

## **Essays on Individual Behavior in Education and Sports**

---

Der Fakultät für Wirtschaftswissenschaften der

Universität Paderborn

zur Erlangung des akademischen Grades

Doktor der Wirtschaftswissenschaften

- Doctor rerum politicarum -

vorgelegte Dissertation

von

**Fabian Lensing, M.Sc., M.Sc.**

geboren am 08.07.1991 in Bocholt

(2022)

## Acknowledgements

When starting my Ph.D. studies, I was not so sure what was really ahead but I was absolutely positive that I had found the best team to accompany me throughout this endeavor. In hindsight, I can do nothing else but confirm this belief. Therefore, I would like to take this opportunity to thank all of you who have supported and motivated – as well as sometimes challenged and pushed me – in these years.

First, I am very thankful to my supervisors Bernd Frick and Thomas Fritz. I am still impressed by your in-depth expertise on all issues of economics, your convincing intuition as well as your leadership style of trust and knowing when to step in. I remember many inspiring and productive ‘Friday afternoon’ discussions, Ph.D. seminars and, in your case, Thomas, also road bike loops around Aachen and Cologne. Thank you for teaching me so much, including matters beyond the specific reach of my Ph.D. research.

I would also like to express my sincere gratitude to the members of the commission who reviewed my dissertation.

Lisa, collaboration with you was a pleasure. Thanks for all the energy, ideas and the commitment to our joint research projects. The same applies to all of the other Ph.D. students of Bernd Frick – I always enjoyed the constructive and helpful discussions with you!

My dear fiancée Laura, a heartfelt thank you for your patience with me – sometimes motivating me with your own impressive work ethic and discipline, often cheering me up when things didn’t go to plan, but always giving me the feeling of trust and security. I am looking forward to our next adventures in life!

Finally, I would like to thank you, Mama and Papa, for your continuous support throughout my entire course of education. My achievements are also the result of your trust and confidence in me.

## Table of Contents

<b>Acknowledgements.....</b>	<b>II</b>
<b>1 Introduction.....</b>	<b>4</b>
1.1 Research Fields Education and Sports .....	5
1.2 Structure, Research Problems and Theoretical Approach.....	6
<b>2 Essays on Individual Behavior in Education and Sports.....</b>	<b>11</b>
A Gender & Migration.....	12
B Signaling & The Bologna-reforms.....	32
C Talent & Crises .....	52
D Strava or didn't happen.....	73
<b>3 Conclusion and Outlook .....</b>	<b>99</b>
<b>4 Publication Bibliography.....</b>	<b>IV</b>
<b>Appendices.....</b>	<b>XV</b>
Appendix to study A – Gender & Migration .....	XV
Appendix to study B – Signaling & The Bologna-reforms .....	XVI
Appendix to study C – Talent & Crises.....	XVII
Appendix to study D – Strava or didn't happen .....	XIX

## 1 Introduction

As early as the eighteenth century, economists had discovered that aggregate social and economic behavior is a result of decisions at an individual level (Smith 2010). Thus, to understand overall social and economic behavior, we need to understand how individuals make decisions. Observing human behavior is one way to determine what drives decisions at an individual level. Accounting for the individual's characteristics, predispositions and preferences and for external parameters describing the decision situation, we can make inferences about the decision-making mechanisms which explain an observed behavior. By understanding these mechanisms, we can, in turn, try to predict or even influence individual behavior and, as a result, overall social and economic behavior.

Given the importance of individual behavior for our societies and economies, it is not surprising that theories aiming at understanding and predicting individual behavior are a major focus in economic research. Since the fundamental work of the Scottish economist Adam Smith for what is nowadays subsumed under the term 'behavioral economics', attention to this field of research has grown constantly. Key contributions include the rejection of Adam Smith's general assumption of pure rationality by Nobel laureate Herbert Simon. He formulated the theory of bounded rationality, highlighting that individuals do not always have all the information required to make the most rational choice (Simon 1955). Richard Thaler, who was also awarded the Nobel Prize in Economics, underlined another limitation of Smith's original theory of rational choice. Thaler showed that not only the lack of knowledge or awareness of all information but also different, and rationally not explainable, mental perceptions of the same outcome play a role in individual behavior (Thaler 1994). This interdisciplinary view built a bridge between traditional economics and psychological approaches to explain decision making and individual behavior (The Royal Swedish Academy of Sciences 2017). Through explaining and illustrating underlying mechanisms such as unconscious biases in decision making, his own work and collaborations with other renowned researchers such as Daniel Kahneman, Amos Tversky, and Cass Sunstein (e.g. Thaler 1980, Thaler et al. 1997, Thaler and Sunstein 2009) have gained great attention, not only in the academic world.

In this dissertation, I aim at contributing to this large and growing body of academic literature on behavioral economics. I use different economic theories to derive testable hypotheses in order to analyze and explain the behavior of individuals in two different fields of research, namely education and sports. For this purpose, I study real-life situations in education and sports to make inferences about the underlying mechanisms that help understand individual behavior.

From a methodological perspective, I apply quantitative methods and analyze data which are drawn from ‘natural experiments’ in the sense of Joshua Angrist’s, Guide Imbens’, and David Card’s work (for a description of their work see Ball 2021). More specifically, the data is not gathered from artificial experiments, e.g. in laboratory settings, but *real* interventions in *real* life. Thus, researchers do not design and run such natural experiments but rather observe the effects of interventions in real life driven by the general environment or third parties. Key advantages of this methodology include the avoidance of selection biases, the validity of methods and findings and the chance to identify causal relationships (The Royal Swedish Academy of Sciences 2021).

## 1.1 Research Fields Education and Sports

The research fields for my studies on individual behavior are education and sports. More specifically, in the first three studies I analyze the behavior of so-called ‘high-ability’ students during their higher education and on the threshold of entering the labor market. Three arguments made me choose this first research field:

First, education is widely cited as a key driver for wealth and health in today’s societies and economies (Grossman 1972; Behrman and Wolfe 1989; Berger and Leigh 1989; Hartog and Oosterbeek 1998). Understanding the decision mechanisms of individuals in (higher) education is, thus, highly relevant for every individual and society as a whole.

Second, higher education can generally be seen as a system which can be described and measured well since it is largely defined by a framework of transparent standards and policies (for example, standards for degrees and study curricula; see Clark 1983). This transparency about the system in which an individual makes decisions and behaves accordingly provides good preconditions to apply quantitative empirical research methods.

Third, I was fortunate to have access to a large and hitherto unused database of a German scholarship organization<sup>1</sup>. This database allowed a clear identification of both external framework conditions and individual predispositions. Furthermore, the database exclusively contains information of high-ability students, namely students with excellent performance in secondary education. Thus, the sample of students, whose decisions and behavior is analyzed in my research, is relatively homogeneous in certain characteristics, i.e. their academic performance. This homogeneity in terms of academic performance allows to focus on other socio-demographic and external factors when analyzing the students' behavior empirically.

Furthermore, I looked at the behavior of individual endurance athletes in a semi-virtual world in the fourth study of my dissertation. In particular, I analyzed the drivers of motivation and behavior of amateur triathletes on sport-specific social media platforms. The motivation to choose this second field of research is twofold. On the one hand, triathletes are also often cited as a relatively homogeneous group of individuals (Wicker et al. 2012) which is beneficial to empirical research methods as described above. On the other hand, analyses of motivation and behavior in a completely different environment (social networks) provide the chance to complement the results of my research in the first field (education) since this is focused mainly on real world environments.

## 1.2 Structure, Research Problems and Theoretical Approach

The core of my dissertation is structured in four chapters along the four studies of my research on the economics of individual behavior. In the following, I outline how these four studies are linked, their individual research focuses, and the theoretical approaches to address their specific research questions.

The overall logic of my research is oriented towards the two key elements which need to be analyzed in order to understand an individual's decisions and, as a result, the respective observable behavior. Obviously, the first element is the individual human being with individual socio-demographic characteristics, preferences and underlying predispositions. The second key element is the external framework – more specifically, every parameter with an impact on the set of alternatives (how to

---

<sup>1</sup> A detailed description of the database can be found in study A below.

decide/behave) or their associated benefits and/or costs. Both elements are linked through the perception of the alternatives' benefits and costs whose difference defines a utility that the individual pursues. More specifically, individual predispositions and preferences affect the perception of benefits and costs and individuals with different socio-demographic characteristics might have different benefits from and costs for the same alternative.

