

September, 27-30, 2021

UNECE EXPERT MEETING ON DATA COLLECTION

Streamlining data collection monitoring activities through the use of control charts: an application to the EU-SILC survey

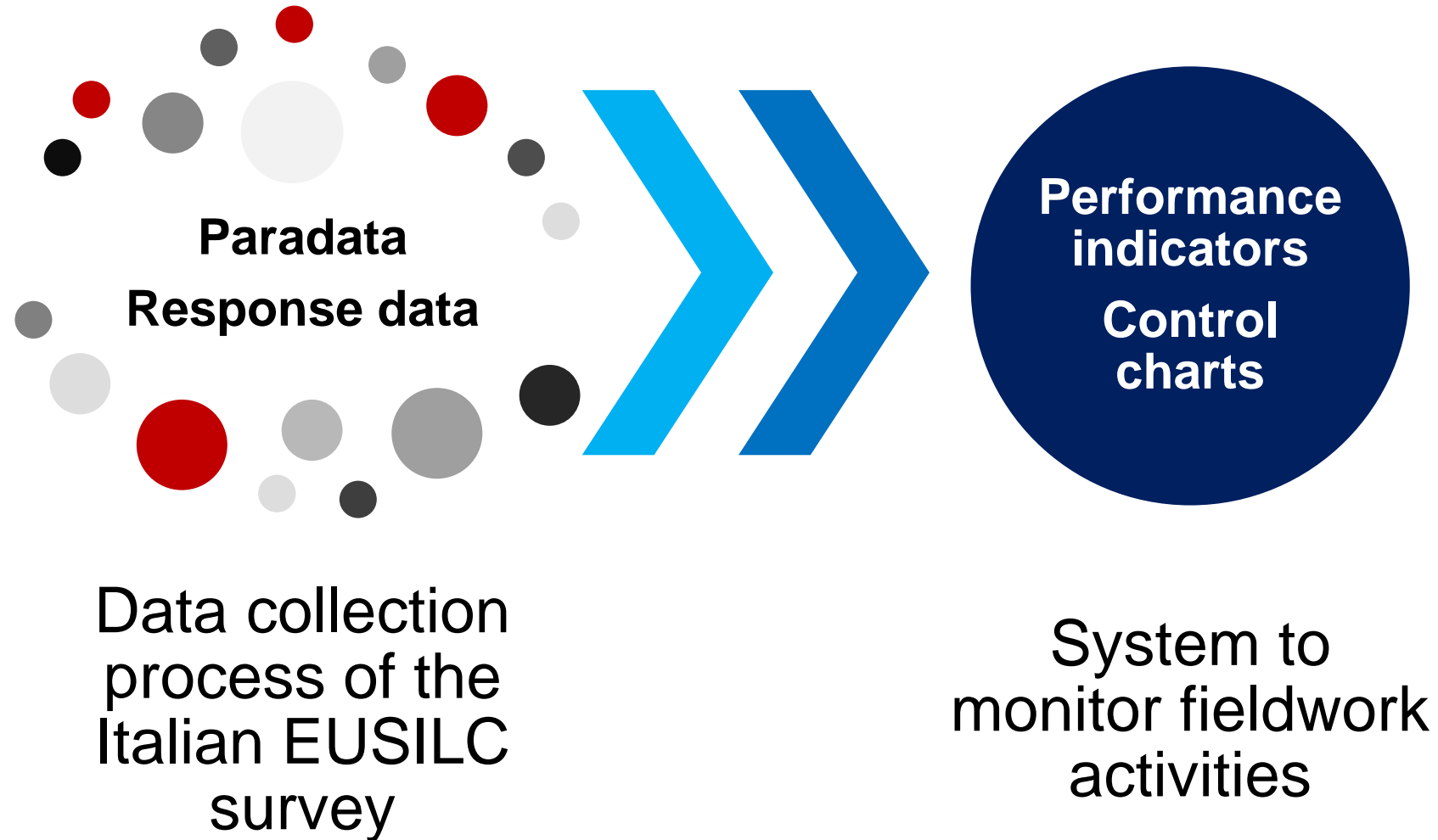
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Istat | Directorate for Data Collection

