



Studying the mode effect in Quality of work life survey

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Background

The use of mixed modes has been increasing also among official statistics in order to reduce nonresponse and cut costs

2017 Statistics Finland started a development project to implement mixed modes and especially web mode in the official surveys by 2020

One of the most consistent findings in mode studies is that self-administered forms perform better than interview-modes when sensitive questions are asked*

*e.g. De Leeuw 2005, Laaksonen S. and Heiskanen M. 2014

Different mixed modes

Advance notification or recruitment in different mode from data collection mode

One sample,
different modes for
different sample
persons

One sample,
different modes for
different parts of
the questionnaire

One sample,
different modes for
different time
points during the
survey

Reminder in mode different from data collection
mode during the data collection period

Different samples,
different modes

Modified from De Leeuw 2005, Dillman 2000, Balden 2004

What is mode effect?

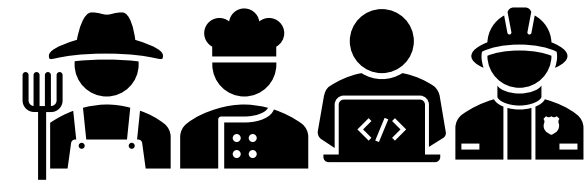
A mode effect is a form of measurement error that occurs when respondents answer differently to a survey question solely because of the mode in which the question is administered

Potential for mode effects to undermine inference from the survey

Can be caused by

- differences in frame coverage
- auditory versus visual presentation of the questions
- differences in handling of “don't know” or refusal response options,
- the role (if any) of the interviewer
- consequences for social desirability pressure

