

Technological Progress and Inequalities of Time allocation and Well-being

20 November 2019 | 10.00 to 17.30
EHESS, Room AS1_08 (Basement)
54 boulevard Raspail, 75006 Paris
Contact: ffj@ehess.fr

24 hours are distributed for work (paid/ unpaid) and leisure. How much time to allocate work and leisure would decide one's earning, one's social life, and one's health condition. Longer working hours would lead more earnings, but at the same time, it will bring less time for sleep, less time for exercise, and less time for leisure. That would also have a negative effect on their children, because lack of time would prevent parents from providing good food or good education for their children.

Technological progress does have an effect on one's time allocation. Telework provides greater flexibility at work and it can allow workers to use their time more productively. "The right to disconnect", which is recently introduced in France, is also a good example of the treatment for technological progress in order to secure workers' leisure time.

Japan is experiencing population aging that is unprecedented in the world, and it is necessary to adopt new forms of work with taking full advantage of technological progress. France is one of the leading countries where the policies towards work life balance was introduced in an early stage, and the reforms are highly regarded in terms of productivity and job satisfaction. We are sure we can learn from the experience of France.

This workshop is co-organized by FFJ and the Panel Data Research Centre of Keio University (PDRC) and funded by Grant-in-Aid for Specially Promoted Research 2017-2021, as the part of the research project: "Economic disparity and intergenerational transfer in the longevity society: Policy evaluation analysis using panel data".

Programme

10.00 | **Welcome Address**

Sébastien Lechevalier (EHESS)

10.10 | **Introduction**

Yoshio Higuchi (Keio University)

10.15 | **AI/Robots and Time: Beyond Myths, a Research Agenda**

Philippe Askenazy (CNRS-ENS)

Various actors have interests to promote that the impact of artificial Intelligence on labour will surpass that of previous General Purpose Technologies. This claim fuels worries about a lack of jobs in the next decades and conversely hopes of a better work-life balance. I argue that the research question should be inverted: in a context of a shrinking working-age population, could AI transfer sufficient labour force and hours for addressing ageing and climate change?

10.55 | **Use of New Information Technology such as AI and Worker Well-being: Evidence from Panel Data Analysis**

Isamu Yamamoto (Keio University)

This paper examines how the introduction and utilization of new information technologies including AI, IoT and big data affect the well-being of workers including their mental health and job engagement, in addition to the types of workers and workplaces that are more influenced by the changes, based on worker panel data. First, looking at the situation of the introduction and utilization of new information technologies shows that workplaces that employ workers with more routine tasks, higher wages, longer working hours, and where there is a focus on operational efficiency, tend to introduce and utilize new information technology. Next, panel data estimation shows that well-being indices such as the mental health index and work engagement index tend to increase after the introduction and utilization of new information technology. Thus, the introduction and utilization of new technologies such as AI can be interpreted as improving well-being, including mental health and work engagement, meaning that the effect of supporting workers is greater than the negative effect caused by the extra workload or learning cost that workers must bear due to new technologies. In addition, it is shown that the impact of such new information technology on well-being is more evident for workers with clear job descriptions, high job discretion, frequent, suddenly changing work demands, and employed in workplaces that conduct work-style reform such as improving operational efficiency, reducing overtime work, promoting morning and evening non-work activities, and promoting paid holidays.

11.35 | **The Great Convergence? Gender and Unpaid Work in Europe and the United States**

Ariane Pailhé (Ined)

Individuals' use of time has changed dramatically in most industrialized countries across the last decades. Women have increased their labor force participation and time spent in paid work, and also reduced the amount of time they spend in unpaid activities. Men have increased their time in unpaid work, but not been enough to compensate so women still perform the bulk of unpaid work irrespective of context. Though gender convergence in paid work, primarily through change on behalf of women, is quite well understood, there are still questions to be answered regarding the ongoing change in unpaid activities. This paper addresses two questions. First, what are the changes we can observe with respect to men's and women's time spent in unpaid work (i.e. housework and childcare) over the past three decades across Europe and the United States? Second, which factors explain these changes, and what factors work in favor of gender equality and reduce the gender gaps in housework and childcare? More specifically, is change due to compositional changes in the population. i.e. education, family structure, labor force participation, or is it driven by social and normative changes among the population? We observe a decrease in the gender gap in unpaid work, mainly due to the decrease of time spent in unpaid activities among women. Decomposition analysis shows that trends are due to changes in norms and practices rather than compositional changes in the population's characteristics.