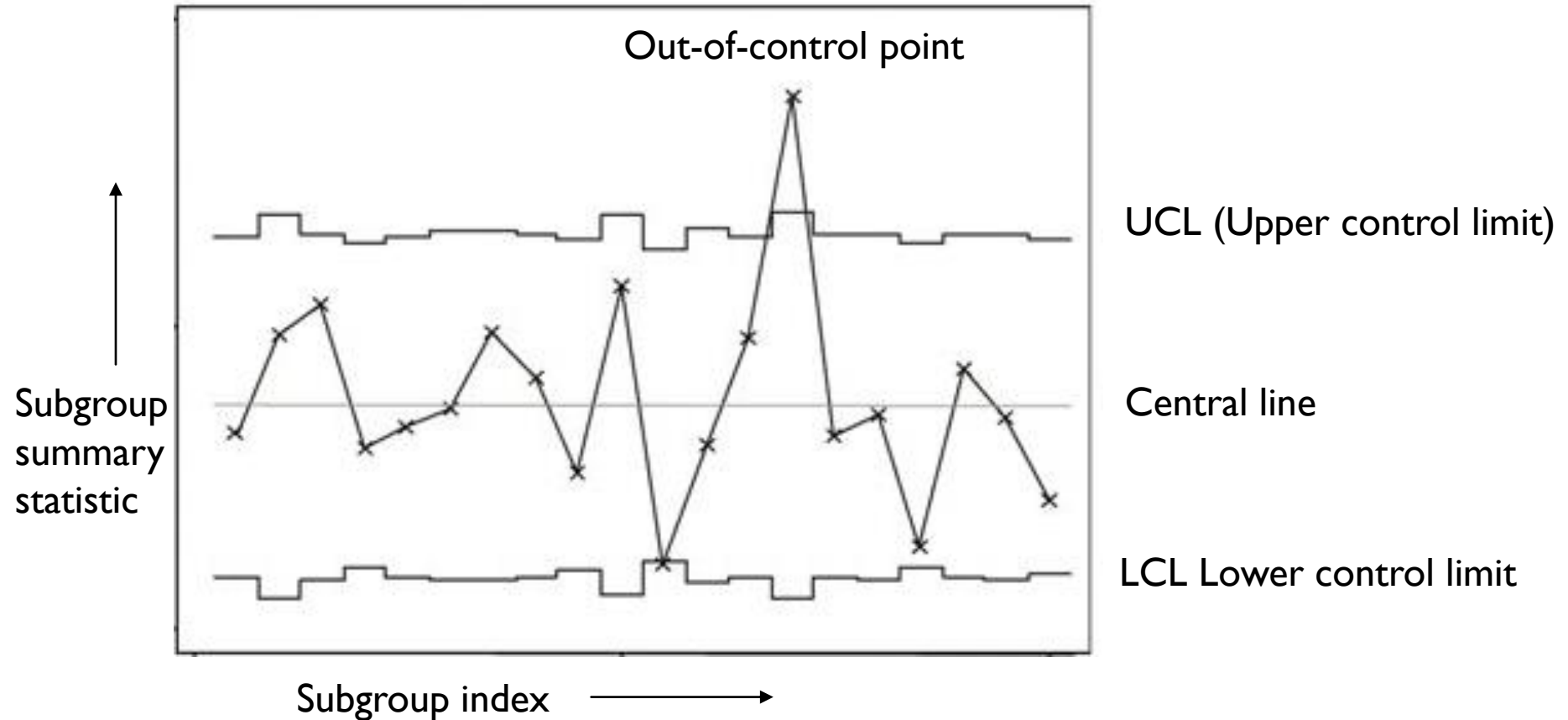
Outline

- **Aim of the work**
- **Typical control chart**
- **EUSILC survey**
- **Defining indicators: some issues**
- **Procedure to monitor the interviewers' work**
 - indicators
 - charts
- **Procedure to monitor the coding of the occupation**
 - indicators
 - charts
- **Conclusions**

Aim of the work



A typical control chart



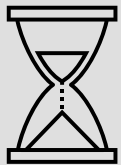
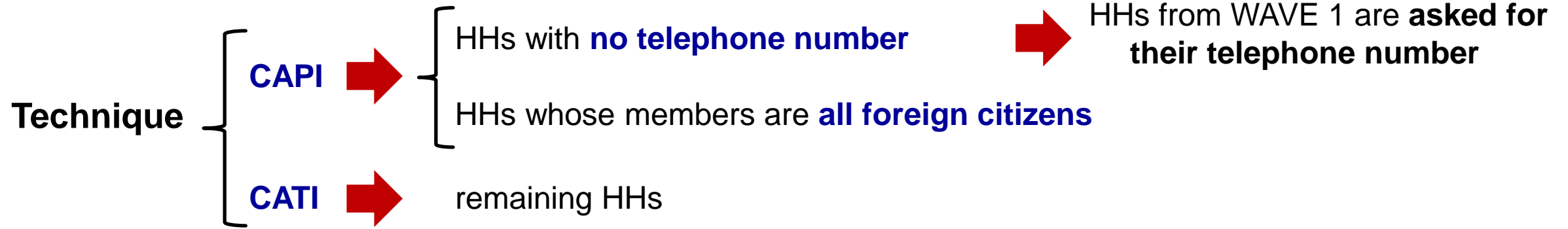
Strength

managers are guided in making **targeted interventions**, without spending time exploring false alarms

EUSILC survey

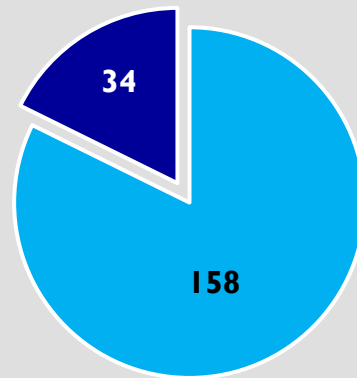
- EUSILC (**European Union Statistics on Income and Living conditions**) is the **EU reference source for comparative statistics on income distribution and social exclusion**
- The survey is carried in Italy by Istat
- **Reference population: all households (HHs) and their members residing in Italy**
- **Sample design:** two-stage scheme (municipalities-households)
- The **annual sample** comprises:
 - **HHs of WAVE 1** from population registers of the municipalities selected at the 1st stage
 - **HHs of WAVE 2, 3, or 4** interviewed for the 2nd, 3rd, or 4th time
- Data are collected **by an external company** on behalf of Istat

