The Future of Work

A Scoping Study

Werner Eichhorst and Isabelle Berrebi-Hoffmann
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1. Introduction

This is a joint report on scoping studies carried out by Werner Eichhorst (first part) and Isabelle Berrebi-Hoffmann (second part) on different aspects of the future of work in Europe. The study has been prepared in the context of the forthcoming Social Transformations and Resilience Partnership under Horizon Europe. Expected to be launched in 2027, this Partnership aims to create a transformative research and innovation programme in the social sciences and humanities to strengthen resilience, fairness, inclusiveness, and social cohesion in response to major societal challenges. One of the Partnership's key impact areas is shaping the future of work.

The first part of this scoping study (by Werner Eichhorst) takes stock of studies that analyse inequalities in access to paid work or different types of jobs and the role labour market institutions play in explaining patterns of inequality, in particular in the context of the triple demographic, technological and demographic transition of the European economy. It is based on the hypothesis that the triple transition reshapes employment arrangements in many ways significant and diverse consequences for job access experienced by different socio-economic groups in different occupations, sectors and countries. From a policy point of view this means that questions emerge on how a future-, human- and climate-centred transition strategy can make sure that diverse social groups can participate actively in the transition, how skills and competencies need to evolve and, lastly, how labour market institutions and wider sets of public policies can improve the functioning of labour markets. The changes brought about by the triple transition affect and reshape social cohesion and may exacerbate existing inequalities which gives rise to concerns on how to ensure adequate support and social security. This required taking stock of research on how the transition affects existing and emerging inequalities, in particular across gender, age, migration status, but also across geographic regions, not least between urban and rural areas.

The first part is based on a systematic screening of main journals in economics, sociology and industrial relations that deal with labour market structures, dynamisms and institutional factors with reference to European countries. A main focus of the search using the terms structuring this report (e.g. "collective bargaining", "labour market access", "wage dispersion" or "regional imbalances") was put on studies on patterns of labour market inequality, in particular inequality in access to employment, access to and exclusion from decent and sustainable jobs (as regards pay and job stability, but also positive or upward mobility and aspects of segmentation, dualisms and polarisation within the employment system. Additional aspects were the heterogeneity across socio-economic groups (age, gender, educational level, migration), regional imbalances and the role institutions and policies play in shaping, deepening or mitigation such patterns of inequality. Priority was given to studies that deal with individual labour law, in particular the regulation of contract types and

employment protection, institutions governing hybrid forms of dependent employment or self-employment, collective bargaining and wage setting, worker representation (works councils, new forms of organisation, e.g. by freelancers) and corporatism as well as wider sets of policies such as active labour market policies, the tax/benefit system or social services to the extent that they influence labour market behaviour. Particular attention was put on studies that address the interaction between the triple transition, institutions or policies and (more or less) unequal labour market outcomes.

Starting points for the first part of the scoping study were core academic journals in economics such as Labour Economics, the Journal of Labour Economics, the European Economic Review, Journal of the European Economic Association. This was complemented by sociological and industrial relation journals such as the Journal of European Social Policy, Work Employment and Society, the Industrial and Labor Relations Review, the British Journal of Industrial Relations, the European Journal of Industrial Relations, Socio-Economic Review, and the European Sociological Review. Further screening was done with major Discussion Paper series such as NBER and IZA as well as relevant overview articles, handbook chapters, OECD or EC reports, including the reference lists to these papers. This strategy also led to the identification of major contributions from EU-funded projects as contributions to peer-reviewed journals, edited volumes or discussion paper series (for an overview see Commission, 2023).[1] The search was done from latest volume backwards, covering (mainly) the last 10 years. Altogether more than 150 contributions were identified as particularly relevant. However, this scoping study does not and cannot claim to be comprehensive and encompassing in terms of disciplinary, topical or geographical coverage.

The second part relied on the production of European research centers specialized on futures of work on one hand, and on the other hand on an analysis of central journals within the academic research landscape on work. It drew upon a series of research published in journals specializing in the sociology of work, economic sociology, and digital studies, through a lens of social sciences and/or political sciences, such as for example: *Administrative Science Quarterly, Annual Review of Sociology, American Journal of Sociology; Sociology; Economy and Society, Socio-economic Review, Organization Studies; Organization Science; Information and Organization; Work, Employment and Society; Work Organisation, Labour & Globalisation; Gender, Work & Organization; Human Relations; Human Resource Management Journal; New Technology, Work and Employment; Work in the Global Economy; Digital Culture & Society; Journal of Peer Production; Journal of Co-operative Organization and Management; International Review of Law Computers & Technology; Revue française de socio-économie; Revue française de Sociologie; La nouvelle Revue du travail; Les Mondes du travail; Sociologie du travail; Travail et emploi; Travail, Genre et Société;*

[1] See also https://research-and-innovation.ec.europa.eu/research-area/industrial-research-and-innovation/future-work_en#how

Économies et sociétés; Réseaux; Terminal- Technologie de l'information, culture & société; Revue de droit comparé du travail et de la sécurité sociale; Sociologia del Lavoro; Economia & Lavoro; Stato e Mercato; Digital Culture & Society; Revista Española de Ciencia Política; Political Studies; Cuadernos de Relaciones Labourales.Southeastern Europe.

Several of these journals have dedicated special issues to the theme of work, its transformations, and its future. Examples include: *Revue Française de Socio-Économie*, special issue "Futurs économiques" (2018); *New Media & Society,* special issue: "Algorithmic Governance in Context" (2022); *Sociologie du travail*, special issue, "Organisation du travail: le retour" (2024); *Terminal. Technologie de l'information, culture & société*, special issue: "Communs numériques: une nouvelle forme d'action collective ?" (2021*); Socio*: "AI and work", forthcoming 2025. *SoutheaternEurope,* "Future of work & Platform Economy on Southeastern Europe" (forthcoming 2025).

Secondly, the programmes of professional association congresses in sociology, economic sociology, or labour economics, both national and international, have also been considered over about ten years. Recently, they have dedicated numerous sub-themes or their general themes to the futures of work. For example, in 2025, the theme of the ASA (American Sociological Association) Annual Meeting will be: "Reimagining the Future of Work."

Finally, the evolution of themes and programmes of professional associations specializing in the theme of work and its transformations, such as IWPLMS (International Working Party on Labour Markets Segmentation) or the JIST (Journées internationales de sociologie du travail) have been also contaken into account. Some emerging themes analyzed in this study are present in recent theses on sociology of work, organizations, and economic sociology (see, for instance, theses.fr).

Consequently, this second part of the study aims to provide reference points concerning themes, approaches, and findings from qualitative and mixed methods social sciences research on the transformation and futures of work. Over the past decade, these studies have provided contributions classified into two major categories. The first type of contribution involves empirical knowledge through sectoral, global, territorial, or occupational field studies, as well as studies examining professions, age, status, and social class, to capture profound transformations in work, productive models, and work organization forms. The second type of contribution critically analyzes traditional conceptual categories of work, its boundaries, employment and its statuses, companies, platforms, value chains, etc., in order to develop analytical tools necessary to understand changes in work content, statuses, and conditions, the diversification of production modes, and evolving social relations to work.

Technological, economic, and social accelerations have led many studies to initially discuss the futures of work through the lens of digitalization, artificial intelligence, and changes in international productive balances, along with their potential consequences

on employment, professions, and skills. Recently, however, researchers have turned their attention toward a « new question of work », or a *"crisis of work,"* particularly regarding conditions and content of actual work or activities. This shift became especially visible in the post-COVID period, which has revealed new distinctions among essential, frontline, and second-line workers whose positions cannot be performed remotely. Questions about work attractiveness and sustainability have notably surfaced through trends such as the crisis of meaning among managers, the *"Great Resignation," "quiet quitting,"* or workers' reluctance to return to employment after COVID in so-called *"under pressure"* sectors such as restaurants, hotels and tourism, construction, care, and health.

Qualitative research tends to demonstrate that while this triple crisis—technological, ecological, and geopolitical—has been reshaping productive models and forms of work and employment in European democracies, the equilibriums and social models built around work within social democracies have been impacted. On the one hand, the emergence of platforms since the 2010s and, on the other hand, the influence of digital technologies and artificial intelligence continue to prompt fresh scrutiny of how our societies conceptualise and decide about the sustainability of occupations, forms of corporate governance, job statuses and quality, as well as the reconfiguration of tasks and work organisation. In this context, social sciences have sought to renew their major research questions and studies to document working environments undergoing profound changes. They have been at the forefront of objectifying these changes as new modes of production and international value chains emerge, reinventing the virtual or physical division of labour.

2. Labour market inequalities and the role of institutions (Werner Eichhorst)

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2.1. State of research

2.1.1. Underemployment/unemployment and labour market (re)integration

The factors behind differences in unemployment or (under)employment across countries and across socio-economic groups have been a field of intense research in labour economics and sociology. Research has stressed in particular the role of policies and institutions in shaping patterns of labour market participation and inclusion or exclusion such as unemployment protection and minimum income support, wage setting, employment protection, care policies or broader tax/benefit arrangements, including retirement schemes, and not least firm-level practices. These areas have also been studied as regards their responses during earlier crisis situations and more long-term labour market shifts. Differences in terms of the ease and the degree of labour market inclusion or exclusion have been studied e.g. regarding factors driving youth unemployment, low or partial female employment or non-employment of older workers. For example, youth unemployment has been related to adverse regulations of labour markets and shortcomings of vocational training systems that ensure a smooth transition from school to work (O'Reilly et al., 2015; Eichhorst & Rinne, 2024). The employment situation of older workers has much to do with retirement incentives and their interaction with adult learning systems (Turek & Henkens, 2021; Picchio, 2021). Women's employment rates and working time arrangements is mainly affected by factors such as gender norms, care policy arrangements, tax/benefit schemes and firm-level policies that create typical path-dependent life course employment patterns, characterized by high part-time shares and gender pay gaps (Kowalewska, 2023; Ferragina, 2019; Matteazzi et al., 2018). These three groups are partially untapped potentials for securing employment given population ageing and labour force decline. Notably, there is clearly untapped potential in easing broad access to skill formation and skill updating over one's whole working life which is essential to avoid unemployment or reliance on passive adaptation via early retirement, which is costly for the welfare state and only hides unemployment of workers without offering effective reintegration. All these features remain relevant given that institutional reforms and changing labour markets and societies require continued analysis. That being said,

research interest in these aspects has not been active in this more recently. This also holds for job mobility as an important channel of adjustment (see Hijzen et al., 2024b).

