Rationality and University Drop Out
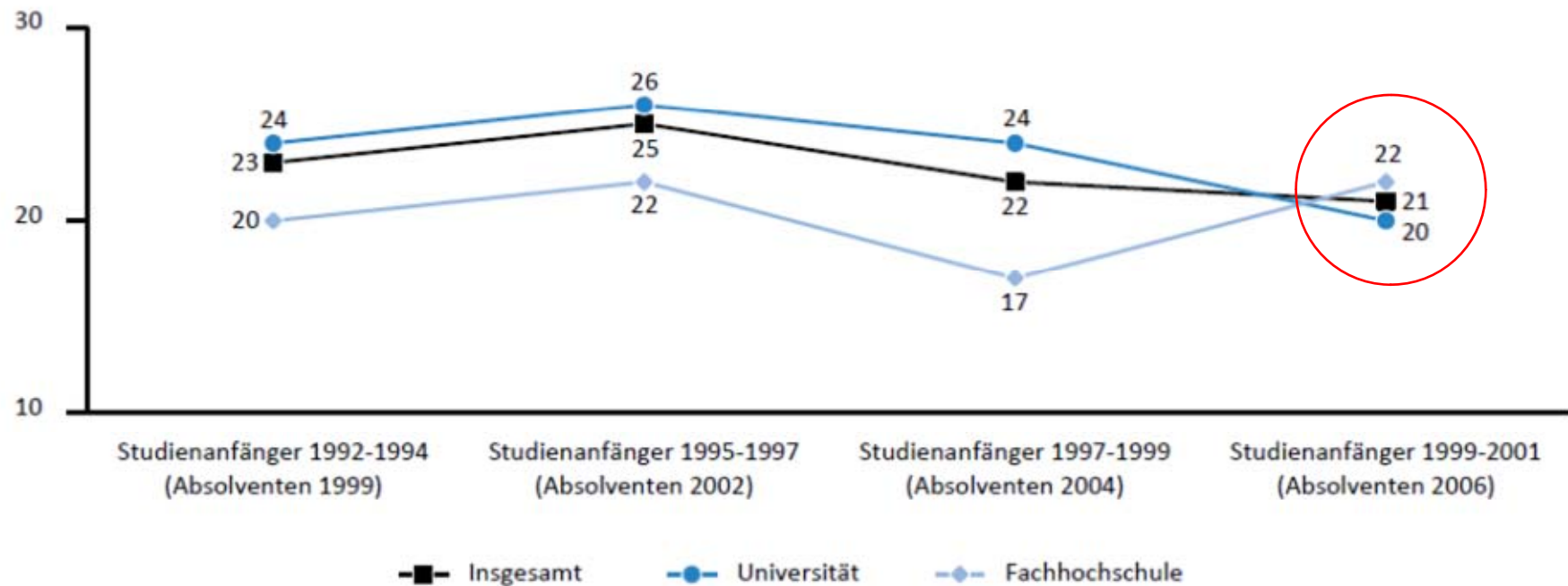
Michaela Sixt
University of Bamberg

Workshop "Rational Choice Sociology"

Venice International University

11/29/2010 till 12/03/2010

Overview

- University Drop-out in Germany

- Determinants of Drop-out

- The Rational-Choice-Perspective

- Data, Variables & Sample

- First Results

- Conclusion and Further Steps

University Drop-out in Germany

Development of drop-out at universities and "Fachhochschulen (FH)" (%)

Source: Heublein et al. 2008; HIS -Studienabbruchuntersuchung 2008

University Drop-out in Germany

Differences in drop-out rates:

- Kind of academia

- Subject-specific drop-out (high drop-out: natural sciences, engineering, economics, linguistics and cultural sciences; low drop-out: medicine, "Lehramt", geography)

- Certificate (Staatsexamen 7% - Diplom/Magister 30% - BA 30%)

- Men drop out more often than women (when controlling subject)

- Social background ?

