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Health Worker Career Choices – exploratory results from Ethiopia

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Based on work with Abigail Barr (Oxford), Magnus Lindelow (World Bank), Jose Montalvo (Pompeu Fabra), Danila Serra (Oxford).

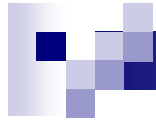


Background

- Part of a work program set up by AFTHD in The World Bank, supported by The Bill and Melinda Gates Foundation, the governments of Norway and France
- The aim is to look at health service delivery from the health worker's perspective
- Analyze health workers' constraint choices using labor and behavioral economics
- Currently under implementation in three African countries: Ethiopia, Rwanda and Ghana



- Here we focus on Ethiopia, and explore the results of the second wave of a cohort study with health workers



Overview

1. Background, data and method
2. Choosing between an urban and a rural post
3. Job satisfaction
4. Future work



1. Background, data and method

1. Qualitative diagnostic study (2003)

- with different types of health workers and users of health services

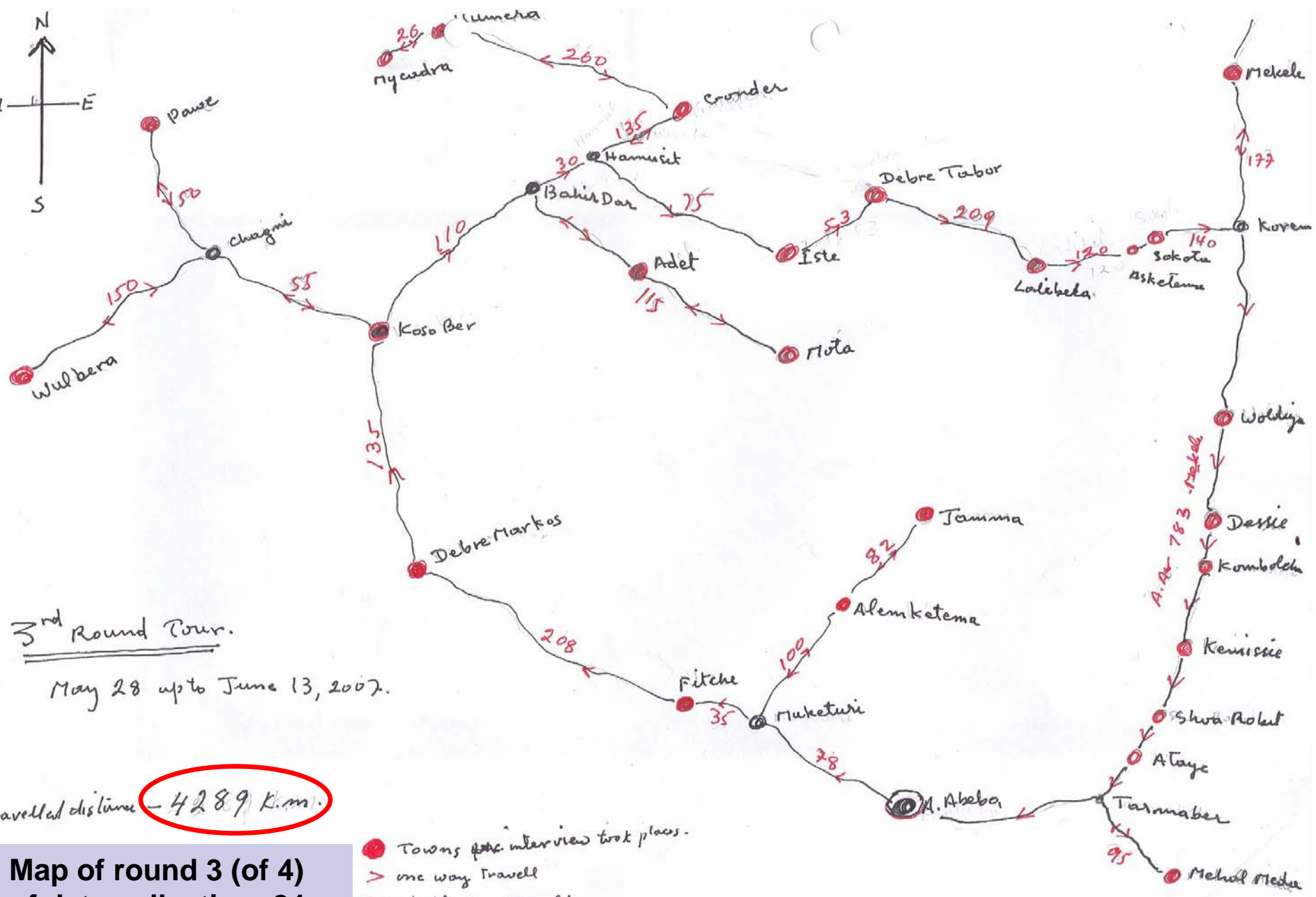
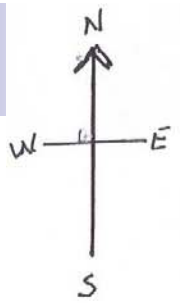
2. Survey with final year health students (2004)

- 219 final year nursing students from 8 schools representing 16% of 2002/3 cohort
- 90 final year doctor students from all 3 medical faculties representing 49% of cohort

3. Telephone follow-up (2005)



4. Re-interview at place of work (2007)



3rd Round Tour.

