



INSTITUT FÜR ARBEITSMARKT- UND  
BERUFSFORSCHUNG  
Die Forschungseinrichtung der Bundesagentur für Arbeit

# PERSÖNLICHKEITSEIGENSCHAFTEN, ARBEITSPLATZMERKMALE UND GESUNDHEIT: EMPIRISCHE ANALYSEN MIT DEM LINKED-PERSONNEL PANEL 2012-2016

Lehrveranstaltung Empirische Forschung zu Arbeit und Personal  
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# 1. INTRODUCTION

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- According to data from the World Bank and World Health Organization (WHO) and various national sources mental disorders impose an enormous disease burden on societies throughout the world.
- Economics and sociology focus on various socio-demographic factors influencing health.
- Linked-Personnel Panel is an innovative data set because it includes subjective and objective health measures as well as a wide range of determinants such as Big Five.
- In the paper, we use alternative models, subsamples and estimation methods to check the robustness of our results.

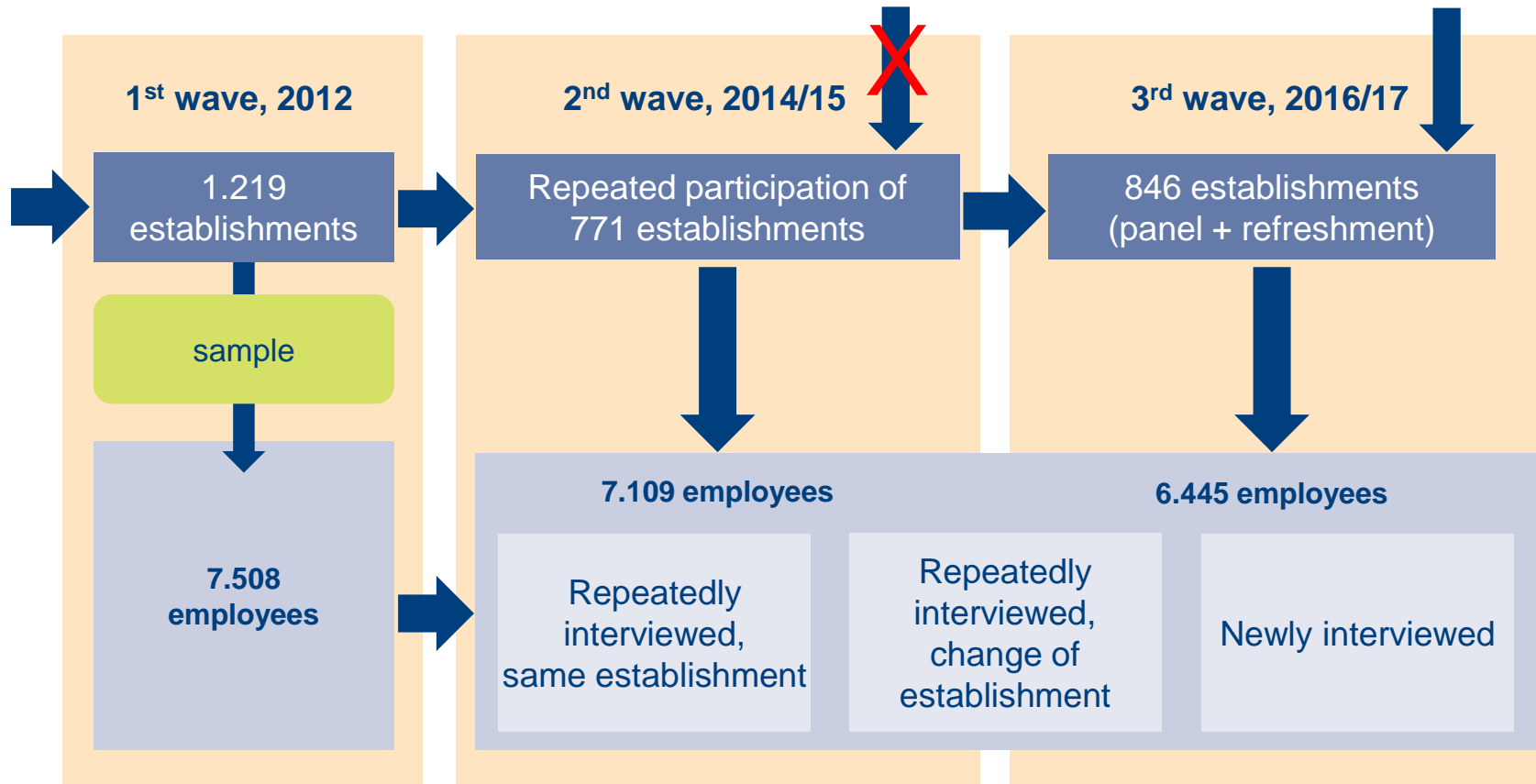
## 2. RELATED LITERATURE ABOUT HEALTH DETERMINANTS (I)