Thus, the underlying concept of my research is that one can understand, and in some cases even predict, individual decisions and the resulting observable behavior, when being able to characterize the individual human person and the external framework clearly. Figure 1 illustrates this concept.

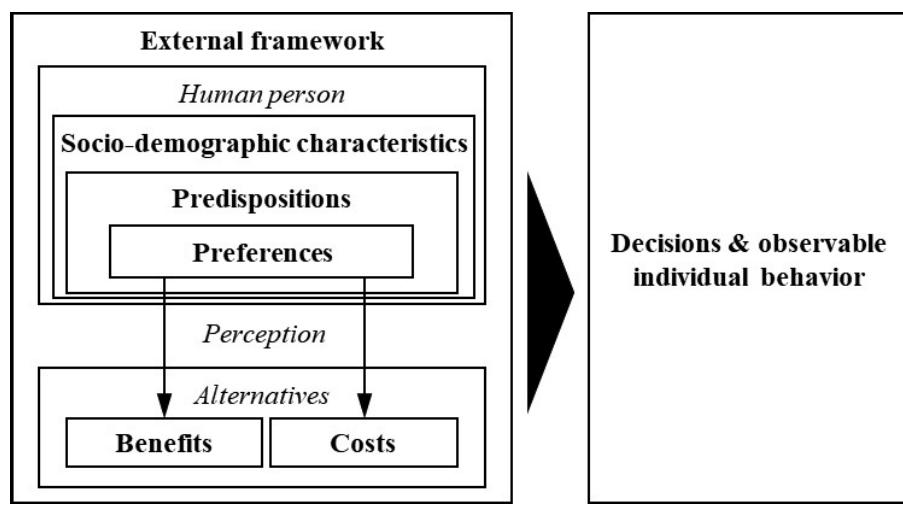


Figure 1: Concept for key parameters to understand individual behavior

The structure of the following four chapters of my dissertation follows this logic. The influence of each element on individual behavior is analyzed by addressing specific research questions in the aforementioned research fields as follows:

**Research question (I):** *How do differences in socio-cultural capital and socio-demographic characteristics, e.g. gender and a migration background, impact individual study behavior (at comparable levels of human capital)?*

Study A 'Understanding the impact of gender and migration on high-ability students' behavior' is centered around individual socio-demographic characteristics, predispositions and preferences. The effects of differences in socio-cultural capital and socio-demographic characteristics on high-ability students' behavior are analyzed by looking at the case of the under-representation of women and

migrants in the executive suite of German companies. Human and socio-cultural capital theory serve as the theoretical basis for this study. The differentiating characteristic of this study in comparison to other research in this area is that all students within our sample have a comparable level of human capital. As mentioned above, my co-authors and I could use a sample for our analyses which consists of high-ability students only, i.e. students who have shown excellent performance during their education careers. Thus, we can clearly identify the influence of socio-cultural capital and socio-demographic factors. Our findings are relevant for the ongoing discussion on gender and migration issues in economy and society. Further, we can contribute to existing research on behavioral economics in higher education through a focus on the influence of socio-cultural capital and socio-demographic factors.

**Research question (II):** *How does a foreseeable change in the external framework conditions, e.g. a change in the study system through the implementation of the Bologna-reforms, influence an individual's study behavior?*

Study B 'When an exchange semester is no longer enough – Why and how the Bologna-reforms changed the behavior of high-ability students' is focused on the influence of a foreseeable change in the external framework on individual behavior. In particular, my co-authors and I look at the impact of the Bologna-reforms on the behavior of German high-ability students. We use signaling theory to address this research problem. Furthermore, a human capital theory perspective is discussed. Our findings add to the ongoing discussion amongst academics of how to separate the relative contribution of signaling versus human capital theory to the explanation of such behavioral patterns. In addition, the results of our analyses can help policy makers in education to better estimate the effects of such changes in the education framework as the Bologna-reforms have caused. Finally, also individual students can benefit from our insights on the dynamics of how signals of ability and productivity change over time and under new external circumstances.

**Research question (III):** *How does an unforeseeable change in the overall external framework conditions, e.g. the change in the economic and labor market conditions during the financial crisis 2008/09, influence an individual's study behavior?*

Study C 'How talent reacts to crises – The rationality of high-ability graduates' response to the financial crisis 2008/09' addresses the influence of *unforeseeable* changes in the external framework on individual behavior. More specifically, my co-author and I explore the reaction of high-ability graduates on the threshold of entering the labor market during the financial crisis 2008/09. In contrast to study B, the changes in the external framework were, in this case, not foreseeable. While the implementation of the Bologna-reforms was planned and concrete measures were transparent, the financial crisis was not foreseeable. Because such large and unforeseeable changes in the external framework occur not infrequently (e.g. the dot-com bubble in the late 1990s or the current Coronavirus pandemic) and often have a severe impact on economies and societies, research on such issues is highly relevant for every practitioner. From a research perspective, we use Smith's 'pure' rational choice theory to discuss our findings. In particular, we evaluate the rationality of our high-ability students' reactions to the financial crisis. Hence, our findings contribute a perspective on whether the pure rational choice argument is still valid in today's complex and dynamic environment.

**Research question (IV):** *What is driving behavior in a completely different environment, i.e. the semi-virtual world of sport-specific social media networks?*

In study D "If it's not on Strava, it didn't happen" – Identifying user archetypes of sport-specific social media platforms based on motivation and behavior', I explore behavior in a completely different external environment. I analyze the drivers of motivation and behavior of amateur athletes on sport-specific social media platforms and account for socio-demographic characteristics and personality traits as a means to identify an individual's predispositions and preferences. The adoption of such platforms and the engagement in such environments in general is increasing rather rapidly. Thus, it is important to understand if and how there are different mechanisms that drive behavior in such environments. More specifically, traditional incentives for a certain behavior, such as monetary benefits, are not existent in this setting and hence, cannot serve to explain a certain behavior. Therefore, I discuss my findings in this study from a relational goods perspective.

Summarizing, each of the four studies addresses one or both of the key elements to understand individual behavior as outlined above. While study A focuses on the influence of individual socio-demographic factors, pre-dispositions and preferences, I explore the effects of (un/foreseeable) changes in the external framework in study B and C. Study D accounts for both individual predispositions and the external framework. As the concrete research problems vary across these studies, different theoretical concepts have been chosen accordingly.

## 2 Essays on Individual Behavior in Education and Sports

Table 1: Overview of studies of this dissertation

Study # & Short Title	Full title	(Co-)Authors	Scientific dissemination
A – Gender & Migration	Understanding the impact of gender and migration on high-ability students' behavior – Exploring behavioral differences in Business, law, and engineering students throughout their academic careers	Lisa Beck-Werz, Bernd Frick, Thomas Fritz, Fabian Lensing	<i>Ongoing</i>
B – Signaling & The Bologna-reforms	When an exchange semester is no longer enough – Why and how the Bologna-reforms changed the behavior of high-ability students	Bernd Frick, Fabian Lensing, Lisa Beck-Werz	<i>Ongoing</i>
C – Talent & Crises	How talent reacts to crises – The rationality of high-ability graduates' response to the financial crisis 2008/09	Bernd Frick, Fabian Lensing	<i>Ongoing</i>
D – Strava or didn't happen	‘If it's not on Strava, it didn't happen’ – Identifying user archetypes of sport-specific social media platforms based on motivation and behavior	Fabian Lensing	Presentations at NASPSPA <sup>2</sup> conference 2021 and Arbeitskreis Sportökonomie Paderborn 2021; <i>Paper publication ongoing</i>

<sup>2</sup> North American Society for the Psychology of Sport and Physical Activity

### 3 Conclusion and Outlook

This dissertation contributes new findings on individual behavior in education and sports.

On a broad level, the findings of the four studies underline that decisions and the resulting behavior are complex processes which, however, can often be explained, understood and even predicted by using economic theory. The studies show that – if we can identify and parameterize relevant environmental factors and individual predispositions and preferences – we find the expected behavior that economic theory suggests.

