EUROPEAN CONFERENCE ON QUALITY IN OFFICIAL STATISTICS
2024 ESTORIL - PORTUGAL

Smart survey and data quality

Lessons learned from the Norwegian household budget survey 2022

Nina Berg and Aina Holmøy, Statistic Norway

INSTITUTO NACIONAL DE ESTATÍSTICA
STATISTICS PORTUGAL

eurostat

The conference is partly
financed by the European Union

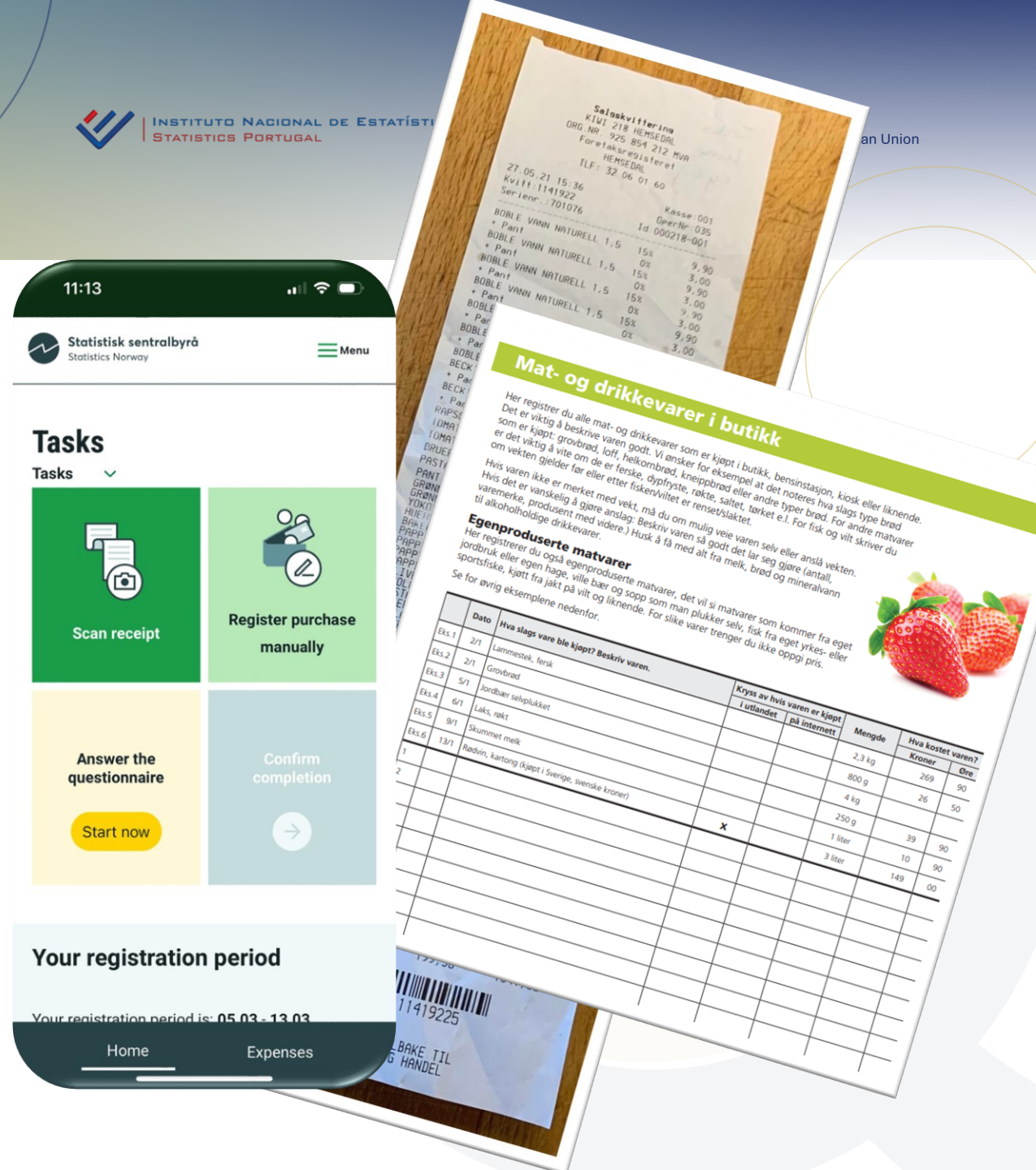
INSTITUTO NACIONAL DE ESTATÍSTICA
STATISTICS PORTUGAL
eurostat
The conference is partly financed by the European Union