Source: Heublein et al. 2003, 2008, Blüthmann et al. 2008

NEPS

Determinants of Drop-out

- Cognitive and non-cognitive competencies

- Personality traits and orientations (e.g. self-concept, attitude to work)

- Motives of choice (intrinsic e.g. professional interest vs. extrinsic e.g. high income)

- Conditions of studies (e.g. organization, supervision)

- Academic and social integration (cp. Tinto 1975)

- Lack of information and expectancies

- Non-university burdens (financial situation, employment, family situation)

(for an overview: Blüthmann et al. 2008; Heublein et al. 2003)

The Rational-Choice-Perspective (Erikson & Jonsson 1996)

Drop-out as a consequence of a low subjective expected utility (SEU) of a university degree determined by

- subjective probability of success (p)

- subjective expected benefits (b)
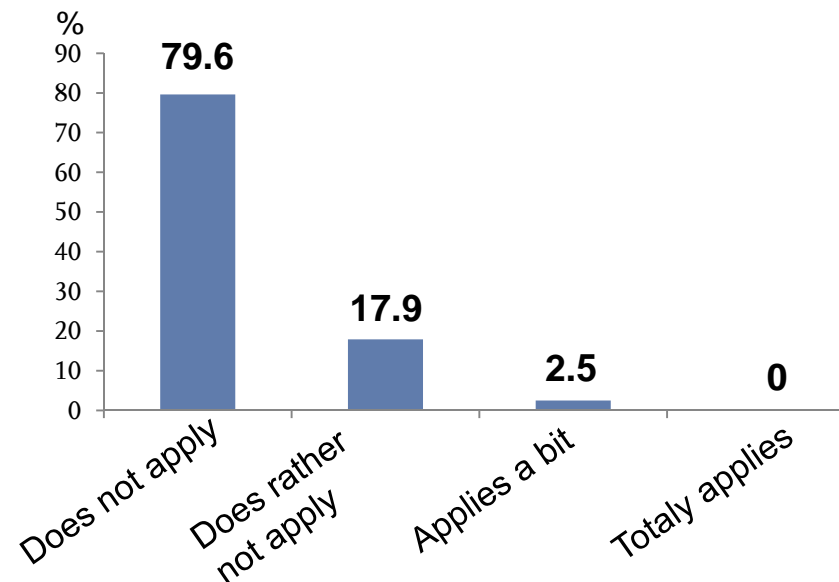
- subjective expected costs (c)

$$\text{SEU (university degree)} = (p*b) - c$$

Data: NEPS - Stage 7 Students

- Sample:
    - BA-Freshmen (University & „Fachhochschule")
    - Selected subjects
    - Bavaria, North Rhine-Westphalia and Lower Saxony

- Pilotstudies of two waves:
    - Autumn 2009 (CATI), N = 483
    - Spring 2010 (Online), N = 331

- Analyzed cases: N = 202

Dependent variable:

„I am thinking seriously about quitting my studies."