- Nutrition, sleep, alcohol, smoking, drugs, stress, BMI are analyzed in medicine and biology as well in economics (Hübler 2017)
- Parental background, race, age, education, employment, wages, satisfaction are also investigated (Borcellos et al. 2018, Maestas et al. 2018)
- Big Five e.g. low emotional stability has negative, but conscientiousness positive effects on health (Wehner et al. 2016)

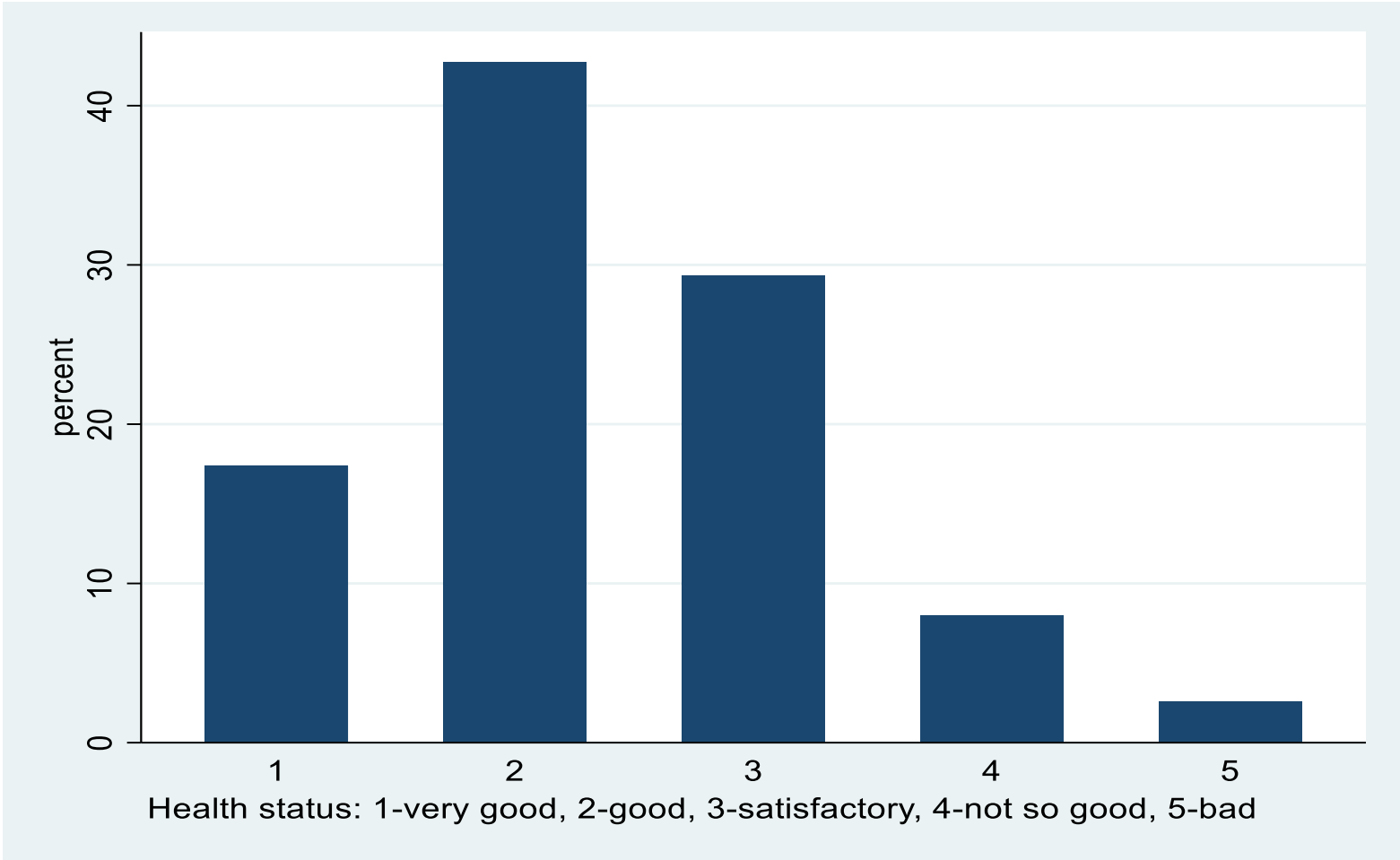
## 2. RELATED LITERATURE ABOUT HEALTH DETERMINANTS (II)

