

# What drives the intentions of craft apprentices to change employer or occupation?

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## Agenda

Introduction

Results of job factors in current literature

Data collection and descriptive statistics

Estimation model and findings

Implications of results

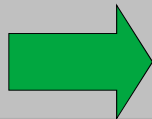
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## Problem in German craft firms: Increasing lack of skilled labor

- **Dual apprenticeship system:** main source of professional training in Germany (Autorengruppe Bildungsberichterstattung, 2010)
- **Number of skilled apprentices** in craft firms has traditionally exceeded its own demand (Smits & Zwick, 2004)
- Reasons: **demographic change**, move to other industries due to several **job factors** (Statistisches Bundesamt 2006; Gericke et al., 2009; Haverkamp et al., 2009)



**Research question:** Which job factors affect the intention of craft apprentices to change employer or occupation after finishing their apprenticeship training?

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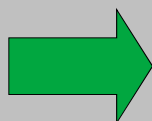
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## Existing literature: Analysis of job factors influencing job mobility

**Stream 1:**  
Impact of **wages** on job mobility and vice versa (i.e. Topel & Ward, 1992)

**Stream 2:**  
Influence of **non-pecuniary factors** on job mobility (i.e. Clark, 2001; Böckermann & Iilmakunnas, 2009)

**No sufficient consideration of apprentices and job change complexity**



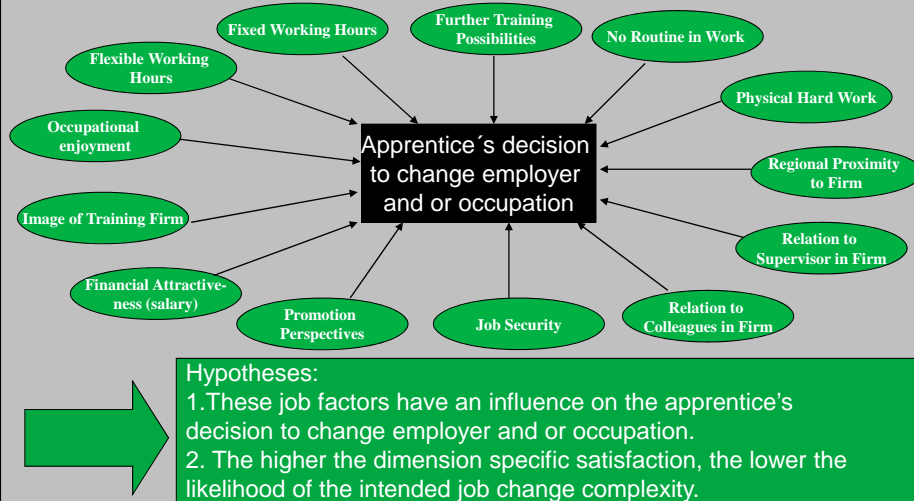
1. Contribution: **Focus on job factor dimensions in the craft sector**
2. Contribution: **Analysis of the intended job change complexity**

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## Job factors: Results of current research



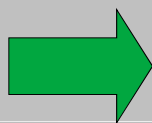
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## Data collection: Questionnaires in 2009

- Survey among craft apprentices in Bavarian vocational schools
- Random sample out of 7 craft sectors (e.g., automotive trade, food trade)
- Questions about future career plans, reasons for choosing the crafts sector and job satisfaction in the crafts sector ("five point likert scale")



1089 complete data sets available for estimation

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## Descriptive statistics: Sample characteristics

Variable	Share	Variable	Share
Male	77.04%	Firm size 1-4	15.06%
No School	2.20%	Firm size 5-9	21.85%
Low School (Secondary general school)	68.96%	Firm size 10-19	19.38%
Middle School (Intermediate school)	24.79%	Firm size 20-49	20.11%
High School (Grammar school)	4.04%	Firm size 50-100	11.75%
Main Construction Trade	5.51%	Firm size 101-499	8.36%
Finishing Trade	10.10%	Firm size 500+	3.49%
Crafts for Industrial Needs	18.00%	Sample Size = 1089	
Automotive Trade	35.08%		
Food Trade	11.11%		
Health Trade	2.85%		
Personal Services	17.36%		