There is a very broad literature on the effects of active labour market policies, unemployment benefits, activation, and its interactions with the tax/benefit systems more generally in European countries as regards their impact on unemployment, underemployment and reemployment of different groups in European labour markets, with notable differences across welfare states (see Khoury & Skandalis, 2024, for an overview). In general, it has been found that there is a fine balance to be struck when balancing unemployment insurance benefit provision and strictness of activation that affect the timing of labour market (re)entry and the quality of jobs taken. Research has shown that rather demanding activation can promote an early entry into the labour market, but reduce the chances of mobility to more stable or better paying jobs (see recent studies such as Altmann et al., 2022; Arni & Schiprowski, 2019). Placement in non-standard jobs, or combining work with benefits, might create lock-in effects, so that the first barrier is passed (into a job) at the expense of difficulties passing the second one (to a more substantial job). These issues have become more prominent given changes in benefit systems and activation policies and given changes in the availability of non-standard jobs.

As regards the avoidance of unemployment, short-time work and job retention schemes can mitigate unemployment hikes in the face of an economic shock such as the Financial Crisis of 2008/09 or the COVID-19 pandemic. There is strong evidence for the role played by short-time work and equivalent schemes in preventing job losses and stabilising productive job matches, mainly benefitting workers on permanent contracts – however, there are also clear signals in the evidence that job retention schemes do not work in the medium and long run and that they do not help improve the adaptation to structural changes as they tend not to be complemented by effective skill updating and preparation for job mobility (Cahuc, 2024; Brinkmann et al., 2024; Hijzen et al., 2024a; Giupponi & Landais, 2023). How the right balance between job protection and external mobility is to be found is an open question for research and policy design.

The triple transition affects access to jobs to the extent that labour demand shifts and affects different groups of workers differently. Workers in some sectors and some occupations are at risk of job downgrading or exclusion while others tend to benefit. The impact of technological change, in particular digitisation, robots and artificial intelligence, on job characteristics and task structures has been studied very intensely in Europe and beyond over the last years (see, e.g., Nedelkoska & Quintini, 2018; Lane & Saint-Martin, 2021; Lassébie & Quintini, 2022; Georgieff & Hyee 2021; Arntz et al., 2016, 2024; Pouliakas, 2018; and Quintini, 2024, for an overview). This is strongly related to the skills workers have and the skill profiles that are needed by employers

and valued more (or less) as the transition advances, potentially driving earnings and broader job quality and employment inequalities.

Research can clearly show that changes in labour demand benefit those workers whose skills allow them to complement technological solutions such as robots or advanced artificial intelligence without being easily substitutable as exposure to such technologies increases. Jobs characterised by productive complementarities between technology and skills expand so that the demand for workers with suitable skill profiles, their job opportunities and the quality of these jobs tends to improve while high risks of automation might lead to decline in labour demand for certain types of jobs and workers (see Georgieff & Milanez, 2021). This also affects the recomposition of tasks within existing but changing occupations as well as different dynamics between occupations. Early adopters of robots have seen more stable employment even in manufacturing (Graetz & Michaels, 2018). An influential study from Germany (Dauth et al., 2021) can also show that exposure to robot is associated with displacement effects in manufacturing, but those are fully offset by new jobs in services. This study finds that automation is related to stable employment within firms for incumbents, which is driven by workers taking over new tasks in their original plants, and these jobs tend to be of high quality. Young workers are affected differently but they adapt their educational choices. Albanesi et al. (2023) for example can find for Europe that on average employment shares have increased in occupations more exposed to artificial intelligence. According to this study this is particularly visible in occupations with a relatively higher proportion of younger and skilled workers. While evidence points at some heterogeneity across countries, only very few countries show a decline in employment shares of occupations more exposed to AI-enabled automation. Country heterogeneity seems to be linked to the pace of technology diffusion and education, but also to the level of product market regulation (competition) and employment protection laws (see also Reshef & Toubal, 2024).

In that sense job upgrading as well as skill upgrading matter. Access to or exclusion from digital skills becomes a factor that can deepen existing income inequalities (see Consoli et al., 2023; Czaja & Urbaniec, 2019). Digital technologies might reduce the role of family backgrounds in skill acquisition and pay so that labour market can become somewhat more inclusive as shown in work on Germany (see, e.g., Arntz et al., 2025) while data from European online platforms points at the fact that recruitment by employers might be less selective than in traditional labour markets (see Martindale & Lehdonvirta, 2023). However, there is also some evidence that in particular artificial intelligence can help increase productivity and even out differences between workers in the job, potentially pointing at an equalizing effect – to the extent that these jobs continue to exist (and adapt) (see e.g. Quintini, 2024, for a recent assessment).

Hence, there is evidence that the genders and age groups are affected asymmetrically, depending on their skill-related position in the changing labour market, and that

regional differences in job dynamisms matter (Burszynski et al., 2023). Workers with obsolete skills, typically lower skilled, older workers and males might be left behind as digital technologies advance, e.g. exposed more to unemployment or atypical jobs as their typical skill sets are less in demand given the decline in routine jobs (see, e.g., Albinowski & Lewandowski, 2024; Lewandowski & Szymczak, 2024, based on work in the EU-funded projects UNTANGLED and WeLar). The opposite holds, on average, for young workers, the highly skilled or women (Albanesi et al., 2025). Adjustments in labour supply in households, compensatory social policies and active labour market policies matter as shown in UNTANGLED work (Doorley et al., 2023).

Effects on inequality and labour market participation are far from uniform and unidirectional, and they are potentially different when looking either at robots, artificial intelligence or other or combined forms of automation of certain human tasks. How labour markets react and to what extent more inclusive settings can be sustained is a question of variables such as labour cost. For example, Bachmann et al. (2024b), also related to UNTANGLED, can show that robot use may have different effects in settings with high or low labour cost, pointing at different national arrangements of human labour and technologies at different levels of sophistication. How labour markets are affected by technological change also has to do with employment and social protection, productivity and innovative potentials as well as related institutions such as skill formation and training policies that promote positive patterns of mobility and enhance the capacity of incumbent workers and labour market entrants to adapt to changes in job tasks and technology. Case study research on selected sectors in European countries shows how actors deal with these changes and to what extent they work with given institutions and policies. Such studies point at a large heterogeneity between and within sectors and between countries, stressing the role of policies in shaping labour market restructuring (see e.g. the UNTANGLED report by Holtgrewe et al., 2024).

Relative to the digital transition and artificial intelligence that have widespread (but varying) impacts across labour markets, the impact of the green transition has been found to be more limited, but also much more concentrated in regional, occupational or sectoral terms which implies potentially highly unequal distributional effects of the greening of the economy and requires a set of well-designed and balanced adjustment strategies that are politically acceptable (see e.g. Hodok & Koszluk, 2024; Vandeplas et al., 2022; Hassel et al., 2024; Causa et al., 2024a, 2024b; Draca et al., 2021; Riom & Valero, 2024; OECD, 2024, Chapters 2, 3 and 4). Notwithstanding conceptual and empirical difficulties to distinguish between green and brown jobs, research points at the overall slow greening of the economy, but this goes along with job displacement for some while others benefit from the green transition, i.e. the creation of more “green” jobs or jobs with more “green” elements. There are important differences across regions as regards their dependence on polluting industries, and their capacity to

generate alternative employment opportunities vary greatly so that some incumbent workers at high risk of displacement face difficulties in making a transition into a new job (Causa et al., 2024a, 2024b; Hassel et al., 2024).

More concretely, aggregate effects of decarbonisation on employment are expected to be small or even positive, driven by new jobs emerging in green industries and occupations at different skill levels (see, e.g. Asikainen et al., 2021, Riom & Valero, 2024, for a recent overview). However, research has also shown that incumbent low and medium skilled workers in carbon-intensive sectors are most (negatively) affected by job restructuring in the green transition while better skilled workers such engineers and other professions tend to benefit more (Riom & Valero, 2024; Vona et al., 2018). For example, when looking into the composition of workers most affected by job decline as the economy becomes greener, research on Germany shows that migrants and low skilled workers tend to be affected the most, given their relative concentration in contracting labour market segments (Bachmann et al., 2024a). Similar results could be found in European-wide studies (e.g. Marin & Vona, 2019). German studies also show that the destruction of rather highly paid jobs in regionally concentrated brown industries such as coal mining tend to be associated with massive losses in earnings and job stability rather than unemployment increases for workers laid off (Haywood et al., 2024; Barreto et al., 2023). This is also confirmed for Europe more widely (Hassel et al., 2024; OECD 2024, Chapter 3, Barreto et al., 2024), pointing at massive needs for labour market policies that can support rather smooth transitions into more sustainable jobs within firms or sector or between them, to the extent that certain industries downsize substantially and require feasible transitions to attainable, but expanding job opportunities. What that concretely means should be a topic of further research, potentially also looking more closely into job reshuffling at the local or regional level (Riom & Valero, 2024).

2.1.2. Wage setting and collective bargaining

Wage inequality has been a major area of labour market research over the last years, emphasising the role of labour demand, labour supply and intermediating variables. Particular attention was put on the role of individual human capital, firms' adaptive strategies in a dynamically changing economic, technological and institutional environment, not least with the shift towards private services and non-standard work. All these drivers are moderated by institutional factors such as wage setting arrangements by way of different, more or less coordinated and centralised types of collective bargaining, legislative influence through statutory minimum wages or the extension of collective agreements as well as wider sets of relevant institutions that influence wage gaps.

