

MEASURING MANAGEMENT PRACTICES: *PRELIMINARY EVIDENCE FROM AN EXPERIMENT*



WORLD BANK GROUP

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Enterprise Analysis*

Overview

1. **OVERVIEW OF THE ENTERPRISE SURVEY**
2. **MANAGEMENT PRACTICES IN THE ENTERPRISE SURVEY**
3. **SOCIAL DESIRABILITY BIAS: *experiment on reporting the use of manager bonuses***
4. **DISCUSSION**

Overview

- 1. OVERVIEW OF THE ENTERPRISE SURVEY**
- 2. MANAGEMENT PRACTICES IN THE ENTERPRISE SURVEY**
- 3. SOCIAL DESIRABILITY BIAS:** *experiment on reporting the use of manager bonuses*
- 4. DISCUSSION**

World Bank Enterprise Survey (ES)

- Global comparability: in ~130 countries of all income levels
- Measure data on: business environment + firm performance + sensitive questions (on e.g. corruption)
- Administered face-to-face by trained enumerators
- Use of private contractors to implement fieldwork
- Use of visual tools (show cards)
- Standardized flow and question format
- Voluntary

World Bank Enterprise Survey (ES), Cont'd

- Nationally representative
- Formal (non-agricultural, non-extractive) private sector
- 5+ employees
- Establishment level
- Stratified SRS design (size x sector x location x panel)
- Use of sampling weights
- Use of the most recent, accurate sampling frame

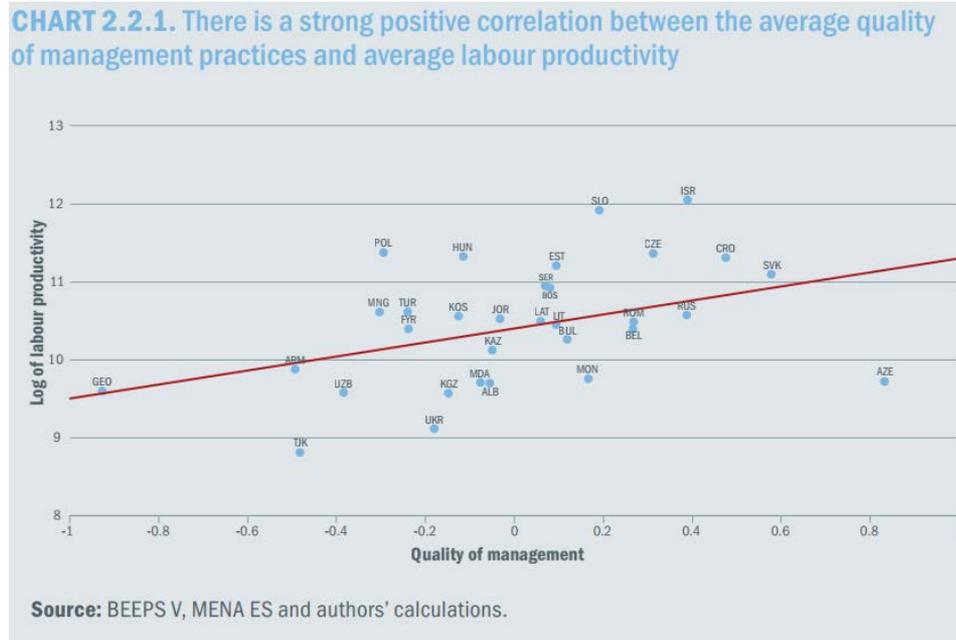
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Inclusion of Management Practices in the ES

- Started from a relationship with MOI (EBRD) in 2008
- A sub-set of questions has been included in several regions to calculate a general management practices index
- ES (BEEPS with EBRD) in Europe and Central Asia 2012/3
- Middle East and North Africa (with EBRD and EIB) 2013/4
- In South America (2017, ongoing)
- Upcoming: 44 countries in Europe & MENA, Joint EBRD-EIB-WBG Enterprise Survey
- Upcoming: ES in selected countries in Africa
- TBD: testing to include (~11) variables necessary for management practices index calculation on in global module

Inclusion of Management Practices in the ES



- Better management practices are generally correlated with greater productivity (EBRD Transition Report 2014)
- In MENA: poorly managed firms benefit more from improvements in management practices than from product innovation (EBRD-EIB-World Bank Group 2016)

Inclusion of basic questions in the ES

TOPICS ON MANAGEMENT PRACTICES IN THE ES

1. Handling problems in the production processes (or process of providing services)
2. Monitoring performance indicators
3. Use of targets (term of focus, ability to achieve, awareness)
4. Incentives (bonuses, promotions, and dismissal)

