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Review Article

Working hours – tracking the current and future trends

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Abstract: It is important to track the trends of future working hours, since working hours have strong associations to everyday life and work-life interaction, but also to health. In this paper we aim to track the current and future trends in working hours. We discuss the trends through the key dimensions of working hours: the length, timing, tempo and autonomy. We also consider the role of current trends of spatial changes of work. Changes in working time patterns are fostered by several driving factors: globalization and business restructuring challenging the current work organizations, new information technologies, demographic and climate change and the current and future pandemics. The past and current tremendous changes in working hours indicate that changes in working hours will continue. The contemporary trends in future working hours pose risks for personal, family and social life, material well-being and health. At its best, however, the new post-industrial working time regime may provide more autonomy and time for recovery to employees as new technologies and changes in business structures release opportunities for greater individual autonomy over how, where, and for how long paid work is performed.

Key words: Working hours, Working time, Work intensity, Shift work, Autonomy, Working life, Trends

Introduction

Working hours and working time patterns have been a public health and safety issue for over a century. Working time has often been at the heart of the debates in labour markets since it is a central question for the organization of production. Working hours are strongly influenced by both global and country-specific changes in technological, industrial and service models, but working times have also been standardized and institutionalized during the industrial era. For example, during the 1920's night work was banned for women in several European countries based on an early ILO contention. Working hour patterns, including the places and spaces of work, and regulations associated with the length, timing, and e.g., autonomy have faced monumental changes during the last 100 years – but the patterns are in change even now. Currently, the new technological possibilities and needs for telework, access to digital 24/7 hour services, as well as the megatrends in economics, globalization, climatic change and demographics will probably change also the future patterns of working hours.

It is important to track the trends of future working hours, since working hours have strong associations to everyday life and work-life interaction[1, 2], but also to health

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and safety[3]. Especially long working hours and night shift work are associated with disturbed sleep and fatigue, and the increased risk of occupational injuries and several chronic diseases including the cardiovascular disease and cancer[4–6].

Changing time and spaces of work – driving factors

In this paper we aim to track the current and future trends in working hours. We will discuss the trends of working hours through four key dimensions: the number of hours worked (duration), the timing of the work, work-time intensity (tempo) and working time autonomy[2]. In addition, as the changes in the place of work are closely related to changes in working time flexibility, we also discuss the role of spatial changes of work in future working hours.

We believe that changes in working hours will continue. Changes in working time patterns are fostered by several driving factors: globalization and business restructuring challenging the current work organizations, the rise of new information technologies, demographic change, the current and future pandemics and the climate change.

First, globalization and continuous business restructuring challenge the established forms of the organization of paid work. Throughout the industrial world there have been increasing pressures to renew laws and regulations to permit more flexible and individualized arrangements for paid work. In the industrial era working times were first standardized and institutionalized. The core feature of the industrial working time regime included an eight-hour working day with daytime work and free weekends called "normal" working time. Since the 1970s the industrial working time regime has been replaced with the post-industrial working time regime[2, 7]. The new working time regime is characterised by deregulation of collective norms, diversification of the length (short and long hours) and pattern of working time, increase of work intensity and blurring of the limits of work time and leisure.

Second, the rise of an information society using new communication technologies in information-intensive work will strongly affect the current and future working time practices. The information society is predicted to break the traditional divisions between work and leisure. In the optimistic visions of the information society, this is seen as an emancipation from the restrictions of the industrial society. Negative visons emphasise the disintegrating impact of shared time rhythms, as well as the stressing demands of modern just-in-time production - even 24 hours a day and across different time zones[8].

Third, the demographic change is challenging national economies especially in developed countries. A key challenge is a shrinking workforce of the ageing populations which will result in a rapidly increasing dependency ratio. National economics suffer if individuals retire early due to health or other reasons. The allocation of time in paid work is a central issue societally: for example, one of the main aims of the European Social Policy Agenda has been to increase the employment rate, especially among women[9]. This goal is expected to be reached with a good balance between paid work and other life spheres.

Fourth, the impact of the COVID-19 crisis on working practices is substantial. The pandemic has promoted a reassessment of the temporal and spatial configuration of work. Especially, working from home has become, perhaps permanently, a reality for a vast number of workers with various implications on individuals and families everyday life[10].