EUSILC survey – Data collection



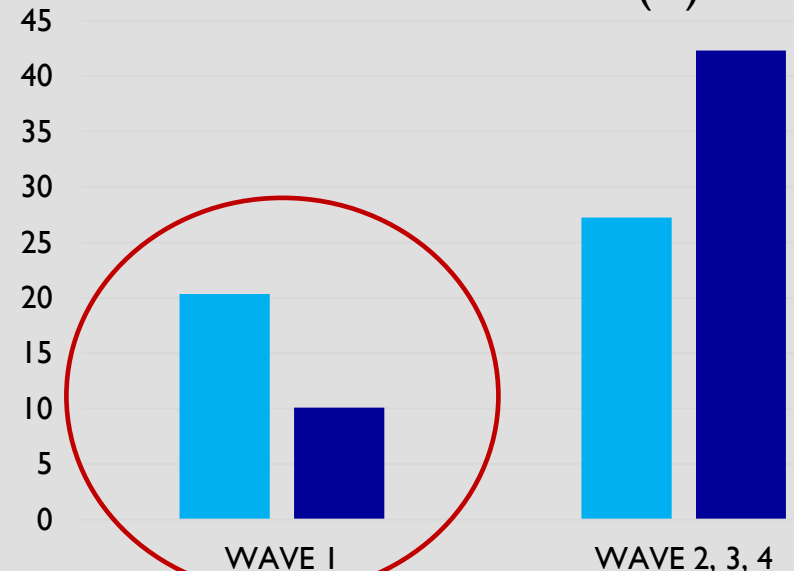
For WAVE 1: longer duration of interviews

N. OF INTERVIEWERS



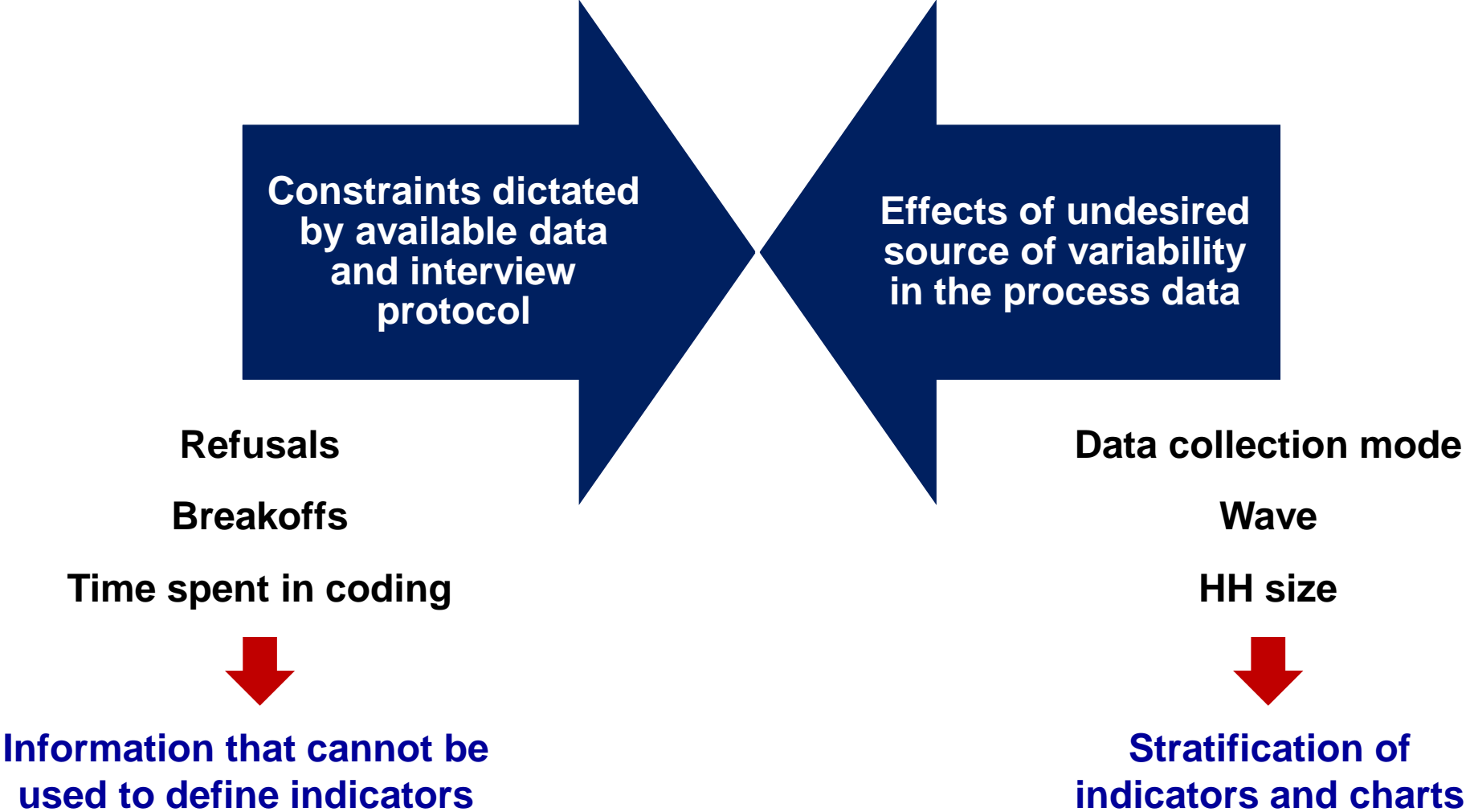
■ CAPI ■ CATI

N. OF INTERVIEWS (%)



■ CAPI ■ CATI

Defining indicators: some issues



The monitoring strategy

Indicators, based on paradata and response data

- completed interviews
- eligible units
- attempts to complete the interview
- duration of interview