- Negative health effects of air pollution, noise and heat are widely discussed (Seltenrich 2015)
- Demerouti et al. (2001) differentiate between working conditions that increase the job demands and those that buffer adverse influences (job resources)
- Kelly (2008) discusses the relationship between commitment and health
- The interaction of job demands, job decision latitude and mental strain is discussed, e.g. by Karasek (1997) and Frila (2016)

# 3. LINKED-PERSONNEL PANEL AND DESCRIPTIONS



# HEALTH STATUS



# MENTAL HEALTH

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It is not clear whether HEALTH is only physical health or whether this variable contains also elements of mental health. Our data set offers some information of the latter category based on five statements:

- I am happy and in good mood.
- I feel easy and relaxed.
- I am active and have a lot of energy.
- I feel fresh and relaxed when I wake up.
- Many things and activities, in which I am interested myself, characterize my everyday life.

The employees were asked whether they agree to these statements. The answers are measured by a rating scale (1-at any time, ... , 6-never). We summarize the outcome of all five topics and call this variable MENTAL HEALTH (psychological well-being). The scale falls between 6 and 30. **The lower the value, the higher is the total mental health.**

## 4. EMPIRICAL STRATEGY

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- Selection of variables incl. least angle regression (LARS) and robust least absolute shrinkage and selection operator (RLASSO)
- Interaction effects
- Random effects models



## 5. ESTIMATION RESULTS I

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	HEALTH	MENTAL HEALTH	ABSENT_NoWD
HEALTH	1.0000		
MENTAL HEALTH	0.3789**	1.0000	
ABSENT_NoWD	0.3180**	0.1211**	1.0000

# ORDERED PROBIT AND REGRESSION ESTIMATES OF HEALTH, MENTAL HEALTH AND WORKING DAYS MISSED (BASIC MODEL)

	health	mental health	no. of working days missed
Not fixed-term contract	0.192***	0.032	3.230***
unskilled	0.351***	0.028	5.736***
craftsman	0.208***	-0.010	3.810***
foreman	0.114*	-0.150**	1.870*
master	0.031	-0.213**	2.948
part time	0.095**	0.022	-1.141
no. of working hours	0.003**	0.001	0.032
training	-0.146***	-0.108***	-2.628***
log (wage)	-0.161***	-0.131***	-4.908***
N	16,972	16,876	16,833
Pseudo-R <sup>2</sup> /R <sup>2</sup>	0.0141	0.0018	0.0326

