Article:
Shibata, S. orcid.org/0000-0002-5944-9721 (2021) Digitalization or flexibilization? The changing role of technology in the political economy of Japan. Review of International Political Economy. ISSN 0969-2290

https://doi.org/10.1080/09692290.2021.1935294

Routledge
Taylor & Francis Group

Review of International Political Economy

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/rrip20

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To cite this article: Saori Shibata (2021): Digitalization or flexibilization? The changing role of technology in the political economy of Japan, Review of International Political Economy, DOI: 10.1080/09692290.2021.1935294

To link to this article: https://doi.org/10.1080/09692290.2021.1935294

Published online: 07 Jun 2021.

REVIEW OF INTERNATIONAL POLITICAL ECONOMY
https://doi.org/10.1080/09692290.2021.1935294

Digitalization or flexibilization? The changing role of technology in the political economy of Japan

Saori Shibata

Leiden Institute for Area Studies, Leiden University, Leiden, Netherlands

ABSTRACT

We are increasingly surrounded by talk of digitalization. Yet, we remain unsure about what impact this digitalization will have upon socio-economic institutions, how the introduction of this digitalization will be contested, the likely role of the state in managing the adoption of digital technology, and the likely consequences for the broader political economy if and when it is introduced. This article examines the process of digitalization as it has unfolded in the service sector in Japan. Based on qualitative interviews with managers in the hospitality industry and union officials, the paper depicts a process that contrasts starkly with the more optimistic view adopted by some commentators, according to which digitalization has the potential to improve working conditions and contribute to a more stable form of growth. Instead, the paper draws on Regulation Theory to argue that the introduction of digitalization is part of a wider process of neoliberalization. As such, digitalization has contributed to deskilling, the fragmentation of work tasks, a digital divide, the intensification of work, and higher levels of workplace surveillance. This represents a further dismantling of the social compromise that underpinned Japan's earlier period of economic growth.

KEYWORDS

Digital economy; digitalization; regulation theory; digital work; flexibilization; wage-labour nexus

Introduction

Digitalization has become one of the key topics facing those who study contemporary political economy. This includes a concern for the speed and degree of change created by new technologies, and questions over the ability and capacity of digitalization to fundamentally transform the contemporary way of being. For techno-optimists, including 'left maximalists' such as Mason (2015) and Sirnicek and Williams (2015), digitalization is a means to ameliorate or even abolish the exploitation that constitutes wage-labour (Dyer-Witheford et al., 2019, p. 6). Other techno-optimists, while acknowledging the potential for a move to lower-wage jobs, nevertheless emphasize digitalization as a fundamental break from the past, having

CONTACT Saori Shibata s.shibata@hum.leidenuniv.nl Leiden Institute for Area Studies, Leiden University, Leiden, Netherlands.

the capacity to create more value with less input (Brynjolfsson & McAfee, 2014, Ford, 2016), or a necessary means by which employers can re-skill and up-skill their employees (World Economic Forum, 2018, pp. 18, 22–23).

In contrast, a group of more sceptical commentators have raised a number of alarming concerns regarding the integration of technologies. Techno-sceptics are wary of claims regarding the potential improvement in working conditions and that automation is considered capable of bringing about (Dyer-Witheford et al., 2019, p. 4). These sceptics view digital development and its research productivity and capacity, as disappointing and exaggerated (Pupillo et al., 2018:45; Broussard, 2018, p. 69; Moody, 2018). Digitalization is costly, unintelligent and limited (Broussard, 2018, p. 29, 69) and biased (Broussard, 2018, p. 80; Eubanks, 2018), leading to unintended concerns/effects (Sugiyama et al., 2017), or has failed to change class relations (Huws, 2014; Moody, 2018).

Other techno-sceptics either doubt the capacity of technologies or consider harmful impacts that technology is likely to have on workers and the economy, while acknowledging the effects of digitalization, they nevertheless warn that digitalization will replace a large number of jobs (Frey & Osbourne, 2013, Ford, 2016, pp. 12–15; Nomura Research Institute, 2016; Frey, 2019). Some argue that digitalization creates a digital divide and produces a bifurcation between professional jobs (management, consulting, financial services) and low-wage jobs (such as monitoring and simple manipulation) (Hirsch-Kreinsen, 2016, pp. 6–7). Some claim that algorithms and big data punish the poor and increase inequality (Eubanks, 2018) or that they are used to promote zero-hour contracts in the interest of personal gain (Mazzucato, 2019). Some emphasize the diminishing level of user's self-control, as well as a reduction in human decision making under the digital age as the Internet of Things (IoT) and AI seek to optimize outcomes and operation, and therefore, takes away our choice, decision, human autonomy and power (Zuboff, 2019, p. 278; Korinek, 2019, p. 13). Moore views the introduction of workplace surveillance as imposing agility on workers (2019, p. 126).

As we can see, views on the effects of digitalization are divided over the question of the likely impact of digitalization upon the workplace, working practices, and labour market inequality. These debates have been played out through a consideration of what some might term the 'uberization' of work and society (Davis & Sinha, 2021; Zwick, 2018; Thelen, 2018), considering especially the impact of gig work and platform work upon different political economies (Wood et al., 2019; Anwar & Graham, 2021; Shibata, 2020). They also reflect more longstanding debates over the relationship between technological change and its impact upon the power relations within the workplace (Burawoy, 1985; Rubery & Grimshaw, 2001; Moore, 2019). The paper explores these questions through a detailed consideration of the process of digitalization as it has occurred in the case of Japan. In doing so, it seeks to contribute to the ongoing study of comparative capitalisms, which has gained in prominence in the field of IPE in recent years (Hay, 2020; Hein et al., 2020). This represents a focus on the different socio-economic and institutional configurations that constitute the national models of capitalism that exist within an overall global economy and which are studied in order to understand how those national configurations mediate the effect of broader socio-economic trends (Hay, 2020). In doing so, it draws on Regulation Theory, which highlights the role of key socio-economic institutions in enabling social

compromise in order for growth and capital accumulation to occur (Boyer, 2018, Lechevalier, 2014a), and therefore also points to the *absence* of such institutions, and associated social compromise, as a source of dysfunctionality (Vidal, 2013).

The study adopts a Regulation Theory (RT) approach due to RT's ability to help inform a study of the nationally-specific institutional configurations that constitute different national models of capitalism. In particular, Regulation Theory highlights the way in which each model of capitalism must deal simultaneously with coordination problems and challenges arising from a number of institutional forms, especially: the wage-labour nexus, inter-firm competition, the form of money, the role of the state, and the insertion of the national model of capitalism within the broader global economy. This highlights the way in which the institutional compromises that are established, which together make up the 'mode of regulation', in turn affect each other and mediate more general global trends of capital accumulation. In adopting a Regulation Theory perspective in the present study, therefore, we are able to understand the move towards digitalization as an institutionally-mediated outcome. The particular form, and mode of regulation, that characterises Japan's model of capitalism will, in turn, mediate the impact of processes of digitalization. As such, we come to understand that digitalization is not solely a process of technological change; but instead is a process mediated by the changing institutional conditions that constitute the national political economy within which technological change occurs. It is this which is the subject of the present paper.

