

Response burden and data quality in business surveys: the experience of Banca d'Italia

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Response burden

- **ACTUAL** (Snijkers et al. 2013)
 - ✓ hours spent
 - ✓ in financial terms (hours spent multiplied by the average hourly cost of respondent's time)
- **PERCEIVED** (Bradburn, 1978)
 - ✓ Perception of time and effort
 - ✓ Stress by sensitive questions

Response burden

- **ACTUAL**

- e.g. Giesen 2012; Lorenc et al. 2013:

Potential effects on

high nonresponse rates
late responses
measurement errors
panel attrition

- Crawford et. al. 2001; Galesic, 2006:

Association with

Characteristics of questionnaires
Firm size

Response burden

- **ACTUAL**

- **PERCEIVED**



- Causes

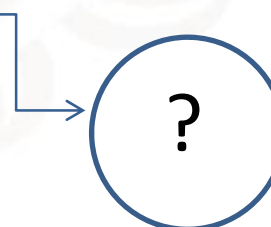
e.g. Dale et al., 2007:

Respondent burden (e.g. motivation and belief in the utility of surveys for own business and society)

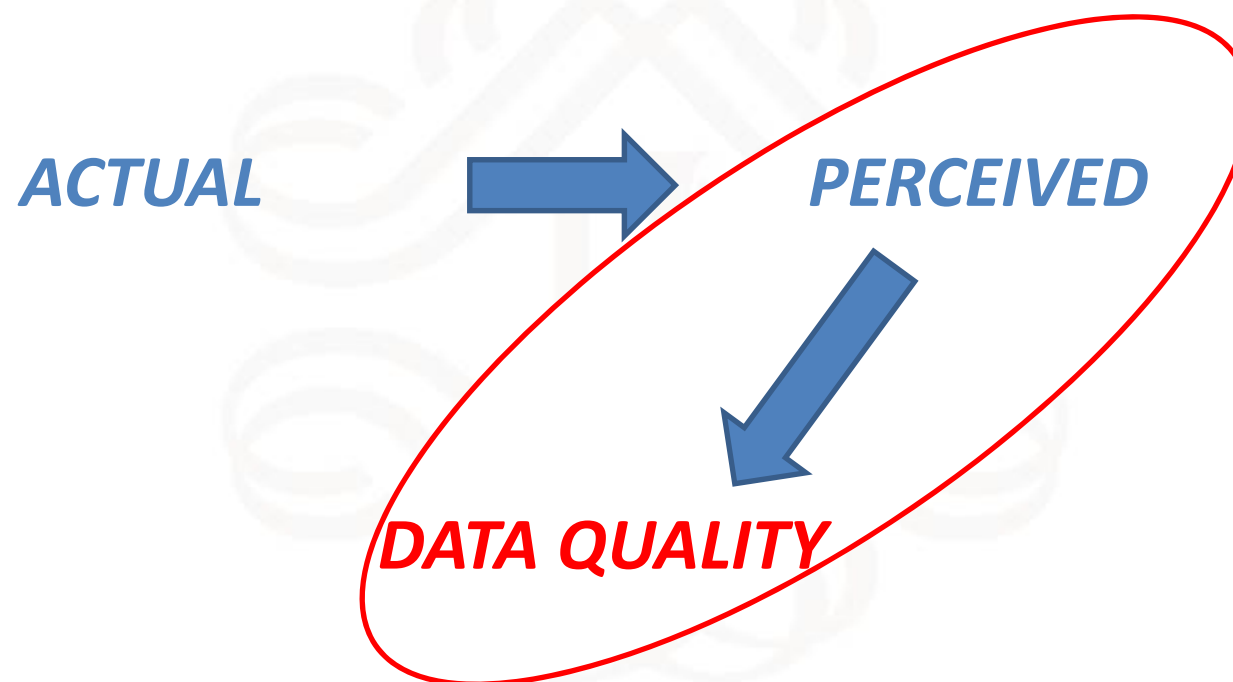
Design burden (e.g., frequency of contact and the mode of data collection)

Interaction burden (e.g. the task, memory demands and item sensitivity)

- Effects



Our aim:



Annual Business Surveys of Bol

Survey of Industrial and Service Firms (INVIND)

(since 1972 - In spring)

Quantitative data (investments, sales,
expectations,...)

