Career Orientation in Engineering

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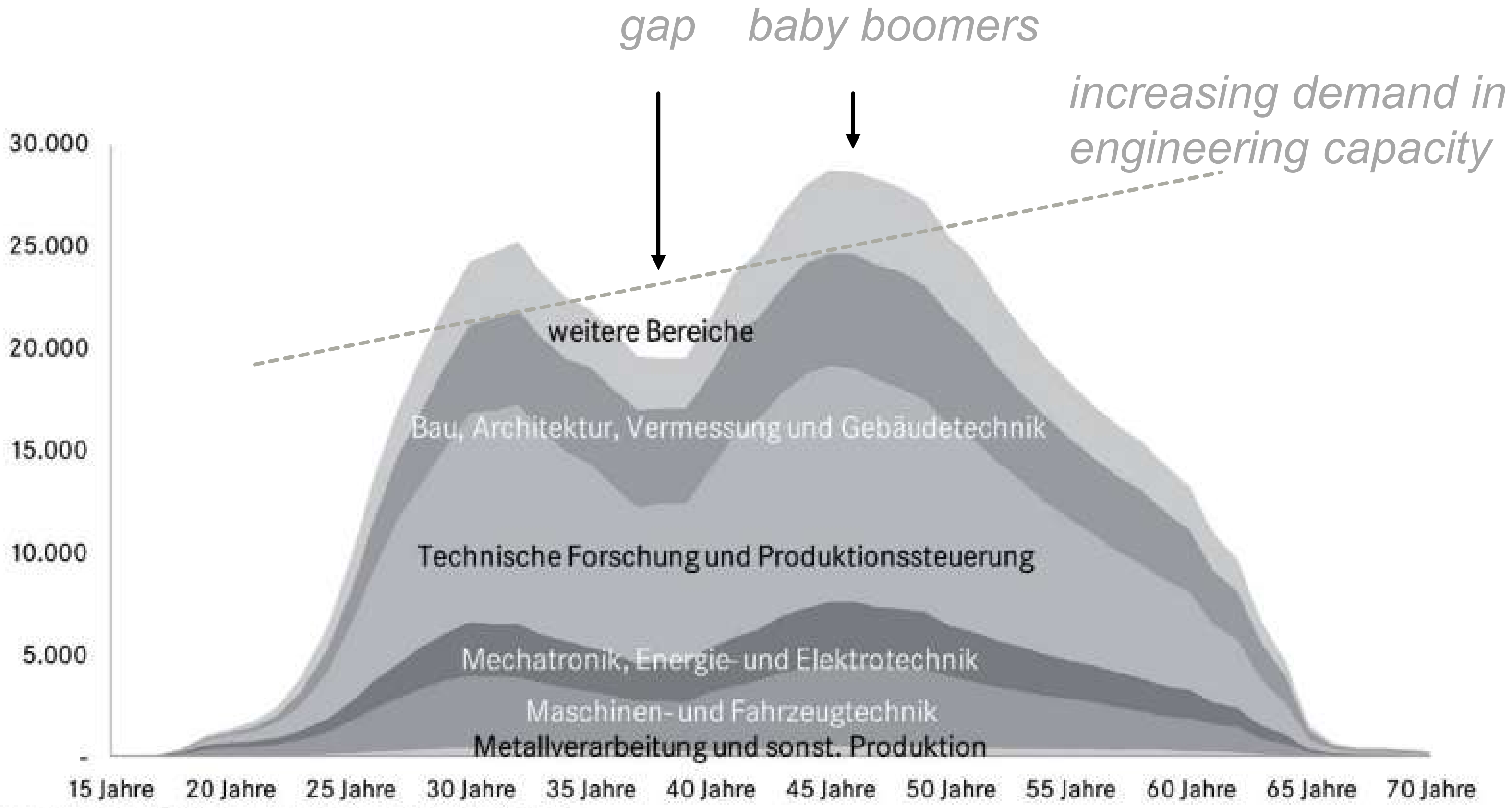
Agenda

- Working Force Forecast
- Turnover intention research
- Career models
- Career orientation study results