In particular, study A reveals the importance of considering differences in socio-cultural capital and socio-demographic factors when analyzing individual behavior. In the case of this study, my co-authors and I explored the effects of gender and migration background on the preferences for certain behavior patterns of high-ability individuals in higher education settings. In our sample of students with comparable levels of human capital, i.e. similar intellectual abilities and previous academic performance, we generally found strong gender effects but only a marginal influence of migration backgrounds. More specifically, our analyses showed that male students more likely choose activities which increase their human capital, such as completing a doctorate, or enhance their business and management skillset, e.g. self-employment during their studies – irrespective of a potential migration background. In contrast, we found that women rather engage in activities that are less associated with a desire to increase one's human capital, for example, working in lower-level auxiliary jobs during their studies.

However, in a certain combination of both factors, namely women with a migration background, the behavior is comparable to that of the male peer group (with or without migration background since there is no significant difference in the behavior amongst male students). These women have most likely already been faced with a large number of 'social barriers' in the past to make it thus far, i.e. being part of our selective sample of high-ability students who received a scholarship. Thus, their behavior could be a result of particularly high levels of aspirations and commitment. One could have also expected that this combination of socio-demographic characteristics, namely women with a migration background, could be a form of 'double

---

discrimination' as both factors are separately often cited as being disadvantageous in terms of career prospects and education opportunities (see chapter A2). We fail to find evidence for this hypothesis in our sample of high-ability students.

These findings of study A underline the importance of considering individual predispositions and preferences in order to correctly understand individual behavior. The results also show that hypotheses such as the aforementioned double discrimination need to be precisely differentiated for different combinations of socio-demographic and socio-cultural characteristics.

Study B and C extend my research on individual behavior in education as effects of external framework conditions have been focused on in these studies. In particular, in study B my co-authors and I analyzed the effects of a foreseeable change in external framework conditions for students due to the implementation of the Bologna-reforms. In study C, in contrast, we looked at the reaction of high-ability graduates to the unforeseeable financial crisis 2008/09 which impaired labor market conditions for recent graduates severely.

Both studies underline that changes in the external framework conditions are, not surprisingly, associated with a change in the behavior of individuals. Moreover, just as in study A, we saw an impact of socio-demographic characteristics on the specific reactions to the changes. Surprisingly however, my co-authors and I found that our high-ability students reacted rationally to both foreseeable and unforeseeable changes. One could also have hypothesized an irrational reaction, especially to an unforeseeable change like the financial crisis: Such a sudden deterioration of career prospects due to tightened labor market conditions most likely puts additional pressure on graduates on the threshold of entering the labor market. As a consequence, the graduates could lose their clear perspective of alternatives and the expected utility when evaluating and deciding how to react to the crisis.

However, we found a rational reaction by the graduates: The most prevalent reaction was to pursue a doctoral degree instead of entering the tight private labor market during the crisis. Compared to other alternatives, this crisis response minimizes short-term opportunity cost and

---

improves long-term career prospects by the acquisition of additional human capital and by producing signals of productivity for future employers (a doctoral degree).

In the case of our students' reaction to the foreseeable implementation of the Bologna-reforms, the high-ability students switched to producing new signals of international qualification. More specifically, they increasingly completed degrees abroad since they lost their relative cost advantage for producing alternative signals (e.g. an exchange semester). By completing degrees abroad instead of shorter study stays abroad, they could distinguish themselves from their lower-ability peers and, thus, improve their labor market prospects.

On a broad level, the overarching finding of studies B and C, namely that high-ability students reacted rationally to both the foreseeable and the unforeseeable change in the external framework, confirm Smith's general concept of rational choices (Smith 2010). More specifically, our high-ability students were actually able to identify all relevant environmental factors, including short- and long-term costs and benefits of alternative behaviors in order to determine the most rational reaction for maximizing their utility (i.e. career prospects). As a result, expectations for their observable behavior are confirmed – they act rationally.

In study D, I analyzed the behavior of amateur athletes on sport-specific social media platforms. In contrast to the situation in studies A, B and C, where high-ability students and graduates optimize their behavior towards maximizing their utility in form of their career prospects, there is no such tangible benefit when using sport-specific social media platforms. My analyses reveal that the behavior on such platforms can be explained by looking at other motivational factors beyond the utility of maximizing a tangible net benefit. I found that the behavior is much more driven by the motivation from interpersonal interactions – in line with the argument of the relational goods theory (Uhlamer 1989; Donati 2019). Thus, these relational goods represent the utility which defines the rationality of the behavior that is motivated by interpersonal interactions.

However, as the motivational effects of interpersonal interactions vary for different groups of athletes on the platform, the explanatory power of relational goods theory is limited in

this context. Thus, when following rational choice theory, it is to be expected that there are other, unobserved forms of utility for the groups of athletes whose behavior on the platforms is obviously not driven by the utility in form of relational goods. Overall, this underlines that the rationality of the behavior of sport-specific social media users cannot be determined as clearly as it is the case for students who aim for maximizing their utility in form of future career prospects (see studies A, B and C).

Summarizing, the findings of the four studies are in line with the overarching concepts of behavioral economics as we were mostly able to observe the suggested behavioral patterns of rational choice theory. However, especially the findings of study D also show that 'utility' which defines the rationality of a certain behavior can take different forms in different situations. The students and graduates in study A, B and C make decisions with the aim to optimize their future career prospects or, more specifically, maximize their future income. In contrast, the athletes which use sport-specific social media platforms derive their utility from relational goods and other, unobserved forms of utility (study D). This shows that my findings are also not inconsistent with Simon's argument of bounded rationality. I found that individuals make choices that are satisfactory to their respective form of utility within the system, i.e. in my case higher education and sport-specific social media platforms, and according to the available information in the given situation (Simon 1955). Thus, the overall research contribution of this dissertation can be seen in the continuation of the discussions around the applicability and limitations of rational choice theory and bounded rationality.

Moreover, I contribute to the research area of behavioral economics in education by using a large and hitherto inaccessible dataset of high-ability students. This dataset allowed my co-authors and me to differentiate various drivers of the students' behavior, especially regarding the impact of socio-demographic characteristics. This helps to bring further transparency and provides a fact base for the discussions in today's society around the effects of gender and migration backgrounds on individual career prospects. These findings will furthermore be relevant to the individual student to better reflect the drivers and estimate the outcomes of their

own behavior. For policy makers in education, knowledge about drivers of individual behavior in their field of influence is also highly relevant. In order to better anticipate the real-life implications of changes in the external framework, such as the Bologna-reforms, they need to understand what drives behavior at the individual level. Future research should build upon these findings and analyze their generalizability to other, non-high-ability students. Emphasis should also be placed on understanding further factors of the external environment (besides policy changes etc.), which have not been focused on in the studies of this dissertation. Especially in the education context, ‘herd’ behavior, i.e. the behavior of the overall student population, could also have strong effects on decisions and behavior at the individual level.

Study D on individual behavior contributes a starting point to better understand individual behavior in very different settings, such as the semi-virtual world. My mixed findings and the complexity of drivers of behavior in these settings underline that this field of research deserves more attention. With the growing number of individuals engaging in these settings, for example, on social media platforms, it becomes more important to understand what forms of utility drive individual behavior in these fields of life.

## 4 Publication Bibliography

Abdi, Hervé; Williams, Lynne J. (2010): Principle Component Analysis. In *Wiley Interdisciplinary Reviews: Computational Statistics* 2, pp. 433–459.

Almås, Ingvild; Cappelen, Alexander W.; Salvanes, Kjell G.; Sørensen, Erik Ø.; Tungodden, Bertil (2016): What Explains the Gender Gap in College Track Dropout? Experimental and Administrative Evidence. In *American Economic Review* 106 (5), pp. 296–302.

Altonji, Joseph G.; Kahn, Lisa B.; Speer, Jamin D. (2016): Cashier or Consultant? Entry Labor Market Conditions, Field of Study, and Career Success. In *Journal of Labor Economics* 34 (S1), S361-S401.

Amichai-Hamburger, Yair; Vinitzky, Gideon (2010): Social network use and personality. In *Computers in Human Behavior* 26, pp. 1289–1295.

Balafoutas, Loukas; Sutter, Matthias (2012): Affirmative action policies promote women and do not harm efficiency in the laboratory. In *Science* 335 (6068), pp. 579–582.