Very high complexity

- Sample: 4,000 Italian firms
- List of units extracted from Cerved
(central balance sheet database)
- Stratification
- Panel sample
- Non-compulsory participation

Business Outlook Survey of Industrial and Service Firms

(since 1993 - In autumn)

Qualitative data (firm's performance)

Medium complexity

The questionnaire

Contents:
multiple aspects
of firms' activities

core questions/ stable

- investment and productive capacity (use and changes)
- turnover
- employment (nr, hours, per capita wages)
- prices
- financing

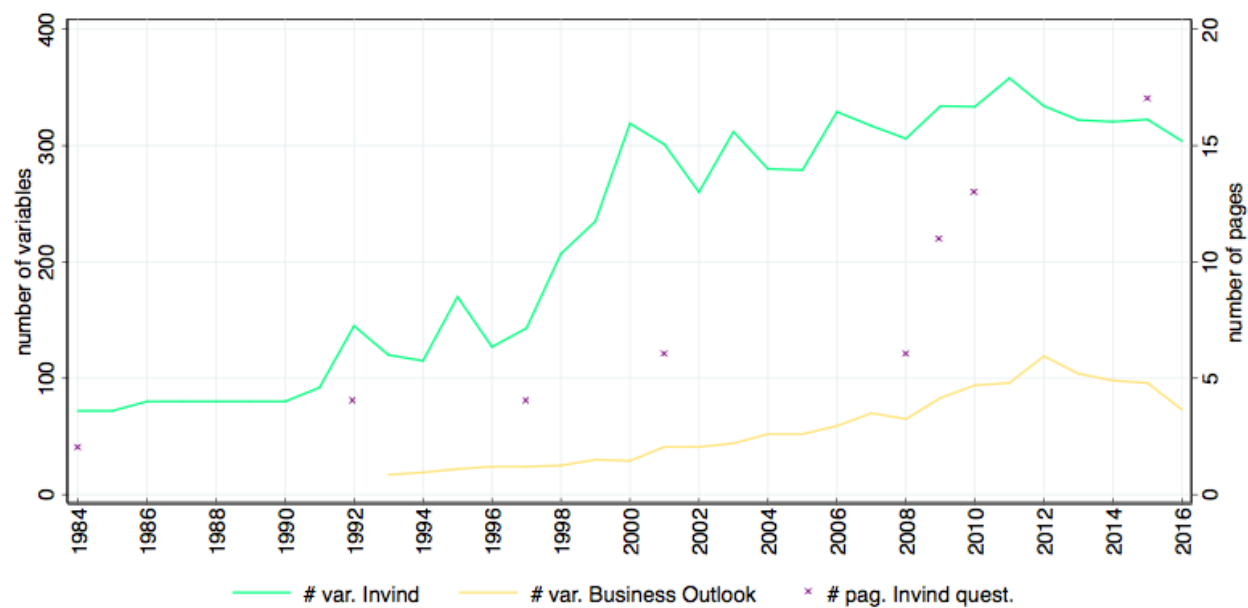
focus questions/changing

Recent examples:

- Uncertainty around turnover
- Incentives to investment
- Use of advanced technologies
- Cybersecurity
- US tariffs
- Service lives of capital goods
- [...]