Japan is particularly well-suited for such a study for a number of reasons. Japan is an advanced industrial democracy with a number of the key problems that digitalization has been identified as having the potential to address. In particular, Japan's ageing population and labour shortage are seen by many as key problems that have the potential to be resolved through digitalization. In addition, Japan is often considered a country where technology is well integrated into the workplace in a way that generates important benefits for firms and the wider economy. Wu, et al., for instance, view Japan as a major power in robot production, and the use of robots in the service sector (2018, p. 4). Wright suggests that the Japanese state has a more focused approach to its support for product development in robotics than its rival countries such as China and South Korea (2020, p. 14). Ford highlights how one Japanese sushi restaurant chain has pioneered the use of advanced technologies and in doing so made itself the most competitive in the industry (2016, p. 15). Ford and Ross also view Japan as leading the world in robotics and introduce Japan's robotisation as a model for the eldercare, restaurant and manufacturing sectors (Ford, 2016, p. 25, p. 162; Ross, 2016, pp. 60–62). From an anthropological perspective, Kovacic (2018) argues that robot technologies are positioned in Japanese society in such a way that they intermingle with Japan's 'thing-making culture' (*monozukuri*), familiar products, and nostalgic imaginary of anime-based characters, and therefore tend to readily gain social acceptability (pp. 585–586; for similar accounts, see Kovacic, 2018, p. 586, Ema et al., 2016, Yamamoto, 2019). Japan is therefore often portrayed as a country context in which technology has significant potential through which digitalization can generate socio-economic improvements, thereby amounting to a 'crucial case'.

The paper proceeds as follows. First, it sets out a Regulation Theory approach and its implications in terms of how we can understand the process of digitalization within Japan's labour market, or in the terms of Regulation Theory: the wage-

labour nexus. Second, the paper provides an overview of the key processes observed within Japan's political economy over recent years, highlighting especially the way in which digitalization forms part of a wider process of neoliberalization, in which the declared pursuit of improved employment and working conditions conceal more malign processes of deskilling, the fragmentation of work tasks, a digital divide, the intensification of work, and higher levels of surveillance. Third, the paper presents a detailed case study of the process of digitalization in Japan's hospitality sector, based on qualitative interviews with both managers and union activists, witnessing a number of the trends outlined above. Finally, the paper concludes by arguing that, in contrast with the more optimistic view adopted by some commentators, according to which digitalization has the potential to improve working conditions and contribute to a more stable form of growth, digitalization in the case of Japan has been part of a broader process of neoliberalization, and in doing so has contributed to the further dismantling of the social compromise that underpinned Japan's earlier period of economic growth.

Regulation theory and the wage-labour nexus in Japan

Regulation Theory is a Marxist-rooted approach to heterodox political economy which seeks to understand the transformation of different forms of capitalism, each of which consists of a different combination of different types of socio-economic institutions (Boyer, 2018). Some models of capitalism are more subject to change than others, which during the period of neoliberalism has meant that institutions in some countries have undergone more thorough processes of neoliberalization than others (Amable, 2017, p. 1). This paper draws on Regulation Theory and its emphasis on the role of institutional configurations, in order to explore the impact of digitalization on workers in Japan. This section examines the way in which one of Japan's key institutional forms – the wage-labour nexus - has experienced this process of digitalization. In doing so, the term 'wage-labour nexus' refers to a system or mechanism which coordinates employment relations and manages/suppresses demands from unions and workers in exchange for a certain degree of social (or socio-economic) compromise.

As Lechevalier et al. (2014) describes, Regulation Theorists view social compromise as a necessary goal within the wage-labour nexus, which can be achieved through measures such as skill training, innovation, and employment security (pp. 86-87). Indeed, the classic form of Japanese capitalism, which is typically viewed as having been in place from the 1950s to the 1980s, is commonly considered to have been built upon such a form of social compromise (Lechevalier et al., 2014). Importantly, however, this social compromise in Japan was dualistic. The employment security that existed within large firms sat alongside, and in part depended upon, insecurity in small firms. Regular workers' security was enabled by the insecurity of non-regular workers and workers in small firms. Male workers' employment security was enhanced by the insecurity of female workers under the male breadwinner model (2014, pp. 87–89). The social compromise associated with the classic Japanese model was not therefore egalitarian, but it was nevertheless more equal than other (neo)liberal models of capitalism. In particular, it provided forms of non-market coordination which limited the growth of labour market inequality in Japan (Lechevalier et al., 2014, p. 88). From the 1990s onwards, however, Japan

has seen a weakening of equality, and a decline in social compromise and employment security, as a result of decay of previous coordination forms, the diffusion of neoliberal norms and practices, and an increase in heterogeneity of Japanese firms (Lechevalier et al., 2014, p. 92–100; Shibata, 2020). As a result of this transformation, Japan has experienced an increase in long-term employment, and an ending of the seniority wage system and enterprise unionism, resulting in Japan becoming one of the least equal among the OECD countries (Lechevalier et al., 2014, pp. 103–104).

Digitalization has been viewed as crucial for the economic growth of many advanced economies, especially in the case of Japan. As Regulation Theory reminds us, however, the way that digitalization progresses is itself embedded in the socio-economic institutions and contexts in each national economy. Yamamoto (2019) highlights the importance of considering not only wages and unemployment (which technologies have an impact upon), but also the working practices, work-style and nationally-specific labour market systems that also form part of the wage-labour nexus. In the same way that neoliberalism has been adopted and progressed in various forms, digitalization has been introduced differently depending on the institutional context and socio-political configuration in each national economic model within which it has occurred. We need to examine, therefore, national-specific models of capitalism in order to consider how digitalization adapts itself to particular labour markets, and whether this has the potential to contribute to the creation of a new social compromise.

Regulation theory starts with the assumption that each model of capitalism has tendencies towards crises and is therefore inherently unstable. Nevertheless, certain models of regulation – which we can conceptualize as specific configurations of socio-economic institutions – have the potential to have temporarily stabilizing effects which suppress class conflict and create the conditions for economic growth (Aglietta, 1998; Boyer & Saillard, 2002; Boyer & Yamada, 2000; Amable, 2016). As such, both the specific nature of institutions, and the relationship between different institutions, has an impact upon the socio-economic outcomes that arise (Boyer, 2019). While capitalism has arguably been resilient over time (Boyer, 2018, p. 15), a number of studies highlight how the temporarily stabilizing effects of different modes of regulation over time become dysfunctional (Lechevalier, 2014b; Hirano & Yamada, 2018; Shibata, 2020; Vidal, 2013). In terms of the process of digitalization, we need to consider how this has been adopted in specific contexts in order to identify its effects and consequences and whether digitalization can lead to a new social compromise.

As noted, the wage-labour nexus that emerged during the post-war period in Japan is commonly viewed as having been marked by socio-economic compromise, consisting of managed competition between corporations, incremental wage increases, and long-term employment security, each of which were secured through the voluntary moderation of demands on the part of organized labour. From the 1990s onwards, a declining level of cross-shareholding, a rise in the number of foreign/external board members, and a (resultant) trend towards increased priority for shareholder values, each prompted an increase in the number of flexible workers, a declining importance for collective wage negotiations, and a resultant stagnation of wages, representing a faltering of Japan's established wage-labour nexus. This can be considered a disintegration or destabilization of Japan's mode of regulation since the 1990s, as the (contested) process of neoliberal restructuring has seen each of its

socio-economic institutions subjected to sustained pressures for change. This has also witnessed efforts by the state and corporate elites to seek a different mode of regulation in order to stabilize the country's employment relations (wage-labour nexus) and (re-)establish the conditions for capital accumulation (Shibata, 2020).

This article focuses on the introduction of digitalization in Japan, and especially its impact upon the Japanese labour market, or 'wage-labour nexus'. This is partly the result of a consistent effort by the government of Japan to promote digitalization, especially within the service sector. This reflects a number of key public policy concerns. The Japanese Ministry of Labour, Health and Welfare (MHLW) reports that in 2018 on average roughly 55% of the firms in the hospitality industry (hotels, restaurants and cafes) faced a labour shortage, especially of part-time workers (2018, p. 7). The government focus on the service sector also reflects its relative importance to national growth. The GDP of the service sector recently surpassed the GDP of the manufacturing industry (Mitsubishi UFJ Research & Consulting, 2017a, p. 5). Labour productivity in the service sector in Japan is only 60% of that in the US (Nihon Keizai Saisei Honbu, 2015, p. 58). Further, labour productivity in the hospitality industry in Japan (which we shall focus in more detail on below) is only 34% of labour productivity of the US counterparts (Kinki Kezai Sangyo Kyoku, 2017, p. 6). This disparity is typically considered a result of divergent expectations regarding the labour intensive nature of customer service in Japan. Digitalization is therefore typically considered a potential solution for two key problems facing Japan's labour market: a labour shortage and low labour productivity.