May 28 up to June 13, 2007.

Travelled distance - 4289 K.m.

Map of round 3 (of 4) of data collection: 24 doctors and 17 nurses in 4 regions

- Towns where interview took place.
- > one way travel
- <> double way travel



4. Re-interview at place of work (2007)

- Overall attrition rate of 14% (1% passed away or entered a monastery; 4% have migrated abroad, 9% have not been located)

=> Rich information on

- Willingness to work in a rural area
- Willingness to migrate abroad
- Motivation
- Job satisfaction
- Attitudes



4. Re-interview at place of work (2007)

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=> Rich information on

- Willingness to work in a rural area
-
- Motivation
- Job satisfaction
-



2. Choosing between a rural and an urban post

- Our data confirms the low presence of health workers in rural areas: in 2007 on average 30% of hws work in a rural post (36% for nurses and 17% for doctors)
- Willingness to work in rural areas
 - Measured in both 2004 and 2007 using contingent valuation questions



Contingent valuation question

Imagine that when you finish your studies you get two jobs as a health worker in the public sector, one in Addis Ababa and one in a rural area 500 km from Addis Ababa. Both contracts are for at least 3 years. Your monthly salary for the job in Addis Ababa would be 700 Birr. Which job would you choose if your monthly salary for the rural job would be \$ amount.



47. Imagine that when you finish your studies you get two jobs as a health worker in the public sector, one in Addis Ababa and one in a rural area **500km** from Addis Ababa. Both contracts are for at least 3 years. Your monthly salary for the job in Addis Ababa would be 700 Birr. Which job would you choose if...