Ball, Philip (2021): Nobel-winning 'natural experiments' approach made economics more robust. nature. Available online at <https://www.nature.com/articles/d41586-021-02799-7>, updated on 10/13/2021, checked on 12/6/2021.

Barnum, P.; Liden, R. C.; Ditomaso, N. (1995): Double Jeopardy for Women and Minorities: Pay Differences with Age. In *Academy of Management Journal* 38 (3), pp. 863–880.

Bartolini, Stefano (2014): Relational Goods. In Alex C. Michalos (Ed.): *Encyclopedia of Quality of Life and Well-Being Research*. Dordrecht: Springer Netherlands, pp. 5428–5429.

Beccetti, Leonardo; Pelloni, Alessandra; Rossetti, Fiammetta (2008): Relational goods, sociability, and happiness. In *Kyklos* 61 (3), pp. 343–363.

Becker, Gary Stanley (1964): Human capital. A theoretical and empirical analysis, with special reference to education. New York: National Bureau of Economic Research (General series / National Bureau of Economic Research, no. 80).

Becker, Rolf (2011): Integration von Migranten durch Bildung und Ausbildung – theoretische Erklärungen und empirische Befunde. In Rolf Becker (Ed.): *Integration durch Bildung. Bildungserwerb von jungen Migranten in Deutschland*. Wiesbaden: VS Verlag für Sozialwissenschaften, pp. 11–36.

Behrman, Jere R.; Wolfe, Barbara L. (1989): Does More Schooling Make Women Better Nourished and Healthier? Adult Sibling Random and Fixed Effects Estimates for Nicaragua. In *Journal of Human Resources* 24 (4), pp. 644–663.

Berger, Mark C.; Leigh, J. Paul (1989): Schooling, Self-Selection, and Health. In *Journal of Human Resources* 24 (3), pp. 433–455.

Berlin Marathon (2019): 14,000 Race Uploads. Available online at <https://www.strava.com/clubs/300194/posts/6673858>, updated on 10/8/2019, checked on 2/15/2021.

Bertrand, Marianne; Hallock, Kevin F. (2001): The Gender Gap in Top Corporate Jobs. In *Industrial & labor relations review* 55 (1), pp. 3–21.

BFUG (2020): Full Members of the European Higher Education Act (EHEA). Bologna Follow-up Group Secretariat. Available online at [http://www.ehea.info/page-full\\_members](http://www.ehea.info/page-full_members), checked on 11/12/2020.

Bills, David B. (2003): Credentials, Signals, and Screens: Explaining the Relationship Between Schooling and Job Assignment. In *Review of Educational Research* 73 (4), pp. 441–469.

Blau, Francine D.; Kahn, Lawrence M. (1994): Rising Wage Inequality and the U.S. Gender Gap. In *The American Economic Review* 84 (2), pp. 23–28.

Blau, Francine D.; Kahn, Lawrence M. (2007): The Gender Pay Gap: Have Women Gone as Far as They Can? In *Academy of Management Perspectives* 21 (1), pp. 7–23.

Blau, Francine D.; Kahn, Lawrence M. (2017): The Gender Wage Gap: Extent, Trends, and Explanations. In *Journal of Economic Literature* 55 (3), pp. 789–865.

Bleidorn, Wiebke; Arslan, Ruben C.; Denissen, Jaap J. A.; Rentfrow, Peter J.; Gebauer, Jochen E.; Potter, Jeff; Gosling, Samuel D. (2016): Age and gender differences in self-esteem. A cross-cultural window. In *Journal of personality and social psychology*, pp. 396–410.

Blom, Erica; Cadena, Brian C.; Keys, Benjamin J. (2021): Investment over the Business Cycle: Insights from College Major Choice. In *Journal of Labor Economics* 39 (4).

BMBF; KMK (2018): Die Umsetzung der Ziele des Bologna-Prozesses 2015-2018. Nationaler Bericht von Kultusministerkonferenz und Bundesministerium für Bildung und Forschung unter Mitwirkung von HRK, DAAD, Akkreditierungsrat, fzs, DSW und Sozialpartnern. Federal Ministry of Education and Research Germany (BMBF) and The Conference of German Cultural Ministers (KMK). Available online at <https://www.bmbf.de/de/der-bologna-prozess-die-europaeische-studienreform-1038.html>, checked on 11/25/2020.

Bohachova, O.; Boockmann, B.; Buch, C. M. (2011): Labor Demand During the Crisis: What Happened in Germany? In *CESifo Working Paper No. 3625*.

Bosnjak, M.; Tuten, T. L. (2003): Prepaid and promised incentives in web surveys. In *Social Science Computer Review* 21 (2), pp. 208–217.

Bourdieu, Pierre; Passeron, Jean-Claude (2005): La reproduction. Éléments pour une théorie du système d'enseignement. Paris: Éd. de Minuit (Collection "Le sens commun").

Boyd, Danah M.; Ellison, Nicole B. (2007): Social Network Sites: Definition, History, and Scholarship. In *Journal of Computer-Mediated Communication* 13 (1), pp. 210–230.

Breen, Richard; Goldthorpe, John H. (1997): Explaining educational differences: towards a formal rational action theory. In *Rationality and Society* 9 (3), pp. 275–305.

Brunner, Beatrice; Kuhn, Andreas (2009): To shape the future: How labor market entry conditions affect individuals' long-run wage profiles. In *Institute for Empirical Research in Economics, University of Zurich Working Paper* 457.

Büchel, Felix; Frick, Joachim R. (2004): Immigrants in the UK and in West Germany? Relative income position, income portfolio, and redistribution effects. In *Journal of Population Economics* 17 (3).

Buser, Thomas; Niederle, Muriel; Oosterbeek, Hessel (2014): Gender, Competitiveness, and Career Choices \*. In *The Quarterly Journal of Economics* 129 (3), pp. 1409–1447.

Bütikofer, Aline; Jensen, Sissel; Salvanes, Kjell G. (2018): The role of parenthood on the gender gap among top earners. In *European Economic Review* 109 (2), pp. 103–123.

Carlin, Barbara A.; Gelb, Betsy D.; Belinne, Jamie K.; Ramchand, Latha (2018): Bridging the gender gap in confidence. In *Business Horizons* 61 (5), pp. 765–774.

Cheng, Albert; Florick, Laura (2020): The Value of Study Abroad Experience in the Labor Market: Findings from a Resume Audit Experiment. In *Working Paper in Education Reform Faculty and Graduate Students Publications*.

Choi, Eleanor Jawon; Choi, Jaewoo; Son, Hyelim (2020): The long-term effects of labor market entry in a recession: Evidence from the Asian financial crisis. In *Labour Economics* 67.

Cipollone, Angela; Patacchini, Eleonora; Vallanti, Giovanna (2014): Female labour market participation in Europe: novel evidence on trends and shaping factors. In *IZA Journal of European Labor Studies* 3 (1), p. 18.

Clark, Burton R. (1983): The Higher Education System: University of California Press.

Cobanoglu, C.; Warde, B.; Moreo, P. (2001): A comparison of mail, fax, and web-based survey methods. In *International Journal of Market Research* 43 (4), pp. 441–452.

Coleman, James S. (1988): Social Capital in the Creation of Human Capital. In *American Journal of Sociology* 94, S95-S120.

Constant, Amelie; Massey, Douglas S. (2003): Self-selection, earnings, and out-migration: A longitudinal study of immigrants to Germany. In *Journal of Population Economics* 16 (4), pp. 631–653.

Cook, Alison; Glass, Christy (2014): Women and Top Leadership Positions: Towards an Institutional Analysis. In *Gender, Work and Organization* 21 (1), pp. 91–103.

Correa, Teresa; Willard Hinsley, Amber; Gil de Zuniga, Homero (2010): Who interacts on the Web? The intersection of users' personality and social media use. In *Computers in Human Behavior* 26, pp. 247–253.

Costa, P. T.; McCrae, R. R. (1992): Revised NEO Personality Inventory and NEO Five Factor Professional Manual. Odessa, FL: Psychological Assessment Resources.

Couture, Jesse (2021): Reflections from the 'Strava-sphere': Kudos, community, and (self-)surveillance on a social network for athletes. In *Qualitative Research in Sport, Exercise and Health* 13 (1), pp. 184–200.

Croson, Rachel; Gneezy, Uri (2009): Gender Differences in Preferences. In *Journal of Economic Literature* 47 (2), pp. 448–474.