Introduction

Benefit of the Study

… and forecasts reflecting the expected demographic changes of the workforce

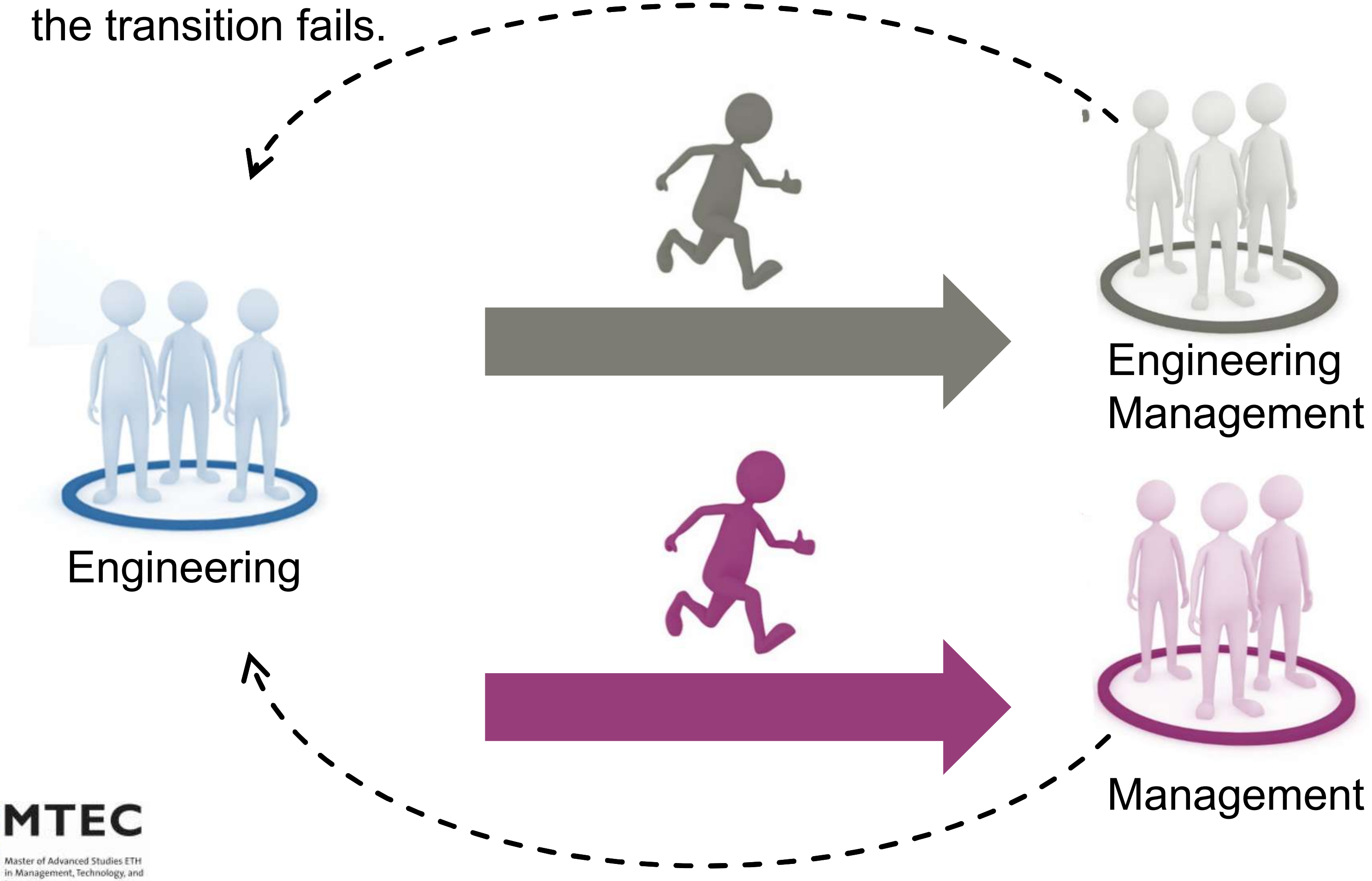


Datenquelle: Statistik der Bundesagentur für Arbeit

Introduction

Benefit of the Study

Engineers transitioning towards engineering management or leaving the field altogether represent a market inefficiency in particular when the transition fails.



Engineering

Engineering Management

Management

Introduction

Benefit of the Study

Why else focus on Engineers?

Professionals have been found to be more focused on their occupations than non professionals (Shore & Martin, 1989).

Hence professionals stay for different reasons.

Turnover Intention Research

Why do engineers transition into management?