Control chart for each indicator

- Step 1.* **screening chart** for all the interviewers working in the reference week
- Step 2.* **in-depth charts** to monitor each interviewer flagged at *Step 1*, over the whole fieldwork period

Tabular reports listing:

- **only the flagged interviewers**
- any other statistics or information useful to decide on the type of intervention

Indicators and charts to monitor the interviewers' work

- **Response rate**



n. of completed interviews / n. of eligible HHs
by **interviewer**, **data collection mode** (CAPI; CATI),
wave (WAVE=1; WAVE>1)

p-chart (chart for proportions)

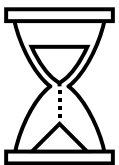
- **Productivity rate**



n. of completed interviews / n. of contact attempts
by **interviewer**, **data collection mode** (CAPI; CATI)

p-chart (chart for proportions)

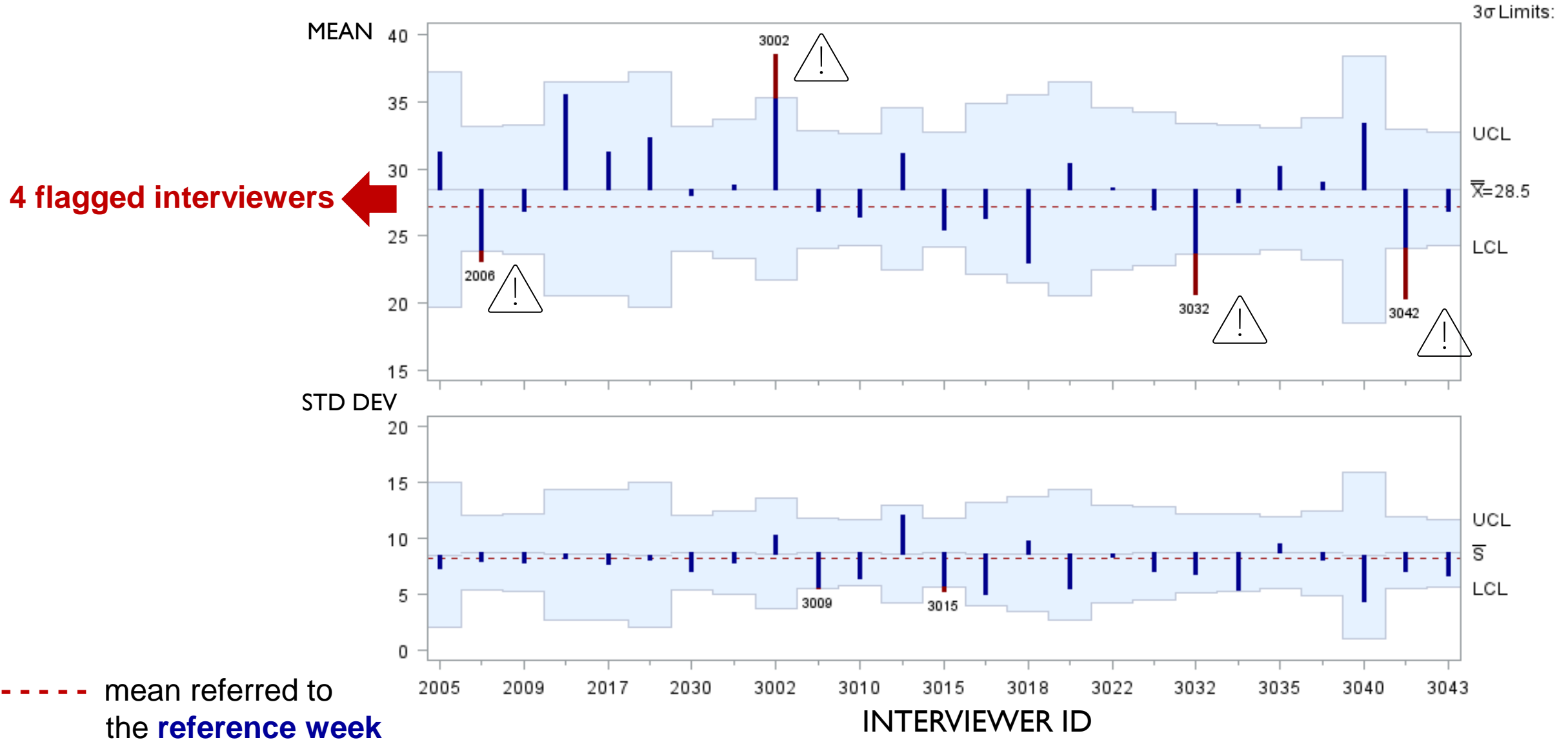
- **Adjusted duration of interview**



time spent to complete an interview (**adjusted for HH size**)
by **interviewer**, **data collection mode** (CAPI; CATI),
wave (WAVE=1; WAVE>1)

\bar{X} and s-charts (charts for continuous variables)