Research has shown that collective bargaining helps stabilise wages, keep wage dispersion under control, and maintain a fair distribution of the benefits from increasing productivity and output between workers and capital and in a more egalitarian way across groups of workers (see, among others Kügler et al., 2018; Zwysen & Drahokupil, 2023; Zwysen, 2024; OECD, 2019a). There are notable differences with respect to the degree of centralization and coordination, which have long been a topic for comparative research. For example, a recent study on OECD countries could show that coordinated and centralised bargaining systems are associated with superior employment levels, better integration of vulnerable groups and smaller wage dispersion than more decentralized systems. Uncoordinated centralized systems perform similarly in terms of unemployment to fully decentralized systems but are associated with higher employment and lower wage inequalities (Garnero, 2021). Strong and coordinated collective bargaining still explains the large extent of wage compression in the Nordic countries and is a strong predictor for high overall income equality, for example (Mogstad et al., 2025). For example, research on Germany has shown that it facilitates access to training within firms (Wotschack, 2020), and it tends to limit inequalities between firms (Card et al., 2013). Collective agreements at different levels facilitate the sharing of benefits and risks, within a negotiated framework. Collective bargaining can also take a forward-looking role in a situation of economic and structural change as regards the governance of adult learning and other transition-oriented policies as in the Nordic countries or the Netherlands, and they can take an active role in the management of transitions in response to structural changes in the labour market (OECD, 2019b Chapter 5; Thelen, 2021; Hassel & Weil, 2024). At the sectoral level, social dialogue can also help manage a transition of production and employment models in a cooperative way as can be shown in case studies on sectors such as automotive and energy (Galgóczi, 2020). At the firm level, co-determination rules that bring about a more institutionalized cooperation of workers and management can have positive effects on capital formation, as has been shown for Germany, pointing at potentially

improved long-term performance of firms (Jäger et al., 2021), however, these effects tend to be hard to measure and identify, which calls for further research, in particular on the interaction with other forms of worker participation (Jäger et al., 2022).

However, trade unions and works councils have eroded in many European countries as have employers' associations, and with them the ability to regulate work through negotiations within companies or in many sectors of the economy has declined. The exhaustion of collective bargaining can be observed quite clearly in Germany where the sphere of collective bargaining has become smaller while the non-organised fringe has become larger (Oberfichtner & Schnabel, 2019). This is also true in many other European countries, not least in Central and Eastern Europe (Czarzasty, 2024) to a varying extent so that it is fair to argue that collective bargaining agreements will hardly reach the whole labour market anymore once they have started to erode. Where the collective organisation of labour is missing most strongly, barriers to organisation are most notable and hard to overcome (Visser, 2019). There have been diverse efforts by trade unions and new types of grass-root associations, but this is just emerging as recent research has shown. This has not yet led to a substantial scope of bargaining in sectors or occupations as both union density and employer organisation remain very limited there. But there is need to look deeper into organisational efforts, motives for (not) organising and new forms of representation.

Where collectively agreed working conditions such as pay or working time policies are no longer sufficient or feasible, core labour market parameters have to be set by governments and parliaments creating an effective wage floor (Pedersen & Picot, 2023), thereby shifting the balance between collective bargaining and legislation in favour of the latter (Picot, 2023; Cova, 2025). This can mean statutory minimum wages and/or extension of bargaining agreements to whole sectors (Paster et al., 2020). The new German minimum wage represented a prominent case for an attempt at containing wage inequality that had emerged over time (Marx & Starke, 2017; Bossler & Schank, 2023). The role of the state in shaping the low pay segment also becomes clear with respect to the French case where a demanding minimum wage, set by law, is combined with subsidies to employers and in-work benefits to stabilise employment in this segment (Barreto et al., 2025). All this calls for future investigation into the development of collective bargaining at national, sectoral or firm level and into the relation to legislation and the effects this has on the short- and long-term employment trajectory of individuals and firm-level strategies to adapt under such institutional conditions and potential reforms.

Lastly, interactions with other types of institutions may need to be studied further. For example, pay transparency requirements have become more widespread over time as a tool to combat wage discrimination and wage gaps, and they have found to have the potential to significantly reduce the gender wage gap, at least under certain circumstances that may warrant further research (Böheim & Gust, 2021; Gamage et al., 2020; Frimmel et al., 2023).

2.1.3. Non-standard work and new forms of employment

Non-standard work based on differences in contractual arrangements has been an issue for academic research over a long period, but research interest in established forms of non-standard work such as temporary contracts or part-time work has vanished somehow more lately, although the different phenomena of atypical forms of employment still change and have important implications for evolving inequalities in the labour market as regards the quality of jobs, namely exposure wage gaps, poverty risks and job instability, in particular difficulties in moving to more regular, better paid and more stable jobs (e.g. Brülle et al., 2019; Gábos et al., 2024, Filomena & Picchio, 2022). This has been found to affect women, young workers, low skilled workers and labour market (re)entrants, i.e. more vulnerable groups, disproportionately (see e.g. Barbieri & Cutuli 2016; Malherbet & Martins, 2024).

Recently, more research has been devoted to a variety of emerging new forms of work (see, e.g., Eurofound, 2020; Bassanini et al., 2024) that are of mostly limited, but diverse importance in European labour markets. This concerns for example on-call work, new and hybrid forms of self-employment, online-intermediated work via platforms or very short fixed-term contracts, just to name a few. Altogether, this calls for continued attention to the dynamic evolution of forms of employment as they evolve in a changing economic, demographic and institutional environment. This is driven by institutional factors, but also labour supply and demand patterns, implying complex and changing patterns of standard contracts and various forms of non-standard work arrangements between countries, sectors or over time. For example, there is also some evidence that ITC skills do not universally translate into the same wage premia across employment types and different levels of union density, pointing at institutional factors intervening and structuring labour market effects and reinstating some preestablished dualisms, despite evolving labour demand and supply (Cutuli & Tomelleri, 2023).

Causes and consequences of dualisms, namely between permanent and temporary contracts, have been widely studied, both in the age of dualization and later on (Emmenegger et al., 2012; Eichhorst & Marx, 2015; Theodoropoulou, 2018; Piasna, 2023; Alvariño et al., 2025; Malherbet & Martins, 2024), motivated by sequences of de- and re-regulatory reforms in employment protection, both with respect to individual dismissal protection and the regulation of fixed-term contracts and temporary agency work as well as other forms of non-standard work. Highly institutionally dualized labour markets tend to forego the full and fair realisation of innovative and productive potentials and job creation in a changing economic environment as they delay timely labour reallocation (Cahuc & Palladino, 2024). There has been a recalibration of the

institutional setup in highly regulated labour market in particular in the aftermath of the Great Recession and subsequent austerity. This has also affected more flexicurity oriented countries as could be shown for Denmark and the Netherlands, for example (Bekker & Mailand, 2019). However, reforms in employment protection apparently have not easily translated into less contractual segmentation as what results in the labour market in practice has much to do with the perception and implementation of contractual arrangements by market actors at the micro level (Eichhorst & Marx, 2021) which calls for a better analytical linkage between macro and micro level analysis (Pulignano & Dörflinger, 2017; Rubery et al., 2024) and for a better understanding of the structures and processes in countries outside well-studied Continental European and Nordic settings. Some research has also gone further to include other elements of protection against labour market risks, namely social protection, and identified different national arrangements (Ferragina et al., 2023), building upon older concepts such as dualization or flexicurity.

Not only legislation matters, but also collective bargaining and changing scarcities in the labour market. For example, responding to trade union pressure, Germany also saw more restrictive legal rules for temporary work agencies, narrowing the divide between core and margin and limiting the maximum duration of assignments and of phases before equal pay was required, but still allowing for some deviations via collective agreements. Triggered by more inclusive trade union initiatives, collective agreements had already contributed to upgrading agency work and the perspective attached to it (Benassi & Dorigatti, 2015).

Apart from some pieces of research, the role of non-standard work has not been strongly and systematically related to the triple transition as a whole - but there are some new aspects that received massive attention. One of the most prominent new aspects of flexible work is certainly mobile or remote work as it surged during the pandemic and as it has remained a prominent but contested feature of a wide variety of occupations. However, the capacity to do telework and the actual use of this locational flexibility exhibit strong differences across occupations, associated with the task- and job-specific degree of teleworkability as well as individual and firm-level factors. In general, remote work is mostly used by highly skilled knowledge workers (Sostero et al., 2023; Eurofound and Joint Research Centre, 2024; Cazes & Senik, 2024). Another aspect of the new forms of work that has gained in visibility, political and academic attention over recent years is work intermediated by online platforms. It typically operates outside formal dependent employment, often relying on formal self-employment, but monitoring workers closely. Overall, despite the intense debate, the prevalence of platform work is still limited in Europe, but with some relevance in certain some sectors or occupations (Urzi Brancati et al., 2020; Eurofound, 2024; Piasna et al., 2022). This poses challenges to established models of social protection and industrial relations and has triggered some dynamism for legal changes and

clarification of the employment status as well as to organise this segment better by way of trade union and grassroot initiatives (see e.g. Tassinari & Maccarone, 2020; Gegenhuber et al., 2021; Aloisi, 2022; Vandaele et al., 2024; Bassanini et al., 2024). Still, this evolving contractual model warrants further investigation as labour demand, labour supply, the institutional provisions and digital technologies evolve, in particular regarding the dynamically changing, but heterogenous character of platform work and with respect to the repercussions it may have on other forms of employment (see Gundert & Leschke, 2024).

The gaps in coverage and benefit levels in unemployment insurance experienced by non-standard workers, due to limited accumulation of entitlements or formal exclusion have been documented widely. In that sense non-standard workers (and the groups employed under such arrangements) are exposed to the dual disadvantage of rather unstable employment and lacking or incomplete unemployment protection. This has triggered a debate how to make unemployment insurance and other elements of social protection, sometimes also including collective wage setting, more accessible, thereby also (partially) evening out labour cost differentials between different types of employment (see e.g. Weber & Schoukens, 2024; Immervoll et al., 2022; Eurofound, 2024; European Commission, 2023; Clegg et al., 2022; Bassanini et al., 2024; Khoury & Skandalis, 2024). This area is dynamically evolving, in particular with respect to different segments of formally self-employed persons, driven by count rulings and policy reforms, pointing at complex and highly diverse patterns that need to be understood better. However, in some cases, the overly generous provision of unemployment benefits to workers in repeated short employment spells can also create incentives to use such employment models heavily in certain occupations as research on France has shown, pointing at a potential role of experience rating and taxation as well as balanced regulation to avoid that (Menger, 2017; Malherbet & Martins, 2024; Cahuc et al., 2020; Khoury et al., 2020).

