations and allowances paid in cash by the employer to the employee. These include:
- Payments in return of overtime work or working during official holidays and vacations.
- Shift or night duty allowances, provided that such payments are not considered as overtime work.
- Benefits and remunerations related to production or commission.
- Grants and allowances paid directly with the monthly salary such as housing allowances.
- Any other allowances.

## 2.3 Organization of Survey Staff

The survey staff consists of the survey administration which is in charge of all administrative and technical duties, and of the office processing staff (editors and coders). The field staff consists of supervisors, field editors and enumerators under the supervision of the field supervisor.

## 2.4 Recruitment and Training of Staff

The field staff was selected according to certain criteria relevant to the nature of the work to be accomplished. Emphasis was placed on the experience, education and specialization of the staff members as much as possible.

A training course was held to provide guidelines on the survey objectives, data collection procedures and how to deal with establishments as well as a detailed explanation of the items in the questionnaire. At the end of the course, a written test was held for the staff to determine their comprehension levels and understanding of the concepts and instructions of the questionnaire.

## 3. Data Collection Stage

### 3.1 Organization of Fieldwork

The fieldwork was carried out by teams each of which consisted of two to three enumerators plus an office editor and a team supervisor.

### 3.2 Data Collection

Data collection started in April 2016 through the personal interview method. In case of large-size establishments the enumerators left the questionnaire by the concerned person in the establishment and fixed a later appointment to complete or collect the questionnaire. This procedure allowed sufficient time for the respondent to prepare the required information

### 3.3 Field Editing

Field editing was assigned to the team supervisor, where he has to check daily a sample of questionnaires for each enumerator working with him. Any detected errors were made clear to the enumerators.

## 4. Data Processing Stage

### 4.1 Office Processing

All completed and field-edited questionnaires were delivered to the Employment Division head office for further editing. During the editing process any error detected in the questionnaire was refered to the division chief. In this case, either a telephone call was made with the respondent for clarification or the enumerator paid a visit to the establishment to correct the faulty data. The questionnaires were then coded before being sent to the Computer Directorate for data entry.

### 4.2 Electronic Processing

The office-processed questionnaires were delivered to the Data Entry Division where they were captured using special pre-prepared entry programs and electronic edit rules. Upon completing the data entry process preliminary cross tabulations of the survey results were generated for review by the subject-matter persons in the Division. Any suspected findings were checked with regard to data entry, tabulation program and raising factors.

### 4.3 Tabulation and Dissemination of Results

After obtaining a clean data file, the final results were tabulated in accordance with the pre-prepared dummy tables. Then the final report was prepared containing detailed tabulations as well as the methodology of the survey. The results of the survey were loaded on the page of the Department of Statistics (DoS).

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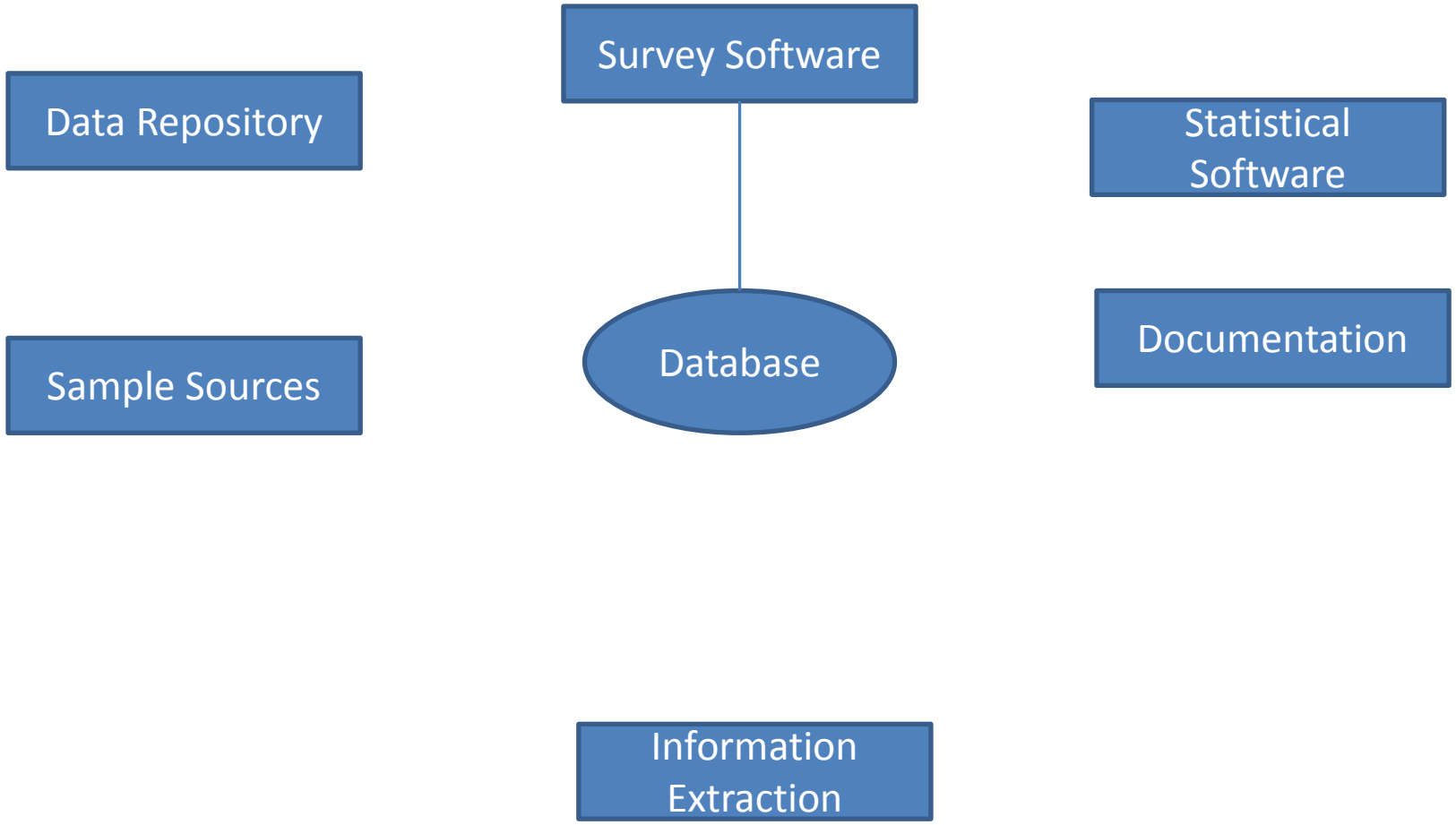
STATISTICS PORTUGAL

# FIFTH INTERNATIONAL WORKSHOP ON BUSINESS DATA COLLECTION METHODOLOGY

## 19-21 SEPTEMBER 2018 – STATISTICS PORTUGAL, LISBON

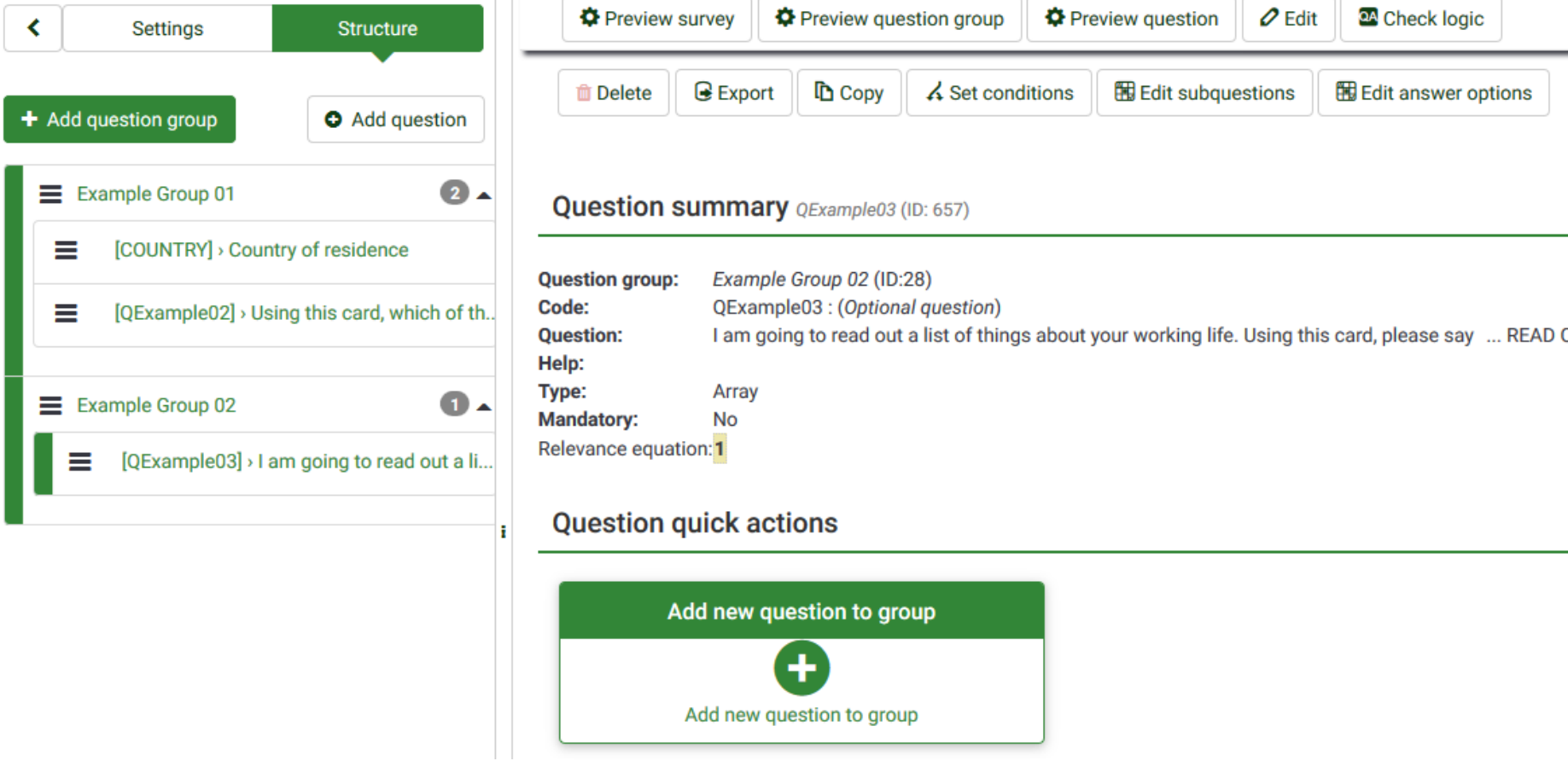
# Integrating survey design and data quality management

Daniel Scheuregger, Cedefop


Survey Software
Data Repository
Statistical Software
Database
Documentation
Sample Sources
Information Extraction

# Survey Software - Limesurvey

| | | | |
|---|---|---|---|
| Questions | Conditions | Translation | Questionnaire development |
| Survey Data (Modes) | Para-Data Collection | Participants Management | Fieldwork administration & data collection |
| Data Archive | Data Exchange | Reporting | Data analysis & archiving |


Settings
Structure
Add question group
Add question
Example Group 01
2
[COUNTRY] › Country of residence
[QExample02] › Using this card, which of th..
Example Group 02
1
[QExample03] › I am going to read out a li...
Preview survey
Preview question group
Preview question
Edit
Check logic
Delete
Export
Copy
Set conditions
Edit subquestions
Edit answer options
Question summary QExample03 (ID: 657)
Question group: Example Group 02 (ID:28)
Code: QExample03 : (Optional question)
Question: I am going to read out a list of things about your working life. Using this card, please say ... READ OUT...
Help:
Type: Array
Mandatory: No
Relevance equation: 1
Question quick actions
Add new question to group
Add new question to group

3 QExample03 I am going to read out a list of things about your working life. Using this card, please say how much the management at your work allows/allowed you...

**READ OUT...**

| | no influence | 2 | 3 | 4 | 5 | 6 | complete control | No answer |
|---|---|---|---|---|---|---|---|---|
| ...to decide how your own daily work is/was organised? | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● |
| ...to choose or change your pace of work? | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● |

Example based on ESS

## Translate survey

Translat to: Porti

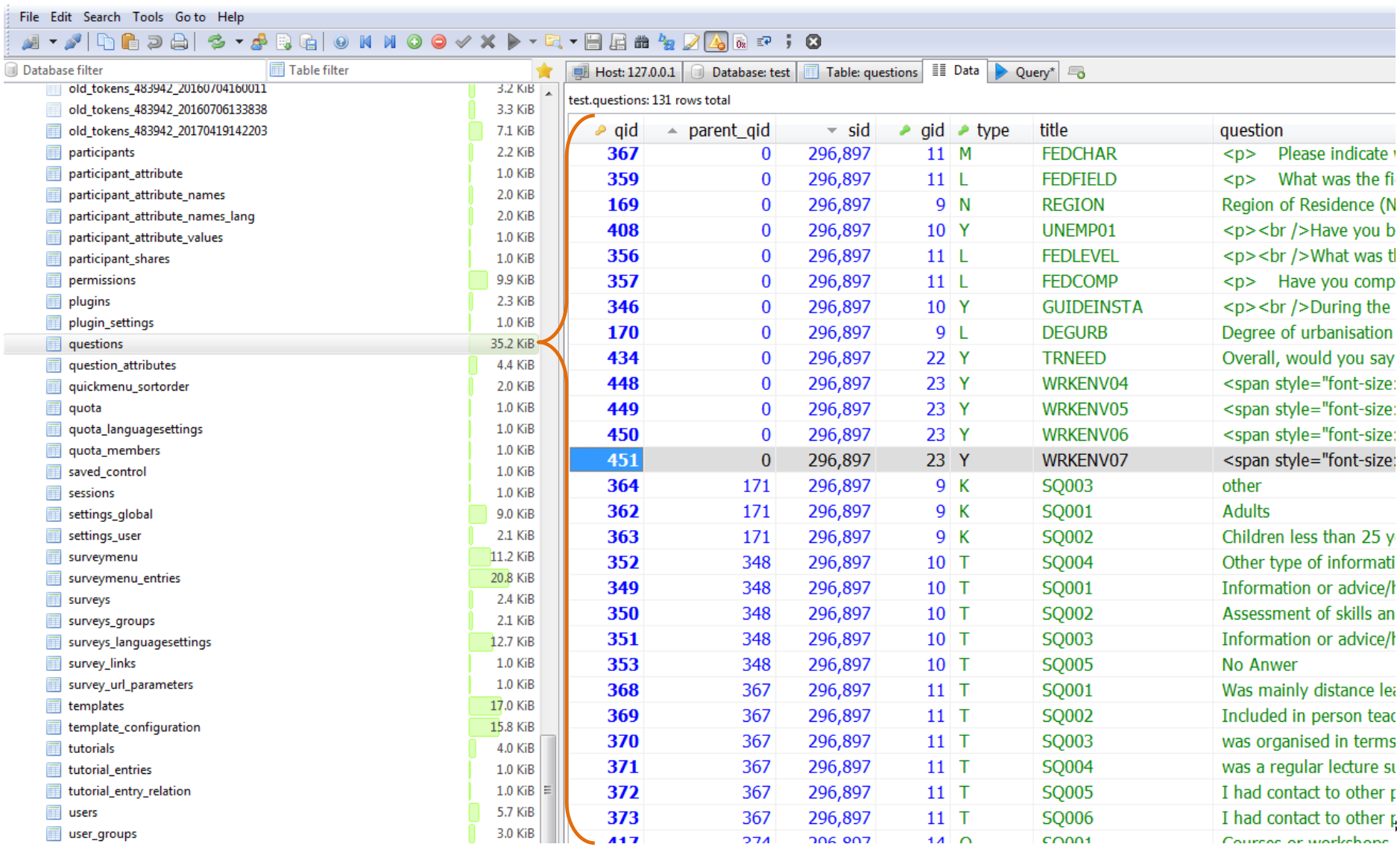
### Translate survey

Survey title and description | Welcome and end text | Question groups | Questions

Subquestions | Answer options | Invitation email subject | Reminder email subject

Confirmation email subject | Registration email subject

| Question code / ID | English | Portuguese |
|---|---|---|
| COUNTRY (651) | Country of residence | País de residência |
| QExample02 (652) | Using this card, which of these descriptions applies to what you have been doing for the last 7 days? Select all that apply. | Translation |




| qid | parent_qid | sid | gid | type | title | question |
|---|---|---|---|---|---|---|
| 367 | 0 | 296,897 | 11 | M | FEDCHAR | <p> Please indicate |
| 359 | 0 | 296,897 | 11 | L | FEDFIELD | <p> What was the fi |
| 169 | 0 | 296,897 | 9 | N | REGION | Region of Residence (N |
| 408 | 0 | 296,897 | 10 | Y | UNEMP01 | <p><br />Have you b |
| 356 | 0 | 296,897 | 11 | L | FEDLEVEL | <p><br />What was t |
| 357 | 0 | 296,897 | 11 | L | FEDCOMP | <p> Have you comp |
| 346 | 0 | 296,897 | 10 | Y | GUIDEINSTA | <p><br />During the |
| 170 | 0 | 296,897 | 9 | L | DEGURB | Degree of urbanisation |
| 434 | 0 | 296,897 | 22 | Y | TRNEED | Overall, would you say |
| 448 | 0 | 296,897 | 23 | Y | WRKENV04 | <span style="font-size: |
| 449 | 0 | 296,897 | 23 | Y | WRKENV05 | <span style="font-size: |
| 450 | 0 | 296,897 | 23 | Y | WRKENV06 | <span style="font-size: |
| 451 | 0 | 296,897 | 23 | Y | WRKENV07 | <span style="font-size: |
| 364 | 171 | 296,897 | 9 | K | SQ003 | other |
| 362 | 171 | 296,897 | 9 | K | SQ001 | Adults |
| 363 | 171 | 296,897 | 9 | K | SQ002 | Children less than 25 y |
| 352 | 348 | 296,897 | 10 | T | SQ004 | Other type of informati |
| 349 | 348 | 296,897 | 10 | T | SQ001 | Information or advice/h |
| 350 | 348 | 296,897 | 10 | T | SQ002 | Assessment of skills an |
| 351 | 348 | 296,897 | 10 | T | SQ003 | Information or advice/h |
| 353 | 348 | 296,897 | 10 | T | SQ005 | No Anwer |
| 368 | 367 | 296,897 | 11 | T | SQ001 | Was mainly distance lea |
| 369 | 367 | 296,897 | 11 | T | SQ002 | Included in person teac |
| 370 | 367 | 296,897 | 11 | T | SQ003 | was organised in terms |
| 371 | 367 | 296,897 | 11 | T | SQ004 | was a regular lecture su |
| 372 | 367 | 296,897 | 11 | T | SQ005 | I had contact to other p |
| 373 | 367 | 296,897 | 11 | T | SQ006 | I had contact to other p |

Host: 127.0.0.1 | Database: test | Table: questions | Data | Query*

```
1 select qid, parent_qid, sid, title, question from test.questions
2 where parent_qid = '171' XOR qid= '171';
3
4
```

*Variable ID* *Survey* *Variable name* *Question text*

questions (5×4)

| qid | parent_qid | sid | title | question |
|---|---|---|---|---|
| 171 | 0 | 296,897 | HHNBPERS |  How many people live ... |
| 364 | 171 | 296,897 | SQ003 | other |
| 362 | 171 | 296,897 | SQ001 | Adults |
| 363 | 171 | 296,897 | SQ002 | Children less than 25 years |

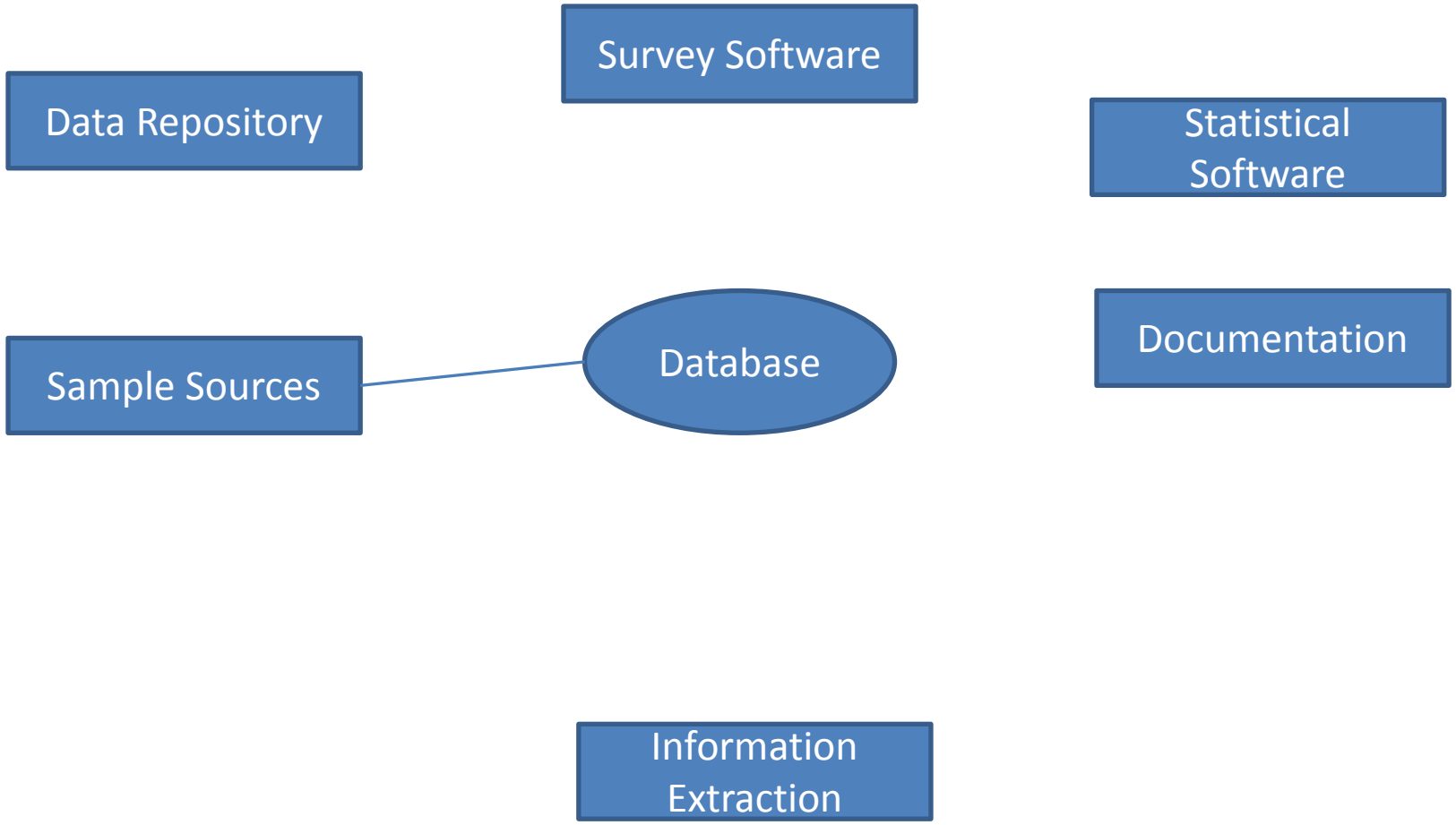
Host: 127.0.0.1 | Database: test | Table: questions | Data | Query*

```
1 select qid, parent_qid, sid, title, question, tag01 from test.questions
2 where tag01 Like  "socio%";
3
4
```

*Added information*

questions (6×5)

| qid | parent_qid | sid | title | question | tag01 |
|---|---|---|---|---|---|
| 343 | 0 | 296,897 | BIRTHMOTHER | What is your mother's country of bi... | sociodemographic |
| 175 | 0 | 296,897 | CITIZEN | What is your citizenship?<br /><s... | sociodemographic |
| 179 | 0 | 296,897 | BIRTHPLACE | What is your country of birth?<br /... | sociodemographic |
| 181 | 0 | 296,897 | MARSTADEFACTO | What is your de facto marital status... | sociodemographic |
| 295 | 0 | 296,897 | MAINSTAT | Do you carry out a job or professio... | sociodemographic |


Survey Software
Data Repository
Statistical Software
Documentation
Sample Sources
Database
Information Extraction

## Central participant database

Display CPDB participants | Info | Import | Blacklist settings | Attributes | Share panel | Export all participants

Selection criteria

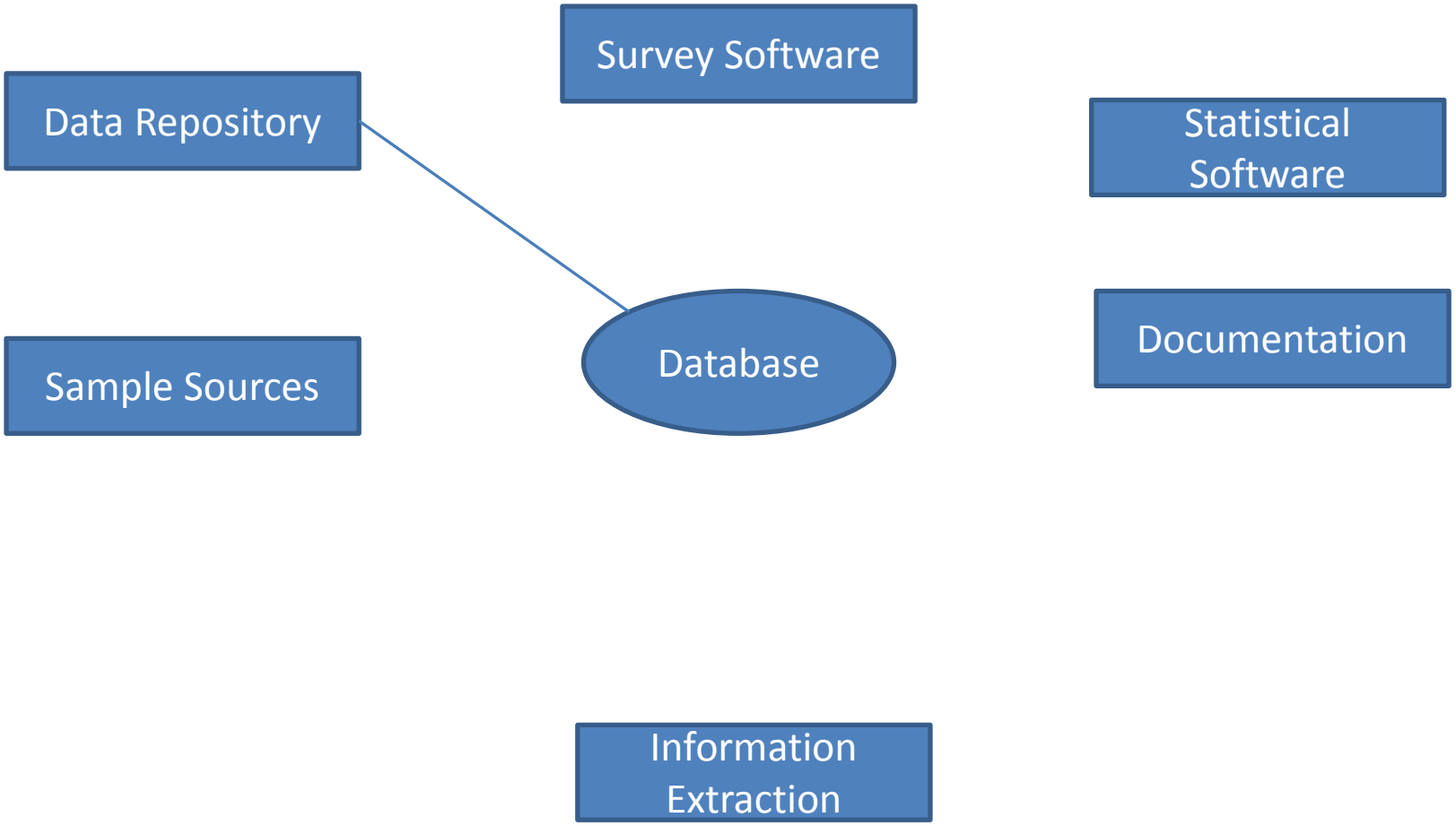
| Action | Last name | First name | Email address | Language | Active surveys | Owner |
|---|---|---|---|---|---|---|
| | | | | | | |
| | Scheuregger | Daniel | daniel.scheuregger@cedefop.europa.eu | | | |

Participants list

Added criteria

| Blacklisted | Created on | country | New Attribute | New Attribute |
|---|---|---|---|---|
| | | | | |
| No | 13.08.2018 | | attribute entry | another attribute |

[...]


Survey Software
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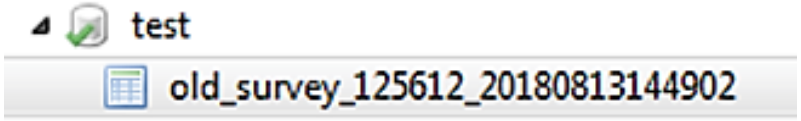
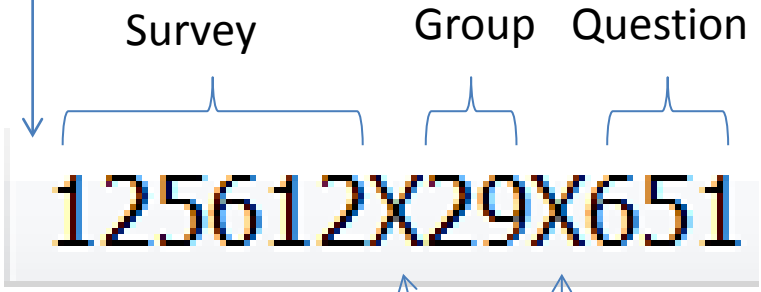
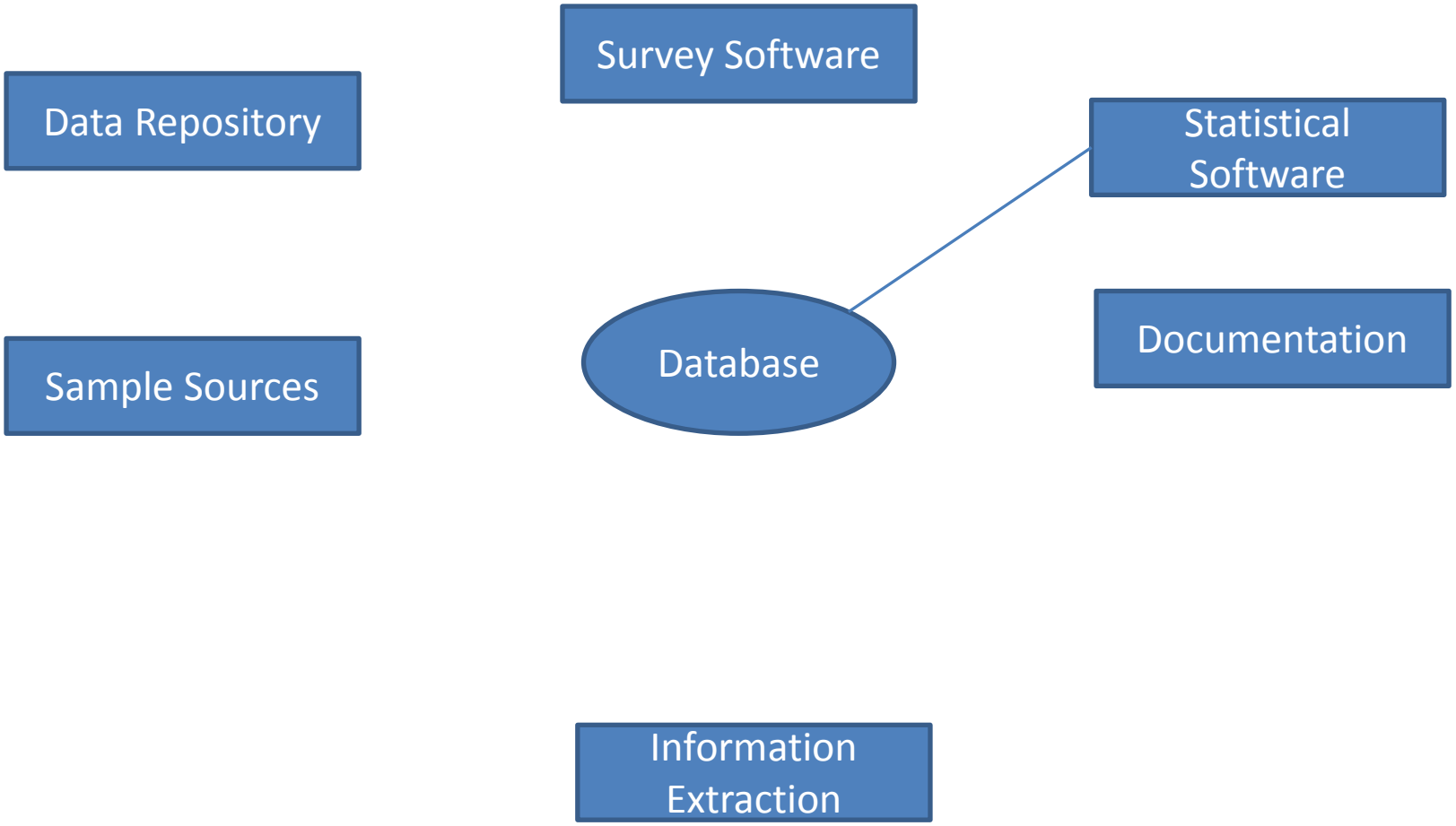



Variables

| startlanguage | (...) | 125612X29X651 | 125612X29X652SQ001 | 125612X29X652SQ006 | 125612X29X652SQ005 |
|---|---|---|---|---|---|
| en | | 00 | 1 | 0 | 0 |

Responses




Survey Software
Data Repository
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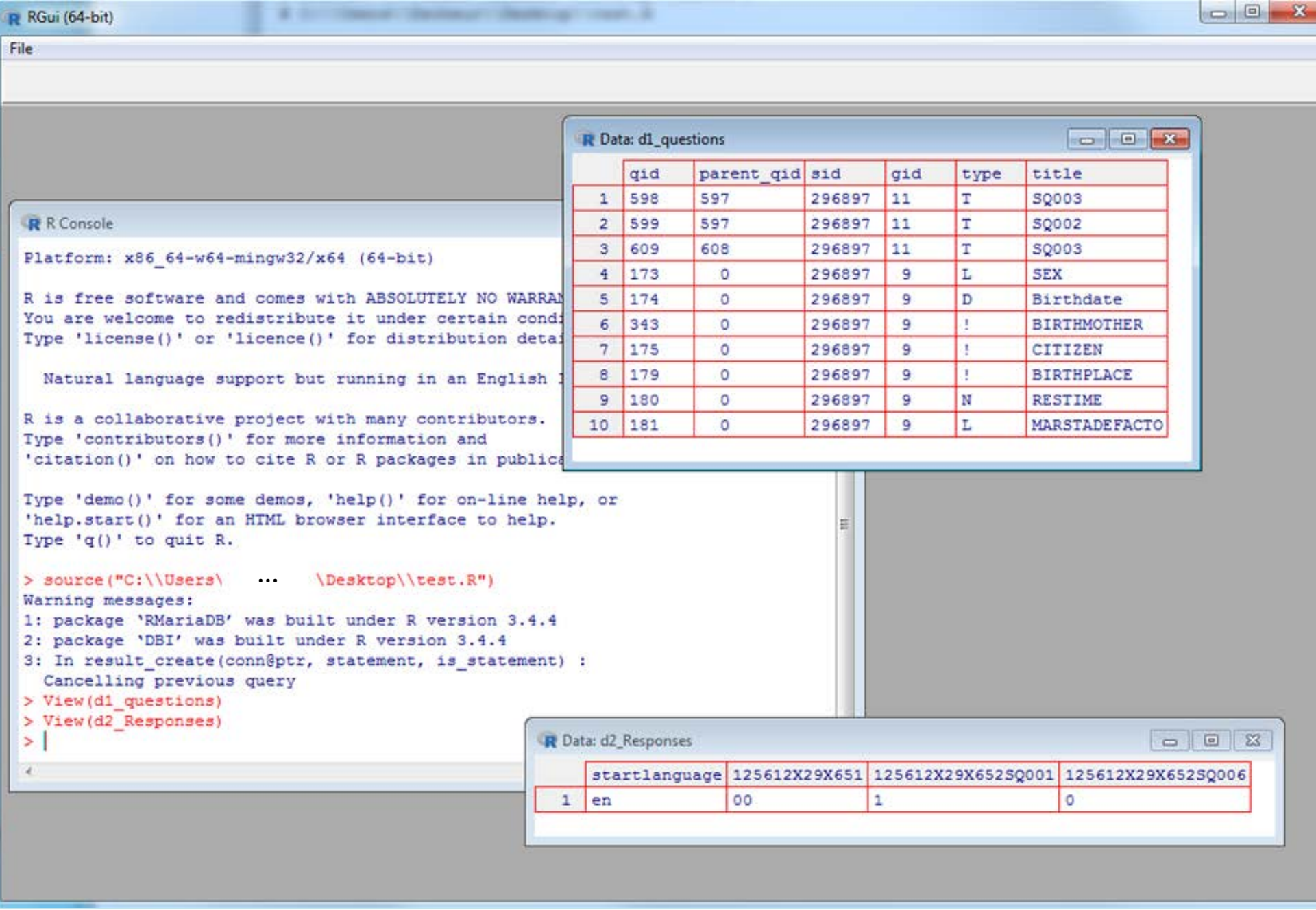
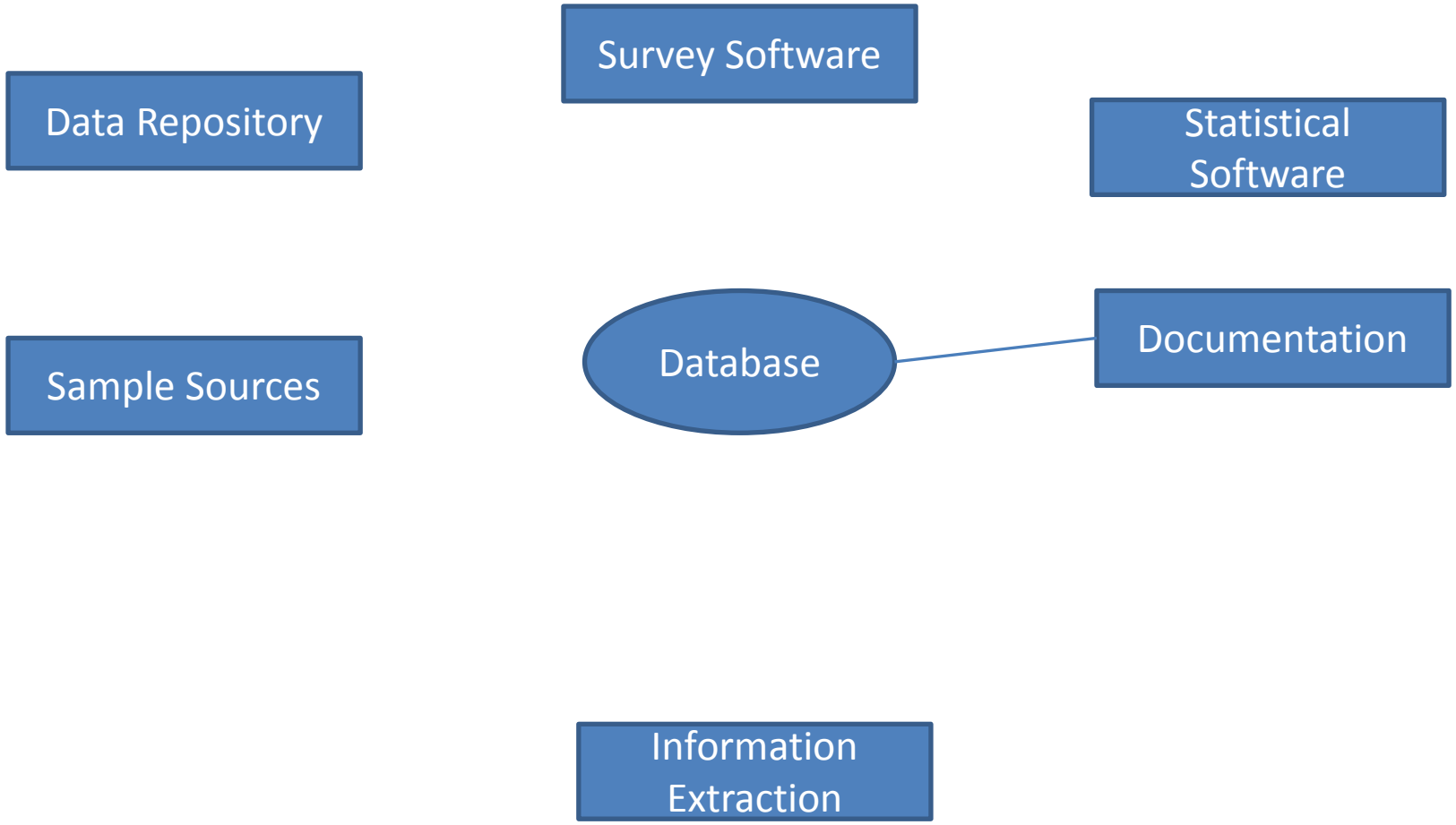