Fifth, climate change is a megatrend that will have impact on industrial restructuring across the globe. It probably affects also working conditions and working hours through changes in world economics and agriculture, immigration and the development of new technologies.

Overall, working time is a central question for the organization of production. It is also a central question of everyday life of workers and their families. The contemporary trends pose risks for personal, family and social life, material well-being, and health and safety. At its best, however, the new post-industrial working time regime may provide more autonomy and time for recovery to employees as new technologies and changes in business structures release opportunities for greater individual autonomy over how, when, where and for how long paid work is performed.

Past and current trends in working hours

During the last decades, industrial shift work has started to decrease in the developed countries, new investments for primary production taking place most often in countries with low salary costs. Industrial production has increased especially in China and other Eastern countries, and in Africa. In Europe and U.S., primary production has often decreased due to the transfer of investments and production to the lower-salary cost countries. Cheaper production costs are associated to lower salaries, but also to longer average working hours. Working hours are less strictly regulated in China and many developing countries compared to e.g., EU with active working time legislation[11] and active participa-

tion of the unions to the negotiating on working hours.

Duration

Although paid working hours, particularly in the more developed countries, have declined dramatically during the last hundred years, the length of working time remains a topic of intense political debate. The decrease of annual working hours per worker has been strongest in countries like South Korea and Japan, even long working hours are still common in these countries[12]. Annual working hours in general tend to decrease when productivity increases since employees are able to work less in more productive economies.

Fig. 1 depicts the current state of work hours throughout the world. The data is derived from ILOSTAT (https://ilostat.ilo.org/) and the map drawn using Eurostat IMAGE tool. Europe and Northern America are characterized by relatively short work hours compared to the Asia and Northern Africa, where very long or excessive work hours are common. In the Central and South America, working time is at the similar level as in the Northern America.

From the health perspective duration of work hours is important. In earlier literature, long working hours – called also as excessive working hours – are usually defined based on potential safety and health risks. Threshold of 48 and 55 weekly hours is typically used in determining long hours because there is evidence that working longer could expose workers to potential health risks. Respectively, in the literature, the threshold of 35 hours is commonly used to define short working hours[13].

Indeed, earlier literature have reported the direct and indirect negative physical and psychological health and well-being impact of *long* working hours[14–15]. The association of long working hours with health may depend, however, on regional and cultural differences. For example, a recent meta-analysis on the association of long working hours with depressive symptoms was stronger in Asian countries, including studies from Japan, South Korea and Thailand, than the rest of the countries from Europe, North America, and Australia[16]. Stronger sense of community instead of putting individual goals first, and the possible stigma related to reporting mental disorders, may also influence the existing cultural differences, and the possibilities for help-seeking at an early phase.

In general, working hours are generally less regulated, or fully unregulated outside Europe. In North America, working time regulations apply primarily to transport, and nuclear power plant operators. This regulation is focused on the maximum daily limits on time on-duty, days on-duty and rest periods within the on-duty periods. Mostly similar type of regulations focusing on the duration of the driving hours instead of all working hours is found in Canada and