Crul, M.R.J.; Schneider, J.; van Praag, L. (2014): Upward mobility and questions of belonging in migrant families. In *New Diversities* 16 (1), pp. 1–7.

Crul, Maurice; Keskiner, Elif; Lelie, Frans (2017a): The upcoming new elite among children of immigrants: a cross-country and cross-sector comparison. In *Ethnic and Racial Studies* 40 (2), pp. 209–229.

Crul, Maurice; Schneider, Jens; Keskiner, Elif; Lelie, Frans (2017b): The multiplier effect: how the accumulation of cultural and social capital explains steep upward social mobility of children of low-educated immigrants. In *Ethnic and Racial Studies* 40 (2), pp. 321–338.

Crul, Maurice; Schnell, P.; Herzog-Punzenberger, B.; Wilmes, M.; Slootmann, M.; Aparicio Gómez, R. (2012): 5 School careers of second-generation youth in Europe. Which education systems provide the best chances for success? In Maurice Crul, Jens Schneider, Frans Lelie (Eds.): *The European Second Generation Compared*: Amsterdam University Press, pp. 101–164.

DAAD and DZHW: Wissenschaft weltoffen 2020 kompakt. English edition. Deutscher Akademischer Austauschdienst (DAAD) and Deutsches Zentrum für Hochschul- und Wissenschaftsforschung (DZHW). Available online at [http://www.wissenschaftweltoffen.de/kompakt/woo2020\\_kompakt\\_en.pdf](http://www.wissenschaftweltoffen.de/kompakt/woo2020_kompakt_en.pdf), checked on 11/10/2020.

Davoine, Eric; Ravasi, Claudio (2013): The relative stability of national career patterns in European top management careers in the age of globalisation: A comparative study in France/Germany/Great Britain and Switzerland. In *European Management Journal* 31 (2), pp. 152–163.

Deutsche Triathlon Union e.V. (2018): Triathlon in Deutschland. Zahlen, Fakten & Hintergründe. Frankfurt am Main. Available online at [https://www.dtu-info.de/a/dateien/Triathlon%20in%20Zahlen/DTU\\_Imagebroschuere\\_2018.pdf](https://www.dtu-info.de/a/dateien/Triathlon%20in%20Zahlen/DTU_Imagebroschuere_2018.pdf), checked on 2/15/2021.

DeZIM-Institut (2020): Teilhabe ohne Teilnahme? Wie Ostdeutsche und Menschen mit Migrationshintergrund in der bundesdeutschen Elite vertreten sind. DeZIM Research Notes. Deutsches Zentrum für Integrations- und Migrationsforschung. Berlin (DRN, 4). Available online at [https://www.dezim-institut.de/fileadmin/user\\_upload/Projekte/Eliten/ResearchNotes\\_04\\_201030\\_ansicht.pdf](https://www.dezim-institut.de/fileadmin/user_upload/Projekte/Eliten/ResearchNotes_04_201030_ansicht.pdf).

Dezsö, Cristian L.; Ross, David Gaddis (2012): Does female representation in top management improve firm performance? A panel data investigation. In *Strategic Management Journal* 33 (9), pp. 1072–1089.

Dickerson, Amy; Taylor, Mary Anne (2000): Self-Limiting Behavior in Women. In *Group & Organization Management* 25 (2), pp. 191–210.

Dohmen, Thomas; Falk, Armin (2011): Performance Pay and Multidimensional Sorting: Productivity, Preferences, and Gender. In *American Economic Review* 101 (2), pp. 556–590.

Donati, Pierpaolo (2019): Discovering the relational goods: their nature, genesis and effects. In *International Review of Sociology* 29 (2), pp. 238–259.

Doyle, Stephanie; Gendall, Philip; Meyer, Luanna H.; Hoek, Janet; Tait, Carolyn; McKenzie, Lynanne; Loorparg, Avatar (2010): An Investigation of Factors Associated With Student Participation in Study Abroad. In *Journal of Studies in International Education* 14 (5), pp. 471–490.

Dustmann, Christian; Fabbri, Francesca (2003): Language Proficiency and Labour Market Performance of Immigrants in the UK. In *The Economic Journal* 113 (489), pp. 695–717. Available online at <http://www.jstor.org/stable/3590195>.

Eckel, Catherine C.; Grossman, Philip J. (2002): Sex differences and statistical stereotyping in attitudes toward financial risk. In *Evolution and Human Behavior* 23 (4), pp. 281–295.

EHEA (2020): Website of the European Higher Education Area. Bologna Process Secretariat. Available online at <http://www.ehea.info/>, checked on 11/25/2020.

Engelage, Sonja; Hadjar, Andreas (2008): Promotion und Karriere—Lohnt es sich zu promovieren? Eine Analyse der Schweizerischen Absolventenstudie. In *Swiss Journal of Sociology* 1 (1).

Ersoy, Fulya Y. (2020): The effects of the great recession on college majors. In *Economics of Education Review* 77, p. 102018. Available online at <https://www.sciencedirect.com/science/article/pii/S0272775719305795>.

European Commission (2020): ETER Database. European Tertiary Education Register. Available online at <https://www.eter-project.com/#/search>, checked on 11/3/2020.

European Commission (2021): The Bologna Process and the European Higher Education Area. Available online at [https://ec.europa.eu/education/policies/higher-education/bologna-process-and-european-higher-education-area\\_en](https://ec.europa.eu/education/policies/higher-education/bologna-process-and-european-higher-education-area_en), checked on 10/25/2021.

Evers, Andrea; Sieverding, Monika (2014): Why do Highly Qualified Women (Still) Earn Less? Gender Differences in Long-Term Predictors of Career Success. In *Psychology of Women Quarterly* 38 (1), pp. 93–106.

Filo, Kevin; Lock, Daniel; Karg, Adam (2015): Sport and social media research: A review. In *Sport Management Review* 18 (2), pp. 166–181.

Financial Times (2021): Top 10 investment banks. Available online at <https://markets.ft.com/data/league-tables/tables-and-trends>, checked on 5/25/2021.

Fleischmann, Fenella; Höhne, Jutta (2013): Gender and migration on the labour market: Additive or interacting disadvantages in Germany? In *Social Science Research*, pp. 1325–1345.

French, Michael T.; Homer, Jenny F.; Popovici, Ioana; Robins, Philip K. (2015): What You Do in High School Matters: High School GPA, Educational Attainment, and Labor Market Earnings as a Young Adult. In *Eastern Econ J* 41 (3), pp. 370–386.

Frick, Bernd; Maihaus, Michael (2016a): The (ir-)relevance of internships. Signaling, screening, and selection in the labor market for university graduates. In *Business Administration Review* 76 (5), pp. 377–388.

Frick, Bernd; Maihaus, Michael (2016b): The structure and determinants of expected and actual starting salaries of higher education students in Germany: identical or different? In *Education Economics* 24 (4), pp. 374–392.

Fuller, R.; Schoenberger, R. (1991): The Gender Salary Gap: Do Academic Achievement, Internship Experience, and College Major Make a Difference? In *Social Science Quarterly* 72 (4), pp. 715–726.

Galla, Brian M.; Shulman, Elizabeth P.; Plummer, Benjamin D.; Gardner, Margo; Hutt, Stephen J.; Goyer, J. Parker et al. (2019): Why High School Grades Are Better Predictors of On-Time College Graduation Than Are Admissions Test Scores: The Roles of Self-Regulation and Cognitive Ability. In *American Educational Research Journal* 56 (6), pp. 2077–2115.

Gault, Jack; Redington, John; Schlager, Tammy (2000): Undergraduate Business Internships and Career Success: Are They Related? In *Journal of Marketing Education* 22 (1), pp. 45–53.

German Federal Labor Office (2020): Einführung einer Kurzarbeiterquote. Methodenbericht. Nürnberg. Available online at [https://statistik.arbeitsagentur.de/DE/Statischer-Content/Grundlagen/Methodik-Qualitaet/Methodenberichte/Leistungsstatistik/Generische-Publikationen/Methodenbericht-Kurzarbeiterquote.pdf?\\_\\_blob=publicationFile](https://statistik.arbeitsagentur.de/DE/Statischer-Content/Grundlagen/Methodik-Qualitaet/Methodenberichte/Leistungsstatistik/Generische-Publikationen/Methodenbericht-Kurzarbeiterquote.pdf?__blob=publicationFile), checked on 7/15/2021.