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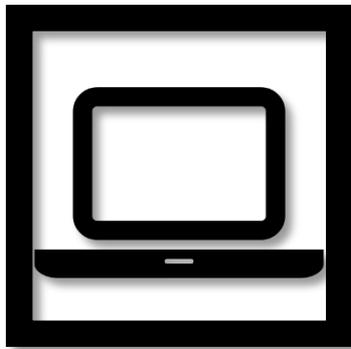
3. **SOCIAL DESIRABILITY BIAS:** *experiment on reporting the use of manager bonuses*

3. **Q: Are there measurement effects (e.g. social desirability bias) to applying management practices questions to the ES methodology?**

Social Desirability Bias

- Respondents are more (less) likely to report socially desirable (undesirable) behavior when interacting with an interviewer
- Response rates are known to be lower for self-administered (online or paper) surveys ...
- ... With the risk of losing representativeness
- This presents a trade-off: recovery of data on complex topics vs. interviewer effects (e.g. desirability bias)

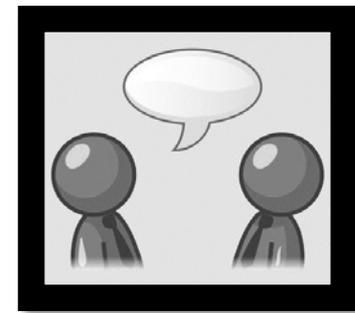
Social Desirability: Mode Effects



Online



CATI/phone



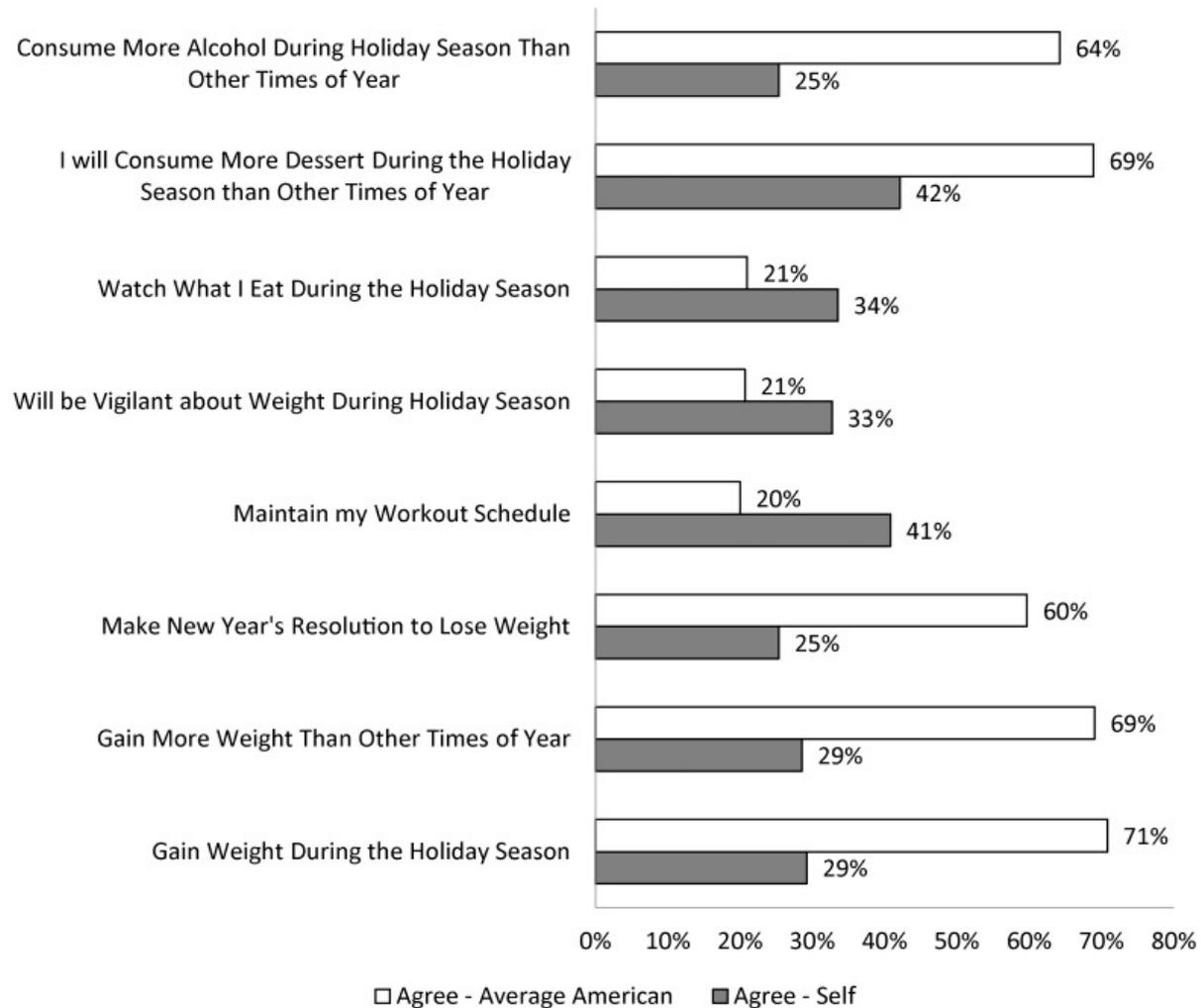
Face-to-face (F2F)