For future research, the constant reconfiguration of the relations between different types of contracts remains an issue, given shifts in labour demand and supply and reforms in dismissal protection, the regulation on non-standard contracts or social protection coverage. Particular emphasis could be put on studying the role of firms in using different types of contracts available in a certain setting. Heterogeneity of firms even within the same country and sector is not yet well understood (see Malherbet & Martins, 2024). From a strategic policy point of view, there is need to analysing patterns of risk allocation, flexibility and adaptability in a systematic fashion in order to be able to develop solutions that are less selective, for example, by inherently flexible, but more unified employment relationships (Aloisi & de Stefano, 2020). This would also include the role of worker participation and organised labour in shaping new forms of work in the labour market (Berg et al., 2023).

2.1.4. Labour market polarisation and regional imbalances

Technological change, but also broader, interrelated trends such as the shift to private and public services, affects different groups of workers differently, potentially exacerbating existing inequalities between workers involved in routine and non-routine dominated jobs. As far as inequality and polarisation on the labour market are concerned, research has found signs of a general long-term trend towards polarisation of jobs by pay levels, i.e. a shrinking and hollowing out of the share of workers in the middle of the pay distribution, especially in the traditional part of medium qualified and medium paid, more routine-heavy occupations (Goos et al., 2014) which also affect men and women differently (Verdugo & Allègre, 2020). However, empirical findings on labour market polarization are not as clear-cut as one might assume. Recent research on European countries could not fully confirm this general trend neither across periods in time nor across countries. This reflects the crucial role of institutions, education and sectoral structures in the economy, even with increased use of robots or AI. Furthermore, polarisation is far from universal just as labour market segmentation varies as do the size and dynamism of different occupational fields, job qualities and skill profiles in labour markets. The polarisation story is less clear in non-liberal countries and if it is not just measured by pay levels but by job quality in a wider sense, including skill levels, prestige and job satisfaction. In that sense, recent studies have shown an upgrading in European countries rather than polarisation, with some differences over time in the strength and direction of these trends (Oesch & Piccitto, 2019; Oesch, 2022; Fernández-Macías & Hurley, 2017; Goux & Maurin, 2019). There is some evidence that polarization trends from the early 2000s have become weaker more recently and affects some European countries more than others and men more than women (Reshef & Toubal, 2024). Overall there has been a significant improvement in employment, in incomes and ultimately in working conditions among the higher skilled, not least in STEM, professional and managerial jobs, and this segment has been growing at a much higher rate than the average of the labour market. Educational upgrading allows for the upgrading of job segments in the era of routine-biased technological change. This has also characterised countries with strong vocational training such as Germany where these advanced intermediate qualifications have lost some ground to tertiary qualifications, not least in combinations (Diessner et al., 2022). At the same time there is evidence of a remarkable stability of the working conditions in the medium segment, despite pressure on these jobs (Peugny, 2019). This points at the continued importance of collective institutions that can stabilise working conditions as well as adaptive capacities in main segments of the labour market. Along this line, Diessner et al. (2025) argue that collective bargaining institutions play a critical role in mediating the skill bias commonly associated with the diffusion of information and communications technologies as collective agreements can determine whether employers have the discretion to selectively reward strategically important high-skilled workers with greater wages and benefits.

This dynamic interaction between labour market shifts and institutional variables should be tracked to better understand what is going on in the most recent period, not least with respect to the linkages between changes in collective skill formation, the skill composition in the labour force and labour market dynamisms as regards task compositions and employment dynamism.

Apart from ‘vertical’ inequalities and polarization, ‘horizontal’ imbalances in terms of potentially growing disparities between regions, in particular within EU member states, have received academic attention, and this spatial differences tend to be long-lasting, despite some evidence of a convergence or growing attention to convergence-oriented policies (see, for example, Balakrishnan et al., 2022; Gianakis & Bruggeman 2020; Gianakis & Mamuneas, 2022; Jung et al., 2023; Castellacci et al., 2019; Vera-Toscano et al., 2022, and Pietrostefani et al., 2024, for an overview). Explaining differences in economic dynamism across regions typically refers to differences in the sectoral and occupational composition as well as skill composition of regional economies that exposes them more or less to the triple transition and helps explain adaptability of regions. This needs to be addressed in a comprehensive way as individual factors such as robot use typically cannot explain much of regional differences ((see e.g. Antón et al., 2022). In general, economic dynamism tends to be concentrated in innovative urban settings and other highly productive clusters, creating many knowledge-intensive and well-paid jobs that attract highly skilled workers, linking them to innovative firms and research centres, which also creates demand for other types of jobs. Other areas, including rural areas and places with traditional industries that fail to renew themselves tend to fall behind in terms of employment and income dynamisms and suffer from a shrinking workforce. To some (limited) extent this might be counteracted by telework and remote work (Eurofound and European Commission Joint Research Centre, 2024; Luca et al., 2024).

In that sense, place-based policies focusing on relative competitive advantages of regional clusters potentially matter as well as government quality (Rodríguez-Pose & Ketterer, 2019). But there is still scope to improve the understanding of ongoing changes at the regional level and what policies can effectively facilitate a more balanced regional dynamism, not least with respect to the transition from regional-concentrated emission-intensive industries to more sustainable production (Hassel et al., 2024). Hence, there is need to look more closely into economic structures and place-based policies that shape development paths at the regional level, not least patterns of industrial decline and renewal which is very much related to innovation potentials of (clusters of) firms and their networks, including public policy initiatives, in particular targeting research and development as well as training. In that sense, research should study the role of sub-national settings.

2.1.5. Adaptability and reform dynamics

Over the last years, there has also been more encompassing research into broader patterns of adaptability of labour markets and economies as regards their capacities to generate good jobs, to be fairer and more inclusive, given the massive challenges of technological progress, global changes and economic restructuring at national, sectoral and regional level. Growth regimes have emerged as a core concept that also provides typologies of arrangements in European countries and pathways of adaptation (see e.g. Hassel & Palier, 2021; Avlijaš et al., 2021).

The restructuring of the economies has been found also to affect political preferences of different socio-economic groups differently, reshuffling long-standing political clusters in the electorate, thereby facilitating or restricting certain policy choices (Häusermann et al., 2022; Häusermann & Palier, 2017; Garritzmann et al., 2021). Survey data from Europe has in particular found stronger support for compensatory rather than investive policies (Busemeyer et al., 2023, 2024; Busemeyer, 2022). How forward-looking 'social investment' policies and supportive labour market institutions can be designed in a way that is also supported politically remains an important issue for further research, in particular given the strong interest of citizens in maintaining a buffering element in social policies. Similar ambiguities can also be found with respect to trade union strategies regarding climate-oriented policies (Thomas & Doerflinger, 2020).

From past experiences there are clear indications at the benefits of overarching societal and political coalitions that also include forms of social dialogue or corporatist alignments at different levels to promote an inclusive transition (see e.g. Thelen, 2021; Wren, 2021; Hassel & Weil, 2024). In that sense, social dialogue can be seen as a valuable resource in the transition, designing policies that work and are politically feasible and acceptable and can also be implemented (Cabrita et al., 2021). This implies more balanced and multidimensional policy packages or sequences that can best be negotiated and stabilised by sufficiently large and stable coalitions. What that concretely means is a topic that calls for continued attention, also taking into account national or subnational diversity in starting conditions, actor constellations, notable social partnership, and policies available to shape the transition. There is definitely scope to take a more integrated research perspective on the triple transition as these trends are interlinked, and policy making needs to deal with them simultaneously (see e.g. Petmesidou & Guillén, 2022; Verdolini, 2023).

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3. New and alternative forms of work organisation (Isabelle Berrebi-Hoffmann)

Isabelle Berrebi-Hoffmann, Cnam-LISE- CNRS, (Laboratory for interdisciplinary socio-economic research), Paris, France.

3.1. State of research

3.1.1. Digital transformation and the future of work

Digital transformation and the future of work is a constant theme in qualitative and quantitative research and public policy over the last thirty years, but a new phenomenon in institutional research since 2016.

Surveys and studies about the future of work have been omnipresent since the advent of computing several decades ago (Beckert, 2016). Following initial debates on the "end of work" and its declining centrality, a first period from the 1990s to the 2010s equated futures of work with organizational models of companies within the "new economy." Investigations and research on the future of work were then associated with digital work environments. Reports and studies, case studies, and ethnographic investigations described in these environments a triple evolution of work: that of *activity*—freer and more creative (without schedules, routines, procedures, or standards, without hierarchy or bureaucracy); that of *management*—informal, more horizontal, casual Friday, remote; and that of *workplaces*—open spaces, nomadic work, and telecommuting. These modes of operation of the future—from startups to Google—have been reflected in debates and public policies for more than thirty years.

However, advancements in artificial intelligence from 2013 onward—facial recognition, translation, deep learning—have generated alarmist international reports on the future of work and the programmed disappearance of occupations and professions. Seminal studies include Frey and Osborne's 2013 research, Obama's 2016 speech on artificial intelligence, and the establishment of the AI Now Institute and Data and Society in 2017, as well as reports by the German Ministry of Labour on WORK 4.0 and Industry 4.0 among the earliest and most cited studies.

Consequently, the current state of research and research gaps on the futures of work and employment in literature and EU projects[2] must be considered, first and foremost, in light of the tremendous explosion of interest in this topic among multiple stakeholders since the mid-2010s. We observe a multiplication and inter-stakeholder circulation of studies and reports financed by trade unions, European ministries of labour, think tanks, research foundations of major consulting firms (McKinsey, BCG, Deloitte, PwC), as well as institutions (OECD, World Bank, ILO). Universities and public research sectors have embraced futures of work by launching dedicated research programmes, e.g. those by Oxford (2013), MIT (2017) and Harvard (2018).

Moreover, futures of work in the context of AI, futures of production in the context of ecological and climate crises, are central to the creation of research institutes, whether called "futures of work" or simply institutes of "futures studies." Approximately twenty public research institutes or initiatives on the "futures of work" have emerged since 2017 in Europe and globally. In total, more than thirty research structures and *future-of-work institutes* or initiatives, across all stakeholders, dedicated to this theme, producing studies and reports annually on the futures of work and employment, have been established since 2016 (see Table 1).