RGui (64-bit)
File
R Console
Platform: x86_64-w64-mingw32/x64 (64-bit)
R is free software and comes with ABSOLUTELY NO WARRAN
You are welcome to redistribute it under certain condi
Type 'license()' or 'licence()' for distribution detai
Natural language support but running in an English l
R is a collaborative project with many contributors.
Type 'contributors()' for more information and
'citation()' on how to cite R or R packages in publica
Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.
> source("C:\\Users\ ... \Desktop\\test.R")
Warning messages:
1: package 'RMariaDB' was built under R version 3.4.4
2: package 'DBI' was built under R version 3.4.4
3: In result_create(conn@ptr, statement, is_statement) :
Cancelling previous query
> View(d1_questions)
> View(d2_Responses)
>
Data: d1_questions
qid parent_qid sid gid type title
1 598 597 296897 11 T SQ003
2 599 597 296897 11 T SQ002
3 609 608 296897 11 T SQ003
4 173 0 296897 9 L SEX
5 174 0 296897 9 D Birthdate
6 343 0 296897 9 ! BIRTHMOTHER
7 175 0 296897 9 ! CITIZEN
8 179 0 296897 9 ! BIRTHPLACE
9 180 0 296897 9 N RESTIME
10 181 0 296897 9 L MARSTADEFACTO
Data: d2_Responses
startlanguage 125612X29X651 125612X29X652SQ001 125612X29X652SQ006
1 en 00 1 0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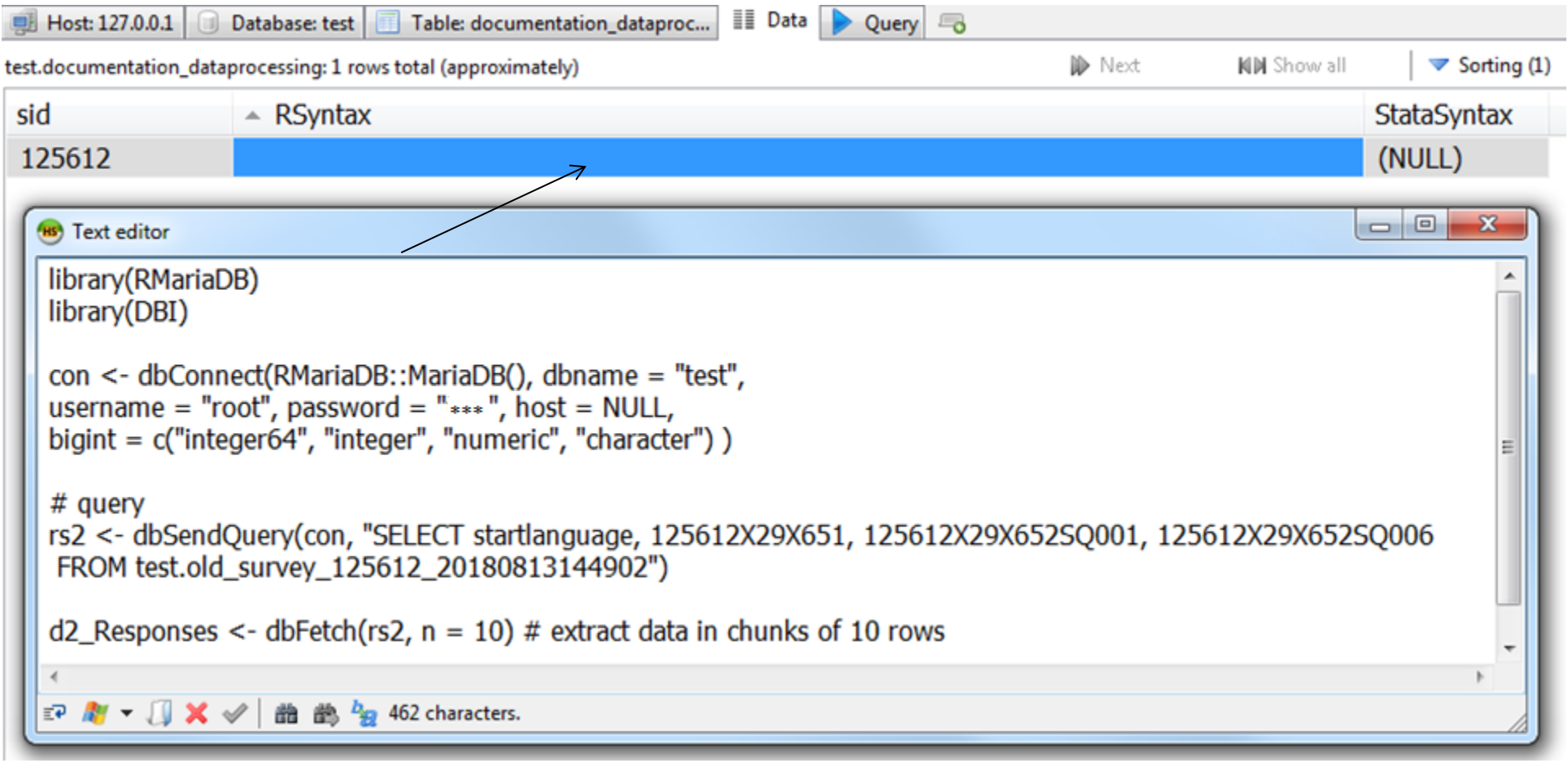
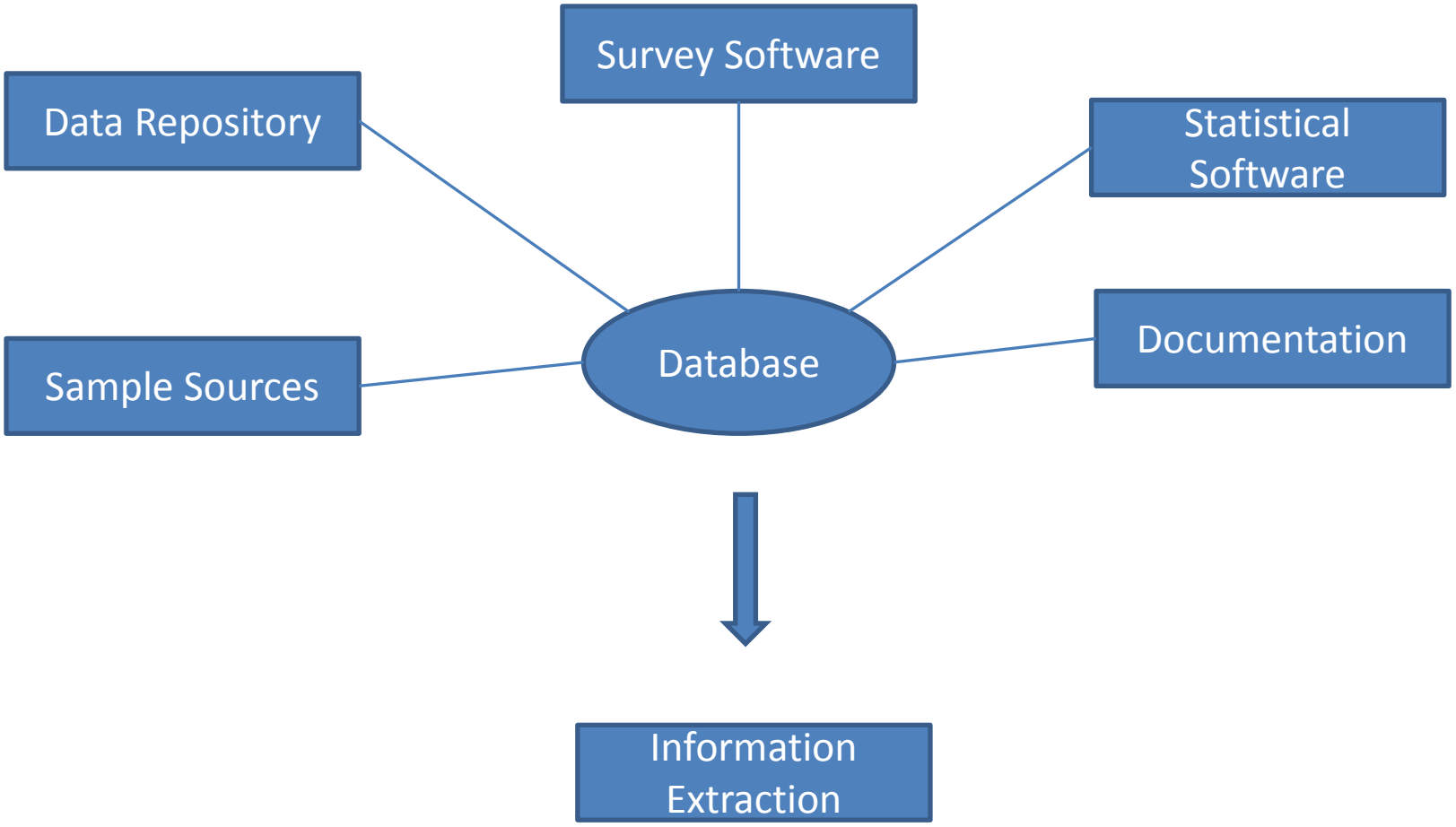

Host: 127.0.0.1
Database: test
Table: documentation_dataproc...
Data
Query
test.documentation_dataprocessing: 1 rows total (approximately)
Next
Show all
Sorting (1)
sid
RSyntax
StataSyntax
125612
(NULL)
Text editor
library(RMariaDB)
library(DBI)
con <- dbConnect(RMariaDB::MariaDB(), dbname = "test",
username = "root", password = "***", host = NULL,
bigint = c("integer64", "integer", "numeric", "character") )
# query
rs2 <- dbSendQuery(con, "SELECT startlanguage, 125612X29X651, 125612X29X652SQ001, 125612X29X652SQ006
FROM test.old_survey_125612_20180813144902")
d2_Responses <- dbFetch(rs2, n = 10) # extract data in chunks of 10 rows
462 characters.


Survey Software
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# Thank you

Daniel.SCHEUREGGER@cedefop.europa.eu

Eurofound

European Foundation for the Improvement of Living and Working Conditions

The tripartite EU Agency providing knowledge to assist in the development of better social, employment and work-related policies

CEDEFOP

European Centre for the Development of Vocational Training

# Quality Assurance for the European Company Survey 2019 (ECS 2019)

Sophia MacGoris

Presentation to BDCM Workshop, Lisbon 18-20 September 2018

# Eurofound and Cedefop

# The two agencies

European Foundation for the Improvement of Living and Working Conditions

- Budget of ca. € 21m
- Ca. 100 people in Dublin and 3 in Brussels
- Areas of expertise: Working Conditions, Living Conditions, Industrial Relations and Collective Bargaining, Structural Change and Restructuring

Both tripartite agencies established in 1975 carrying out comparative socio-economic research

European Centre for the Development of Vocational Training

- Budget of ca. € 13m
- Ca. 90 people in Thessaloniki and 2 in Brussels
- Areas of expertise: Vocational Education, Lifelong Learning, Understanding Qualifications, Policy Analysis

# European Company Surveys
# Background and focus

# European Company Survey

- Survey of HR managers and employee representatives in European establishments
  - Most senior person in charge of human resources in the establishment (MM)
  - Official employee representative (works council/trade union) (ER)
- Three editions so far and one in progress:
  - 2004/5: working time and work-life balance
  - 2009: flexibility practices and social dialogue
  - 2013: work organisation, human resource management, direct employee participation and social dialogue
  - 2019: (*in cooperation with Cedefop*), topics similar to 2013 but with more detail on skills utilisation, skills strategies and digitalisation. Issues will be linked to business strategy and performance

# 4th ECS Survey design

# Survey design

- Probability-based samples of establishments with at least 10 employees, carrying out market activities
- All EU Member States plus ME, MK, RS and TR
- Sample sizes range from 250 in Malta to 1,500 in Germany
- Push-to-web approach
  - Establishments contacted by telephone
  - Identifying both MM and ER respondent
  - Request to administer questionnaire online
- MM questionnaire in all establishments (ca. 120 items, 20 – 25 min.), ER questionnaire (ca. 90 items, 15 min.) in establishment where an ER is present and willing to participate.
- State-of-the-art procedures with regard to questionnaire translation, contact strategy, quality assurance, and quality monitoring.

# Eurofound's Approach to Quality Assurance for Surveys (1)

- Alignment with the European Statistical System: relevance & timeliness, accuracy, accessibility, coherence
- Following Cross-Cultural Survey Guidelines
- Applying the Total Survey Error approach: coverage, sampling, non-response and measurement error
- Closely monitoring and comprehensively documenting the survey production process

# European Statistical System Quality Criteria

- Relevance & Timeliness
  - relevance for users of the survey data reports, in terms of substance and timing of publication.
- Accuracy
  - validity and reliability of the survey data.
- Accessibility
  - Availability of outputs and transparency of processes.
- Coherence & Comparability
  - Consistency with other data sources
- Punctuality
  - adherence to the timeline as set at the start of the project.

# European Statistical System quality criteria applied to all survey stages

| | | Relevance | Accuracy | Accessibility | Coherence & Comparability | Timeliness & Punctuality |
|---|---|---|---|---|---|---|
| Planning & Design | | ■ | ■ | ■ | ■ | ■ |
| | | | | | | |
| Sampling & Weighting | Sampling | | ■ | ■ | ■ | ■ |
| | Weighting | | ■ | ■ | ■ | ■ |
| Questionnaire | Questionnaire | ■ | ■ | ■ | ■ | ■ |
| | Translation | | | ■ | ■ | ■ |
| Pre-Fieldwork | Fieldwork infrastructure | | | ■ | ■ | |
| | Scripting | | ■ | ■ | ■ | ■ |
| | Training of fieldwork managers and interviewers | | ■ | ■ | ■ | ■ |
| Fieldwork | Fieldwork organisation | | ■ | ■ | | ■ |
| | Fieldwork monitoring and data validation | | ■ | ■ | | ■ |
| Post-Fieldwork | Data processing | | ■ | ■ | ■ | ■ |
| | Micro data | | ■ | ■ | | ■ |
| | | | | | | |
| Analyses & Dissemination | | ■ | ■ | ■ | ■ | ■ |

# Survey stages (1)

- *Planning & Design*
  - Three sub-stages: survey planning, survey design, and procurement.
  - Carried out by Eurofound with the help of external experts and stakeholders
  - QA depends on fixing the survey mandate, and comprehensive documentation of all discussions and decisions
- *Sampling & Weighting*
  - Sampling and weighting are both related to the coverage of the population and are important for the validity of survey measurement
  - QA of sampling covers the extent to which all elements of the target population are covered
  - QA of weighting covers the extent to which weights are available for all data entries.
-

# Survey stages (2)

- Questionnaire
  - Includes questionnaire development and translation
  - Carried out by Eurofound with the help of external experts and stakeholders
  - QA for development covers the documentation of content details, time-line and roles of actors involved
  - QA for translation covers the connection between survey goals and survey measurement and the procedures that ensure a balance between coherence and linguistic and cultural appropriateness
- Pre-Fieldwork
  - Last stage in which quality measures can be taken without interfering with fieldwork
  - Includes data entry process, consistency checks, interviewer training, fieldwork manager training, fieldwork infrastructure

# Survey stages (3)

- Fieldwork & Data
  - Data collection is conducted by the contractor
  - Monitoring quality indicators in real time enables Eurofound to take appropriate measures when necessary
- Post-Fieldwork
  - Includes data processing, coding and checking, resulting in a final micro data set, containing the questionnaire data, coded data, weights and paradata
- Analysis & Dissemination
  - The final stage concerns the analysis and dissemination of the survey data, which Eurofound carries or contracts out.

# Quality assurance framework

Developed by Eurofound in 2013 and based on the quality concept of the European Statistical System, the Cross-Cultural Survey Guidelines and the Total Survey Error Approach.

3 elements:

- **Quality assurance**: planned procedures and activities to ensure that the survey meets quality requirements
- **Quality control**: planned system of process monitoring, verification and analysis of indicators of quality, and updates to quality assurance procedures, to ensure that quality assurance works
- **Quality indicators**: list of measurable indicators on the basis of which the quality of the survey processes and output will be monitored and assessed

# Quality indicators and the Quality Assurance Plan (QAP)

Quality Assurance Plan (QAP) includes quality indicators which covers all aspects of the survey from beginning to end. Targets are set for both contractor and EF.

1. List of quality indicators provided to tenderers outlining
   - targets that **have to be** achieved (red)
   - targets that **are aimed to be** achieved
2. Tenderer confirms/proposes benchmark targets for non-red ones
3. EF and contractor agree benchmarks for non-red targets.
4. Indicators to be integrated into all aspects of the survey
4. Quality indicators file updated monthly by contractor
5. Final quality indicator list produced by contractor at end of project

# We aim for a high quality ECS …
# QAP – Source Questionnaire

- Questionnaires are developed based on experts' and stakeholders' input

| | | | |
|---|---|---|---|
| *E&C* | *Questionnaire has been consulted with Eurofound and Cedefop's stakeholders* | *Y* | *Documentation of steering group meetings* |
| *E&C* | *Percentage of questionnaire items in the final source questionnaire that meet international methodological standards of question design (such as outlined in Saris & Gallhofer (2007))* | 100% | *Documentation of expert consultation* |

- Advance translation and cognitive testing

| | | | |
|---|---|---|---|
| *E&C* | *Comprehensive documentation of the process of advance translation* | *Y* | *Documentation of advance translation (advance translation report)* |
| *E&C* | *Advance translation delivered to Ipsos at agreed date (date to be inserted here by client when agreed with client)* | *Y* | *Email from client sending results of adcance translation to Ipsos* |
| CT | A strategy for cognitive testing is agreed that that reflects current academic standards, as illustrated by academic references included in a document outlining the strategy for cognitive testing | Y | Cognitive test strategy |
| *E&C* | *Number of questions for which 'major' issues are detected that are kept* | *0* | *Cognitive test report* |
| CT | Cognitive test results delivered at the agreed date | Y | Email to client delivering cognitive test report |

# We aim for a high quality ECS …
# QAP - Translation

- State of the art translation process: translatability assessment, team translation methodology (TRAPD - Translation, Review, Adjudication, Pre-testing and Documentation)

| | | | |
|---|---|---|---|
| CT | Percentage of translators and adjudicators that take part in translator training | 100% | Attendance lists |
| CT | Translation materials (e.g. translator instructions, and translator and adjudicator training materials) are constructed using input from the cognitive test and advance translation and are provided to the translators | Y | Translation report (re input and provision) / Translation instructions and training materials, training sessions (re provision to translators) |
| *E&C* | *Translation materials are made publicly available.* | Y | *Availability on Eurofound website* |
| CT | Percentage of languages for which translation or adaptation follows the agreed process | 100% | Translation report |
| CT | Percentage of languages, out of those for which translation is required, for which systematic documentation in English is provided about the process and results of adjudication | 100% | Translation documentation |
| CT | Percentage of cross-national review sessions, in which adjudicators from each of the countries sharing the particular language participate | 100% | Attendance lists |
| CT | Percentage of final translated questionnaire items that required editing (e.g. correcting typo's, copying and pasting errors, etc.) | <5% | Translation documentation |

# We aim for a high quality ECS …
# QAP – Sampling

- Detailed sampling plans are drawn up in close collaboration between EF/CF and the contractor; 12 out of 28 EU countries are using establishment registers

| | | | |
|---|---|---|---|
| CT | A common sampling strategy is agreed that reflects current academic standards, as illustrated by academic references included in the sampling strategy document | Y | Sampling strategy |
| CT | Final sampling strategy delivered to client at the agreed date | Y | Email to client submitting final sampling strategy |
| CT | Percentage of countries where a sampling frame on the establishment level is used | 43% | Sampling strategy |
| *E&C* | *Sampling plans approved by client at agreed date* | *Y* | *Email(s) from client approving final country-level sampling plans* |

# We aim for a high quality ECS …
# QAP – Training

- Face to face seminar with national fieldwork partners

| | | | |
|---|---|---|---|
| CT | Percentage of local project leaders/country coordinators attending the fieldwork manager instruction meeting | 100 % | List of participants |

- Training of interviewers

| | | | |
|---|---|---|---|
| CT | Interviewer training materials are comprehensive, fully covering the process for respondent selection and recruitment as well as for questionnaire administration. | Y | Interviewer training materials |
| CT | Interviewer training materials are translated into the working languages of all the country teams | Y | Interviewer training materials |
| CT | Percentage of interviewers that are trained before they participate in fieldwork | 100 % | Attendance lists; email confirming the fact to client |
| CT | Percentage of staff in charge of online adminstration of interviews that are trained before they participate in fieldwork | 100 % | Attendance lists; email confirmation to client |

# We aim for a high quality ECS …
# QAP – Fieldwork monitoring, training

- Weekly teleconferences with contractor (and more if necessary)
- Close fieldwork monitoring in place by contractor and followed by EF/CF; 10% of screener calls checked; detailed weekly reports to be provided

| | | | |
|---|---|---|---|
| CT | An explicit, comprehensive and discriminative interviewer monitoring strategy is outlined | Y | Fieldwork strategy |
| CT | Percentage of countries where at least 10% of successful screening interviews are monitored | 100% | Technical report; Weekly reporting; Contact data |
| CT | Percentage of countries where at least 10% of follow-up calls for CAWI completion are monitored | 100% | Technical report; Weekly reporting; Contact data |
| CT | Percentage of countries covered in weekly monitoring data (in accordance with template) | 100% | Weekly reporting |
| CT | Number of times that the weekly monitoring data for the preceding week is not delivered on **Tuesday** by the end of business, without prior agreement | 0 | Emails to client delivering weekly reports |
| *E&C* | *Number of times that the quantitative indicators in the weekly monitoring data and the progress and projections (of end date) are not checked by the following **Thursday** by the end of business, without prior agreement* | *0* | *Emails responding to weekly reports* |
| CT | Results from the data validation approach are integrated in the weekly fieldwork reports | Y | Weekly reporting |

# We aim for a high quality ECS…

- Data protection and ethics strategy in place for contractor, national partners and interviewers
- Extra efforts for high response (e.g. using best interviewers, targeted timing of calls, email and telephone follow-up, *customised report* offered to respondents)
- Independent quality assessment review to be commissioned following completion of the survey

Eurofound

European Foundation for the Improvement of Living and Working Conditions

The tripartite EU Agency providing knowledge to assist in the development of better social, employment and work-related policies

CEDEFOP

European Centre for the Development of Vocational Training

# Thank your for your attention!

www.eurofound.europa.eu
www.cedefop.europa.eu

Sophia.MacGoris@eurofound.europa.eu
Gijs.vanHouten@eurofound.europa.eu
Giovanni.Russo@cedefop.europa.eu

# Frame Error Impact on Structural Business Statistics Surveys

FIFTH INTERNATIONAL WORKSHOP ON
BUSINESS DATA COLLECTION METHODOLOGY

19 - 21 September 2018 - Statistics Portugal, Lisbon

AGJENCIA E STATISTIKAVE TË KOSOVËS
AGENCIJA ZA STATISTIKE KOSOVA
KOSOVO AGENCY OF STATISTICS

# Frame Error Impact on SBS Surveys in KAS

19 - 21 September 2018 - Statistics Portugal, Lisbon

AGJENCIA E STATISTIKAVE TË KOSOVËS
AGENCIJA ZA STATISTIKE KOSOVA
KOSOVO AGENCY OF STATISTICS

# Content

- Introduction
- Methodology
  – sampling
  – collection of data
- Quality
- Frame error
- Analysis
- Conclusions
- Questions

# Introduction

- Business surveys are often the only data source used to collect economic information about enterprises.
- In particular, Structural Business Survey (SBS) are based on sample data and yearly produce aggregated economic data such as turnover, production value, personnel costs, etc.

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AGENCIJA ZA STATISTIKE KOSOVA
KOSOVO AGENCY OF STATISTICS

# Methodology

The sample frame consists of a list of active enterprises maintained in the Statistical Business Register (SBR) within KAS. According to the methodology used in statistic, active enterprises are considered only those who have declared one of the taxes or have declared any employees during the reference year.

- This paper aims to identify and measure the impact of principal frame errors on the sample-based estimations using auxiliary administrative variables

# Quality

- The SBS is based on the use of the Statistical Business Register (SBR) as the reference frame.
- Quality of statistics produced by each survey is related to the quality of the SBR.

# Auxiliary administrative information for turnover: the fiscal turnover

- The use of administrative sources for statistical purposes continues to be one of the strategic purposes of any statistical institutes.
- But the possibility to substitute direct information with available administrative data is dependent, where the needed information exist, on their quality (data from Tax authority of Kosovo).

# Types of errors

- Several types of error affect estimates;

- it is possible to distinguish between sampling and non-sampling errors.

# Frame errors and their impact

- It is known that the purpose of each survey is to produce estimate as accurate as possible of a given unknown parameter.
- In the estimation process of economic aggregates of the SBS survey, both frame and non- response errors are treated as non-responses and measures of the overall error are supplied in the production of statistics.

# Cont.

- The impact of non-sampling errors is more difficult to measure. Among non-sampling errors frame errors and non-response errors, represent the major sources of errors.

# Cont.

- Sampling errors can be evaluated according to some measures supplied by the sampling theory for probability sampling

# Cont.- 2

- The level of errors in the register and the errors in the sampled-based estimation are correlated.
- The accuracy of estimates depends on their variability and bias.
- Their magnitude determines the overall error.

# Frame and sample size

- In SBS survey for 2016, the frame of the survey was 36880 units, from which have been taken for sample 3151, which represent 8.54 % of all active enterprises.

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KOSOVO AGENCY OF STATISTICS

# Some findings regarding the SBS survey in KAS

- Sampling and survey coverage

  - the general rule is to cover at least 80 percent of activity, notably 80 percent of turnover from business register.

# Levels of stratification

- (i) first stratification level - by activity NACE Rev 2. by section,
- (ii) second stratification level - by size (initially three strata of size class by activity),
- (iii) third stratification level was within 4 digit by size within the third class.

# Analysis – some figures

- In the process to estimate data from the survey, an important step is the analysis of information from economical point of view.

- During the analysis we found some illogical data as following:
- Expenditure were higher than turnover;
- Wages and salaries for instance in some cases 50 euro/employee
- Turnover per employee 1000 euro whereas wages per employee more than 1200 euros, in such way those figures didn’t make any sense.

- In such cases we have used comparative method within the same sector for different enterprises and Comparative method in different time for the same enterprises also.

# - Intersection analysis

Example: 500 = purchasing; 400 = Turnover; 300 = salaries; 200 = number of employees

| Stat. Units | NACE code | Turnover | Purchasing | Salary | No. of employee | Ratio 4/5 | Av. Salary |
|---|---|---|---|---|---|---|---|
| A | 46 | 3,452,165 | 2,456,152 | 75,850 | 25 | 0.71 | 252.83 |
| B | 46 | 16,356,145 | 10,556,085 | 95,851 | 30 | 0.65 | 266.25 |
| C | 46 | 15,467,154 | 10,587,095 | 85,851 | 25 | 0.68 | 286.17 |
| D | 46 | 12,158,250 | 17,850,950 | 72,850 | 18 | 1.47 | 337.27 |
| E | 46 | 8,956,985 | 6,857,599 | 10,500 | 15 | 0.77 | 58.33 |
| F | 46 | 589,950 | 256,355 | 158,500 | 27 | 0.43 | 489.20 |
| total | | 56,980,649 | 48,564,236 | 499,401 | 140 | 0.85 | 297.26 |
| *taken into account | | 44,822,399 | 30,713,286 | 340,901 | 98 | 0.69 | 289.88 |

Looking at this we have three cases with illogical data:

**Enterprise "D**" the cost of buying goods it's higher than Value of Sale or 17,850,950.0 > 12,158,250. In this case we have observed that cost of buying goods has been exaggerated. What we did? We used Average method within the section.

$$\overline{X} = \frac{\sum Xi}{\sum Yi} = \frac{448223991}{307132860} = 1.45$$

Xi = turnover
Yi = purchasing

Based on the result of formula the ratio of Purchasing to Turnover should be 0.69 and not 1.45, after that we corrected the value from 17,850,950.0 to 8,389,192.5 to prove 8,389,192.5/ 12,158,250 = 0.69*100 = 69%

Notice: were from we got the number 8,389,192.5 0.69* 12,158,250 = 8,389,192.5 euro

After the adjusted data the table will look like this:

| Stat. Units | NACE code | Turnover | Purchasing | Salary | No. of employee | Ratio 4/5 | Av. Salary |
|---|---|---|---|---|---|---|---|
| A | 46 | 3,452,165 | 2,456,152 | 75,850 | 25 | 0.71 | 252.83 |
| B | 46 | 16,356,145 | 10,556,085 | 95,851 | 30 | 0.65 | 266.25 |
| C | 46 | 15,467,154 | 10,587,095 | 85,851 | 25 | 0.68 | 286.17 |
| D | 46 | 12,158,250 | 8,389,192.5 | 72,850 | 18 | 0.69 | 337.27 |
| E | 46 | 8,956,985 | 6,857,599 | 10,500 | 15 | 0.77 | 58.33 |
| F | 46 | 589,950 | 256,355 | 158,500 | 27 | 0.43 | 489.20 |
| total | | 56,980,649 | 39,102,479 | 499,401 | 140 | 0.85 | 297.26 |
| *taken into account | | 44,822,399 | 39,102,479 | 340,901 | 98 | 0.69 | 289.88 |

# Main outcomes

- number of employees;
- turnover;
- value of purchases and detail of these purchases;
- value of the inventories at the beginning of the year and at the end of the year;
- value of the taxes paid by enterprises;
- value and details concerning the investment;

Actions to speed up or increase the response rate have been adopted:

- enterprises on delay are subjected to one reminder by post and one by phone.

- This survey (as the other SBS and most of the STS surveys) is managed in a centralised statistical information system aiming to assure also a rotating system among sampled units to reduce burden on enterprises.

# Conclusion

- The unsatisfactory sampling survey response rate together with the availability of a huge amount of data from administrative sources (balance sheets and tax data) has suggested some adjustments in the SBS production process.

# Cont.

- The integration of the original SBS sample with administrative sources has allowed both to increase the response rate and to measure the discrepancies in the final estimation due to unit non-response.

- Using the comparative method had shown a good result for improvement of quality of data.
- The estimation (grossing up) the data of SBS result to level of the economy we used method of coefficient which have shown good result, for all outcomes (indicators),

- A further work needs to be done like a more disaggregated analysis (NACE at 4 digits, NACE at 3 digits and size classes)
- A further analysis on the informative contents of tax data could permit to extend this experiment to other SBS variables.

"To err is human, to forgive divine – but to include errors in your design is statistical.

Kish, 1977

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KOSOVO AGENCY OF STATISTICS

# Thank You for your attention!

## Any Questions?

hysni.elshani@rks-gov.net
hysni.el@gmail.com

# Evaluating Mode Sequence When Email is used as the Initial Contact in Establishment Surveys

**Josh Langeland**
U.S. Bureau of Labor Statistics

Fifth International Workshop on Business Data Collection Methodology

September 2018

# Disclaimer

The opinions expressed in this presentation reflect the views of the author, and not necessarily those of the Bureau of Labor Statistics

# Motivation

- Survey costs are up, budgets are not
- Additional effort is required to maintain response rates
- Two Experiments
  - Email vs Paper mail invitations (production)
  - Mode sequence Email augmented with paper at different contact attempts (non-production)
    - Save money
    - Increase or maintain response rates
    - Increase electronic reporting

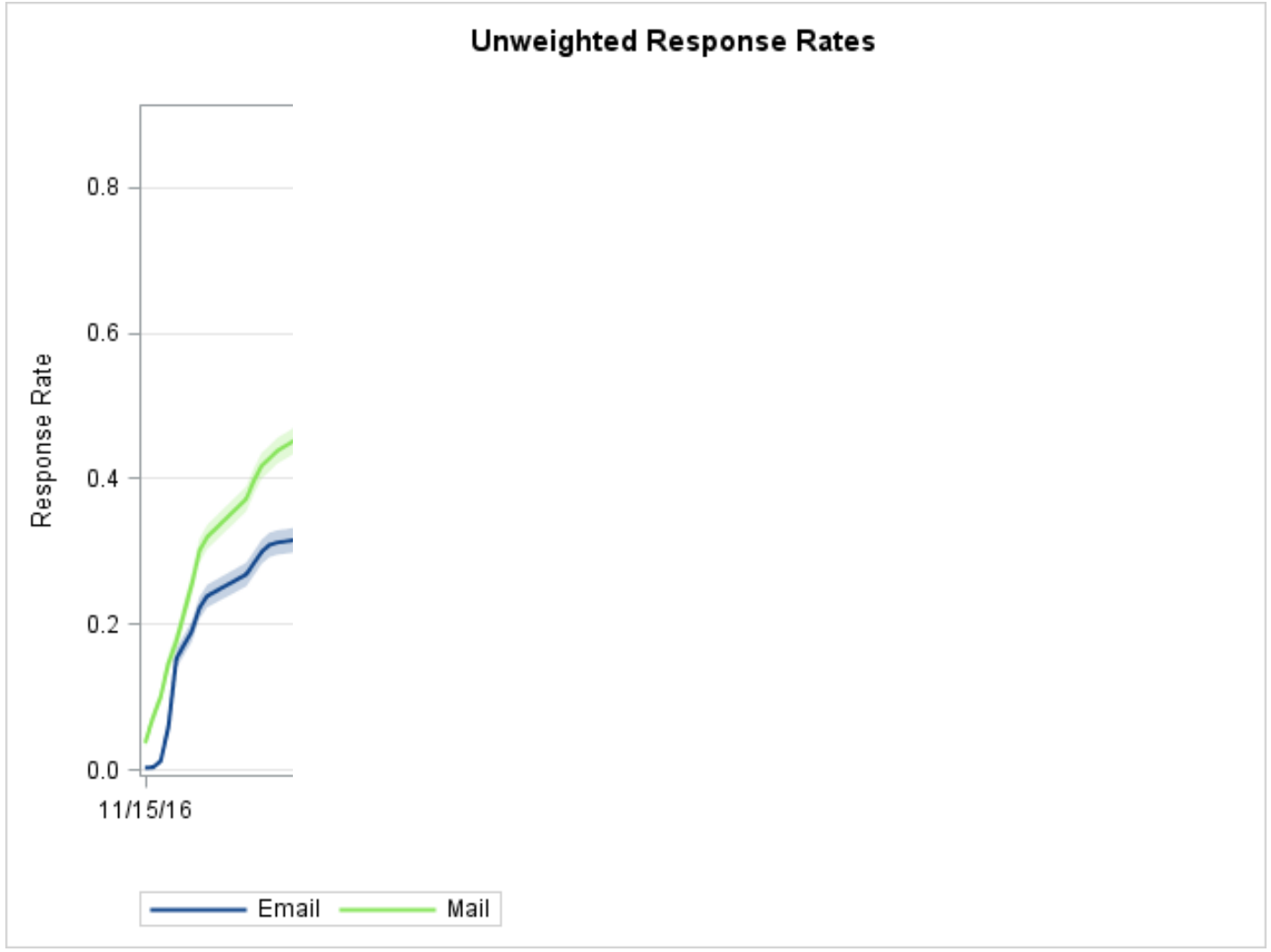
# Motivation

- Cost
  - Sample 200,000 units twice per year
  - $1.44 (€1.23) to mail survey forms
  - $0.73 (€0.62) to mail letters

# Experiment 1: Email vs Mail Invitations

- Initial survey invitation sent through **mail** or **Email**
- The six follow-ups were sent to **all** units

# Experiment 1: Email vs Mail



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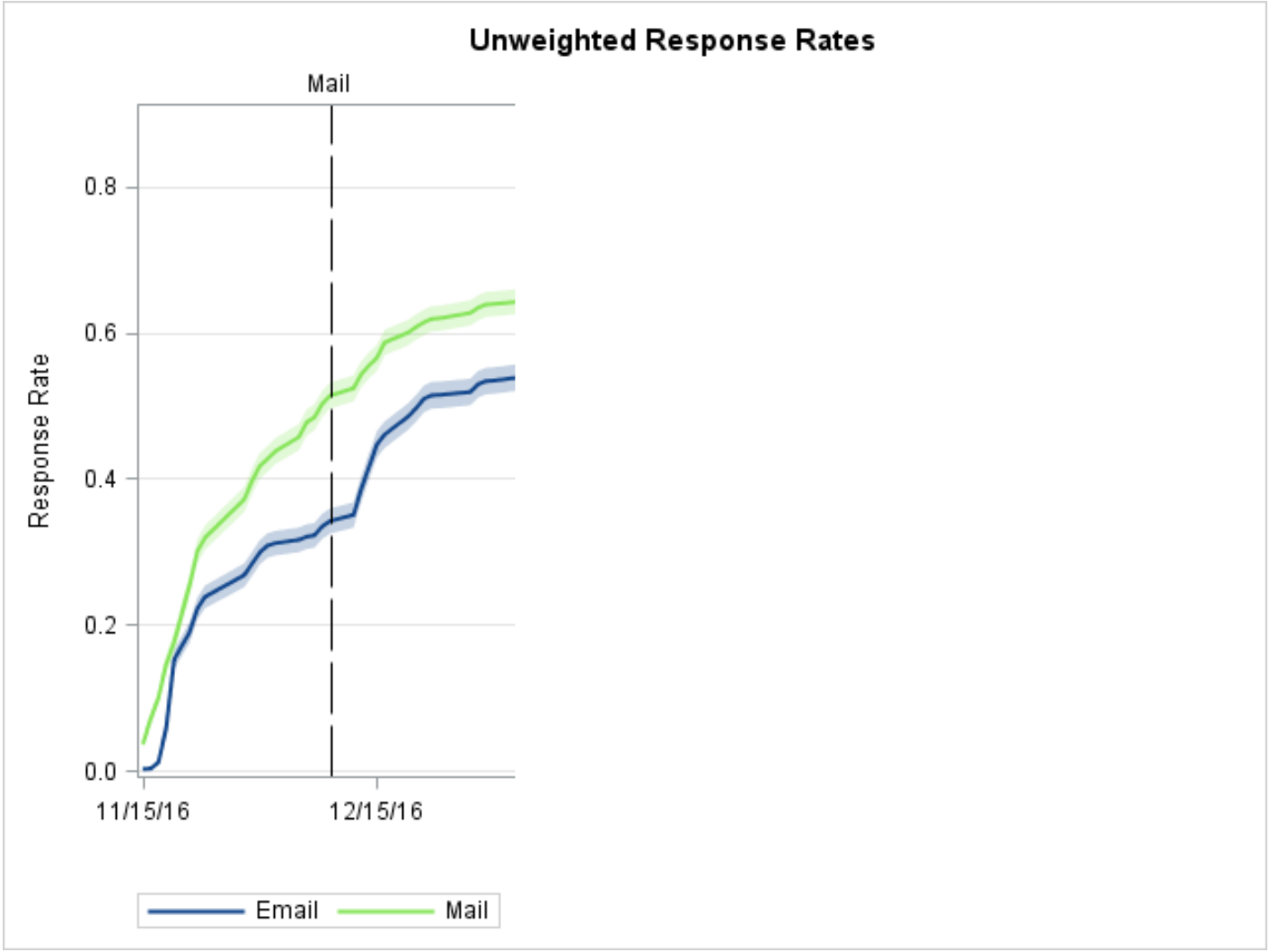

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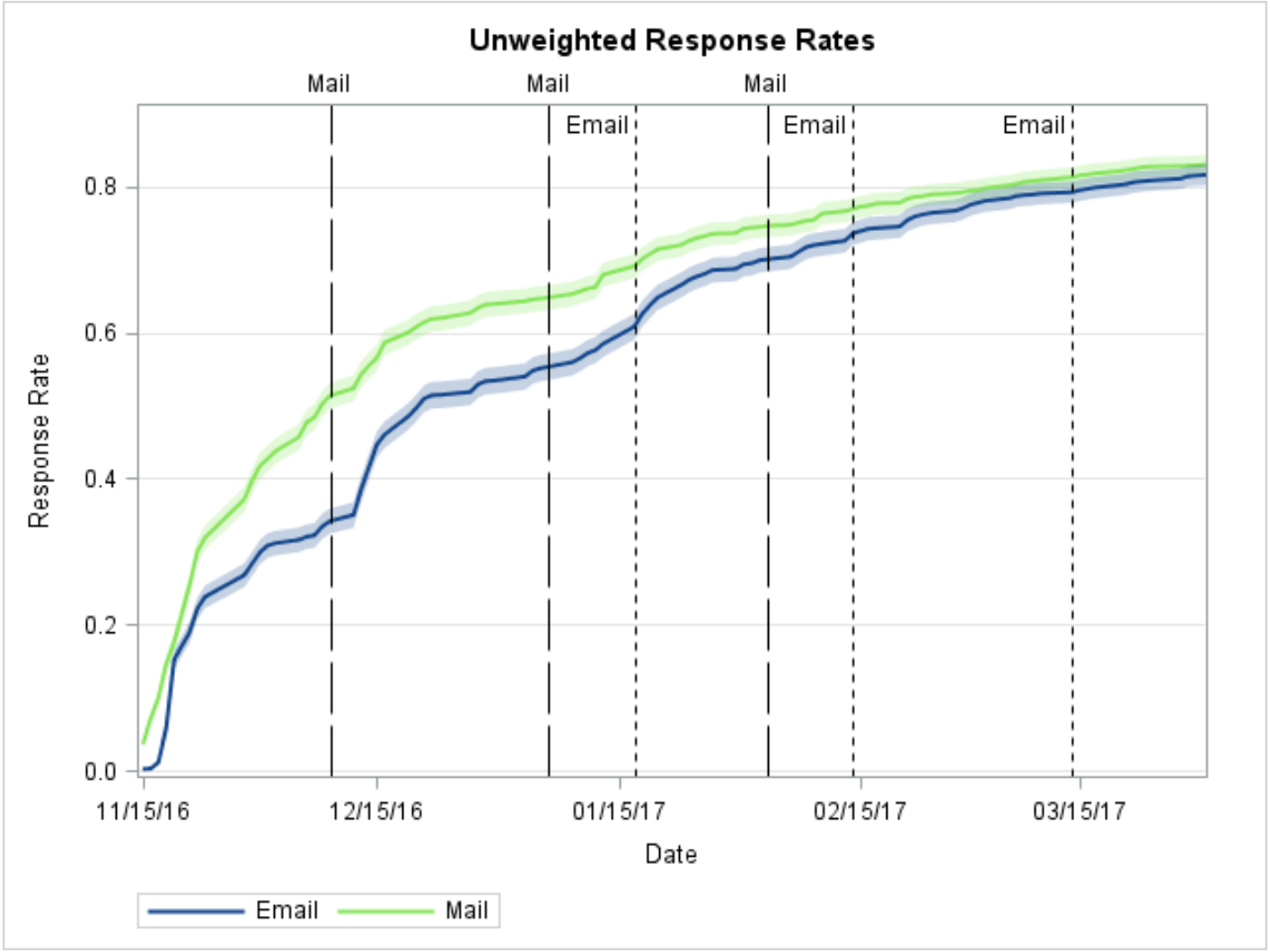