assessment of response burden

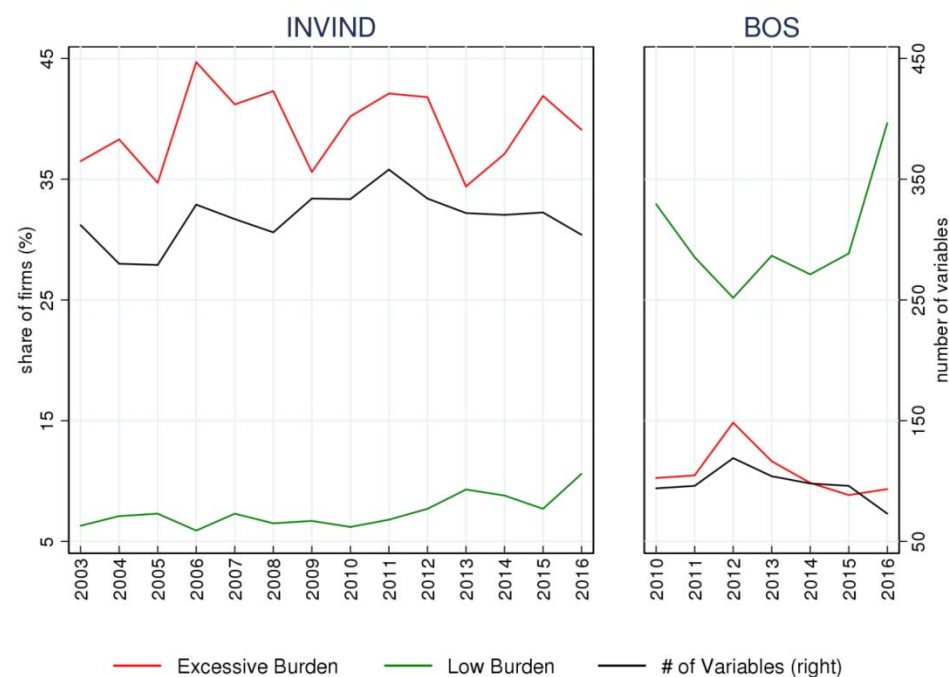
Actual response burden over time



Assessment of response burden

How would you rate the effort involved in completing the questionnaire? ⁽¹⁾	<input type="text"/>	V980N
Legend: (1) 1=modest; 2=average; 3=large; 4=excessive.		
To what extent do you think the following factors made it difficult to fill in the questionnaire? <i>(For each factor please assign a score ranging from 1 to 10, where 1 indicates that the factor played a very limited part in making the questionnaire difficult to fill in while 10 indicates that it played a very large part)</i>		
A Too many questions	<input type="text"/>	P30BISA
B It was necessary to seek the help of several people to answer the questions	<input type="text"/>	P30BISB
C It was not always easy to understand the questions because some of the terms were not clear	<input type="text"/>	P30BISC
D The possible answers did not include my situation	<input type="text"/>	P30BISD
E For some questions, it was difficult to choose the correct answer	<input type="text"/>	P30BISE
How many people from your firm, including yourself, were involved in filling in the questionnaire?	<input type="text"/>	P31
Was it necessary to involve external consultants (e.g. accountant, labour consultant, etc.)(Yes/No)	<input type="text"/>	P32
Could you please indicate how much time approximately it took your firm to collect the necessary information and fill in the questionnaire? <i>(please indicate the number of hours)</i>	<input type="text"/>	P33

Perceived response burden over time



Perceived vs actual response burden

RESPONSE BURDEN	Low	Average	High	Excessive
Average time (hours)	1.8	3.7	6.4	8.2
Too many questions	3.2	4.8	7	8.3
More people involved	2.3	4.2	6.1	7.2
Use of unclear terms	2.1	2.9	4	4.9

Perceived response burden and data quality

Businesses can reduce a perceived high burden:

- By responding too late
- By not responding at all (unit non-response)
- By responding with data less accurate than required

Perceived response burden and data quality

Businesses can reduce a perceived high burden:

- By responding too late
- ***By not responding at all
(unit non-response)***
- By responding with data less accurate than required
 - ✓ item non-response
 - ✓ response error

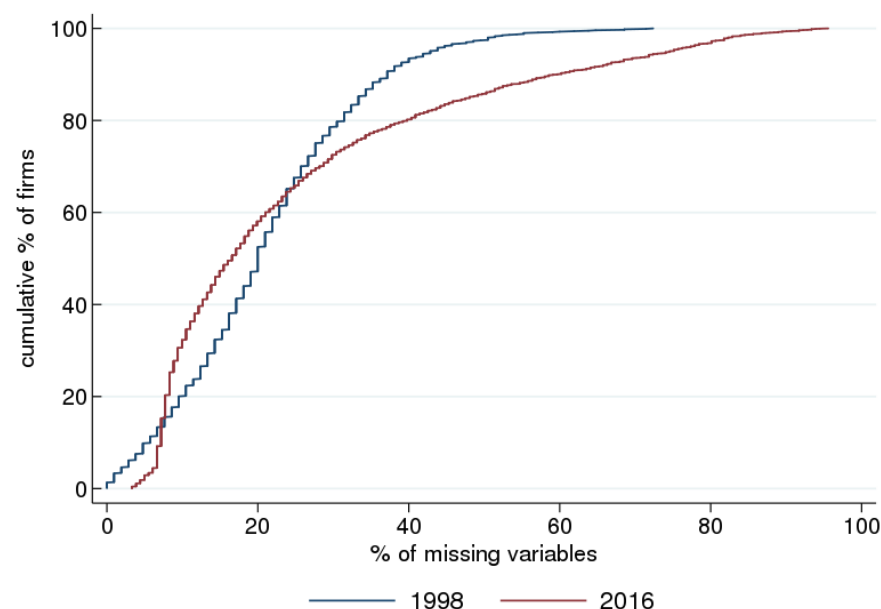
	Attrition
# waves	0.904***
	(0.016)
Per.Res.Bur = Average	1.452
	(0.414)
Per.Res.Bur = High	1.356
	(0.425)
Per.Res.Bur = Excessive	1.992*
	(0.599)
Per.Res.Bur = Missing	2.527**
	(0.827)
Δ employment	0.225**