47.1 Your monthly salary for the rural job would be 600 Birr

I would choose the job in Addis Ababa

I would choose the job in the rural area

47.2 Your monthly salary for the rural job would be 700 Birr

I would choose the job in Addis Ababa

I would choose the job in the rural area

47.3 Your monthly salary for the rural job would be 800 Birr

I would choose the job in Addis Ababa

I would choose the job in the rural area

47.4 Your monthly salary for the rural job would be 900 Birr

I would choose the job in Addis Ababa

I would choose the job in the rural area

47.5 Your monthly salary for the rural job would be 1,000 Birr

I would choose the job in Addis Ababa

I would choose the job in the rural area

47.6 Your monthly salary for the rural job would be 1,100 Birr

I would choose the job in Addis Ababa

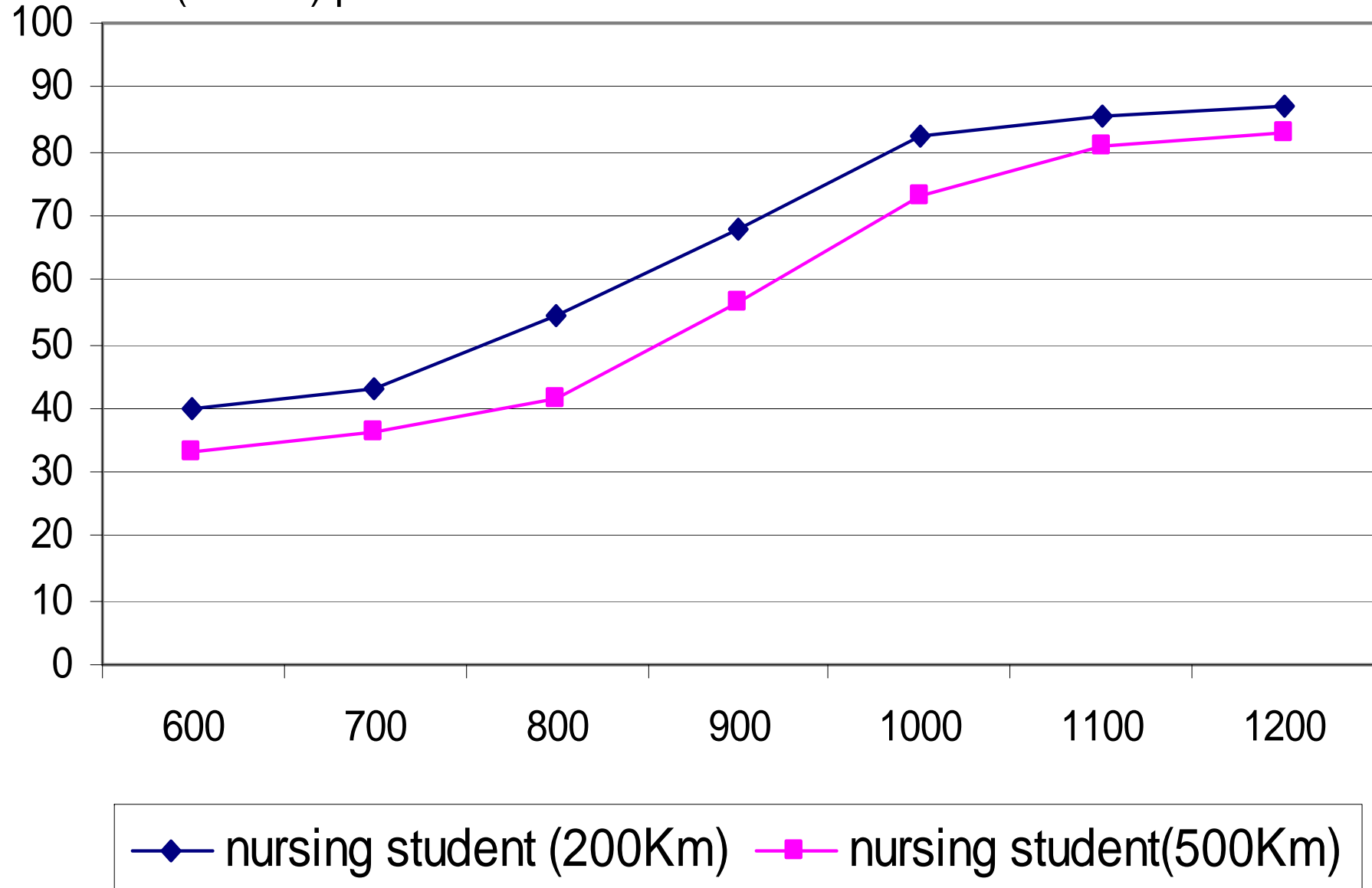
I would choose the job in the rural area

