

'Digitally-based' Self-employed Work: A Systematic Literature Review

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Introduction

Many academics and policy makers alike expect the world of work to change fundamentally as, among other things, mobile devices enable everybody to work everywhere, robots are able to translate and give medical advice, and big data collection enables employee tracking and transforms leadership. While some authors view the transformation of work as continuation and intensification of past trends in capitalist accumulation (Aroles et al., 2020), others highlight its disruptive potential. The frequently cited study by Frey and Osborne (2017) predicts that 47% of jobs in the US are at risk of automation. However not only might particular segments of the labour market become redundant and the quality of existing jobs changes, but also new forms of employment emerge. According to Valenduc and Vendramin (2016, p. 5) "*The very concept of a 'job' may become outdated and replaced by an ever-shifting portfolio of commissions and projects assigned through online platforms, with the 'Uberisation' of work lying just around the corner.*"

Digital technologies have been changing the nature of products and services, affected management strategies, and transformed the organisation of work across time and space. They have further facilitated to split jobs into tasks and outsource them to a (global) workforce. In that sense, technology has played an important role enabling and accelerating broader developments such as economic globalization, the liberalization of financial markets, organizational restructuring and employment flexibilization (Boreham et al., 2007). Outsourced tasks range from high-skilled programming or proof-reading activities to cleaning and food delivery. They can be allocated via online platforms and performed by crowdworkers. But they can also be executed by freelancers or independent contractors who directly interact with their clients but whose physical appearance at the site of the company becomes redundant in the digital economy. What unites these work arrangements is that they are different (new) manifestations of self-employment which have been substantially facilitated by the digitalisation of the workplace.

The self-employed are typically acknowledged for their entrepreneurial aspirations, risk-taking behaviour, and for their businesses' contribution to economic activity. Moreover, self-employment is typically associated with offering a high degree of flexibility and autonomy which might conform better with the life-style of an increasing share of the workforce (Smeaton, 2003). However, the share of self-employment in this "traditional" sense is constant or decreasing in European countries. In contrast, the share of solo self-employed has been increasing (Eurofound, 2017). Moreover, the boundaries between self-employment and dependent employment have been shown to become increasingly blurred. The degree of independence, autonomy and flexibility can be substantially limited, either due to their dependency on a small number of clients, or due to the financial instability resulting from intermittent project-based work.

This paper aims to understand and capture the relevance, changing nature and diversity of the *independent* segment of the digital labour market. Since the 1990s, different terms such as freelancer, independent contractor or gig worker have been used in the scientific literature to describe and define the increasingly heterogeneous manifestations of self-employment. In these

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works the role of technology might be in the fore- or in the background. Moreover, different disciplines and sub-disciplines approach the topic from different perspectives, with different underlying interests and focus points and different methodologies. The aim of this article is to systematize and critically evaluate an expanding and evolving yet fragmented research area, thereby contributing to conceptual clarification and classification of 'digitally-based' self-employed work.

To this end, we provide a comprehensive and systematic literature review with which we aim to tackle the following *research questions*:

- Which terms have been used in the scientific literature to identify and describe 'new' forms of independent self-employed work?
- Which dimensions, concepts and characteristics are used to define, describe and classify types of self-employed work?
- Which of these forms of self-employed work are digitally-based? How can these forms be traced back to technological developments?
- How did the academic discussion about (technology enabled) self-employed work change over time?
- Which actual arrangements, work realities, risks and potentials are related to different variants of self-employed work? Which implications has this for inequalities in the labour market?

Method

To tackle these research questions, we follow a mixed-methods approach. As a first step, we provide a general overview of the broader relevant literature by conducting a quantitative analysis of relevant key terms using text mining. This part enables to reveal the relevance of particular terms related to self-employment and technology over time, thereby contributing to respond to research question one, but also providing insights into the development of the academic discussion as well as the role of technology. Moreover, the quantitative analysis builds a general (descriptive) framework for and filters into the second step consisting of a qualitative analysis based on a reduced set of journal articles combined with the most relevant grey literature items (i.e. working papers, books, chapters and reports from international institutions). Doing so will enable us to obtain deeper insights into the structural dimensions used to categorize variants of 'digitally-based' self-employed work, and to infer about the motives, risks and potentials that have been identified in the literature to accrue to different groups of workers.

Preliminary results

The sample of our quantitative analysis consist of 381 reviewed scientific articles published between 1990 and 2021, covering the topics of self-employment, technology, digitalization and new forms of work. These articles were located via keyword searches in the Web of Science. The majority of articles (231) was published since 2015. This is, on the one hand, due to the general increase in scientific publications. On the other hand, a large number of recent articles focuses on topics related to platform work. Between 2016 and 2020 more than every second article used terms such as gig, crowd or platform. Self-employment more generally was relevant in the mid 2000s but the occurrence of related terms declined since then. This is also true for the term 'freelancing'. Telework was a prominent topic in the beginning of the 2000s but does not appear in the more recent literature anymore. An exploratory network analysis reveals some further insights into the characteristics of different types of 'digitally-based' self-employed work. For example, terms related

to control, algorithm and digitalisation have been used in articles dealing with platform work. Conversely, articles dealing with telework dealt, among other things, with the working space, isolation and family. Overall, the quantitative analysis shows that different terms have been used in the literature to describe different arrangements in the independent segment of the labour market. With the qualitative analysis we aim examine in more detail whether these terms have been associated with different 'actual' work arrangements and realities from a distributional perspective.