Perceived response burden and data quality

Businesses can reduce a perceived high burden:

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- **By responding with data less accurate than required**
 - ✓ **item non-response**
 - ✓ response error

Cumulative distributions of firms for shares of missing variables in INVIND 1998 and 2016

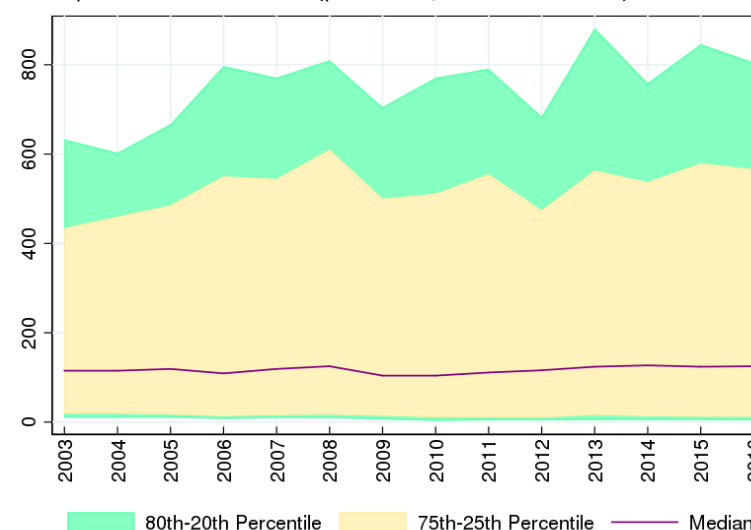


Perceived response burden and data quality

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 - ✓ **response error**

Response error on turnover (percentiles, thousands of euro)



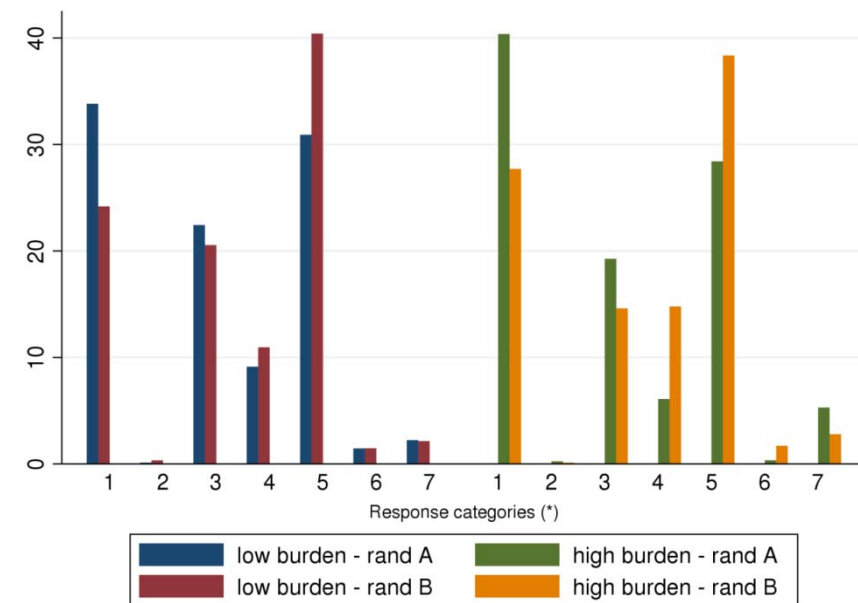
	(1)	(2)	(3)
	Q=0.25	Q=0.50	Q=0.75
high_burden	0.808	9.684*	22.00*
	(0.705)	(4.104)	(11.093)

Perceived response burden and data quality

Businesses can reduce a perceived high burden:

- By responding too late
- By not responding at all (unit non-response)
- ***By responding with data less accurate than required***
 - ✓ item non-response
 - ✓ ***response error***

Distribution of factors affecting the expected price dynamics of firms. Randomized experiment with reversed response categories (percentages).



Conclusions:

1. Analysis of the dynamics of response burden in two business surveys of Banca d'Italia
2. Factors affecting the perception of burden
3. Perceived response burden has negative effects on data quality:
 - i. Timeliness
 - ii. Attrition
 - iii. Item-non response
 - iv. Inaccurate answers

Monitoring and reducing perceived response burden should be a priority for data producers!

Thank you

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