German Federal Statistical Office (2021a): Table 13211-0001: Registered unemployed, registered vacancies, short-time worker, establishments on short-time work. Available online at <https://www-genesis.destatis.de/genesis//online?operation=table&code=13211-0001&bypass=true&levelindex=0&levelid=1626334295355#abreadcrumb>, checked on 7/15/2021.

German Federal Statistical Office (2021b): Tables 21311-0004 & -0001: Students, Germany, Semester, Nationality, Gender, Degree. Available online at <https://www-genesis.destatis.de/genesis/online?operation=abruftabelleBearbeiten&levelindex=2&levelid=1628598470651&auswahloperation=abruftabelleAuspraegungAuswaehlen&auswahlverzeichnis=ordnungsstruktur&auswahlziel=werteabruf&code=21311-0001&auswahltext=&werteabruf=Werteabruff#abreadcrumb>, checked on 8/30/2021.

Gneezy, U.; Niederle, M.; Rustichini, A. (2003): Performance in Competitive Environments: Gender Differences. In *The Quarterly Journal of Economics* 118 (3), pp. 1049–1074.

Gneezy, Uri; Rustichini, Aldo (2004): Gender and Competition at a Young Age. In *American Economic Review* 94 (2), pp. 377–381.

Gosling, Samuel D.; Rentfrow, Peter J.; Swann, William B., JR. (2003): A very brief measure of the Big-Five personality domains. In *Journal of Research in Personality* 37, pp. 504–528.

Greenlaw, Corey; Brown-Welty, Sharon (2009): A Comparison of Web-Based and Paper-Based Survey Methods Testing Assumptions of Survey Mode and Response Cost. In *Evaluation Review* 33 (5).

Grossman, Michael (1972): On the Concept of Health Capital and the Demand for Health. In *Journal of Political Economy* 80 (2).

Gui, Benedetto; Sugden, Robert (2005): Economics and social interaction: accounting for interpersonal relations: Cambridge University Press.

Guillén, Laura; Mayo, Margarita; Karelaiia, Natalia (2018): Appearing self-confident and getting credit for it: Why it may be easier for men than women to gain influence at work. In *Human Resource Management* 57 (4), pp. 839–854.

Hartmann, Jörg (2016): Assimilation over the Life Course? The Career Mobility of Second-Generation Turkish Men in Germany. In *Zeitschrift für Soziologie* 45 (4), pp. 281–297.

Hartmann, Michael (2002): Der Mythos von den Leistungseliten. Spitzenkarrieren und soziale Herkunft in Wirtschaft, Politik, Justiz und Wissenschaft. Frankfurt: Campus-Verlag.

Hartog, Joop; Oosterbeek, Hessel (1998): Health, wealth and happiness: why pursue a higher education? In *Economics of Education Review* 17 (3), pp. 245–256.

Heath, Anthony F. (2013): Unequal chances. Ethnic minorities in western labour markets. Oxford: Oxford Univ. Press (Proceedings of the British Academy, 137).

Heath, Anthony F.; Rothon, Catherine; Kilpi, Elina (2008): The Second Generation in Western Europe: Education, Unemployment, and Occupational Attainment. In *Annual Review of Sociology* 34 (1), pp. 211–235.

Heming, Jan; Stanski, Caroline; Zimmermann, Tobias (2021): Stepstone Gehaltsreport fuer Absolventen 2020/21. StepStone Group. Available online at [https://www.stepstone.de/Ueber-StepStone/wp-content/uploads/2020/11/Stepstone\\_Gehaltsreport\\_fuer\\_Absolventen\\_2020\\_21.pdf](https://www.stepstone.de/Ueber-StepStone/wp-content/uploads/2020/11/Stepstone_Gehaltsreport_fuer_Absolventen_2020_21.pdf), checked on 1/5/2022.

Hügelschäfer, Sabine; Achtziger, Anja (2014): On confident men and rational women: It's all on your mind(set). In *Journal of Economic Psychology* 41, pp. 31–44.

Hughes, David John; Rowe, Moss; Batey, Mark; Lee, Andrew (2012): A tale of two sites: Twitter vs. Facebook and the personality predictors of social media usage. In *Computers in Human Behavior* 28 (2), pp. 561–569.

Huntington-Klein, Nick (2021): Human capital versus signaling is empirically unresolvable. In *Empirical Economics* 60 (5), pp. 2499–2531.

Islam, Iyanatul; Verick, Sher (2011): From the Great Recession to Labour Market Recovery. London: Palgrave Macmillan UK.

Janson, K.; Schomburg, H.; Teichler, U. (2006): Wissenschaftliche Wege zur Professur oder ins Abseits? Strukturinformationen zu Arbeitsmarkt und Beschäftigung an Hochschulen in Deutschland und den USA. Kassel: Incher.

John, Oliver P.; Srivastava, Sanjay (1999): The Big-Five Trait Taxonomy: History, Measurement, and Theoretical Perspectives. In L. Pervin, Oliver P. John (Eds.): *Handbook of personality: Theory and research*. 2<sup>nd</sup> ed. New York: Guilford, pp. 102–138.

Jonsson, J. O.; Rudolphi, F. (2011): Weak Performance--Strong Determination: School Achievement and Educational Choice among Children of Immigrants in Sweden. In *European Sociological Review* 27 (4), pp. 487–508.

JUVE (2021): Nationaler Überblick Top 50. Available online at <https://www.juve.de/handbuch/de/2021/ranking/2>.

Kahn, Lisa B. (2010): The Long-Term Labor Market Consequences of Graduating from College in a Bad Economy. In *Labour Economics* 17 (2), pp. 303–316.

Kao, Grace; Thompson, Jennifer S. (2003): Racial and Ethnic Stratification in Educational Achievement and Attainment. In *Annual Review of Sociology* 29 (1), pp. 417–442.

Kari, Tuomas; Piippo, Jenni; Frank, Lauri; Makkonen, Markus; Moilanen, Panu (Eds.) (2016): To Gamify or Not to Gamify? Gamification in Exercise Applications and Its Role in Impacting. Digital Economy. Bled, Slovenia, 19.-22.06. Bled eConference.

KMK (2020): Schulstatistik. Abiturnoten im Ländervergleich. The Conference of German Cultural Ministers (KMK). Available online at <https://www.kmk.org/dokumentation-statistik/statistik/schulstatistik/abiturnoten.html>, checked on 12/28/2020.

Konyali, Ali; Crul, Maurice (2017): Professionals Made in Germany: Employing a Turkish Migration Background in High-Status Positions. In *SI* 5 (1), pp. 55–65.

Kratz, Fabian; Netz, Nicolai (2018): Which mechanisms explain monetary returns to international student mobility? In *Studies in Higher Education* 43 (2), pp. 375–400.

Kray, Laura J.; Thompson, Leigh (2004): Gender Stereotypes and negotiation performance: an Examination of theory and research. In *Research in Organizational Behavior* 26, pp. 103–182.

Kristen, Cornelia; Granato, Nadia (2007): The educational attainment of the second generation in Germany. In *Ethnicities* 7 (3), pp. 343–366.

Kristen, Cornelia; Reimer, David; Kogan, Irena (2008): Higher Education Entry of Turkish Immigrant Youth in Germany. In *International Journal of Comparative Sociology* 49 (2-3), pp. 127–151.

Leung, Louis; Lee, Paul S.N. (2005): Multiple determinants of life quality: the roles of Internet activities, use of new media, social support, and leisure activities. In *Telematics and Informatics* 22, pp. 161–180.

Liu, Shimeng; Sun, Weizeng; Winters, John V. (2019): Up in STEM, down in business: changing college major decisions with the great recession. In *Contemporary Economic Policy* 37 (3), pp. 476–491.

Löfgren, Karl-Gustaf; Persson, Torsten; Weibull, Jörgen W. (2002): Markets with Asymmetric Information: The Contributions of George Akerlof, Michael Spence and Joseph Stiglitz. In *Scandinavian Journal of Economics* 104 (2), pp. 195–211.

Lörz, Markus; Netz, Nicolai; Quast, Heiko (2016): Why do students from underprivileged families less often intend to study abroad? In *Higher Education* 72, pp. 153–174.