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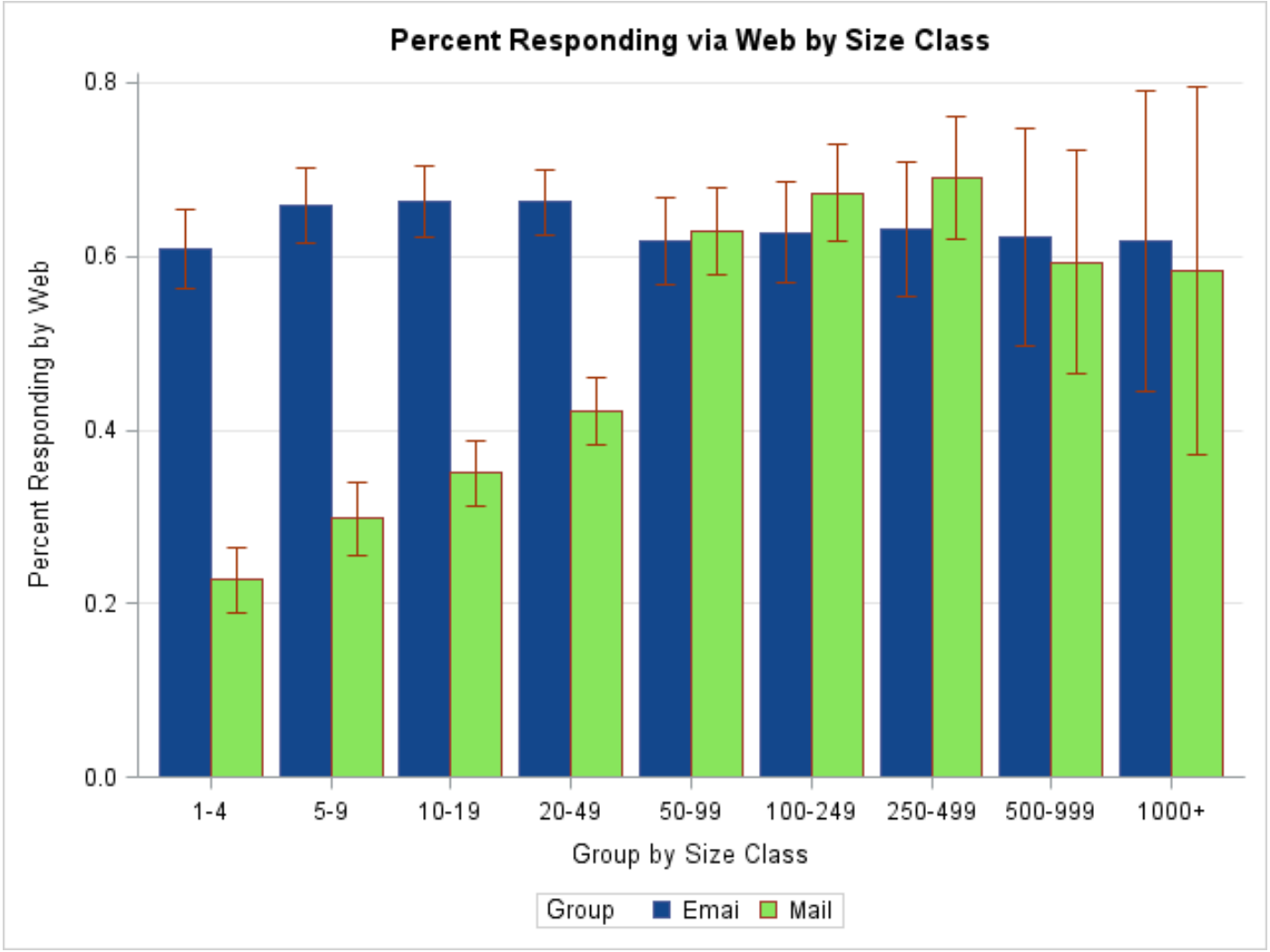
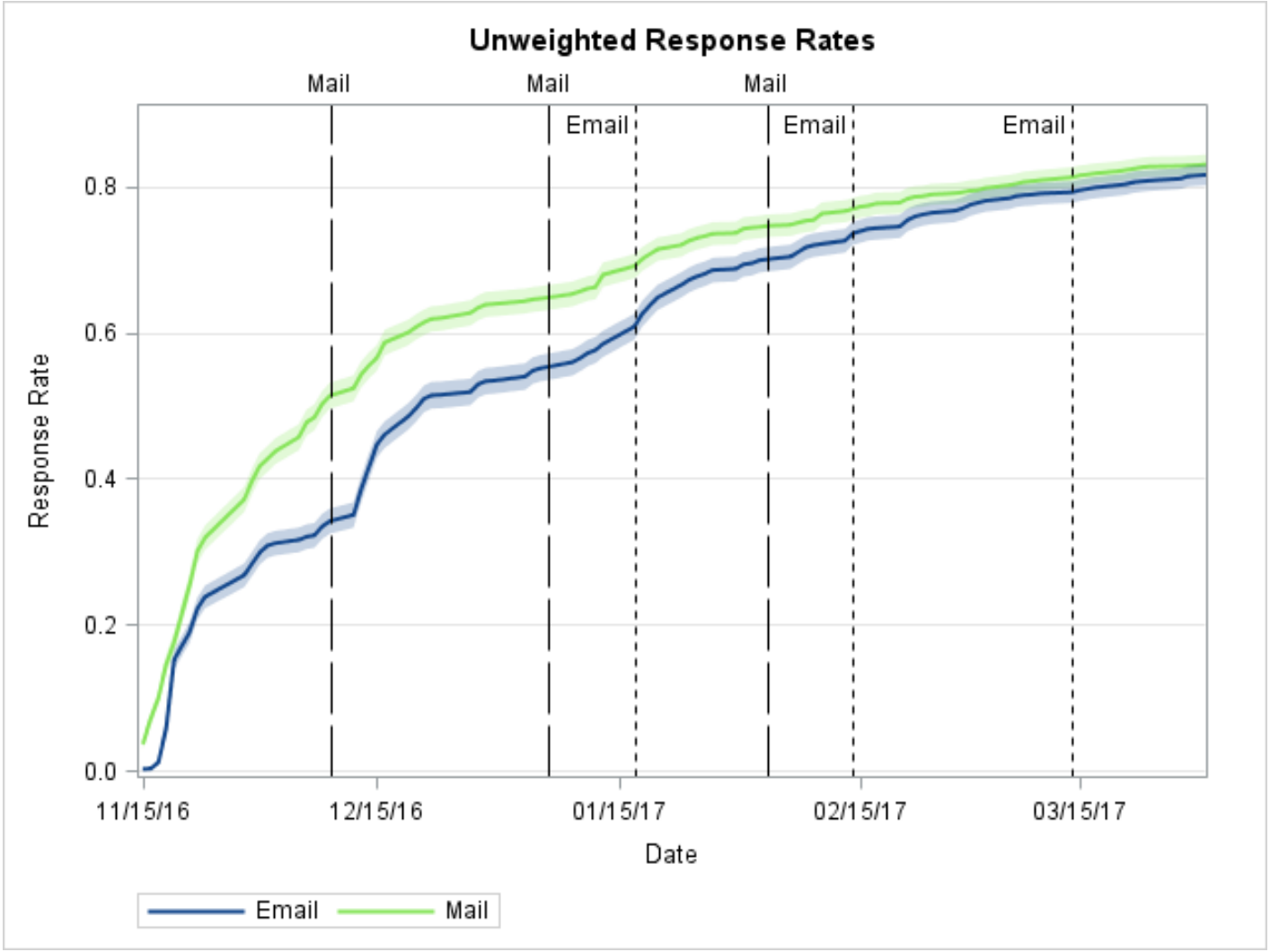


# Experiment 1: Email vs Mail

- Units that received initial Email invitation:
  - Achieved an equivalent response rate
  - Were more likely to respond online
  - Responded at a slower pace
  - Were cheaper to collect per response

# Experiment 1: Email vs Mail



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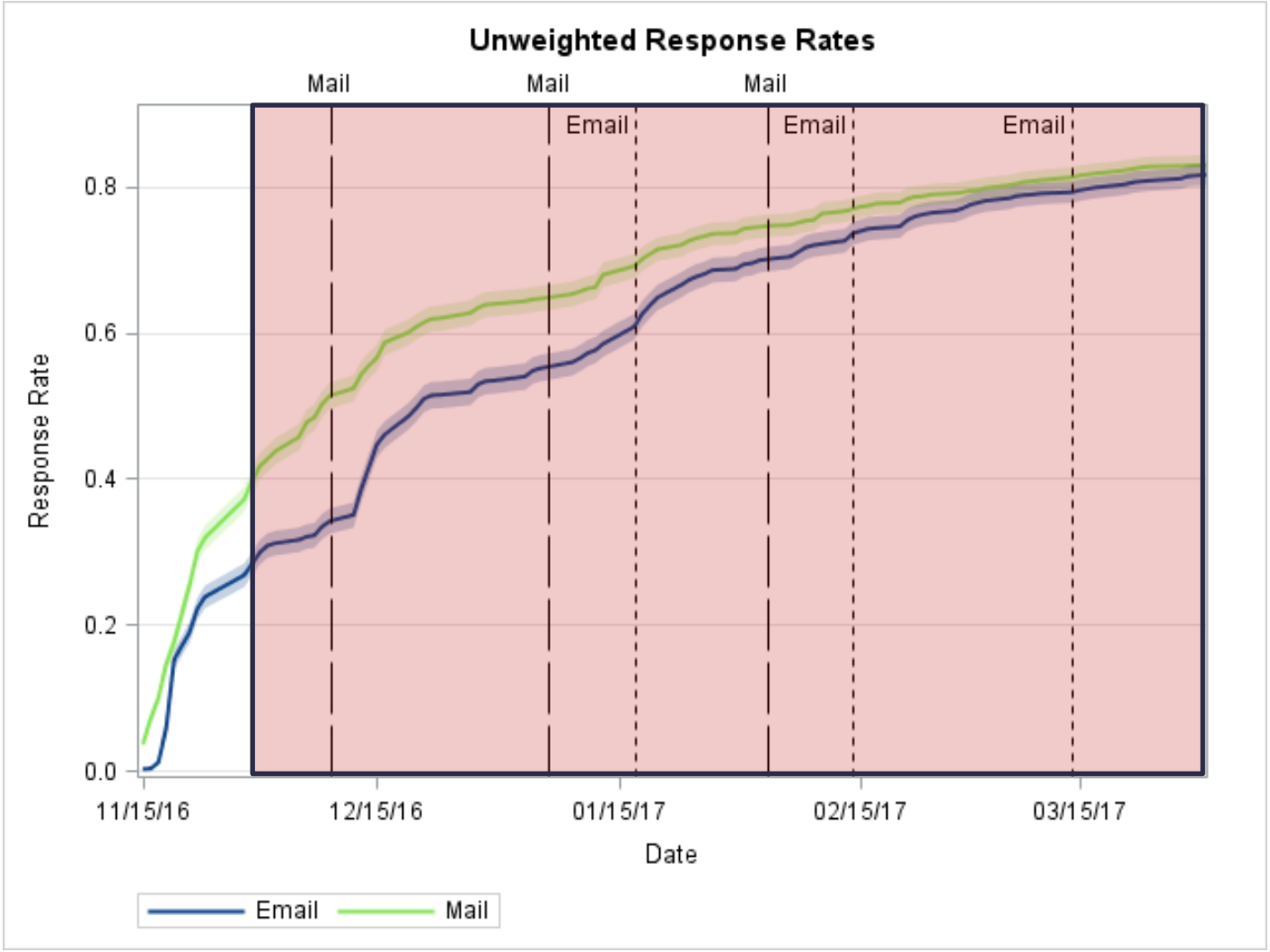
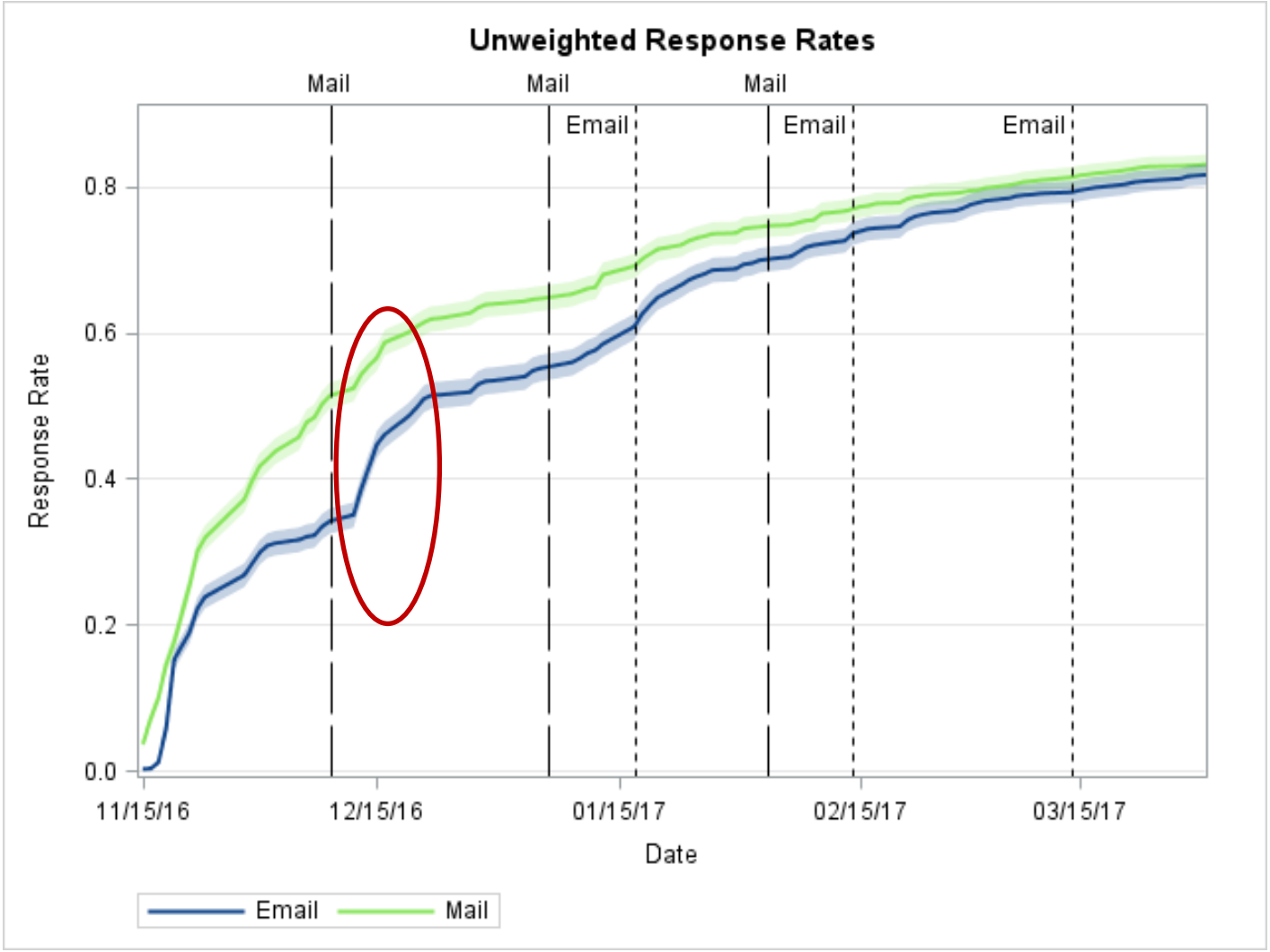


# Experiment 1: Email vs Mail



# Experiment 2: Mode Sequence

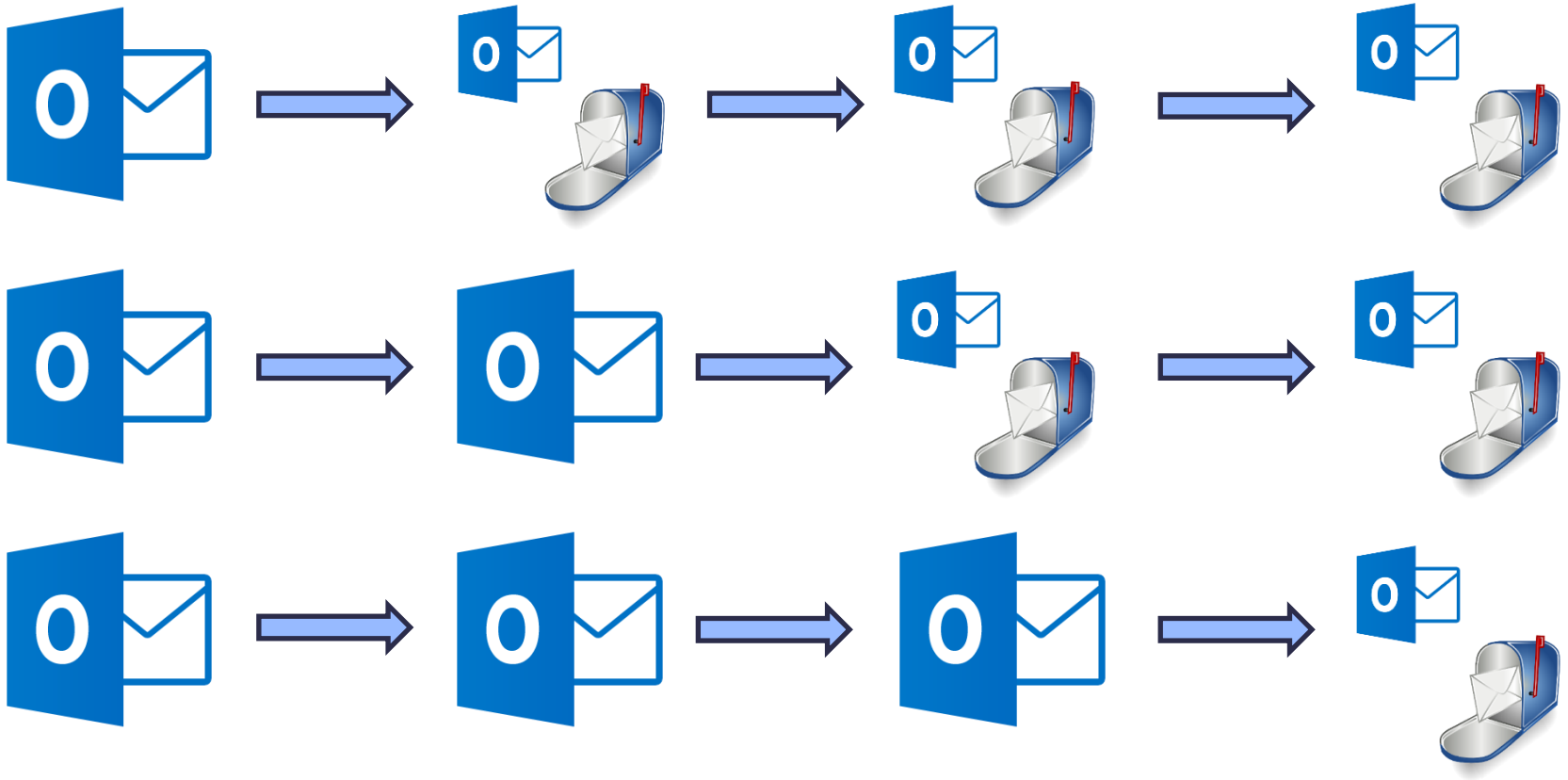
- Experiment outside of production environment, sample randomized into three groups (n ~ 2,900 each)
- All units received initial survey invitation through Email
- All units received follow-up reminders through email
- Treatments vary when the Email follow-up is augmented with a paper mail

# Experiment 2: Mode Sequence

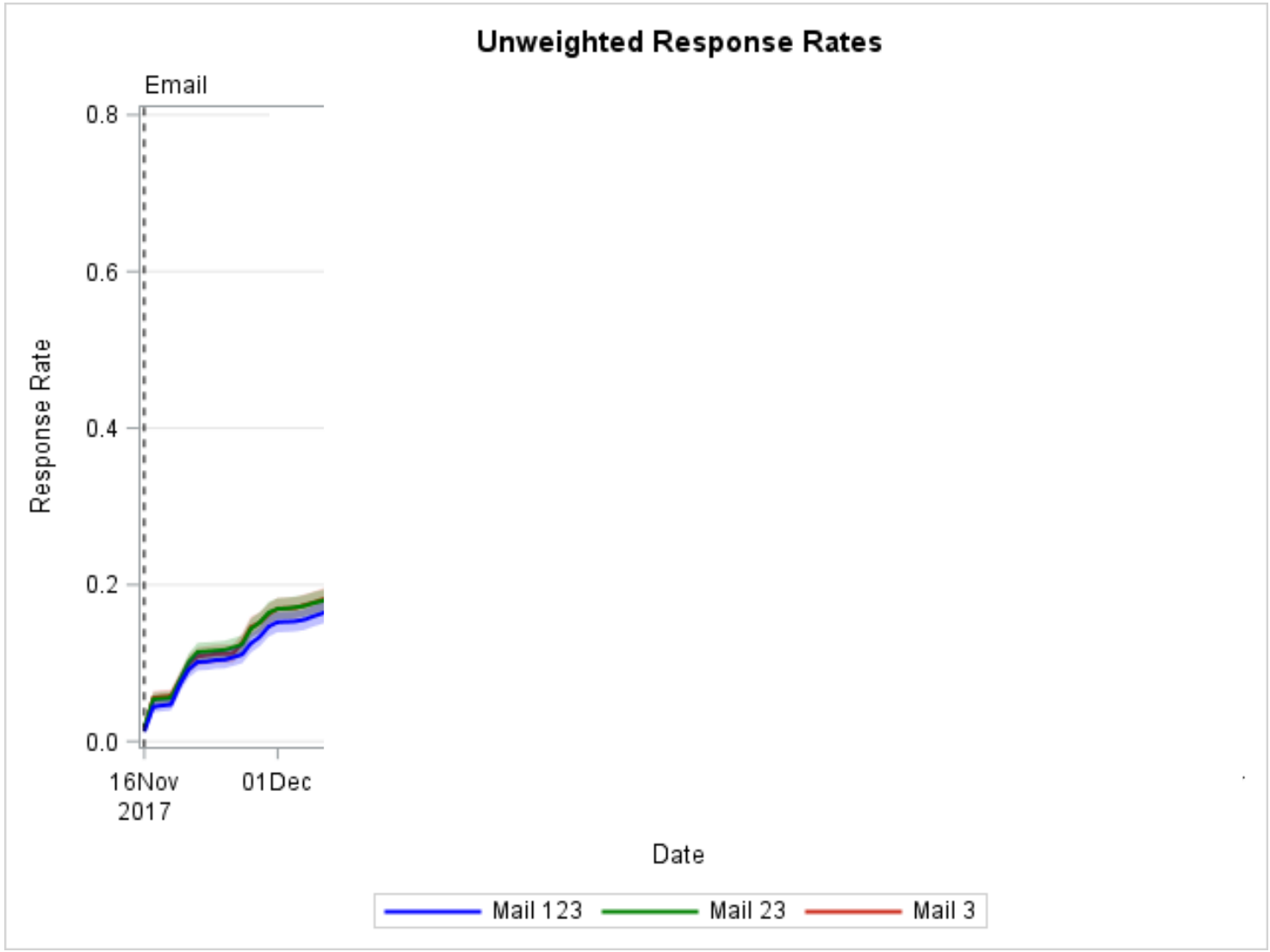
Mail 123

Mail 23

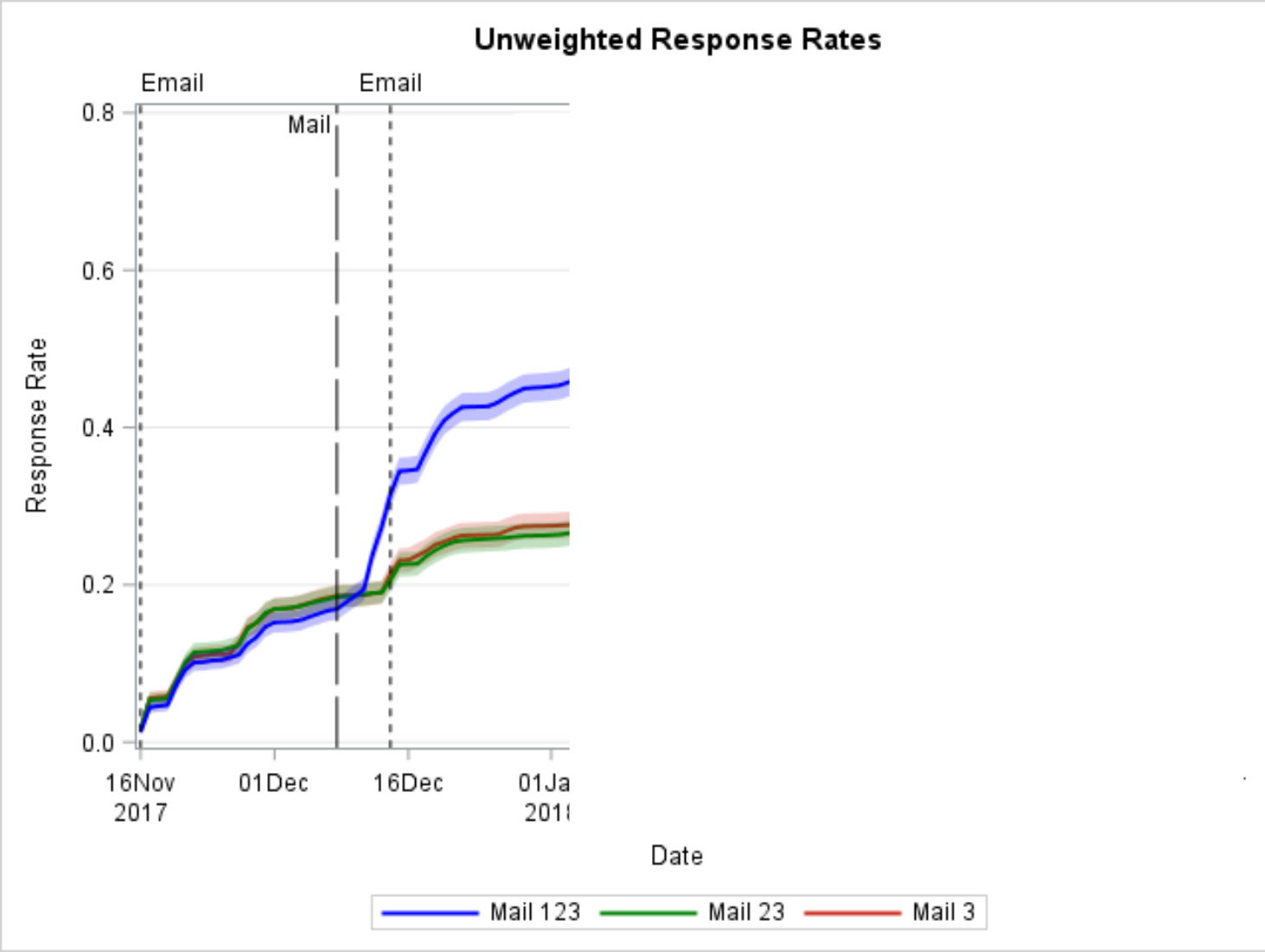
Mail 3



# Experiment 2: Response Rates



# Experiment 2: Response Rates



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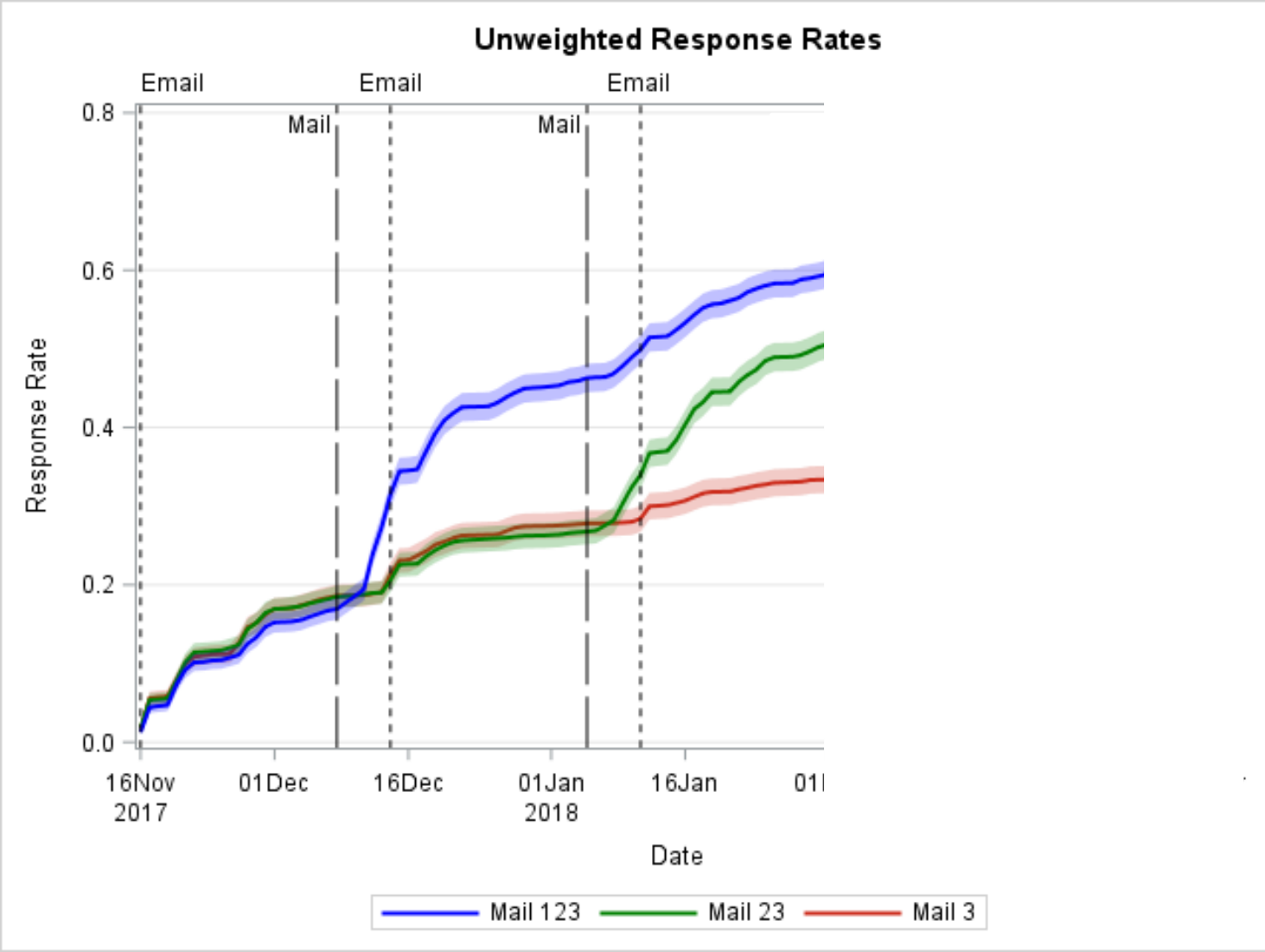

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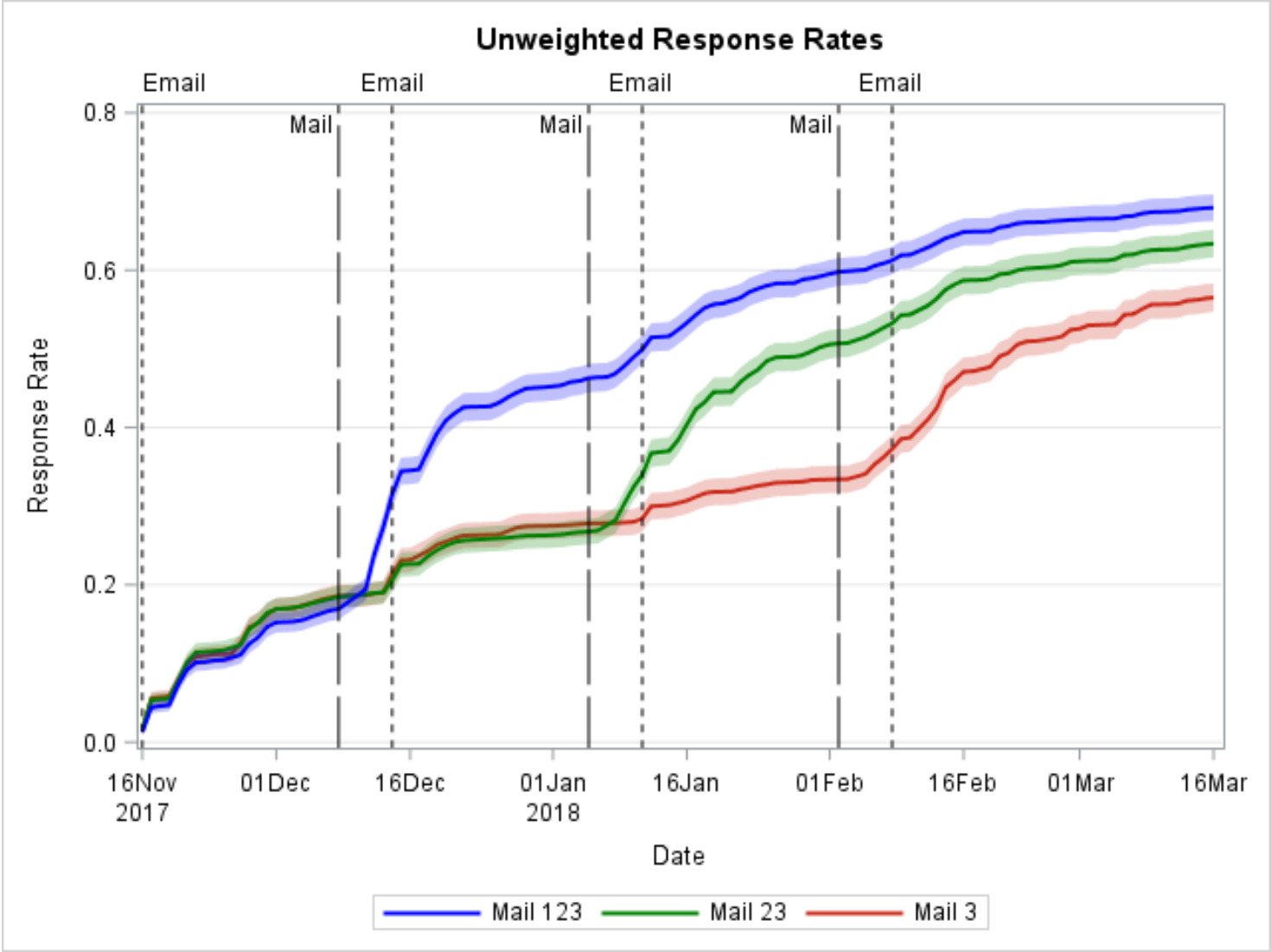
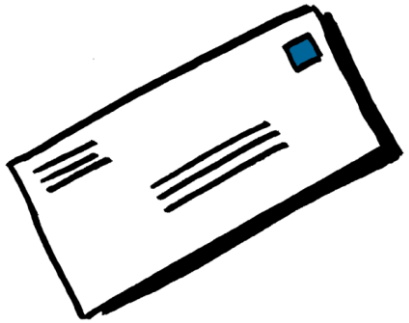


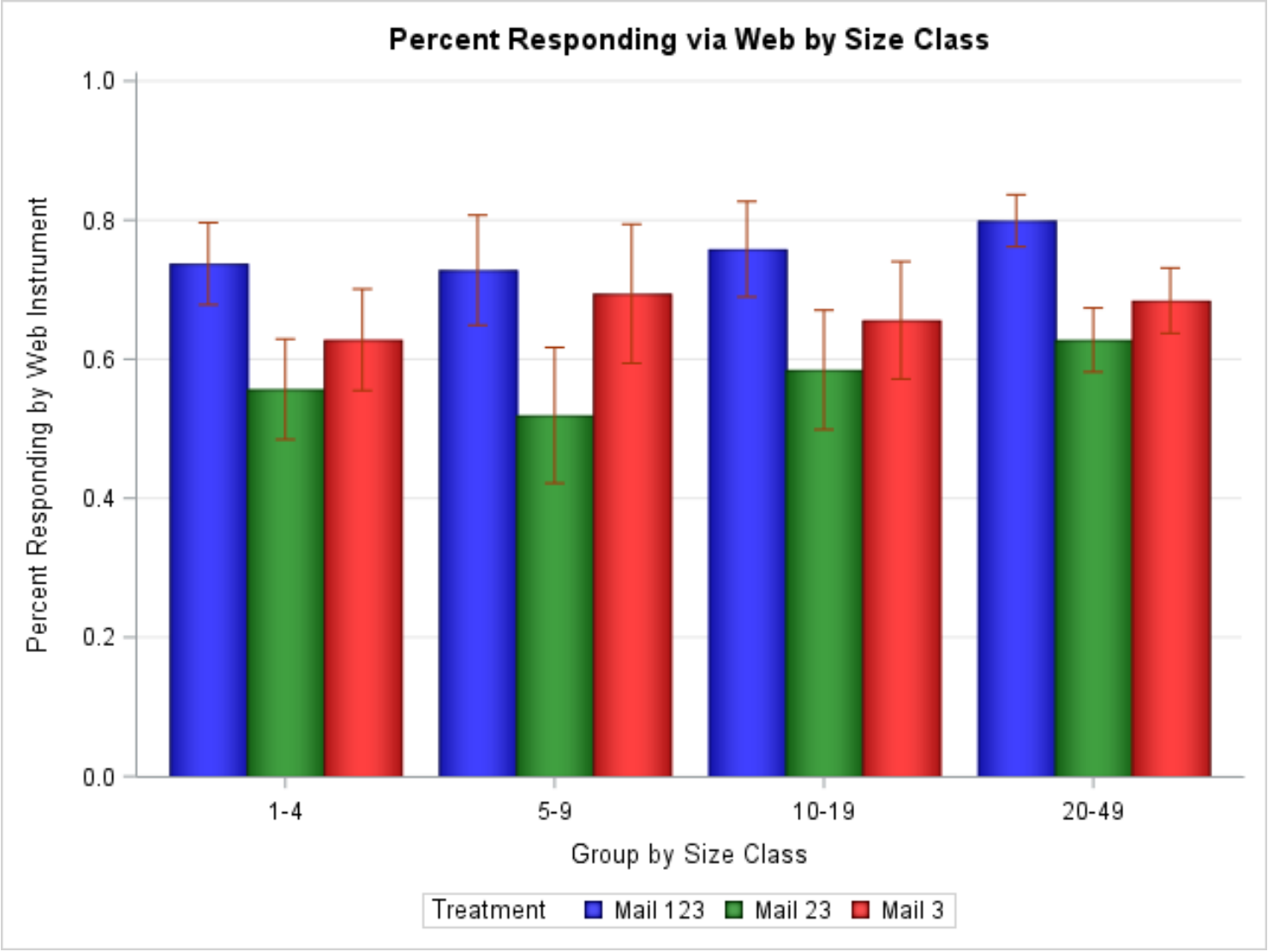
# Mode of Response



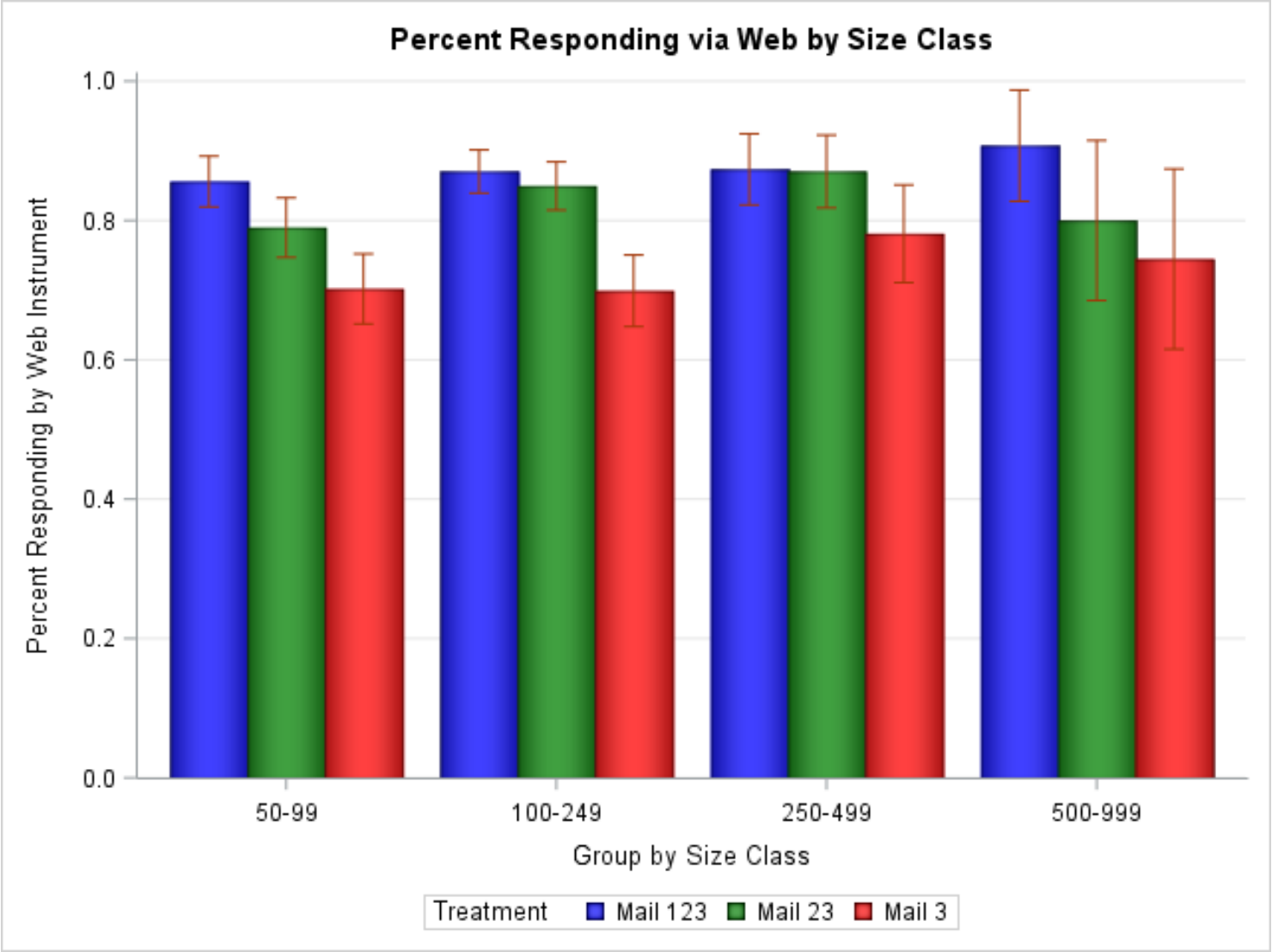
# Experiment 2: Mode of Response

| Collection Mode | Group | | |
|---|---|---|---|
| | Mail 3 | Mail 23 | Mail 123 |
| Web Instrument | 69% | 72% | 82% |
| Survey Form | 19% | 18% | 9% |
| Email | 9% | 8% | 7% |
| Fax | 2% | 1% | 1% |
| Phone | 1% | 1% | 1% |
| | 100% | 100% | 100% |

# Experiment 2: Mode of Response



# Experiment 2: Mode of Response



# Summary

- Email is useful but should be used as a supplement to mail, not as a replacement
  - First experiment suggests initial Email contact increases web reporting
  - In second experiment, all units received initial contact via Email and all three groups were reporting through web at 69% or above!