The Quality of work life survey

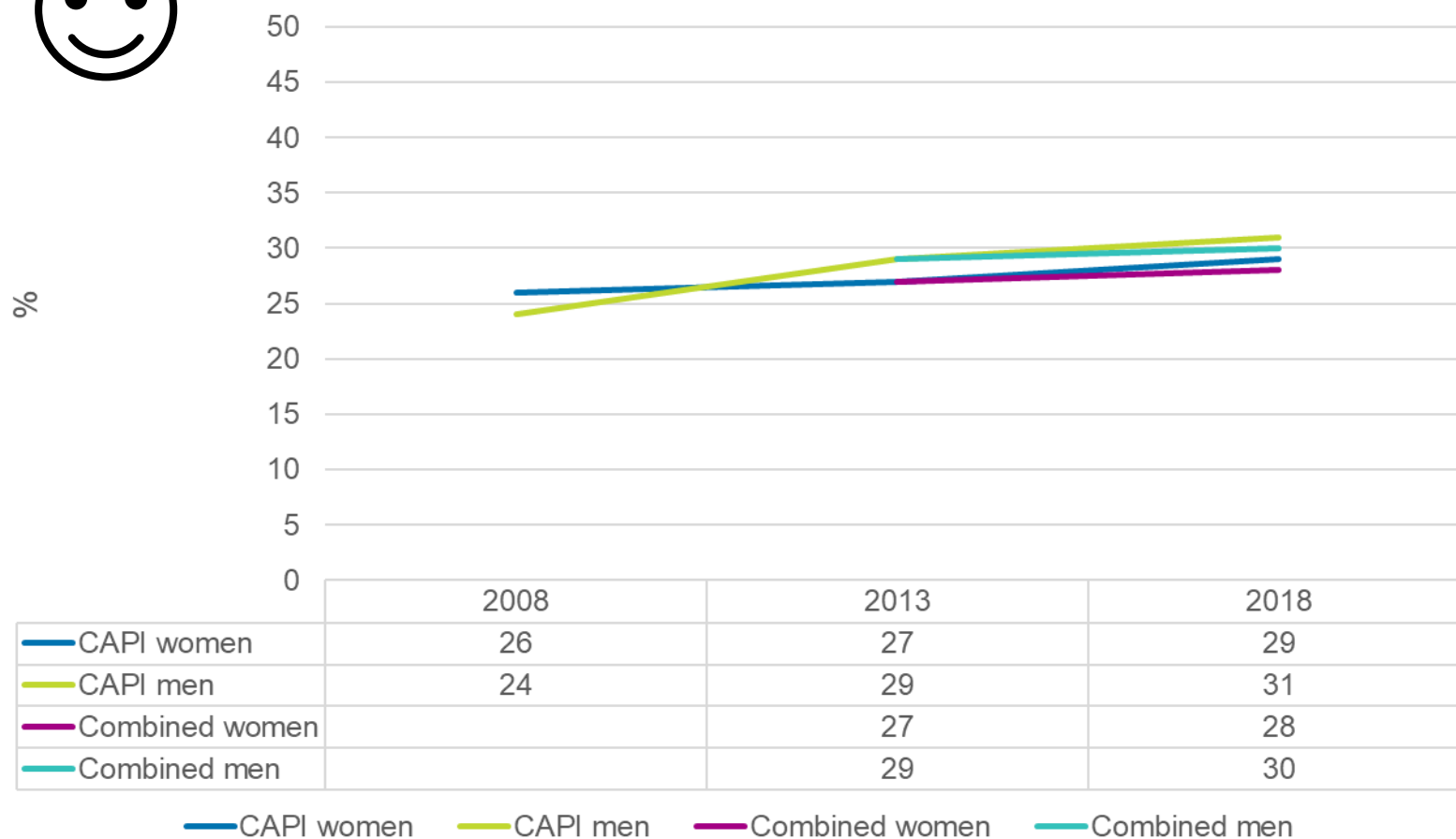


- The survey is an extensive personal interview survey conducted since 1977 to monitor employees' working conditions and changes in them
 - 2018 Quality of work life survey was divided into two samples:
 - The pilot sample consisted of 3200 people who were asked to respond via web
 - The traditional sample of 6153 people who were interviewed face to face or via telephone.
 - [The response rate varied between the two samples (face-to-face 67 %, web 48 %)
 - [The respondent characteristics differed considering age, gender, education, socioeconomic status and line of business
- Weighting adjustment with calibration

