

# Perspectives on the Sharing Economy



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Edited by

Dominika Wruk, Achim Oberg  
and Indre Maurer

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# TABLE OF CONTENTS

Introduction .....	1
Perspectives on the Sharing Economy <i>Dominika Wruk, Achim Oberg and Indre Maurer</i>	
<b>1. Business and Economic History Perspective</b>	
1.1 .....	30
Renaissance of Shared Resource Use? The Historical Honeycomb of the Sharing Economy <i>Philipp C. Mosmann</i>	
1.2 .....	39
Can the Sharing Economy Regulate Itself? A Comparison of How Uber and Machinery Rings Link their Economic and Social Goals <i>Sabine Gruber</i>	
<b>2. Economics Perspective</b>	
2.1 .....	48
Regulating Consumers' Contributions and Usage of a Shared Good: An Experimental Approach <i>Eva Hofmann, Barbara Hartl, Thomas Sabitzer, Sarah Marth, Elfriede Penz and Erik Hoelzl</i>	
2.2 .....	56
Determinants of Accommodation Prices Provided by Airbnb in four EU Cities <i>Kristóf Gyódi and Lukasz Nawaro</i>	
2.3 .....	64
Does Education Still Matter in Online Labor Markets? <i>Andrea M. Herrmann, Petra Zaal, Maryse M.H. Chappin and Brita Schemmann</i>	

### 3. Organization Studies Perspective

3.1 .....	72
Types of Business Models in the Sharing Economy: An Exploratory Study in Germany <i>Dominika Wruk, Achim Oberg, Indre Maurer and Jennifer Klutt</i>	
3.2 .....	82
Shared Mobility Business Models— Trust Building in the Sharing Economy <i>Barbara Hartl, Elfriede Penz, Elke Schüßler and Eva Hofmann</i>	
3.3 .....	89
From Shared Mobility to Shared Lifestyles – Understanding Whether and How Household Carsharing Practices Spread into Other Sectors <i>Eivind Farstad and Iratxe Landa Mata</i>	
3.4 .....	95
Theorizing Technologies for the Sharing Economy: The Blockchain Example <i>Tino Schöllhorn</i>	

### 4. Management and Strategy Research Perspective

4.1 .....	108
Stakeholder Theory and the Sharing Economy: Toward a Research Agenda <i>David Oliver and Matt Statler</i>	
4.2 .....	113
Mapping the Stakeholders and Their Relationships in the Sharing Economy: The Case of Airbnb <i>Catherine L'Ecuyer</i>	
4.3 .....	120
A Collaborative Energy System—How Business Models of the Sharing Economy May Drive the Energy Transition <i>Frederik Plewnia and Edeltraud Guenther</i>	

4.4 ..... 126  
 Car-as-a-Service Platforms  
*Hugo Guyader and Laura Piscicelli*

**5. Information Systems Perspective**

5.1 ..... 134  
 To Share or Not to Share: A Digital Divide in the Sharing Economy  
*Thomas Eichhorn, Sebastian Jürss and Christian P. Hoffmann*

5.2 ..... 141  
 Up or Out? The Dynamics of Star-Rating Scores on Airbnb  
*Timm Teubner and Florian Glaser*

5.3 ..... 148  
 In Blockchain We Trust? Consumer Trust Relationships  
 in the “Sharing Economy 2.0”  
*Florian Hawlitschek*

5.4 ..... 156  
 Facilitating or Regulating the Sharing Economy?  
 Uncovering the impact of Carsharing  
*Alexander Frey, Manuel Trenz and Daniel Veit*

**6. Political Science and Legal Studies Perspective**

6.1 ..... 166  
 Conceptualizing the Role of the State in the Digital Platform Economy  
*Jonas Pentzien*

6.2 ..... 173  
 Sharing and the City: Roles, Relations, and Governance Mechanisms  
*Yuliya Voytenko Palgan, Oksana Mont and Lucie Zvolška*

**7. Linguistics and Semantics Perspective**

7.1 ..... 182  
 A Conceptual Development of the Sharing Economy from  
 the Field of Linguistics and Semantics  
*Steven Curtis and Matthias Lehner*