→ Outcome Variable: drop-out intention

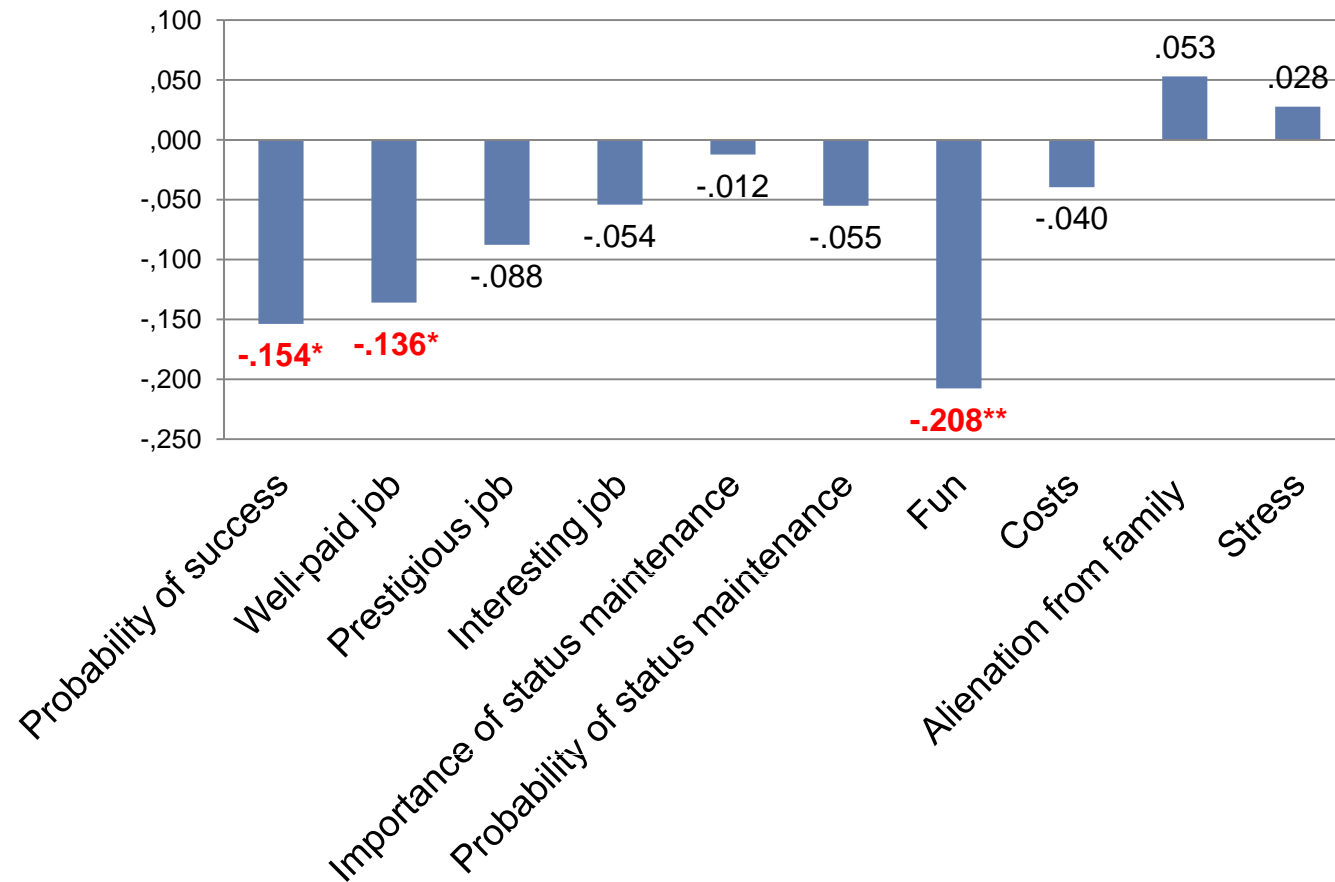Never thought about drop-out   (79.6%, N = 161)

Thought about drop-out   (20.4%, N = 41)

Independent variables:

- Estimation of the probability of successfully finishing studies

- Benefits:
    - Subjective importance of a university degree for having a well-paid job, prestigious job, interesting job
    - Fun with studies
    - Probability of status maintenance with a university degree

- Costs:
    - Indirect and direct cost when reaching a university degree
    - Alienation from family when reaching a university degree
    - High burden/stress when reaching a university degree

Correlation (Pearson) of drop-out intention and …

Significance: p<0.1 = +; p<0,05 = * ; p<0,01 = **

Probability of drop-out intention (Logistic Regression/Odds Ratio)