An overview of digitalization in Japan: extending and intensifying flexibilisation

In contrast to the claims of techno-optimists, many observers have raised concerns that digitalization of the workplace has contributed to a disempowering of workers, especially by extending and intensifying Japan's already flexibilized labour market. In order to understand these processes, we need to consider the broader transformation of Japan's socio-economic institutions, and especially labour market, over recent years, and especially under the Abe administration (2013–2020). Figure 1 shows the expanding proportion of non-regular workers in Japan, which include part-time workers, contract workers, and dispatch workers (temp agency workers), and who tend to have fixed-term employment contracts. This trend accelerated under the Abe administration from 2013 onwards with non-regular workers making up nearly 40 percent of Japan's workforce, the highest rate amongst the advanced industrial economies. Digitalization overlaps with this trend of rising number of non-regular workers, as the process of digitalization creates an opportunity for work tasks to be broken down into smaller, fragmented, tasks, which are then allocated to non-regular workers as 'gig work', through temporary agencies, or through some other form of flexible employment.

The move towards an increased proportion of non-regular employment within Japan's labour market has also been accompanied by slow wage growth. Figure 2 shows Japan's limited wage growth over the last three decades in comparison to other major economies. As Lechevalier and Laugier (2019) rightly point out, the adoption of new productive technologies in Japan has commonly been used as a

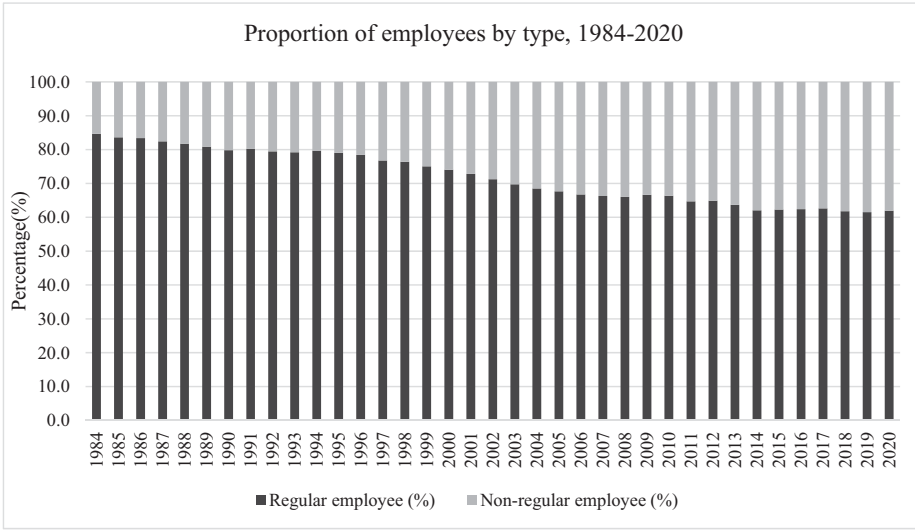

Figure 1. Proportion of employees by type in Japan, 1984–2020.
Source: Statistics Bureau of Japan (2020). Labour Force Survey, historical data, figure 9 (1)

way to simultaneously limit wage growth. This was in part associated with the move to hire a greater number of non-regular workers (Yamamoto, 2019). Stagnating wage growth is especially an issue in the service sector, with many employees viewing this as directly resulting from digitalization. Over 27% of those surveyed in the service industry expect a decrease in wages directly as a result of the introduction of AI (Rengo, 2018, p. 9).

Japan has a high level of work intensity in comparison to other economies (see Figure 3). This includes a relatively high level of 'job strain', which the OECD defines as jobs where workers face more job demands than the number of resources they have at their disposal. This in part results from an ongoing process of work intensification that has occurred in Japan over a number of years, and which also overlaps with the process of digitalization. Government labour market policy has focused predominantly on flexibilization in recent years, with a strong focus on being able to transfer between workplaces in order to further increase labour productivity (Cabinet Office, 2016).

This move to flexibilization has gone hand-in-hand with the process of digitalization. For instance, a recent survey highlighted how 53% plan to increase "job-type employment" (jobu gata koyou), rather than hiring new graduate trainees, as part of moves to introduce AI (Mitsubishi UFJ Research & Consulting, 2017b, p. 58). These results indicate that companies are shifting to a more flexible employment mechanism in the era of digitalization.

Digitalization adds another layer to this ongoing and already-advanced flexibilization of employment relations in Japan, in which workers take up fragmented tasks and fill in the gap between humans and machines. It is in this sense that we should understand digitalization as furthering ongoing processes of labour market flexibilization, and in doing so contributing to the dismantling of the social compromise that underpinned Japan's earlier period of economic growth.

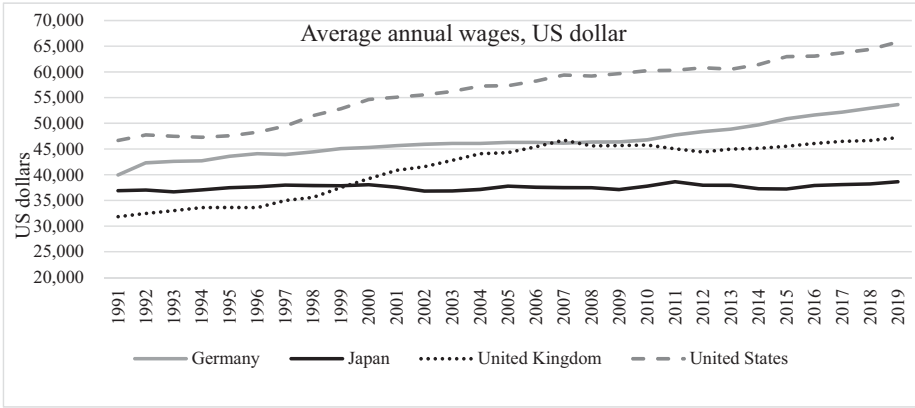

Figure 2. Average annual wages, US dollars.
Source: OECD (2020a) Employment and Labour Market Statistics, Average annual wages.

Government policy (failure)

In order to understand the ongoing development of the wage-labour nexus within Japan we need also to consider government policy. Regulation Theory directs us towards a search for public policy measures that might contribute to the creation of new forms of social compromise (Lechevalier et al., 2014). As such, we are interested in both the question of what policies the government has adopted as part of the process of digitalization, and the degree to which these represent the construction of a new form of institutionalized social compromise.

Table 1 presents a summary of the key policies introduced by the Abe administration in the areas of both labour market policy and digitalization. These have typically promised to improve the quality of life for workers whilst at the same time focusing on the introduction of infrastructure, finance, ICT literacy and productivity in order to ensure that Japanese firms become more globally competitive, while largely failing to address questions of social exclusion and the flexibilizing labour market. In the era of digitalization, flexibilization has become a key characteristic of Japan's labour market, in which only cosmetic policies are put in place without much attempt to achieve consensus or create a social compromise. For Japan's relatively small welfare state, which has historically relied upon firms creating employment security, moves to reduce employment protection have further exacerbated the lack of social security and equality in Japan.