The majority of apprentices work in small and medium-sized enterprises and have a low or medium educational background

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## Data collection: Items in Questionnaire

Variable	Survey Item
Occupational enjoyment	I enjoy doing crafts work
Image of Training Firm	The training firm has a good reputation
Financial Attractiveness (salary)	This crafts occupation is financially attractive for me
<b>What do you think – to which extent are the following factors fulfilled in the crafts sector?</b>	
Promotion Perspectives in Crafts	Promotion perspectives
Job Security in Crafts	Job security
Relation to Supervisor in Firm	Good relation to supervisor
Relation to Colleagues in Firm	Good relation to colleagues
Regional Proximity to Firm	Regional proximity of the workplace to your current residence
Physical Hard Work in Crafts	Physical hard work
No Routine in Work in Crafts	No routine
Further Training Possibilities	Further training possibilities
Fixed Working Hours	Fixed working hours
Flexible Working Hours	Flexible working hours

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## Descriptive statistics: Job satisfaction domains in the crafts sector

<i>Variable</i>	<i>Mean</i>	<i>SD</i>	<i>% chose 4 or 5</i>
Occupational Enjoyment	4,239	0,897	85,49%
Image of Training Firm	3,797	1,039	69,61%
Financial Attractiveness (salary)	3,432	1,162	52,62%
Promotion Perspectives	4,001	1,010	74,20%
Job Security in Crafts	4,073	1,003	76,95%
Relation to Supervisor in Firm	3,388	0,988	47,38%
Relation to Colleagues in Firm	3,947	0,997	71,63%
Regional Proximity to Firm	3,609	0,987	55,92%
Physical Hard Work in Crafts	3,987	1,054	72,27%
No Routine in Work in Crafts	3,883	1,069	68,87%
Further Training Possibilities	3,055	1,217	36,36%
Fixed Working Hours	4,200	1,024	78,33%
Flexible Working Hours	3,959	1,071	70,16%

Sample Size = 1089

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## Data collection: Items in Questionnaire

<i>Variable change complexity</i>	<i>Survey Item on plans for further career</i>
<b>Intention to stay with training firm and keep occupation (y=1)</b>	Remain with the training firm for more than one year as a skilled worker (N=340 / 31.22%)
<b>Intention to change firm but keep occupation (y=2)</b>	Change firm in the crafts sector but keep working in my training occupation Change to a firm in industry but keep working in my training occupation (N=380 / 34.89%)
<b>Intention to change firm and occupation (y=3)</b>	Change to a firm in industry even if can't keep my training occupation Work in another job (N=369 / 33.88%)

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## Estimation model: Multivariate ordered probit model

$$y = \alpha + \beta \vec{X} + \gamma \vec{W} + u$$

y: Dependent variable (job change complexity)

y=1: No change of employer or occupation

y=2: Employer change and no change of occupation

y=3: Employer change plus change of occupation

$\vec{X}$ : Vector of satisfaction dimensions

$\vec{W}$ : Control variables (sex, schooling background, firm size and occupation)

u: Error term

## Estimation model: Results (1/2)

<i>Additional Covariates</i>	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>
<b>13 Dummies for job satisfaction dimensions</b>	Yes	Yes	Yes
<b>Sex</b>	Yes	Yes	Yes
<b>School</b>	Yes	Yes	Yes
<b>Firm Size</b>	No	Yes	Yes
<b>Occupation</b>	No	No	Yes