	Model 1	Model 2	Model 3	Model 4
Highest parental educational degree (Ref.: high)				
Low	.426	1.203	.391	.378
Middle	1.176	.459	.917	.933
Missing	.320	1.012	.272	.278
HISEI (Proxy-values)	1.009		1.014	1.014
Probability of success		.536 +	.613	.597
Benefit				
Well-paid job			.662	.661
Prestigious job			1.173	1.209
Interesting job			.994	.959
Importance of status maintenance			1.081	1.059
Probability of status maintenance			.957	1.017
Fun			.665 +	.648 +
Costs				
Direct/indirect				.920
Alienation from family				1.149
Stress				.850
-2 Log-Likelihood	185.94	182.51	176.33	175.35
R^2	0.13	0.16	0.20	0.21

Source: NEPS - Stage 7, Wave Autumn 2009/Spring 2010, N=202,
Exp (B); $p<0.1$ = +; $p<0.05$ = * Controlled in every model: sex, year of birth, migration background, subject, employment status, available income, average grade (mathematics/German)

Probability of drop-out intention (Logistic Regression/Odds Ratio)

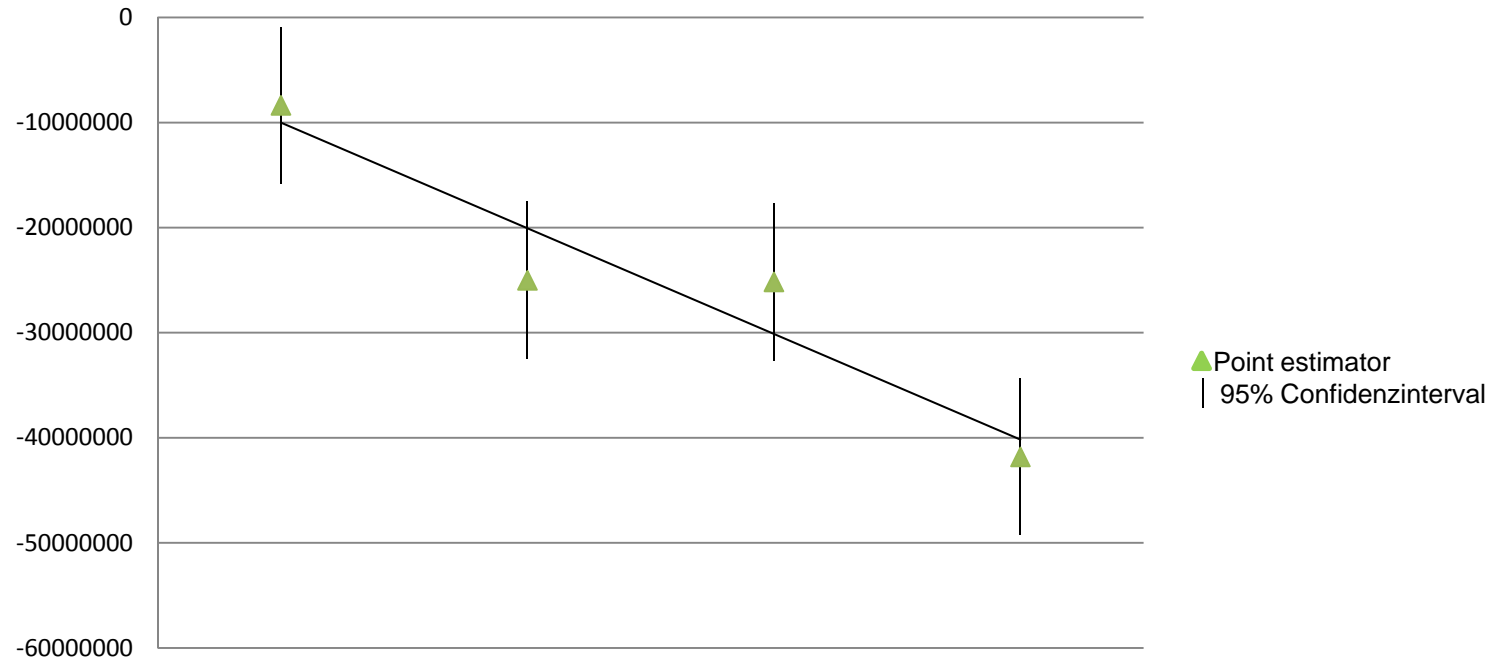|	Model 5	Model 6	Model 7	Model 8	Model 9
Probability of success	,016*	,026 +	,078*	,206	1,373
Benefit					
Well-paid job	,015*	,628	,592	,658	,653
Prestigious job	1,145	,044 +	1,288	1,224	1,227
Interesting job	,883	,938	,085 +	,960	,966
Importance of status maintenance	1,046	1,089	1,047	1,080	1,057
Probability of status maintenance	1,050	1,069	1,077	,368	,959
Fun	,620 +	,615 +	,641 +	,679	1,666
Costs					
Direct/indirect	,888	,930	,875	,901	,935
Alienation from family	1,072	1,041	1,230	1,120	1,153
Stress	,801	,843	,878	,859	,843
Interaction effects					
p*well-paid job	2,443*				
p*prestigious job		2,186 +			
p*interesting job			1,741 +		
p*probability of status maintenance				1,280	
p*fun					,804
-2 Log-Likelihood	171,02	171,88	172,27	175,05	174,97
R²	0,24	0,23	0,23	0,21	0,21