12.15 | **Lunch Break**

14.00 | **Time-Adjusted Poverty among Working Households in Japan**

Kayoko Ishii (Keio University) (co-authored with Kunio Urakawa)

Time is a finite resource along with money, and it is essential to fulfilling the basic needs of life. This research focuses on 'time poor' individuals in Japan, where people do not have enough time to engage in child care and housework as well as leisure and other activities. We defined income and time poverty thresholds and estimated the time-adjusted income poverty by considering the situation where households fall into income poverty by purchasing housework-related

services in the market to compensate for their time deficit. Based on the estimated results, we demonstrated that the government needs to increase the policy support, especially for single-parents with children and for double-income couples with children.

14.40 | Innovation and Job Quality: A Virtuous Circle? Country and Firm-Level Evidence

Christine Erhel (Cnam) (co-authored with Mathilde Guergoat)

In this presentation, we will present some results of a European comparative project (QuInnE, Quality of jobs, Innovation and Employment), which aim was to better identify the links between innovation and job quality and test the empirical relevance of the “virtuous circle” hypothesis which is at the heart of Lisbon and Europe 2020 Strategies.

First, using classification techniques, we will identify innovation and job quality regimes in Europe and cross them in order to define a joint typology of EU countries. The results show that innovation and job quality clusters appear generally well correlated, in accordance with the variety of capitalism perspective and to the idea of a “virtuous circle” between innovation and job quality. In particular, the situation of Nordic countries illustrates a regime of complementarity between high job quality and high innovation. At the opposite end, most Eastern and Central European countries display low levels of innovation and job quality. However, some gaps also appear, like for instance in France or Estonia in 2012: both countries display a rather high innovation effort but only average or low levels of job quality.

Second, using a dataset of French firms, we will analyze the effect of technological innovation on employment and job quality at firm level. It shows that innovation increases employment and job quality (measured through wages, the number of permanent contracts and working hours). However, this overall virtuous circle between innovation, employment and job quality should be nuanced: first, because not all social groups benefit from firm innovation, as lower-skilled workers and women are less positively affected in terms of employment and wages; second, as the positive effects of innovation appear mainly in Manufacturing, and not in Services.

15.20 | The Human Sustainability of ICT and Management Changes: Evidence for the French Public and Private Sectors

Nathalie Greenan (Cnam)

We investigate the human sustainability of Information and Communication Technology (ICT) and management changes using a French linked employer-employee survey on organizational changes and computerization. We approach the human sustainability of changes through the evolutions of work intensity, skills utilization, and the subjective relationship to work. We compare in the private sector and the state civil service the impacts of ICT and management changes on the evolution of these three dimensions of work experience. We find that intense ICT and management changes are associated, in the public sector, with work intensification and knowledge increase. In the private sector, ICT and management changes increase the use of skills, but at a rate decreasing with their intensity and without favoring the accumulation of new knowledge. However, their impacts on the subjective relationship to work are much stronger, with public sector employees expressing discouragement, as well as the feeling of an increased effort-reward imbalance when private sector employees become more committed. We find that this divergence is neither explained by the self-selection of employees in the two sectors nor by implementation of performance pay. We identify two partial explanations: one is related to employee turnover in the private sector, the other to the role of trade unions. These results suggest that the human sustainability of ICT and management changes depends on their intensity and on how their implementation takes into account the institutional context of the organization.

16.00 | Coffee Break

16.10 | Inequality through Wage Response to the Business Cycle – Evidence from the FFL Decomposition Method

Naomi Kodama (Nihon University) (co-autored with Izumi Yokoyama and Yoshio Higuchi)

This study explores the change in wage response to the business cycle and resultant wage inequality. First, we find that the pro-cyclical relationship between wage and business cycle has weakened among low-income earners after the late 1990s, despite the fact that wages of low earners had been vulnerable to the business cycle fluctuations before this period, using the Firpo, Fortin, and Lemieux decomposition method. Second, our empirical analyses using the DiNardo, Fortin, and Lemieux decomposition method confirm that the change contributed to mitigating wage inequality among employed people in the subsequent recessions such as the 2008 global financial crisis. This could be explained by the structural changes in Japanese employment system triggered by the financial crisis in 1997, which turned firms' attitude towards downsizing more aggressive than before. This change affected mainly low-income earners who tend to belong to the secondary segment, while the wages and job security of the high-wage workers who mainly belong to the primary segment have stayed stable even after the structural changes. As a result, employment adjustment has dominated wage adjustment for the low-income earners after the change in the employment practice, which led to the results found in this study.

16.50 | General Discussion and Prospects