

# Impact of Limited Education on Employment Prospects in Advanced Economies

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## Abstract

Employment and wage inequalities between educational groups in advanced economies have received much attention in economic and sociological research. Over the past 50 years, the labor market vulnerability of less-educated workers has increased and will most probably continue to do so unless crucial interventions take place. Foundational research has identified multiple factors that contribute to rising educational disparities in employment prospects. It has focused in particular on demand-side factors, such as skill supply–demand mismatches, changes in overall job structures, foreign trade, or institutional changes; however, most studies were based on supply-side data. Cutting edge research has challenged some of these findings by studying recruitment processes, technological changes, and skill distributions, and by using a multidimensional concept of education. Nevertheless, the relative importance of the various factors has yet to be determined. Other key issues for future research involve including women in the analysis, explaining not only differences between educational groups but also differences within the group of less-educated workers, and studying the impact of variation in competence–qualification relationships on the employment prospects of less-educated workers. Research of this nature will require more interdisciplinary cooperation between economists and sociologists and an increase in international comparative studies. Such research will enrich our understanding of how the barriers confronting less-educated workers in the labor market can be overcome or removed.

## INTRODUCTION

Research has repeatedly shown that in advanced societies, employment rates and wages increase with education, whereas unemployment rates decrease. Higher educated workers have better chances of finding a (well-paid) job than less-educated ones. Since the 1970s, the economic prospects of the latter have worsened, resulting in a significant widening of labor market inequalities between high- and low-skilled labor. Economic recessions, including the

most recent one, have further exacerbated the already disadvantaged labor market position of the less educated.

Since the 1950s and 1960s, the advanced economies have witnessed a rapid increase in educational attainment and declining numbers of less-educated young people. As a consequence, educational expansion has generated compositional changes of the less-educated group. Since the 1990s, many countries have experienced a slowing of educational expansion, especially for young men. There are various causes behind this trend, including the growing inflow of low-skilled immigrants, school systems insufficiently engaged in discovering and developing the learning potentials of (the “remaining”) low-achieving youth, and the vicious circle of experienced or perceived disadvantage discouraging low-achieving youngsters from investing in education.

This entry reviews well-established and new research findings in economics and sociology on the continuously growing labor market inequalities between higher and less-educated workers. Existing work suggests that multiple factors have contributed to educational disparities in labor market outcomes in general and the increasing vulnerability of the less-educated in particular. The final part of this entry identifies important avenues for future research and their potential for innovative insights.

## FOUNDATIONAL RESEARCH

### LIMITED EDUCATION

At present, no established definition of “limited education” exists. For advanced societies, researchers have often used the lowest educational group, assuming that the skills of this group are too poor for adequate participation in economic and social life. Recently, following poverty research, a *relative* definition of less education has been added. Here, less education—sometimes also called *educational deprivation*—is classified as the education level that falls significantly below the population average. This population average defines the societal level of education that, in a given society, serves as the reference point for institutional and welfare state regulations, labor market organizations, employer expectations, and youth’s identity formation. According to this approach, the definition of limited (or less) education crucially depends on social contexts and thus varies historically and cross-nationally.

Earlier US studies classified individuals who dropped out of high school as less educated. Today, everyone without a college education is considered less educated. As noted before, besides historical changes, important cross-national differences exist. In the Netherlands, for instance, researchers

include all those in the less-educated group who have not completed any kind of upper secondary program, general or vocational. In Germany, by contrast, anyone who has not finished at least an upper secondary *vocational* education program counts as less-educated. These different definitions are because of country differences in upper secondary education systems (providing firm-, industry-specific or general skills) and their nexus to the institutional organization of labor markets as occupational (industry-specific) or internal (on-the-job training) systems.

In international comparisons, “less education” is simply classified as having completed less than upper secondary education. Relevant comparative research has therefore ignored the aforementioned differences in the meaning of being without upper secondary education.

#### EDUCATIONAL DISPARITIES IN EMPLOYMENT PROSPECTS

There are several theories explaining educational disparities in employment prospects. Their basic idea is that labor market outcomes are the result of matching job queues and labor queues. While the former consist of rankings of available jobs by workers, the latter involve employers’ rankings of job applicants. Thus job placements and wages are produced by supply-side factors, that is, by individuals’ job preferences (including their investment in education) and job search behavior, and by demand-side factors, that is, employers’ preferences, hiring practices, and decisions on production issues.