Source: NEPS - Stage 7, Wave Autumn 2009/Spring 2010, N=202,
Exp (B); p<0.1 = +; p<0,05 = *; Controlled in every model: sex, year of birth, migration background, subject, employment status, available income, average grade (mathematics/German). highest parental educational degree; HISEI.
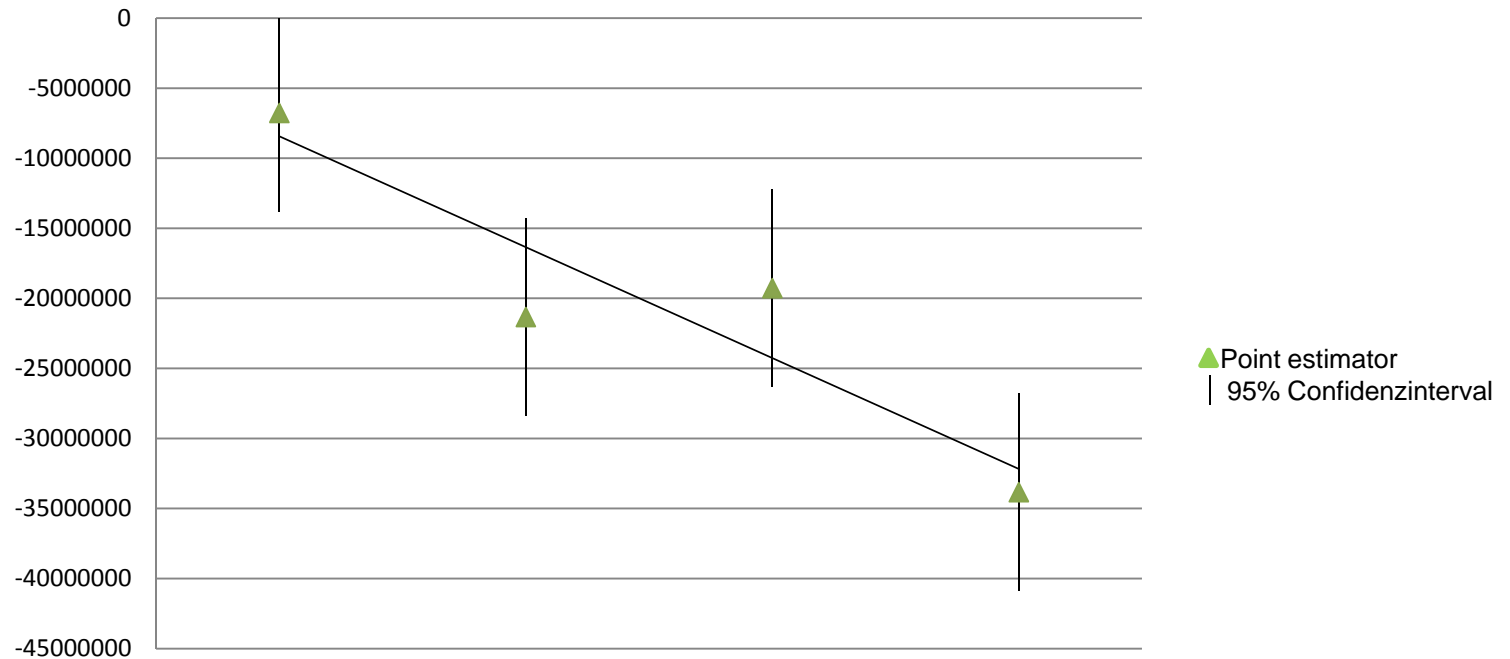
Particular effects on probability of drop-out intention