The importance of the theme of artificial intelligence and its impact on the future of work is also reflected in the evolution of the academic output of critical artificial intelligence research institutes. These, which emerged in the United States and the rest of the world from 2018 onwards, have been publishing and funding research on the impact of AI on work since the early 2020s. Notable examples of these institutes and initiatives include, chronologically: *One Hundred Year Study on Artificial Intelligence* created by researchers from Harvard and Stanford; Carnegie Mellon, McKinsey Global Institute, Microsoft; *Partnership on AI*, established in September 2016 by Amazon, DeepMind, Google, Facebook, IBM, Microsoft, Apple; *AI Now Institute* (New York), founded in 2017 by Kate Crawford and Meredith Whittaker (formerly of Google and Microsoft); *Data & Society's Intelligence and Autonomy Initiative* (New York), 2017; and the FAT Conference: *Fairness, Accountability, and Transparency of Algorithms*, whose first interdisciplinary conference combining computer sciences and social sciences took place in New York in February 2018. Similarly, the internet and society research centres, which have multiplied and operate in networks within European and international democracies, are developing research on AI and work, platforms, ethical issues related to employee surveillance or algorithmic management, and work within GAFAM and other digital companies, as well as their influence on work transformations and global economies.

[2] H2020 and Horizon Europe: https://research-and-innovation.ec.europa.eu/research-area/industrial-research-and-innovation/future-work_en; https://op.europa.eu/en/publication-detail/-/publication/f989a7bc-a833-11ed-b508-01aa75ed71a1/language-en

Table 1: Research institutes on the future of work – institutional surge since 2010s[3]

Institute Name	Country	Year of Establishment	Description and Link
Digital Futures at Work Research Centre (Digit)	United Kingdom	2019	A research centre examining the impact of digitalization on employment and skills. https://digit-research.org/
MIT Task Force on the Work of the Future	United States	2018	An initiative by MIT analysing and anticipating labour transformations in the age of new technologies and automation. https://workofthefuture.mit.edu/
Institute for the Future of Work (IFOW)	United Kingdom	2018	An independent centre analysing the impact of technology on work and the necessary public policies. https://www.ifow.org/
Future of Work Institute - United States	United States	2017	Institute focusing on emerging trends and the skills required for the jobs of tomorrow. https://www.futureofworkinstitute.com/
Future of Work Institute - Curtin University	Australia	2017	An institute studying the impact of emerging technologies and organizational changes on work. https://research.curtin.edu.au/future-of-work-institute/
Managing the Future of Work Project, Harvard	United States	2017	A research project at Harvard Business School analysing trends and challenges of the future of work. https://www.hbs.edu/managing-the-future-of-work/about-the-project/Pages/default.aspx
Centre for Future Work - Australia	Australia	2016	Based in Sydney, this centre focuses on economic policies and the future of work in Australia. https://www.futurework.org.au/
World Economic Forum (WEF)		2016	*The Future of Jobs Report* (published since 2016) tracks employment trends in response to AI, automation, and climate change.
Centre for Future Work - Canada	Canada	2016	A centre studying public policies for a fair and sustainable future of work. https://centreforfuturework.ca/

[3] See also a detailed list of further institutes and institutional actors in the Appendix to this section (3.3).

Institute Name	Country	Year of Establishment	Description and Link
Future of Work Research Centre	United Kingdom	2014	A research centre analysing the impact of technologies and social changes on work. https://www.sheffield.ac.uk/management/research/centres-and-institutes/future-work-research-centre
International Labour Organization (ILO): The *Future of Work Initiative* (2013)	Genève	2013	The *Future of Work Initiative* (2013) formally integrated foresight research into labour policy.
Institute of Desirable Futures (IFs)	France	2012	A foresight school helping to imagine and build the future, offering training on the future of work. https://www.futurs-souhaitables.org/
Research Institute for Flexicurity, Labour Market Dynamics and Social Cohesion (ReflecT)	Nether-lands	2009	An institute created at Tilburg University, focusing on multidisciplinary research on flexicurity, labour market dynamics, and social cohesion. https://www.tilburguniversity.edu/research/institutes-and-research-groups/reflect
Future of Humanity Institute - University of Oxford	United Kingdom	2005	An interdisciplinary institute exploring major challenges, including those related to the future of work. https://www.fhi.ox.ac.uk/
Institut für die Zukunft der Arbeit (IZA)	Germany	1998-2025	A centre specializing in labour market research and transformations of work in Europe. https://www.iza.org/
Institute for Research on Quality of Work Life	Nether-lands	2017	An institute focused on the relationship between productivity and quality of work life, promoting management practices that enhance employee well-being and business performance. https://www.ilqvt.lu/

3.1.2. Platforms, platform work and new productive models

Over the past decade, a significant number of institutional reports, European programmes, and academic research in sociology of work and labour economics have focused on studying platforms and the "platformization" of the economy. Indeed, platform-based production models, relying on digital technology, have taken on atypical forms that challenge labour regulation institutions, corporate structures, and capitalism in developed economies.

Platform work and micro-tasking

In particular, work platforms and gig economy platforms have been the focus of numerous empirical studies since the mid-2010s. Case studies, ethnographies, and field surveys on working conditions within delivery platforms such as *Uber, Lyft*, or *Deliveroo* on one hand, and microwork on platforms like Amazon Mechanical Turk[4] on the other, have deepened over the past five years. Scholarly books and essays have sought to document both the business models, corporate strategies, and the impact of these new forms of enterprises on traditionally regulated professions (ride-hailing drivers, taxis, hospitality, personal services, etc.) since their emergence in 2008. For instance, Berg et al. (2019) provide survey data from 75 countries on micro-task platforms, while Rosenblat (2018) offers an in-depth ethnography of Uber drivers in the United States and Canada. Casilli et al. (2019) document the low remuneration and fragmented labour of microworkers in France, while Froissart et al. (2024) analyse worker resistance and collective action among Chinese food delivery couriers. Other studies describe how algorithmic management reshapes work, transfers business risks onto workers, and erodes autonomy.

The regulation of platform work has raised new legal questions in social democracies. A substantial body of legal scholarship has emerged over this period, closely linked to public policy and parliamentary debates (notably in the United States, Europe, and Canada). These discussions have led, in some cases and countries, to the reclassification of independent platform workers as employees. The most central and frequently cited research focuses on various themes, including working conditions, work fragmentation and low pay, intensified control systems, management tools, algorithmic management, subjective work experiences, taskification, and employment restructuring.

[4] Amazon Mechanical Turk (often shortened to “MTurk”) is Amazon’s online crowdsourcing marketplace where individuals or organizations (“requesters”) post small, discrete jobs called Human Intelligence Tasks (HITs), and a global pool of workers (“Turkers”) completes those tasks for a payment set by the requester. Typical HITs include labeling images, transcribing or moderating content, answering survey questions, and other micro-tasks that still require human judgment.

The dematerialization of management control and algorithmic management

Other sectors of the economy have also been affected by waves of quantification and digitalization in labour control technologies. A stronger hold of procedural rationality over ways of life is progressively taking shape (De Munck, 1999). In private companies, public services, and administration, research has shown that constraints on individuals have tightened over the past thirty years (Berrebi-Hoffmann, 2009). Studies on labour and corporate environments indicate that performance indicators, activity tracking, and time monitoring, which have gradually been digitized, along with customer rating systems, now weigh on the daily activity of employees and freelancers in a novel way. Meanwhile, governance and management tools are increasingly designed for remote control. Research remains active on the impact of digital systems on work experiences, workers' ability to act, and the deteriorating quality of work due to tools perceived as coercive. The absence of human interlocutors during malfunctions or system failures exacerbates "work impediments" and subjects employees to authoritarian and coercive forms of compliance.

The question of agency and worker autonomy has been a central concern in work psychology and ergonomics. The legal and techno-critical research movement initiated by Harvard law professor Lawrence Lessig also highlights these issues (1999, 2000). The quality of work declines with the introduction of remote digital surveillance, which replaces direct hierarchical control and procedures. An increase in administrative tasks has been observed, leading ultimately to a more coercive mode of task and personnel management.

This results in intensification of work, which has been well documented over the past twenty years (Askhenazy et al., 2024), a deterioration in working conditions, a crisis of meaning for professionals and executives (Graber, 2018), and concerns about the physical toll on essential workers. Additionally, issues such as occupational health and safety, workplace well-being, psychosocial risks and burnout are increasingly prevalent. Many research institutions and studies are now framing the question of labour transformations around the sustainability of work.

Algorithmic management in gig work raises concerns about worker autonomy and exploitation (Oxford Internet Institute, 2023). The tension between autonomy and surveillance appears to necessitate new regulatory frameworks in various professions. For example, debates on ethics and AI, regulations on remote surveillance (for delivery drivers, cashiers, corporate messaging systems), or facial recognition and forced disconnection (such as Uber drivers being logged out of the app) highlight these challenges. Recently, the question of the sustainability of algorithmic management for workers has been posed (Griesbach et al., 2019; European Agency for Safety and Health at Work, 2024a, 2024b). Ergonomics, work psychology, and sociology of work have developed significant research on topics ranging from cobotics and human-

machine interactions to the loss of meaning among workers in AI-managed logistics warehouses (Doyle-Kent & Kopacek, 2021; CRTD, 2024; Bobillier-Chaumont, 2022). However, large-scale comparative empirical research on these phenomena remains scarce and needs further exploration.

The issue of counterpowers and the need for work democratization is a concern is current academic research on work, organization of work and firms governance. The question of counterpowers arises, leading to discussions on workers' participation in decision-making and the emerging need for workplace democratization. Ultimately, who decides the content of work and activity when tasks and work organization are digitized?

Other issues on AI and work

Generative AI is not only impacting blue-collar jobs but also displacing white-collar professionals in fields such as law, journalism, and customer service (Frey & Osborne, 2023). Policymakers are increasingly concerned with how to implement regulatory frameworks to mitigate job displacement (OECD, 2023). The three recent phases of AI (annotation-based learning, recommendation algorithms, and LLMs (large language models) or generative AI are rarely distinguished in studies predicting AI's impact on work. While much research focuses on annotation and content moderation, studies on LLMs are beginning to emerge. However, research on AI and work regarding recommendation algorithms remains scarce. Yet, these algorithms significantly affect social democracies, fragment opinions on social networks, reshape journalism and information flows, and transform professional sectors.