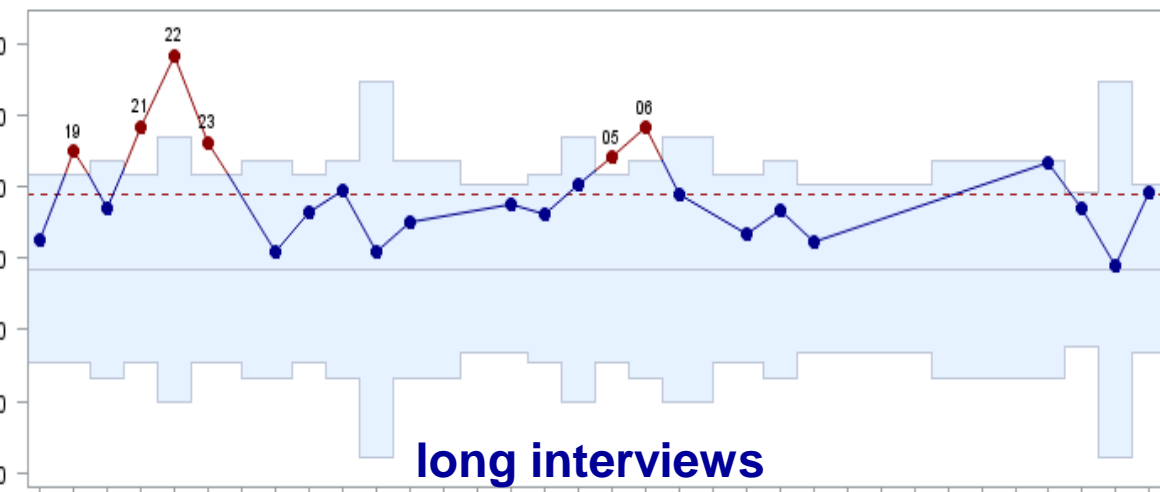
Screening chart for *Adjusted duration of interview – 5th week* CATI data – WAVE>1



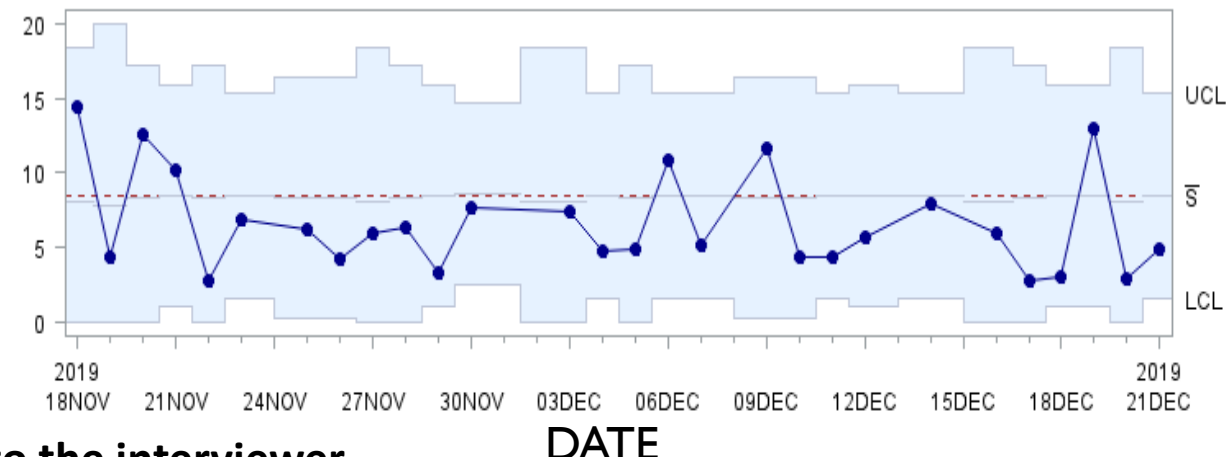
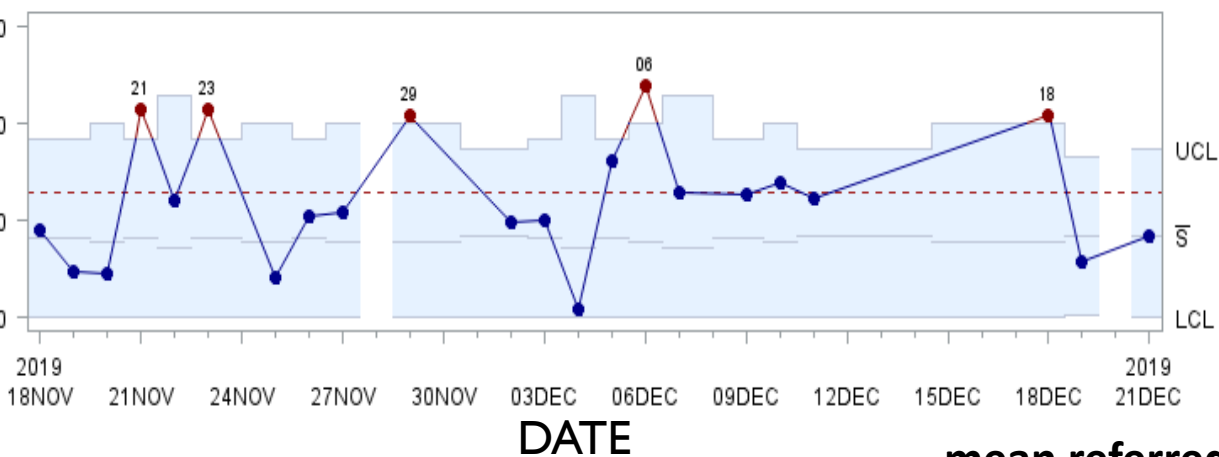
In-depth charts for *Adjusted duration of interview* – 5th week