Mode effect in Quality of work life survey



Very pleased with current job %



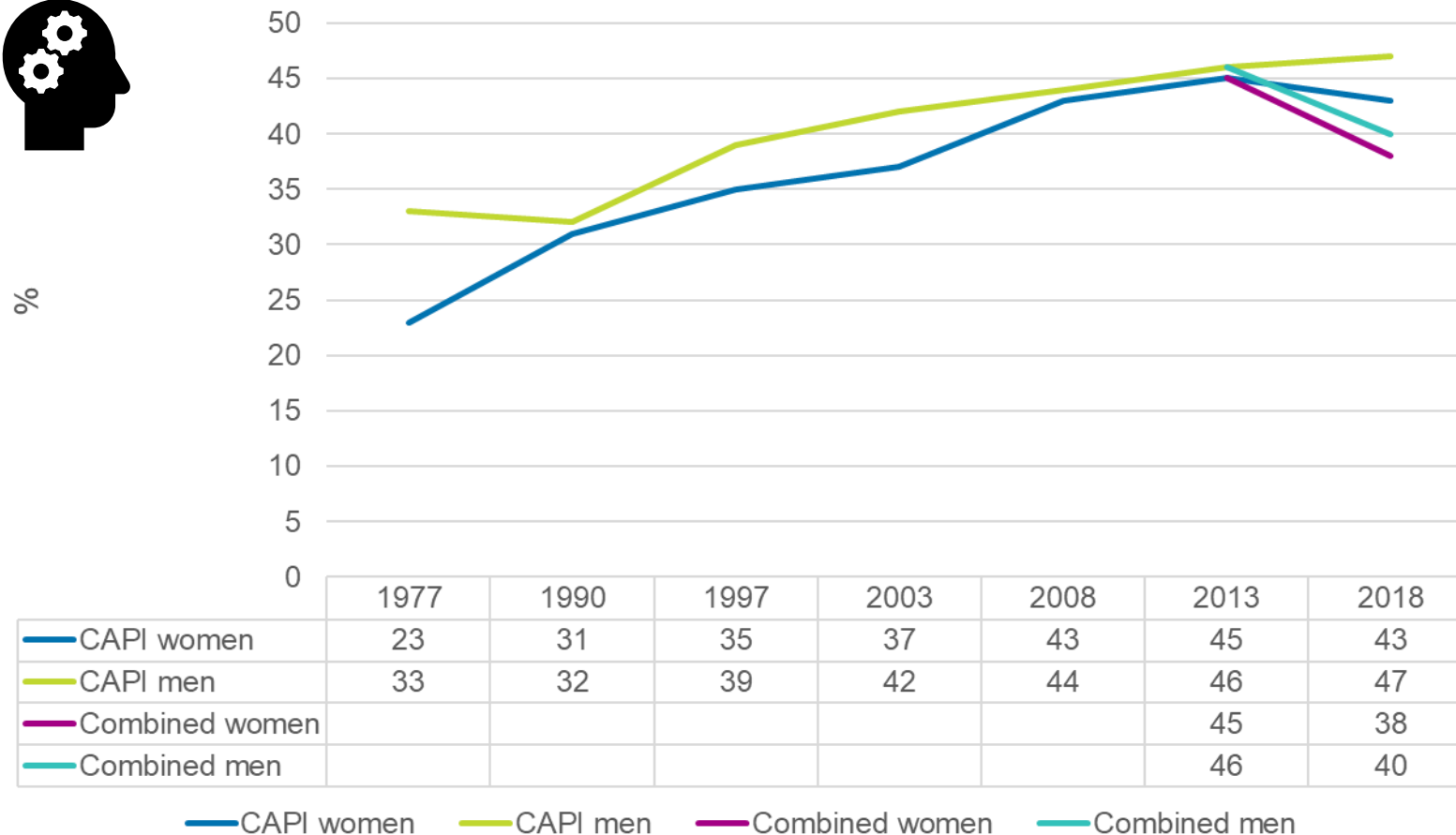
No significant mode effects in the following questions:

- Most fact questions
- I don't have enough time to schedule my future assignments
- Too few employees at the workplace
- I don't have enough time to familiarize myself with customers' problems

Mode effect in Quality of work life survey