47.7 Your monthly salary for the rural job would be 1,200 Birr

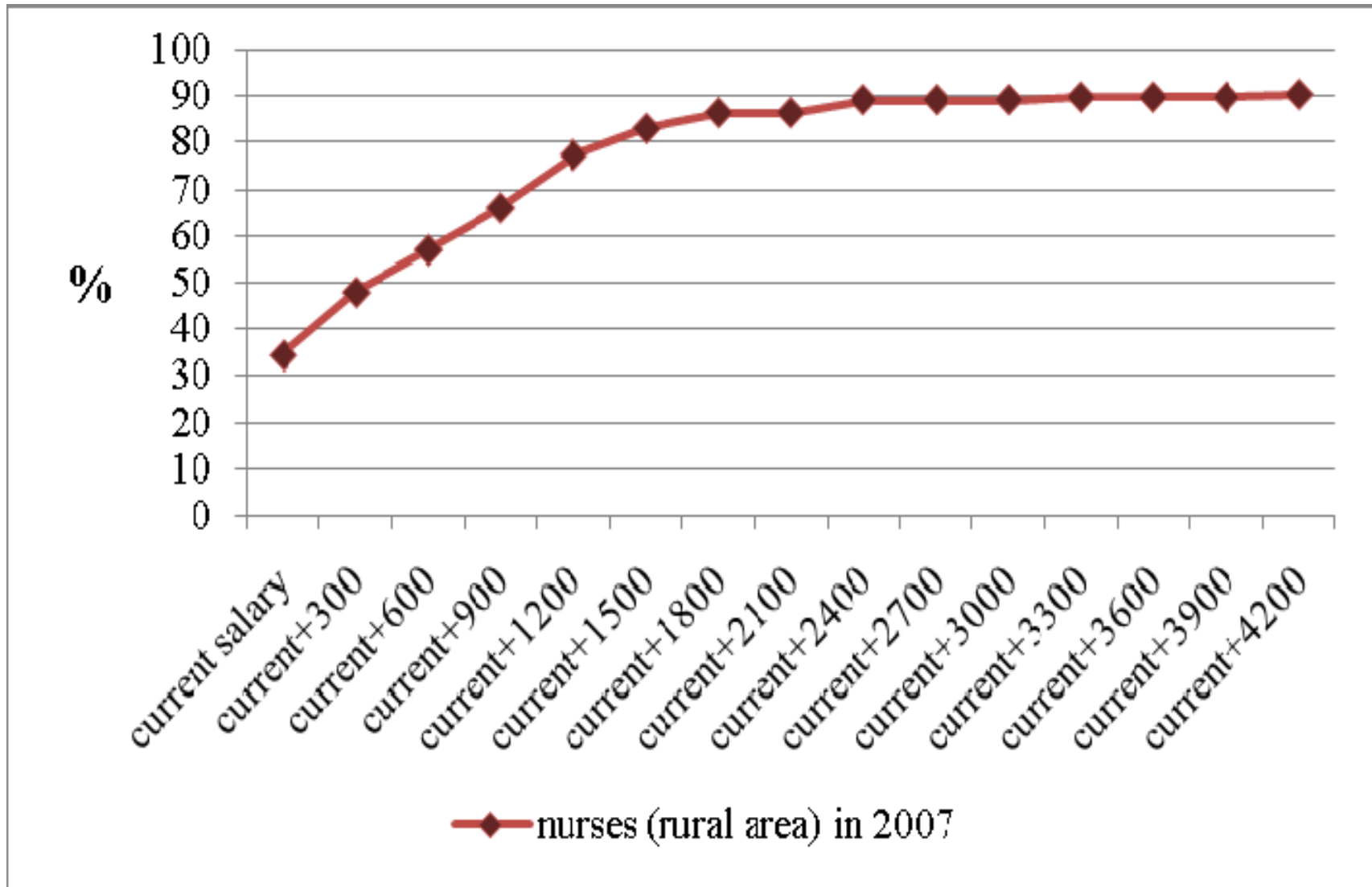
I would choose the job in Addis Ababa

I would choose the job in the rural area

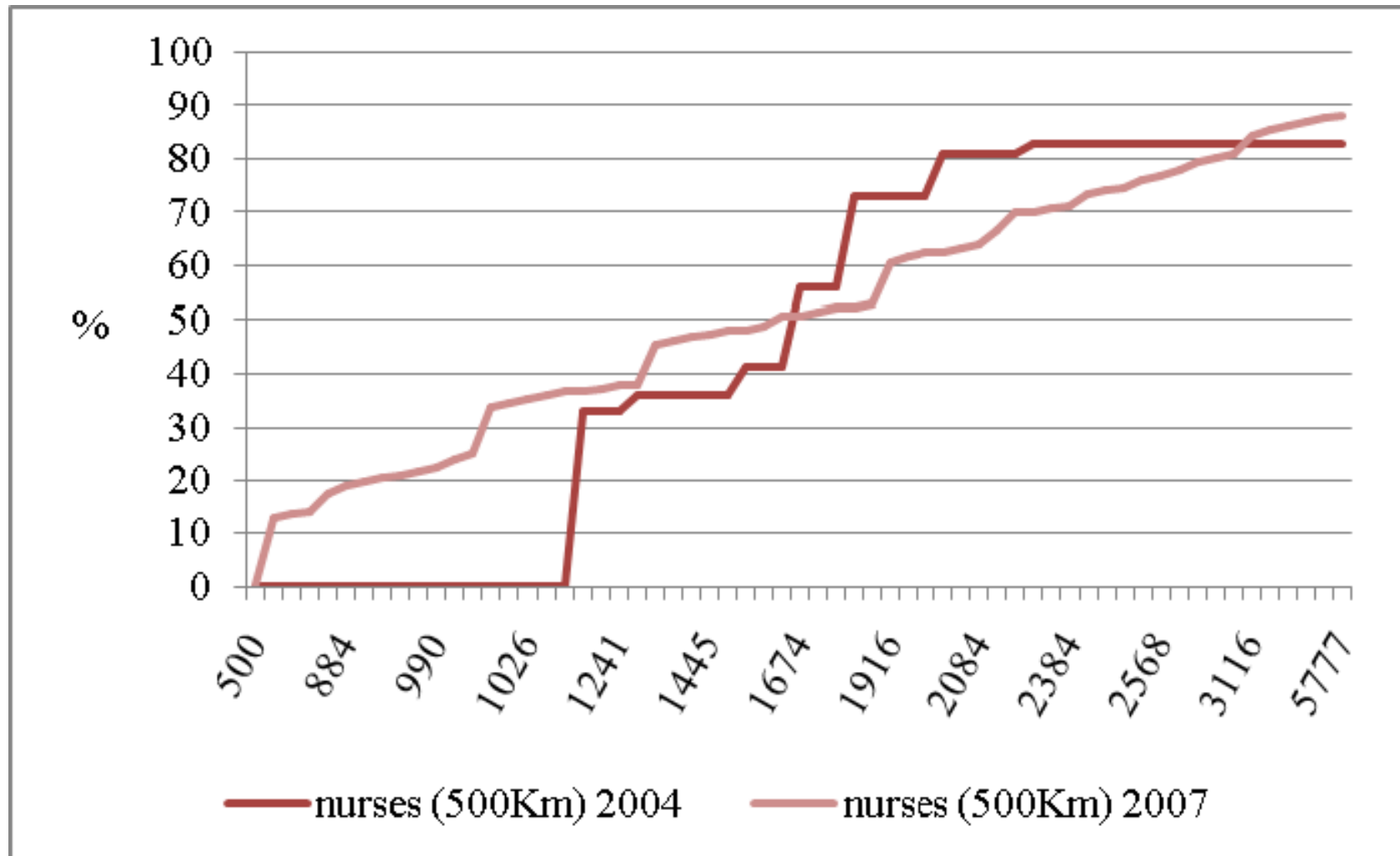
Cumulative distribution for reservation wages for rural (200km) and remote (500km) post