SOCIAL DESIRABILITY EFFECT

Less bias

More bias

An example for the holidays



Social Desirability: Innovation

- For business operators, some activities or topics are framed as desirable (e.g. Cirera and Maloney, 2017)
- Example: innovation is framed as desirable for entrepreneurs and business owners
- Bias may be exacerbated when topic is less understood
- Upshot: reinforces the tradeoff between complex topics and interviewer effects

Inclusion of basic questions in the ES

TOPICS ON MANAGEMENT PRACTICES IN THE LAC ES

Potential for social desirability:

- **Performance bonuses (filter treatment in LAC)**
- **Production targets**
- **Monitoring of performance indicators**

LAC: experiment

- **GOAL:** test effect of treatment (filter question) on false positives of management activity (Type II error, use of managerial bonuses)
- **GIVENS:**
 - F2F enumeration (CAPI on tablet)
 - Include sub-set of questions to calculate management index
 - Use of filters throughout questionnaire
 - Use of show cards listing scale of desirable options
- **IMPLEMENTATION:**
 - n ~4500
 - Seven South American countries
 - Fieldwork February - December 2017
 - Randomized treatment (not applied by strata) of Y/N filter question

LAC: fieldwork

Country	n	WB Income	Sampling Frame	Yield ^a [Response ^b]
Argentina*	1000	UMI	Dun & Bradstreet Argentina 2010 y 2016 (N=46,688)	28.7% [62.9%]
Bolivia	360	LMI	INEC, Censo Económico, updated 2016 (N=12,588)	40.3% [70.4%]
Colombia*	1000	UMI	Confecamaras Colombia 2014/2016 (N=58,465)	15.9% [67.9%]
Ecuador	360	UMI	Superintendencia de Compañías Valores y Seguros del Ecuador, 2016 (N=11,830)	22.5% [57.7%]
Paraguay	360	UMI	Directorio General de Empresas y Establecimientos 2015 (N=5,624)	17.6% [76.8%]
Peru*	1000	UMI	Registro MYPE, SUNAT (Hacienda), 2011 (N=15,720)	15.7% [46.8%]
Uruguay*	360	High	Instituto Nacional de Estadística (INE), 2015 (N=11,777)	10.4% [50.7%]

* Fieldwork ongoing

UMI: Upper middle income

LMI: Lower middle income

a. Interviews per contacted firm/enterprise

b. Interviews per confirmed eligible contact

Implementation in MOPS

11 In 2010 and 2015, what were **managers'** performance bonuses usually based on at this establishment?

Mark all that apply

	2010	2015
Their own performance as measured by production targets	<input type="checkbox"/>	<input type="checkbox"/>
Their team or shift performance as measured by production targets	<input type="checkbox"/>	<input type="checkbox"/>
Their establishment's performance as measured by production targets	<input type="checkbox"/>	<input type="checkbox"/>
Their company's performance as measured by production targets	<input type="checkbox"/>	<input type="checkbox"/>
No performance bonuses (If no performance bonuses in both years, SKIP to 13)	<input type="checkbox"/>	<input type="checkbox"/>

- Q11 is the comparable question
- United States Census Bureau
- Self-administered, mailed paper or electronic instrument
- Stand-alone

Implementation in LAC ES

CONTROL

ANSWER IF ROT.R11=2 (NOT SELECTED)

R.11	Over the last complete fiscal year [insert last complete fiscal year], what were managers' performance bonuses usually based on?
	INTERVIEWER: INCLUDE ANY TYPE OF TARGET, INCLUDING TARGETS BASED ON PRODUCTION, SALES, THE FIRM'S STOCK PRICE, ETC.
	SHOW CARD 14

Their own performance as measured by targets	1
Their team or shift performance as measured by targets	2
Their establishment's performance as measured by targets	3
Their company's performance as measured by targets	4
No performance bonuses	5
DON'T KNOW (SPONTANEOUS)	-9
DOES NOT APPLY (SPONTANEOUS)	-7