Good possibilities for professional development at current job %



Significant mode effects in the following questions:

- My superior trusts his/hers employees
- Our workplace atmosphere is supportive
- My superior treats aging employees equally
- My superior encourages the employees to study and develop in their job

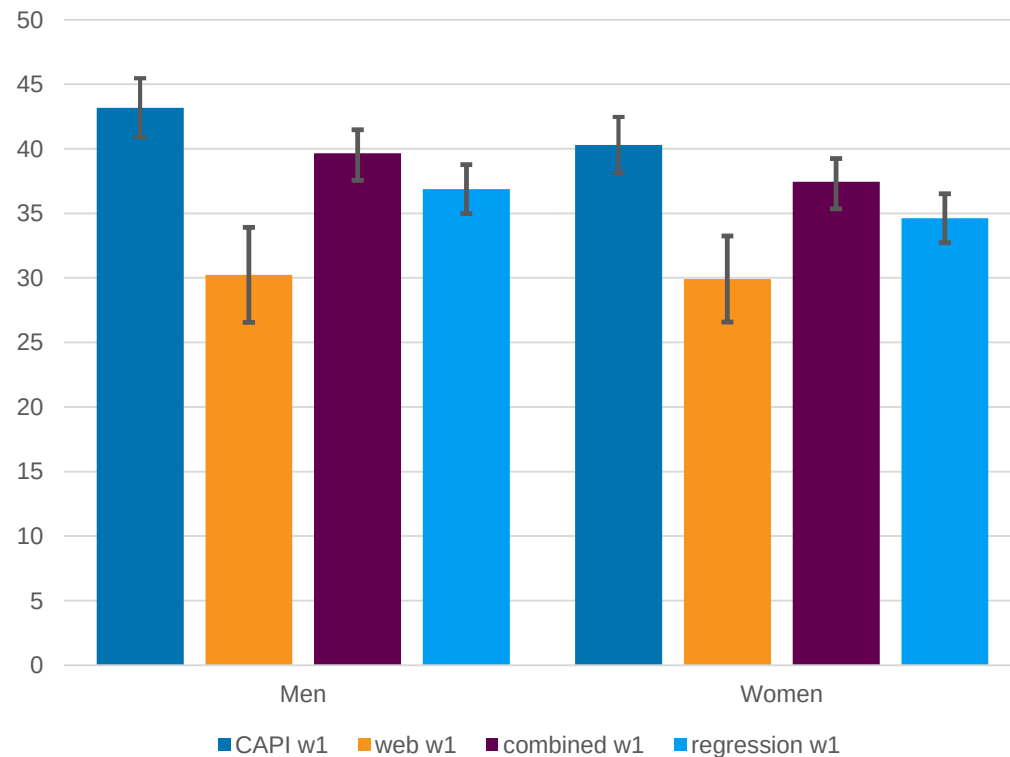
-> Consistent findings: web respondents gave overall more negative impression of their work life quality