Nurses' reservation wage to work in a rural area



Nurses' reservation wage to work in a rural area 2004 and 2007





What explains a health worker's willingness to work in a rural area?

“There is an obvious difference between rural and urban postings. Working in rural areas involves helping the poor... in urban areas, one can learn, have more income, have good schools for one's children.”

Health worker in Ethiopia



Econometric Analysis

- 1) OLS of reservation wage on independent vars
- 2) MLE using all information from payment card

$$\Pr(rp = 1 | x) = \Pr(v(1, w_1; x) - v(0, 700; x) > \zeta_0 - \zeta_1) = F(-\Delta v) = F(\Delta w; \beta)$$

$$\Delta v = \delta \ln(\Delta w) + x' \beta$$

$$\begin{aligned} \Pr(rp_m = 1) &= \Pr(v(1, w_m; x) - v(0, 700; x) > \zeta_0 - \zeta_1) - \Pr(v(1, w_{m-1}; x) - v(0, 700; x) > \zeta_0 - \zeta_1) \\ &= F(w_m; \beta) - F(w_{m-1}; \beta) \end{aligned}$$

$$\ln L(\delta, \beta) = \sum_{i=1}^N \left\{ I_i^0 [F(w_1; \delta, \beta)] + \sum_{m=2}^{M-1} I_i^m [F(w_{m+1}; \beta) - F(w_m; \beta)] + I_i^M [1 - F(w_M; \delta, \beta)] \right\}$$




Estimated equation

$$\begin{aligned} \ln rw_i = x_i' \beta + u_i = & \beta_0 + \beta_1 AGE_i + \beta_2 FEMALE_i + \beta_3 EXP_i + \beta_4 TSCORE \\ & + \beta_5 ADDIS_i + \beta_6 DIST_i + \beta_7 HELPPPOOR_i + \beta_8 TIGRAY_i \\ & + \beta_9 CATHOL_i + \beta_{10} PROTEST_i + \beta_{11} DOCTOR_i + u_i \end{aligned}$$

Table 1: Least squares estimation of the log of the reservation wage to work in a rural area

	2004		2007	
	Nursing and Medical students		Nursing and Medical students	
AGE	-0.02 (2.94)**	-0.01 (2.08)*	-0.01 [0.417]	-0.01 [0.620]
FEMALE	0.03 (0.69)	0.03 (0.82)	0.39 [0.002]***	0.41 [0.001]***
EXP (in 000)	0.03 (2.84)**	0.03 (2.74)**	0.04 [0.496]	0.02 [0.674]
TSCORE	-0.16 (0.79)	-0.11 (0.54)	-0.32 [0.626]	0.01 [0.984]
ADDIS	0.07 (1.91)+	0.07 (1.91)+	0.05 [0.776]	0.10 [0.532]
DIST (in 000)	-0.13 (0.21)	-0.24 (0.41)	-0.00 [0.976]	-0.00 [0.923]
HELPPoor	-0.14 (3.93)**	-0.12 (3.14)**	-0.06 [0.640]	0.02 [0.848]
TIGRAY		0.09 (1.34)		-0.10 [0.616]
CATHOL		-0.14 (2.44)*		-0.41 [0.036]**
PROTEST		0.04 (1.00)		0.22 [0.100]*
DOCTOR	0.83 (16.22)**	0.80 (15.75)**	0.99 [0.000]***	0.94 [0.000]***
Constant	7.03 (40.39)**	6.92 (39.59)**	7.63 [0.000]***	7.39 [0.000]***
Observations	220	220	206	204
R-squared	0.75	0.76	0.279	0.315

Absolute value of t statistics in parentheses
+ significant at 10%; * significant at 5%; ** significant at 1%

- 
- What explains the heterogeneity in health workers' willingness to work in a rural area?