TREATMENT

ANSWER IF ROT.R11=1 (SELECTED)

R.11.1	Does this establishment offer performance bonuses to managers?
---------------	--

Yes	1	
No	2	GO TO E1
DON'T KNOW (SPONTANEOUS)	-9	GO TO E1

ANSWER IF ROT.R11=1 (SELECTED)

R.11.2	Over the last complete fiscal year [insert last complete fiscal year], what were managers' performance bonuses usually based on?
	INTERVIEWER: INCLUDE ANY TYPE OF TARGET, INCLUDING TARGETS BASED ON PRODUCTION, SALES, THE FIRM'S STOCK PRICE, ETC.
	SHOW CARD 13

Their own performance as measured by targets	1
Their team or shift performance as measured by targets	2
Their establishment's performance as measured by targets	3
Their company's performance as measured by targets	4
DON'T KNOW (SPONTANEOUS)	-9
DOES NOT APPLY (SPONTANEOUS)	-7

Results: treatment effect of filter

Probit, Pr of Reporting that Firm Offers Management Bonuses

	20+ EMPLOYEES							
	Pooled	Argentina	Bolivia	Colombia	Paraguay	Peru	Uruguay	Ecuador
Filter question treatment	-0.370*** (0.0600)	-0.0414 (0.116)	-0.588*** (0.190)	-0.313** (0.143)	-0.899*** (0.170)	-0.628*** (0.143)	0.0566 (0.182)	-0.345** (0.172)
Panel firm	0.171*** (0.0658)	0.137 (0.148)	0.373* (0.212)	0.0690 (0.162)	-0.100 (0.226)	0.457*** (0.151)	0.453** (0.178)	-0.0486 (0.207)
Years main respondent has been with the firm (log)	-0.123*** (0.0386)	-0.241*** (0.0855)	-0.0795 (0.138)	-0.0450 (0.0860)	0.0458 (0.117)	-0.304*** (0.0822)	-0.0217 (0.104)	-0.0304 (0.124)
Main Respondent is Female	-0.278*** (0.0712)	-0.567** (0.228)	-0.473 (0.324)	-0.0560 (0.123)	-0.201 (0.218)	-0.208 (0.167)	-0.638** (0.310)	-0.151 (0.212)
Constant	1.264*** (0.464)	0.664* (0.397)	-0.256 (0.493)	-0.345 (0.431)	0.509 (0.332)	1.730*** (0.517)	0.245 (0.354)	0.0698 (0.432)
Observations	1,896	404	159	348	225	387	173	200
Avg. treatment effect	-13.5%	-1.5%	-21.3%	-11.4%	-31.8%	-21.5%	1.8%	-12.9%
Design Strata FE?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE?	Yes	No	No	No	No	No	No	No

Probit regression. Robust standard errors, clustered on region-sector-size-panel design and enumerator ID in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Results: treatment effect of filter