As Table 1 shows, the labour market policies and reforms advocated by the Abe administration (2013–2020) acted to further labour market flexibilization throughout the period (and as such represent a further dismantling of the institutions of social compromise that underpinned Japan's earlier period of economic growth). At the same time, the Japanese government, seeking to appease dissenting workers, introduced a number of (superficial) concessions in drafting labour market policy (see Table 1). This includes, the *Workstyle Reform: The Japan's Plan for Dynamic Engagement of All Citizens*, which consists of a mix of deregulation and re-regulation labour market policies. These policies included a call for companies to increase wages, and to promote fairer and equal treatment of all workers. At the same time,

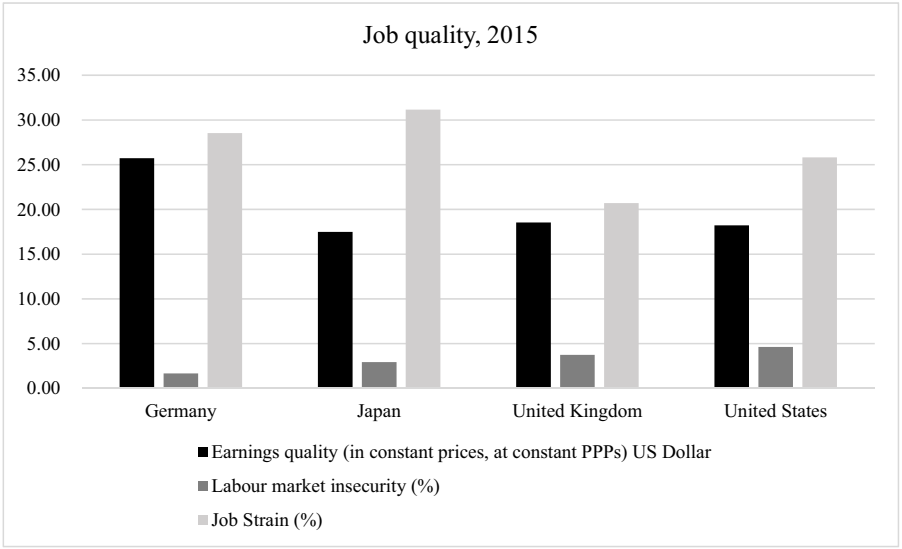

Figure 3. Comparison of job quality.
Source: OECD (2015) Job quality

they also include a deregulatory policy which allows for the exemption of compulsory overtime pay (see Table 1, "High-Level professional system"). It also includes the *Revision of the Part-time Employment Act*, *Labour Contract Act* and the *Worker Dispatching Act* which aim for equal pay for equal work. In revising these acts, the government encouraged firms to shift hiring practices, from non-regular to regular workers, and to focus on equal treatment of non-regular workers in an attempt to improve non-regular workers' status. The government also declared the need to create a better work-life balance by implementing the *Amendment to Labour Standard Act* (see Table 1). This includes a new regulation to limit overtime work (albeit with insufficient level of protection) in order to reduce working hours. As already witnessed in Figure 2, however, wage growth has been limited throughout this period and despite these measures being introduced, suggesting that they have had little impact upon the concrete practices of firms.

The policies on digitalization introduced by the Abe government mainly seek to create a business-friendly and robot-friendly environment (see Table 1). Some policies, including Society 5.0 and AI Strategy 2019, indicate the government's intension to achieve work-life balance and human-centered AI society. Yet, these policies tend to focus on the improvement of productivity, since low productivity (in comparison to other advanced economies) has been a more long-standing concerns for Japanese businesses. The *2019 New IT policy outline* similarly focuses on the improvement of business competitiveness. These policies in the area of digitalization appear to focus on the improvement of the business environment and to accommodate digitalization, but pay less attention to the labour market challenges and working condition.

A close examination of many of these policies reveals that they further the flexibilization of the labour market, by presenting cosmetic improvements and the diversification of employment status types as an opportunity to be welcomed,

Table 1. Policies, regulations and strategies over the labour market and digitalization.

Policies, regulations and strategies	Declared outcomes/goals	Actual impact	Impact on the wage-labour nexus
Workstyle reform			
Workstyle Reform: The Japan's Plan for Dynamic Engagement of All Citizens (MHLW, 2019)	improve the quality of working life, achieve work-life balance, boost labour productivity and introduce a variety of work patterns	Continuous flexible employment and unequal employment practices	The government failed to mediate between capital and labour
Amendment to Labour Standard Act (MHLW, 2020, 2021)	revising the practices of long-working hours and reduce working hours by limiting overtime work hours	the limitation is considered insufficient, still allows long overtime work and enables employers not to pay overtime work for some workers	insufficient compromise and social exclusion
2019 Revision of the Part-time Employment Act, Labour Contract Act and the Worker Dispatching Act (MHLW, 2020)	fairer treatment of workers and equal pay for equal work	The majority of non-regular workers consider their wages are still low. They are excluded from bonus and retirement payments (Rengo, 2019). The majority of non-regular workers have not been converted to regular employment status	a lack of social compromise between capital and labour. The government failed to mediate. social exclusion
2019 High-level professional system (MHLW, 2020)	exempt highly skilled professionals from the work-hour regulations	Unpaid overtime work, exacerbating of wages for some workers	less improvement in workstyle, insufficient compromise
Policies on digitalization			
Society 5.0 (Cabinet Office, 2020)	Human-centered society: make digitalization to support the work and enable anyone enjoy a high quality of life	The focus is placed on healthcare, mobility, infrastructure and FinTech. It has not resolved social challenges as it promises.	No visible attempt to coordinate or build consensus between business and labour
AI Strategy 2019 Kantei, 2019a)	This strategy is to establish the social environment and infrastructure and improve research and development in AI. It seeks to improve productivity and competitiveness of Japanese industries to match with those of the US, Germany and France	This strategy raises the importance of human-centered AI society and increase ICT literacy. The strategy does not take into consideration of the current labour market challenges including inequality, low wages, poor working environment and employment insecurity.	Failed to mediate between digitalization and the wage-labour nexus
2019 New IT policy outline in the digital	This seeks to establish digital friendly	This aim to prepare the technology	

(*continued*)

Table 1. Continued.

Policies, regulations and strategies	Declared outcomes/goals	Actual impact	Impact on the wage-labour nexus
era (Kantei, 2019b)	environment to make Japanese business more competitive	infrastructure and business friendly environment in order to make Japanese businesses internationally competitive, but it has no policy for labour.	No positive impact on the wage-labour nexus
2020 R&D to Achieve Robot-Friendly Environments (METI 2020)	establish robot-friendly infrastructures for R&D and encourage firms to achieve internal-robot friendly environments.	The focus is placed on robots rather than human labour.	Human are likely to be forced to work around robots. Not likely to lead to a consensus-oriented capital-labour relations.

Source: own compilation.

despite at the same time arguably worsening the labour market protection available to employees. This is reflected in the way in which the measures have been received by representatives of organized labour. For instance, as trade union activist Mikamoto (NPO POSSE) argued, Abe government's labour market reforms fails to incorporate the views of workers' or unions' voices, and reforms remain superficial and largely perpetuate precarious hiring practices (interview, January 23, 2019). This reflects the reduced strength of organized labour more generally within Japan's current model of capitalism (Imai, 2021, Watanabe, 2018). According to one Rengo survey, the majority of non-regular workers still face low wages, unequal treatment and no improvement in their employment status (2018, p. 7, 10, 14–15). These problems are compounded by the lack of opportunity for organized labour to contribute to government decision-making. One of the study groups attached to the Ministry of Economy, Trade and Industry (METI) on Workstyle failed to include a single representative of trade unions in its membership (2017). Moreover, discretionary working hours, one of the workstyle reforms advocated by the government, are supposed to increase workers' discretion, but in reality this serves to enable firms to avoid making overtime payments (S. Mikamoto, interview, January 23, 2019).