2004

- parents' household welfare(-),
- urban back ground (-)
- intention to help the poor (+)
- 'catholic' (+): proxies school curriculum and culture

2007

- female (-)
- 'catholic' (+): proxies school curriculum and culture


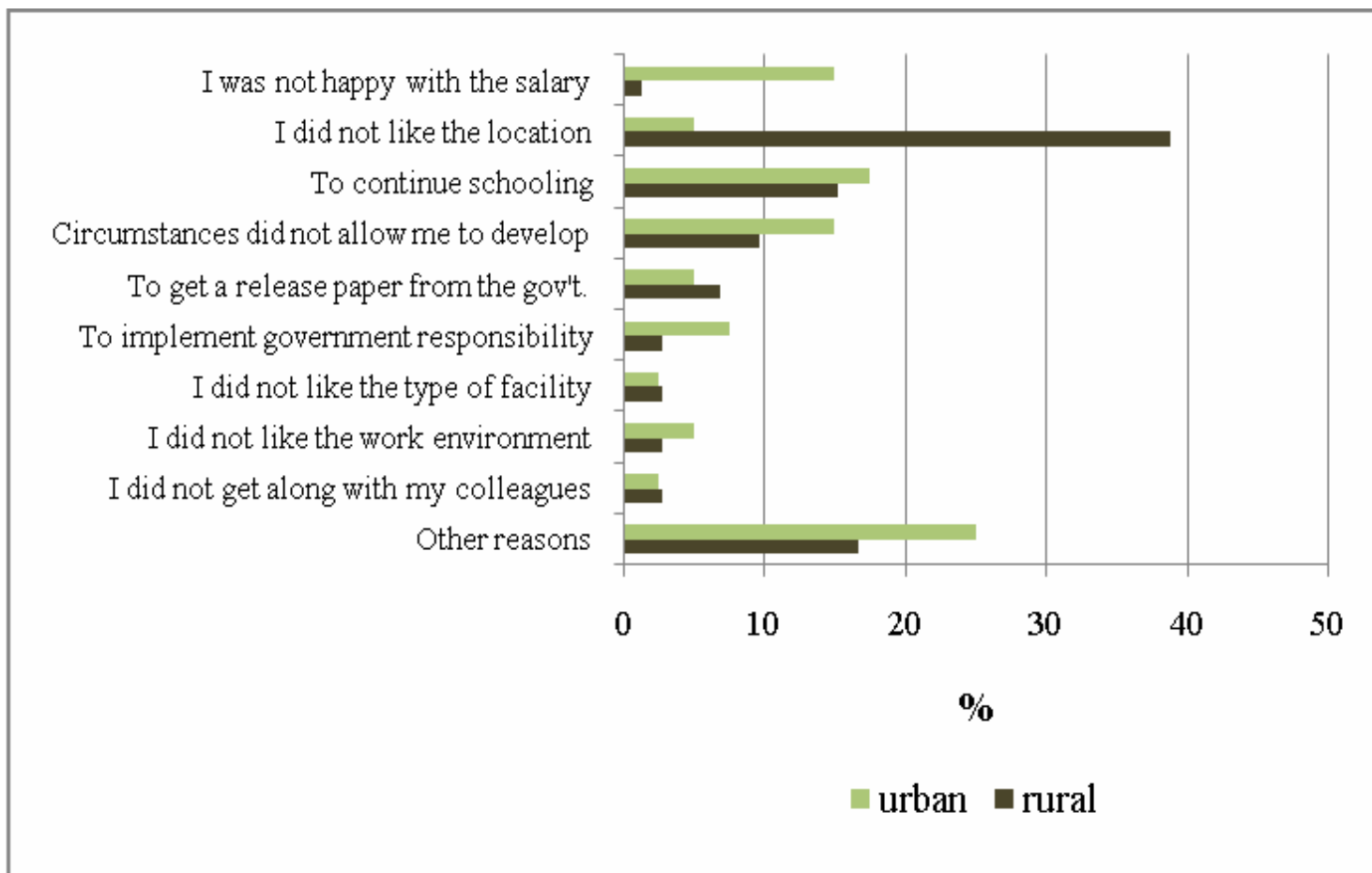
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- CV questions remain hypothetical; do we have 'harder' data
 - Job quitting data provides us with harder evidence on (un)willingness to work in a rural area
 - The most important reason to leave a rural post is:
 - 'do not like the location' (nurses)

Figure 14: Reasons why nurses quit their first job, by location





Job satisfaction

- We asked respondents to
 1. rank different job attributes according to their importance
 2. Indicate satisfaction on each of these attributes
- We also asked questions on satisfaction with life, economic situation and career