Smart surveys

- Reducing respondent burden
- Efficiency
- Non-digital accessibility
- Data quality

The Household budget survey (HBS) 2022

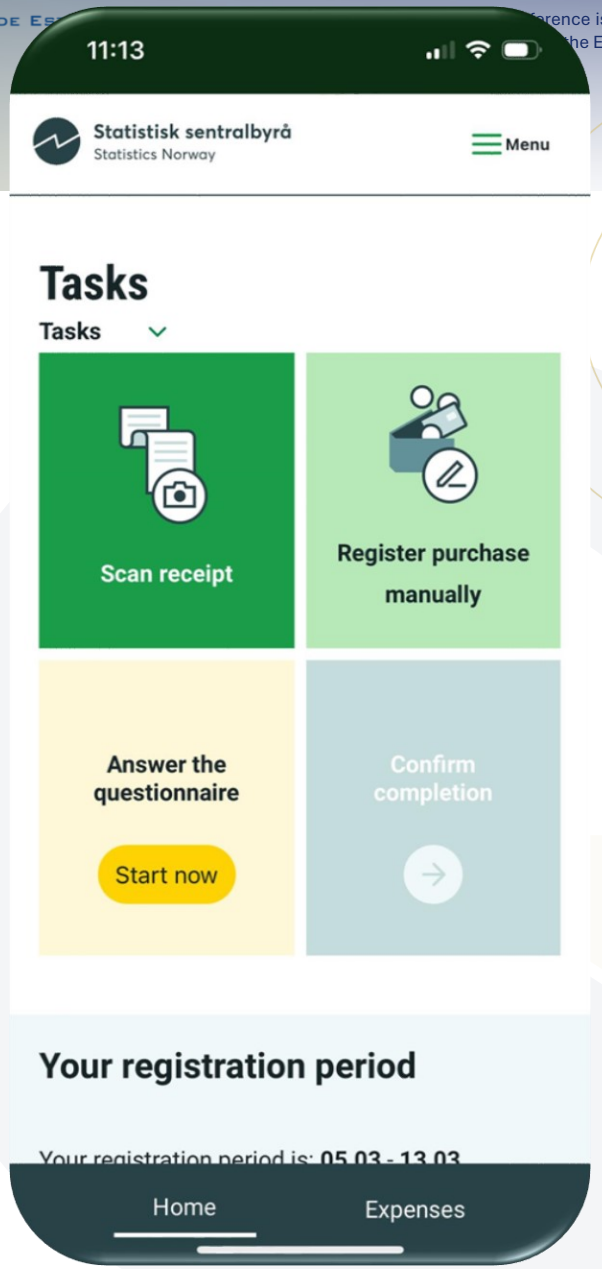
- Web application
- Scanning (OCR)
- Diary from 14 to 7 days



INSTITUTO NACIONAL DE ES... STATISTICS PORTUGAL
...rence is partly ...the European Union

The HBS Web application

- Accessibility
  - Platform Independence
  - Easy Installation (independent of AppStore)
- Secure Login
  - ID-porten with two-factor authentication
- Usability
  - Minimal editing
  - Possible to edit/obscuring sensitive information on receipt
- Help
  - Interviewers/Onboarding/Popup Tutorials/SMS/”?”