Interviewers 3002 and 3042 – CATI data – WAVE>1

INTERVIEWER 3002



INTERVIEWER 3042

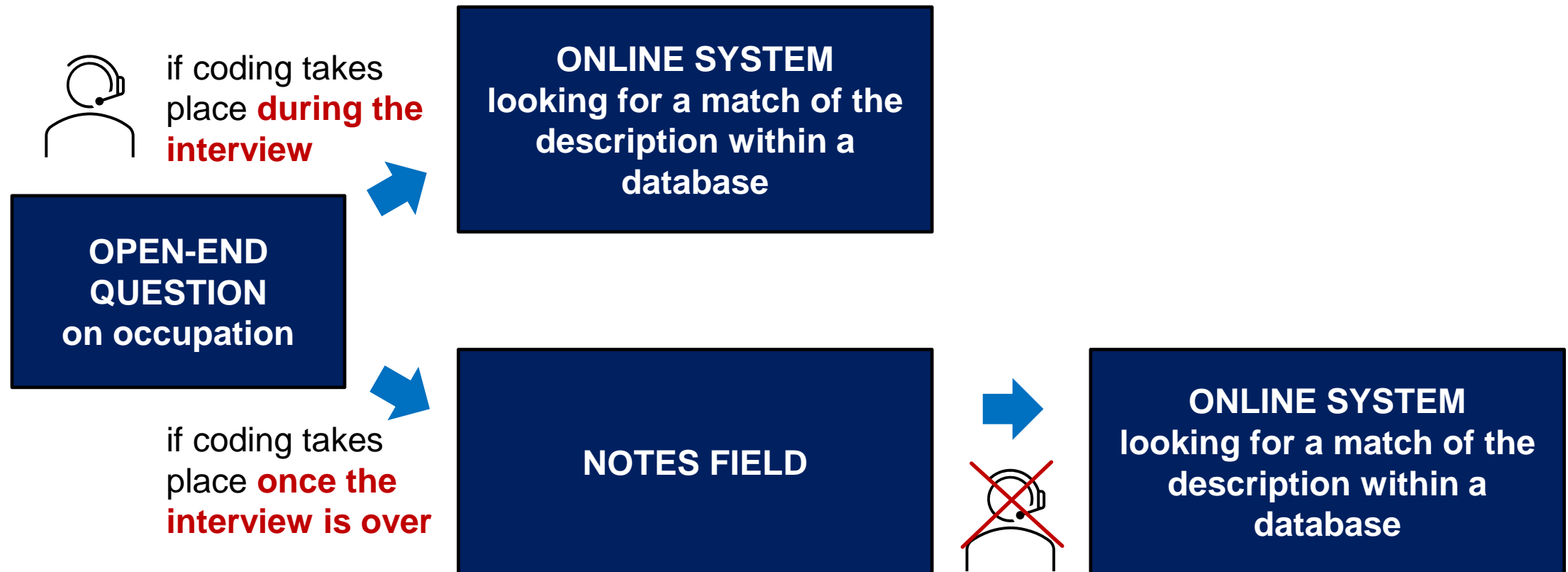


----- mean referred to the interviewer

Interventions: **de-briefing** with interviewer 3002 and **strict monitoring** of interviewer 3042

Monitoring the coding of occupation

Aim: detect any potential improper interviewing behavior that might lead to assign a **wrong code to the occupation** declared by the respondent



Indicators and charts to monitor the coding of occupation

- **Proportion of classification codes**

to assess possible concentrations of codes
by **interviewer**, **data collection mode** (CAPI; CATI),
occupational group (1; 2; 3; 4; 5; 6; 7; 8; 9)