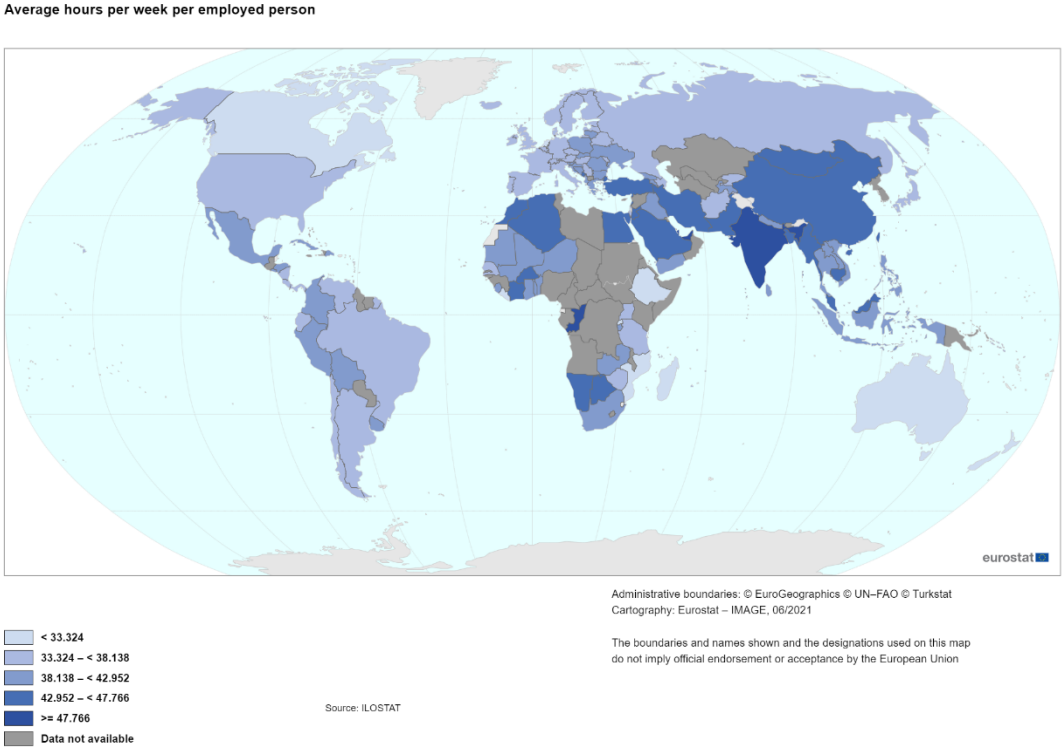

Fig. 1 Average hours per week per employed person in the world 2014–2020 (source: ILOSTAT)

Australia[17].

Furthermore, long working hours may have negative effects on work-family integration and on personal relationships. Recently there has been increased attention drawn to the fact that 'too little' work (e.g., zero hours contracts) could also be a well-being and work-family issue[18].

According to EU-LFS surveys, average duration of weekly working hours show relatively stable trends over the two recent decades (2000–2018)[19, 20]. There is also a stable or decreasing trend in the prevalence of excessive work hours (over 48 hours/week) during last two decades in European countries. Contrary to excessive work hours, there seems to be virtually no change in the prevalence of short work hours (34 hours/week or less) during last two decades in European countries[20].

Previous research points, very importantly, to the fact that the longer the working hours are, the more willing people are to reduce them – and vice versa[19, 20]. Clear majority of men and especially women doing excessive working hours would prefer to work less hours. By contrast, large share of both women and men doing short working hours would prefer to work more hours. Thus, a large share of both excessive and short working hours is done unwillingly.

Although the trends in duration of working time show minor trends in Europe, we may expect polarized trends across socio-economic groups, genders and also countries. On the one hand, among employees in dynamic sectors and with a good labor market situation, working hours are stretching. The less educated are more affected by low-autonomy work and underemployment. Very short part-time work often associates with other harmful work conditions, such as a lack of career possibilities and protection.

Timing

The raise of service economy in the post-industrial era, along with globalisation and labour deregulation, has led to a dramatic increase in the demand for employees to work around the clock. Debate in this area has gathered pace with the increase in women's employment and the way in which the unsocial work hours of women working in service industries – especially on Saturdays and Sundays – have changed families' time structures[21]. One of the most influential transition in the labour markets is that the 'dual-earner' household has become a common arrangement especially in industrial countries. As women have massively entered the labor force and especially in the service industries where working hours are increasingly atypical, work-life balance has emerged as an important issue.

Timing of work is greatly associated to shift work that has been defined by the International Labour Organization (ILO)[22] as "a method of organization of working time in which workers succeed one another at the work-place so that the establishment can operate longer than the hours of work of individual workers". Shift work has traditionally been essential in most societies to guarantee basic infrastructure services associated to health care, transportation, and the supply of electricity, water and gas as well as basic telecommunications. The industrial change and the needs to use expensive production technology on 24/7 basis, as well as the amplified needs for industrial productivity increased the prevalence of shift work for a long time. Shift work was common already in the 19th century and increased during the 20th century with the intrusion of new technology and growing industrial needs. The association of shift work with health and safety has been widely studied. Due to the high prevalence of shift work in many countries, the numerous associations of the shift work with the established health risks like disturbed sleep and insomnia[23, 24], occupational injuries, and the chronic diseases including cardiovascular diseases and cancer[4–6], any changes in the prevalence of shift work will be relevant also for occupational health and safety.