- Using Email alone will harm response rates

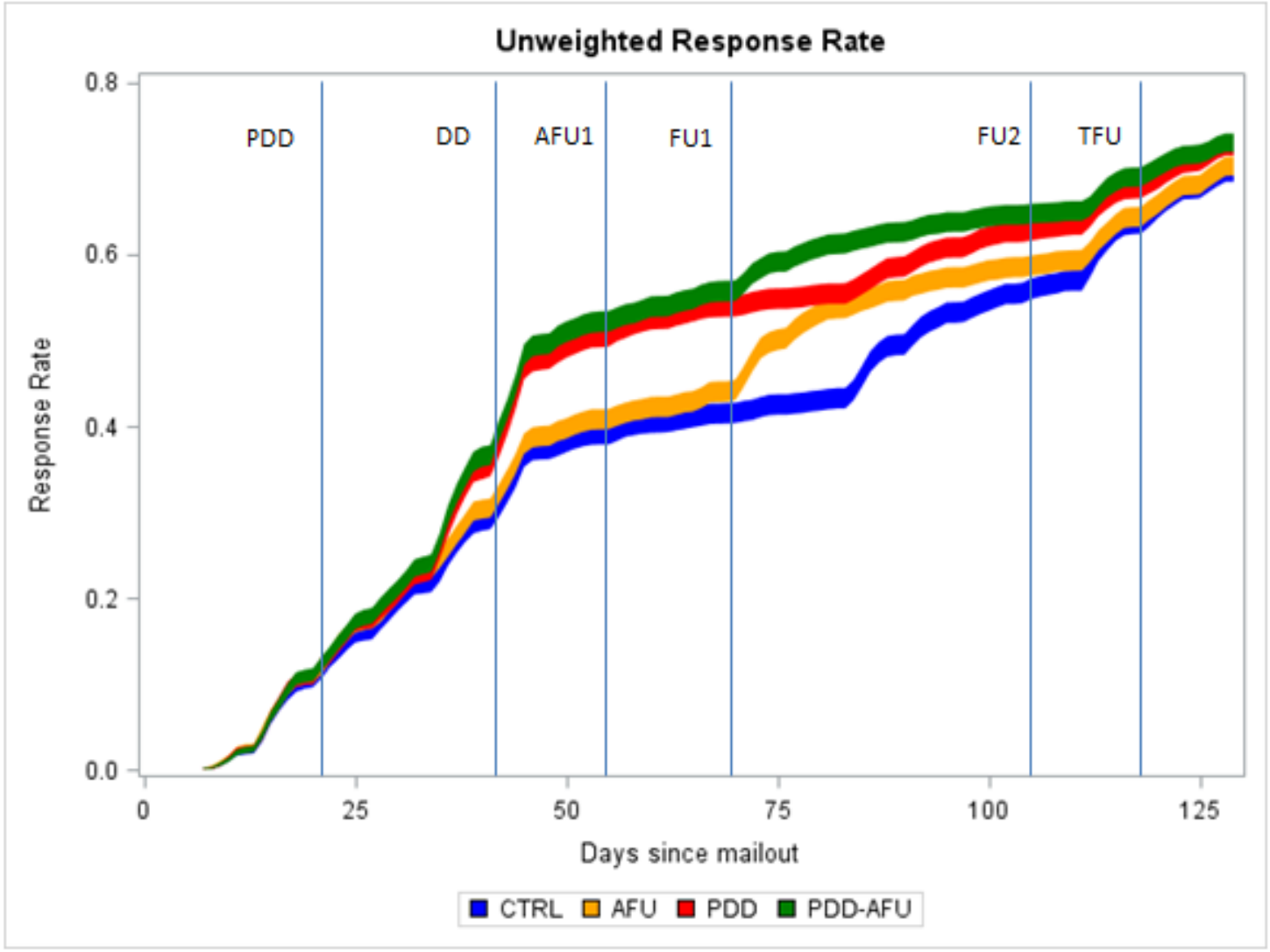
# Contact Information

**Josh Langeland**
Research Statistician
U.S. Bureau of Labor Statistics
langeland.joshua@bls.gov

# Discussion Points

- Does anyone have any success stories / useful tips for contacting establishments with Email?
  - Follow-up, do you have Email information on frame data? If not, how do you acquire them?
- Is waiting 1-month too long when sending Email reminders?

# Auxiliary


Unweighted Response Rate
Response Rate
0.0
0.2
0.4
0.6
0.8
PDD
DD
AFU1
FU1
FU2
TFU
0
25
50
75
100
125
Days since mailout
CTRL
AFU
PDD
PDD-AFU

UNIVERSITY OF MANNHEIM

Institute for Employment Research
The Research Institute of the Federal Employment Agency

IAB

# The Impact of Invitation Mode on Participation in an Online Establishment Survey

Fifth International Workshop on Business Data Collection Methodology

BDCM - Lisbon
September 2018

**Joseph Sakshaug**
Basha Vicari

# Motivation

- Strategies that maximize participation in Web-only surveys are in high demand

- However, there is a lack of empirical evidence to guide recruitment decisions in Web-only surveys
  - Especially for surveys of establishments

# Email vs. Paper Invitations / Reminders

- Findings from individual/household survey literature (see background paper) are inconsistent

- Sometimes email invitations are more effective than paper invitations, other times not

- Prenotification literature suggests that paper invitation followed by email reminder improves response rates over an email-only contact strategy
  - But empirical evidence is mixed

# Limitations of Previous Studies

- Small sample sizes
- University populations
- Email and postal addresses are both known
- Contact information is valid and regularly updated

# Issues with Establishment Populations

- Email addresses lacking for many establishments

- Even email addresses provided by establishments through previous survey participation may be outdated

# Possible remedies for establishment surveys

- In the case of invalid email addresses, supplementary paper contacts can be used to administer invitations/reminders

- If email address is entirely lacking, paper contacts can be administered from the outset

- Alternatively, establishments can be sent a prenotification letter with request to provide email address to receive email invitation
  - But increases costs and unclear whether establishments are willing to comply with such a request
  - Even if not, may still increase likelihood of response to subsequent paper invitation

# Further research gap: Nonresponse Bias

- Besides response rates and costs, also important to consider effects of contact mode on nonresponse bias

- Response rates only weakly correlated with nonresponse bias
  - Groves (2006)

- High response rates do not imply low NR bias, just as low response rates to dot imply high NR bias

- Detailed auxiliary information lacking in most NR studies

# Research Questions

- What is the effect of paper vs. email invitations on response rates to a Web-only survey of establishments?
- Which combination of paper and email invitation/reminder modes maximizes response?
  - How useful are supplementary paper contacts for handling undelivered email invitations?
- Are establishments willing to provide an email address to receive an email invitation? How does this strategy compare to a paper-only contact strategy?
- What is the impact of different contact mode strategies on nonresponse bias and costs?

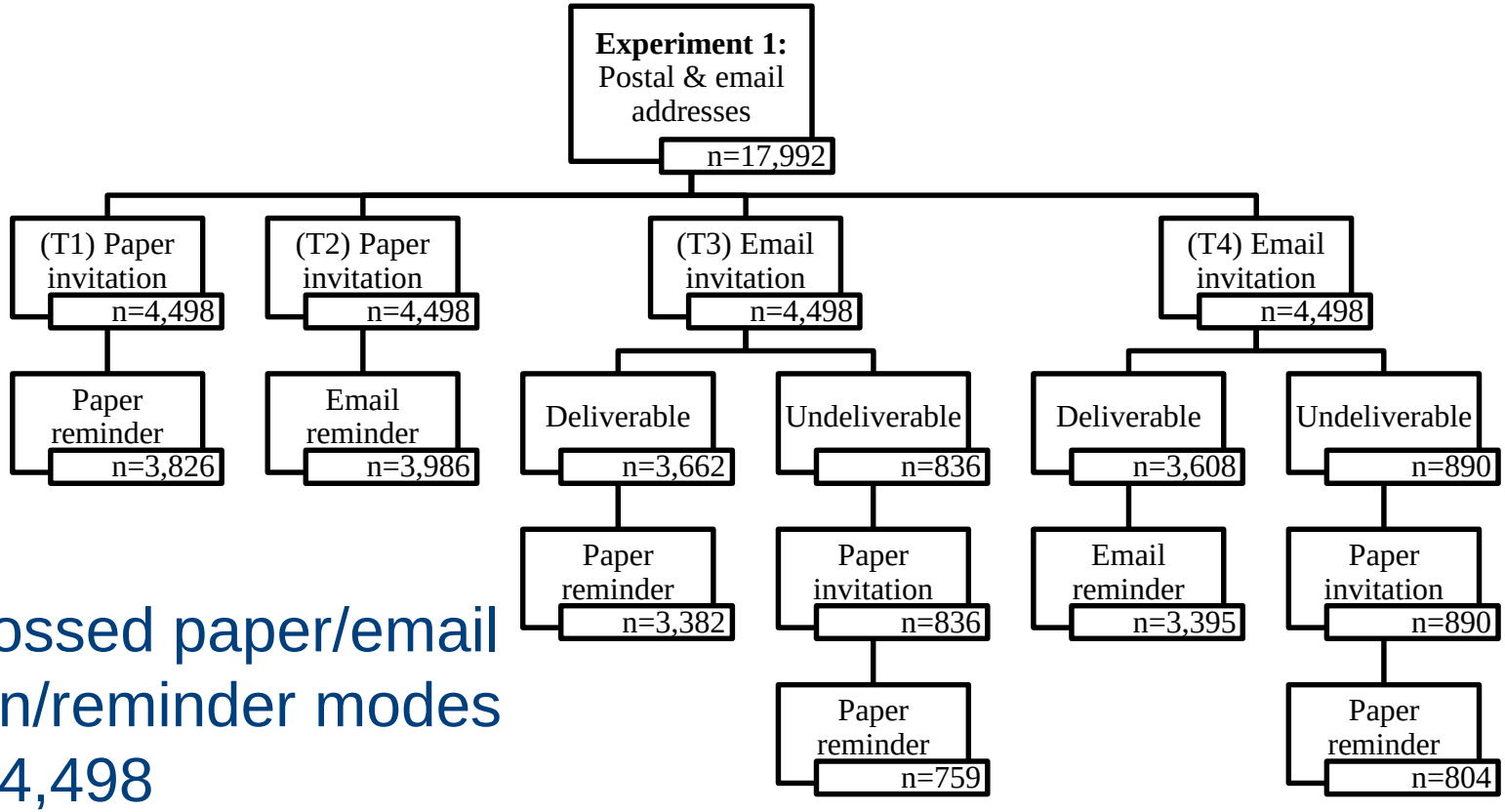
# Survey on Applicant Selection (SAS) for Job Vacancies

- "One-off" Web-only survey about factors that influence hiring decisions made when filling job vacancies
- Conducted by the IAB between Nov 2014 – Jan 2015
- N = 29,513 public and private establishments recruited
  - All previously participated at least once in the mixed-mode (mail/Web) IAB Job Vacancy Survey (JVS) from 2010-2012
  - All employed at least one individual in one of 25 target professions
- Establishments sampled from IAB register data
  - Register includes all establishments in Germany with at least one employee liable for social security contributions

# Sample Details

- Postal and email addresses available for 17,992 establishments
- Email addresses voluntarily provided at the end of the JVS forerunner survey
- Most email addresses were personalized, including the name of the contact person (e.g. firstname.surname@establishment.de)
  - Drawback is that they expire as soon as contact leaves the establishment or changes name.
- No attempt was made to verify the validity of the email address prior to launching the SAS survey
- For the remaining 11,520 establishments, only postal addresses available
- Both groups differed with respect to employee composition; similar with respect to industry sector

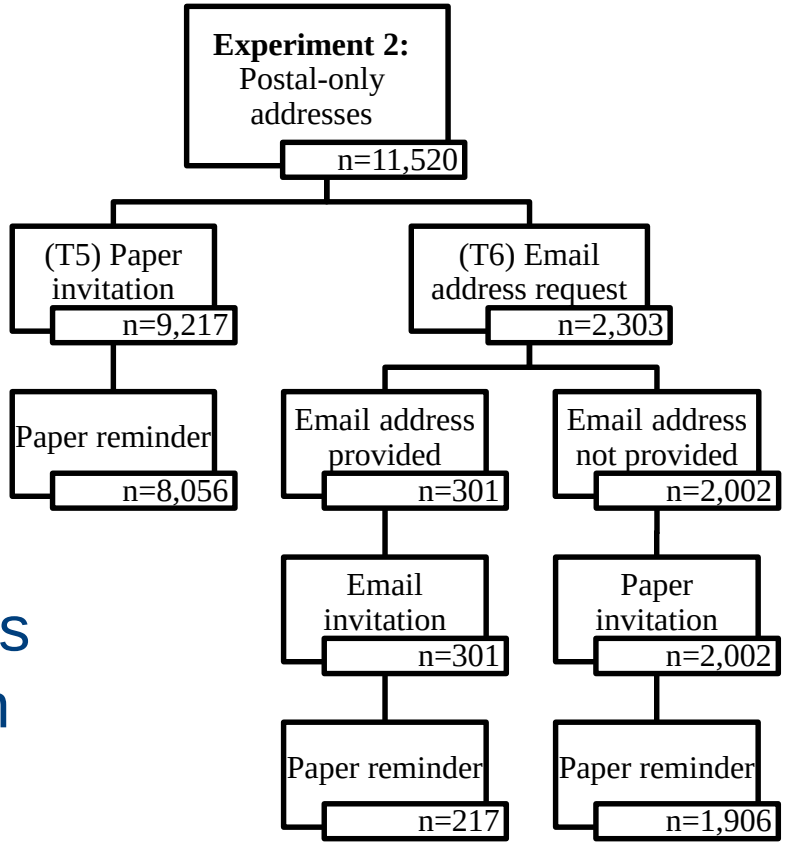
# Experiment 1 (Postal-Email Addresses): Invitation and Reminder Mode (T1-T4)




- Fully crossed paper/email invitation/reminder modes
  - N = 4,498
- Supplementary paper contacts for undeliverable email invitations

# Experiment 2 (Postal-Only Addresses): Prenotification and Email Address Request (T5-T6)

- Paper-only contact group
  - N = 9,217
- Prenotification letter sent with email address request
  - N = 2,303
- Supplementary paper contacts administered to prenotification nonrespondents (N = 2,002)



# Additional Study Details

- All contacts addressed to the Human Resources (HR) office or managerial board of the establishments

- Included the salutation “Dear sir or madam”
  - Used even in the case of personalized email addresses

- All invitations/reminders included access link to the Web survey and personalized password

- Paper and email invitations/reminders delivered around same time

# Analysis Steps: Comparison of Response Rates

- Response rates calculated:
  1) before reminder
  2) after reminder, and
  3) after supplementary paper contacts

- Response is defined as any establishment that initiated the Web survey, regardless if they actually completed the questionnaire
  - Includes break offs and those not reporting a target profession

- All establishments included in denominator, including undeliverable contacts
  - Similar to AAPOR Response Rate 1

# Analysis Steps: Nonresponse Bias

- NR bias calculated using 12 establishment-level IAB register variables available for entire sample

- Number of employees
- % full-time employees
- % female employees
- % German employees
- % low-qualified employees
- % middle-qualified employees
- % high-qualified employees
- % marginal employees
- Median age of employees
- East (vs. West) Germany
- Industry sector
- Year of foundation

- All continuous variables categorized
- Preference given to equal-sized groups

## Nonresponse Bias Calculation

- Nonresponse bias
  - Calculated as the difference between respondent-based estimate for category, *c*, of a given register variable:

$$Nonresponse\ Bias(\bar{Y}_c) = \bar{Y}_{c,r} - \bar{Y}_{c,n}$$

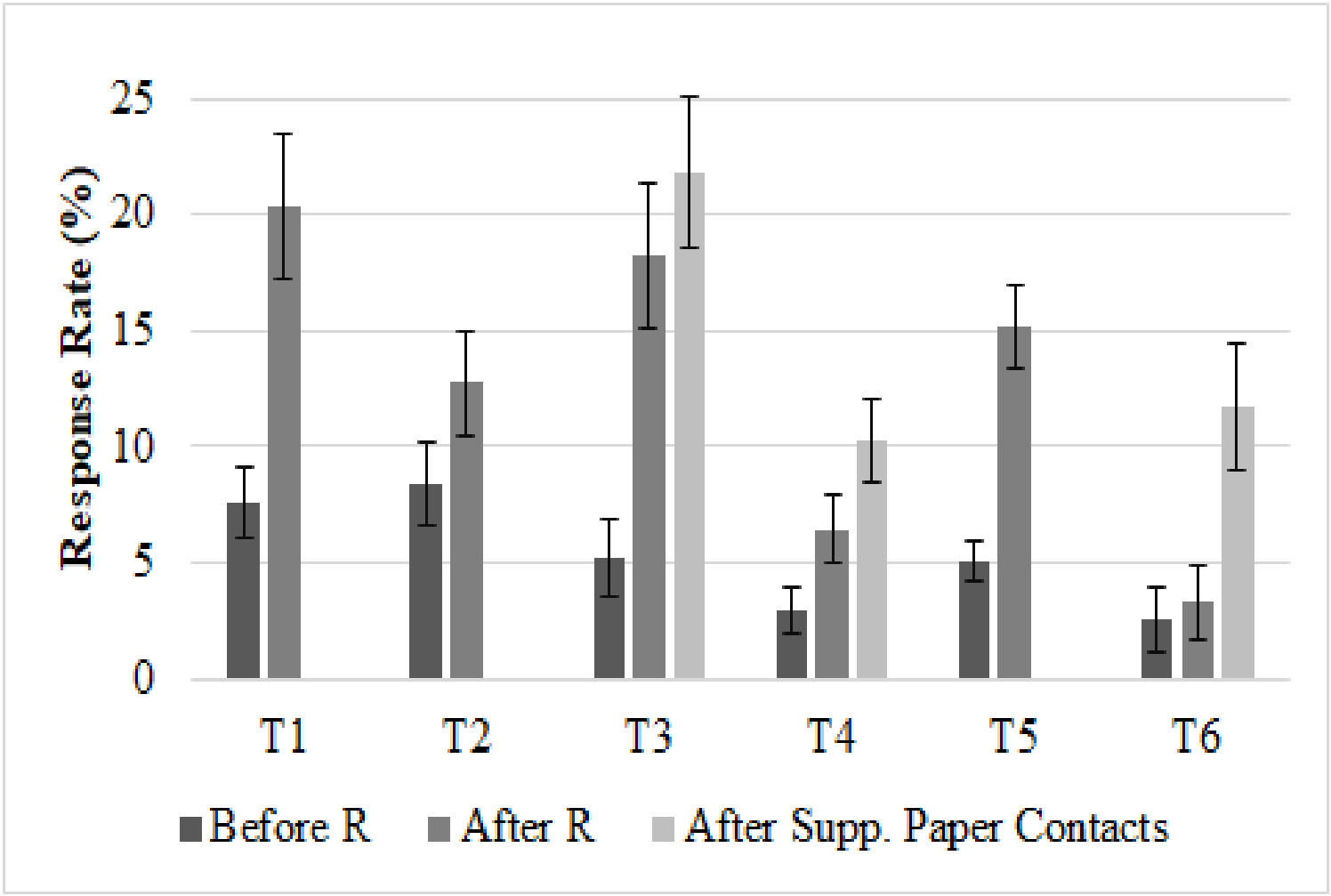
- Average absolute nonresponse bias (AANB)
  - Calculated as the average of the absolute value of all nonresponse bias estimates

$$Avg.Abs.Nonresponse\ Bias = \frac{\sum_{c=1}^{C} |NR\ Bias(\bar{Y}_c)|}{C}$$

# Analysis Steps: Costs

- Expense estimates provided by the postal department of the IAB
- Materials included printing, postage, and envelopes
- Personnel and working time expenses not included in the cost calculations
- Costs related to programming and testing Web survey instrument are assumed fixed across groups and not included in cost estimates
- Total costs and per-respondent costs are both reported

# Results: Response Rates by Treatment Group



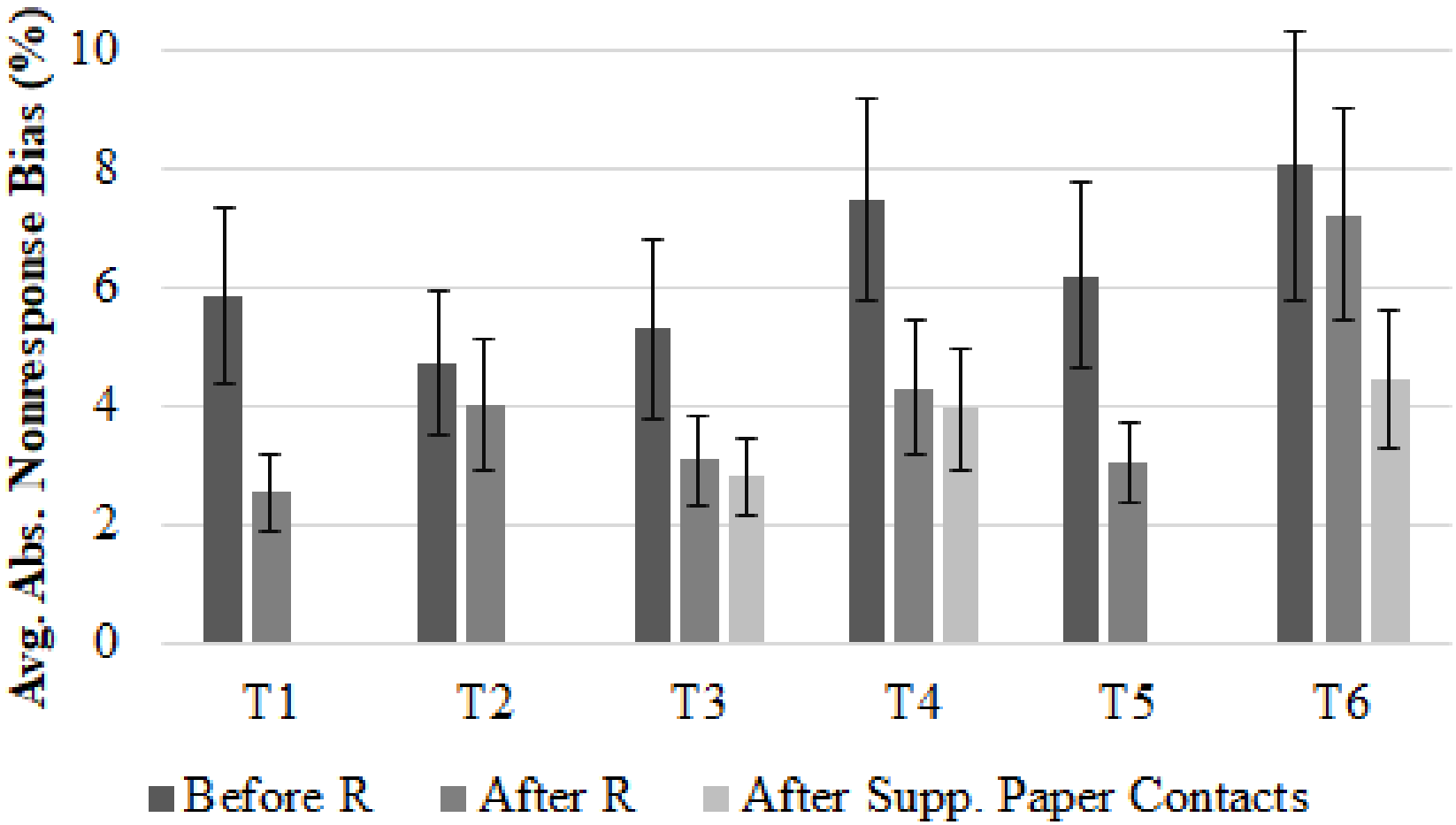
# Experiment 1: Key Findings – Response Rates

- Initial paper invitation (8.0%) more effective than email (4.1%)
  - Difference: p<0.000
- Highest rates in paper-paper (20.3%) and email-paper (18.2%)
  - Difference: p=0.341
- Lowest rates in paper-email (12.8%) and email-email (6.4%)
  - Difference: p=0.005
- Supplementary paper contacts for undelivered email invitations (about 18% in both groups) produced a statistically significant improvement in response
  - Email-paper: from 18.2 to 21.9%
  - Email-email: from 6.4 to 10.3%

# Experiment 2: Key Findings – Response Rates

- 8.4% of establishments provided an email address, of which 39.0% participated in Web survey after paper reminder
- Overall (unconditional) response rate is 3.3% in prenotification group
- Administering supplementary paper contacts to prenotification nonrespondents improved response rate to 11.7%, but still significantly lower than paper-paper group (15.2%)

# Results: Average Absolute Nonresponse Bias (AANB)



# Key Findings – NR Bias (AANB)

- Results largely consistent with response rate results
- That is, higher response rates yield smaller average NR bias
- Experiment 1
  - paper-paper < email-paper < paper-email < email-email
- Experiment 2
  - Paper-paper < prenotification email request group

- Reminder and supplementary paper contacts reduced AANB across all treatment groups

# Results: Recruitment Costs

| | Experiment 1: Postal-email addresses (N=17,992) | | | | | Experiment 2: Postal-only addresses (N=11,520) | |
|---|---|---|---|---|---|---|---|
| | T1 | T2 | T3 | T4 | | T5 | T6 |
| **Sample size** | 4,498 | 4,498 | 4,498 | 4,498 | | 9,217 | 2,303 |
| **Total costs (in Euros)** | | | | | | | |
| **Before reminders** | 2,620 | 2,620 | 0 | 0 | | 5,369 | 1,472 |
| **After reminders** | 4,849 | 2,620 | 1,970 | 0 | | 10,062 | 1,598 |
| **After supp. paper contacts** | -- | -- | 2,899 | 987 | | -- | 3,874 |
| **Total costs per respondent** | | | | | | | |
| **Before reminders** | 5.20 | 5.12 | 0 | 0 | | 6.83 | 17.72 |
| **After reminders** | 4.63 | 3.24 | **2.37** | 0 | | **5.96** | **14.93** |
| **After supp. paper contacts** | -- | -- | **0.90** | **1.46** | | -- | **6.80** |

# Key Findings – Costs

- Not surprisingly, lowest per-respondent costs associated with every email treatment group
- However, email-email not associated with lowest per-respondent costs after administering supplementary paper contacts
- Experiment 1 (after accounting for all contacts):
  - Email-paper < email-email < paper-email < paper-paper
  - Noteworthy that the cheapest and most expensive contact sequences also produced the highest response rates
- Experiment 2
  - Paper-paper < prenotification email request group

# Overall Conclusions I

- Paper-only invitation/reminder strategy found to be most effective for maximizing participation among establishments
  - Finding holds regardless of email address availability

- Email-paper outperforms reverse sequence and performs similarly as well as paper-paper at a substantially lower per-respondent cost

# Overall Conclusions II

- Supplementary paper contacts can be a useful means of obtaining responses from establishments with invalid/unknown email addresses
  - Also reduces aggregate NR bias and per-respondent costs

- However, survey organizations should not go out of their way to solicit email addresses from establishments for the sole purpose of administering an email invitation
  - Ineffective from cost and error perspective, relative to paper-only contact approach

UNIVERSITY OF MANNHEIM

IAB

## Thank you for your attention!

Joseph Sakshaug (University of Mannheim and IAB, Germany)
joe.sakshaug@iab.de / joesaks@uni-mannheim.de

Basha Vicari (IAB, Germany)
basha.vicari@iab.de

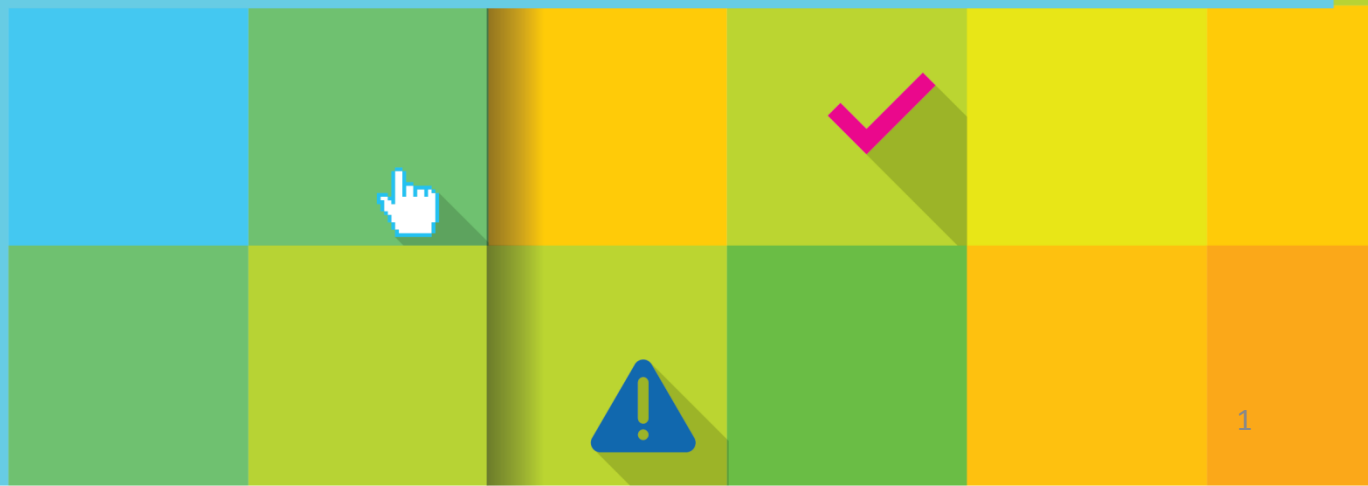
## Target Professions

accountant, architect, bank teller, caregiver for disabled persons, chemist, computer scientist, construction engineer, cook, electrical engineer, emergency medical technician, general manager, hairdresser, HR specialist, industrial management assistant, industrial mechanic, IT specialist for application development, lawyer, mechanical engineer, office management assistant, pharmacists,  physician, preschool teacher, secondary teacher, social worker, and truck driver

INSTITUTO NACIONAL DE ESTATÍSTICA
STATISTICS PORTUGAL

# FIFTH INTERNATIONAL WORKSHOP ON BUSINESS DATA COLLECTION METHODOLOGY

## 19-21 SEPTEMBER 2018 – STATISTICS PORTUGAL, LISBON



# Leveraging Behavioural Insights to Improve Construction Businesses' Survey Response

Office for National Statistics, United Kingdom

Alessia Tosi, PhD (alessia.tosi@faststream.civilservice.gov.uk)

Helen Moore (helen.moore@ons.gov.uk), Pete Smith (peter.smith@ons.gov.uk), Beverly Best (bev.best@ons.gov.uk)

# Project Aims

1. Explore the use of behavioural science principles to increase the number of businesses that return the survey questionnaire on time, thereby reducing resources spent response chasing

2. Assess the feasibility of behavioural insights trials across business surveys, and gauge the benefits of behavioural insights interventions weighted against the operational and reputational risks.

# The Problem

ONS Construction Survey is one of our most resource-intensive and expensive monthly surveys for response chasing

- responses are typically late
- respondents complain that they are unable to provide the data
- complaints and queries relating to our survey materials (letters, reminders)

➡ unnecessary administrative costs (chasing calls, reminders, follow-up communications)

➡ increased respondent burden

➡ quality concerns for the Monthly Construction Statistical release

# From a respondent's point of view: identified psychological/ behavioural barriers

- The request is unclear and/or key information is not received in a timely manner
- Perceived high cost associated with responding which ONS is not clearly recognising
- Failure to understand/recognise the value of providing the information
- Perception that the ONS is not making full use of existing resources, and so it is wasting their time

## Can we use behavioural insights to address (some of) these psychological/behavioural barriers and so improve the timeliness of responses to ONS Construction Survey?

# Challenges

Can we apply behavioural insights to businesses rather than individuals?

- Respondents must answer for the **business**, not for themselves
- Participation is **mandatory**
- ONS Construction Survey is a multi-wave survey, incl. **long-standing respondents** (with biased prior experience and/or hard-to-switch established reporting routines)

# Responses

- Questionnaires are at the end **completed by people** with the normal range of emotions/strategies for avoiding unpleasant tasks (Dillman, 2000)
- Authority principles may work, but respondent-driven **compliance principles of reciprocity** may be more effective (Snijker & Luppes, 2000)
- Different types of interventions for different types (long-term vs. newly) respondents

# Challenges

Operational constraints and risk perception:

- **Risk aversion** from the statistical outputs' team: concerns that the intervention may adversely affect the data (and so the estimates)
- We **could not reduce the cost of being a respondent** by changing the format / content / structure / paper-based mode of the survey
- Experimental interventions were a «first timer» for ONS business operations: **little pre-knowledge of the operational and processing obstacles** that we might be facing at the difference stages of the survey cycle

# Responses

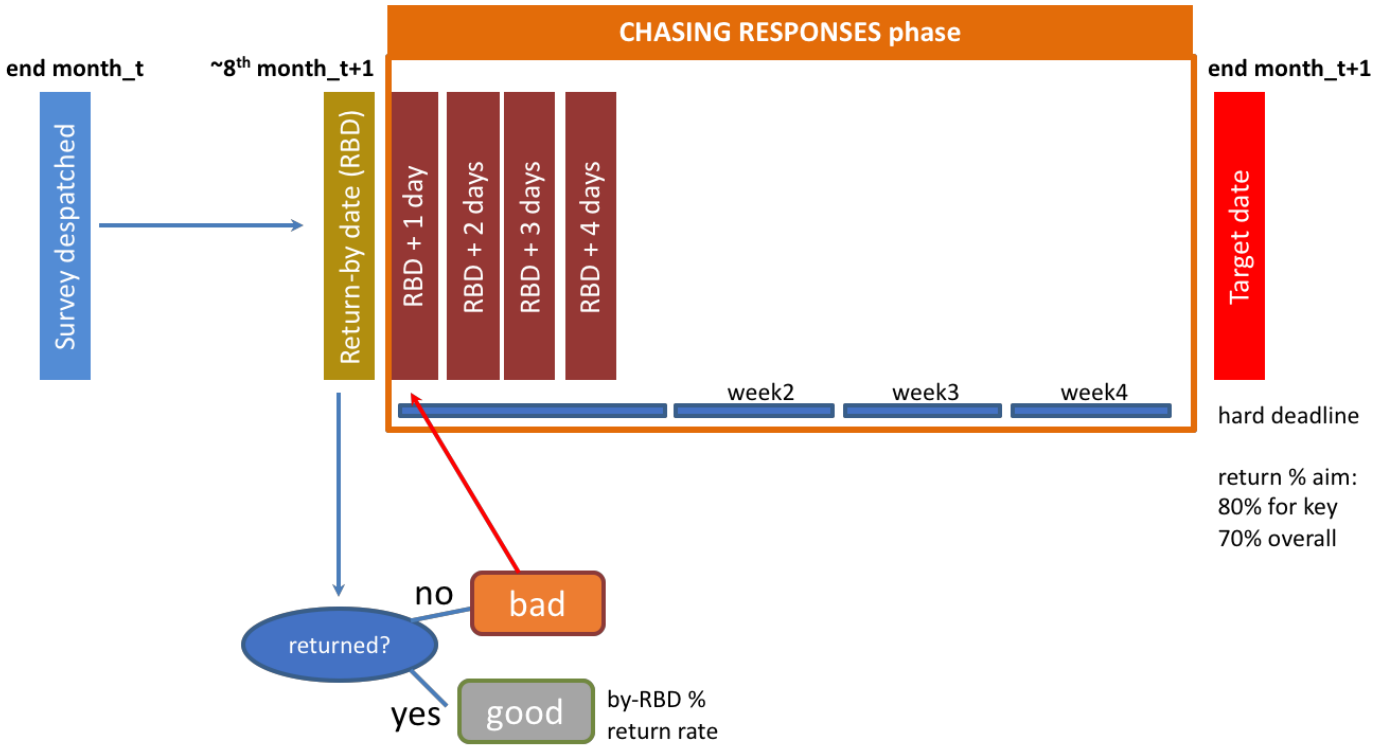
- We only experimented with **newly-selected and smaller businesses** whose data is of less primary importance for the Construction Survey Statistical Release
- We changed **the way we approach businesses** and aim to build trust in respondents and improve their cooperation (i.e., avoiding being confrontational )
- We Identified and **involved key internal stakeholders** from the start, and created a **process map** of ONS Construction Survey cycle

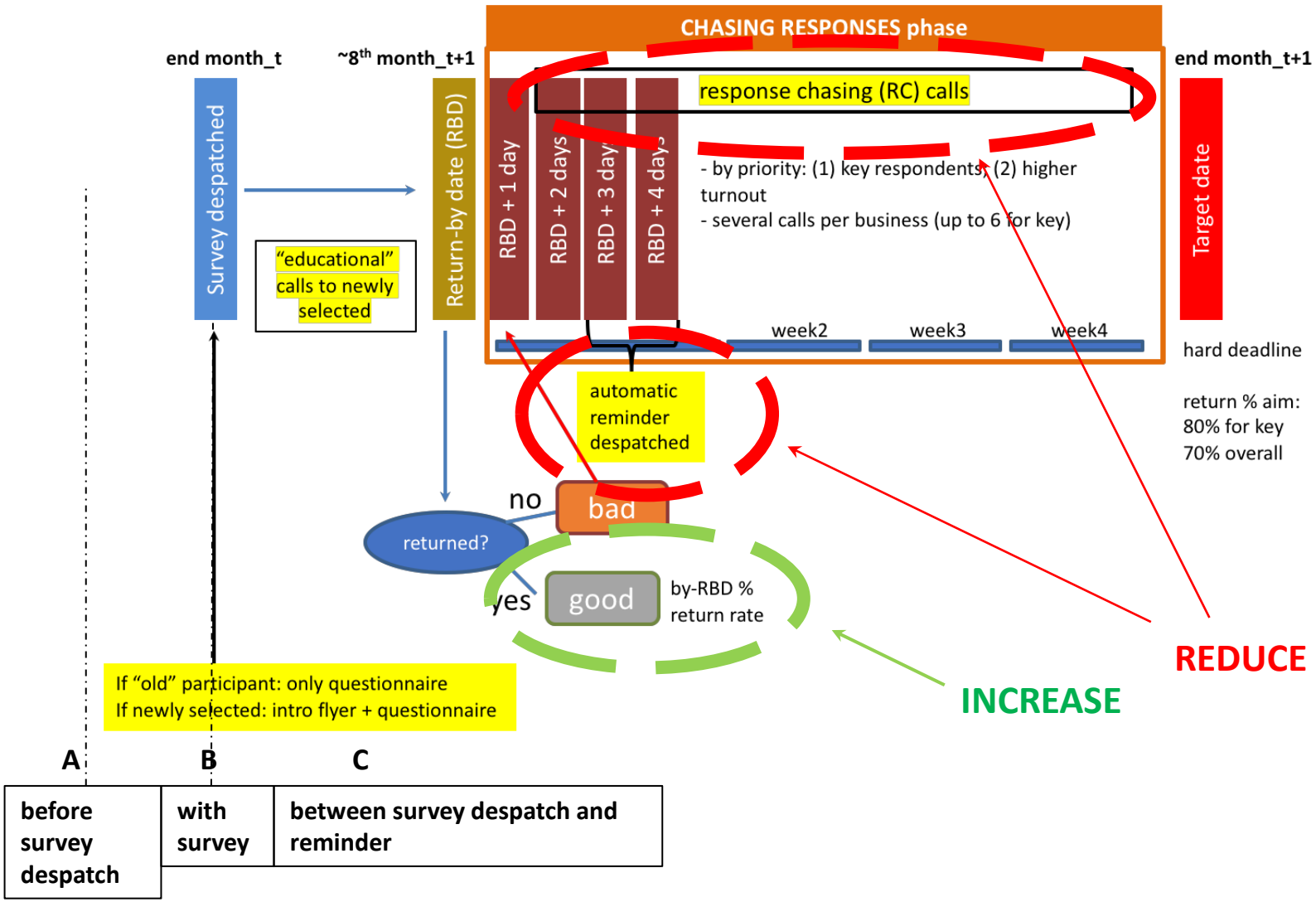
# Main nature of intervention

A respondent-oriented communication strategy centred on the compliance principles of reciprocity that:

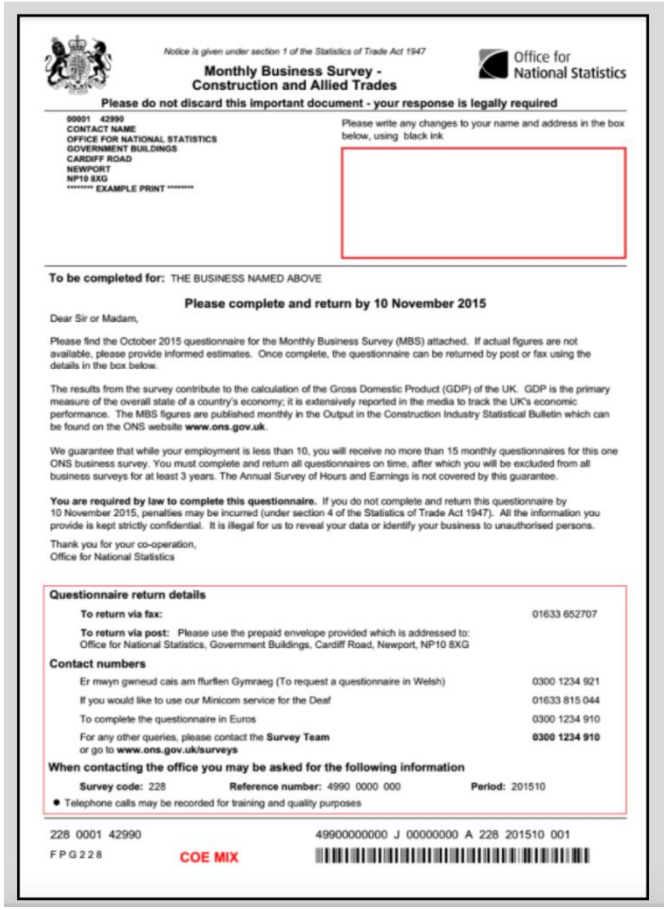
- was built around respondent importance and the usefulness of the survey
- acknowledged the respondent's effort and costs of responding
- acknowledged that the survey process could (and will) be improved
- was not confrontational (businesses were already frustrated!)
- clearly conveyed purpose and expectation of the communication, at each stage, and provided all key information at the right time
- was personal (whenever possible).