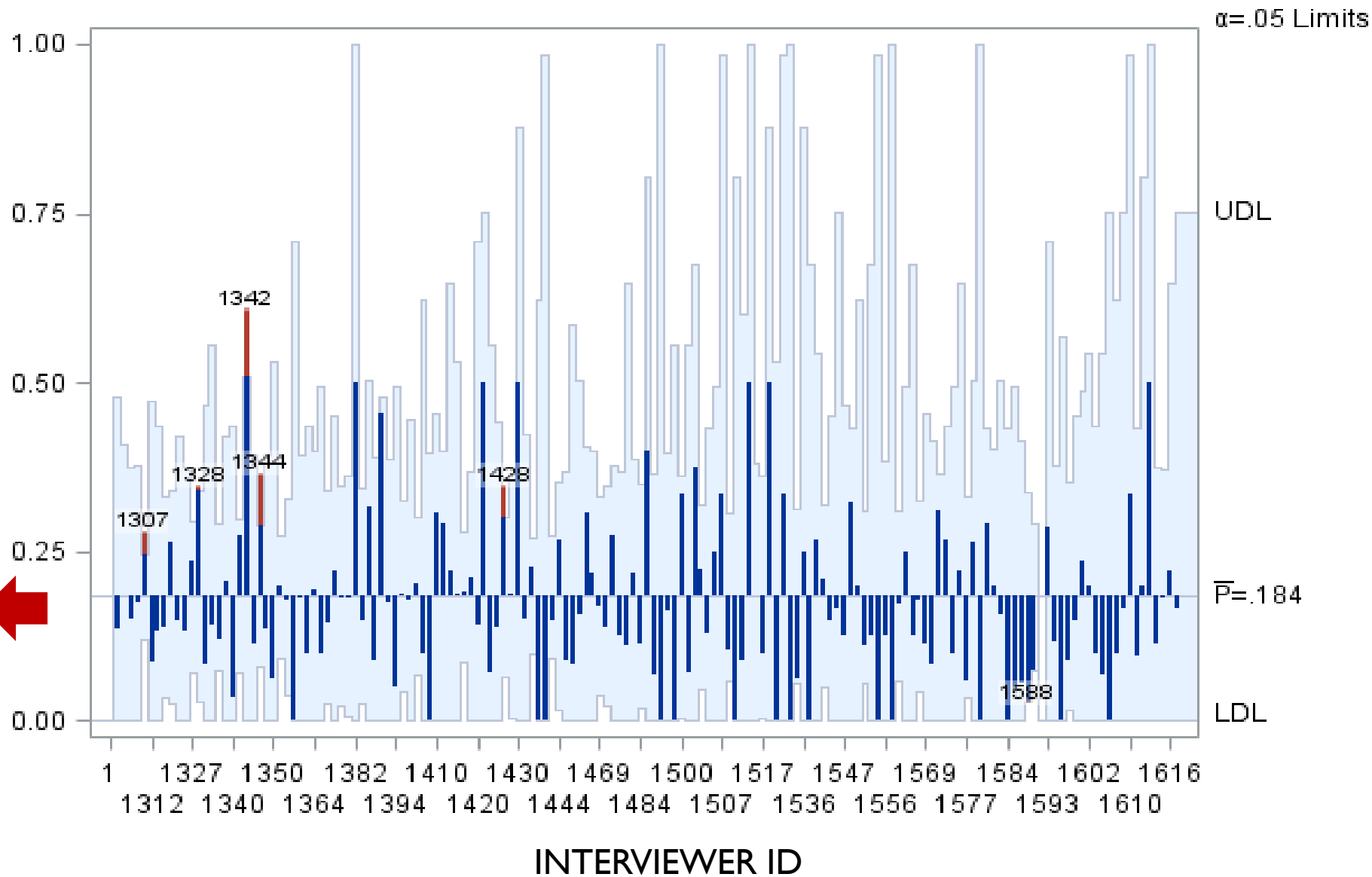
analysis-of-means chart (for proportions)

- **Proportion of confirmed codes**

to assess the tendency to confirm previously assigned codes
(only for WAVE>1)
by **interviewer**, **data collection mode** (CAPI; CATI)

analysis-of-means chart (for proportions)

Chart of the *Proportion of codes* in the 6th occupational group CAPI data



6 flagged interviewers ←

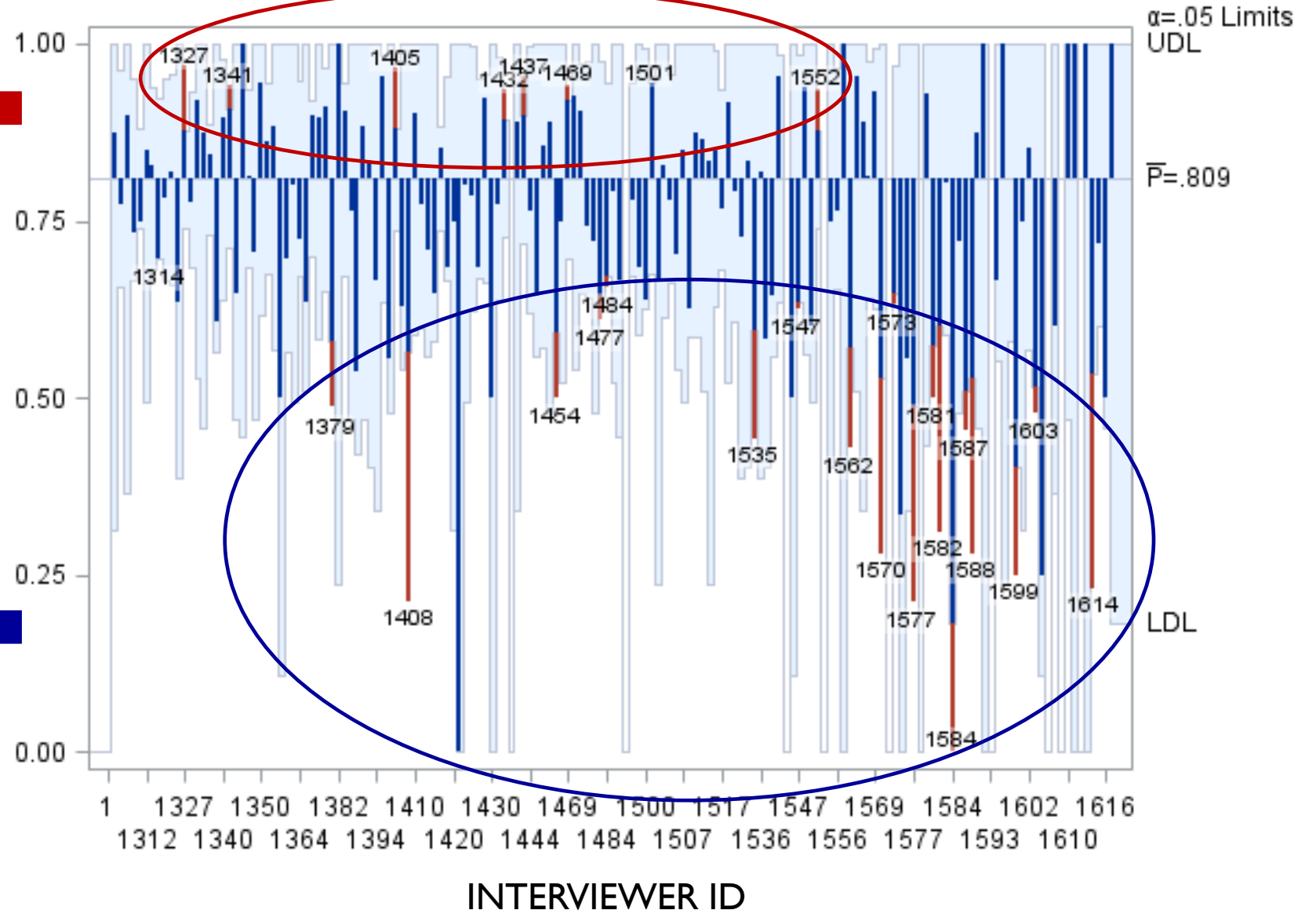
Chart of the *Proportion of confirmed codes* CAPI data