On the basis of this matching idea, the poor(er) employment prospects of less-educated people are mainly explained by their lacking the skills required by employers (human capital theory) or their lacking “educational credentials” as credible signals of learning capabilities and trainability (signaling theory). On these grounds, less-educated jobseekers are placed at lower ranks in labor queues or even excluded entirely if their education is deemed insufficient. Other explanations advanced by economists and sociologists include the sorting hypothesis or the idea of credentials as social entitlements. Here, educational attainment is seen as a “positional good” in labor markets, legitimizing the meritocratic idea that labor market rewards correspond to individual educational attainment.

All four theoretical approaches help elucidate the phenomenon that less-educated workers have the poorest employment opportunities in all advanced societies and that their employment concentrates in the same sectors (agriculture, lower-skilled blue-collar or service jobs). Nonetheless—as empirical research has shown—their employment prospects do vary over time and across countries, depending on the labor supply–demand ratio, the occupational structure, and the meaning attributed to “less education” by employers and society.

## INCREASING VULNERABILITY OF LESS-EDUCATED PEOPLE

Multiple factors account for the increasing labor market vulnerability of the less educated, primarily regarding supply-side changes in their group composition and demand-side shifts in job availability and occupational structure.

On the supply side, educational expansion has altered selection patterns into the less-educated group, leading to a real or perceived lowering of this group's average level of cognitive and noncognitive skills. In addition, an impoverishment of this group's social network resources is observable (social isolation hypothesis). As in advanced societies, educational attainment still depends on social origin, over time the "remaining" less educated more often belong to lower social classes, wherever fewer adults with strong labor market attachment are part of their network. This compositional change has contributed to their decreasing employment prospects because—as many studies have shown—employers rely heavily on hiring through informal referrals, especially for low-skilled jobs. Furthermore, the lack of network resources means that less-educated youngsters receive very little practical support in the process of application writing. Moreover, research for the United States has shown that the rising incarceration rate of young black men—who see crime as an attractive "alternative" to joblessness and low-wage employment—partly explains the widening employment gap between the high- and less-educated.

Demand-side factors have received more attention in empirical research than (sociological) supply-side factors. A first line of research has culminated in the crowding-out (or displacement) hypothesis. Here, the idea is that in advanced societies, the pace of educational expansion was faster than changes in job structures, resulting in a skill mismatch between job and labor queues. Owing to this mismatch, less-educated workers are crowded out by higher educated workers (in low-skilled jobs), raising the risk of over-education in jobs with low skill requirements. Neither of these developments has, however, resulted in decreasing wage differentials between high and low-skilled workers, as human capital theory would predict. On the contrary, as mentioned above, we observe increasing wage inequality between them. Thus, crowding out has predominantly contributed to increasing educational disparities in getting a (proper) job.

With respect to the wage and employment losses of less-educated workers over time, a second set of factors is important. Changes in occupational and sectoral structures have led to declining numbers of low-skilled jobs, especially for men. Major developments generating these changes are increasing mechanization in agriculture and shifts from (relatively high-paid) manufacturing to service jobs. Furthermore, foreign outsourcing and cheap

imports have lowered the demand for low-skilled labor in manufacturing and agriculture—albeit only to a minor extent in many countries. Finally, business cycles and economic recessions are especially detrimental for less-educated workers.

A third set of explanatory factors is the movement of jobs out of inner cities, combined with the well-documented lower geographic mobility among less-educated workers, ethnic residential segregation, and insufficient public transportation. Especially in the United States, this spatial mismatch of job and labor queues has worsened the employment prospects of low-skilled workers over time.

Fourth, a number of institutional changes have exacerbated educational inequalities in job security and job quality. Both the growth of temporary staffing and the greater distinction between “core workers” and “flex-workers” have aggravated the employment situation of low-skilled workers. In addition, the weakening of collective bargaining and wage regulations has increased the incidence of low pay. Finally, curtailments of unemployment benefits, combined with the expansion of in-work benefits and support for poor families (including increased availability of child-care facilities), have forced more less-educated women into employment, although mostly in low-wage jobs.

### CUTTING EDGE RESEARCH

Recent work has challenged some of these research findings. Foundational research has identified demand-side factors as especially relevant for less-educated workers’ deteriorating employment prospects. Most of the analyses are based, however, on individual-level data, in which labor market placements represent the combined result of supply- and demand-side factors. Only few studies have directly examined employers’ skills requirements and hiring procedures. These have shown that less-educated applicants face specific barriers in hiring processes, including:

- rising skills requirements, as a result of actually increasing skill needs, but also used as means to practice discrimination in a politically correct way,
- hiring through (informal) referrals, with the objective to reduce hiring costs, but also to reproduce the firm’s social composition,
- hiring processes with multiple screening stages, which tend to exclude less-educated applicants right away (based on their written application documents), making employers less likely to discover differences in learning potentials and soft-skills among less-educated applicants.