Lünendonk & Hossenfelder (2021): Lünendonk-Liste 2021 Managementberatung. Available online at <https://www.luenendonk.de/produkte/listen/luendonk-liste-2021-fuehrende-managementberatungs-unternehmen-in-deutschland/>, checked on 5/25/2021.

Mahan III, Joseph E.; Seo, Won Jae; Jordan, Jeremy S.; Funk, Daniel (2015): Exploring the impact of social networking sites on running involvement, running behavior, and social life satisfaction. In *Sport Management Review* 18, pp. 182–192.

Mertens, Anne; Röbken, Heinke (2013): Does a doctoral degree pay off? An empirical analysis of rates of return of German doctorate holders. In *Higher Education* 66 (2), pp. 217–231.

Messer, Dolores; Wolter, Stefan C. (2007): Are student exchange programs worth it? In *Higher Education* 54 (5), pp. 647–663.

Mohamad, Ismail; Usman, Dauda (2013): Standardization and Its Effects on K-Means Clustering Algorithm. In *Journal of Applied Sciences, Engineering and Technology* 6 (17), pp. 3299–3303.

Möller, Joachim (2010): The German labor market response in the world recession – de-mystifying a miracle. In *ZAF* 42 (4), pp. 325–336.

Mullen, Ann L. (2009): Elite destinations: pathways to attending an Ivy League university. In *British Journal of Sociology of Education* 30 (1), pp. 15–27.

Münstermann, Leonard (2012): Zur Beitragsfinanzierung des Kurzarbeitergeldes. In *Wirtschaftsdienst* 92 (11), pp. 763–769.

Netz, Nicolai (2015): What Deters Students from Studying Abroad? Evidence from Four European Countries and Its Implications for Higher Education Policy. In *Higher Education Policy* 28 (2), pp. 151–174.

Netz, Nicolai; Finger, Claudia (2016): New Horizontal Inequalities in German Higher Education? Social Selectivity of Studying Abroad between 1991 and 2012. In *Sociology of Education* 89 (2), pp. 79–98.

Niederle, M.; Vesterlund, L. (2007): Do Women Shy Away From Competition? Do Men Compete Too Much? In *The Quarterly Journal of Economics* 122 (3), pp. 1067–1101.

OECD (2012): Untapped Skills: Realising the Potential of Immigrant Students: OECD Publishing.

Opitz, C. (2005): Zum aktuellen Stellenwert des Doktortitels unter den Vorständen deutscher Grossunternehmen: Eine Signaling-Perspektive. In *Die Unternehmung* 59 (3), pp. 281–294.

Oreopoulos, Philip; Wachter, Till von; Heisz, Andrew (2012): The Short- and Long-Term Career Effects of Graduating in a Recession. In *American Economic Journal: Applied Economics* 4 (1), pp. 1–29.

Oyer, Paul (2006): Initial Labor Market Conditions and Long-Term Outcomes for Economists. In *Journal of Economic Perspectives* 20 (3), pp. 143–160.

Parey, Matthias; Waldinger, Fabian (2011): Studying Abroad and the Effect on International Labour Market Mobility: Evidence from the Introduction of ERASMUS. In *The Economic Journal* 121 (551), pp. 194–222.

Parro, Francisco (2012): International Evidence on the Gender Gap in Education over the Past Six Decades: A Puzzle and an Answer to It. In *Journal of Human Capital* 6 (2), pp. 150–185.

Parzinger, Norbert (2018): Azur Associate Erhebung 2017. Azur. Available online at <https://www.azur-online.de/artikel/glaeserne-decke-in-kanzleien-nur-jeder-zehnte-vollpartner-ist-eine-frau/#>, checked on 2/18/2021.

Petzold, Knut (2017): Studying Abroad as a Sorting Criterion in the Recruitment Process: A Field Experiment Among German Employers. In *Journal of Studies in International Education* 21 (5), pp. 412–430.

Petzold, Knut; Moog, Petra (2018): What shapes the intention to study abroad? An experimental approach. In *Higher Education* 75 (1), pp. 35–54.

Politis, Diamanto; Winborg, Joakim; Dahlstrand, Åsa Lindholm (2012): Exploring the resource logic of student entrepreneurs. In *International Small Business Journal* 30 (6), pp. 659–683.

Presley, Adrien; Damron-Martinez, Datha; Zhang, Lin (2010): A Study of Business Student Choice to Study Abroad: A Test of the Theory of Planned Behavior. In *Journal of Teaching in International Business* 21 (4), pp. 227–247.

Rammstedt, Beatrice; John, Oliver P. (2007): Measuring personality in one minute or less: A 10-item short version of the Big Five Inventory in English and German. In *Journal of Research in Personality* 41, pp. 203–212.

Reisenbichler, Alexander; Morgan, Kimberly J. (2012): From “Sick Man” to “Miracle”. In *Politics & Society* 40 (4), pp. 549–579.

Relikowski, Ilona; Yilmaz, Erbil; Blossfeld, Hans-Peter (2012): Wie lassen sich die hohen Bildungsaspirationen von Migranten erklären? Eine Mixed-Methods-Studie zur Rolle von strukturellen Aufstiegschancen und individueller. In Rolf Becker, Heike Solga (Eds.): *Soziologische Bildungsforschung*, vol. 52. Wiesbaden: Springer Fachmedien Wiesbaden (Kölner Zeitschrift für Soziologie und Sozialpsychologie), pp. 111–136.

Relyea, Clint; Cocchiara, Faye K.; Studdard, Nareatha L. (2008): The Effect of Perceived Value in the Decision to Participate in Study Abroad Programs. In *Journal of Teaching in International Business* 19 (4), pp. 346–361.

Risse, Leonora; Farrell, Lisa; Fry, Tim R. L. (2018): Personality and pay: do gender gaps in confidence explain gender gaps in wages? In *Oxford Economic Papers* 70 (4), pp. 919–949.

Rivers, Damian J. (2020): Strava as a discursive field of practice: Technological affordances and mediated cycling motivations. In *Discourse, Context & Media* 34 (2), p. 100345.

Robbins, Steven B.; Lauver, Kristy; Le, Huy; Davis, Daniel; Langley, Ronelle; Carlstrom, Aaron (2004): Do psychosocial and study skill factors predict college outcomes? A meta-analysis. In *Psychological bulletin* 130 (2), pp. 261–288.

Roberts, Paul (2018): Why Social Media Is So Addictive to Cyclists—and How to Use It to Ride Better. What you need to know about the psychology of our ride apps to harness their powers for good. Bicycling. Hearst Digital Media. Available online at <https://www.bicycling.com/culture/a22736718/why-strava-and-instagram-are-so-addicting-for-cyclists/>, updated on 8/15/2018, checked on 2/14/2021.

Rohm, Andrew J.; Milne, George R.; McDonald, Mark (2006): A Mixed-Method Approach for Developing Market Segmentation Typologies in the Sports Industry. In *Sport Marketing Quarterly* 15 (1), pp. 29–39.

Ross, Craig; Orr, Emily; Sisic, Mia; Arseneault, Jaime M.; Simmering, Mary G.; Orr, R. Robert (2009): Personality and motivation associated with Facebook use. In *Computers in Human Behavior* 25, pp. 578–586.

Rubin, Jeffrey Z.; Brown, Bert R. (1975): The Social Psychology of Bargaining and Negotiation. Saint Louis, New York: Elsevier Science; Academic Press.

Salikutluk, Zerrin (2016): Why Do Immigrant Students Aim High? Explaining the Aspiration–Achievement Paradox of Immigrants in Germany. In *European Sociological Review* 32 (5), pp. 581–592.

Salikutluk, Zerrin; Giesecke, Johannes; Kroh, Martin (2020): The Situation of Female Immigrants on the German Labour Market: A Multi-Perspective Approach. SOEPpapers on Multidisciplinary Panel Data Research. DIW Berlin, The German Socio-Economic Panel (SOEP) (1072).

Sánchez Barrioluengo, Mabel; Flisi, Sara (2017): Student mobility in tertiary education. Institutional factors and regional attractiveness. Publications Office of the European Union. Luxembourg (JRC science for policy report).