# The “business as usual”


CHASING RESPONSES phase
end month_t
~8th month_t+1
end month_t+1
Survey despatched
Return-by date (RBD)
RBD + 1 day
RBD + 2 days
RBD + 3 days
RBD + 4 days
Target date
week2
week3
week4
hard deadline
return % aim:
80% for key
70% overall
returned?
no
bad
yes
good
by-RBD %
return rate


CHASING RESPONSES phase
end month_t
~8th month_t+1
end month_t+1
Survey despatched
Return-by date (RBD)
Target date
response chasing (RC) calls
RBD + 1 day
RBD + 2 days
RBD + 3 days
RBD + 4 days
- by priority: (1) key respondents, (2) higher turnout
- several calls per business (up to 6 for key)
week2
week3
week4
hard deadline
return % aim:
80% for key
70% overall
"educational" calls to newly selected
automatic reminder despatched
no
bad
returned?
yes
good
by-RBD % return rate
REDUCE
INCREASE
If "old" participant: only questionnaire
If newly selected: intro flyer + questionnaire
A
B
C
before survey despatch
with survey
between survey despatch and reminder

# Main Page



*Notice is given under section 1 of the Statistics of Trade Act 1947*

**Monthly Business Survey - Construction and Allied Trades**

Office for National Statistics

**Please do not discard this important document - your response is legally required**

00001 42990
CONTACT NAME
OFFICE FOR NATIONAL STATISTICS
GOVERNMENT BUILDINGS
CARDIFF ROAD
NEWPORT
NP10 8XG
******** EXAMPLE PRINT ********

Please write any changes to your name and address in the box below, using black ink

**To be completed for:** THE BUSINESS NAMED ABOVE

**Please complete and return by 10 November 2015**

Dear Sir or Madam,

Please find the October 2015 questionnaire for the Monthly Business Survey (MBS) attached. If actual figures are not available, please provide informed estimates. Once complete, the questionnaire can be returned by post or fax using the details in the box below.

The results from the survey contribute to the calculation of the Gross Domestic Product (GDP) of the UK. GDP is the primary measure of the overall state of a country's economy; it is extensively reported in the media to track the UK's economic performance. The MBS figures are published monthly in the Output in the Construction Industry Statistical Bulletin which can be found on the ONS website **www.ons.gov.uk**.

We guarantee that while your employment is less than 10, you will receive no more than 15 monthly questionnaires for this one ONS business survey. You must complete and return all questionnaires on time, after which you will be excluded from all business surveys for at least 3 years. The Annual Survey of Hours and Earnings is not covered by this guarantee.

**You are required by law to complete this questionnaire.** If you do not complete and return this questionnaire by 10 November 2015, penalties may be incurred (under section 4 of the Statistics of Trade Act 1947). All the information you provide is kept strictly confidential. It is illegal for us to reveal your data or identify your business to unauthorised persons.

Thank you for your co-operation,
Office for National Statistics

**Questionnaire return details**

**To return via fax:** 01633 652707

**To return via post:** Please use the prepaid envelope provided which is addressed to:
Office for National Statistics, Government Buildings, Cardiff Road, Newport, NP10 8XG

**Contact numbers**

| | |
|---|---|
| Er mwyn gwneud cais am ffurflen Gymraeg (To request a questionnaire in Welsh) | 0300 1234 921 |
| If you would like to use our Minicom service for the Deaf | 01633 815 044 |
| To complete the questionnaire in Euros | 0300 1234 910 |
| For any other queries, please contact the **Survey Team** or go to **www.ons.gov.uk/surveys** | **0300 1234 910** |

**When contacting the office you may be asked for the following information**

**Survey code:** 228 **Reference number:** 4990 0000 000 **Period:** 201510

- Telephone calls may be recorded for training and quality purposes

228 0001 42990
FPG228 COE MIX
49900000000 J 00000000 A 228 201510 001

# Intervention: how / what / when

# Intervention: how / what / when

# Behavioural Science principles used

## RECIPROCITY

We have an inherent desire to help those who have helped us in some way

## HEAD START

When we're made feel like we're making progress, we're more likely to complete a task

## MESSANGER EFFECT

We are highly influenced by the identity of who is communicating the information

## MAKE IT TIMELY

Help people planning and prompt them when they are more likely to be receptive increase chances they'll complete the task

## HASSLE FACTOR

Reduce the perceived effort or 'friction' required to perform an action.

## "GETTING SMTH BACK"

A positive engagement feedback loop makes people willing to engage again in the future

# Intervention: how / what / when

# New "BI" Communication Strategy

## RECIPROCITY

Introduced a Prenotification Letter + FAQ:
- we are writing to businesses to help them plan their response to the survey
- we explicitly acknowledge their effort

## MESSANGER EFFECT

Two "voices":
- helpful & informal in the Prenotification Letter (Construction Survey manager)
- official & monitoring in the Intro Letter (Deputy Director of Business Surveys)

## HASSLE FACTOR

We simplified the message: clear call for action and no lengthy return details
We broke down the goal (responding to the survey) into 3 specific manageable tasks clearly visualised in a checklist diagram

## HEAD START

In the Intro Letter, the 3-task checklist diagram had the first box already checked (this is done!)

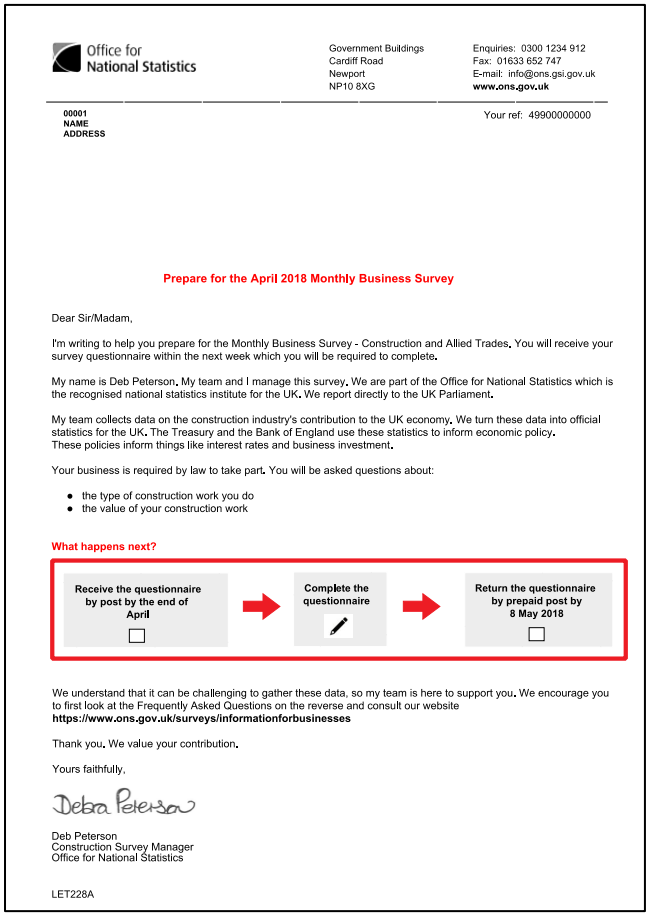
## MAKE IT TIMELY

Prenotification Letter :
- addresses "newbies" (no bias/ no routine yet)
- explicitly to support them to complete the survey form, by highlighting what information is required by when.

## "GETTING SMTH BACK"

We included a postcard with the survey form with an infographic based on previous survey results relevant to the business, and a big thank you note

# Example: the prenotification letter



Office for National Statistics

Government Buildings
Cardiff Road
Newport
NP10 8XG

Enquiries: 0300 1234 912
Fax: 01633 652 747
E-mail: info@ons.gsi.gov.uk
**www.ons.gov.uk**

**00001**
**NAME**
**ADDRESS**

Your ref: 49900000000

**Prepare for the April 2018 Monthly Business Survey**

Dear Sir/Madam,

I'm writing to help you prepare for the Monthly Business Survey - Construction and Allied Trades. You will receive your survey questionnaire within the next week which you will be required to complete.

My name is Deb Peterson. My team and I manage this survey. We are part of the Office for National Statistics which is the recognised national statistics institute for the UK. We report directly to the UK Parliament.

My team collects data on the construction industry's contribution to the UK economy. We turn these data into official statistics for the UK. The Treasury and the Bank of England use these statistics to inform economic policy. These policies inform things like interest rates and business investment.

Your business is required by law to take part. You will be asked questions about:

- the type of construction work you do
- the value of your construction work

**What happens next?**

**Receive the questionnaire by post by the end of April** ☐ → **Complete the questionnaire** → **Return the questionnaire by prepaid post by 8 May 2018** ☐

We understand that it can be challenging to gather these data, so my team is here to support you. We encourage you to first look at the Frequently Asked Questions on the reverse and consult our website **https://www.ons.gov.uk/surveys/informationforbusinesses**

Thank you. We value your contribution.

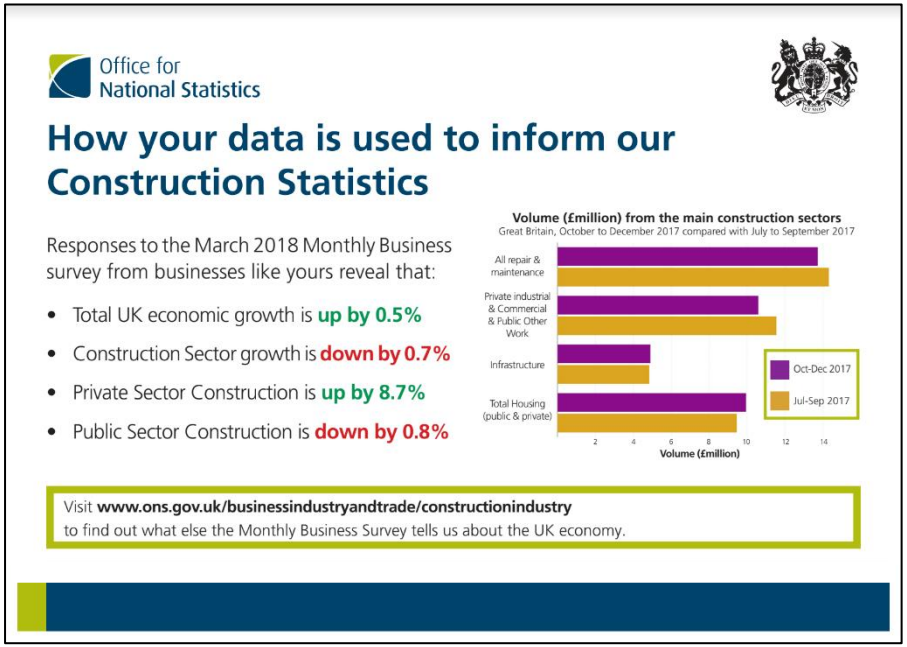
Yours faithfully,

Debra Peterson

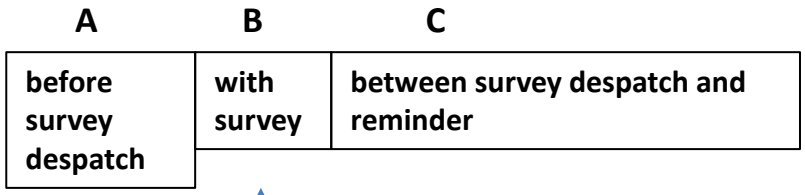
Deb Peterson
Construction Survey Manager
Office for National Statistics

LET228A

# Example: the infographic postcard



# Intervention: how / what / when




Intro Letter
Postcard (infographic / thank you)
FAQ

Prenotification Letter
FAQ

# The Experimental Trial

## Hypothesis

The Behavioural insights (BI) intervention will increase the likelihood of businesses to return their questionnaire by the Return-by-Date (RBD) and within one week after the RBD.

## Trial Design

Two-arm stratified randomized control trial (RCT) while conducting ONS Construction Survey in the months of April and May 2018.

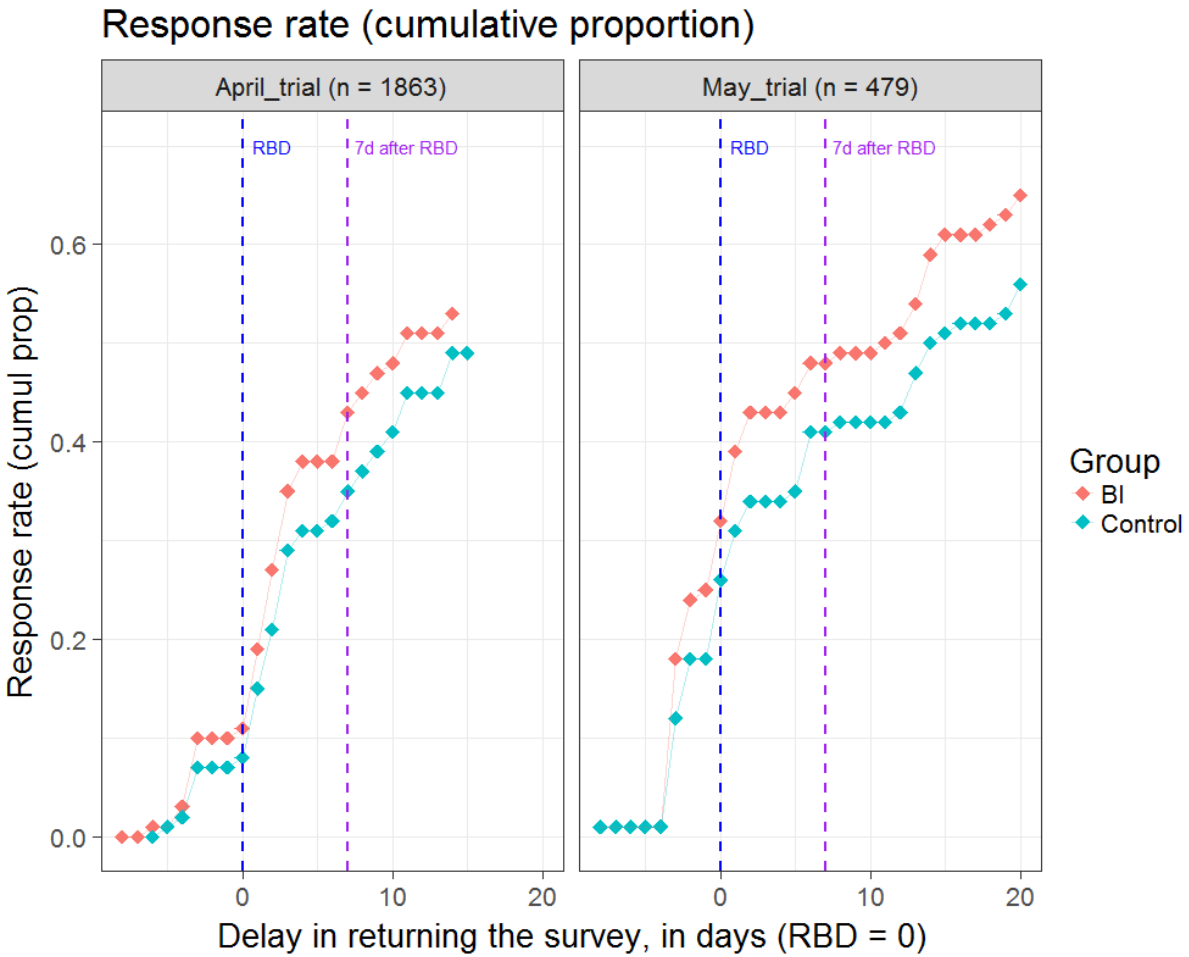
## Trial Sample

- Businesses (N = 2369) were newly selected participants in the survey sample for January- May 2018
- Stratified randomisation by Month of First Selection (Jan-May) and Size (0-4, 5-9, and 10-19) to account for confounds + permuted block randomisation to assign businesses to the BI group (n = 1183) vs. Control (n = 1186) within each stratum
- No educational call or chasing call was made to trial participants during the trial survey months

## Trial Power

A-priori power simulation suggested a sample size between 2300 and 2500 would give 80% power to detect the smallest effect of practical significant (4 ppt) increase in return rate at alpha = 5% (one-tail)

# Results



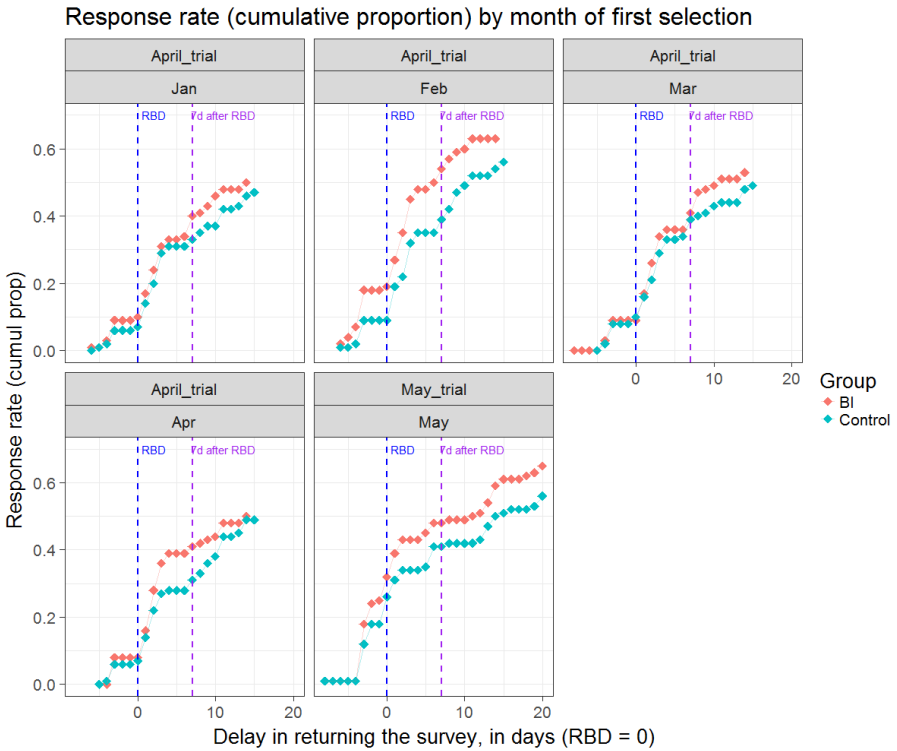

**At Return-by-Date (RBD):**
BI group : 16%
Control : 12%

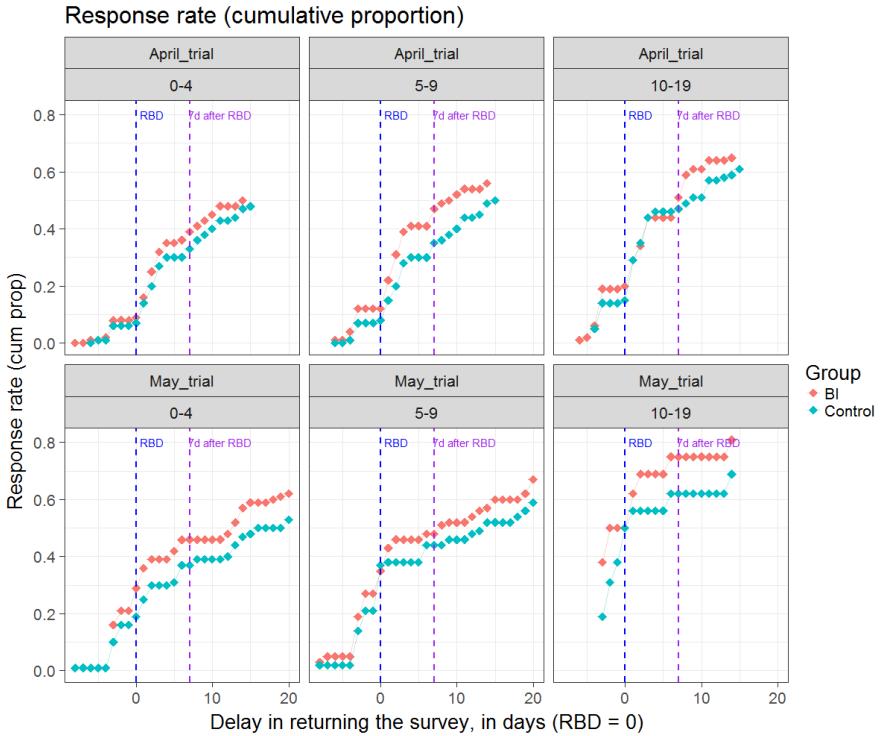
β = 0.35 (95% CI 0.11-0.59),
Odds-Ratio = 1.41, p = 0.002

**At RBD + 7 days:**
BI group : 45%
Control : 37%

β = 0.33 (95% CI 0.17-0.50),
Odds-Ratio = 1.39, p < 0.001

# No sub-group was negatively affected



# Impact on in-coming queries

## Total number of incoming calls from return by date to close down

### Historical Data

- April 2017 data not available
- For May 2017 = 683
  → General Information = **290**, Help to complete = 38

### Trial Months Data (including but not exclusive to trial participants)

- For April 2018 = 550
  → General Information = **131**, Help to complete = 22
- For May 2018 = 559
  → General Information = **153**, Help to complete = 21

# Conclusions

- We leveraged behavioural science principles to increase the number of businesses that return the survey questionnaire on time, thereby reducing resources spent response chasing

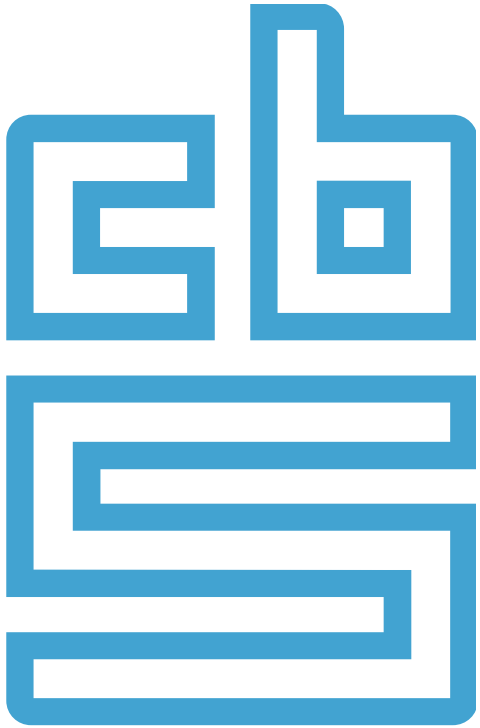
- We could assess the feasibility of behavioural insights trials across business surveys, and gauge the benefits of behavioural insights interventions weighted against the operational and reputational risks.

# Lessons Learned

- At the very start, create a clear **process map** of the whole survey process (incl. printing, reception and ingestion) which captures **what can go wrong** at the different process stages and possible solutions
- **Involve** and meet regularly with key people across different business areas + Set-up **roles with clear responsibilities** + Establish a **process of detailed reporting** to track decisions and milestone in the project ➡ Promptly address issues and escalate decisions to right level
- When planning, be aware of anything (incl. processes) that **cannot be changed or measured** as part of the intervention (e.g., colours!)
- **Understand the context** of the issue(s) that the intervention is aiming to address with behavioural insights (do not follow a cookbook)
- As behavioural insights experts, be brave in your proposal but be ready to find compromises and **start small** instead ➡ Essential to build trust with key stakeholder and take in their concerns

# Questions

- Switching the behaviour of long-standing survey participants is a different challenge: what might work for them?
- How have you dealt with the risk aversion of key stakeholders?
- How to use the momentum and capitalise on these results?



# Targeted communication

Promising technique:

- Improving data collection
- Strengthen imago Statistics Netherlands

Better data, faster response pace

How? Most effective technique? Timing? Limits cost-effiency?

# Several pilots

The recently become mandatory agricultural surveys

The mandatory 2017 Survey on Research & Development

The non-mandatory Survey on Arts and Culture Education

The non-mandatory 2017 ICT Survey

The non-mandatory 2018 ICT Survey

# Agricultural surveys:

## Obligation, removing potential barriers

Surveys:

- Apple & Pear Yields
- Vegetables (outdoor crops)
- Pig Population
- Arable Farming
- In 2017: Consumption of Pastureland (non- mandatory)

1. No enforcement until 2018
2. To keep a good customers relationship: several attractive communication products

# Agricultural surveys: Response rates (%)

| survey | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|
| Apple & Pear Yields | 50,8% | 49,5% | 77,8% | 76,8% |
| Vegetables (outdoor crops) | 53,7% | 48,7% | 72,5% | 71,3% |
| Pig Population | 64,2% | 58,9% | 77,9% | 84,6% |
| Arable Farming | 58,4% | 50,3% | 78,8% | 72,0% |
| Consumption of Pastureland (non- mandatory, pilot products in 2017) | 51,9% | 48,5% | 54,8% | 39,8% |

# Impact

- Obligation didn’t result in much commotion on social media, relatively low number of calls to our helpdesk, communication materials might be helpfull
- Higher response rates are entirely affected by the mandation
- Farmers are focussed on the mandatory surveys, non-mandatory surveys have a lower priority now
- Extra costs: € 8.500,-- yearly (excl. hourly wages)

# survey on R&D: Reminder with information about approaching enforcement procedure

- Mandatory since 2015
- Information card enclosed with the reminder letter
- Promising: 6% additional response

| Response rates | 2015 (R&D) | 2016 (R&D) |
|---|---|---|
| Upon sending reminder letter & info enforcement | 72,8% | 67,2% |
| Upon telephonic reminder | 83,5% | 83,9% |
| increase | 10,7% | 16,7% |

- Experiment will be repeated: new questionnaire may have interfered with the pilot results

# Survey on Arts and Culture education:

## pre-due date reminder

- Aim: to enhance the response (target 50%, actual response rate much lower
- Experiment with new pre-due date reminder: card vs. letter

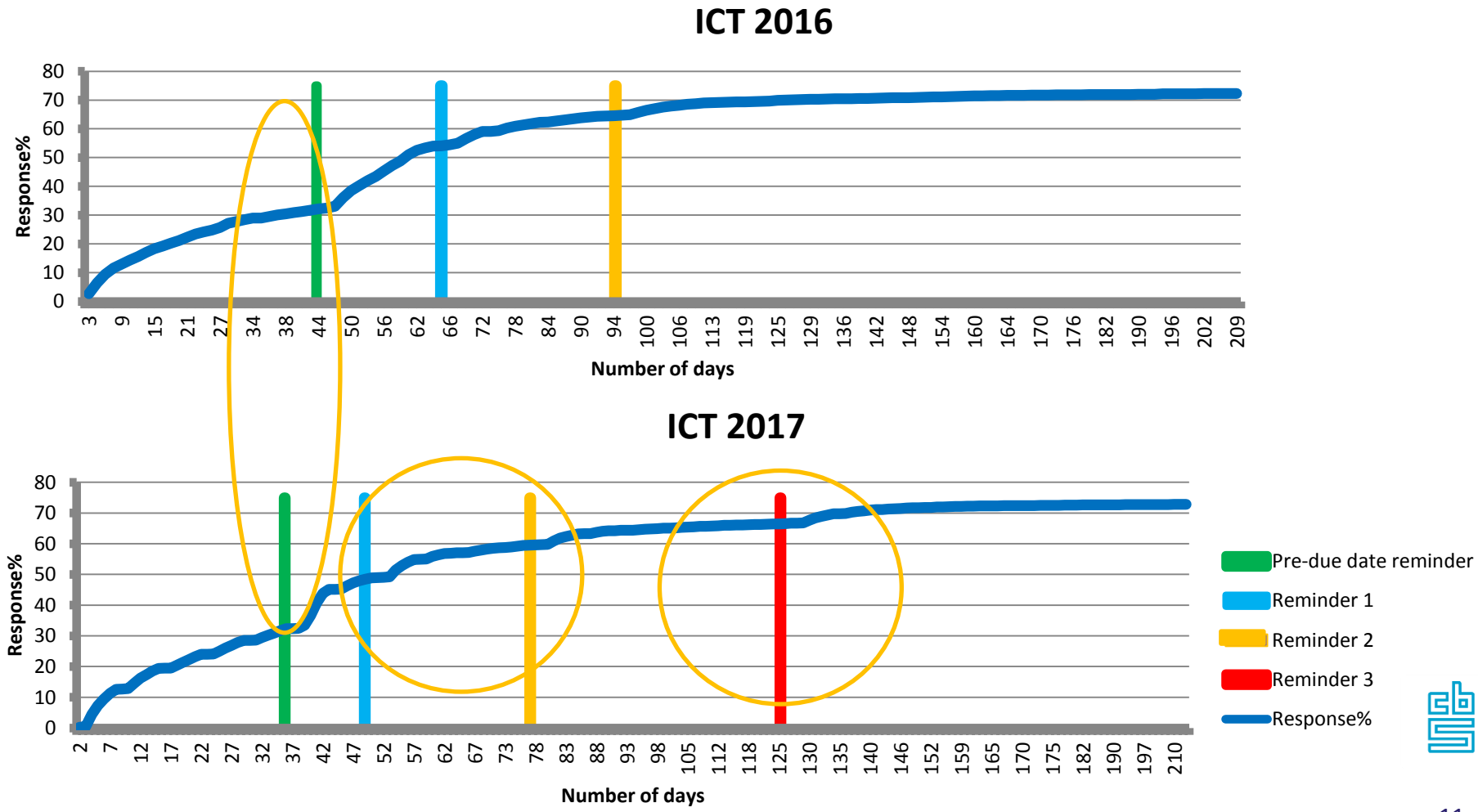
| Pre-due date reminder | Card | | | Letter | | |
|---|---|---|---|---|---|---|
| | n | r | % | n | r | % |
| Upon due date | 4052 | 314 | 7,7%* | 4022 | 430 | 10,7%* |
| End of survey (after another reminder letter and telephonic reminder) | 4052 | 1024 | 25,3% | 4022 | 1087 | 27,0% |

* Significantly different (95% confidence interval)

- Pre-due date reminder letter significantly better

# ICT 2016, 2017 & 2018

- Design
- Incentive
- Pre-due date reminder card vs. letter


ICT 2016
Response%
Number of days
ICT 2017
Response%
Number of days
Pre-due date reminder
Reminder 1
Reminder 2
Reminder 3
Response%

# ICT 2016 & 2017: Design large businesses

- Design: timing of the letters is important
  - early pre-due date reminder letter is effective (5 ½ weeks after start)
  - Don’t sent the reminders to early (9 and 13 weeks after start)
- Third reminder: 3-4% extra response

# ICT 2018: Non-tailored unconditional Incentive

- Incentive (general feedback)

| | Incentive | | | No incentive | | |
|---|---|---|---|---|---|---|
| | n | r | % | n | r | % |
| Small businesses | 4970 | 2009 | 40,4% | 4970 | 2110 | 42,5% |
| Large businesses | 6316 | 3822 | 60,5% | 6316 | 3819 | 60,5% |

- Incentive / no incentive: Response-rates not significant different

# ICT 2018: Pre-due date reminder

— Pre-due date reminder (letter vs. card):

| | Pre-due reminder card | | | Pre-due reminder letter | | | No pre-due reminder | | |
|---|---|---|---|---|---|---|---|---|---|
| | n | r | % | n | r | % | n | r | % |
| Small businesses | 3313 | 1369 | 41,3% | 3311 | 1434 | 43,3%* | 3313 | 1316 | 39,7%* |
| Large businesses | 4210 | 2544 | 60,4 | 4212 | 2638 | 62,6%* | 4210 | 2459 | 58,4%* |

* Significantly different (95% confidence interval)

— No significant difference between card en letter

— Letter significant better than no pre-due date reminder

# Conclusion

- Timing of communication
- Pre due reminder
- Reminder
- Advanced communication about enforcement
- Website
- Incentive with general feedback

# Discussion

**What are your experiences with additional communication materials like flyers, incentives, video clips, etc?**

**What are your experiences regarding the effect of cards as compared to letters?**

# Agricultural Survey: pre-due date reminder cards and factsheets

website

Uw opbrengst
telt mee!

# Mogen we u nog even herinneren?

**Mogen we u even herinneren?**
Onlangs heeft u de vragenlijst oogstraming groenten open grond 2017 ontvangen. Veel van uw collega's hebben de vragenlijst ondertussen ingevuld. U ook? Dan bedanken wij u daarvoor hartelijk.
Heeft u dit nog niet gedaan, wilt u hier dan nog tijd voor vrijmaken? U zou ons daarmee erg helpen.

**En wat heeft u er zelf aan?**
Mede dankzij u kan CBS jaarlijks de oogstraming van groenten op open grond samenstellen en publiceren. U kunt deze informatie ook zelf gebruiken. Bijvoorbeeld om uw eigen bedrijfsontwikkelingen te vergelijken met de landelijke trends.
Op www.cbs.nl/landbouw vindt u de laatste nieuwsberichten, video's en cijfers.

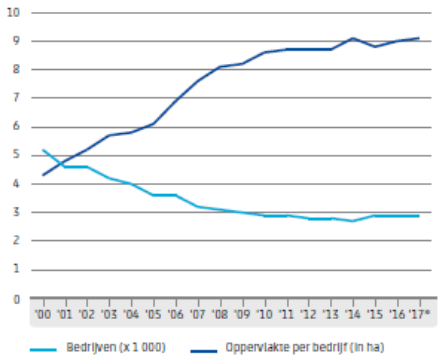
**Heeft u vragen?**
Kijk dan op www.cbs.nl/groenten of neem contact op via (045) 570 64 00.

**U kunt inloggen op https://antwoord.cbs.nl**
**Rechts vindt u de inloggegevens. →**

# Factsheet

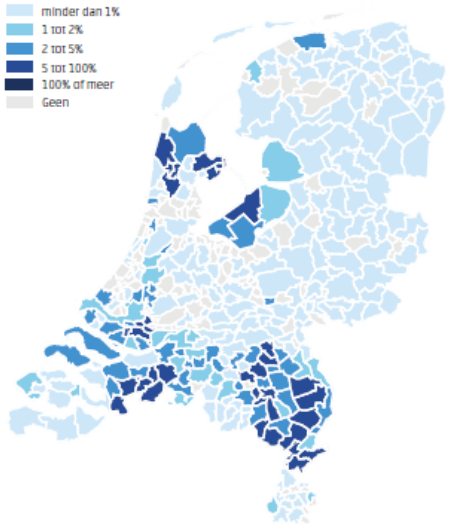
## Groenten in de open grond

### Groenten in de open grond, 2000-2017*

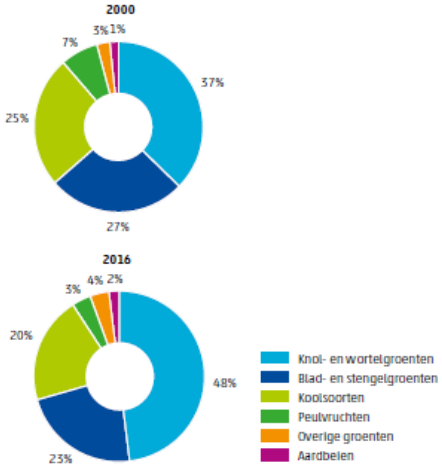



**61%** van de asperges komt uit Limburg

### Percentage tuinbouwgroenten open grond in landbouwareaal, 2016




### Groenteteelt; oogst naar gewasgroep



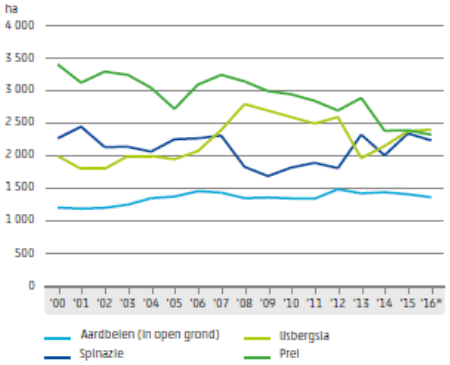

**3,4** kilo aardbeien voor elke Nederlander

**17,1** mln kilo winterpeen geoogst

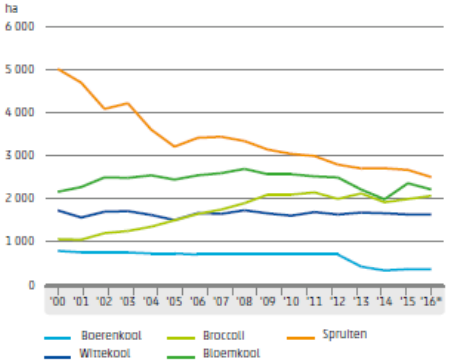
Factsheet

# Groenten in de open grond

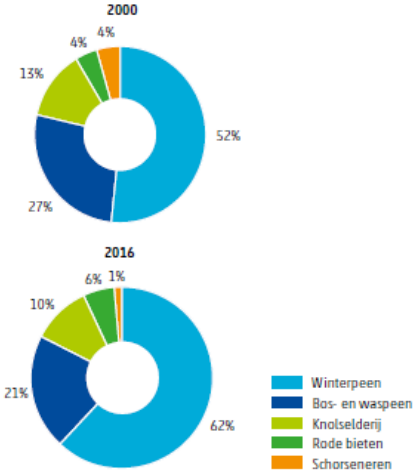
## Teeltoppervlakte enkele groenten, 2000-2016*



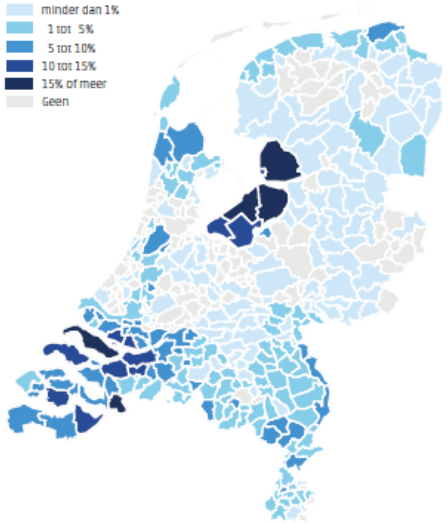

## Teeltoppervlakte enkele koolsoorten, 2000-2016*




## Groenteteelt; oogst knol- en wortelgroenten




## Percentage akkerbouwgroenten in landbouwareaal, 2016




**7,6** hectare prei per teler gemiddeld

**13,2** hectare spruitjes per teler gemiddeld

* Betreft de voorlopige cijfers van dat jaar.

Sheets BDCM Lisbon improve targeted communication Stat Neth Houben 20180824.pptx - PowerPoint

Elke korrel telt!