Digitalization as profit-oriented restructuring

According to Lechevalier and Laugier (2019), Japan's success in production in the 1970s and 1980s was underpinned by its approach to human resource management, which entailed corporate investment in training workers and Toyotism (efficient production mechanism including just-in-time production and teamwork), and the organization of production, rather than technology itself. Workers were typically well-trained and were cognizant of the wider process of production. Workers' well-being and the stable increase of wages also considered to contribute to the creation of class compromise within the firm. These strengths were lost as the labour

market and firms in Japan underwent a process of neoliberalization (Lechevalier & Laugier, 2019).

This process of neoliberalization has also witnessed a concerted effort by firms to hold down wages in an attempt to increase the profit share, including through the restructuring of firms. It is here, moreover, that we see a further overlap between the wider processes of neoliberalization and that of digitalization. Business managers have consistently adopted digitalization in an attempt to improve labour productivity and increase profit, resulting in the intensification of work and undermining workers' status. For instance, Keidanren, the Japanese business association, proposed a set of reforms in its document, 'workstyle in the era of Society 5.0′, that encouraged more flexible work, including tele-working, satellite office, flexible working hours, side businesses, the integration of robots and the creation of higher value-added work (2020).

Digitalization has been viewed by firms as a means by which to shorten nominal working hours. Average annual hours worked in Japan's labour market have declined steadily since the early 1990s (Figure 4). This decline in working hours largely reflects the increase in the number of non-regular workers who are made to work flexibly and for shorter hours as well as due to the fragmentation of work. Digitalization has increased labour productivity, but it has not so far created secure and stable employment. In the era of the coronavirus crisis, business owners have moved increasingly to fire workers, and especially non-regular workers (Toyo Keizai Online, 2020).

As noted, these trends form part of a wider process whereby Japan's model of capitalism has witnessed moves towards a heightened focus on profit and finance, which in turn has had unfavorable consequences for workers (Hirano & Yamada, 2018). Corporations have increased their profits while (as we saw in Figure 2) wages have stagnated. This move towards a more profit-oriented model is unlikely to be reversed as a result of digitalization.

The move towards a more profit-focused model of capitalism has been viewed by many as a sign of success, despite the low levels of growth in Japan over the past three decades. These profits have been largely achieved through the flexibilization of employment, rather than Japan's monetary and fiscal policies. Real wages have moved lower than those in other advanced economies. As such, the maintenance of profits on the side of companies stems from efforts to keep the wage share low. Regardless of the efficiency and higher productivity generated by digitalization, profits and benefits have not been shared with workers. This has been exacerbated by digitalization, which has increased the reliance upon low-skilled work. This low-waged and low-skilled work has largely been taken up by non-regular workers, women, foreign, and part-time student workers. These workers are increasingly replaceable as employers tend to hire them flexibly rather than invest in them for their skill improvement. When profits are under pressure, employers tend to lengthen working time and reduce prices, and the cost of these measures fall largely on the shoulders of employees (Arata, 2014). In some cases, as introduced above, digitalization has intensified work by reducing the number of staff in order to reduce labour costs.

In sum, and as we have seen, the introduction of digitalization into the current Japanese model of capitalism has seen advantages disproportionately benefit firms rather than result in an improvement of employment or working conditions in the

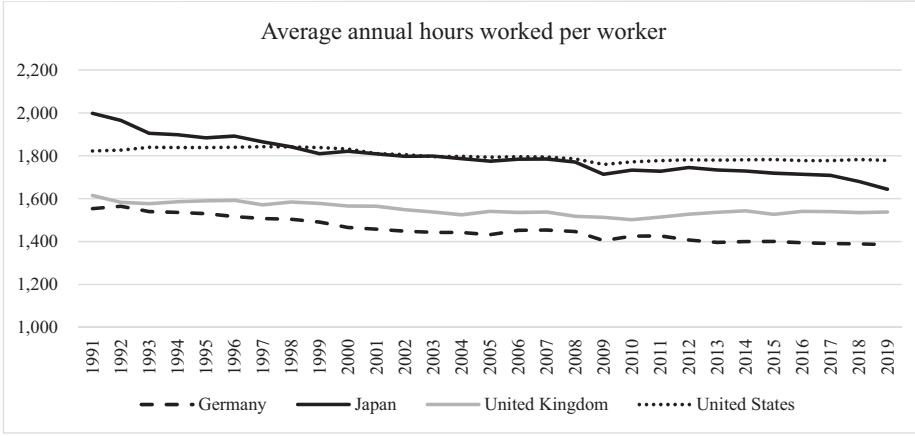

Figure 4. Average annual hours worked per worker, 1991-2019.
Source: OECD (2020b) Employment and Labour Market Statistics, hours worked

way that techno-optimists have hoped. As such, digitalization presents a new avenue for the government and business to seek a more flexible employment system, furthering the neoliberalization of Japan's political economy and contributing to the ongoing dismantling of the social compromise that underpinned Japan's earlier period of economic growth. This has exacerbated the digital divide between skilled and low skilled workers, between workers and managers, and between employees and owners of technologies. Digitalization has thus far failed to improve wages, employment status or working conditions and continues to undermine workers' status while business elites continue to adopt digitalization as a means to achieve profit-oriented restructuring. We turn now to consider in more detail some of these key trends in the case of Japan's hospitality sector, drawing on qualitative interviews in order to highlight the impact of digitalization upon working and employment practices within a sector that has witnessed considerable efforts to restructure through the introduction of a range of new digital technologies.

Digitalization in japan's hospitality sector

This section explores the introduction of digitalization in the hospitality industry (restaurants, cafés, hotels) in Japan. It draws on semi-structured interviews conducted with 20 managers in the hospitality industry (restaurants, cafés, hotels) and 15 union officials between 2018 and 2019, as well as journalistic reports and official documents. It traces the process through which digitalization has occurred, how and why it has been adopted, what outcomes it has generated, and how it has changed employment relations. The findings provide an in-depth analysis of change in the workplace in the hospitality industry which has resulted from digitalization, highlighting the way in which these moves have generated deskilling, the fragmentation of work tasks, an exacerbation of a digital divide, the intensification of work, and higher levels of surveillance; all of which represents a further dismantling of the social compromise that underpinned Japan's earlier period of economic growth.

Table 2 presents a list of tasks which were introduced as part of the process of digitalization in the hospitality sector and the specific effects associated with digitalization. As the table shows, digitalization has led to an increase in labour productivity and increased subordination of employees' tasks to customers' demands as data is used to increase surveillance and disciplining of workers in the workplace (Zuboff, 2019). These are developments, moreover, that have been actively promoted by government policy, with the Cabinet Office explicitly advocating the move to digitalization as part of move towards a more flexible working environment and flexible workforce in the foodservice industry (Cabinet Office, 2016).

Key consequences of digitalization in the hospitality sector

As was highlighted in a number of the interviews conducted as part of the present research, as well as in the publications of unions, business associations and official documents, digitalization has not consistently reduced workload nor improved working conditions or employment practices. Instead, digitalization has led to problems of deskilling, a digital divide, and excessive pressure on staff who are increasingly required to be 'agile' and adjust to new technology. In addition, digitalization has often made workers more dependent on technologies and as a result reduced the level of workers' autonomy.

Deskilling, digital divide and reducing the autonomy of workers

Technological development often produces a polarization of high and low-skilled workers, as medium-skilled workers are squeezed out of the labour market. As one sushi chef put it, in raising his concerns over how the 'chef used to be able to check the dining room and the number of customers and how long they are sitting, and decide the number of pieces of sushi to prepare' (A. Tsuji, interview June 8, 2018). Instead, now automated restaurants of the Kura corporation digitalize customer data at their entrance, allowing chefs to rely on data provided on a digital screen. Whilst managers view this digitalization as a means by which to make it easier to train sushi chefs, at the same time it also represents a process of deskilling, which in turn creates the polarization and digital divide between skilled and unskilled employees.