Moreover, studies by David Autor and colleagues on rising skills requirements and skill-based technological change have uncovered that most skill upgrading has occurred within, rather than across industries (e.g., Acemoglu & Autor, 2010; Autor, 2011). Thus, it is not restricted to unionized manufacturing industries. Therefore, the decline in manufacturing jobs and deunionization may have had a smaller effect than previously thought. Instead, these studies have shown that deskilling as a result of skill-replacing technologies for routine job tasks, on the one hand, and rising wage premiums for high-skilled (non-routine) tasks, on the other, have intensified the education-based polarization of employment and wages.

Comparative studies on the relationship between skill distributions, wage differentials, and employment have challenged another prominent research finding. In contrast to the conventional wisdom that high wages push low-skilled workers out of employment, little evidence exists that country differences in the level of wage compression actually translate into differences in job creation and the unemployment rates of less-educated workers. Moreover, research based not only on formal educational attainment but also on competence tests has shown that country differences in educational wage disparities are related to variations in overall skill (competence) distributions (Freeman & Schettkat, 2000). Accordingly, for example, the higher skill compression in Germany compared to the United States is responsible for Germany's lower levels of wage inequality (aside from differences in wage-setting institutions). This focus on skill distributions also helps explain why employment problems for low-skilled workers are common in all advanced societies, while the low-wage problem is not.

In recent years, sociologists have contributed to the research on the labor market vulnerability of less-educated people by emphasizing a multidimensional understanding of education (e.g., Solga, 2008). Besides education as human capital (skills) and educational certificates as signals of trainability or institutionalized job entitlements, they introduced the idea that education also defines social group memberships (and thereby social networks) and that educational biographies involve processes of identity formation (which can lead to self-stigmatization among less-educated people and their withdrawal from labor and training markets). This broader concept of education allows for integrating multiple explanatory factors for the declining employment prospects of less-educated workers. Furthermore, it draws attention to previously overlooked factors, such as the causes and consequences of the waning educational participation of disadvantaged youth and the changing cultural meaning of "less education."

## KEY ISSUES FOR FUTURE RESEARCH

It is widely agreed that these multiple factors contribute to the increasing vulnerability of less-educated people. Yet, for several reasons, their relative importance remains unclear. First, researchers use different definitions of “less education,” making comparisons across studies difficult. Second, many studies investigate only one or two factors, thereby neglecting other decisive factors. Finally, there is too little historical and internationally comparative research. Therefore, more multifactor and cross-national studies are needed in the future.

Moreover, most studies look at differences between educational groups and pay only little attention to differences *within* the less-educated group in terms of composition and outcomes. Yet despite educational expansion, this group’s compositional heterogeneity may not have diminished over time (due to, *inter alia*, the inflow of immigrants or the increasing differentiation in less-educated youth’s school biographies). Regarding outcomes, the few studies that do exist have revealed the extent of wage inequality within the less-educated group to vary across time and countries. Most of these studies remain rather descriptive. Substantive explanations for differences in employment and wages between less-educated workers have therefore yet to be identified by future research.

Furthermore, women are excluded from the analyses in most studies. Yet by ignoring them, we overlook essential aspects of less-educated workers’ employment prospects, including women’s continuously rising educational participation, the impact of family formation on the labor market situation of low-skilled mothers, teenage motherhood as an “attractive alternative” to employment in low-wage jobs for women, as well as the ways in which safety-net changes or family policies (such as divorce legislations) influence the employment participation of low-income and single-headed families and thereby educational disparities in employment. Moreover, less-educated immigrants are under-researched in many European countries, even though the problem of rising requirements in writing and math in lower-skilled service jobs is particularly acute for them. In this context, we also need more evaluation research in order to develop integrative and effective education and labor market policies to address this skills mismatch.

Another very promising area for innovative research is the relationship between competencies and educational degrees and their distinct impact on the labor market opportunities of low-skilled workers. This should be investigated both between and within countries. Initial cross-nationally comparative studies have revealed that the relationship between degrees and competencies varies remarkably between advanced societies (e.g.,



Gesthuizen, Solga & Künster, 2011). Examining this variation can help disentangle the (relative) effect of poor educational qualifications or skills on educational disparities in wages and employment. In addition, research is needed that explicitly focuses on the fact that the nature of educational deprivation varies significantly between countries (lack of firm-, industry-specific, or general skills), and on how these variations and the corresponding types of labor market organization (occupational vs internal markets) influence the success and failure of the less-educated. Regarding the country studies, investigating the qualification-competence-relationship would also enrich research. It would draw our attention to recruitment processes and the meaning employers attach to skills requirements and “being less educated.” This would help clarify why and how educational degrees, as well as cognitive and noncognitive skills, influence the process of matching persons and job positions.