In Europe and other developed countries, the prevalence of shift work has stayed high, about 20%[25] during the last decades. In 2018, 16.7% of employed men and 9.4% of employed women worked also nights, based on the EU Labour Force Survey covering 28 European countries[26]. The amount of shift work has stayed high due to the increase of service sector and transportation that have expanded in all developed countries together with the structural and economical changes, and the globalization increasing trade between the countries. In EU, shift work is now most common in social and health care sector, hotels and restaurants, retail and sales, public administration and defense, and in transportation sector – not forgetting the manufacturing that included more employees during the earlier decades[27].

The average working hours in shift work are mostly around 40 hours in Europe while they may be over 70 hours in many companies of China and Africa. The average working hours are important for the health effects of shift work since the lower average working hours allow the use of shorter work shifts, lower number of night shifts, and more free days compared to shift systems with high average working hours. Shift systems with around 70 hours a week are common in rapidly developing countries, and these schedules can be very stressful resulting in increased sleepiness and safety hazards at work[28].

The working hours in countries like Japan and Korea are also well regulated nowadays in relation to the number of night shifts and consecutive night and other working days[17]. However, we could not find good statistics on the trends or legislation of shift work patterns outside Europe.

Tempo

Although a certain level of time pressure can be a natural part of life, prolonged and severe time pressure is related to health problems as well as to less job satisfaction, general well-being and leisure[29]. Thus, working tempo or intensity is often conceptualized as job demand, contrary to job resources such as autonomy[30].

Time pressure can be expected to increase employees' negative emotions, stress and fatigue, and these reactions may spill over into family life, which may increase work-to-family conflict by limiting employees' abilities to perform family duties[31]. High time pressure at work is associated with early retirement intentions[32]. Increasing work intensity or tempo has been commonly reported during last decades. The sources of work intensification are manifold but earlier studies emphasize meaning of technical, organizational, and industrial change; declining worker power; and increased insecurity[33].

Autonomy

Ability to control one's own time (duration, timing, predictability and tempo) is associated with better health and social well-being of employees[34], to the ability to achieve a satisfactory work-life balance[35] and to labour force participation. Working time autonomy is a key feature in the overall job quality, which is expected to become more important. The current COVID-19 crisis with massive shift to teleworking has undoubtedly increased the time autonomy among millions of workers. However, to what extent this practice is continued after the crisis is debatable. Regarding working time autonomy, it is also important to consider how predictable and fragmented working hours are. The predictability of hours suggests that one is able to coordinate and plan activities taking place. Particularly to families with children, unpredictable, fragmented hours pose challenges because family routines require predictability[36]. Overall, work hour and employment unpredictability concerns either young employees or low educated and those in elementary occupations[19]. Concerning young labour market entrants and emerged digital platforms as 'employers', unpredictability can refer to new types of on-call work without pay during waiting time.

Changing places of work

Eurofound's e-survey Living, working and COVID-19[34] conducted in July 2020 across the European Union showed that nearly half of the employees in the sample worked at home at least some of the time and a third reported working exclusively from home. As the response of employees and employers to the COVID-19 teleworking experience has been generally positive, teleworking is likely to become more commonplace. The risks of extensive telework relate to increasingly blurred work-life boundaries and to physical and emotional exhaustion.

Future trends in working hours

The main effects of COVID-19 pandemic have been on the shift towards telework[37], but that has naturally taken place only in work that can be done independent of time and place – mostly at home. Shift work, that is carried out in hospitals, factories and transportation, has been influenced marginally. However, the fluctuations in demand for services and products needed for the prevention and treatment of the COVID-19 pandemic have also influenced working hours in hospitals and some factories. COVID-19 pandemic has increased workload especially in health care, like in intensive care units[38]. In some countries with highest prevalence rates of COVID-19, occasional overtime and changes in work schedules have increased also work stress in health care. After the current pandemic, health care systems in many countries are overloaded due to accumulated undone work, the "treatment debt". The "treatment debt" and risk for future pandemics may keep health and social care sector busy still for years – demanding also long working hours and 24/7 work occasionally in inpatient departments.