Probability of success:	LOW	HIGH	LOW	HIGH
Well-paid job:	LOW	LOW	HIGH	HIGH

Source: NEPS - Stage 7, Wave Autumn 2009/Spring 2010, N=202,
Logit-Coeffcients; controlled : sex, year of birth, migration background, subject, employment status, available income, average grade (mathematics/German). highest parental educational degree; HISEI, prestigious job, interesting job, importance of status maintenance, probability of status maintenance, fun, costs, alienation from family, stress , interaction p*well-paid job.
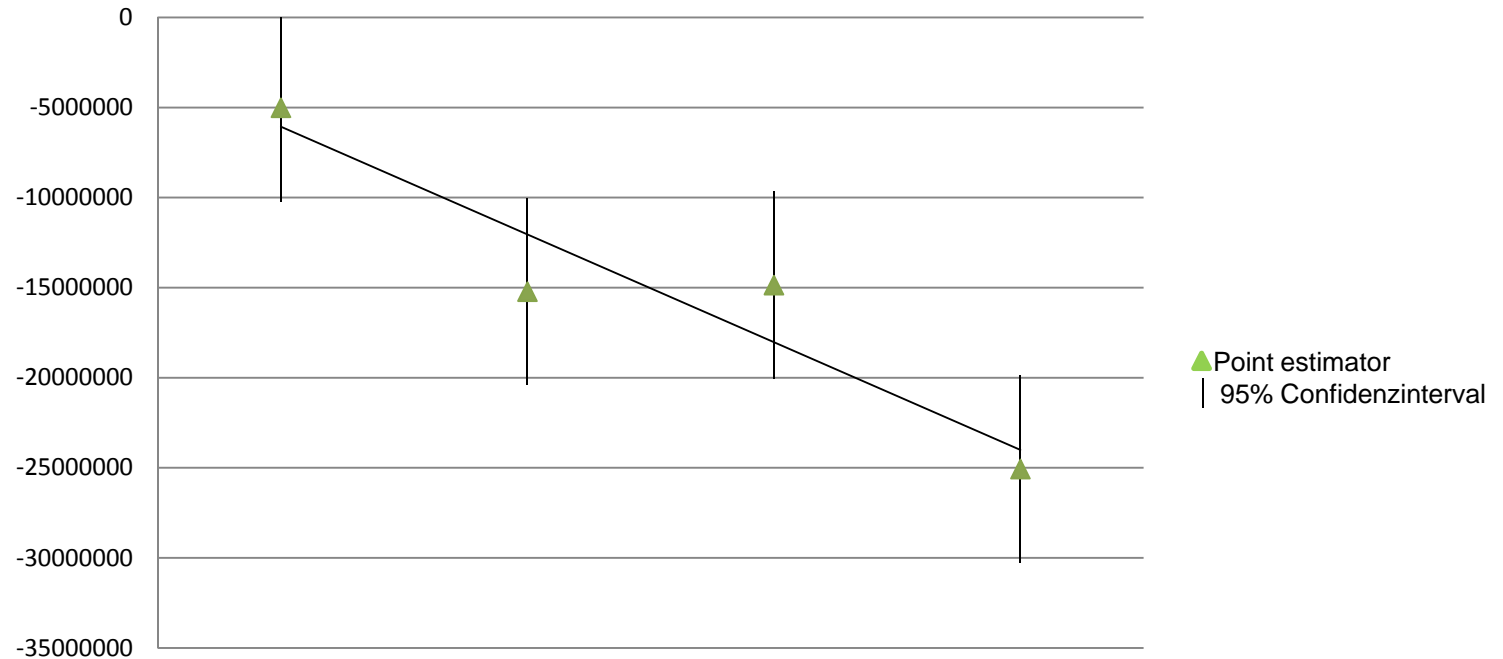
Particular effects on probability of drop-out intention