### CONCLUDING COMMENTS

In many European countries, dramatically contracting birth cohort sizes have led to the expectation that the trend of rising labor market vulnerability of the less-educated would reverse itself. This is, however, an unlikely scenario. First, neither the rise in real skills requirements nor the rise in stigmatization will be affected by changes in supply–demand ratios. Second, future economic growth will not alleviate the unemployment risk of low-skilled workers, because it will never be strong enough to trigger sufficient job creation. Moreover, the recent recession and its negative impact on youth employment, especially among less-educated youth, will have long-lasting effects—both for the individual (due to scar effects) and for society (because of the vicious circle of exclusion). Thus more policy-oriented research is needed to identify “success conditions” for less-educated individuals’ later entry into training and to effectively mitigate the negative effects of being less educated on employment and wages.

### REFERENCES

- Acemoglu, D. & Autor, D. (2010). *Skills, Tasks and Technologies: Implications for Employment and Earnings*. NBER Working Paper No. 16082. Retrieved from <http://www.nber.org/papers/w16082>
- Autor, D. (2011). The Polarization of Job Opportunities in the U.S. Labor Market: Implications for Employment and Earnings. *Community Investment*, 23, 11–16. Retrieved from [http://www.frbsf.org/publications/community/investments/1110/CI\\_IncomeInequality\\_Autor.pdf](http://www.frbsf.org/publications/community/investments/1110/CI_IncomeInequality_Autor.pdf).



- Freeman, R. B. & Schettkat, R. (2000). *Skill Compression, Wage Differentials and Employment: Germany vs. the US*. NBER Working Paper No. 7610. Retrieved from <http://www.nber.org/papers/w7610>
- Gesthuizen, M., Solga, H., & Künster, R. (2011). Context matters: Economic marginalisation of low-educated workers in cross-national perspective. *European Sociological Review*, 27, 264–280. doi:10.1093/esr/jcq006
- Solga, H. (2008). Lack of training, employment opportunities for low-skilled persons from a sociological and microeconomic perspective. In K. U. Mayer & H. Solga (Eds.), *Skill formation. Interdisciplinary and cross-national perspectives* (pp. 173–204). Cambridge, NY: Cambridge University Press.

### FURTHER READING

- Borghans, L., & De Grip, A. (Eds.) (2000). *The overeducated worker? The economics of skill utilization*. Cheltenham, England: Edgar Elgar.
- Bound, J., & Holzer, H. J. (2000). Demand shifts, population adjustments, and labor market outcomes during the 1980s. *Journal of Labor Economics*, 18, 20–54.
- Card, D., Kramarz, F., & Lemieux, T. (1996). *Changes in the Relative Structure of Wages and Employment: A Comparison of the United States, Canada, and France*. NBER Working Paper No. 5487. Retrieved from <http://www.nber.org/papers/w5487>
- Freeman, R. B. (Ed.) (1994). *Working under different rules*. New York, NY: Russell Sage Foundation.
- Gregory, M., Salverda, W., & Bazen, S. (2000). *Labour market inequalities: Problems and policies of low-wage employment in international perspective*. Oxford, England: Oxford University Press.
- Holzer, H. J. (1996). *What employers want: Job prospects for less-educated workers*. New York, NY: Russell Sage Foundation.
- Krugman, P. & Lawrence, R. (1993). *Trade, Jobs, and Wages*. NBER Working Paper No. 4478. Retrieved from <http://www.nber.org/papers/w4478>
- Rosenbaum, J. R. (2005). *Beyond college for all: Career paths for the forgotten half*. New York, NY: Russell Sage Foundation.
- Solga, H. (2002). ‘Stigmatization by negative selection’: Explaining less-educated people’s decreasing employment opportunities. *European Sociological Review*, 18, 159–178. doi:10.1093/esr/18.2.159

### USEFUL HYPERLINKS

- Education at a Glance indicator (OECD): Retrieved from <http://www.oecd.org/edu/educationataglanceindicatorsrawdata.htm>
- Employment policies and data (OECD): Retrieved from <http://www.oecd.org/els/employmentpoliciesanddata/>
- OECD (2013). *OECD Skills Outlook 2013: First Results from the Survey of Adult Skills*. Paris, France: OECD [http://skills.oecd.org/OECD\\_Skills\\_Outlook\\_2013.pdf](http://skills.oecd.org/OECD_Skills_Outlook_2013.pdf).

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WZB (Wissenschaftszentrum Berlin für Sozialforschung), Research Unit “Skill Formation and Labor Markets”: <http://www.wzb.eu/en/research/education-work-and-life-chances/skill-formation-and-labor-markets>

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