Adaptation to economic shock

Unequal distribution of work hours in the form of under- or over-employment may have negative economic and social consequences, such as an unequal distribution of incomes and reduced well-being. Current COVID-19 pandemic has stimulated debate on working time as a measure to enhance a more egalitarian distribution of employment. Governments around the world have been fighting against COVID-19 and trying to find measures needed to mitigate the resulting damage to economies. Some countries have used working time reduction as a measure to fight against unemployment. For example, Germany has a long tradition in utilizing short working hours (*Kurzarbeit*) in adapting to economic shocks. However, many of the re-

distribution programs have been designed as short-term crisis measures and at the aggregate level working hours will probably return to their earlier level. Shorter working hours maybe, however, targeted for specific groups in the future. Reduced working hours can enhance work-life balance by making it easier to combine employment with care responsibilities. Shorter work hours may make it easier for young adults to enter the labor market and to extend work life participation among older workers. Older people with disabilities or those with decreased work ability can often benefit from shorter working hours. For employees with work disability, shorter work hours may also improve return to work and increase work participation.

New forms of insecure employment, such as zero-hour jobs, on-call work without pay during waiting time, multiple job holdings or platform work, pose new questions for workers' economic well-being, health and caring responsibilities. These insecurities may increase the economic pressure to take double jobs, which possibly increases weekly working hours and unsocial timings of working hours. Overall, this type of working hour patterns and employment unpredictability concern usually migrant labour, lower educated and those in elementary occupations. New forms of labour market regulation and social protection systems may be needed to tackle these new issues.

Adaptation to demographic change

Ageing employees with later mandatory retirement age may face increasing challenges due to working in demanding working conditions, like in shift work with high physical and/or cognitive workload. On the other hand, the use of new incentive policies to increase work participation may increase part-time working in older age, and also during old-age pension for additional income. For young people, postponement of childbearing is common until securing their foothold in the insecure labour markets. The use of future incentive policy for maternity leave and part-time work among parents with young children is probably critical for the adaptation to demographic change in aging societies.

Adaptation to 24/7 society

Increased autonomy of working hours will probably improve possibilities to decide on the starting and ending times of the work. Since chronotype, the tendency for being more alert in the morning or evenings is largely genetic[39], this is a welcome change for many evening types in fixed morning shifts. Shift work, having a major impact to the timing of work, will be influenced by the global and country-specific changes in technological and other changes. We do not know, whether globalization will continue as an increasing trend – or will it wane due to an increased need for protection against global competition and interaction, also influenced by the current and possibly future pandemics. Ageing will increase the need for additional 24/7 health and social care services and increase shift work in that sector. The need for healthy workforce to shift work is an additional challenge related to ageing[40]. Shift work is normally carried out by relatively young workers, probably due to being rather stressful and less paid. Ageing of the workforce emphasizes the need for health promotion and improvement of the working conditions of workers in all ages to keep them active in working life.

Adaptation to climatic change

Climatic change is probably the largest megatrends that may influence the working and living conditions in many different ways. One apparent trend in hot climatic countries may be the change of work from daytime to night-time, with lower temperatures for physical outside work. Heat waves are already now a risk factor in many hot countries having especially high number of construction workers[41]. However, climatic change is probably associated in many ways to profound changes in global economic structures, increasing also emigration from Africa and other countries suffering the climatic change most. Any major changes in the number of employees, or hazards in economics will also change the way how work will be organized.

Conclusions

The daily, weekly and lifelong working hours are key determinants of health, individual and family well-being and participation in working life. Recent changes in working time, such as increase of unsocial and fragmented working hours, boundaryless work, high time pressure, de-regulation and differentiation of working hours by gender and socio-economic groups create new demands and challenges. This requires rethinking sustainable solutions for working time that help workers to retain their well-being and health – as well as to maintain work motivation and productivity – throughout working life.

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