INSTITUTO NACIONAL DE ESTATÍSTICA
STATISTICS PORTUGAL
eurostat
The conference is partly financed by the European Union

Findings

1. Participation and engagement

2. Data accuracy and plausibility

The conference is partly financed by the European Union

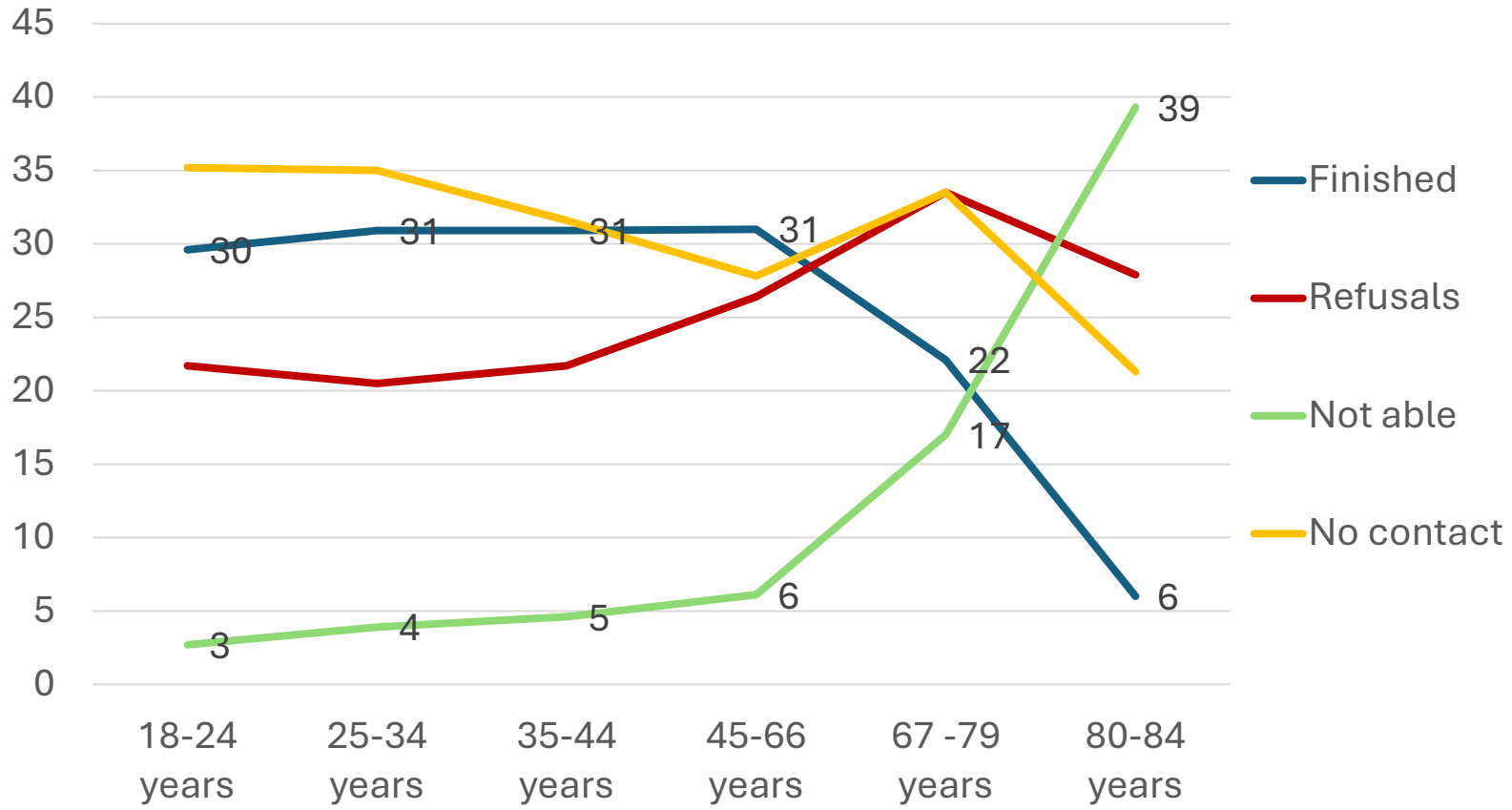
1. Participation

Completion rates HBS 2022:

- 30 % completed all parts of the survey
  - 43 % completed telephone interview
  - 14 % dropout