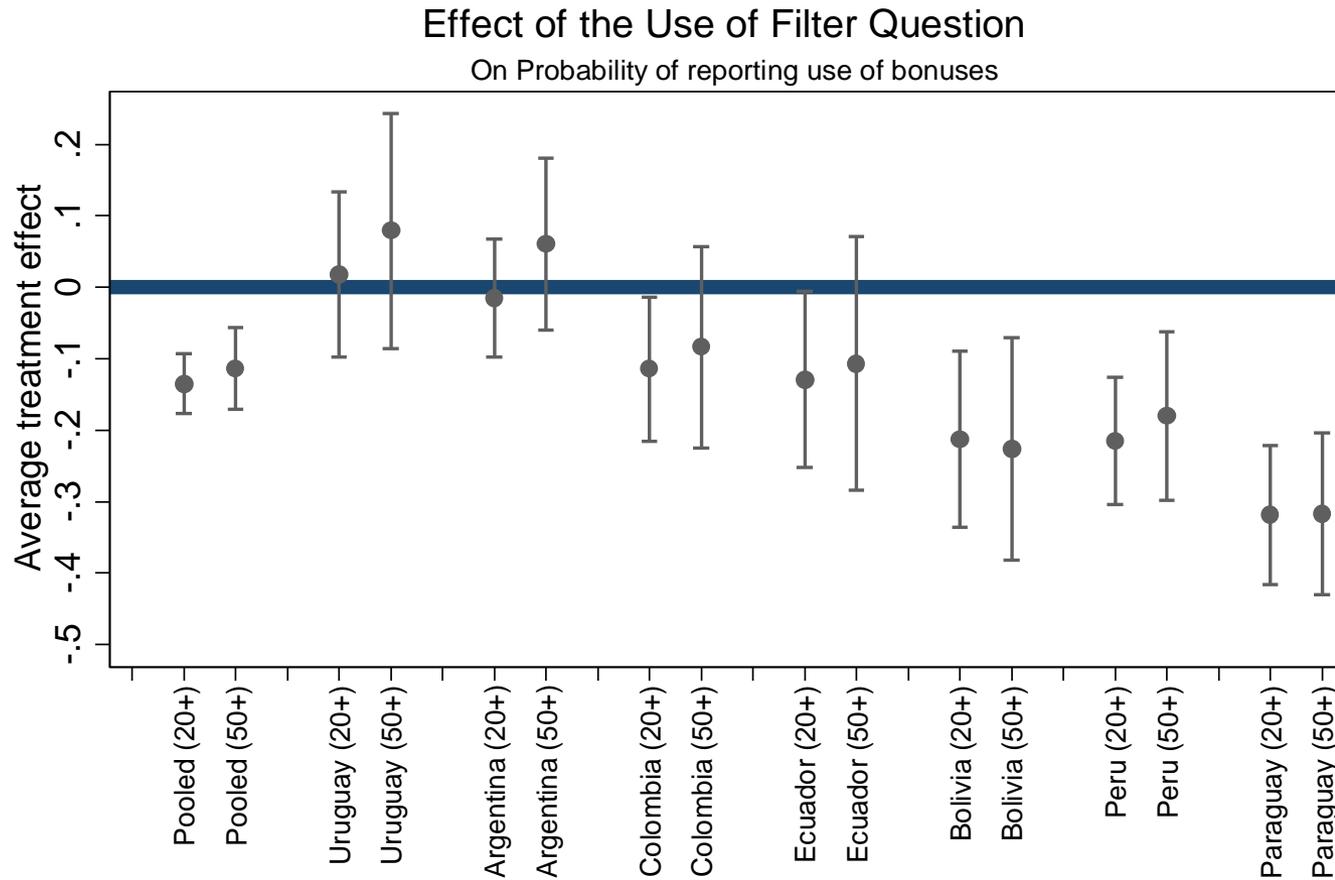
Probit, Pr of Reporting that Firm Offers Management Bonuses

	50+ EMPLOYEES							
	Pooled	Argentina	Bolivia	Colombia	Paraguay	Peru	Uruguay	Ecuador
Filter question treatment	-0.305*** (0.0801)	0.168 (0.172)	-0.613*** (0.237)	-0.226 (0.196)	-0.904*** (0.204)	-0.516*** (0.184)	0.226 (0.238)	-0.279 (0.243)
Panel firm	0.162** (0.0811)	-0.118 (0.196)	0.122 (0.218)	0.246 (0.219)	-0.134 (0.246)	0.466*** (0.173)	0.528** (0.253)	0.0630 (0.265)
Years main respondent has been with the firm (log)	-0.107** (0.0485)	-0.269** (0.115)	-0.0475 (0.172)	-0.0634 (0.103)	0.0541 (0.119)	-0.199** (0.100)	-0.221 (0.153)	-0.0541 (0.143)
Main Respondent is Female	-0.320*** (0.0985)	-0.790** (0.378)	-0.450 (0.312)	0.0132 (0.170)	-0.464 (0.330)	-0.204 (0.211)	-0.836* (0.477)	-0.207 (0.229)
Constant	1.099** (0.479)	0.368 (0.477)	0.0866 (0.569)	-0.525 (0.660)	0.448 (0.303)	1.356** (0.537)	0.836 (0.548)	0.0726 (0.486)
Observations	1,158	226	107	210	153	259	91	112
Avg. treatment effect	-0.114	0.0608	-0.226	-0.084	-0.317	-0.18	0.0788	-0.107
Design Strata FE?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE?	Yes	No	No	No	No	No	No	No

Probit regression. Robust standard errors, clustered on region-sector-size-panel design and enumerator ID in parentheses.