Mode effect or something else?

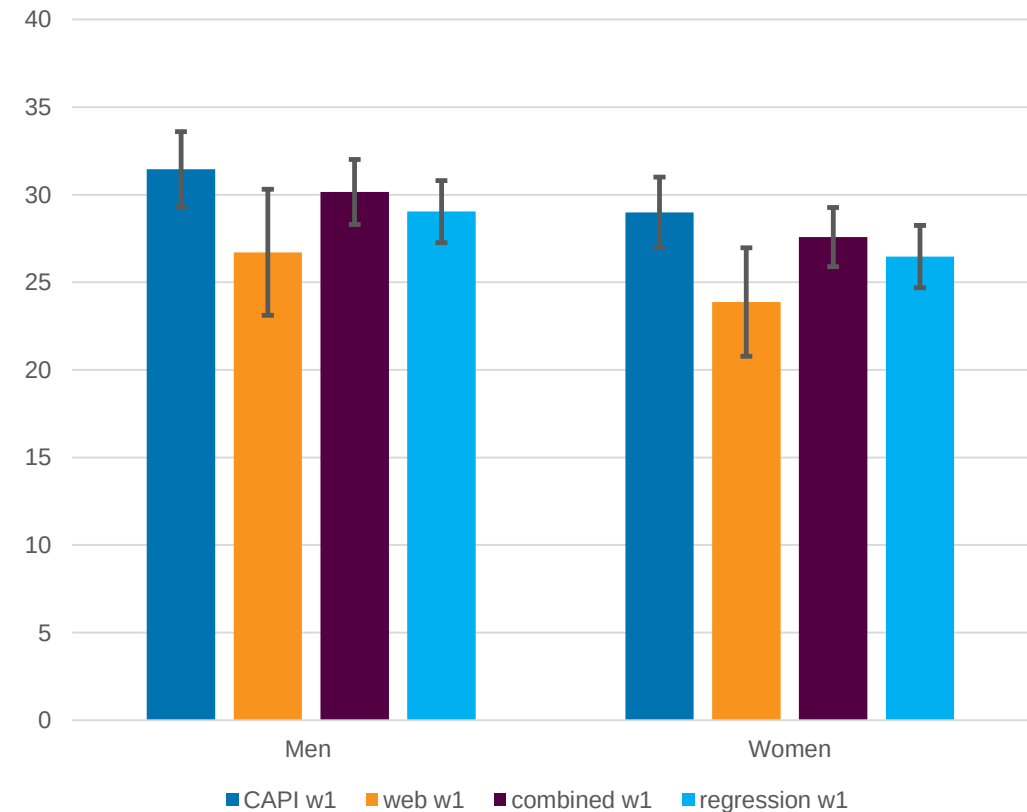
- Coverage error
- Nonresponse error
 - Differences in respondent group composition were adjusted by **weighting, respondent matching and regression modelling**
 - There were no significant differences between samples considering **item nonresponse**
- Measurement error
 - Presenting of '**I don't know**' or 'refuse to answer' categories
- Other confounding aspects
 - **time of the participation** varied between samples but proved not to be a significant dependent on variables affected by mode effect