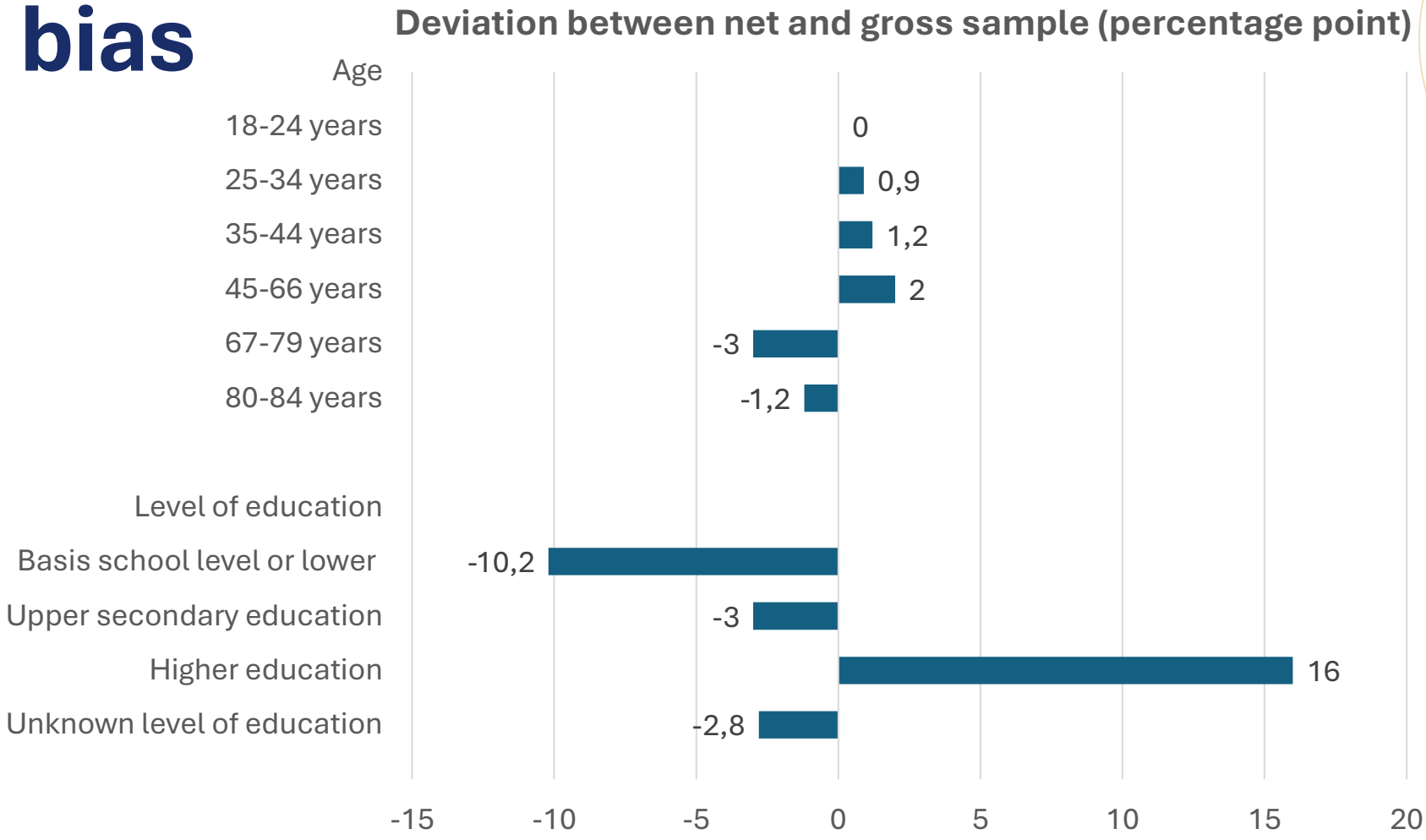
The conference is partly financed by the European Union

Participation and non-response by age (per cent)



INSTITUTO NACIONAL DE ESTATÍSTICA
STATISTICS PORTUGAL
eurostat
The conference is partly financed by the European Union

Sample bias



The conference is partly financed by the European Union

Lessons learned

- App well received – did not reduce willingness to engage (18-67 years)
  - Digital-only format limits participation among the oldest + lower education
- Smart surveys require interviewer assistance and technical support
- User-friendliness is key to completion rates