7.2..... 189  
Building Trust in English and German for Collaborative Consumption:  
A Comparative Case Study of the Language and Content Used by  
Collaborators on Airbnb  
*Alex Zarifis and Richard Ingham*

# DOES EDUCATION STILL MATTER IN ONLINE LABOUR MARKETS?

ANDREA M. HERRMANN  
Utrecht University (The Netherlands)  
[A.M.Herrmann@uu.nl](mailto:A.M.Herrmann@uu.nl)

PETRA ZAAL  
Utrecht University (The Netherlands)  
Deloitte Consulting, Netherlands

MARYSE M.H. CHAPPIN  
Utrecht University (The Netherlands)

BRITA SCHEMMANN  
Utrecht University (The Netherlands)

## Introduction

To date, the opinion that higher levels of education lead to higher income levels in dependent employment is virtually uncontested (Day & Newburger, 2002; de Wolff & van Slijpe, 1973; Miller, 1960). Theoretically, this paradigm is founded on the asymmetric information and, thus, the adverse selection problem that employers face before hiring employees. To address this problem, employees signal their qualities to potential employers through their educational certificates. Accordingly, the literature on labour economics demonstrates a link between educational attainment and pay levels.

Online labour markets, or the ‘gig economy’ – which allows organisations and individuals alike to hire workers through online platforms for a one-time service – fundamentally challenge this paradigm: gig workers do not need educational certificates to offer their services on online platforms, such as Upwork, freelancer or PeoplePerHour. Rather than through educational certificates, adverse selection is prevented through the platforms’ review system. This raises the question whether educational attainment still influences wage levels in online labour markets: Do gig workers with higher levels of education have higher levels of income?

## Theory

Drivers of income levels have been discussed across different strands of the social science literature, most notably in labour economics and economic sociology. To investigate the importance of education for the income levels of workers, labour economists have importantly relied on principal-agent theories explaining how adverse selection is prevented in labour markets (Jensen & Meckling, 1976): Typically, an employer (the principal) cannot be sure of the capabilities and intentions of a possible employee (the agent) until they have been working together for an extended period of time. The fact that these capabilities and intentions are not known beforehand increases uncertainties. For this reason, the principal will use information that is available to him in order to decide whether, or not, to hire an employee and, if so, at what wage level. This information consists of several characteristics (Spence, 1973), most importantly the agent’s (1) *education*, (2) *previous work experience*, (3) *recommendations*, and (4) *gender*.

(1) *Education* is a particularly important measure that a principal can use in order to reduce the effect of adverse selection. A degree can signal to the principal that the agent has not only dedicated his time to studying a specific subject, but also successfully completed this trajectory. This reduces the risk that the principal will hire an inadequate agent. For this reason, agents with a higher educational degree can signal a stronger quality and have a stronger position to negotiate their salaries. Accordingly, both the industrial relations and labour economics literatures agree that the educational degree obtained is an important predictor of income levels: the higher the level of education received, the higher the salary levels of agents. This relationship has not only been established for regular employees (de Wolff & van Slijpe, 1973; Lazear, 1974; Miller, 1960), but also for workers hired on atypical and temporary contracts (Visser, 2002). Translating these insights to the gig economy, we expect to find that:

*H<sub>1</sub>: The higher the level of education of a gig worker, the higher his income.*

(2) As time passes between the completion of the education and the application for the job, the degree becomes less important. Instead, one’s *work experience* gains in signalling power. Having had a previous job becomes proof that an agent has a certain set of skills and attitude which signal the quality of work he is capable and willing to do (Spence,

1973). Accordingly, Lazear (1974) and Mincer (1974) both find that previous work experience is correlated to a higher income. Part of this relationship can be explained through on-the-job training which positively influences income and job bids (Krueger & Rouse, 1998). Likewise, it was found for atypical workers, who gain different skills at each place they work (Friedman, 2014), that working in the same industry for a longer period, closes the initial pay gap between temporary workers and traditional employees (Booth, Francesconi, & Frank, 2002; Jahn & Pozzoli, 2013). Translating these insights to the gig economy, we expect to find that:

*H<sub>2</sub>: The more work experience a gig worker has, the higher his income.*

(3) Another important mechanism to prevent adverse selection are *references* of previous employers. Given that references are written on the basis of a worker's previous performance, they serve as a strong signalling mechanism of quality. One of the first studies on the importance of references as signalling tools revealed that most jobs are filled through referrals, rather than on the basis of resumes (Christopherson et al. 1999). A similar phenomenon was identified for the income of freelancers and the reviews they obtain: the more positive the reviews, the more income or job offers a freelancer receives (De Stefano, 2016). The reason for this is that a positive review is considered a proof of quality (Schemmann, Herrmann, Chappin, & Heimeriks, 2016). Translating these insights to the gig economy, we expect to find that:

*H<sub>3</sub>: The higher the review scores of a gig worker, the higher his income.*

(4) Next to factors that can signal worker quality to potential employers, *gender* constitutes a major driver of different income levels. Accordingly, research across the social sciences found that women earn systematically and persistently less than men for doing the same work (for example Baroudi & Igbaria, 1994; Bobbitt-Zeher, 2007; Gill, 2002). Men, simply, seem to request and thus receive significantly higher salaries (Barron, 2003). Accordingly, we expect that:

*H<sub>4</sub>: Male gig workers have a higher income than female gig workers.*

## **Data and Operationalization**

To test these hypotheses, this study investigates one of the largest international freelancer platforms, which offers a wide range of high-skilled jobs such as programming, design, translating and writing. To be able to compare educational degrees across economies, the study focuses on 14 Western economies with similar education systems: Canada, France, Germany, Greece, Hungary, Italy, the Netherlands, Poland, Portugal, Romania, Spain, Sweden, the United Kingdom, and the United States of America. To ensure that the analyses include gig workers who are sufficiently experienced about the wage levels they can ask for, the study includes only gig workers with at least three reviews. This also ensures that the review scores of gig workers are not influenced by only one or two referees. After cleaning the data for outliers, the remaining sample includes a total of 2327 gig workers.

For each of these gig workers, we collected and manually cross-checked data on the hourly wage a gig worker asks for, the highest educational degree obtained, the years of relevant work experience, the average review score, as well as the gig worker's gender. In addition, we control for the years a gig worker is active on the platform, the type of job s/he offers, as well as country.

## **Analyses and Results**

OLS regressions analysing how the wage levels of gig workers are influenced by (H1) their education, (H2) work experience, (H3) reviews, (H4) gender, as well as their time active on the platform, job type, and country provide the following results. Most importantly, and contrary to the expectation of H1, education does not significantly influence the wage levels of gig workers. Instead, previous work experience, review scores, and gender turn out to be significant predictors of income levels of gig workers. This confirms our expectations of H2-H4. Importantly, these findings are robust as they did not change when we for instance estimated a multi-level model.

## **Discussion and conclusion**

Our findings have several implications: At a theoretical level, they support the idea that signalling mechanisms, addressing adverse selection problems in work relationships, are important drivers of workers' income levels. Importantly though, in the gig economy, these drivers no longer seem to consist in the educational degree of gig workers but rather in their previous work experience and the reviews obtained. It is furthermore striking that women earn significantly less than men also in the gig economy, where contact between work requesters and gig workers is extremely limited. These findings contribute to the existing literatures at the intersection of labour economics and economic sociology investigating the drivers of income levels.

At a practical level, the insight that education does not matter for income levels of gig workers challenges the current education paradigm that higher qualifications are a route to economic wealth. This also challenges the design of

our current education systems: If the gig economy indeed develops into a major labour market of the future, Western education systems would benefit from reconsidering how to better prepare gig workers for their future jobs. Furthermore, our findings also point to the power of platforms' review systems and the potential need to regulate the ways in which they operate: While national education systems are governed and supervised by the state through accreditation systems, review systems are exclusively designed by platforms, which thus have the power to influence the employability of gig workers with a simple change of the algorithm determining the workers' evaluation.

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