Probability of success:	LOW	HIGH	LOW	HIGH
Prestigious job:	LOW	LOW	HIGH	HIGH

Source: NEPS - Stage 7, Wave Autumn 2009/Spring 2010, N=202,
Logit-Coeffcients; controlled : sex, year of birth, migration background, subject, employment status, available income, average grade (mathematics/German). highest parental educational degree; HISEI, well-paid job, interesting job, importance of status maintenance, probability of status maintenance, fun, costs, alienation from family, stress , interaction p*prestigious job.

Particular effects on probability of drop-out intention

▲	Point estimator	
	95% Confidenzinterval	

(Chart y-axis values: 0, -5000000, -10000000, -15000000, -20000000, -25000000, -30000000, -35000000)

Probability of success:	LOW	HIGH	LOW	HIGH
Interesting job:	LOW	LOW	HIGH	HIGH

Source: NEPS - Stage 7, Wave Autumn 2009/Spring 2010, N=202,
Logit-Coeffcients; controlled : sex, year of birth, migration background, subject, employment status, available income, average grade (mathematics/German). highest parental educational degree; HISEI, well-paid job, prestigious job, importance of status maintenance, probability of status maintenance, fun, costs, alienation from family, stress , interaction p*interesting job.

Main findings:

- No empirical hint for an effect of social origin on drop-out intention

- Fun has clear effect on drop-out intention

- Costs (seem) have no effect on drop-out intention

- Considering interaction effects of subjective probability of success and the job related benefits on drop-out intention, both are important determinants of the drop-out intention

Further steps:

→ Main studies (number of cases)

→ Further waves: drop-out not drop-out intension

Integration of further determinants:

→ Bounded Rationality: subjective information, norms and values, attitudes toward education

→ Motives of choice, personality traits, competenices

→ Social and academic Integration

Thank you for your attention!

Michaela Sixt
University Bamberg – NEPS

michaela.sixt@uni-bamberg.de

References

Blüthmann, Irmela; Lepa, Steffen; Thiel, Felicitas (2008): Studienabbruch und -wechsel in den neuen Bachelorstudiengängen. Untersuchung und Analyse von Abbruchgründen. In: Zeitschrift für Erziehungswissenschaft, Jg. 11, H. 3, S. 406–429.

Erikson, Robert/Jonsson, Jan O.(1996): Can Education be equalized? Boulder: Westview Press.

Heublein, Ulrich; Spangenberg, Heike; Sommer, Dieter (2003): Ursachen des Studienabbruchs. Analyse 2002. Herausgegeben von HIS. Online verfügbar unter http://www.bmbf.de/pub/ursachen_des_studienabbruchs.pdf, zuletzt geprüft am 05.01.2009.

Heublein, Ulrich; Schmelzer, R.; Sommer, Dieter; Wank, J. (2008): Die Entwicklung der Schwund- und Studienabbruchquoten an den deutschen Hochschulen. Statistische Berechnungen auf der Basis des Absolventenjahrgangs 2006. (HIS Projektbericht).

Tinto, Vincent (1975): Dropout from Higher Education: A Theoretical Synthesis of Recent Research. In: Review of Educational Research, Jg. 45, H. 1, S. 89–125.