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Results: treatment effect of filter



NOTE: 95% C.I. shown. Includes design-based and respondent controls, clustered S.E. by country-stratum-enumerator

Results: treatment effect of filter

Probit, Pr of Reporting that Firm Offers Management Bonuses

	20+ EMPLOYEES MANUFACTURING							
	Pooled	Argentina	Bolivia	Colombia	Paraguay	Peru	Uruguay	Ecuador
Filter question treatment	-0.403*** (0.0827)	-0.0709 (0.133)	-0.395* (0.233)	-0.396** (0.170)	-1.010*** (0.270)	-0.773*** (0.230)	-0.412 (0.314)	-0.00975 (0.208)
Panel firm	0.0466 (0.0820)	0.0606 (0.147)	-0.438 (0.297)	0.198 (0.182)	-0.200 (0.237)	0.196 (0.189)	0.887*** (0.340)	-0.342 (0.405)
Years main respondent has been with the firm (log)	-0.108** (0.0506)	-0.152 (0.0937)	-0.105 (0.297)	-0.0783 (0.102)	0.205 (0.188)	-0.356*** (0.0828)	-0.0512 (0.305)	0.128 (0.154)
Main Respondent is Female	-0.356*** (0.0947)	-0.613** (0.253)	-0.0825 (0.413)	-0.247 (0.153)	-0.228 (0.406)	-0.225 (0.228)		-0.0824 (0.159)
Constant	0.377 (0.319)	0.234 (0.288)	0.768 (0.980)	0.235 (0.419)	0.677 (0.419)	1.958*** (0.547)	0.0224 (0.995)	-0.515 (0.447)
Observations	1,081	298	66	252	85	233	45	85
Avg. treatment effect	-14.5%	-2.6%	-14.5%	-14.4%	-33.8%	-26.1%	-12.5%	-0.4%
Design Strata FE?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE?	Yes	No	No	No	No	No	No	No

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*** p<0.01, ** p<0.05, * p<0.1

Results: treatment effect of filter

Probit, Pr of Reporting that Firm Offers Management Bonuses

	50+ EMPLOYEES MANUFACTURING							
	Pooled	Argentina	Bolivia	Colombia	Paraguay	Peru	Uruguay	Ecuador
Filter question treatment	-0.309*** (0.109)	0.116 (0.198)	-0.359 (0.284)	-0.217 (0.226)	-0.697* (0.363)	-0.585** (0.283)	-0.339 (0.231)	-0.173 (0.274)
Panel firm	0.0374 (0.100)	-0.235 (0.206)	-0.493* (0.291)	0.320 (0.252)	-0.0163 (0.224)	0.220 (0.204)	0.947** (0.377)	-0.177 (0.439)
Years main respondent has been with the firm (log)	-0.0783 (0.0620)	-0.163 (0.123)	-0.00454 (0.286)	-0.101 (0.122)	0.221 (0.195)	-0.289*** (0.101)	0.0887 (0.436)	0.257 (0.178)
Main Respondent is Female	-0.366*** (0.131)	-1.097** (0.516)	0.256 (0.371)	-0.207 (0.202)	-0.327 (0.546)	-0.0658 (0.279)		-0.135 (0.227)
Constant	0.0914 (0.561)	0.414 (0.440)	0.442 (0.924)	0.0181 (0.649)	0.400 (0.421)	1.470* (0.752)	-0.417 (1.457)	-0.631 (0.637)
Observations	691	163	58	160	60	159	26	54
Avg. treatment effect	-11.4%	4.1%	-13.2%	-8.0%	-24.2%	-20.0%	-12.2%	-6.6%
Design Strata FE?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE?	Yes	No	No	No	No	No	No	No