3.1.3. Firm governance, organization of work, and the quest for new productive models

The crisis of scales: Sectoral, global, transnational, or planetary?

One of the most significant shifts in research on work and corporations over the past fifteen years has been the reconfiguration of analytical frameworks. Comparative approaches between countries or nations have long been and remain dominant in European research. Meanwhile, reasoning in terms of nested scales (local, national, European, global) continues to be central to most European research programmes. However, more recently, socio-economic methods and studies have emerged that aim to characterize, on one hand, a "global" socio-economic space and, on the other, a transnational sectoral space. Since the 2000s, transnational value and decision-making chains that bypass territorial and legally anchored frameworks have become widespread. Simultaneously, qualitative studies on labour, firms, and productive

systems have almost systematically adopted ethnographic approaches (local, multi-sited, or "fragmented"). Ethnographic methods have thus become predominant in recent doctoral dissertations in sociology, political science, ergonomics, and work psychology, as well as in disciplines previously less engaged with micro-sociological empiricism, such as law (e.g., legal clinics studying platform workers), social geography, and certain heterodox economic currents.

In economic sociology, it is observed that since the 1990s, *labour regulation arenas* and centres of power have shifted. The governance of large corporations, equipped with computerized management tools, has evolved towards a *transnational space*, while financial indicators and shareholder influence have relocated decision-making centres further away from workplaces and national regulatory frameworks. This period saw the emergence of global value chains—initially in textiles and pharmaceutical production, following the automotive and chemical industries, and later expanding into IT services and artificial intelligence. The 2000s witnessed the platformisation of these transnational systems, enabled by the development of the internet, the web, and its applications.

Regulations that govern the workplace are increasingly developed in areas that transcend national boundaries and regulations. These areas include international consulting, auditing, European assessments, rating agencies, AI, and GAFAM. The issue of scale has become even more complex in the context of the climate and ecological crises, as well as the pressing need for sustainability. This has led to a rethinking of social science thinking, as recently argued by D. Chakrabarty (2022). In this regard, significant research has been dedicated to globalized work in large groups with evolving governance.

B-corps, cooperatives and firm governance issues

One of the earliest ways to transform companies is through the creation of new legal forms, which have emerged in several countries in recent years. Italy amended its articles of association in 2016 to broaden the mission of companies based on the model of the not-for-profit company that has emerged in the United States—the Benefit Corporation or B-Corp. France passed a new law in 2019, known as the "Pact" law, which introduces the status of a "company with a mission."[5] This development marks a significant shift, as it introduces a new paradigm where a company's purpose can extend beyond the pursuit of profit to include a "mission," defined as a specific objective aligned with general, ecological, or social interests. Notably, Danone became the first

[5] *Law n° 2019-486 du 22 mai 2019*, JORF n° 0119, 23 mai 2019. https://www.legifrance.gouv.fr/jorf/article_jo/JORFARTI000038496249

CAC 40 company to adopt this status in 2020. This "national" and legal path is gaining traction, signifying a notable transformation in the corporate landscape. For a century, the pursuit of profit was the only mission that was never included in the definition of a company. Any manager who deviated from this could be dismissed for misconduct. This minor legal revolution allows companies to pursue goals other than profit alone, as outlined in the "Pact" law. While it is not yet possible to measure their actual effectiveness, this new development is significant. Concurrently, there has been an increase in the number of statutes related to cooperatives. Alongside worker cooperatives (SCOPs in France), other forms of cooperatives have emerged, such as business and employment cooperatives (CAEs in France) and collective interest cooperatives, with hybrid partnerships that can bring together public, private, and non-profit actors within the same structure.

Moreover, the issue of power-sharing within companies, their governance, and/or their democratization has gained renewed importance in the wake of the health crisis, the ecological crisis, and the social crisis, in recent socio-economic research. Can salaried representation in boards of directors be guaranteed parity with shareholders, in others European countries than Germany for instance? Should additional supervisory boards be introduced to regulate board decisions that have drifted towards short-termism? Despite some active academic research on workers participation to the governance of firms and boards, reforms and debates in this area do not seem to attract the necessary consensus in some countries like France, in contrast to more active European initiatives[6]. A European directive has been adopted to introduce "sustainable corporate governance,"[7] which will eventually mandate the creation of an advisory board empowered to commission audits—a first step towards a timid counterpower within corporate governance, representing interests beyond those of shareholders.

[6] https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12548-Sustainable-corporate-governance_en

[7] https://eur-lex.europa.eu/eli/dir/2024/1760/oj

Value Sharing, Work Ownership, and Employee Participation

At the intersection of labour law, work psychology, organizational sociology, and management sciences, research is developing on "professional dialogue" as a response to algorithmic management. This theme is particularly active and attracts interest from trade union actors as well as company executives and management teams.

The issue of value sharing, forms of employee participation, and profit-sharing revives the debate on remuneration, which has recently been reinvigorated in research in terms of "justice" and "economic morality." The protests of content creators over value-sharing mechanisms with platforms indicate that new regulations and redistribution rules—including in the data economy—must be reconsidered. Similarly, the ecological transition raises questions about hidden costs and the negative externalities of productive activities and our accounting systems. Active research is seeking to reform the international accounting system to integrate environmental costs in all firms accounting systems and reflect the exact added value of productive activities.

Industrial sovereignty, productive relocalisation, and alternative production systems

Social science research has recently increasingly focused on alternative production models and eco-systems experimentations which developed since 2010s. Open-source software, open hardware, productive commons, cooperative platforms, short supply chains, circular economy models, and distributed manufacturing. These alternative production forms no longer fit neatly within traditional firm and market models as empirically and theoretically defined by mainstream social sciences and legal frameworks. Additionally, they derive their efficiency from "data work" and collaborative ecosystems whose boundaries, as well as ownership structures, are being debated in society. Meanwhile, numerous public actors and states are positioning themselves against the GAFAM, advocating unprecedented regulatory measures to curb the dominance of digital giants.

In 2020, the European Commission adopted the Circular Economy Action Plan, a cornerstone of the European Green Deal, which aims to make the European Union climate-neutral by 2050. However, the links between research in labour sociology, economic geography, and organizational sociology on one hand, and European policies promoting short supply chains, circular economy initiatives, or productive third places on the other, are only just beginning to form. The issue of distributed production and manufacturing, as well as the scaling up of these processes, is being discussed and debated. However, research has yet to provide sufficiently compelling figures and experiments to support this ongoing transition.

3.1.4. The end of the unity of place for employment, work and work collectives: The workplace question

Over the past three decades, the IT sector has developed virtual infrastructures and transnational standards that gradually equip an immaterial international division of labour. These infrastructures enable offshoring and nearshoring in immaterial industries, task-based project segmentation (streams), remote micro-work, and micro-tasking. Consequently, work can no longer be understood solely through the workplace. The unity of employer, workplace, and work community that traditionally defined salaried employment is now dissolving in many sectors.

A Moroccan freelance IT specialist might work remotely for an Indian employer under contract with a French IT services company serving a German client. This worker may receive training from a virtual work community on Reddit or Discord while engaging in daily social interactions at a client's site or a local coworking space. This new disconnect between the employer managing the contract, the actual workplace of the employee, the project collective executing tasks, and the work community—previously unified within a single legal and physical entity—challenges the very notion of the enterprise as conceptualized in the 20th century. Transnational value chains, cascading subcontracting arrangements, proceduralisation, and the standardisation of virtual tasks have developed from the 1990s to the 2010s. These micro-work chains now form a global division of labour in the production and manufacturing of artificial intelligence services (Le Ludec, 2024; Tubaro et al. 2020). As a result, the workplace itself has become a research subject, with growing studies on new workspaces such as coworking spaces, third places, and remote work.

The emergence of a new worker social class

A significant research trend, inspired by the digital labour economy, examines work figures that deviate from traditional subordinate employment. Does the rise of a service society, digital tools, and work dematerialization signal the emergence of a new social class?

The digital sector encompasses all forms of freelance work, entrepreneurship, disguised or legitimate non-subordinate employment in IT services companies platform work, and embedded subcontracting chains. Over the past thirty years, debates have arisen on whether a new worker class has emerged. Dubbed "knowledge workers" and later the "creative class," these professionals—artists, consultants, advertisers,

designers, IT developers, and other freelance creators—momentarily embodied the ideal of an emancipated and desirable working world in the 2000s.

Yet, this creative labour model is also marked by individualization, competition, nomadism, independence, and vocation—all at once. It exposes workers to personal risks such as isolation, overinvestment, precarity, economic dependence, value capture, and exploitation of unpaid labour, as highlighted by numerous case studies on platform work, independent labour, seasonal work sustainability, and the mental health effects of atypical contracts and schedules.

Recent discussions have introduced new nomenclatures that require empirical and quantitative research: "essential workers," "frontline or second-line workers," work utility, work meaning, value sharing, and the phenomenon of "quiet quitting" all challenge sustainable work models and their fair organization and remuneration.

Another emerging theme is workers' resistance in the digital economy, highlighting new social movements leading to union revitalization or the creation of new labour organizations.

Furthermore, research increasingly examines work time and temporalities, addressing intensification, acceleration, work-life boundaries, and the protection of non-work time.

A consequence of the emergence of new class and new place and ways of working is also that a growing number of academic research has been focusing lately on a more epistemological and reflexive challenge on whether new categories and concepts to describe and classify contemporary work are needed.

Frontiers and categories of work

How /should unpaid work, reproductive work, domestic work, self-production, subsistence work, artistic work, care work, free work, forced work, content creation work - like on *YouTube* - be integrated into studies and measures of work? or should we keep the categories and boundaries of contemporary classifications, especially statistical ones.

Research into new forms of employment is focusing on platforms, using reworked categories such as subordinate self-employment and non-subordinate and autonomous salaried work. The need for new typologies and categories based on emerging figures, status, activities and alternative production models has raised since a few years. The questions of frontiers of work, which are blurring in many ways (Flichy, 2019), and categories of knowledge on work (Hertzog & Zimmermann, 2023), are just two examples.