\*\*\* p<0,01, \*\* p<0,05 \* p<0,1

## Estimation model: Results (2/2)

Variables	Model 1	Model 2	Model 3
Occupational Enjoyment	-0,521 *** / (0,111)	-0,531 *** / (0,111)	-0,498 *** / (0,113)
Image of Training Firm	-0,241 *** / (0,082)	-0,222 *** / (0,082)	-0,222 *** / (0,083)
Financial Attractiveness (salary)	-0,251 *** / (0,080)	-0,238 *** / (0,080)	-0,234 *** / (0,081)
Promotion Perspectives	-0,139 / (0,095)	-0,125 / (0,096)	-0,0945 / (0,096)
Job Security in Crafts	-0,280 *** / (0,076)	-0,302 *** / (0,077)	-0,312 *** / (0,077)
Relation to Supervisor in Firm	0,100 / (0,086)	0,114 / (0,086)	0,088 / (0,087)
Relation to Colleagues in Firm	0,0562 / (0,087)	0,028 / (0,088)	0,037 / (0,088)
Regional Proximity to Firm	-0,017 / (0,0784)	-0,007 / (0,080)	-0,009 / (0,080)
Physical Hard Work in Crafts	-0,051 / (0,104)	-0,043 / (0,104)	-0,037 / (0,105)
No Routine in Work in Crafts	-0,119 / (0,0941)	-0,129 / (0,094)	-0,127 / (0,095)
Further Training Possibilities	-0,389 *** / (0,095)	-0,396 *** / (0,095)	-0,437 *** / (0,097)
Fixed Working Hours	-0,256 *** / (0,091)	-0,238 *** / (0,092)	-0,212 *** / (0,093)
Flexible Working Hours	0,011 / (0,0750)	0,021 / (0,0752)	0,026 / (0,076)

\*\*\* p<0,01, \*\* p<0,05 \* p<0,1 / N=1.089 in all Models

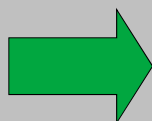
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## Most important findings:

- **Non-pecuniary job satisfaction dimensions have an effect on the apprentice's decision to change employer or occupation**
- **Most important and robust factors: occupational enjoyment, regional proximity to firm and job security**
- **The higher the satisfaction, the lower the likelihood of the intended job change**
- **Positive effect for educational background, no effect for gender and no effect for firm size**
- **Surprising: No effect for pecuniary factors**



We can confirm hypothesis 1 and 2

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## Important implications of the results: Potential actions for firms and institutions to make apprentices stay in the craft sector

- **Initial screening of apprentices:** Train predominantly apprentices wishing to reside close to the firm.
- **Search for apprentices enjoying craft work:** Provide internships before the start of the apprenticeships.
- **Training of supervisors:** Explain supervisors the importance of involving apprentices in varying tasks, leadership and motivational topics.
- **Presentation of career opportunities:** Provide the variety of career opportunities in the craft sector (i.e. training as master craftsman).

Thank you  
for your attention!



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## Back-Up

	Job-offer by training firm	Communicated separation from the training firm or accepted job offer from another firm	
<b>Intention to stay with employer (training firm) and keep occupation</b>	248 50.30%	13 11.11%	N=261
<b>Intention to change employer but keep occupation</b>	147 29.82%	43 36.75%	N=190
<b>Intention to change employer and occupation (change career)</b>	98 19.88%	61 52.14%	N=159
	N=493	N=117	N=610

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## Back-Up: Probit regression for an impending separation

VARIABLES	Model 1	S.E.
Occupational enjoyment	-0.582***	(0.200)
Image of Training Firm	-0.178	(0.141)
Relation to Supervisor	-0.0651	(0.142)
Relation to Colleagues	0.0565	(0.183)
Regional Proximity to Firm	-0.347**	(0.138)
Physical Hard Work in Crafts	0.0371	(0.164)
No Routine in Work in Crafts	0.0605	(0.160)
Further Training Possibilities	-0.0374	(0.144)
Fixed Working Hours	-0.0703	(0.196)
Flexible Working Hours	0.128	(0.182)
Job Security	-0.591***	(0.169)
Promotion Perspectives	0.0500	(0.164)
Financial Attractiveness (salary)	-0.0587	(0.133)

\*\*\* p<0.001, \*\* p<0.05 \* p<0.1 / N=610

Dependent variable *impending separation* (1 = Communicated separation from the training firm or job offer from another firm; 0 = Take-over offer by training firm)