How can we use all the observations: Methods for mode effect adjustment // weighting and regression

Good possibilities for professional development at current job %

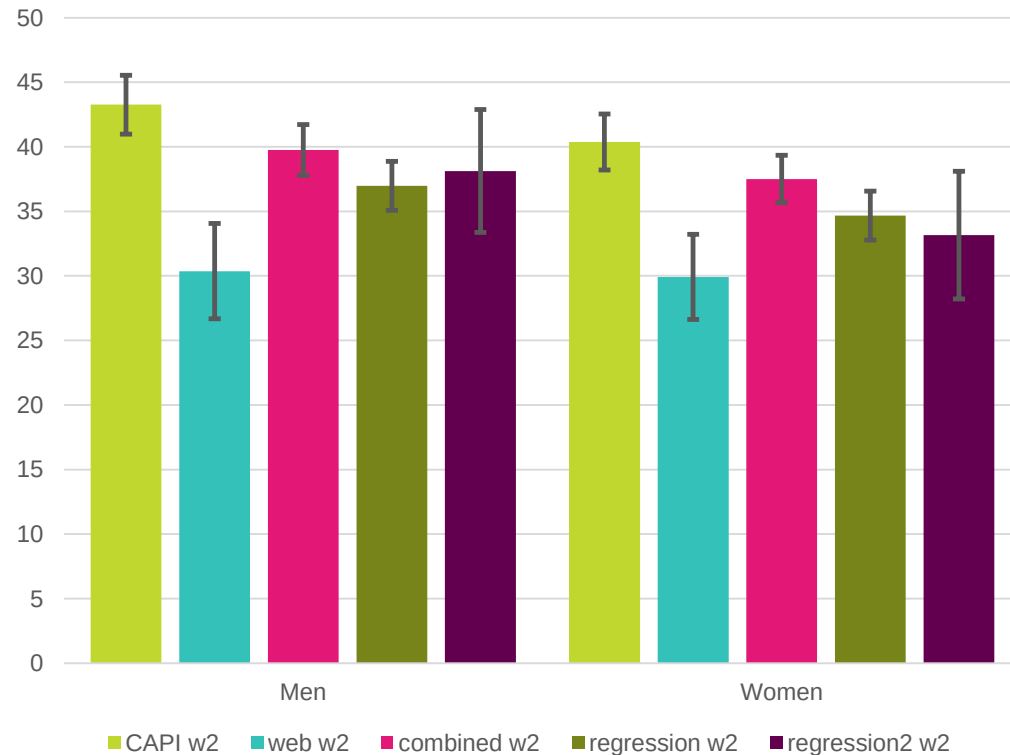


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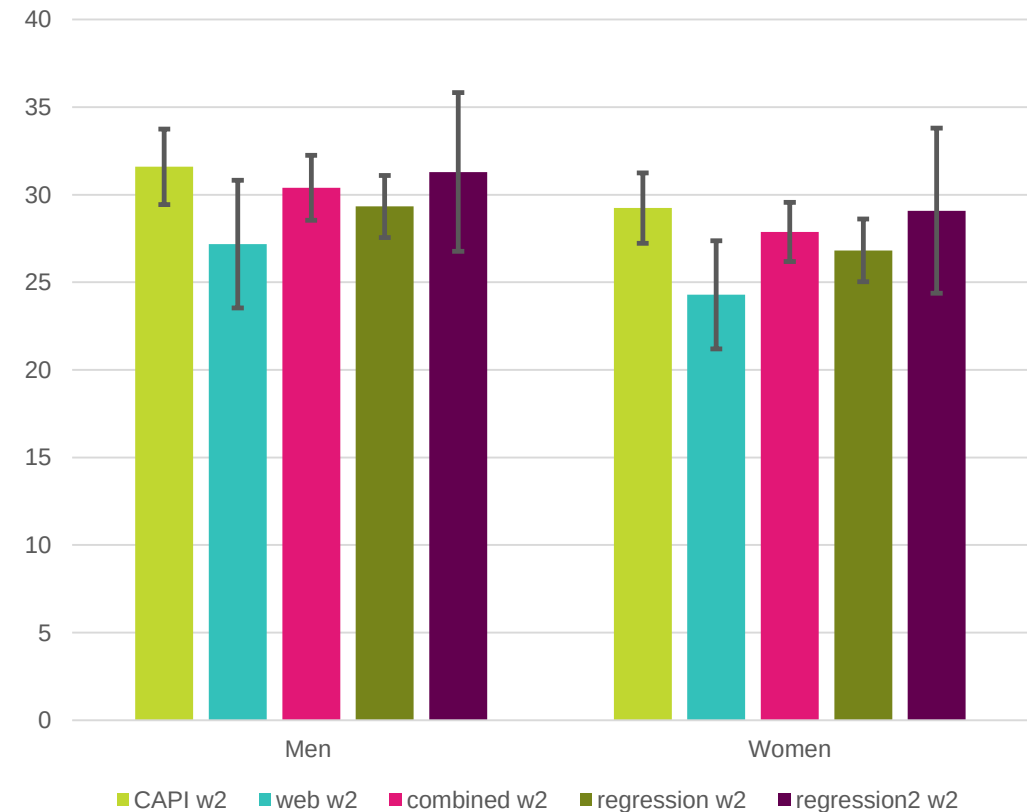


How can we use all the observations: Methods for mode effect adjustment // weighting and regression