# Mogen we u nog even herinneren?

### Mogen we u even herinneren?

Onlangs heeft u de vragenlijst oogstraming akkerbouw 2017 ontvangen. Veel van uw collega's hebben de vragenlijst ondertussen ingevuld. U ook? Dan bedanken wij u daarvoor hartelijk.
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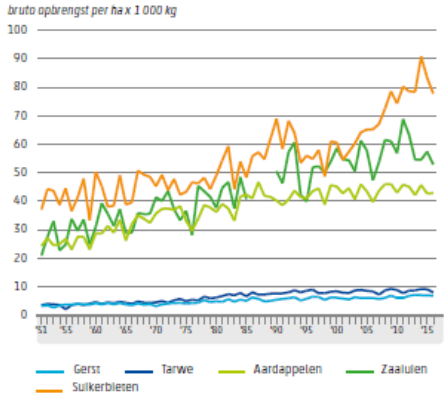
**Rechts vindt u de inloggegevens. →**

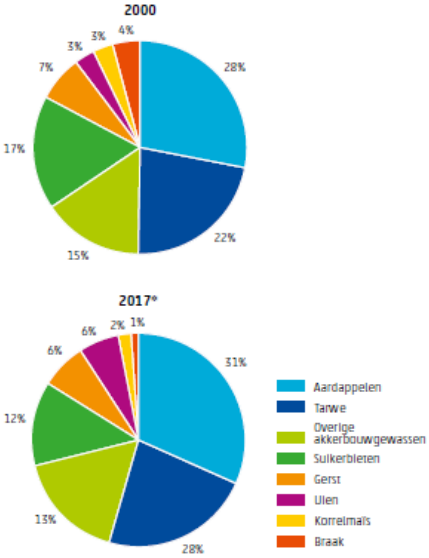
Factsheet

# Oogstraming akkerbouw

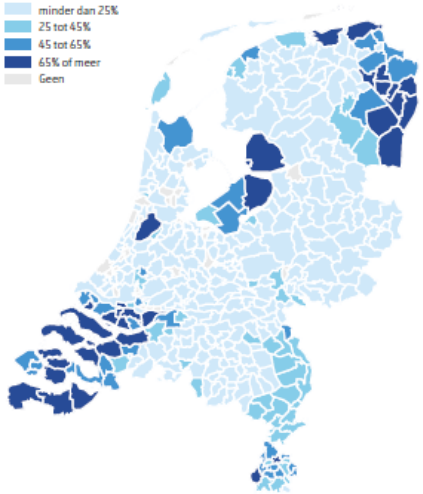
### Opbrengst akkerbouwgewassen, 1951-2016*




### Procentuele verdeling arealen naar gewas




### Percentage akkerbouw in landbouwareaal, 2016




**10 800** akkerbouwbedrijven hebben gemiddeld 41 hectare grond

**28%** van het landbouwareaal is akkerbouw

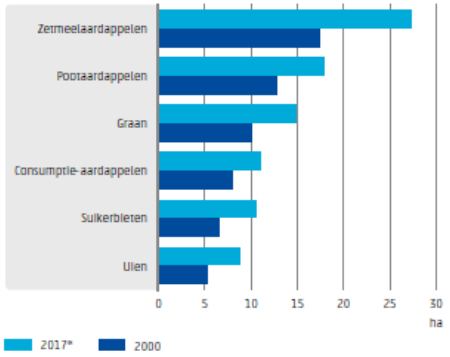
* Betreft de voorlopige cijfers van dat jaar.

Sheets BDCM Lisbon improve targeted communication Stat Neth Houben 20180824.pptx - PowerPoint

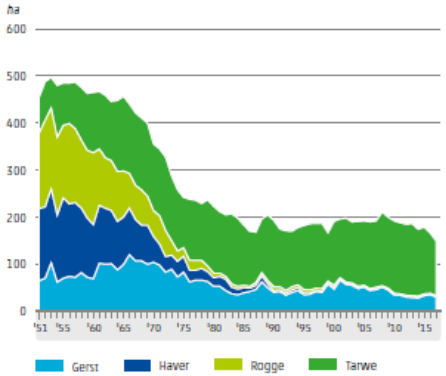
Factsheet

# Oogstraming akkerbouw

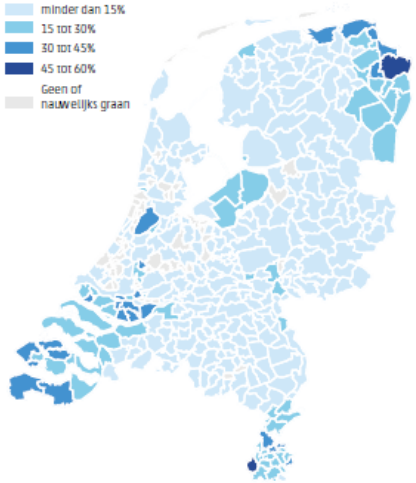
**Oppervlakte akkerbouwgewassen per bedrijf**




**Arealen graan vanaf 1951 (x 1 000 ha)**




**Percentage granen in landbouwareaal, 2016**




**72%** van het landbouwareaal in Zeeland is akkerbouwterrein, in Utrecht is dit 2%

**407** pootaardappeltelers telt de Noordoostpolder en is hiermee koploper, Hollands Kroon volgt met 179 telers

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voor ons mee!

# Mogen we u nog even herinneren?

**Mogen we u even herinneren?**
Onlangs heeft u de vragenlijst oogstraming appels en peren 2017 ontvangen. Veel van uw collega's hebben de vragenlijst ondertussen ingevuld. U ook? Dan bedanken wij u daarvoor hartelijk.
Heeft u dit nog niet gedaan, wilt u hier dan nog tijd voor vrijmaken? U zou ons daarmee erg helpen.

**En wat heeft u er zelf aan?**
Mede dankzij u kan CBS jaarlijks de oogstraming appels en peren samenstellen en publiceren. U kunt deze informatie ook zelf gebruiken. Bijvoorbeeld om uw eigen bedrijfsontwikkelingen te vergelijken met de landelijke trends. Op www.cbs.nl/landbouw vindt u de laatste nieuwsberichten, video's en cijfers.

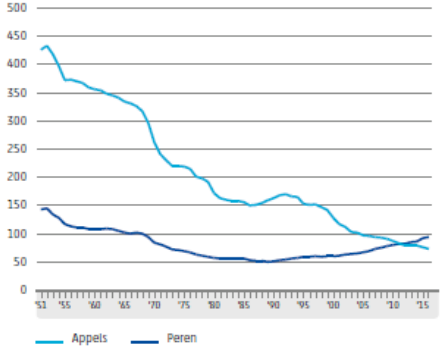
**Heeft u vragen?**
Kijk dan op www.cbs.nl/appelsenperen of neem contact op via (045) 570 64 00.

**U kunt inloggen op https://vragenlijst.cbs.nl/fruit17**
**Rechts vindt u de inloggegevens. →**

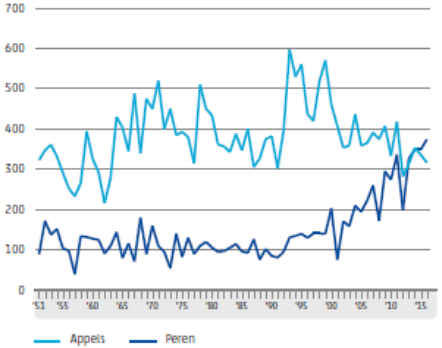
Factsheet

# Oogstraming appels en peren

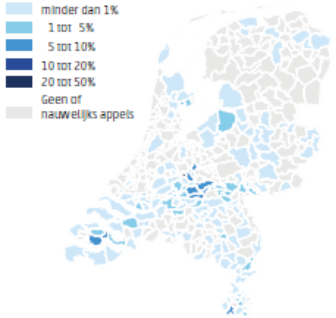
## Oppervlakte appels en peren vanaf 1951 (x 100 ha)



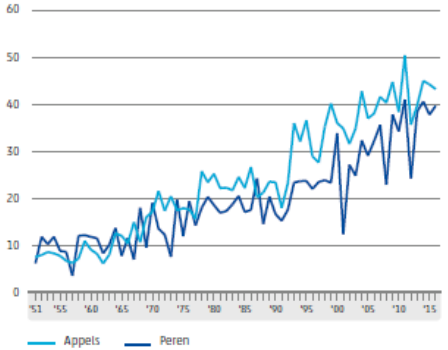

## Opbrengst appels en peren vanaf 1951 (in mln kg)




## Percentage appelboomgaarden in landbouwareaal, 2016




## Opbrengst appels en peren per hectare vanaf 1951 (in 1 000 kg)



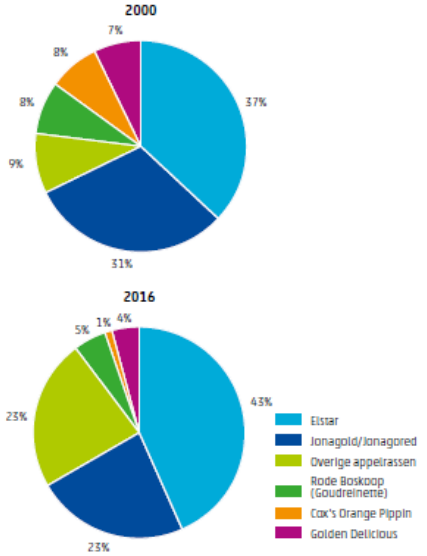

**877** appeltelers waren er in 2016, in 2000 waren het er 1787

**7,7** hectare appels had een fruitteler in 2016 gemiddeld, in 2000 was dit 6,4 hectare

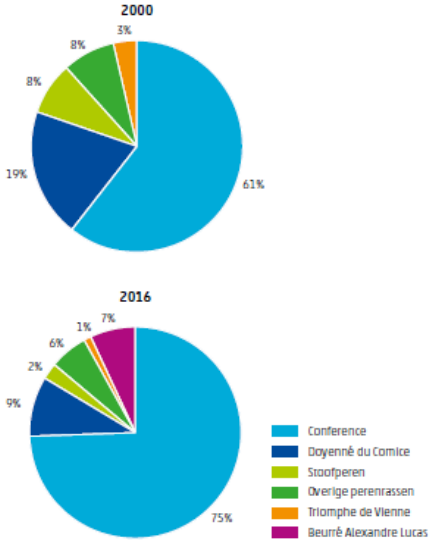
# Factsheet

## Oogstraming appels en peren

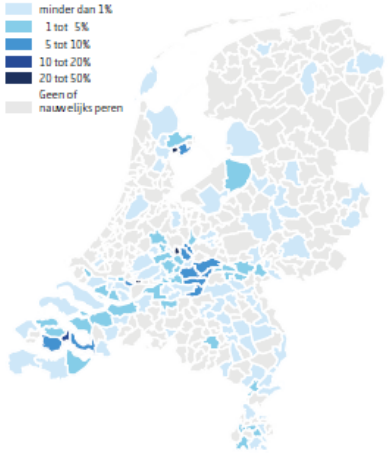
### Procentuele verdeling arealen naar appelras




### Procentuele verdeling arealen naar perenras




### Percentage perenboomgaarden in landbouwareaal, 2016




**1027** perentelers waren er in 2016, in 2000 waren het er 1684

**8,2** hectare peren had een fruitteler in 2016 gemiddeld, in 2000 was dit 3,0 hectare

* Betreft de voorlopige cijfers van dat jaar.

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U telt
voor ons mee!

# Mogen we u nog even herinneren?

**Mogen we u even herinneren?**
Onlangs heeft u de vragenlijst varkensstapel 2017 ontvangen. Veel van uw collega's hebben de vragenlijst ondertussen ingevuld. U ook? Dan bedanken wij u daarvoor hartelijk.
Heeft u dit nog niet gedaan, wilt u hier dan nog tijd voor vrijmaken? U zou ons daarmee erg helpen.

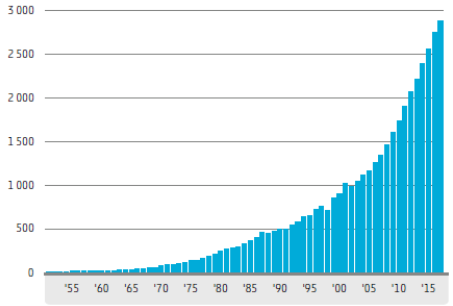
**En wat heeft u er zelf aan?**
Mede dankzij u kan CBS jaarlijks cijfers over de samenstelling van de varkensstapel vaststellen en publiceren. U kunt deze informatie ook zelf gebruiken. Bijvoorbeeld om uw eigen bedrijfsontwikkelingen te vergelijken met de landelijke trends. Op www.cbs.nl/landbouw vindt u de laatste nieuwsberichten, video's en cijfers.

**Heeft u vragen?**
Kijk dan op www.cbs.nl/varkensstapel of neem contact op via (045) 570 64 00.

**U kunt inloggen op https://vragenlijst.cbs.nl/vark17**
**Rechts vindt u de inloggegevens. →**

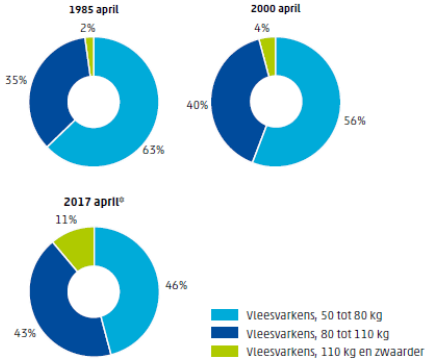
# Factsheet
## Varkens

### Varkens per bedrijf, 1951-2017*

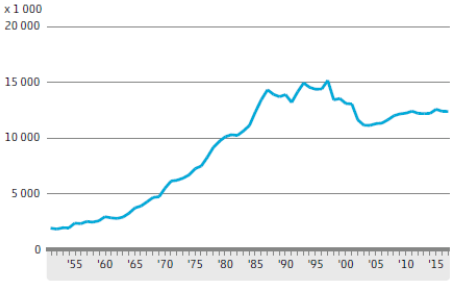



**215** bedrijven met meer dan 10 000 varkens

### Varkensstapel, vleesvarkens

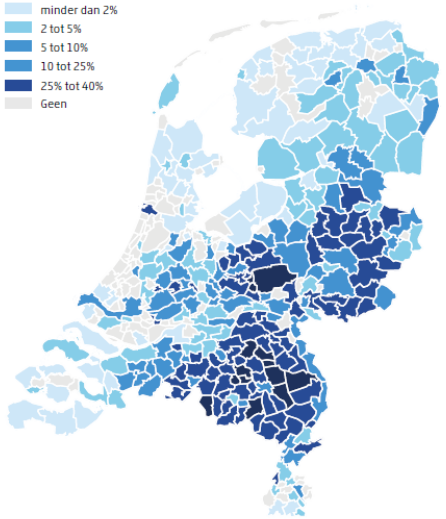



### Varkensstapel, 1951-2017*




**48%** van de varkens in Noord-Brabant

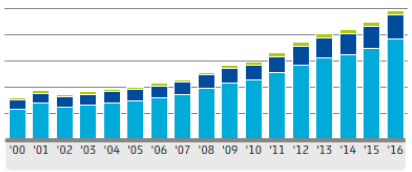
### Percentage landbouwbedrijven met varkens, 2016



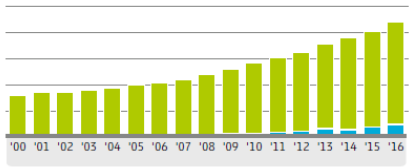

**3135** varkensbedrijven in Nederland

# Factsheet
## Varkens

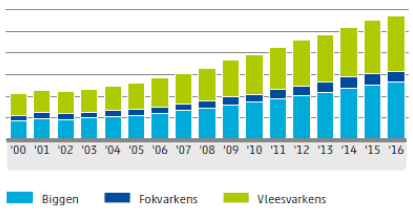
### Fokzeugbedrijven, aantal varkens per bedrijf, 2000-2016



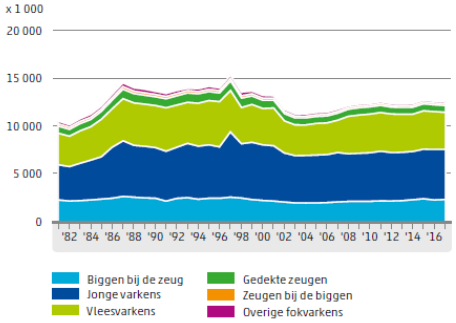

### Vleesvarkensbedrijven, aantal varkens per bedrijf, 2000-2016




### Overige varkensbedrijven, aantal varkens per bedrijf 2000-2016




### Varkensstapel, 1981-2017*

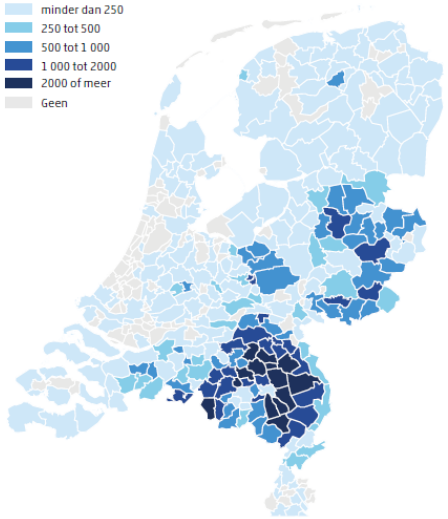



**2** duizend vleesvarkens
op doorsnee vleesvarkensbedrijf

**12,4** miljoen varkens op
1 april 2017, een jaar eerder 12,5 miljoen

* Betreft de voorlopige cijfers van dat jaar.

### Aantal varkens per km² land, 2016




**92%** varkensstapel
op gespecialiseerde bedrijven, dit
was in 2000 nog 79%

# U telt voor ons mee!

# Mogen we u nog even herinneren?

**Mogen we u even herinneren?**
Onlangs heeft u de vragenlijst Graslandgebruik 2017 ontvangen. Veel van uw collega's hebben de vragenlijst ondertussen ingevuld. U ook? Dan bedanken wij u daarvoor hartelijk.
Heeft u dit nog niet gedaan, wilt u hier dan nog tijd voor vrijmaken? U zou ons daarmee erg helpen.

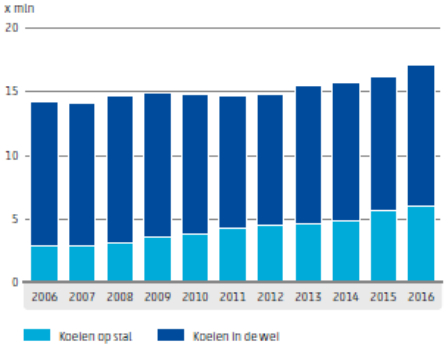
**En wat heeft u er zelf aan?**
Mede dankzij u kan CBS jaarlijks het graslandgebruik samenstellen en publiceren. U kunt deze informatie ook zelf gebruiken. Bijvoorbeeld om uw eigen bedrijfsontwikkelingen te vergelijken met de landelijke trends. Op www.cbs.nl/landbouw vindt u de laatste nieuwsberichten, video's en cijfers.

**Heeft u vragen?**
Kijk dan op www.cbs.nl/grasland of neem contact op via (045) 570 64 00.

**U kunt inloggen op https://antwoord.cbs.nl**
**Rechts vindt u de inloggegevens. →**

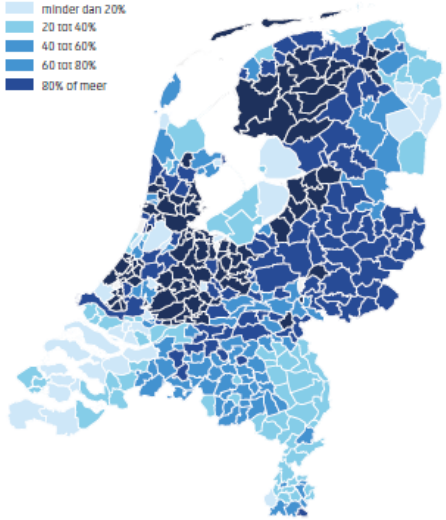
# Factsheet Grasland

**Melkkoeien, 2006-2016**

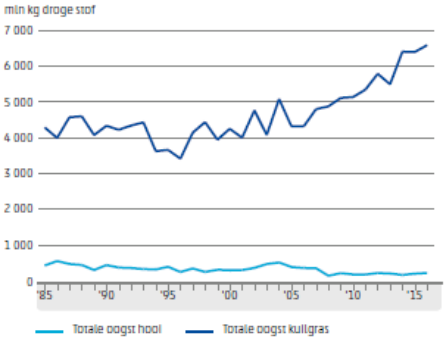



**2,9 maaibeurten gemiddeld in 2016**

**Aandeel grasland van cultuurgrond per gemeente, 2016**




**Oogst grasland, 1985-2016**

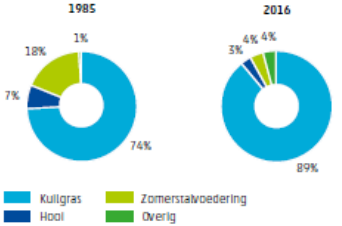



**44 hectare grasland bij een melkveebedrijf gemiddeld**

**65% van de melkkoeien liep in 2016 in de wei**

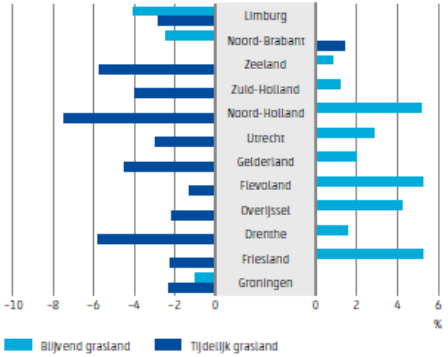
# Factsheet Grasland

## Graslandgebruik

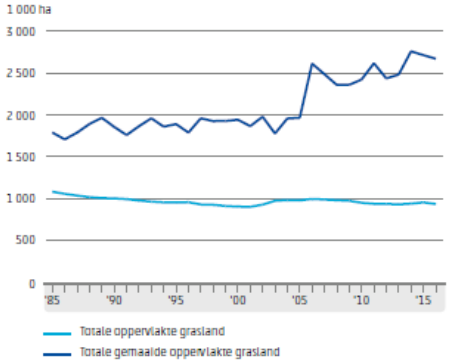



**86%** van de landbouwgrond in de provincie Utrecht bestaat uit grasland

## Mutatie grasland per provincie, 2016 t.o.v. 2015




## Grasland, oppervlakte en gemaaide oppervlakte, 1985-2016




**64%** van de bedrijven met 100 melkkoeien of meer past weidegang toe

**92%** van de bedrijven met melkkoeien in Noord-Holland stuurt de koeien in de wei

Excel 2016

# survey on R&D: Reminder with information about approaching enforcement procedure

# Wat als u niet instuurt?

Het CBS heeft als taak het op tijd samenstellen van betrouwbare informatie. Zonder u kunnen we dit niet realiseren! Alleen als veel bedrijven aan onze onderzoeken meedoen, kunnen wij betrouwbare cijfers samenstellen. **U bent dus heel belangrijk voor ons.**

Het CBS heeft de plicht er alles aan te doen om de benodigde gegevens zoveel mogelijk bij andere organisaties, zoals bijvoorbeeld de Belastingdienst, op te halen. Alleen als deze organisaties niet de juiste of onvolledige informatie hebben, benadert het CBS individuele bedrijven om gegevens aan te leveren.

De overheid vindt uw gegevens zó belangrijk dat het aanleveren van gegevens aan het CBS verplicht is gesteld. Dit is vastgelegd in de Wet op het Centraal Bureau voor de Statistiek. Dezelfde wet biedt het CBS ook de mogelijkheid om te handhaven. Dit betekent dat we u, als u geen gegevens levert, kunnen verplichten de gegevens alsnog aan te leveren. Uw dossier kan dan worden overgedragen aan de afdeling Handhaving van het CBS.

Natuurlijk doen we dat niet zomaar. Daarom in de begeleidende brief, bij deze kaart, een laatste herinnering om uw gegevens alsnog op te sturen.

**Meer informatie**
Ga naar www.cbs.nl/handhaving. U kunt ook contact opnemen via (045) 570 6400.

# U doet toch ook mee?

Voor wat er **feitelijk** gebeurt

# Survey on Arts and Culture education: pre-due date reminder

Name &Address

contactpersoon CBS Contact Center
doorkiesnummer 045 5706400
correspondentienummer 12345678
ons kenmerk -

**onderwerp** **Culturele en creatieve sector 2016 - herinnering**

**Heerlen**, 11 september 2018

Geachte heer / mevrouw,

In onze brief van 1 januari 0001 vroegen we u om de vragenlijst Culturele en creatieve sector 2016 in te vullen vóór 1 januari 0001. We hebben uw gegevens nog niet ontvangen. Daarom willen we u hieraan herinneren. Uw medewerking is belangrijk omdat wij anders niet op tijd betrouwbare gegevens kunnen publiceren. Heeft u de vragenlijst al ingestuurd, dan kunt u deze brief als niet verzonden beschouwen.

**Waarover gaat het onderzoek** Het aantal zelfstandigen in de culturele en creatieve sector is de laatste jaren sterk gestegen. Door de bezuinigingen op de sector in 2013 is er meer aandacht voor de bedrijven, werknemers en zelfstandigen die erin actief zijn. Welke activiteiten ontplooien zij en hoe doen zij dat. Mede door het onderzoek van de Raad voor Cultuur en de Sociaal Economische Raad is er daarbij ook belangstelling voor de arbeidsmarktpositie en inkomenssituatie van ondernemers in de culturele en creatieve sector.

Het beeld van de sector wordt mede bepaald door de cijfers van het CBS. Die cijfers worden onder meer verzameld in dit onderzoek onder bedrijven, instellingen en zelfstandigen die werkzaam zijn in de culturele en creatieve sector. Met uw bijdrage aan dit onderzoek kunnen wij de sector verder in beeld brengen en landelijke en regionale beleidsmakers en adviseurs van actuele en betrouwbare gegevens voorzien.

Daarom vragen wij u de vragenlijst Culturele en creatieve sector 2016 in te vullen. Ook voor uw instelling/bedrijf levert het onderzoek nuttige informatie op. Zo kunt u aan de hand van cijfers beoordelen wat de positie van uw instelling/bedrijf is ten opzichte van de branche. Meer informatie is te vinden op www.cbs.nl/kunstencultuur bij de onderzoeksresultaten.

**Zo vult u de vragenlijst in**
- Ga naar <<link naar vragenlijst>>
Typ dit adres in de adresbalk bovenaan uw scherm en dus **niet** in Google of een andere zoekmachine.
- Log in met:
  * gebruikersnummer 1234-5678
  * toegangscode 012345

**Vervolg op achterzijde**

**Heeft u vragen?** Ga dan naar www.cbs.nl/kunstencultuur voor meer informatie. Daar vindt u antwoorden op veelgestelde vragen en kunt u een aantal zaken online regelen.
Op www.cbs.nl/onderzoeksresultaten staan de resultaten van andere onderzoeken.

Wij danken u alvast hartelijk voor uw tijd en medewerking.

Hoogachtend,
Hoofddirecteur Dataverzameling

CBS Heerlen

Mw. dr. A. Boeijen

U telt
voor ons mee!

# Mogen we u nog even herinneren?

**Mogen we u even herinneren?**
Onlangs heeft u de vragenlijst Culturele en creatieve sector 2016 ontvangen. Veel van uw collega's hebben de vragenlijst ondertussen ingevuld. U ook? Dan bedanken wij u daarvoor hartelijk. Heeft u dit nog niet gedaan, wilt u hier dan nog tijd voor vrijmaken? U zou ons daarmee erg helpen.

**En wat heeft u er zelf aan?**
Mede dankzij u kan het CBS jaarlijks in kaart brengen hoeveel bedrijven actief zijn in de culturele sector, welke cursussen er worden aangeboden en hoeveel leerlingen en cursisten daaraan deelnemen.
U kunt deze informatie ook zelf gebruiken. Bijvoorbeeld om uw eigen bedrijfsontwikkelingen te vergelijken met de landelijke trends.
Op www.cbs.nl/kunstencultuur vindt u de laatste cijfers.

**Heeft u vragen?**
Kijk dan op www.cbs.nl/kunstencultuur of neem contact op via (045) 570 64 00.

**U kunt inloggen op https://vragenlijst.cbs.nl/kunst16.**
**Rechts vindt u de inloggegevens. →**

# ICT:

## pre-due date reminder

website

**86%** van alle bedrijven heeft een website

D0C480

# Waarom vraagt het CBS u?

ICT is niet meer weg te denken uit het Nederlandse bedrijfsleven. Optimale toepassing van ICT biedt kansen voor bedrijven, bijvoorbeeld door nieuwe producten en processen te ontwikkelen. Met uw gegevens maken wij statistieken over het ICT-gebruik van bedrijven in Nederland. Hiermee kunnen beleidsmakers en onderzoekers belangrijke ontwikkelingen volgen, diverse bedrijfssectoren onderling vergelijken en zien hoe Nederland presteert binnen Europa. Zo krijgen we bijvoorbeeld een beter beeld van veiligheid rondom ICT.

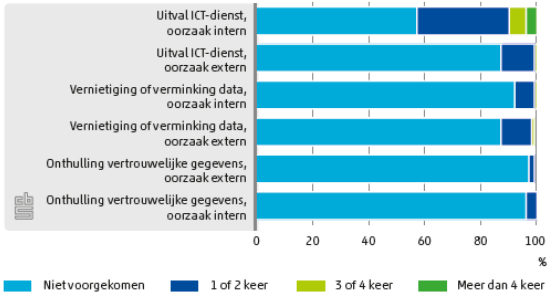
De statistieken die wij maken zijn voor iedereen kosteloos beschikbaar. Ook voor u, als u bijvoorbeeld wilt kijken in hoeverre andere bedrijven gebruik maken van social media of e-commerce. Deze 'factsheet' is slechts een klein voorbeeld van de informatie die het CBS over dit onderwerp biedt.

De publicatie *ICT kennis en economie 2017* kunt u vinden op: www.cbs.nl/ictgebruik
We zien uw gegevens van de ICT-enquête ook dit jaar weer graag tegemoet.

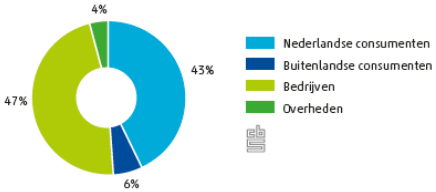
**68%** van alle bedrijven maakt gebruik van sociale media

## Enkele uitkomsten uit het onderzoek: ICT-gebruik bedrijven 2017

### Voorkomen ICT-veiligheidsincidenten (%-bedrijven)




### Verdeling webomzet per soort afnemer



Centraal Bureau voor de Statistiek
Postbus 24500 | 2490 HA Den Haag
Postbus 4481 | 6401 CZ Heerlen
www.cbs.nl

ICT gebruik bedrijven
Adresregel2
Adresregel3
Adresregel4
Adresregel5
Adresregel6
Adresregel7

correspondentienr. <correspondentienummer>
onderwerp ICT gebruik bedrijven 2016 - herinnering
datum 14 april 2017

Geachte heer/mevrouw,

In onze brief van 14 april 2017 vroegen we u om de vragenlijst ICT gebruik bedrijven 2016 in te vullen vóór 12 juli 2017. We hebben uw gegevens nog niet ontvangen. Daarom willen we u hieraan herinneren. Uw medewerking is belangrijk, omdat wij anders niet op tijd betrouwbare gegevens kunnen publiceren. Heeft u de vragenlijst al ingestuurd, dan kunt u deze brief als niet verzonden beschouwen.

*Waarover gaat het onderzoek?*
Het CBS publiceert elk jaar cijfers over het ICT-gebruik van bedrijven. Deze cijfers geven een beeld van onder andere ICT-vacatures, gebruik van mobiel internet , ICT-veiligheid en e-commerce. Intensief ICT gebruik kan efficiency en productiviteit van bedrijven bevorderen. Mede op basis van de cijfers kunnen overheden maatregelen nemen om de economie te stimuleren. Ook andere beleidsdoelen, zoals innovatie, kunnen zo worden bevorderd.

Daarom vragen wij u de vragenlijst ICT gebruik bedrijven in te vullen. Ook voor uw bedrijf levert het onderzoek waardevolle informatie op. U kunt uw eigen ICT-gebruik vergelijken met het totaal van alle bedrijven. U kunt die vergelijking ook maken per bedrijfstak en op het gebied van bedrijfsgrootte. Meer informatie is te vinden op www.cbs.nl/ictgebruik bij de onderzoeksresultaten.

*Zo vult u de vragenlijst in*
- Ga naar **https://antwoord.cbs.nl**
- Log in met:
* gebruikersnaam <gebruikersnaam>
* wachtwoord <wachtwoord>

Uw onderneming bestaat uit een aantal groepsmaatschappijen. Daarom vragen we u om de geconsolideerde gegevens op te geven. De groepsmaatschappijen waarvan u de cijfers moet doorgeven, staan vermeld in de vragenlijst na het welkomstscherm.

De gegevens die u verstrekt, worden uitsluitend gebruikt voor het samenstellen van statistische overzichten. Deze overzichten zijn zo samengesteld dat geen gegevens over herleenbare afzonderlijke bedrijven, instellingen of personen zijn te ontlenen. Wel kan een bedrijf, instelling of persoon het CBS daartoe toestemming geven. Ook worden aan andere (overheids)instellingen, bedrijven of personen geen gegevens verstrekt waaruit afzonderlijke bedrijven, instellingen of personen zijn te herleiden.

vervolg op achterzijde

*Heeft u vragen?*
Op www.cbs.nl/ictgebruik vindt u meer informatie. Zo kunt u een aantal zaken online regelen en u vindt antwoorden op veelgestelde vragen.
U kunt ons ook bellen op (045) 570 64 00. Wij zijn bereikbaar van maandag tot en met vrijdag tussen 9.00 en 17.00 uur.

Ik dank u alvast hartelijk voor uw tijd en medewerking.

Met vriendelijke groet,

Mevrouw dr. A. Boeijen
Hoofddirecteur Dataverzameling

Ook uw cijfers tellen mee!

### Mogen we u even herinneren?

Onlangs heeft u de vragenlijst ICT-gebruik bedrijven 2018 ontvangen. Veel bedrijven hebben de vragenlijst ondertussen ingevuld. U ook? Dan bedanken wij u daarvoor hartelijk. Heeft u dit nog niet gedaan, wilt u hier dan nog tijd voor vrijmaken? U zou ons daarmee erg helpen.

### En wat heeft u er zelf aan?

Mede dankzij u kan het CBS jaarlijks de publicatie 'ICT, kennis en economie' samenstellen en uitbrengen. U kunt deze informatie ook zelf gebruiken. Bijvoorbeeld om uw eigen bedrijfsontwikkelingen te vergelijken met de landelijke trends.
Op www.cbs.nl/ictgebruik vindt u de laatste nieuwsberichten en cijfers.

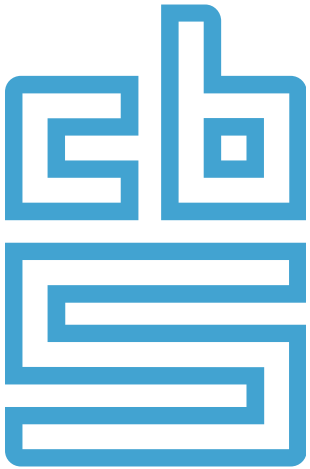
### Heeft u vragen?

Kijk dan op www.cbs.nl/ictgebruik of neem contact op via (045) 570 64 00.

**U kunt inloggen op https://antwoord.cbs.nl**
**Rechts vindt u de inloggegevens. →**

DOC490

# Mogen we u nog even herinneren?



Voor wat er **feitelijk** gebeurt

INSTITUTO NACIONAL DE ESTATÍSTICA
STATISTICS PORTUGAL

# FIFTH INTERNATIONAL WORKSHOP ON BUSINESS DATA COLLECTION METHODOLOGY

## 19–21 SEPTEMBER 2018 – STATISTICS PORTUGAL, LISBON

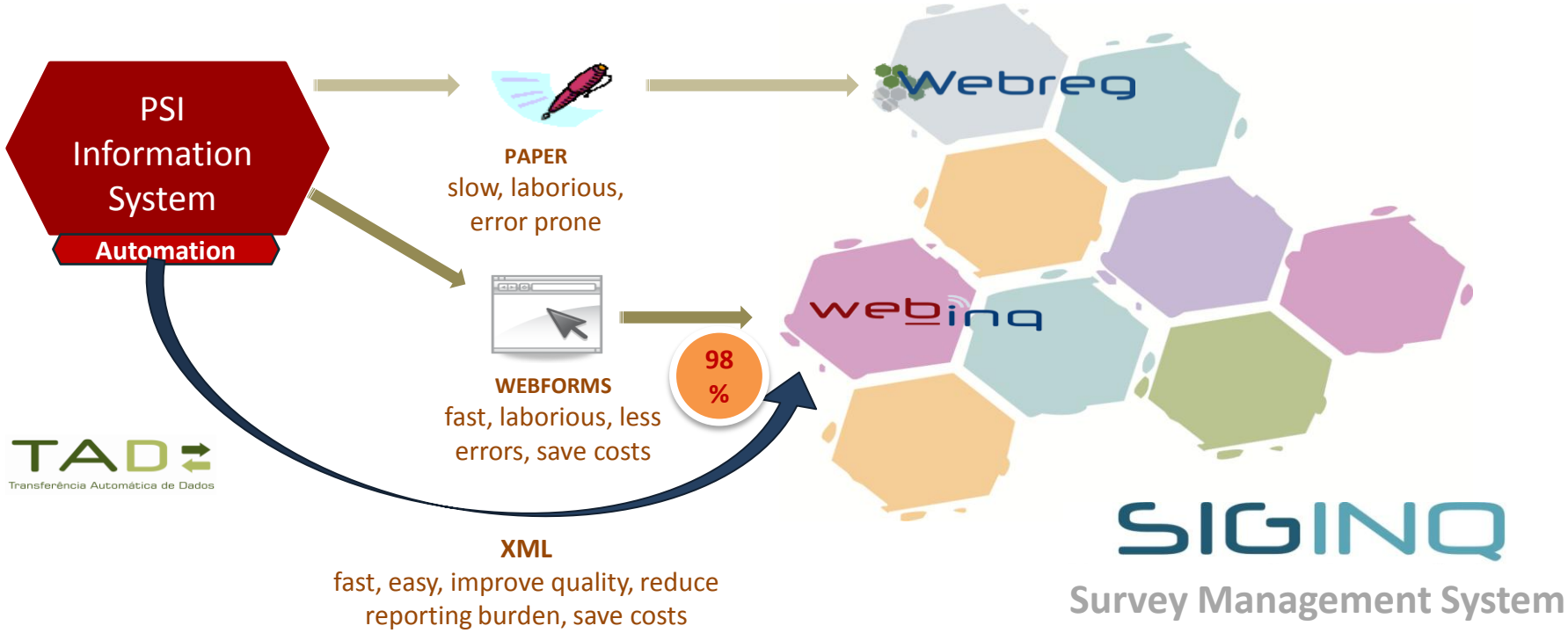
# MOTIVATING RESPONDENTS IN BUSINESS SURVEYS
# Statistics Portugal

Session 9b (RT): Contact, Communication & Motivation Strategies

**Paulo Saraiva**
Director of Data Collection Department
paulo.saraiva@ine.pt

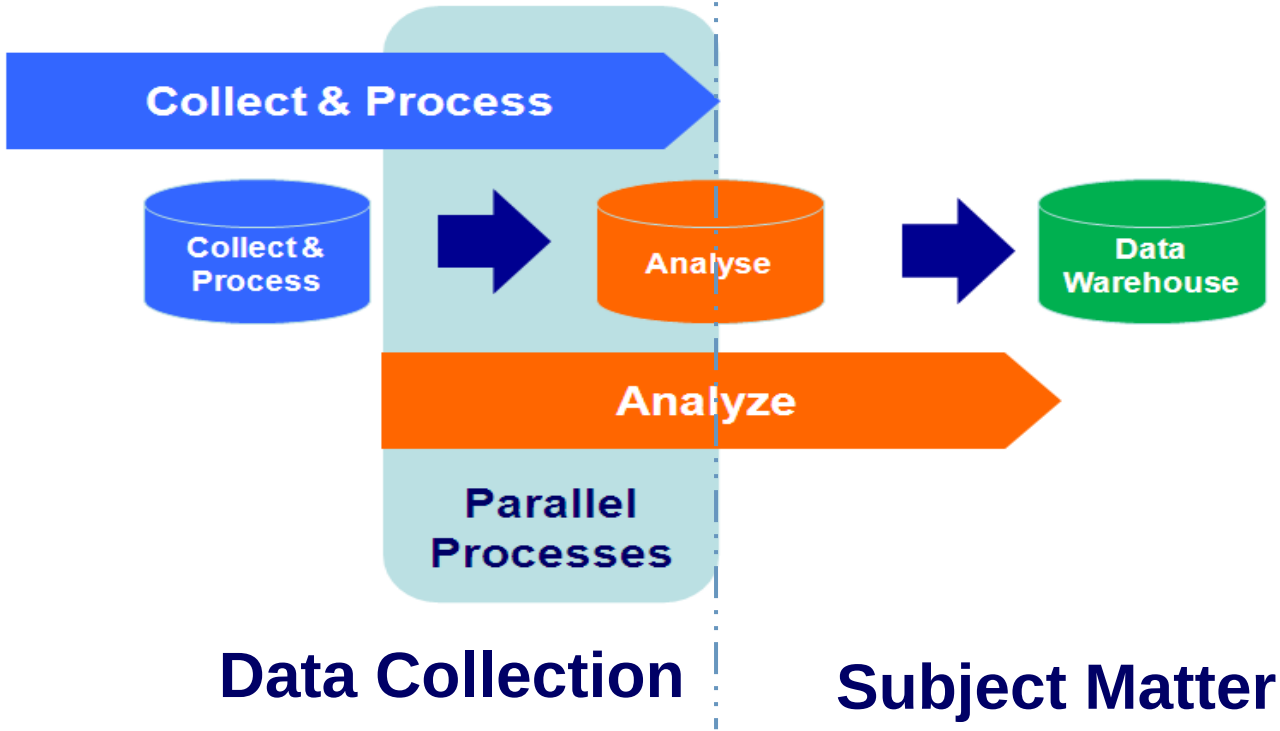
**Almiro Moreira**
Director of Business Surveys Unit
almiro.moreira@ine.pt