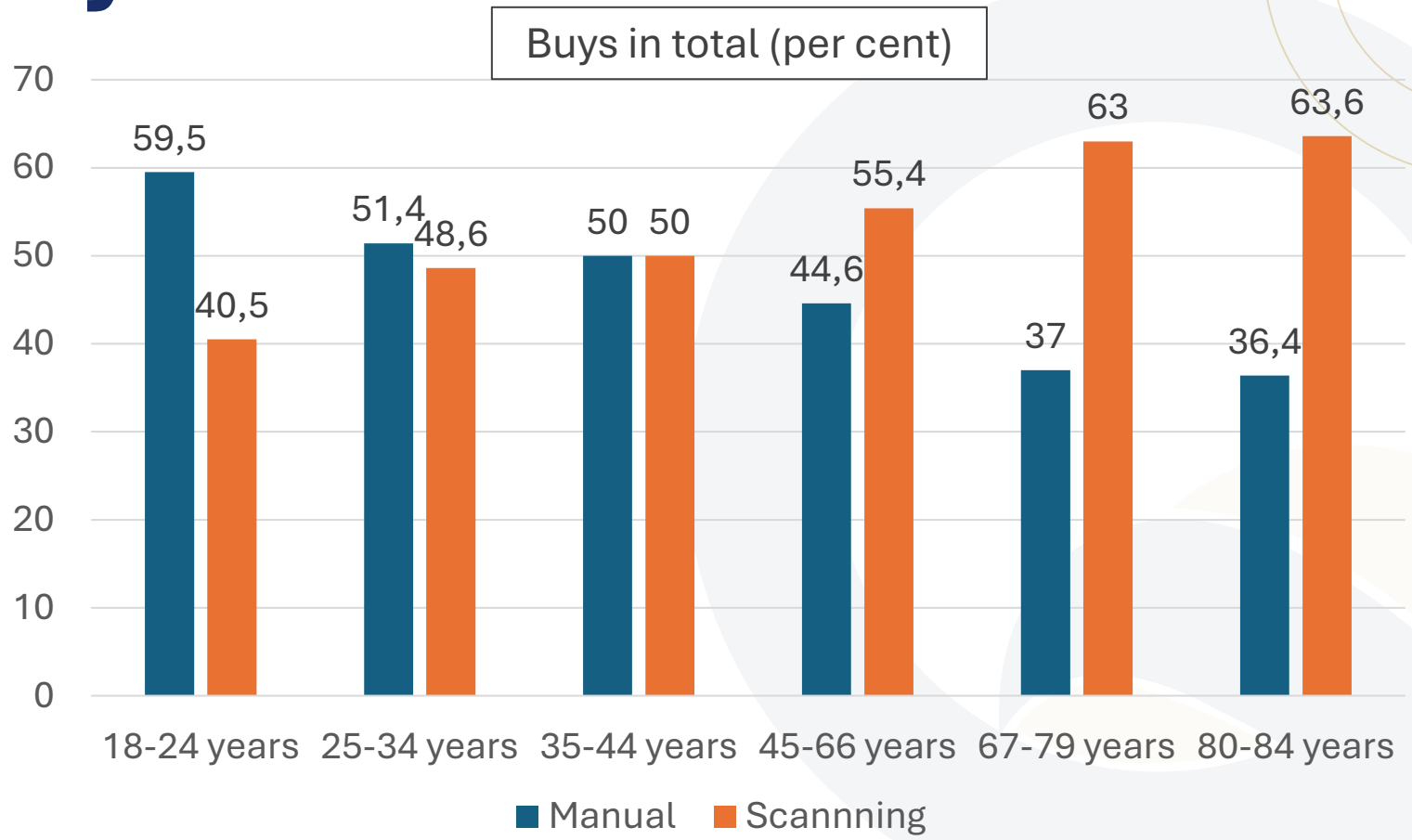
INSTITUTO NACIONAL DE ESTATÍSTICA
STATISTICS PORTUGAL
eurostat
The conference is partly financed by the European Union