# ORDERED PROBIT AND REGRESSION ESTIMATES OF HEALTH, MENTAL HEALTH AND WORKING DAYS MISSED (MODEL WITH PERSONAL CHARACTERISTICS)

	health	mental health	no. of working days missed
age	0.025***	-0.005***	0.117***
male	-0.016	-0.120***	-2.112***
schooling	-0.074***	0.021***	-1.794***
German	-0.014	0.007	-1.609
openness	0.009	0.052***	-0.173
extraversion	0.009*	0.039***	-0.417***
conscientiousness	0.023**	0.046***	0.162
agreeableness	0.027***	0.040***	-0.278*
neuroticism	-0.114***	-0.121***	-0.974***
N	13,694	13,597	13,491
Pseudo-R <sup>2</sup> /R <sup>2</sup>	0.0546	0.0240	0.0312

Big Five: 3 – fully applies, ..., 15 – does not apply at all

# ORDERED PROBIT AND REGRESSION ESTIMATES OF HEALTH, MENTAL HEALTH AND WORKING DAYS MISSED (COMBINED MODEL)

	health	mental health	no. of working days missed
Not fixed-term contract	0.166***		2.636***
unskilled	0.121**		2.086*
craftsman	0.046		0.610
foreman		-0.013	
master		-0.190*	
part time	0.017		-0.823
working hours	0.003		0.029
training	-0.055*	-0.072***	-1.887***
log (wage)	-0.154***	-0.074**	-3.675***

# ORDERED PROBIT AND REGRESSION ESTIMATES OF HEALTH, MENTAL HEALTH AND WORKING DAYS MISSED (COMBINED MODEL, CONTINUED)

	health	mental health	no. of working days missed
age	0.026***	-0.006***	0.131***
male		-0.109***	
schooling	-0.036***	0.040***	0.720***
German			
openness		0.052***	
extraversion		0.032***	
conscientiousness	0.040***	0.044***	-0.059
agreeableness	0.016*	0.019**	-0.159
neuroticism	-0.096***	-0.103***	-0.557***

Big Five: 3 – fully applies, ..., 15 – does not apply at all

# ORDERED PROBIT ESTIMATES OF HEALTH AND INTERACTION EFFECTS

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independent work (D)	-0.226***
deadline pressure (D)	0.186***
independent work (D) * deadline pressure (D)	-0.116**
N	21,012
Pseudo-R <sup>2</sup>	0.0051

D (1=yes; 0=no)

# ORDERED PROBIT ESTIMATES OF HEALTH AND INTERACTION EFFECTS

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unpleasant environmental conditions (D)	0.333***
emotional commitment (D)	-0.235***
unpleasant environmental conditions (L) * emotional commitment (D)	-0.080*
N	20,976
Pseudo-R <sup>2</sup>	0.0130

L (1: fully applies, ..., 5: does not apply at all),  
D (1=yes, 0=no),

## RANDOM EFFECTS ORDERED PROBIT ESTIMATES OF HEALTH

	Random effects
Not fixed-term contract (D)	0.199***
unskilled (D)	0.185***
craftsman (D)	0.099**
part time(D)	0.010
no. of working hours	0.002
training (D)	-0.109***
log (wage)	-0.294***
age	0.038***
home working (D)	0.063
independent work (L2)	0.105***

D (1=yes, 0=no), L 2 (1: yes, completely, ..., 5: not at all)



# RANDOM EFFECTS ORDERED PROBIT ESTIMATES OF HEALTH

	Random effects
physically demanding work (L2)	-0.062***
unpleasant environmental conditions (L2)	-0.064***
deadline pressure (L2)	-0.062***
emotional commitment (L2)	0.097***
feel as part of the firm family (L2)	-0.000
need help from colleagues (L3)	0.091***
unfairly criticized (L3)	-0.159***
N	16,737
LR	1,484.37***

D (1=yes, 0=no), L2 (1: yes, completely, ..., 5: not at all), L3 (1: ever, ..., 5: never)

## 6. CONCLUSIONS

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- Using the LPP data we demonstrate that socio-demographic variables, Big Five, working conditions exert an influence on health, mental health and days missed due to illness.
- The interaction of these variables is also relevant supporting Karasek (1979)
- Robustness checks include IV-estimations, RE panel regressions and analyses of subsamples
- More information about employers' strategies could be used for further studies.
- Of interest are specific studies e.g. about the impact of technostress (Maier et al. 2017)