not enough commitment in the coding task?

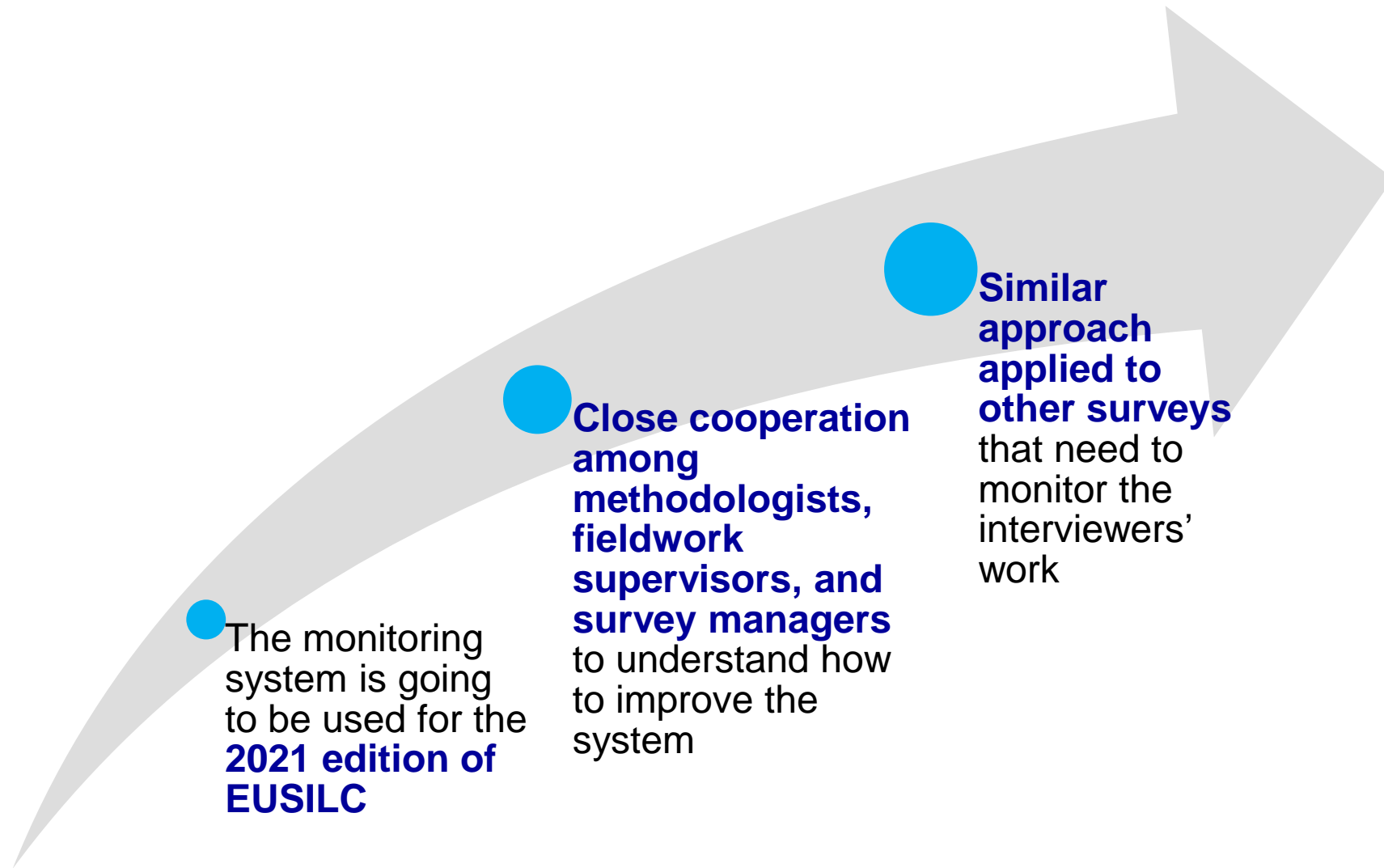
By integrating the results from the other charts, it is possible to understand whether the out-of-control event is linked to a fraudulent attitude

above-average efforts

- **lack of understanding** of how the coding should be performed
- **difficulties in using** the assisted coding software



Next steps and lessons learned



thanks

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