# Data Collection Workflow Overview



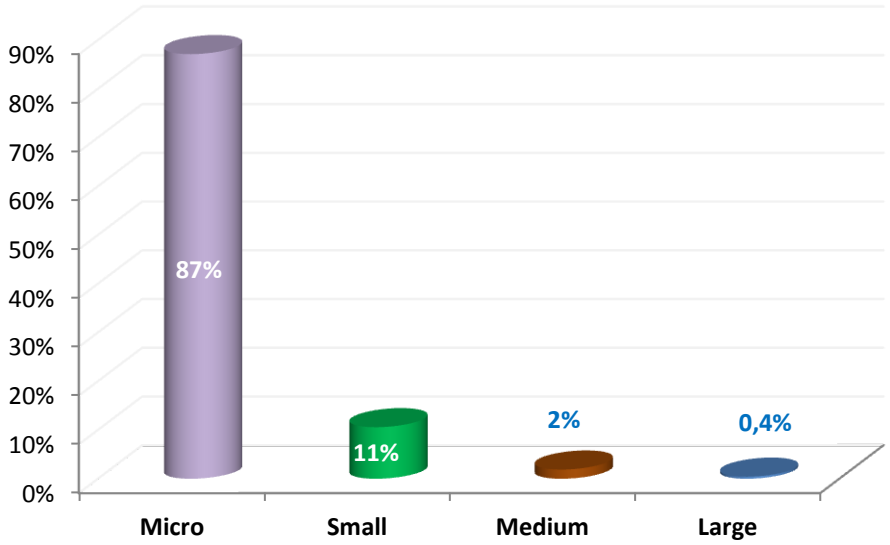

PSI – Provider Statistical Information / Respondent / Data Provider

# Data Collection Production System Architecture

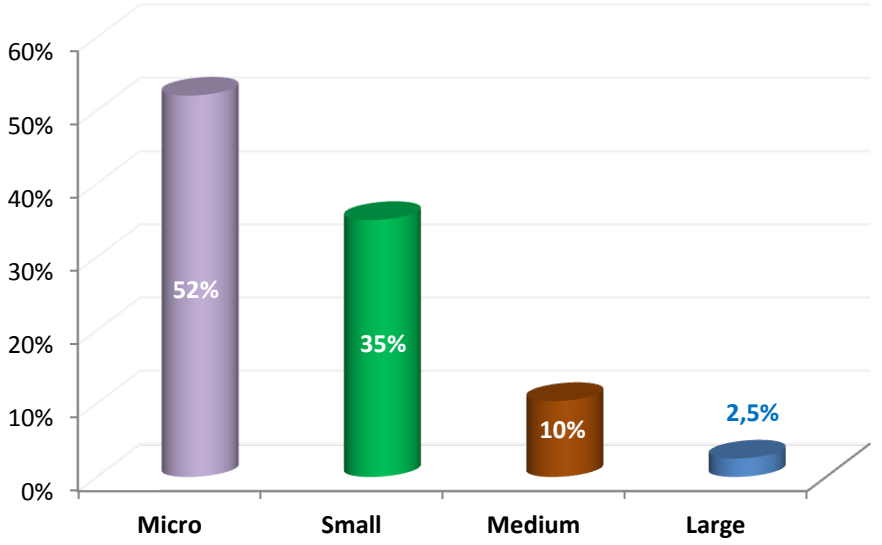


# Portuguese business structure

**Companies by Size**

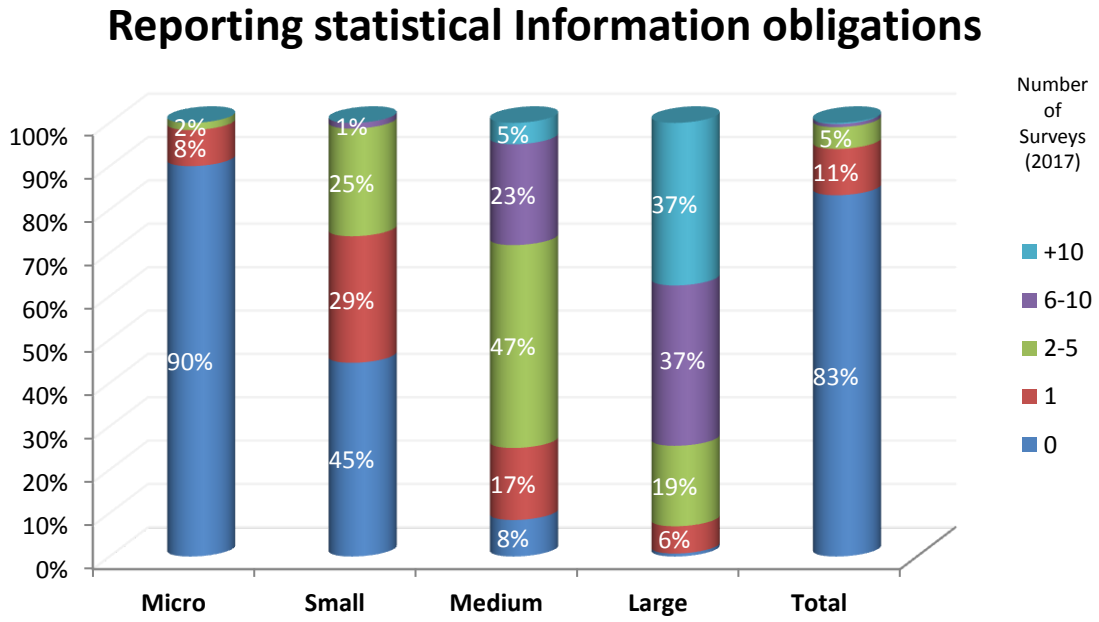



**Respondents by Size**

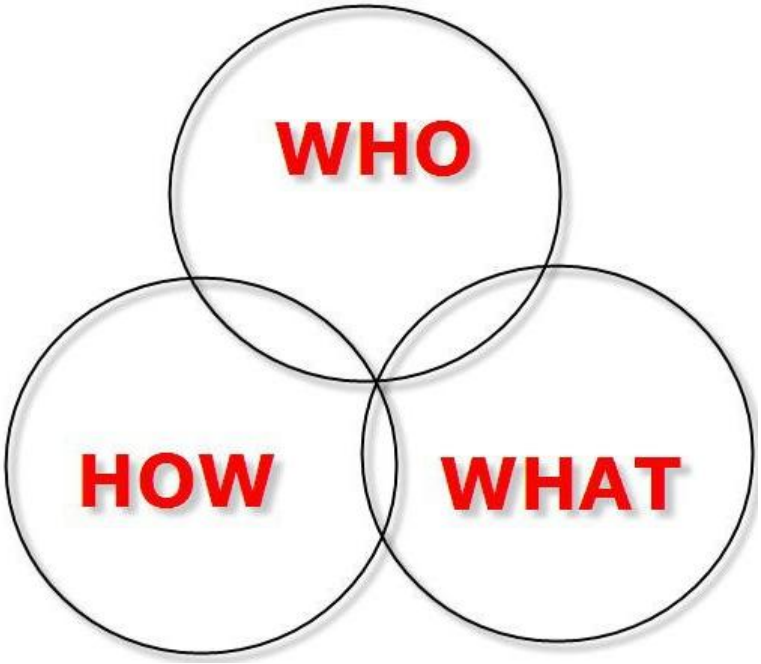


# Reporting statistical Information obligations

- Only 10% of Micro Companies are involved in surveys, and 8% participate in just one survey.
- Large Companies are full involved in surveys, and 37% have more than 10 surveys by year.



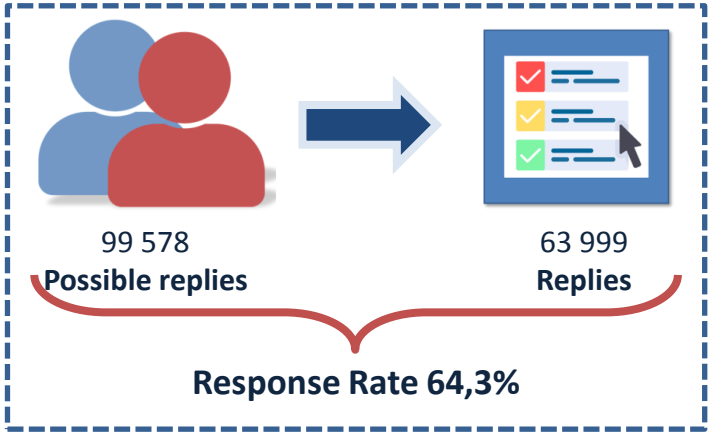
# Respondent Behaviour




- Respondents are invited to, in a voluntary base, fill a short opinion questionnaire.

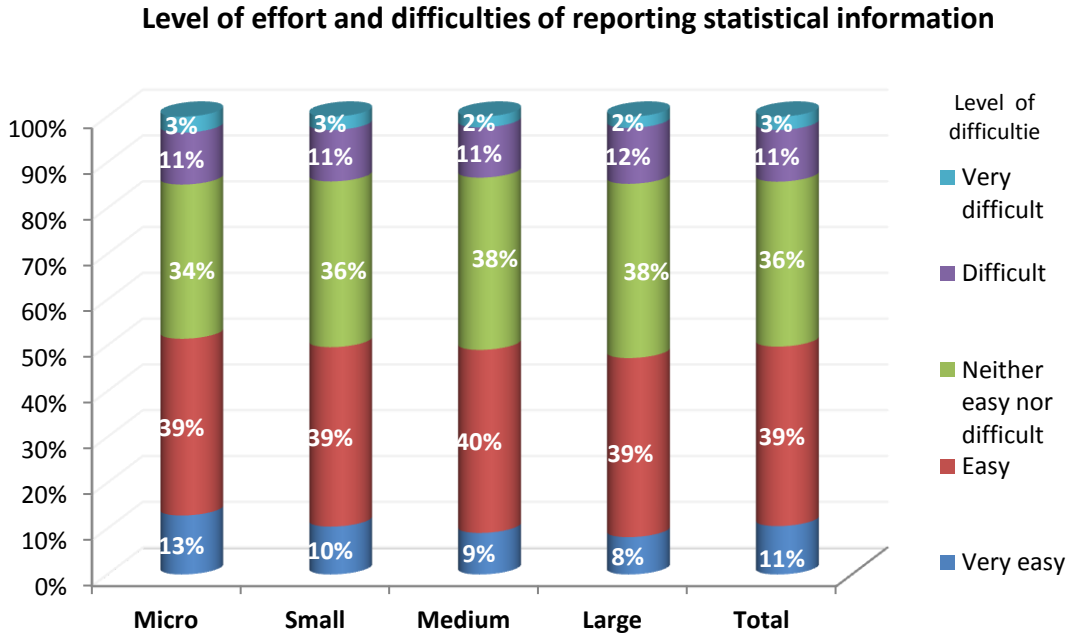
# Opinion questionnaire - Figures

- 68 different surveys were involved (2017)

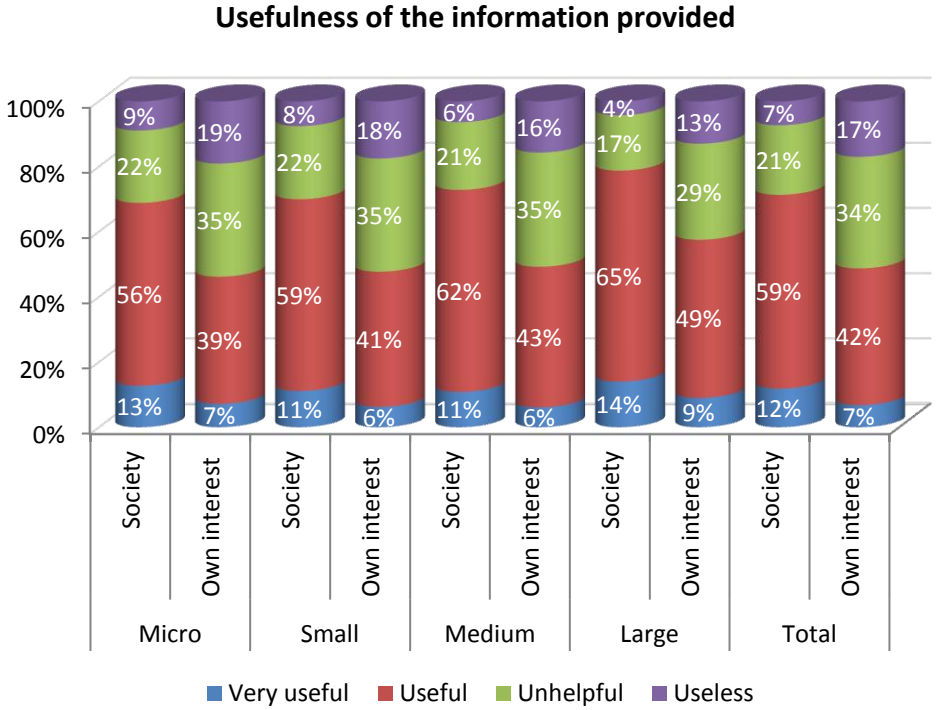


# Opinion questionnaire - Figures

- Company Size does not affect the level of effort.
- 50% say that is Easy or Very Easy reporting Statistical Information.
- Only 3% report that is Very difficult.



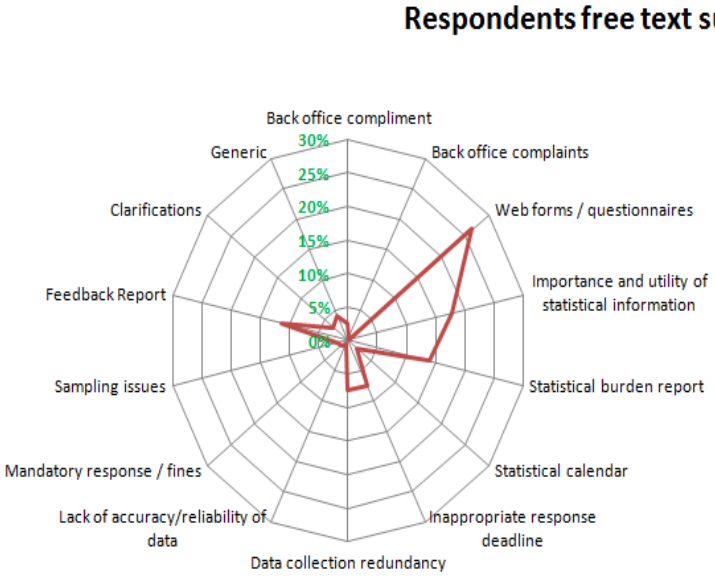
# Opinion questionnaire - Figures

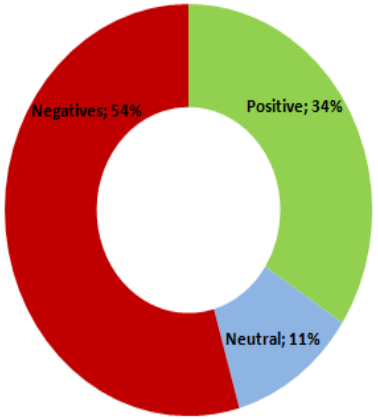



- Companies consider that the statistical information (SI) has significant utility to the society, but they are more reluctant to admit their own interest on it.
- SI own interest, increase as the company size grown.

# Opinion questionnaire - Figures

- More than 3000 feedbacks were received.
- 34% of positive feedbacks.
- Web forms, statistical burden, and feedback report were the most common.



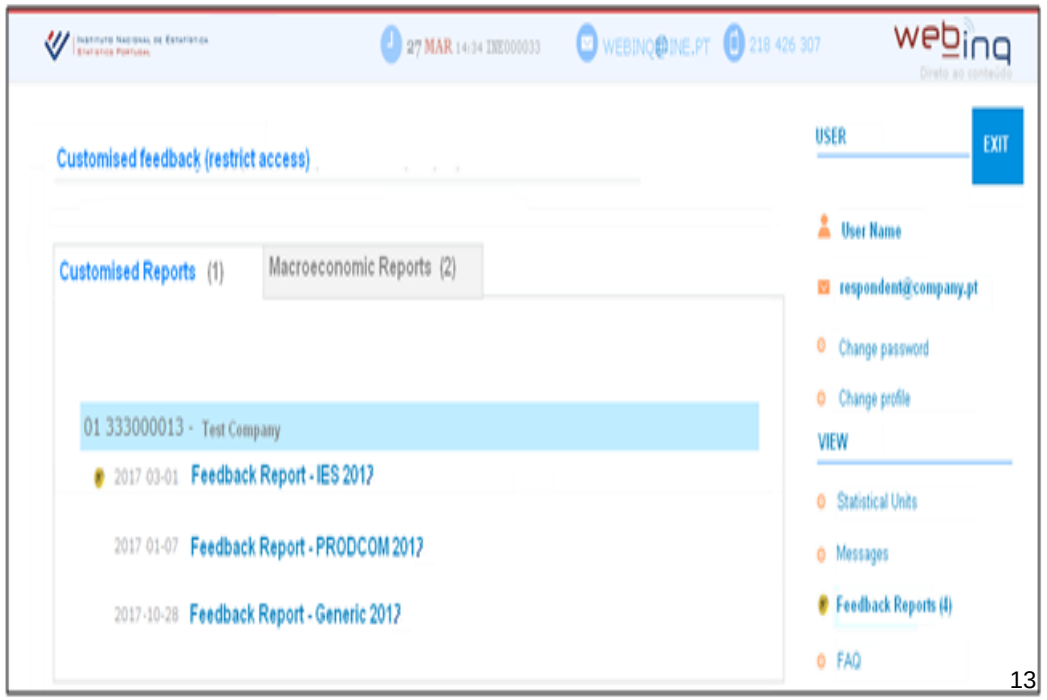
# Follow Up – Motivating Respondents

- All feedbacks were responded.
- Annual Statistics Calendar were created.
- Some Web forms were reviewed.
- Handbook of Principles and Practices for Business Surveys, were reviewed, simplifying reminders and letters.
- Data collection schedule was adjusted (when possible).

- More statistical personalized feedback reports are being developed.

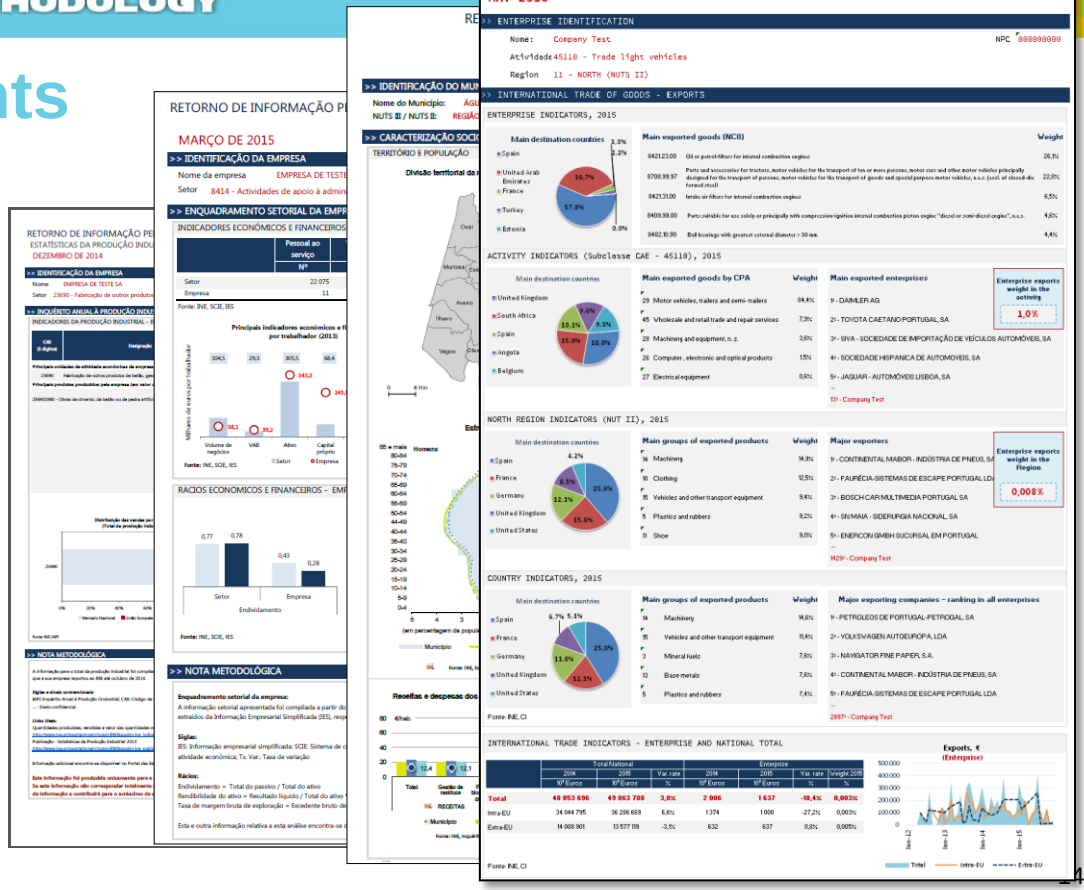
# Feedback to respondents

- Confidentiality assured.
- The reports have been designed in a very concise manner, using graphics and images.
- Regularly updated.



# Feedback to respondents

- More than 50000 companies involved.
- Synthetic and targeted way by themes.
- Tailored Reports for large companies.
- Keeping open to new suggestions.



# Respondents Quick Reactions

- **Recognized as an excellent initiative**

"Filling information to the Statistics Portugal becomes interesting..."

"The report feedback received, increases our responsibility for the quality of the information provided..."

"Great initiative, congratulations."

"This information help us to better understand the market in which we stand and the position of our Company. Many thanks."

"...show us that time that our company expends in response to the statistics requested by the Statistics Portugal have a positive return."

"This information is very important for us. Many thanks."

"We highly appreciated the received feedback report..."

# Possible Questions???

- How often should we replicate these initiatives?
- The Personal Feedback Report. Is really appreciated by respondents?
- Do you feel that small things can reproduce big changes in Respondents Motivation?
- Motivation!Tailoring or ready-to-use?

# MOTIVATING RESPONDENTS IN BUSINESS SURVEYS
## Statistics Portugal

- **Session 9b (RT): Contact, Communication & Motivation Strategies**

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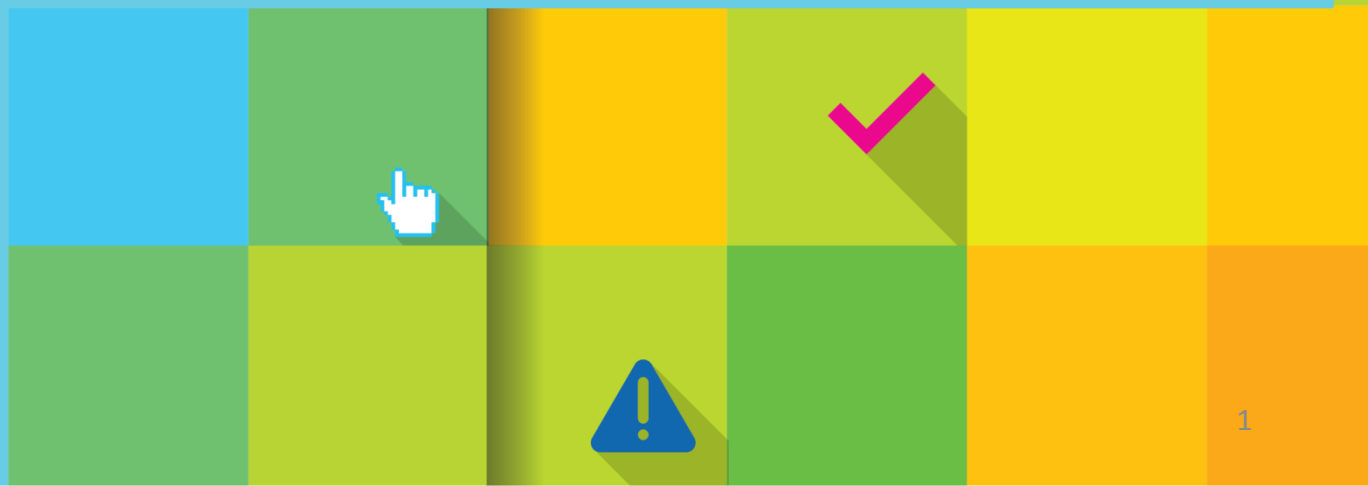


# CENTRALIZED INBOUND AND OUTBOUND CONTACT CENTER SERVICE AS NEW STRATEGY IN DATA COLLECTION

**G. Bellini (speaker)**
**S. Binci, P. Bosso, S. Curatolo, F. Monetti**

# SUMMARY

I. Data collection and Contact Center service centralization

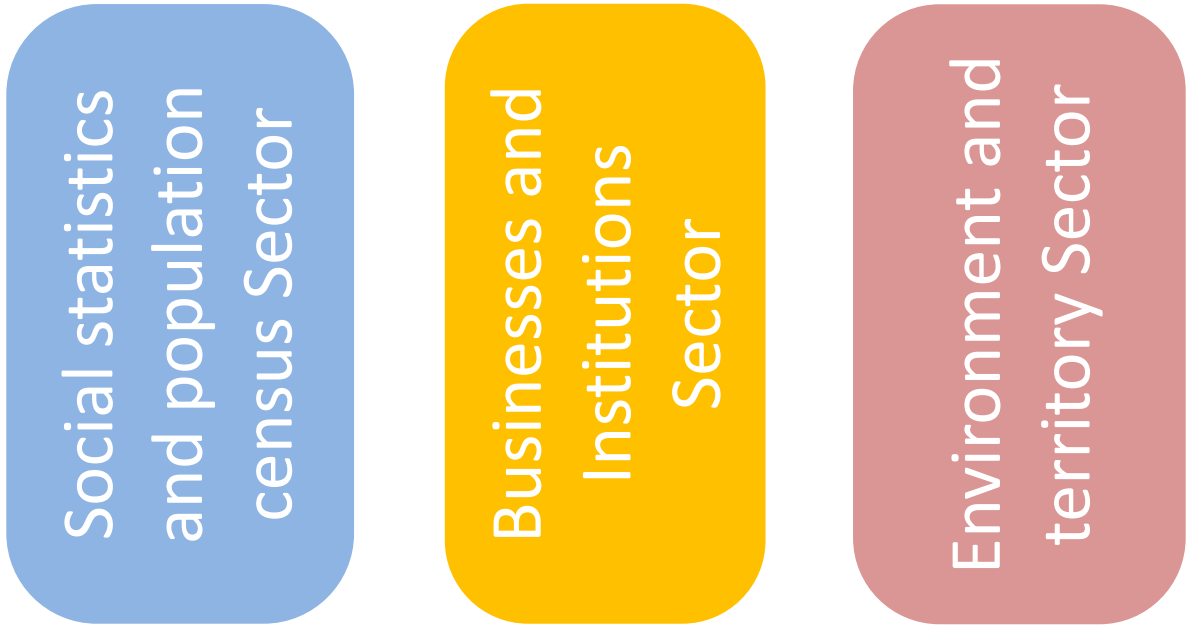
II. INbound and OUTbound service organization and tools adopted

III. Preliminary results and service data analysis

IV. Future challenges

# I. Data collection and Contact Center service centralization

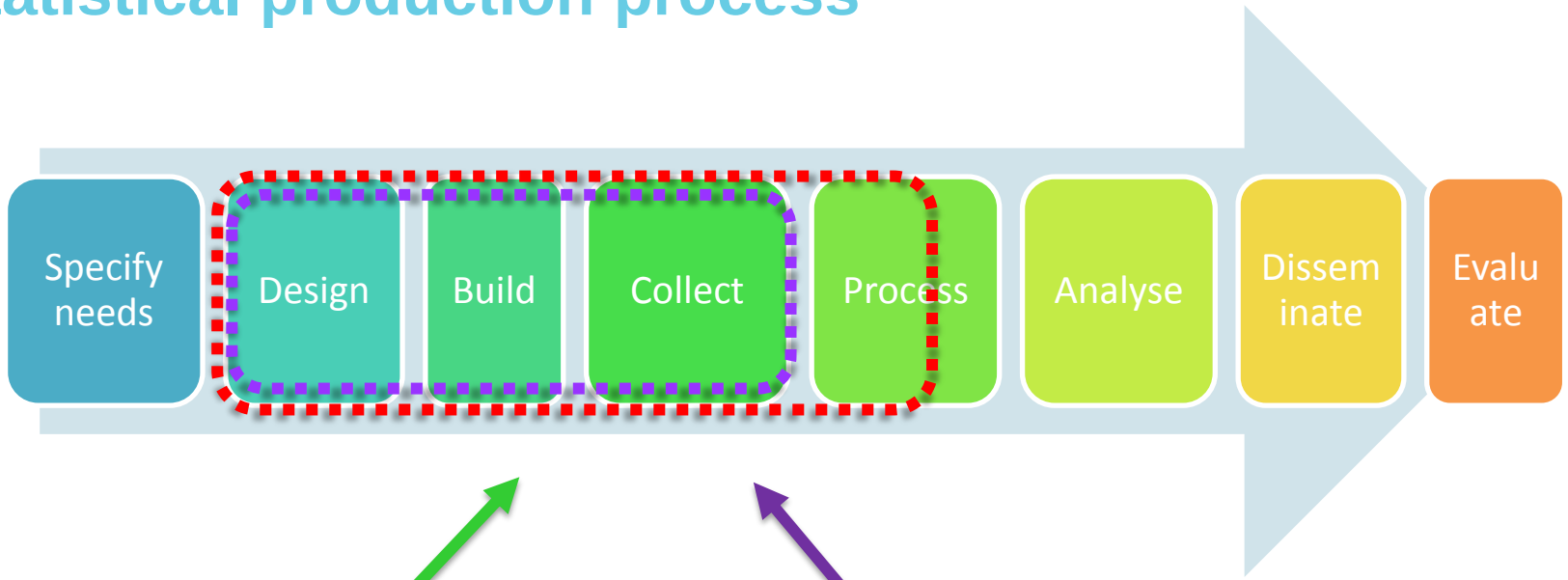
# New setup: Data collection as cross-sectional service



# Data collection (DC) centralisation

- ✓ **Only responsibility** centre for DC
- ✓ Establishing a **specialist centre for the DC**
- ✓ Transfer of **specialist knowledge of DC** between sectors
- ✓ **Increase the efficiency** of the activities carried out
  - **Standardization** of activated processes and functions
  - **Deleting duplications and overlays** in functions
  - **Restructuring** of the DC processes
- ✓ **Revisit capacities, resources used, workflows**

# Statistical production process




**Directorate for data collection (CDDC)**

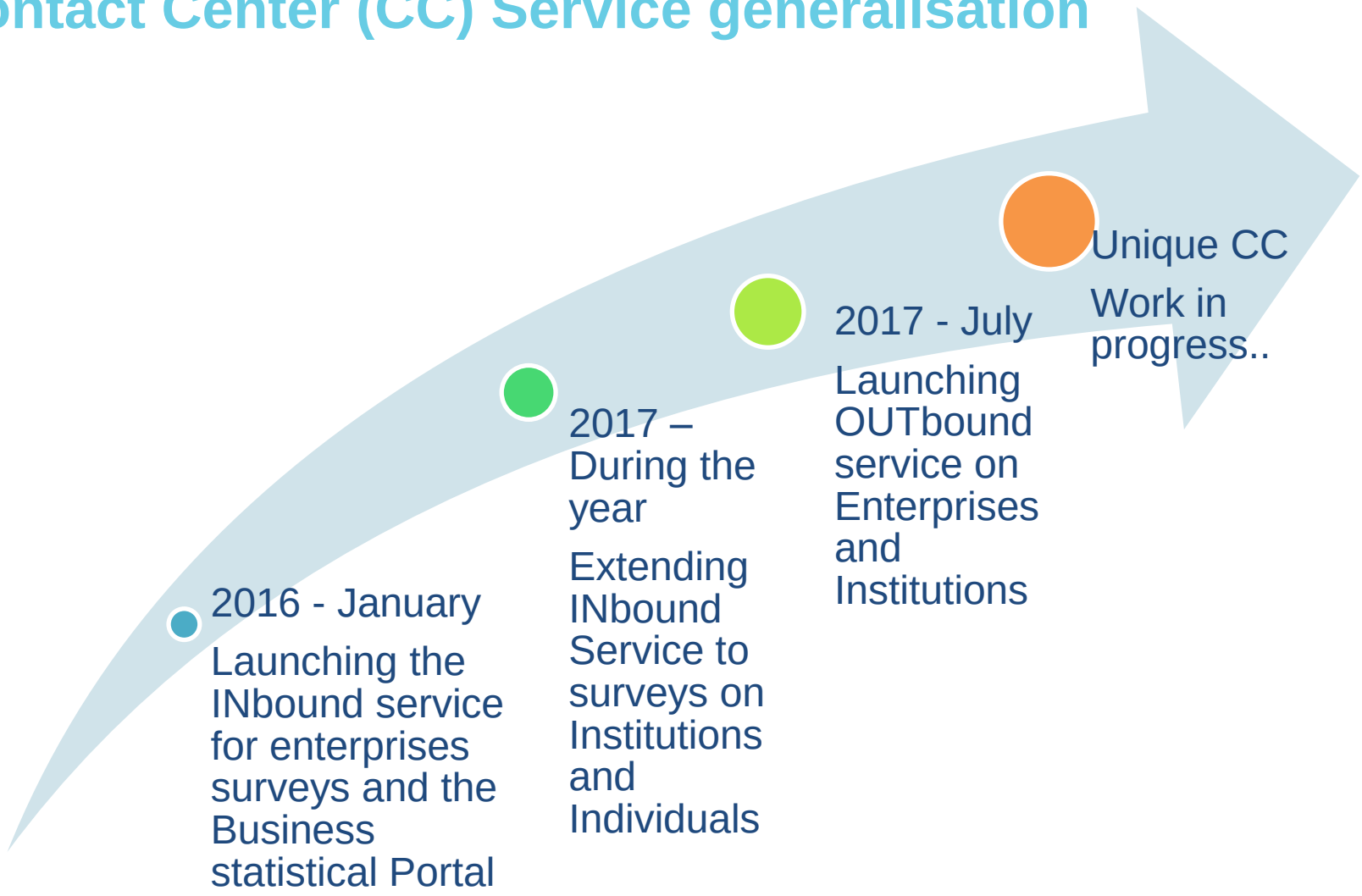
**Division for data collection implementation**

**One of the core activity**

Management of Contact Center services

**Mapping of CDDC activities within the framework of the international reference conceptual schema GSBPM**
**Source**: Delibera D16 49 DIRM2017
**Generic Statistical Business Process Model – GSBPM**
(http://www1.unece.org/stat/platform/display/metis/The+Generic+Statistical+Business+Process+Model)

# Contact Center (CC) Service generalisation



# II. INbound and OUTbound service organization and tools adopted

# INbound – OUTbound - Service objectives

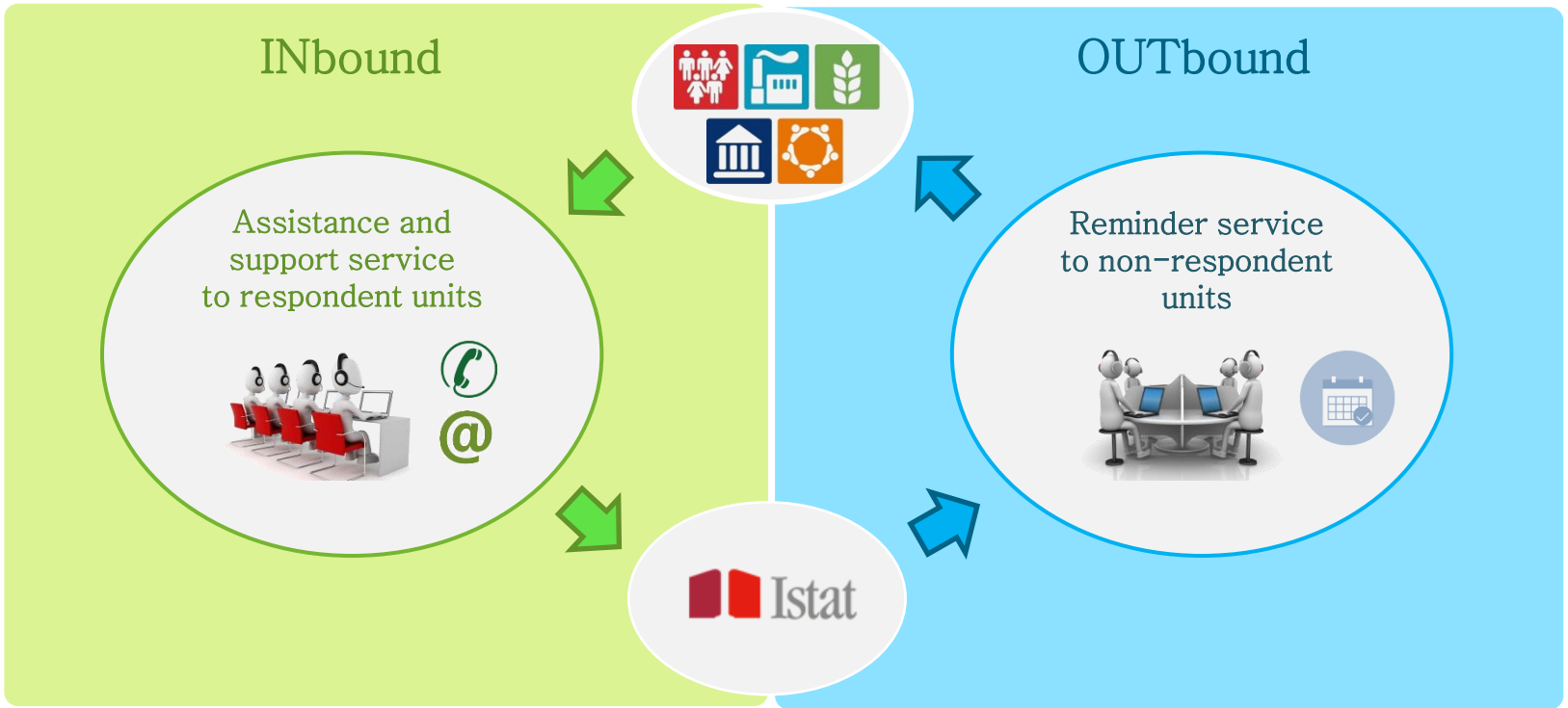
## GENERAL

- Providing assistance and support to respondent units
- Standardize data collection processes by adopting a single model for all surveys
- Improve the quality of the data collected, mainly in terms of completeness and timeliness

## Specifically for OUTBound

- Improve response rates (managing reminds as «core service» and the direct data entry as «additional service»)
- Confirm/Update the register information of the survey units and the data of the company contacts that populate the acquisition systems of the Institute (statistical portal, Gino...)