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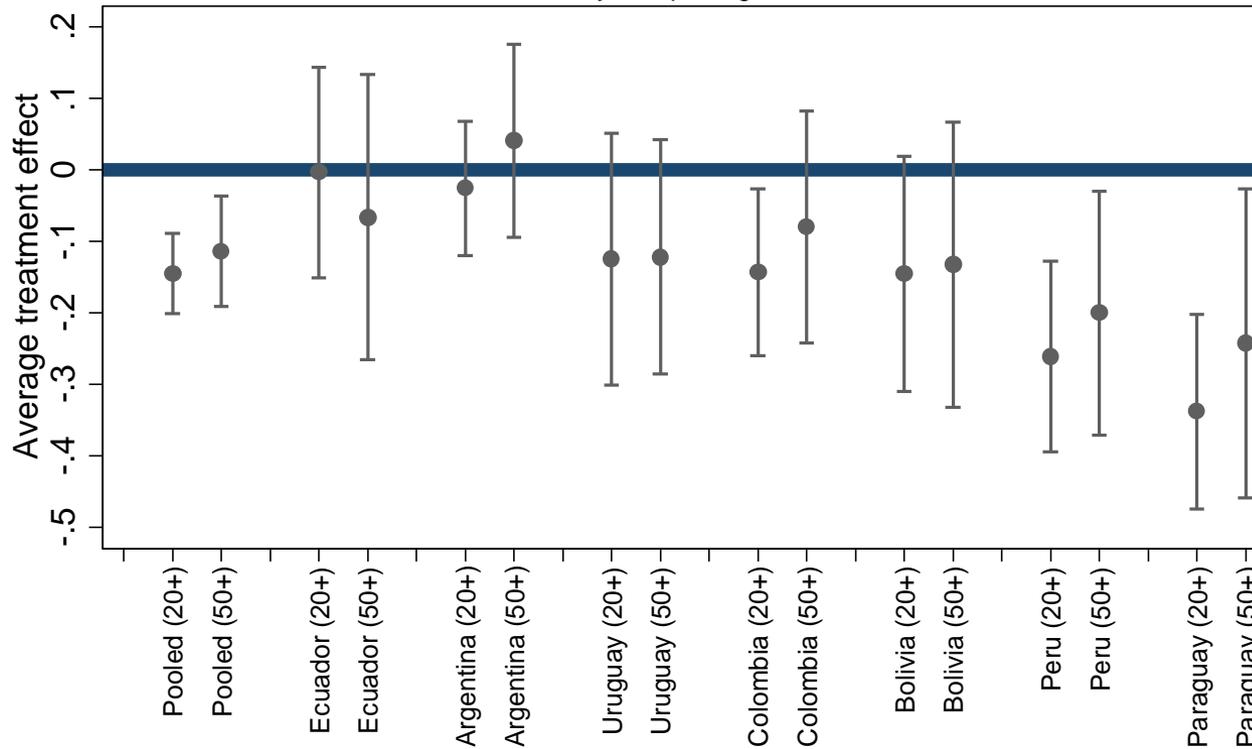
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Results: treatment effect of filter

MANUFACTURING

Effect of the Use of Filter Question

On Probability of reporting use of bonuses



NOTE: 95% C.I. shown. Includes design-based and respondent controls, clustered S.E. by country-stratum-enumerator

Results: treatment effect of filter

Probit, Pr of Reporting that Firm Offers Management Bonuses

	20+ EMPLOYEES SERVICES							
	Pooled	Argentina	Bolivia	Colombia	Paraguay	Peru	Uruguay	Ecuador
Filter question treatment	-0.338*** (0.0929)	0.0347 (0.285)	-0.591* (0.316)	0.0260 (0.238)	-0.881*** (0.224)	-0.298* (0.159)	0.179 (0.210)	-0.701*** (0.221)
Panel firm	0.361*** (0.106)	0.345 (0.381)	0.726** (0.302)	-0.329 (0.324)	0.0103 (0.321)	1.138*** (0.193)	0.399* (0.230)	0.116 (0.237)
Years main respondent has been with the firm (log)	-0.152** (0.0603)	-0.492*** (0.185)	-0.0871 (0.137)	0.110 (0.190)	-0.0453 (0.144)	-0.277 (0.168)	0.0130 (0.124)	-0.220 (0.203)
Main Respondent is Female	-0.195* (0.115)	-0.548 (0.547)	-0.748 (0.484)	0.337 (0.235)	-0.194 (0.252)	-0.169 (0.280)	-0.306 (0.379)	-0.0925 (0.358)
Constant	1.366*** (0.400)	1.350* (0.692)	-0.526 (0.496)	-1.462** (0.732)	0.456 (0.454)	1.776*** (0.511)	0.0509 (0.380)	0.490 (0.615)
Observations	813	106	93	96	140	152	111	115
Avg. treatment effect	-12.1%	1.2%	-19.5%	0.9%	-30.9%	-9.1%	6.5%	-25.3%
Design Strata FE?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE?	Yes	No	No	No	No	No	No	No

Probit regression. Robust standard errors, clustered on region-sector-size-panel design and enumerator ID in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Results: treatment effect of filter

Probit, Pr of Reporting that Firm Offers Management Bonuses

	50+ EMPLOYEES SERVICES							
	Pooled	Argentina	Bolivia	Colombia	Paraguay	Peru	Uruguay	Ecuador
Filter question treatment	-0.274** (0.126)	0.519 (0.368)	-0.548 (0.494)	-0.318 (0.396)	-1.010*** (0.271)	-0.186 (0.208)	0.593** (0.281)	-0.709* (0.407)
Panel firm	0.436*** (0.132)	0.379 (0.428)	0.832*** (0.261)	0.158 (0.563)	-0.245 (0.364)	1.197*** (0.235)	0.434 (0.347)	0.275 (0.348)
Years main respondent has been with the firm (log)	-0.154* (0.0826)	-0.513* (0.285)	-0.113 (0.207)	0.0632 (0.348)	-0.0356 (0.155)	-0.0446 (0.245)	-0.336* (0.186)	-0.495** (0.231)
Main Respondent is Female	-0.271* (0.163)	-0.233 (0.642)	-1.220** (0.587)	0.617* (0.351)	-0.635* (0.355)	-0.443 (0.340)	-0.472 (0.627)	-0.175 (0.425)
Constant	1.415*** (0.427)	0.648 (0.926)	-0.873 (0.740)	-0.154 (1.131)	0.507 (0.507)	1.502*** (0.533)	1.098* (0.613)	0.961 (0.667)
Observations	462	63	49	47	93	99	54	57
Avg. treatment effect	-9.9%	17.9%	-16.7%	-11.1%	-33.6%	-5.6%	21.5%	-24.7%
Design Strata FE?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE?	Yes	No	No	No	No	No	No	No