Over the years studies (Bailyn, 1982; Hood, 1992; Johnson, 1998; Tremblay, 2002; Wilde, 2009; Hodgson, 2011), show that the underlying motives for changing has not changed much:

Job related variables:

- *perception of alternatives and opportunities*
- *skill development*
- *organizational support to develop ones skills*
- *autonomy*
- *impact*
- *salary satisfaction*

Turnover Intention Research

- How do job related variables contribute to occupational commitment and turnover intention?

job related variables

occupational commitment

turnover intention

Theory

Factors influencing Occupational Commitment

- General overview from literature (Bailyn, 1982; Maertz & Griffith, 2004)
- emotional comfort
- rational calculation
- obligation or need
- desire
- belief in oneself to achieve goals
- perceived expectations
- moral motivations
- social motivations

Selected in this study

- Perception of alternatives
- Skills
- Organizational Support
- Autonomy & Impact
- Salary Satisfaction

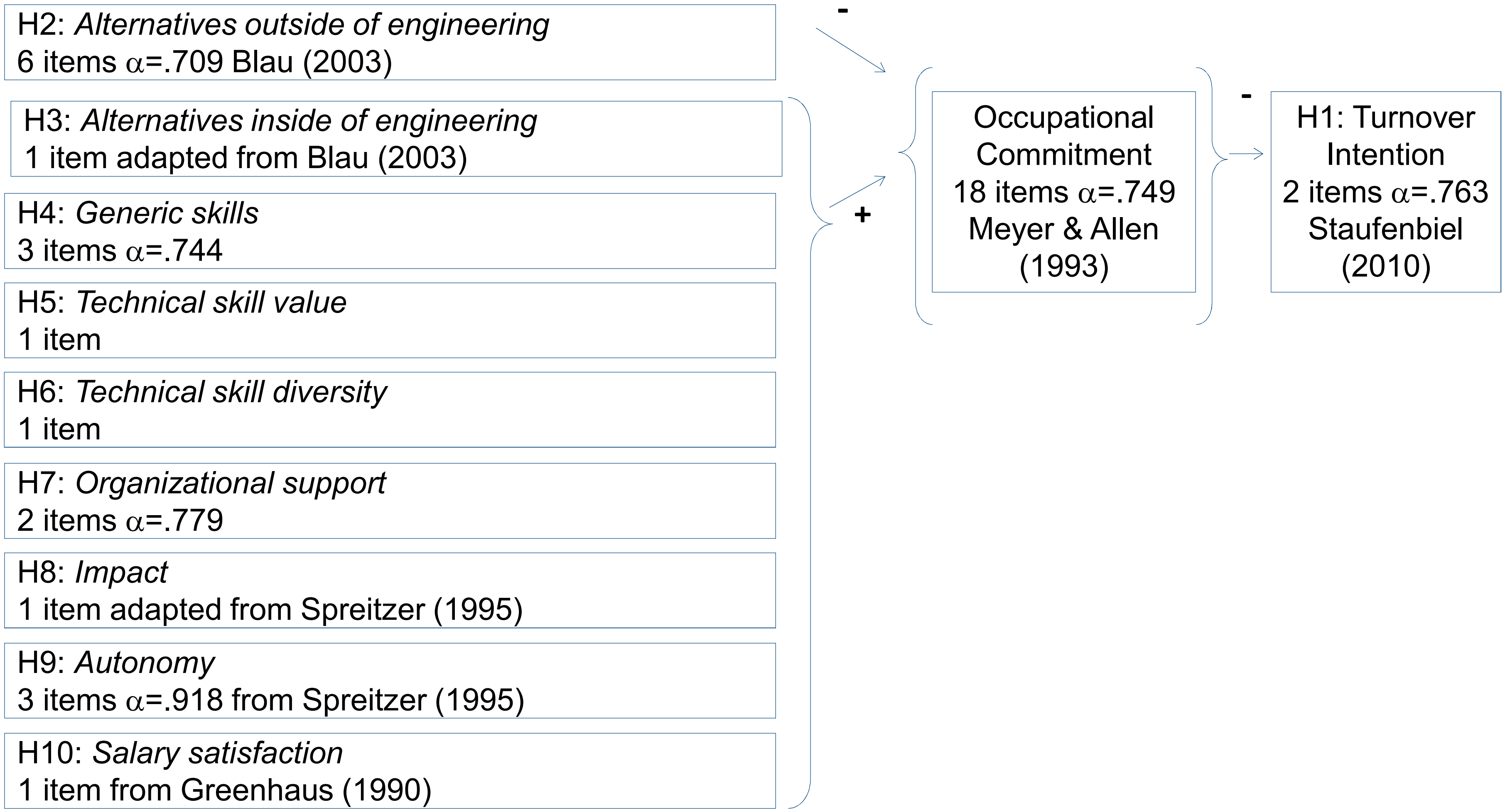
Career Models

- Protean Career
- Boundaryless Career

Career Orientation Study Results

Method

Measures



H2: *Alternatives outside of engineering*
6 items α=.709 Blau (2003)