The subjective relationship with work: a new challenge for employers?

The crisis of work is also a crisis of the relationship to work especially among young generations with regards to ecological challenges, sensemaking and desirable lifestyle. What relationships to work are emerging in the light of these upheavals? What research is looking into the *future of relationships to work*? These have been the subject of much debate since the pandemic of 2020, with new dichotomies: essential or front-line workers and teleworkers, the usefulness of work or "bullshit jobs", "quiet quitting", the crisis of meaning for managers and bifurcations that bear witness to work that has become less sustainable, or even less desirable. While entries by age (young people, seniors), gender, CSP and sector of activity have been explored extensively since 2020, they still need to be consolidated. In particular, the question of the bifurcation of young graduates is insufficiently documented, as is that of the comparative sustainability of senior employment across sectors, jobs and countries. The issue of disability and inclusion in the workplace is developing strongly, but here too, comparative studies and research that are not exclusively quantitative are still needed. Moreover, as soon as the question of the relationship to work is raised, some of the research seeks to ask more fundamental questions related to the ecological question, alternative forms of production, territories and lifestyles.

In digital work worlds, work as investment is a first type of the relationship to work. Work as investment can be understood in its relationship to time and generations. One invests heavily in work for "a while", to benefit ourselves or our children in the future. The aim of work-investment is to gain access to higher status and social positions. In a way, it is akin to the commitment to work of generations of migrants, to enable a form of integration and social mobility for the next generation. One pre-notion of this relationship to work is the belief in a possible meritocracy, which, whatever its rules, operates over time, and therefore presupposes a relative stability in the hierarchies of social prestige. This relationship with work, while most often damaging to health, is also a source of meaning. From being a simple "commodity", even a fictitious one, work has become *a financial asset*, which can be played with, diversified, invested or withdrawn to optimize returns. Financial capitalism, which is also a "capitalism of promises" in Tech, thus confers on work a very different status from that of wage commodification, that of a risky investment and a bet on the future.

Another category of relationship to work could be grouped under the term work as a way of life, or the centrality of work. In contrast to investment work, this involves placing work at the center of a status or living space that is made to last, and where ways of working, consuming, producing and living intermingle to form a whole. This is the case for "nomadic" tech workers, for certain "influencers" and content creators on the Web, and today for certain teleworkers. In the digital world, makerspaces and hackerspaces, like FabLabs, are also part of an attempt to "turn lifestyle into work". The same is true of the "zero- unemployment" experiment in France. The quest for a way of life that

makes work, or work as a way of life, can be seen in many of the forks in the road taken by young graduates of top business schools, or in those who choose to live in productive communities or eco-villages in search of a sober life today. Surprisingly, this is also the traditional promise of wage-earning within what remains of the Fordist compromise: protected wage-earning provides lifelong status, a way of life, work and access to a stable and total mode of consumption. Work as a way of life, but also as a "total social fact", whether undergone or chosen, can also be found in certain sectors, such as the hotel and catering trade, rural tourism, diplomats and doctors, expatriates, seasonal workers and humanitarian aid workers (Aberdam, 2024).

A third type of relationship to work could be work as an aspiration, and the crisis of vocational professions. IT freelancers, young people, carers, teachers, the unemployed and migrants have all seen their conditions of access to employment, or their actual working conditions, deteriorate with the intensification of work, cost-cutting and downsizing, the multiplication of digital control and surveillance tools, or reporting in the public sector, the voluntary sector, and a few years earlier in the private sector. Employment, or "good work" becomes an aspiration. Some work for free (internships) to gain access to the hoped-for activity, i.e. permanent employment for young people, or to have the time to do good, quality work. Public service professions, from hospitals, police and justice to schools, are just a few examples. The situation also echoes that of intermittent workers and artists, who work so that one day they can hope to work. This type of relationship is also to be found in the digital world, among freelancers. The particularity of this third figure is that the activity itself is sought-after and valued to the point of sometimes "paying" to work or working for free. Vocational occupations are particularly concerned, as are certain professions in the care, tourism and hotel industries, and contract civil servants. Here again, the professions to which these self-employed, contract or precarious workers aspire are a source of meaning, prestige, and job security, but also of difficulties in terms of personal organization, commitment limits, time and sustainability.

Ultimately, a new social way of thinking about production relationships and economic power, in order to understand the current labour crisis, both objective and subjective, seems necessary. Observation of the diversity of productive situations, work relations and relationships to work transformed by both AI and digital technology raises questions, while quests for meaning in a world where ecological and geopolitical disruptions are prevalent, reveal a need for new rights and institutions that remain to be studied more systematically by future research programmes.

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3.3. Appendix

Below is a further detailed list of organizations and institutions that have focused on the future of work since 2020 and have produced reports on it. For each organization, we provide their name, some of the topics studied related to the future of work, and a link to the organization's website and/or an exemplary study.

Public Institutions

Agence nationale pour l'amélioration des conditions de travail (Anact) (France): studies on work in 2050 https://www.anact.fr/la-fresque-du-travail-de-demain

Direction de l'Animation de la Recherche et des Études Statistiques du Ministère du travail (Dares) (France): evolution of the organization of work and transformations of professions in the future https://dares.travail-emploi.gouv.fr/dossier/les-metiers-en-2030

Institut für Arbeitsmarkt- und Berufsforschung (Germany): research on the evolution of the labour market in Germany and its adaptation to new European trends https://iab.de/wie-sieht-der-arbeitsmarkt-der-zukunft-aus/

Federal Ministry for Economic Affairs and Climate Action (Germany): future of work and digital transformation https://www.bmwk.de/Redaktion/EN/Publikationen/bmwk-ga-the-future-of-work-in-the-digital-transformation.pdf?__blob=publicationFile&v=1

France Travail (France): studies on the transformation of professions and the emergence of new activities in the future https://www.francetravail.fr/actualites/le-dossier/les-metiers-de-demain/85-des-emplois-de-2030-nexistent.html)

UK Commission for Employment and Skills (UK): evolution of employment and work by 2030 https://assets.publishing.service.gov.uk/media/5a7e312aed915d74e6224b43/er84-the-future-of-work-evidence-report.pdf

Consulting firms and Think tanks

Accenture: productivity and health as issues of the future of work, https://www.accenture.com/us-en/insights/consulting/future-work

Boston Consulting Group (BCG): future impact of changes in work on health, qualifications, etc. https://www.bcg.com/capabilities/people-strategy/future-of-work

Bruegel: research on economic policies related to digitalization and the future of work, organization of a network of experts on the future of work. https://www.bruegel.org/system/files/wp_attachments/Bruegel_Blueprint_30_ONLINE.pdf

Deloitte: the future of work from the perspective of business organization and human capital https://www.deloitte.com/fr/fr/services/consulting/services/future-of-work.html

European Policy Center (Suisse): globalization, automation and digital: their impacts on the future of work, https://www.epc.eu/en/projects/The-future-of-work~1eaf78

EY (Ernst & Young): studies on the future of work based on the presumed transformations of workplaces, new work cultures and public policies https://www.ey.com/en_se/future-of-work

McKinsey & Company: future of work, impacts of Covid and automation on the labour market in Europe https://www.talkspirit.com/blog/the-future-of-work-in-europe-according-to-mckinsey

PwC (PricewaterhouseCoopers): the effects of automation on tomorrow's work https://www.pwc.com/gx/en/services/workforce/publications/workforce-of-the-future.html

The Global Future of Work Foundation (UK): development of methodologies to understand the future of work https://globalfutureofwork.com

Trade union and employer organizations

BusinessEurope: employers' perspectives on digitalization, automation and skills for the future of work https://www.businesseurope.eu/publications?category%5B%5D=61

European Trade Union Confederation: workers' rights, impacts of teleworking, young people and the future of work, https://www.etuc.org/sites/default/files/circular/file/2019-05/CES-Brochure%20The%20Future%20of%20Youth-UK%20def-Basse%20def.pdf

European Trade Union Institute: digital economy and future of work, telework, unionism and future of work, https://www.etui.org/events/future-work-reclaiming-value-work-digital-economy

International Trade Union Confederation: the future of work seen from the point of view of employment, gender inequalities, public policies... with recommendations for the regulations to be put in place. https://www.ituc-csi.org/IMG/pdf/the_future_of_work_web.pdf

World Employment Confederation: the effects of technologies, demographic changes... on the work of the future. https://weceurope.org/topics-europe/future-of-work/

Other universities, research centers, foundations

Bertelsmann Stiftung (Germany): scenarii for the future of work, https://www.bertelsmann-stiftung.de/de/publikationen/publikation/did/2050-die-zukunft-der-arbeit

Centre for Employment Relations, Innovations & Change, Warwick, Institute for Employment Research (UK), Flexibility and future of work, https://warwick.ac.uk/fac/soc/ier/rewage/news-archive/the_future_of_flexible_working_-_evidence_paper_20230830.pdf

Europäischer Sozialfonds für Deutschland (Germany): production and services in the future https://www.esf.de/portal/DE/ESF-Plus-2021-2027/Foerderprogramme/bmbf/zukunft_der_arbeit.html

Institut für Wirtschaft Forschung - IFO Institut (Germany): researches on the future of the German labour market, the impact of technological innovations and economic policies on young people and work, etc. https://www.ifo.de/en/media-center/2022-01-17/welcome-future-work-age-digitalization-and-remote-work-opportunities-and

FAOS – University of Copenhage (Denmark) : flexicurity and future of work https://faos.ku.dk/english/news/flexicurity-and-the-future-of-work/

Fafo Institute for Applied International Studies (Norway): studies on working conditions, industrial relations, and social policies in the future in the Nordic countries. https://www.fafo.no/prosjekter/fullforte-prosjekter/future-of-work

Fraunhofer Institute (Germany): the future of work: automation and its impact on labour markets https://www.fraunhofer.de/en.html

Green European Foundation (GEF): studies on the future of work and ecology, emerging sectors and new skills required for a sustainable economy https://gef.eu/

Institut de recherche économiques et sociales (Ires) (France): future of work and union issues https://ires.fr/publications/cfdt/nouvelles-formes-d-emplois-et-de-travail-nouveaux-enjeux-syndicaux/