Probit regression. Robust standard errors, clustered on region-sector-size-panel design and enumerator ID in parentheses.

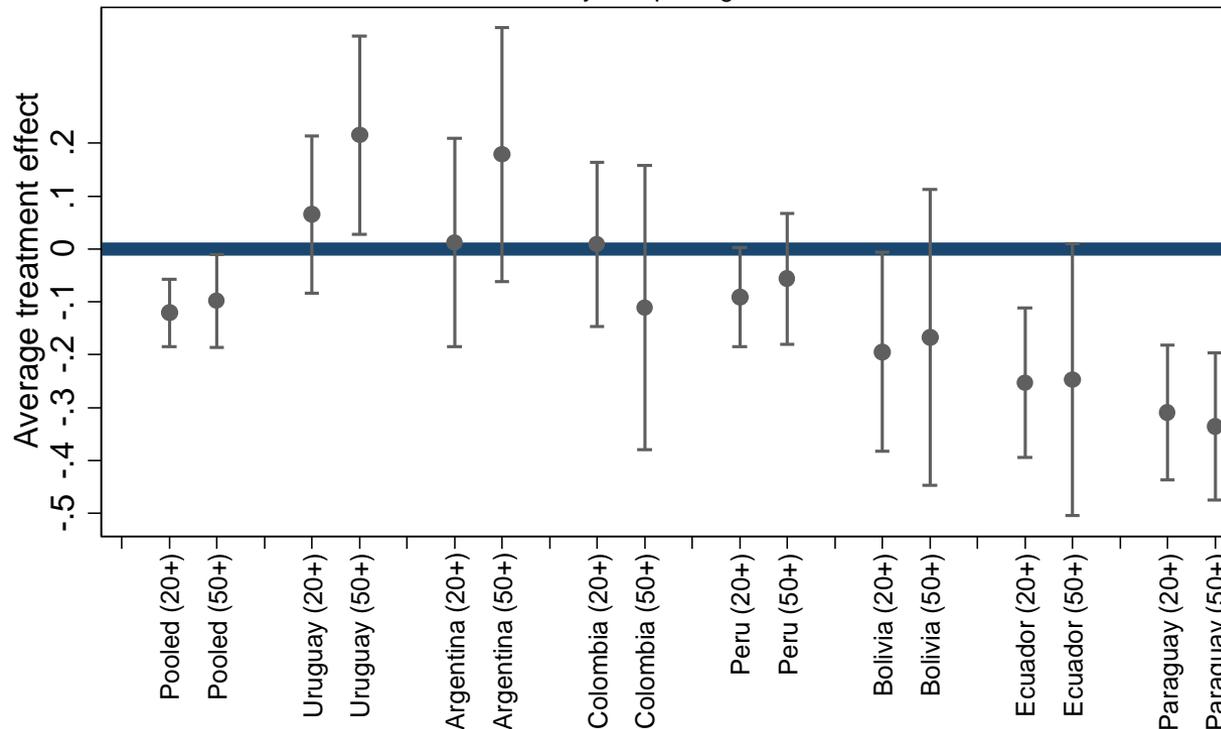
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Results: treatment effect of filter

SERVICES

Effect of the Use of Filter Question

On Probability of reporting use of bonuses



NOTE: 95% C.I. shown. Includes design-based and respondent controls, clustered S.E. by country-stratum-enumerator

Overview

1. OVERVIEW OF THE ENTERPRISE SURVEY

2. SOCIAL DESIRABILITY BIAS: *experiment on reporting the use of manager bonuses*

3. DISCUSSION

Discussion

- Listing of certain management practices (e.g. use of bonuses) seems to imply desirable answers
- On its face: bias seems upward
- But, there may be downward effect (learning within the questionnaire)
- Need for broad comparability ...
- ... And feasible implementation
- Mode is given: are there similar effects using different modes?
- Conservative approach: application of filter

THANK YOU

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