H3: *Alternatives inside of engineering*
1 item adapted from Blau (2003)

H4: *Generic skills*
3 items α=.744

H5: *Technical skill value*
1 item

H6: *Technical skill diversity*
1 item

H7: *Organizational support*
2 items α=.779

H8: *Impact*
1 item adapted from Spreitzer (1995)

H9: *Autonomy*
3 items α=.918 from Spreitzer (1995)

H10: *Salary satisfaction*
1 item from Greenhaus (1990)

Occupational Commitment
18 items α=.749
Meyer & Allen (1993)

H1: Turnover Intention
2 items α=.763
Staufenbiel (2010)

Method

Sample

- Descriptives

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	72	86.7	86.7	86.7
	Female	11	13.3	13.3	100.0
	Total	83	100.0	100.0	

Maritial

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Single	26	31	31.3	31.3
	Married or in a Committed Relationship	57	69	68.7	100.0
	Total	83	100.0	100.0	

LevelEdu

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	On the job training	3	3.6	3.6	3.6
	Bachelors in Engineering	13	15.7	15.7	19.3
	Masters in Engineering	56	67.5	67.5	86.7
	PhD in Engineering	11	13.3	13.3	100.0
	Total	83	100.0	100.0	

Results

Correlation Analysis

Variables	M	SD	1	2	3	4	5	6	7	8	9	10	11
1 Age	37.12	8.13											
2 Alternatives outside of engineering	4.70	.97	-.176										
3 Alternatives inside engineering	4.54	1.50	-.033	.053									
4 Generic skills	1.97	.60	-.304**	.010	-.185								
5 Technical skill value	5.34	1.32	.070	-.016	.122	-.213							
6 Technical skill diversity	3.48	1.88	-.105	.075	.066	.256*	.086						
7 Organizational support	4.76	1.43	.080	.025	.240*	-.123	.508**	-.151					
8 Impact	5.05	1.37	-.004	-.055	.201	-.092	.072	-.123	.434**				
9 Autonomy	5.60	1.25	.029	.100	.086	-.294**	.379**	-.103	.404**	.195			
10 Salary	4.45	1.51	.322**	-.004	.301**	-.406**	.193	-.180	.312**	.285**	.229*		
11 Occupational Commitment	4.33	.62	.100	-.354**	.379**	-.103	-.031	.098	.155	.326**	.028	.117	
12 Turnover Intention	3.52	1.70	-.076	.164	-.276*	.159	-.228*	.254*	-.443**	-.280*	-.209	-.357**	-.190

**. Correlation is significant p < 0.01 level (2-tailed).

*. Correlation is significant p < 0.05 level (2-tailed).

Results

Linear Regression Analysis Occupational Commitment

	Independent Variable:	Occuapational Commitment (OCC)	
	Predictors	Model 1	Model 2
Model 1:	Control Variables		
	Age	.100	.072
Model 2:	Significant Variables		
	Alternatives outside of engineering		-.367**
	Alternatives inside engineering		.347*
	Impact		.242*
	Technical skill diversity		0.179†
	Technical skill value		-0.176
	Generic skills		-0.090
	Salary		-0.086
	Organizational support		0.091
	Autonomy		0.027
	R^2	-.002	.299
	F(R^2)	.825	4.499**
	ΔR^2	.010	.374
	F(ΔR^2)	.825	4.868**

Note. Standardized regression coefficients β and adjusted R^2 are displayed.

† $p<0.1$. * $p<0.05$. ** $p<0.001$.

Results

Linear Regression Analysis Turnover Intention

	Independent Variable:	Turnover Intention (TI)	
	Predictors	Model 1	Model 2
Model 1:	Control Variables		
	Age	-.076	-.057
Model 2:			
	Occupational Commitment		-.184†
	R^2	-.007	.150
	$F(R^2)$	.470	1.641
	ΔR^2	.006	.034
	$F(\Delta R^2)$	.470	2.801†

Note. Standardized regression coefficients β are displayed.

$^{\dagger}p<0.1$.