Leopoldina – Nationale Akademie der Wissenschaften (Germany): the future of work, concepts, impacts of demographics, digital technology, etc. https://www.leopoldina.org/fileadmin/redaktion/Publikationen/Nationale_Empfehlungen/2024_BBAW_Leopoldina_Stellungnahme_Zukunft_der_Arbeit.pdf

Oxford Martin School (UK): impact of automation and artificial intelligence on European jobs. https://www.oxfordmartin.ox.ac.uk/future-of-work

Tilburg University (Netherland): studies on the transformations of work and employee well-being in the context of European policies. https://repository.tilburguniversity.edu/server/api/core/bitstreams/9a3adce2-fe90-4162-9832-c1e5ac30c6a9/content

University of South Wales (UK): future of work and skills https://assets.publishing.service.gov.uk/media/5a7dd8e1e5274a5eaea66b20/the_future_of_work_key_findings_edit.pdf

Organizations structured on a European and global scale

Eurofound: changes in working conditions, quality of work and employment, weakening of certain groups of workers https://www.eurofound.europa.eu/system/files/2023-04/ef22028en1.pdf ; https://www.eurofound.europa.eu/en/surveys/european-working-conditions-surveys/european-working-conditions-survey-2024

European Commission: future of work policy in Europe

https://www.ospi.es/export/sites/ospi/documents/documentos/Sstudy_Shaping_the_digital_transformation_in_Europe_Final_report_202009.pdf

European Center for the Development of Vocational training: future of work, artificial intelligence and vocational training https://european-union.europa.eu/institutions-law-budget/institutions-and-bodies/search-all-eu-institutions-and-bodies/european-centre-development-vocational-training-cedefop_fr

International Labour Organization: future of work and social dialogue https://www.ilo.org/sites/default/files/wcmsp5/groups/public/@dgreports/@cabinet/documents/publication/wcms_570282.pdf

Organization for Economic Cooperation and Development: reports on the future of employment, labour market policies, and inequalities https://www.oecd.org/en/publications/algorithm-and-eve_a1603510-en.html

4. Conclusion

4.1. Part 1: Summary, assessment and research gaps

The future of work has been one of the most prominent areas of scenario building, academic, societal and political discourse. Research has contributed to this by way of empirical studies on recent changes in the labour market in the era of the triple transition. Overall, the last decade has brought about a vast literature in labour economics, sociology and political economy on the impact of the triple transition, in particular technological change, on access to (good) jobs and different facets of inequality in the labour market, namely by demographic group or region. This has provided new evidence in well-established research areas such as non-standard work or industrial relations. Not all aspects of the triple transition have received the same extent of attention in academia, however, there is particular much less work devoted to the greening of the economies and the labour market.

Furthermore, research has addressed – to some extent – the role of institutions and policies in shaping access to employment and patterns of inequality as well as the politico-economic consequences of changing patterns of inequality in terms of policy preferences and policy making. But the political economy of institutional adaptation is potentially an area with ample scope for deeper and more systematic, also comparative research.

Overall, research has found large variation across countries in terms of institutions and economic structures, influencing the degree of vulnerability, adaptability and resilience across European Union member states and within these countries.

There are still relevant gaps in the evidence found so far.

1. First, empirical research that deals with employment faces the continued need to update our understanding of ongoing changes in labour markets, societies and in the political sphere as the triple transition is progressing further, also influenced by new challenges in the global economic and political environment such as geo-political tensions and trade conflicts that could have far-reaching implications for value chains and jobs. Hence, given the permanent renewal of the empirical situation, further research is advisable to check for the **validity of earlier findings**, e.g. regarding labour market polarisation, inequality in access to decent jobs, the labour market impact of latest artificial intelligence etc. This requires the analysis of sufficiently long time series data up to the present period. The heterogeneity of effects across countries, regions or sectors calls for a deeper and better understanding of the **role of institutions** and **targeted policies** put

in place in response to structural change. Also in that respect, established findings need to be checked against most recent developments.

2. In that respect there is now also a clear need to bringing in multiple aspects of the transition/s into studies on inequality and not to focus on either demographic change or technological/digital progress or decarbonisation in isolation. In fact, the **interconnectedness of trends** may have increased, and given challenging economic conditions and rising global tensions adaptations by labour market actors might well have changed in the early 2020s and will likely continue to do so in the years to come. In that sense, both from an analytical and from a policy point of view there is need to address the parallel transitions as complex bundle of challenges, but also opportunities.
3. Research would certainly benefit from more **systematic analysis at sub-national, regional or sectoral level** to study the functioning of different employment ecosystems below national or supranational policy making. In that respect, having a closer look at EU member states less studied such as the CEE countries would also be a plausible step, in particular given the dynamic economic development, but also restructuring going on there. This could show more explicitly how actors deal with the triple transition and how and to what extent existing and evolving institutional mechanisms help with sustaining positive job environments, namely via firm-level and sectoral collective bargaining as well as supportive arrangements at the regional level. This type of research could be of particular use in the context of the European strategic agenda.
4. From a data and methods point of view, research benefits from access to new data sources that extend beyond standard administrative and survey data. Here, there is scope for new insights and for cross-checking findings, for exploring novel type of data and use better indicators that are informative about institutions, their application and concrete procedures in administration, collective bargaining or firm-level practices. Additional potential to explore more systematically comes from linking longitudinal employee and employer data, in particular when working with them in an internationally coordinated way. Addressing the big challenges of the triple transition, research needs to go beyond quantitative analysis and should adopt more **mixed method approaches** to study processes of adaptation and the role of actors, including their perceptions, strategies and behaviour. Case studies might be particularly telling in that respect, apart from complex quantitative studies. Combined methods would also allow for taking more systemic and comparative perspectives that can capture institutional arrangements and their evolution as brought about by actors that deal and cope with a changing environment.
5. One aspect that warrants more systematic analysis is the **comparative study of political strategies and reforms**, in particular the political facilitation of forward-looking policies that help shape the triple transition in a productive and inclusive manner. This calls for a better understanding of the political economy and actual

policy making, but also collective and broader societal or corporatist bargaining and the formation of supportive coalitions. In that respect it would also be desirable to move beyond general policy pointers and to reach more concrete, substantial and feasible policy options, derived potentially from in-depth case studies. The same is still true for the regulation of employment types and associated elements of security and flexibility.

6. Lastly, a relatively understudied field is the **practical implementation** of policies such as active labour market policies, training agreements or changes in the regulation of contract types. Reforms can hardly bring about expected (positive) effects if they are not implemented coherently as we frequently see ways of circumvention, non-take up or reinterpretation in practice. This may have to do with administrative complexity, intransparent or lacking information or ambiguous or competing objectives and interests. Also in that respect we can expect notable differences across sectors, types of firms, across regions, or with respect to more or less vulnerable groups on the labour market.

4.2. Part 2: Research gaps and research needs

In addition to the observations related to the first part of this scoping-study, insights gained in the second part suggest the following research gaps as well as long- and short-term research needs:

7. Studies building on **large qualitative datasets** are relatively rare today and could shed light on the transformations underway through comparative studies on emerging new forms of employment and new work organization and task recomposition.
8. Multidisciplinary research into the **sustainability of salaried and self-employed work across sectors**, companies and functions could be developed in a more integrated way, building on past work on work intensification, digitalization, algorithmic management, job attractiveness and sectors under pressure. It remains to integrate the dimension of work organization as a comparative issue within the conditions of sustainability of future work. The "most different cases" method could be used for in-depth case studies of extreme unsustainability situations and, on the contrary, particularly desirable and attractive work situations.
9. Research on occupational health, burnout and work-life balance prefigures a trend toward more integrated research between **psychology, ergonomics, sociology and law**. The need to protect non-work time, as well as training and learning time, in a work environment of accelerated and intensified temporalities, driven by new technologies, remote work and the blurring of boundaries between

the workplace and private life and based on a norm of permanent availability of employees are some examples of this trend.

10. More systematic and comparative research on experiments and productive alternatives. These experiments, some of which date back ten years or so, are now sufficiently numerous and booming, and provide sufficient hindsight to initiate comparative research that would assess them in terms of sustainability, economic model, durability, efficiency and scaling modes, in a context of possible war economies on the one hand, energy transition and sobriety on the other, and finally policies of sovereignty and relocation of industrial or manufacturing activity. Similarly, the study of **alternative systems of ownership and value production**, such as free software, free licenses and opensource software, is still under- researched in terms of its impact on the rest of the productive fabric, its place in the general economy and the forms of work it enables.
11. Research into the regulation and governance of algorithms and large language models in the worlds of work, as well as into the law, institutions and norms needed to preserve human agency and decision-making within tasks and their composition, seems necessary in the short term. Similarly, the **blurred and recomposed forms of employment**, whether for internet content creators or platform workers, or global, migrant or forced labour, call for comparative studies on new institutional forms of framing the employer/employee relationship. The relationship between autonomy and surveillance for employees and self-employed workers in the digital or other sectors is a subject that is still under-researched. More generally, future forms of work organization, as well as the regulations and balances of power between actors (employees, employers, Stake Holders, Share Holders, State and Public Policies) could give rise to further research.
12. Research into transformations in **corporate governance**, including financial governance, and into sustainable management systems could be pursued, in view of the proliferation of new cooperative, non-profit or hybrid public/private statutes. The question of employees' power to act, their participation in decision-making, and the new rights required for employees, such as an extended right of withdrawal for ethical or ecological causes, could be studied.
13. The rising and continuing crisis of **vocational and public services work** (physicians, teachers, police, justice, care and education ….) should be addressed in completely renewed research. As those occupations are closely linked to democratic models and politics.
14. Finally, more **fundamental research** into categories of thought and measurement of the value and usefulness of work, as well as the boundaries of work (reproductive work, subsistence work, unpaid work, free work, domestic work, content creation, work at home...) has been developed for over fifteen years in academic research, without finding much echo in institutional or European research programmes. However, following the example of the ESeG (European

Socio- economic Groups nomenclature) standard, built on research stemming from the UK sociologist Goldhorpe's works, bridges between fundamental research on the new categories and boundaries of work, as well as on the evolution of relationships to work, could enable us to build renewed tools and representations of a work undergoing major changes in its content, organization, usefulness and social desirability.

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