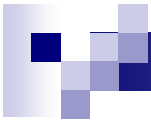


Figure 4: Importance of different job characteristics in 2004

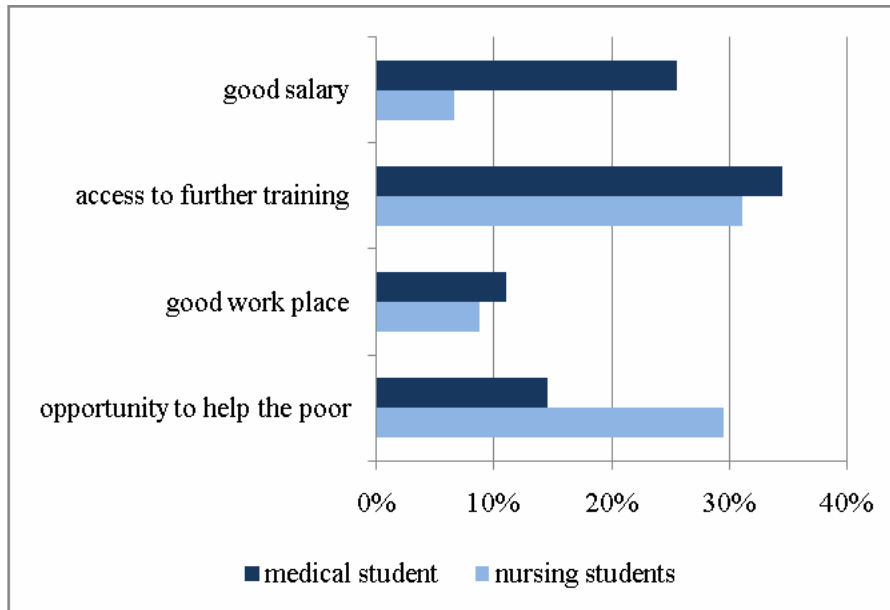


Figure 5: Importance of different job characteristics in 2007

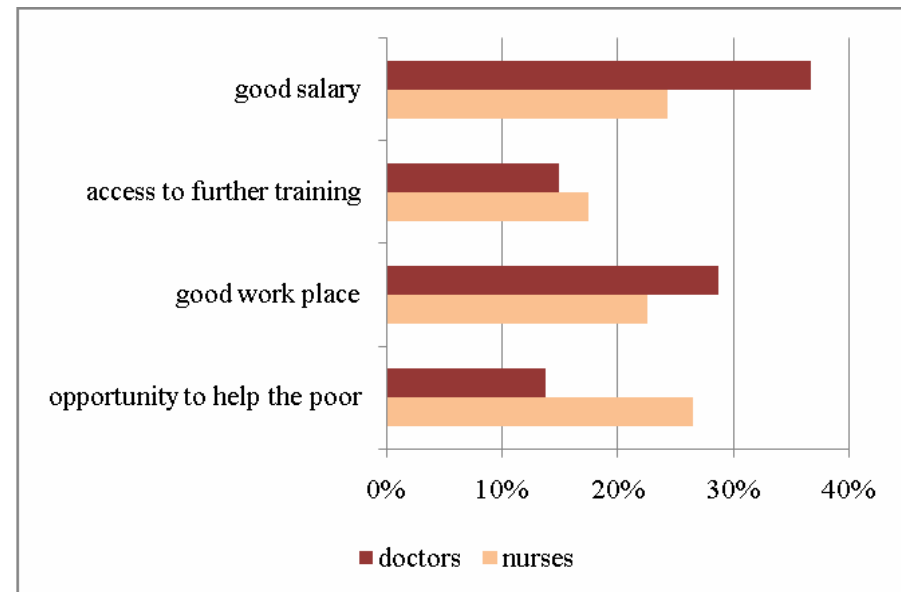
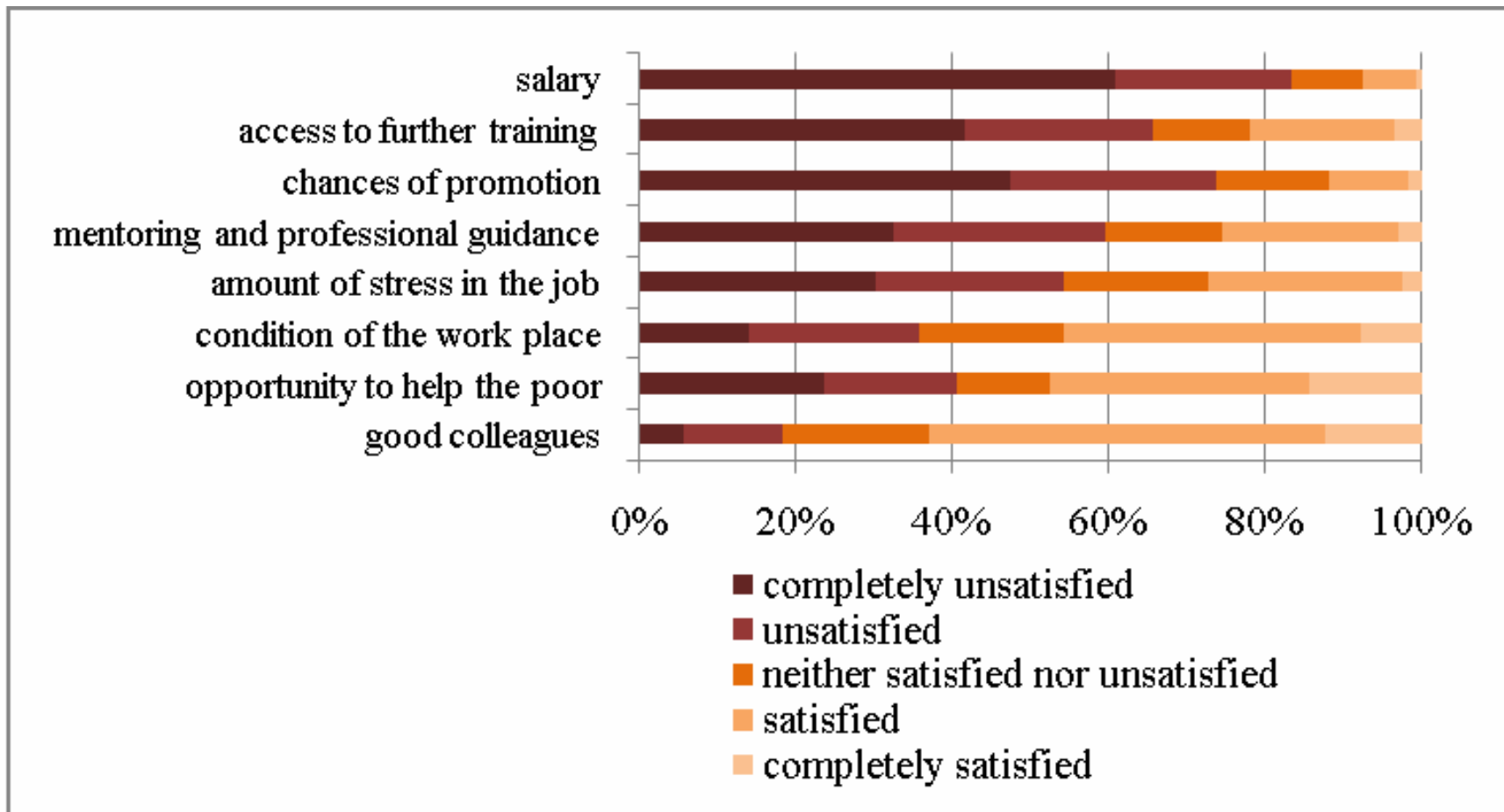