2. Data accuracy and plausibility

The conference is partly financed by the European Union

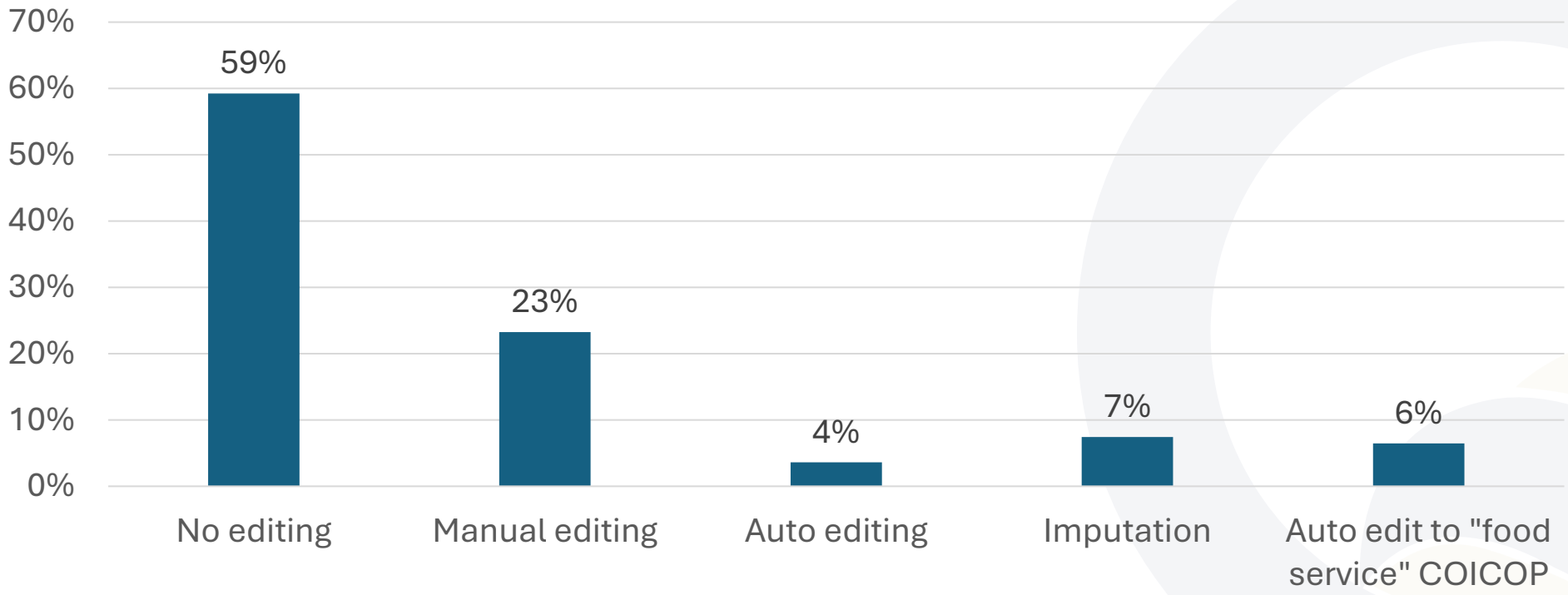
Use of data entry method

- Buys in total:
  - 53 % scanning
  - 47 % manual entry
- Product items:
  - 85 % scanning
  - 15 % manual entry