Good possibilities for professional development at current job %

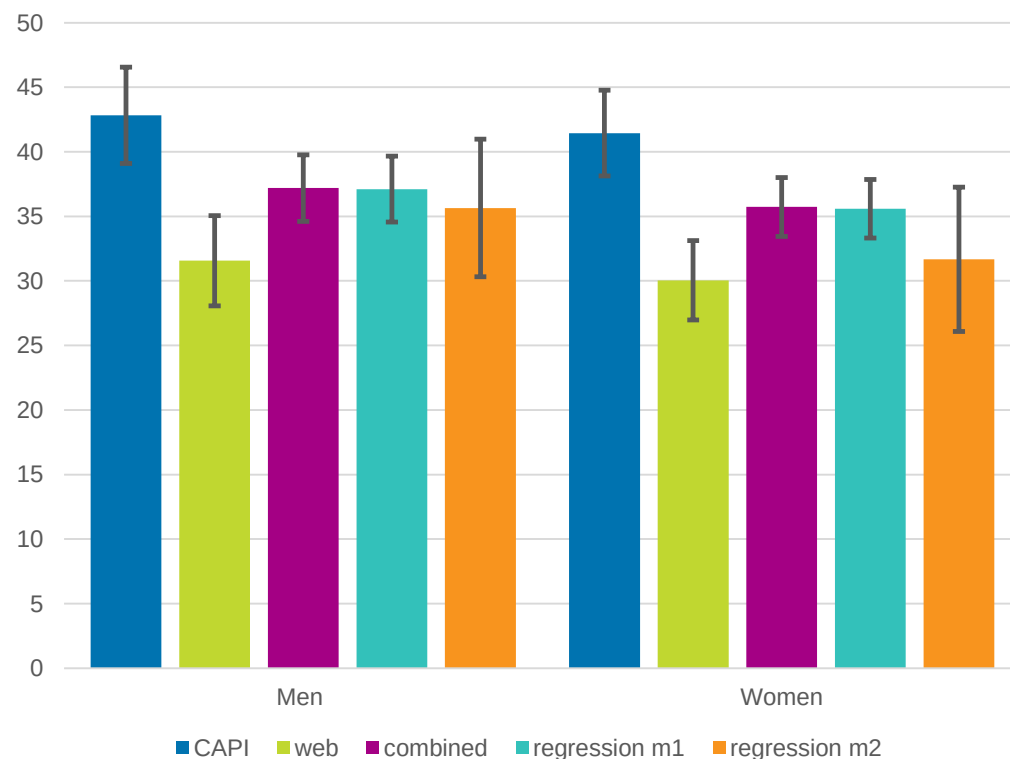


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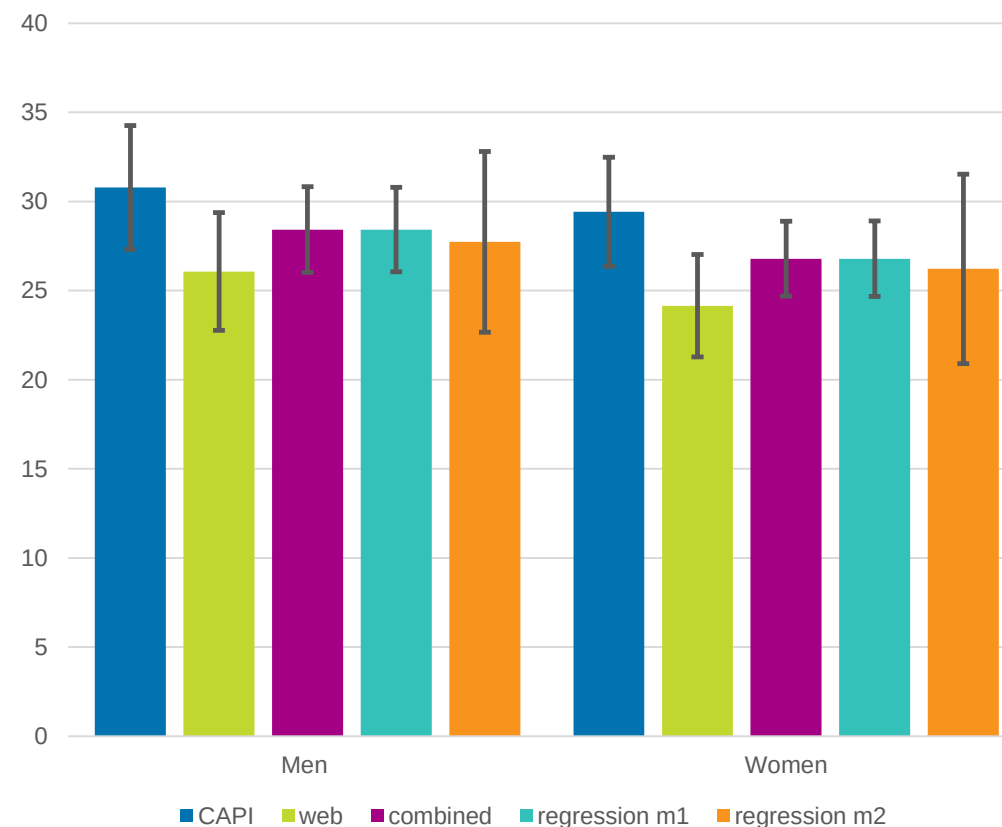


How can we use all the observations: Methods for mode effect adjustment // matched respondents

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What (else) could we do? Methods for mode effect adjustment

- Leave it be – the mode effect breaks the time series
- Further regression modelling – create individual model for every response variable if needed
 - The use of interaction terms should also be studied
 - Some interaction terms could also be added to the weighting procedure
- Treating the variables affected by mode effect partly as a missing data problem and imputing them with e.g. multiple imputation (Kolenikov et al 2014)

Discussion & Conclusions

- The mode effect could be partly explained by nonresponse error (unit nonresponse)
- Measurement error can be a valid explanation too
- There are multiple confounding factors and they seem to vary from variable to variable
- Mode effect is still found in some fact questions too
- Whatever method is used, it should clearly described especially if the same data will be used by other researchers
- The research concerning mode effect continues in Statistics Finland



Thank You

Statistics Finland 

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References

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