Sax, Linda J.; Gilmartin, Shannon K.; Bryant, Alyssa N. (2003): Assessing response rates and nonresponse bias in web and paper surveys. In *Research in Higher Education* 44 (4).

Scala, Natalie M.; Tomasi, Stella; Goncher, Andrea; Bursic, Karen M. (2018): Motivation and Analytics: Comparing Business and Engineering Students. In *INFORMS Transactions on Education* 19 (1).

Schneebaum, Alyssa; Rumplmaier, Bernhard; Altzinger, Wilfried (2016): Gender and migration background in intergenerational educational mobility. In *Education Economics* 24 (3), pp. 239–260.

Schofer, Evan; Meyer, John W. (2005): The Worldwide Expansion of Higher Education in the Twentieth Century. In *American Sociology Review* 70 (6), pp. 898–920.

Schwandt, Hannes; Wachter, Till von (2019): Unlucky cohorts: Estimating the long-term effects of entering the labor market in a recession in large cross-sectional data sets. In *Labor Economics* 37 (S1), pp. 161–198.

Sewell, William H.; Haller, Archibald O.; Ohlendorf, George W. (1970): The Educational and Early Occupational Status Attainment Process: Replication and Revision. In *American Sociological Review* 35 (6), p. 1014.

Simon, Herbert A. (1955): A Behavioral Model of Rational Choice. In *The Quarterly Journal of Economics* 69 (1), pp. 99–118.

Smith, Adam (2010): The Wealth of Nations: An inquiry into the nature and causes of the Wealth of Nations: Harriman House Limited.

Speer, Jamin D. (2016): Wages, Hours, and the School-to-Work Transition: The Consequences of Leaving School in a Recession for Less-Educated Men. In *The B.E. Journal of Economic Analysis & Policy* 16 (1), pp. 97–124.

Spence, Michael (1973): Job Market Signaling. In *The Quarterly Journal of Economics* 87 (3), pp. 355–374.

Statistisches Bundesamt (2017): Fachserie 1 Reihe 1.2 - Bevölkerung und Erwerbstätigkeit. Wanderungen (Wanderungsstatistik). Statistisches Bundesamt. Wiesbaden.

Statistisches Bundesamt (2018): Bevölkerung und Erwerbstätigkeit. Bevölkerung mit Migrationshintergrund - Ergebnisse des Mikrozensus 2017.

Statistisches Bundesamt (2019): Statistische Jahrbuch 2019. 3-Bildung. Available online at [https://www.destatis.de/DE/Themen/Querschnitt/Jahrbuch/statistisches-jahrbuch-2019-dl.pdf?\\_\\_blob=publicationFile](https://www.destatis.de/DE/Themen/Querschnitt/Jahrbuch/statistisches-jahrbuch-2019-dl.pdf?__blob=publicationFile).

Strava (2020a): Strava Milestones: 50 Million Athletes and 3 Billion Activity Uploads. Available online at <https://blog.strava.com/press/strava-milestones-50-million-athletes-and-3-billion-activity-uploads/>, updated on 2/4/2020, checked on 2/15/2021.

Strava (2020b): What's new? Available online at <https://www.strava.com/subscription/whats-new?btn=1VYMwWeYrcyESMWsdA7qaV&par=1j04LtpJLsMmFYcuYm5dIt>, checked on 2/15/2021.

Stypińska, Justyna; Gordo, Laura Romeu (2018): Gender, age and migration: an intersectional approach to inequalities in the labour market. In *European Journal of Ageing* 15 (1), pp. 23–33.

Teichler, Ulrich (2012): International Student Mobility in Europe in the Context of the Bologna Process. In *Research in Comparative and International Education* 7 (1), pp. 34–39.

Thaler, Richard H. (1980): Toward a Positive Theory of Consumer Choice. In *Journal of Economic Behavior and Organization* 1 (1), pp. 39–60.

Thaler, Richard H. (1994): Quasi rational economics. 1<sup>st</sup> ed. New York: Russell Sage Foundation.

Thaler, Richard H.; Sunstein, Cass R. (2009): Nudge. Improving decisions about health, wealth, and happiness. Revised and expanded edition. New York: Penguin Books.

Thaler, Richard H.; Tversky, Amos; Kahneman, Daniel; Schwartz, Alan (1997): The Effect of Myopia and Loss Aversion on Risk Taking: An Experimental Test. In *The Quarterly Journal of Economics* 112 (2), pp. 647–661.

The Royal Swedish Academy of Sciences (2017): Richard H. Thaler: Integrating Economics with Psychology. Scientific Background on the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel 2017. Available online at <https://www.nobelprize.org/uploads/2018/06/advanced-economicsciences2017.pdf>, updated on 10/9/2017, checked on 12/6/2021.

The Royal Swedish Academy of Sciences (2021): The Prize in Economic Sciences 2021. Natural Experiments Help Answer Important Questions. Available online at <https://www.nobelprize.org/uploads/2021/10/popular-economicsciencesprize2021-3.pdf>, checked on 12/14/2021.

Times Higher Education (2020): THE World Ranking. Available online at [https://www.timeshighereducation.com/world-university-rankings/2021/world-ranking#/page/0/length/25/sort\\_by/rank/sort\\_order/asc/cols/stats](https://www.timeshighereducation.com/world-university-rankings/2021/world-ranking#/page/0/length/25/sort_by/rank/sort_order/asc/cols/stats), checked on 11/20/2020.

Tomlinson, Michael (2008): ‘The degree is not enough’: students’ perceptions of the role of higher education credentials for graduate work and employability. In *British Journal of Sociology of Education* 29 (1), pp. 49–61.

Toncar, Mark F.; Reid, Jane S.; Anderson, Cynthia E. (2006): Perceptions and Preferences of Study Abroad. In *Journal of Teaching in International Business* 17 (1-2), pp. 61–80.

Tribe Group (2009): The mind of the triathlete. Available online at <http://www.usatriathlon.org/about-multisport/demographics.aspx>, checked on 2/15/2021.

Tyler, John H.; Murnane, Richard J.; Willett, John B. (2000): Estimating the Labor Market Signaling Value of the GED. In *The Quarterly Journal of Economics* 115 (2), pp. 431–468.

Uhlamer, Carole Jean (1989): “Relational goods” and participation: Incorporating sociability into a theory of rational action. In *Public Choice* 62 (3), pp. 253–285.

Universum Global (2020): World's Most Attractive Employers. StepStone Group. Available online at <https://universumglobal.com/wmae2020/>, checked on 5/25/2021.

Vallet, Louis-André (2007): What Can We Do to Improve the Education of Children From Disadvantaged Backgrounds? In Marcelo Sánchez Sorondo, Edmond Malinvaud, Pierre Léna (Eds.): *Globalization and Education*. Berlin • New York: Walter de Gruyter.

van den Berge, Wiljan (2018): Bad start, bad match? The early career effects of graduating in a recession for vocational and academic graduates. In *Labour Economics* 53, pp. 75–96.

van Houtte, Mieke (2004): Why boys achieve less at school than girls: the difference between boys' and girls' academic culture. In *Educational Studies* 30 (2), pp. 159–173.

Velonews (2012): Family sues Strava over descending death. Available online at <https://www.velonews.com/news/road/family-sues-strava-over-descending-death/>, updated on 6/19/2012, checked on 2/15/2021.

Weichselbaumer, Doris (2020): Multiple Discrimination against Female Immigrants Wearing Headscarves. In *Industrial & labor relations review* 73 (3), pp. 600–627.

Weiss, Andrew (1995): Human Capital vs. Signalling Explanations of Wages. In *Journal of Economic Perspectives* 9 (4), pp. 133–154.

West, Liam Richard (2015): Strava: challenge yourself to greater heights in physical activity/cycling and running. In *British journal of sports medicine* 49 (15), p. 1024.

Westmattelmann, Daniel; Grotenhermen, Jan-Gerrit; Sprenger, Marius; Rand, William; Schewe, Gerhard (2021): Apart we ride together: The motivations behind users of mixed-reality sports. In *Journal of Business Research* 134 (1), pp. 316–328.

Wicker, Pamela; Hallmann, Kristin; Prinz, Joachim; Weimar, Daniel (2012): Who takes part in triathlon? An application of lifestyle segmentation to triathlon participants. In *International Journal of Sport Management and Marketing* 12 (1/2), pp. 1–24.