The widening gap between skilled and unskilled workers in Japan's digitizing service sector labour market is becoming increasingly problematic. A number of reports highlight how nearly half of Japan's workforce is at risk of being replaced by automation (Nomura Research Institute, 2016; Mitsuhashi, 2016, p. 16). During interviews, this was raised by a number of managers who highlight how the digital divide is becoming more of a problem in Japan than the risk of unemployment. While knowledge-based skilled workers (such as computer engineers and programmers) have typically benefited from the process of digitalization, workers in the foodservice industry have suffered from the same process. Due to inadequate skill sets in the digitized workplace, some staff have been unable to catch up with the pace of new technologies. A number of managers also mentioned that employees find it hard to adjust to new technologies due to the considerable adjustment to the flow of work associated with the introduction of new technology, including increased technological knowhow (M. Hayasaka, interview, January 21, 2019).

Table 2. The digitalization in the hospitality industry in Japan.

Areas of digitalization	Types of digitalization	Achieved effects
Advertising/promotion	IoT, AI, automated notification system, digital signs to notify the vacancy	Speedy information, accurate information on waiting time and vacancies, higher satisfaction level of customers from clear signs of vacancy
Booking	Digitized customer files on the online platform 24/7 digitized booking system, smartphone booking	Digitalization of customer files, improved efficiency and convenience, simplification of booking, increased profits, reduced human labour, booking mistakes and time spent on managing bookings, frequent updates (improved visibility), connect customer information with the point of sale (resultant behavioral surplus), more variety of hotel plans
Customers to the tables/ automated check-in	Emotional robots, digital identification of empty seats, data on customer at the entrance, face recognition, self-service to the table, automated check-in	Efficiency, reduction of workers, agile service, improved labour productivity, translation service for overseas customers, more accurate data input on the number of customers and time management, visual entertainment, translation service for foreign customers, more face-to-face service where necessary, a solution for a labour shortage
Ordering	Tablets, smartphone order, computerized and self-service, registered customers, instruction on how to eat specific food	Efficiency, simplification, speed, visual image of each menu, increase labour productivity, a solution for a labour shortage, reduce food wastes, translation service for foreign customers, simplify tasks for particularly the elderly staffs to manage ordering, improved analysis on customer preferences, behavioral surplus, notification of last order
Cooking	Robots chef, robot bartender, café robot, machine learning (menu)	Reduced burden on human labour, efficiency, simplification of cooking for new, foreign and elderly staffs, visual entertainment, more personalized menu,
Food serving	Robots (food and dish carrying robot), automation (conveyor belt) and wearable device	Reduced burden on human labour, simplification of work and easier training of staffs, efficiency, a solution for a labour shortage, agile food delivery, visual entertainment, the maintenance of low priced food, more accurate analysis of customer preferences from conveyor belts, reduction of

(*continued*)

Table 2. Continued.

Areas of digitalization	Types of digitalization	Achieved effects
		food wastes, improved customer service
Kitchen and storage room	(arm) robots, washing machine/ robots, plate slots machine learning, automated temperature control, the plate collection device	improved working conditions for staff, reduced burden, increase in labour productivity, simplification, increased food hygiene and more accurate control of temperatures and reliable records
Payment	Digitized bill with ordering, self-service payment, face recognition, digital food tray, cashless system	Increased efficiency and speed, reduce mistakes of calculation, improved labour productivity, simplification at point of sale, translation service for foreign customers
Training	Digitized manual	Efficiency, labour productivity, easier management of the new hires, reduction in time in training, reduce paper waste (booklet), more time available for human service
Inventory management	IoT, digitized inventory (Smart Mat), digital management of sales, automatic measurement of buffet food	Visualization of inventory, reduced burden on human labour, automatic measurement of an individual stock, alert of replenishment, automatically order products in shortage, efficient management of stock and inventory, improved labour productivity, a solution for labour shortage, automatic measurement of food in each container in buffet restaurants, reduce food waste, enable staff to focus on human service, monthly and yearly data on inventory for further business improvement
Accounting Check-out	Accounting software, algorithm (registered customer) and data	Simplification of accounting, reduce mistakes at point of sales, order-payment combined, improved labour productivity, translation service for foreign customers, a solution for a labour shortage, easier management of data on sales
Monitoring	Wearable devices, vein authentication, camera check of all chain restaurants	Cost cut, reduce cheating/ slacking by staff, improve staff efficiency, agile service to customers' requests/demands, minimize time in going to each table, quieter dining environment, more accuracy on the number of customers and time spent on each table, digitized shifts and management of staffs, automated calculation of

(*continued*)

Table 2. Continued.

Areas of digitalization	Types of digitalization	Achieved effects
		individual wages, linking to sales analysis, order systems, profit-and-loss management, increased sales, reduced labour on accounting, improved human service
Staff management	Vein authentication system, AI, video monitoring	AI simplified the estimation of the approximate number of potential customers and the formulation of staff shifts. Manage staff working hours accurately without false information. Monitor workers and provide the same quality service in all chains.
Job interview	AI (through a smartphone)	24/7 availability of interview, increase opportunities to secure potentially suitable candidates, reduce the time between the submission of applications and the first day of work, speeding up the entire hiring process, a solution for labour shortage, reduce the potentially wasted time and risk in case of no show

(Source: Author's own compilation).

Digitalization also has the potential to reduce the autonomy of workers by monitoring and controlling the workplace environment. One of the reasons for employers to adopt new technologies, such as in the move to the so-called 'Internet of Things (IoT)' is to monitor employees' work and to ensure continual working (Kinki Keizai Sangyo Kyoku, 2017, p. 19). As one interviewee put it, 'The monitoring device (camera) in each restaurant enables all managers to provide a consistent service even though their wages decline (due to the simplification of management work)' (A. Tsuji, interview, June 8, 2018). Tsuji further commented that this monitoring mechanism has become particularly beneficial as managers become older, enabling consistent customer service in all restaurants. The digital technology adopted in Japan's hospitality industry has acted to simplify the tasks and help the ageing workforce. However, it has also started stripping away workers' skills, human decisions and autonomy, and ensuring the maintenance of low wages, while increasing the level of workplace surveillance.

This situation resonates with a broader tendency to move towards surveillance capitalism (Zuboff, 2019). The surveillance system has been witnessed in Japan's foodservice sector, where staff have increasingly become dependent on technologies to calculate and estimate customers' behaviors (A. Tsuji, interview, June 8, 2018). This has led to a loss of self-control for chefs and serving staff. The increased dependency on technology implies a reduction in workers' autonomy, which also challenges the capacities of workers to improve their skills.

There is, however, a lack of skilled workers who can manoeuver this system. As one of the interviewees put it, 'the foodservice industry tends to attract low skilled

Figure 5. The current profits in the hospitality industry.
Source: Policy Research Institute (2020), Houjinkigyo toukei nennpou tokusyu.

workers' (Hibiki, interview, August 18, 2018). Data processing and communication engineers and system engineers have recently become in high demand and their wages in Japan are twice as high as other jobs (Nihon Keizai Shinbun, 2019). Under the digitizing workplace, these low skilled workers in the foodservice sector became dependent on technology while tech-skilled engineers and cognitive workers become more valuable, increasing the digital divide.

In this sense, we might argue that digitalization tends to optimize work, but deprive workers of their opportunity to improve their skills and knowledge. Managers who can integrate digitalization in the workplace, and corporations which sell new technologies, are each more likely to gain from their knowledge production. As one union official interviewed stated, there is a divide between workers who can only perform simple tasks and those who can work creatively with cognitive knowledge (T. Chiba, interview, March 28, 2019).

The process of deskilling of some workers has a subsequent effect upon the wages paid to those deskilled workers. This is a fear widely felt across the sector. For instance, according to Rengo's 'Survey on AI', roughly 30 percent of workers in the foodservice sector predict their wages will decline and over 58 percent of them predict their wages will not increase in the near future as a result of the integration of AI (Rengo, 2018, p. 9).