Figure 6: Satisfaction with job characteristics



SATISFACTION WITH JOB CHARACTERISTICS 2007--rural areas

	completely unsatisfied	neither sati	satisfied	completely	
good colleagues	4.69	10.94	23.44	51.56	6.25
opportunity to help the po	20.31	18.75	12.5	32.81	14.06
condition of the work plac	25	29.69	18.75	23.44	1.56
amount of stress in the job	32.81	21.88	0	17.19	26.56
mentoring and professiona	34.38	23.44	18.75	17.19	4.69
chances of promotion	43.75	26.56	15.63	10.94	1.56
access to further training	45.31	21.88	0	14.06	17.19
salary	64.06	17.19	0	10.94	6.25

SATISFACTION WITH JOB CHARACTERISTICS 2007--urban areas

	completely unsatisfied	neither sati	satisfied	completely	
good colleagues	5.56	13.58	16.67	48.77	14.81
opportunity to help the po	24.69	16.67	11.73	32.1	14.2
condition of the work plac	9.88	19.14	18.52	41.36	10.49
amount of stress in the job	29.63	24.07	19.14	24.07	2.47
mentoring	31.48	29.01	13.58	22.84	2.47
chances of promotion	48.77	25.93	12.96	9.88	1.85
access to further training	40.12	24.69	11.11	18.52	4.94
salary	59.26	24.69	7.41	6.79	1.23



GENERAL SATISFACTION-rural 2007

	completely unsatisfied	neither sati	satisfied	completely	
satisfaction with the job	14.06	12.5	25	29.69	17.19
satisfaction with the caree:	4.69	7.81	7.81	57.81	20.31
satisfaction with economic	60.94	21.88	9.38	4.69	1.56
satisfaction with life	25	29.69	21.88	20.31	1.56

GENERAL SATISFACTION-urban 2007

	completely unsatisfied	neither sati	satisfied	completely	
satisfaction with the job	14.2	22.84	16.67	37.65	8.02
satisfaction with the caree:	8.64	12.96	15.43	45.68	16.67
satisfaction with economic	56.17	25.31	9.88	6.17	1.85
satisfaction with life	28.4	20.99	24.07	22.84	3.09



Further work will look in depth at ...

- What explains labor supply decisions?
 - Rural versus urban position
 - Migration abroad
- How do preferences change and why? What is the role of schooling and expectations?
- What drives job satisfaction?
- Can we make costing simulations using contingent valuation (incl. free housing CV)