# INbound – OUTbound management: Integrated working flow




The two services operate as an **integrated management system:**

- operators with similar skills and experience
- same knowledge system (FAQs) to support sample units
- comparable training sessions
- use of standard procedures to manage the sample units

# INbound – OUTbound management: The players

**Sample units**

Enterprises, Institutions and Individuals involved in statistical surveys

**Contact Center INbound Operators**

- provide assistance and support to respondent units in fulfilment of statistic requirements (Single contact point)
- manage and solve the most recurring issues
- transmit the complex and specific requests to Istat experts (by the tool *Agenda Condivisa*)

**Contact Center OUTbound Operators**

- contact the non-respondent units to remind survey's deadline
- provide assistance and support in fulfilment of statistic requirements, whether required
- redirect the contacted unit to Inbound Service for any complex non-thematic and non-recurring thematic request

**Istat**
Data Collection and Statistical Production Directorates

- solve Inbound complex non-thematic and non-recurring thematic cases (by the tool *Agenda Condivisa*)

# INbound – OUTbound management: Istat internal functions

## Data Collection Directorate

- standardisation of operational procedures
- define activity schedule
- production and update of non-thematic subject matter
- training to operator on non-thematic matter
- monitoring the service
- management of complex non-thematic service requests (SR)

## Production Directorates

- production of thematic subject matter
- training to operator on specific survey matter
- management of non-recurring thematic service requests (SR)

# INbound (IB) – OUTbound (OB) management: Main activities

**PRELIMINARY PHASE**

- Production/update of survey information and thematic FAQ (Production Directorates)
- Non-thematic FAQ update (DC)
- Training operators (Production and DC Directorates)
- IB - Creation of thematic areas and log-in credentials to access the shared Agenda (DC, Contact Center - CC)
- OB – Define list size by survey, based on sample size and response rates analysis
- OB - List creation and integration with variables
- OB - Updating Contacts script

**CARRYING OUT PHASE**

- Supervision and monitoring of the service (DC)
- Eventual training on the job (DC and Production Directorates)
- IB - Third-level non-thematic ticket processing (DC)
- IB – Third-level thematic ticket processing (Production Directorates)
- OB – Daily update of the non respondents list (DC)
- OB – Daily report Delivery (CC)

# INbound – OUTbound tools to solve users request: Survey characteristics

| Survey characteristics | |
|---|---|
| NATIONAL AND INTERNATIONAL REGULATION | List of main legislative acts |
| SURVEY NAME | Complete name arising from legislative act |
| REFERENCE PERIOD | Month / Quarterly / Year / |
| SAMPLE TYPE | Census/Sample |
| SAMPLE SIZE | Number of units included |
| SURVEYED VARIABLES | Main issues |
| OBLIGATION TO ANSWER | YES/NO |
| SUBJECT TO PENALTIES | YES/NO |
| DEADLINE FOR DATA COLLECTION | DAY/MONTH/YEAR |
| SURVEY PRODUCTION RESPONSIBLE | Name Surname (direct telephone) |
| CONTACT MAIL | Survey ordinary contact mail |

# INbound – OUTbound tools to solve users request: FAQ - Main categories

**non-tematic**

*Cross-cutting requests* regarding:

- access and usage of data acquisition system
- information on legislation, obligation to answer and penalties
- general information about survey (deadline, involved units, data collection method, …)

**recurring thematic**

*Requests on specific survey issues*:

- main questionnaire topics and methodology
- insolvency proceedings
- register information changes

# INbound – OUTbound tools to manage data acquisition Business statistical Portal - Back office

The back-office of the Business Statistical Portal is the tool used by contact center operators to provide first-level assistance to survey respondents regarding:

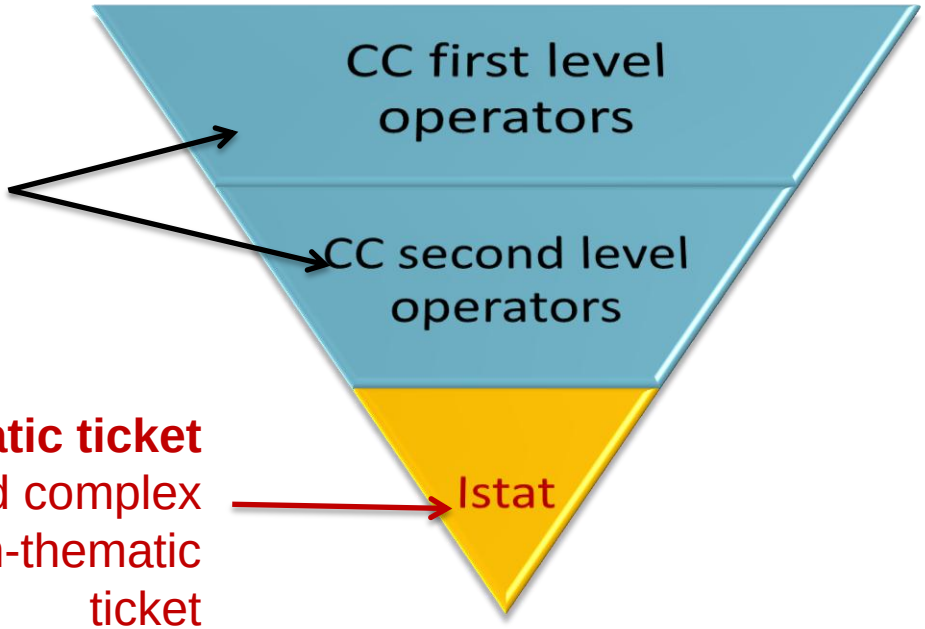
- registration and access to the system
- resetting of original password for login
- insertion of requests for updating business master data in the appropriate section of the Business statistical Portal (business name, address, type of company, NACE activity, etc.)
- deadline for data transmission and information on state of fulfillment for each specific survey

# Focus INbound : 1/2
# Trouble ticket system – Tickets management

Each Inbound Service Requests presented by telephone or email and classified according to FAQ categories, creates a ticket.

Responsibility in ticket solving:

**Non-thematic ticket** and recurring thematic ticket




**Thematic ticket** and complex non-thematic ticket

# Focus INbound : 2/2
# Trouble ticket system – *Agenda Condivisa*

Contact Center operators transmit not solvable tickets to Istat experts by the *Agenda Condivisa* tool

The *Agenda Condivisa*:

- **includes all relevant informations** to allow Istat experts managing the Service Request, that is:
  - respondent units data (unit code, name and contact informations of user who contacted Inbound service, …
  - request matter (short description)
- **provides all the functionalities to allow managing ticket** by Contact Center operators and Istat experts

# Focus OUTbound : Contact script



- Standard form, customized according to metadata on survey characteristics
- Guiding the operator in the contact management of the *not responding unit*, defining the flow
  - for the verification of the company contact and for the delivery of the reminder determined by the characteristics of the unit
  - for assistance in case a specific request arise from the non-respondent
- Defines the encoding of contact results (Provisional and definitive)

# Focus OUTbound : Lists and sample units contacts



**Statistical production**

- **Provide** a list of the units to be contacted balanced according to the following criteria:
- influential units
- units subject to penalties
- long term non-respondent units
- presence or not of at least one contact (telephone number or name of a delegate to the compilation)

**Data Collection**

- **Integrate** the list with the information useful for the customization of the script:
- registry unit variables
- date and protocol number of the survey information and / or communication with the of the information for the login to the data acquisition system
- contact person of the survey unit (eg delegates and administrators of the portal)
- penalty units

**CC OUTbound**

- **Integrate** the list with missing contact information
- **Upload** the list into the software

# Focus OUTbound : The additional service



It's used in order to support Quarterly Business Survey on Job Vacancies and Hours Worked (VELA) respondents in the transition phase from CATI to CAWI surveying technique

In addition to the "core service", the following services are provided:

- support respondents in the compilation of the questionnaire and right interpretation of the questions
- direct realization of data entry in the on-line questionnaire, if explicitly required by the contacted enterprise
- direct insertion of register changes, in the appropriate section of the Business statistical Portal

# III. Preliminary results and service data analysis

# Preliminary results:
# increase of response rate and decrease in lenght of DC

Structural Business surveys

Average response rate + 11 percentage points

Average length of data collection -37.2 solar days (*d*)

Short-term surveys

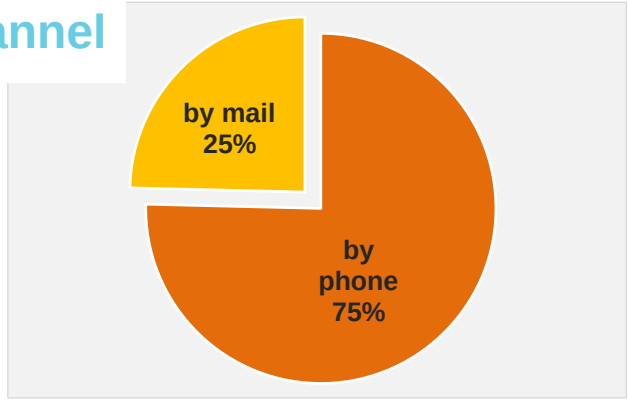
(three representative surveys)

Average response rate + 20 percentage points

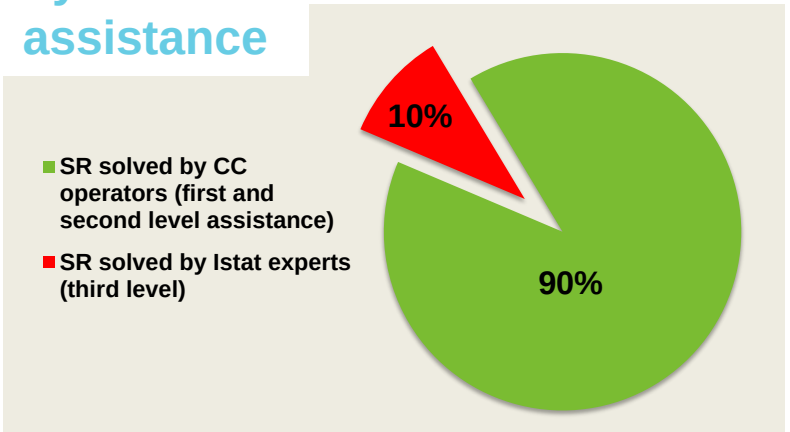
# INbound service:

## by channel

250.000 total SR

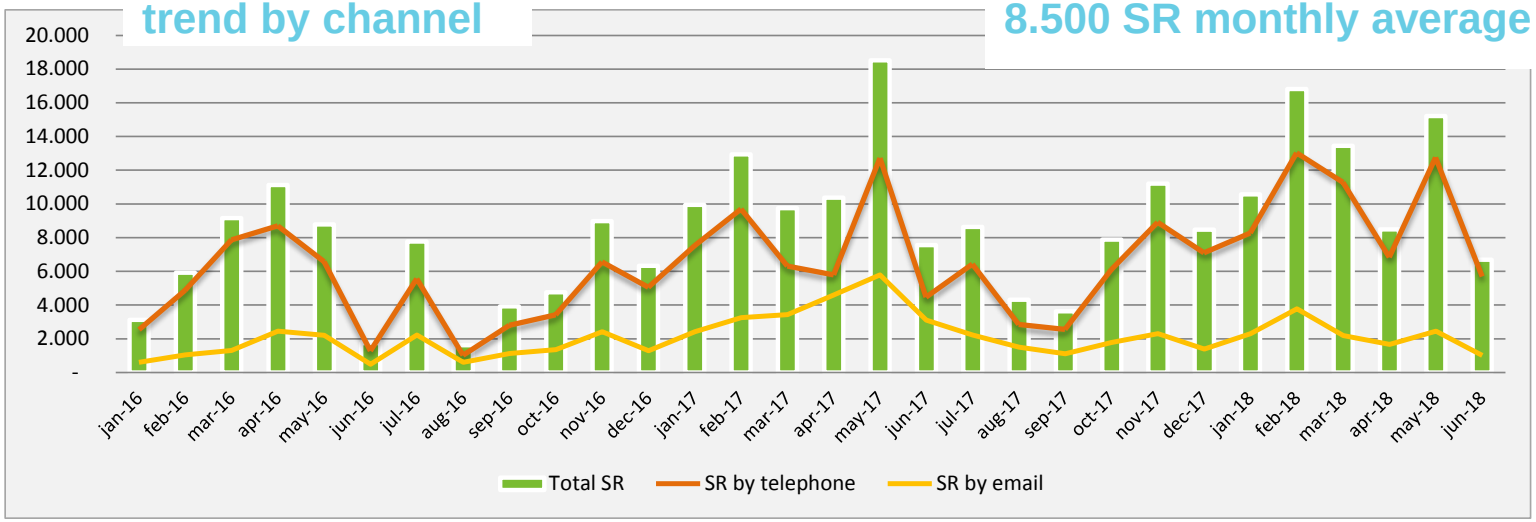



## by level of assistance

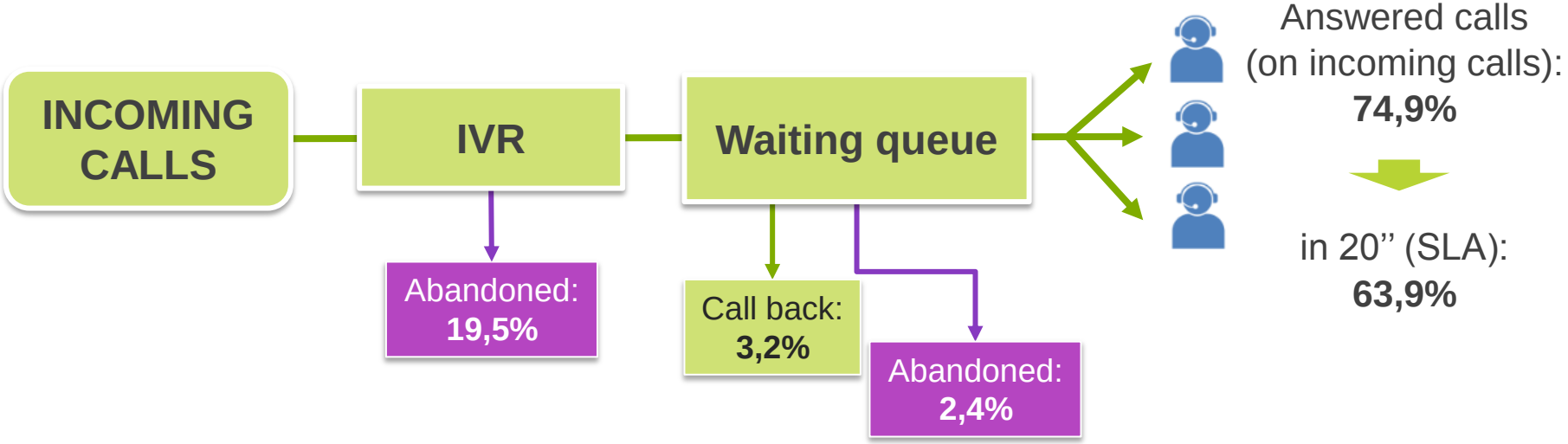



## trend by channel

8.500 SR monthly average

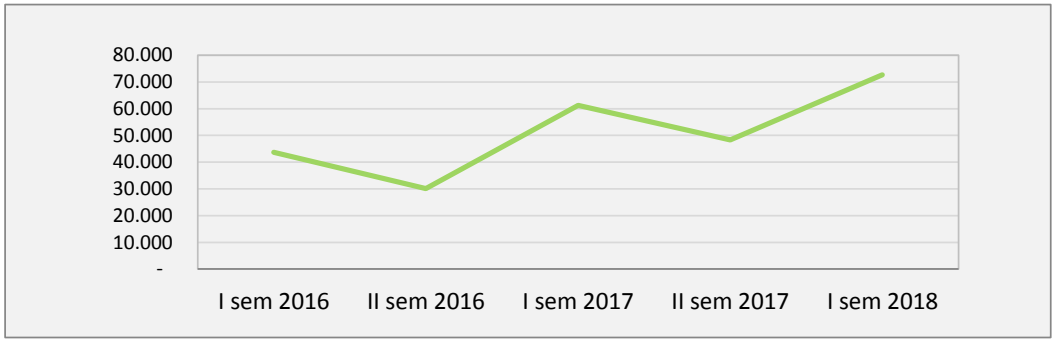


# INbound service: overall efficiency

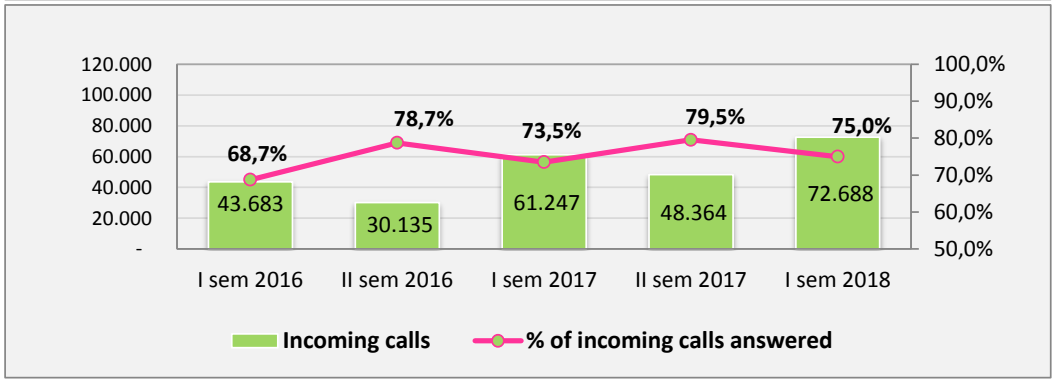


# INbound service: efficiency trend:

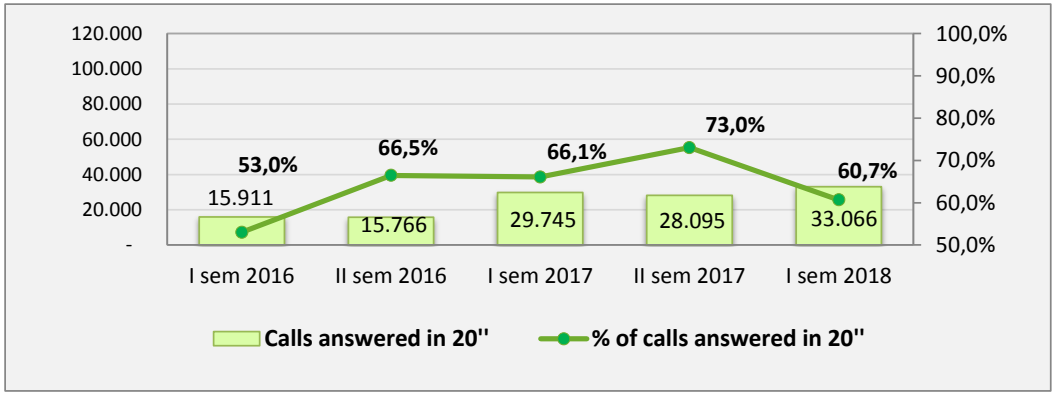
## Incoming calls




## Incoming and answered calls



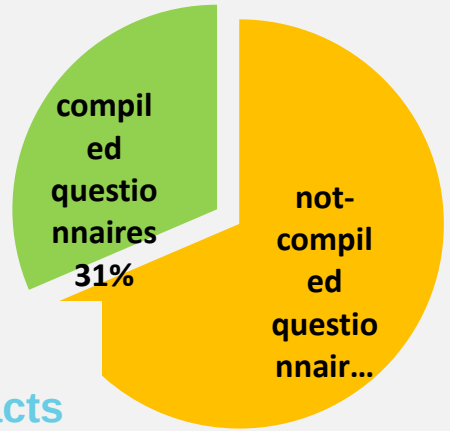

## Calls Answered in 20” (Service Level Agreement)



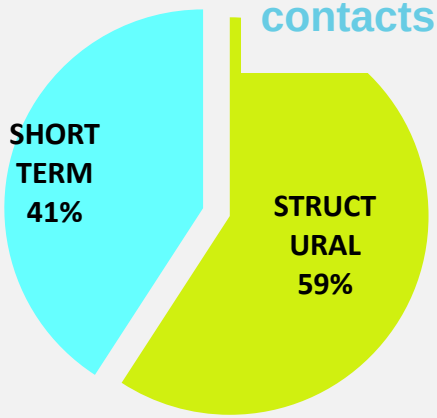
# Outbound service: effectiveness

## Overall dimension

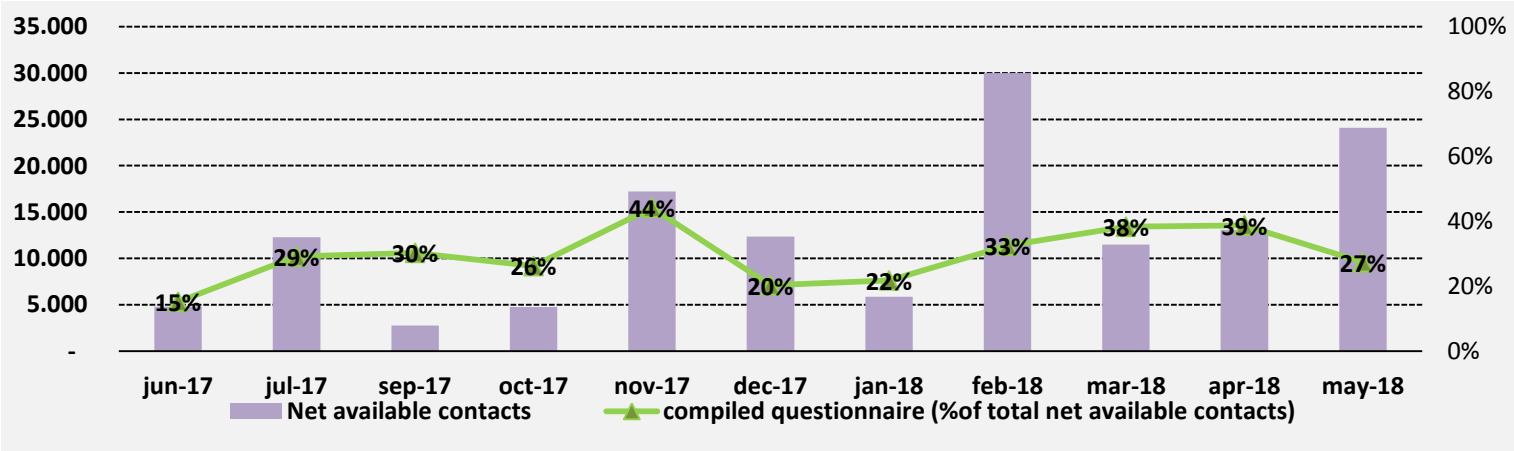
138,613 net available contacts




43,580 paid contacts

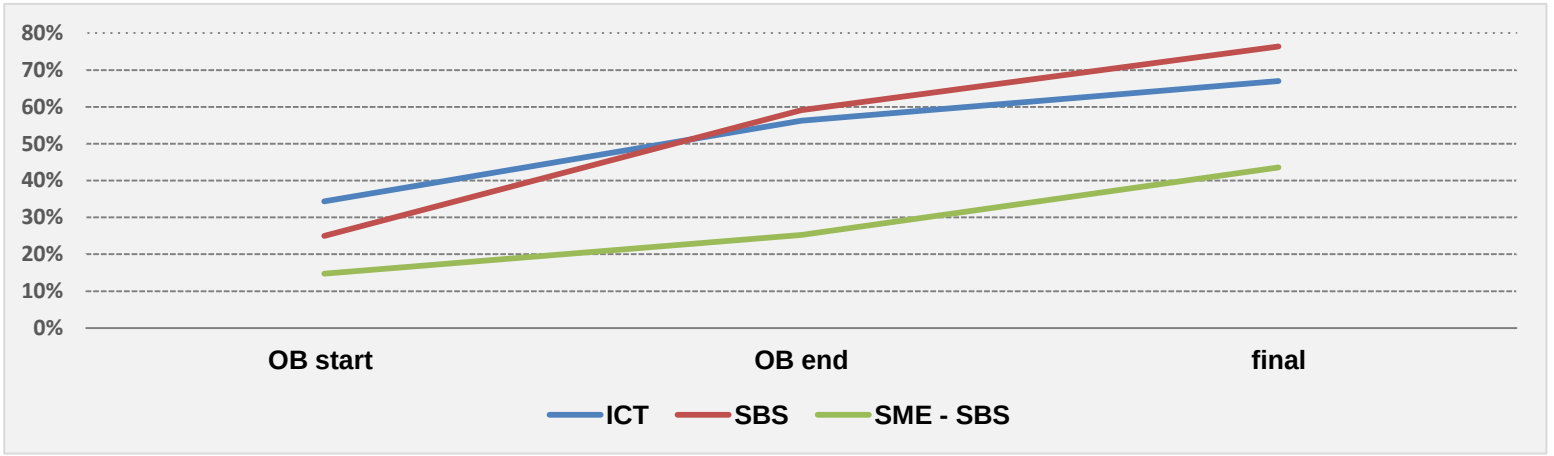



## Trend

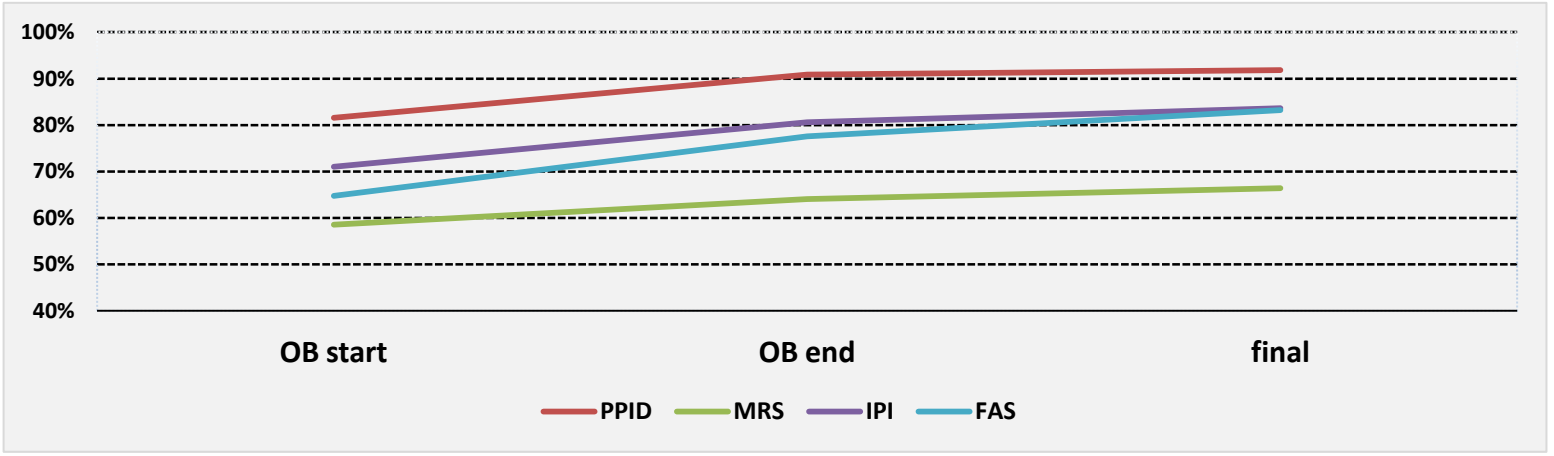


# OUTbound service: response rate trend by survey

STRUCTURAL

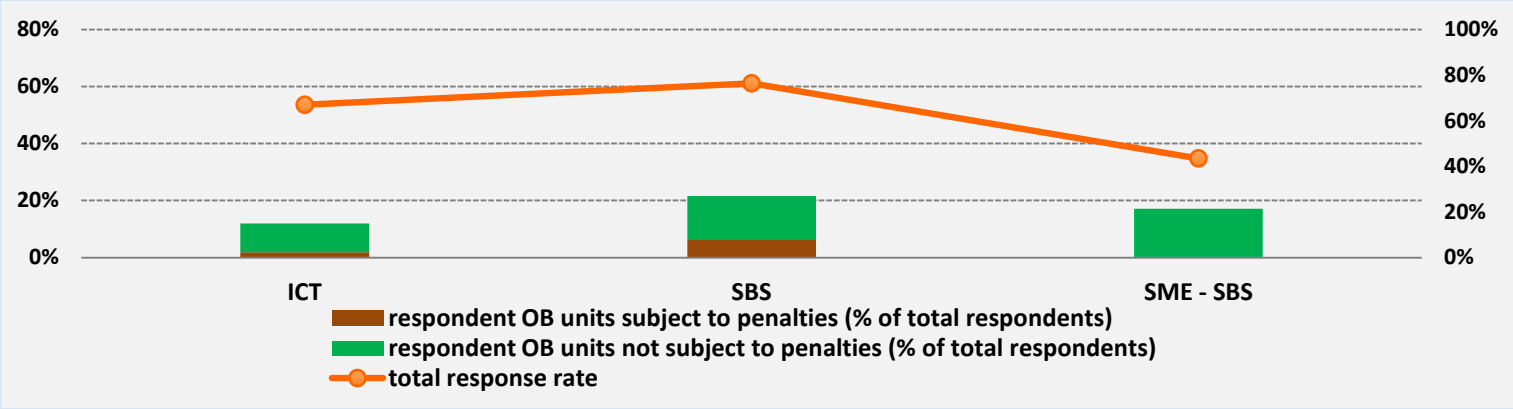



SHORT-TERM

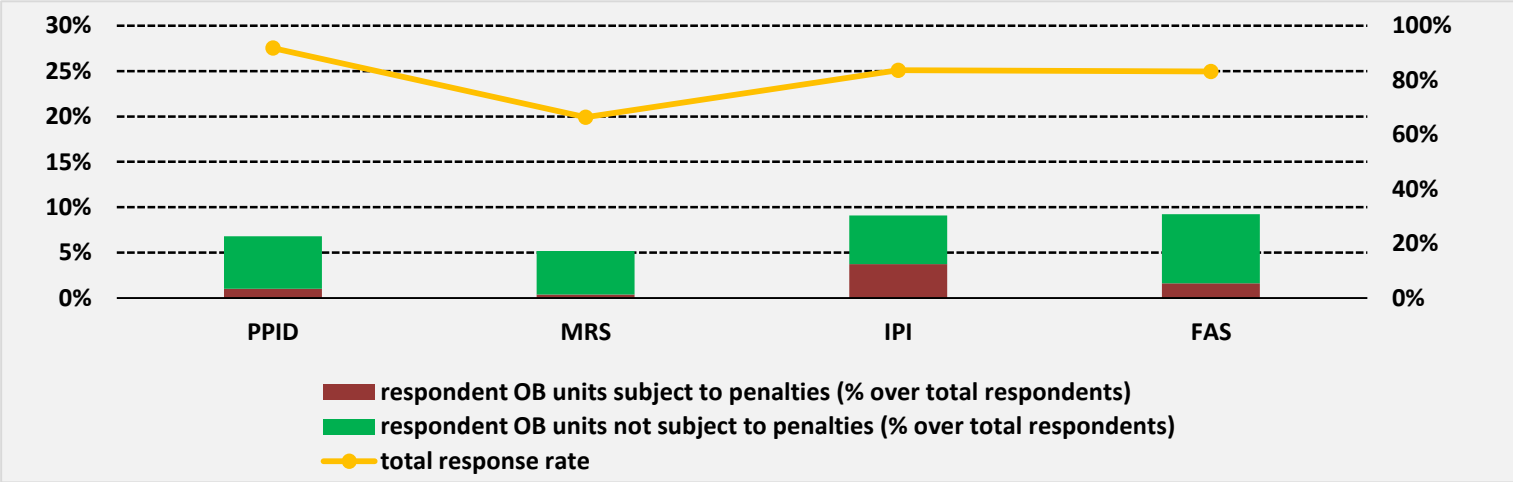


# Outbound service: contribution to overall response rate by survey

STRUCTURAL

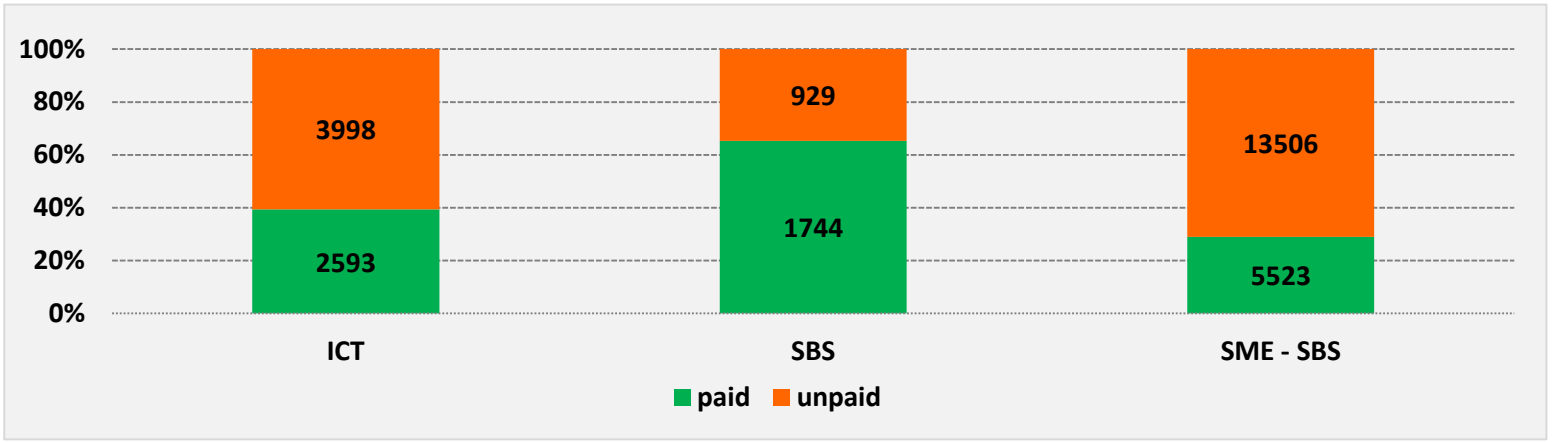



SHORT-TERM

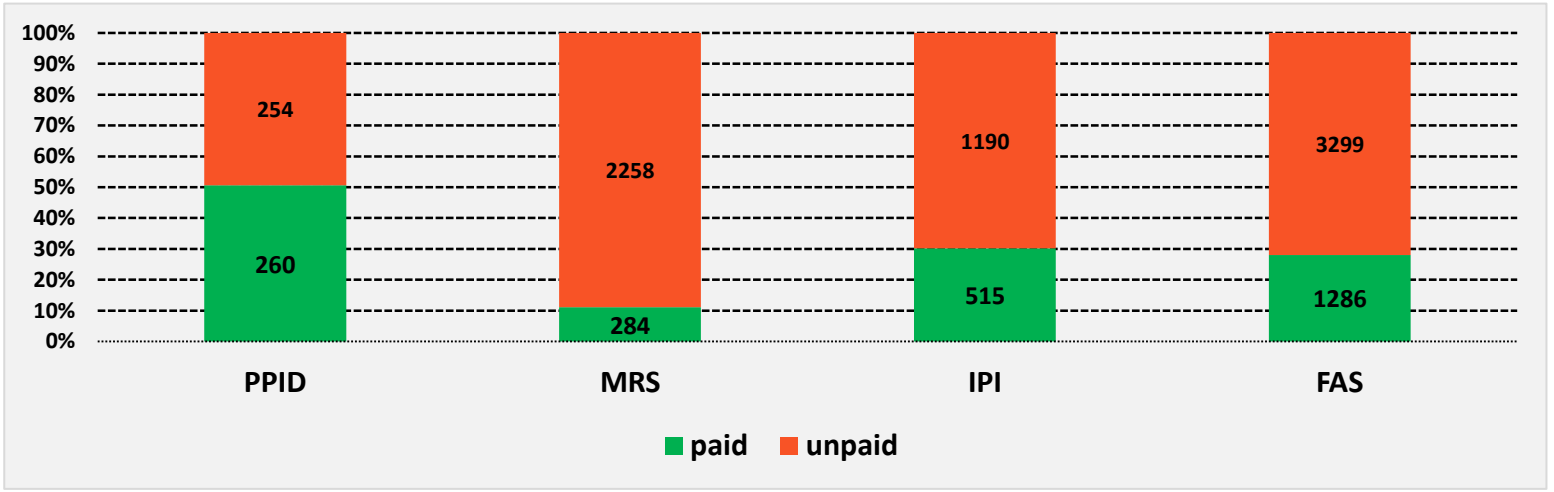


# Outbound service: effectiveness by survey (OB respondents)

STRUCTURAL




SHORT-TERM



# Future challenges

- ✓ Use of **management and acquisition systems increasingly standardized and homogeneous** in the type of functions made available
- ✓ Generalization of the service: **greater integration between INbound and OUTbound services**
- ✓ **Progressive inclusions of all survey** under a single CC service
- ✓ **Rationalization of tendering procedures** for the acquisition of the service: reduction of costs per unit

# Thank you for paying attention!

# Main issues to be discussed

- Inbound

How to adapt the service to specific features of different target populations (households, individuals, enterprises and institutions)?

- Outbound

How to deal with units included in more than one survey simultaneously

# Notifying and training procedure for respondents in Statistics Estonia

Heidi Pellmas
Head of Data Processing
Data Processing and Registers Department

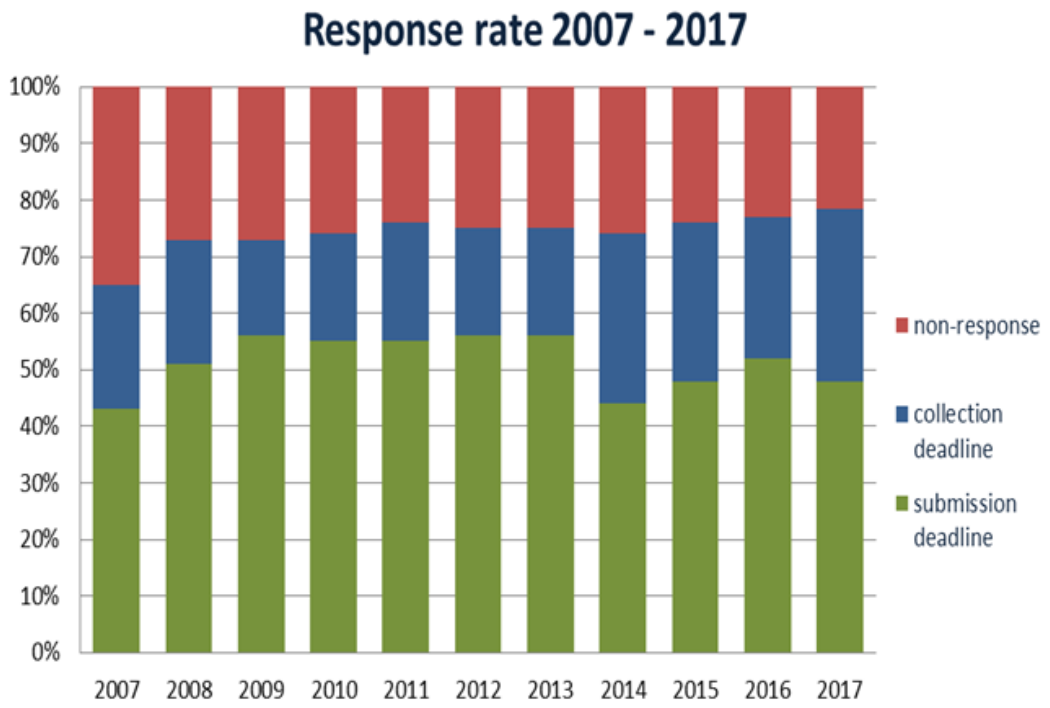
21.09.2018

# Notifying and training

- Notifications
  - About the obligation to submit data
  - About changes or adjustments in questionnaires
  - Other notifications (information letters, descriptions of statistical activities, etc.)
  - Reminders (about approaching / expired deadlines)
  - Precept - warning (before penalty payment)
- Trainings
  - About questionnaires
  - About the data submission application eSTAT
  - Informative trainings
- Who we inform and train
  - Managers of the enterprise
  - eSTAT main users
  - Data providers

# Why?

- Every year - Statistics Estonia conduct about 160 statistical activities. 50 of these are based 100% on administrative data and for 70 we collect data from economic units and persons.
- We collect data with the help of 150 different questionnaires - about 140 of these can be filled in our electronic data collecting system eSTAT and the others are done by paper or by interviews.
- In a calendar year we collect data from 40 000 economic units. For economic units the submitting data is legally required
- In one year we collect ~420 000 questionnaires, on average 1700 in one day.
- In one year we send around 450 000 electronic notices to economic units.



# Notifications about the obligation to submit data

- 15 December – notification about obligations in the following calendar year
- 12th date each month – notification about obligations imposed due the calendar year

  - The questionnaires which the enterprise must submit in the following year have been listed on Statistics Estonia's website under menu item "Obligation to submit data"
    - obligations are visible to the enterprise after entering the registry code
    - on the list are questionnaires, periods, deadlines, important information about data submission - questionnaires pages have links to the information about the purpose of data collection, information about where the data are used, published, etc.
  - For data submission, we recommend using the electronic data collection environment eSTAT. Links to information about joining and using eSTAT have been added.
  - Information about Statistics Estonia's right to issue a precept to the respondent for the elimination of the violation resulting from failure to submit data or submission of distorted data.

# Other notifications

- We thank respondents for their cooperation
  - Upon ending data collection with a questionnaire, we inform respondents about the data sources which are going to be used for data collection in the future.
  - When we send year-end greetings to enterprises who have submitted their data on time in the calendar year
- We inform respondents
  - About the objective and importance of the statistical activity, reason for data collection, data users, etc. https://www.stat.ee/esms-metadata . We send inform-letters, for example, for questionnaires EKOMAR – Economic activity (year), Economic activity (quarter); Intrastat; Manufactured goods; Innovation Survey, etc.
  - eSTAT main users – notification at the beginning of the year about their data submission rights and obligations in the calendar year
  - Information to new respondents about joining eSTAT - https://www.stat.ee/en

# Reminders

- Reminders are sent to enterprises that have not submitted their data to Statistics Estonia (partially completed questionnaires are regarded as questionnaires not submitted).
  - The letters are sent automatically by eSTAT on specified dates – 5 days prior and 3, 7 and 20 days after the submission Deadline (*background paper appendix 1)*.
- In addition to the reminders sent from the eSTAT system, also separate reminders can be sent to economic entities:
  - When necessary, to respondents of questionnaires with a longer collection period, who have not submitted data by deadline
  - In the case of INTRASTAT questionnaires not yet started – reminders are sent by client support on the 25th date each month about all the missing periods
- Precept - warning (before penalty payment)
  - Monthly and quarterly questionnaires - the letters are sent about 10 days after submission deadline
  - Yearly questionnaires - the letters are sent about 20 days after submission deadline

# Trainings

- We wish to introduce to the managers, accountants, etc. of enterprises / economic entities
  - the objectives of specific statistical activities for which the enterprises must submit data
  - instruct and consult them on using eSTAT
  - instruct and consult them to complete questionnaires
  - consult them on the sources which are used to pre-fill the questionnaires
- On Statistics Estonia's website under menu item "Submit data" are available
  - information on organized training
  - the training programs
  - the training  materials
  - registration for training
- Training providers include:
  - Heads of statistical activities
  - Head of client support
  - Leading statistician of the source database  team
  - Senior consultant from Marketing and Dissemination Department

# Trainings feedback

- After training we ask participants for feedback. The link to the feedback form is sent to the e-mail address that participants provided during registration for training.
- The summaries of feedback forms will be available to all training providers and the training organiser, so that training sessions to data providers could be made more informative and accessible.
- In addition, we send each enterprise that received a training invitation (irrespective of whether they participated in the training session or not) a link to the training materials, so that there would be an option to review the materials when necessary.

This year, we started developing video tutorials - for the data submission application eSTAT and for various questionnaires. These videos will be added to the training materials on the website.

# Thank You!

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