This is part of a wider process whereby digitalization has been part of, and acted to further, the profit-oriented restructuring reforms introduced across the Japanese economy. Again, this trend was especially notable in the hospitality sector, which saw an increase in the level of profits from 2005 to 2018 (Figure 5). At the same time, the sector has seen lower wages than other industries and the wage growth over time has been weak (Figure 6). While it is not possible to explain this entirely in terms of the move to digitalization, nevertheless the moves to introduce digitalization have clearly enabled some of the outcomes that we have observed, in terms of the overall lowering of the wage share, which Figures 5 and 6 both highlight.

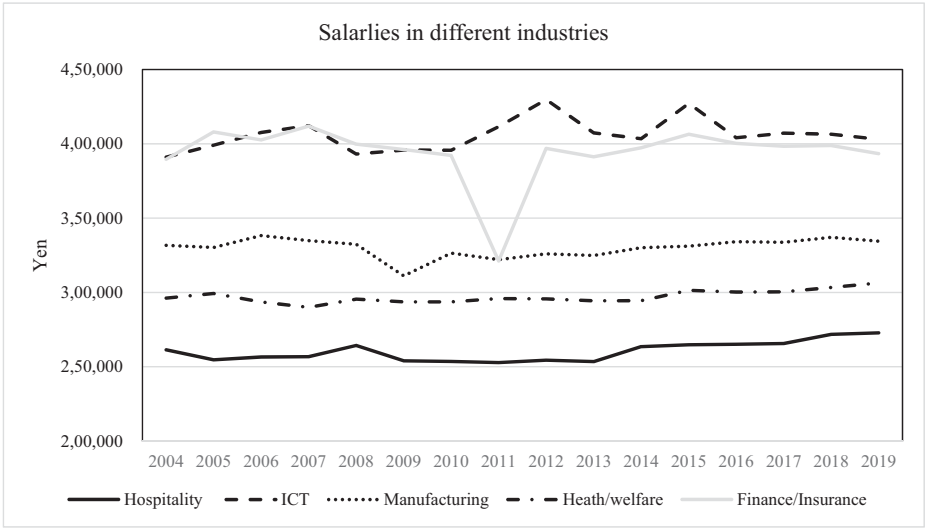

Figure 6. Monthly salaries by industry.
Source: e-Stat (2019) Chingin kouzou kihon toukei chyosa, Sangyo daibunrui

Agility and intensification of work

Digitalization requires workers to adapt themselves to a new speed, new efficiency and new ways of doing things in the workplace. Employers need elderly workers to be efficient, in particular, in the hospitality sector. Some employers adopted new technologies to simplify tasks for elderly workers. In the words of one interviewee, 'elderly workers tend to be slow in taking orders and sometimes have difficulties hearing customers' requests and orders. This is why technologies have become useful for elderly workers' (M. Kourai, interview, December 28, 2019). In this sense, digitalization is sometimes presented as a panacea, on the grounds that it is able to make elderly workers efficient as well as support low-skilled and deskilled workers by simplifying tasks. This potential, however, also risks locking those workers into being deskilled and low-waged whilst demanding them to be agile. Agile workers may increase labour productivity, but they do not necessarily benefit from it.

Digital devices demand agility from workers. For instance, wearable devices have become a way of speeding up the customer service. Digitalization therefore has the potential to impose efficiency and agility upon workers. The wearable devices used in Japan as part of digitalization act to intensify working conditions by requiring workers to be quick to respond to customers' demands. One example is the *Noodoe*, the wearable digital bell, which has begun to be adopted in a large number of restaurants and cafés in Japan. It acts by digitally notifying waiters and waitresses and chefs of the different types of demands from customers. This function can undoubtedly reduce the frequency with which waiters and waitresses need to go back and forwards to tables. In contrast, it has also increased pressure on staff by urging them to respond to customers' demands promptly. The device enabled the chef to respond directly to customers' needs. With this device, expectations become high and employers demand that employee work quickly and more

efficiently, whereas employees gradually lose their decision-making and autonomy. High speed and efficiency are normalized and standardized in the digital era, in which unskilled workers are increasingly controlled by the devices.

The capacity for digitalization to replace human work represents an 'automation paradox' (Decker et al., 2017). For Decker et al. (2017), it is important that tasks be performed by humans rather than by automation. Otherwise, the 'automation paradox occurs, which means that, during normal operations, human workers have to carry out cognitively draining activities, and in case of malfunctions or unexpected situations they suddenly have to make highly sophisticated decisions which they do not master anymore' (352). This paradox is already happening in the Japanese service sector. Some chain sushi restaurants adopt digital machines which show digital images of each piece of sushi, workers without high skills can make sushi (Tajiri, interview, December 19, 2018, A. Maruyama, interview, January 15, 2019). Low-skilled workers have become dependent on digital devices. When machines break, low-skilled chefs are required to adapt themselves to cook without any digital data or appliances and are expected to perform experienced chefs' skills, requiring prompt decision-making, adaptability and agility.

The automation paradox also results in the intensification of work. This paradox applies to the case of wearable devices such as *Noodoe* discussed above. Without this device, the waiters/waitresses do not have the skills to serve customers promptly. Replacing human tasks with digitalization creates an automation paradox, in which work is intensified as workers become dependent on machines and devices, creating serious challenges once those machines break. Workers who are deemed to be low-skilled are expected to perform efficiently when machines malfunction.

Intensification of work in the digital era is associated with 'Digital Taylorism', in which digital technologies and automation simplify and optimize the principles of work and work control for complicated tasks (Hirsch-Kreinsen, 2016, p. 7). This optimization of work often leads to the intensification of work for employees. For instance, Harada of *Shutoken Seinen Union* (Youth Union in Capital Area) warns that 'digitalization increased efficiency and improved labour productivity, but also forces workers to do everything by him/herself (N. Harada, interview, July 11, 2018). In one of the chain cafés in Japan, digitalization acted to simplify tasks, leading part-time workers to take responsibility for managing the whole café. Simplification and improved efficiency of work importantly means the intensification of work for some workers and forces low-skilled workers to conduct more tasks beyond their job description without adequate payment for workers. This type of one-person operation is a common outcome of Digital Taylorism. Harada further comments that, even if digitalization enables shorter working hours, it may not improve working condition and fails to secure the necessary wages needed to sustain living standards if employers do not make efforts to improve working condition. Thus, digitalization enables employers to hire workers for shorter periods of time, with several managers who were interviewed stating that digitalization had led to a shortening of nominal working hours; a trend which has been particularly notable in the hospitality industry (Figure 7).