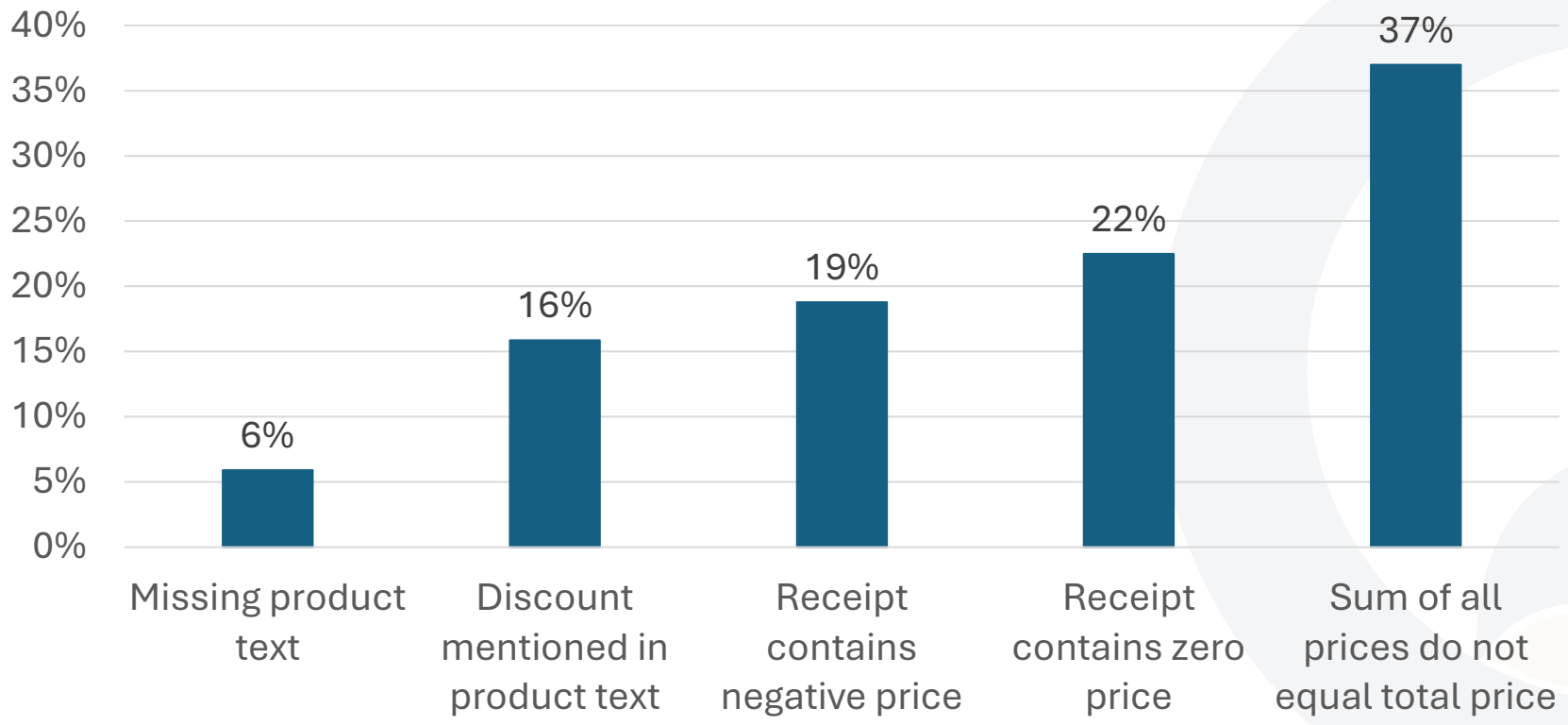
The conference is partly financed by the European Union

40% of receipts edited



The conference is partly financed by the European Union

Types of errors in scanning receipts



The conference is partly financed by the European Union

Lessons learned

- Web app, scanning, & machine learning improves data processing speed
- Scanning (/OCR) technology improves accuracy
- High volume, high number of registration errors
- Require substantial editing in-house – future reuse will be more efficient
- Push warnings and search lists was not developed as planned
- Respondents do not record as meticulously as we need (under reporting?)
- Interviewer support is invaluable to improve respondents recording

The conference is partly financed by the European Union

Improving data quality going forward

- Tailor recruitment strategies further
- Asses need for a non-digital option?
- Add smart search lists
- Use improves scanning (/OCR) technology and refined machine learning models
- Enhance our data editing – BOTH machine & human AND in-app & in-house
  - Balancing user-friendliness vs data accuracy

EUROPEAN CONFERENCE ON QUALITY IN OFFICIAL STATISTICS
2024 ESTORIL - PORTUGAL

Questions?

Contact Information:

Nina Berg, nina.berg@ssb.no

Aina Holmøy, aina.holmoy@ssb.no

INSTITUTO NACIONAL DE ESTATÍSTICA
STATISTICS PORTUGAL

eurostat

The conference is partly
financed by the European Union