Digital Taylorism, once it has fragmented the tasks of workers, amounts to the further alienation of workers, who find themselves with far less control over the labour process and subject to greater control by machines and devices. The floor

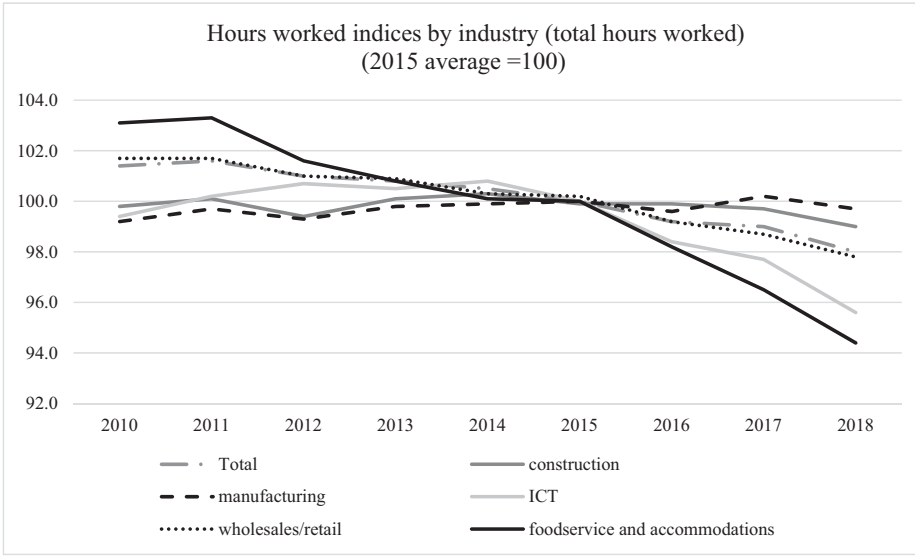

Figure 7. Hours worked indices by industry (total hours worked).
Source: e-Stat (2020) Maitsuki kinrou toukei chyosa, zenkoku chyosa, dai 53 pyo.

staff in restaurants and cafés, for instance, are increasingly expected to have restaurant management skills, as these tasks become simplified and controlled by devices (A. Tsuji, interview, June 8, 2018). These new devices, including tablets and smartphones, see staff and chefs in the kitchen also increasingly required to follow digital orders made through machines. Workers in the foodservice industry have thus increasingly become dependent on inventory devices and temperature control machines.

Limitation to automation

Digitalization also comes with the risk of technical failure, which can cause significant inconvenience and inefficiency. Hibiki, the CEO of the restaurant *Hibiki*, predicts that many tasks in the restaurant industry will be replaced or supported by automation and digitisation. Nevertheless, he is also aware of the challenges that digitalization creates. In his words:

> digitalization faces its limits when there is no Wi-Fi. The disruption of Wi-Fi is not unusual in the workplace and happens often. The software company from which we installed the digital devices did not respond to the problem since they said the problem is the Wi-Fi system. On the other hand, the internet provider said that there was no problem with the Wi-Fi. This became a frustrating situation where nobody was willing to help us (Hibiki, interview, August 18, 2018).

The maintenance of sometimes-not-so-intelligent devices can increase the level of stress experienced by workers. Ooura, at the Ganko Food Service Co. similarly warns of the importance of contracting an urgent support mechanism for some lines of work which cannot be replaced by a human, as otherwise everything may stop (interview, June 8, 2018). Another interesting example is the case of the emotional robot, Pepper, introduced in *Hamazushi*. The *NikkeixTeECH* survey revealed

that only 15% of Hamazushi chain stores which signed up to have Peppers in their store would opt to keep Pepper after their three-year-contract expired. Roughly 80 percent of stores answered to say that they do not need the robot (Fukui, 2018). This implies that some technologies are not entirely popular for employees but they can be a nuisance to maneuverer. Installing digitalization can end up being more expensive than expected. The extra costs can trigger the reduction of labour costs.

This is the case not only with the instalment and the maintenance of new digital devices but also with regard to upgrading. Hayasaka at Huis Ten Bosh commented on the necessity of updating technologies. As he put it, '*Henna Hotel* introduced robots at the hotel reception five years ago, but they have now started looking out of date. We are thinking of changing to something new' (M. Hayasaka, interview, January 21, 2019). As this example illustrates, digitalization requires continuous maintenance and costly upgrading.

Further, digitalization is not universally beneficial nor intelligent. Small cafés and restaurants especially do not benefit from certain types of automation. The foodservice industry in Japan is predominantly made up of small-scale businesses, which in turn is associated with a low rate of digitalization. According to a survey conducted by the trade union confederation, Rengo, workers in the hospitality industry have lower expectation in AI with only 40% having a high expectation. This compares with 70% in the finance sector (2018, p. 4). This survey also demonstrates that 62% of surveyed workers in the hospitality industry think AI would not change their workload (2018, p. 8). As this example illustrates, the adoption of technology is not a straightforward solution for labour shortages and does not invariably reduce workload.

As should be clear from the above, we need to avoid any overly rosy evaluation regarding the introduction of technology that ignores the potential harm that can be done to the capacity for human labour. One interesting example is that of the large restaurant chain, *Yoshinoya*, which introduced Al-based interviews using smartphones for the first round of job interviews in an attempt to save time. This raises the question of whether such a process can be free from prejudice and discrimination in terms of gender, race and skill levels. In the hospitality industry, where the turnover of workers is high, AI-based interviews are often used to filter candidates. This may reduce opportunities for people who do not own smartphones and lack skills and experiences before they have a chance to get to interviews. When AI decides who can proceed to the next round of interviews, this has the potential to introduce significant bias and to work against female workers, elderly workers, disabled workers, and foreign workers who tend to have fewer opportunities in the job market.

Conclusion

Digitalization in Japan has been advanced by both by firms and the state, as part of a wider process of neoliberalization, witnessing efforts to accelerate the flexibilization of the labour market and ensure profit-oriented restructuring. This contrasts markedly with the views of the so-called 'techno-optimists' who view digitalization as having the potential to improve working conditions and employment practices, as well as the broader living conditions of workers and citizens. Instead,

digitalization has contributed to deskilling, the fragmentation of work tasks, an exacerbation of the digital divide, the intensification of work, and higher levels of workplace surveillance. This represents a further dismantling, ongoing since the 1990s, of the social compromise that underpinned Japan's earlier period of economic growth (Lechevalier et al., 2014; Shibata, 2020).

Digitalization has furthered the fragmentation of work, deskilling and social disconnectedness experienced by workers, and compounded low wages and precarious working conditions, as part of a wider process of profit-oriented restructuring. This has seen workers increasingly required to be 'agile', and increasingly monitored with the new surveillance technology. In the case of the hospitality industry studied in this paper, the benefits achieved through digitalization have largely been felt by employers and firms, and far less so by workers.

Whilst the move to digitalization is a global trend, the present paper has explored its implementation across the socio-economy of Japan, as well as through a more detailed exploration of developments in the Japanese hospitality sector. As we have seen, changes to the labour market and employment practices of firms are embedded within a broader institutional configuration, meaning that the introduction of technology as witnessed through the digitalization of the Japanese economy is done in such a way that reflects broader socio-economic and institutional processes. The broader process of neoliberalization of Japan has shaped and influenced the way in which digitalization has been introduced, and likewise witnessed digitalization contribute to the form that neoliberalization is taking in the case of Japan. This therefore represents an important lesson for those interested in the development of Japan's model of capitalism, but also contributes to our knowledge of the development of comparative capitalisms, as neoliberalism is increasingly challenged, and continues to morph globally (with national specificities) in the wake of the Covid-19 crisis. Efforts to put digitalization to good use require a consideration (and critical evaluation) of the wider configuration of socio-economic institutions that constitute any particular national model of capitalism, which itself must be understood in terms of its place within the wider global political economy. It is to this end that the present paper contributes, in exploring the digitalization of Japan's neoliberalizing model of capitalism.

Acknowledgements

The research was supported by Asia Leiden Centre. I am grateful of my colleagues, Kasia Cwiertka, Lindsay Black, Ethan Mark, Guita Winkel, Kohei Suzuki, Mari Nakamura and Marte Boonen in Leiden University who provided insightful feedback and suggestions. I also would like to thank Aliona Nyasheva, Ian Bruff and David Bailey for their comments on this paper. I also thank the three anonymous reviewers and the editor for the constructive review process.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This work was supported by LeidenAsiaCentre.

Notes on contributor

Saori Shibata is an assistant professor at Leiden University. Her research focuses on Japan's political economy, including the changing nature of work, the digital economy and how Japan's model of capitalism is transforming. This draws on institutionalist approaches to capitalism and critical political economy. She has published in *New Political Economy*, *British Journal of Political Science* and *Cornell University Press*.

ORCID

Saori Shibata http://orcid.org/0000-0002-5944-9721

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