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Article

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Location-specific labour control strategies in online retail

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Abstract: Online retail is currently profoundly restructuring the working conditions in the retail sector. Existing studies generally describe the working conditions in the large warehouses of online retail as ‘digital Taylorism’. This article broadens this perspective and draws on the theoretical concept of the local labour control regime. It explores how managements’ technological and social labour control strategies vary spatially between online retail warehouses located in inner and outer metropolitan areas of the four largest German cities. The study uses qualitative methods and is mainly based on expert interviews with executives, representatives of trade unions and works councils, representatives of associations, and further experts. This study gains insights on the spatial variety of labour control and thus is relevant for international research on labour control and for practitioners’ ability to create decent and humane work.

Keywords: online retail, e-commerce, metropolitan area, labour union, economic geography, labour geography

1 Introduction

Online retail (e-commerce) has spread significantly since the beginning of the twenty-first century. It is a new business model that is generating radical changes in employment in the retail sector (Staab & Nachtwey 2016). While salespersons’ jobs in brick-and-mortar shops are under even more economic pressure than before (Evans & Kitchin 2018), employment is increasing in warehouses and delivery logistics (Altenried 2021; ILO 2021; Veen et al. 2020). This paper focuses on warehouse work, which takes place in ‘pure’ online retail firms and in ‘hybrid’ retailers that operate warehouses for online retail in addition to their brick-and-mortar shops. In ‘pure online’ and in ‘hybrid’ retail, warehouse work generally means that workers stow, pick and pack the goods and prepare them for sending. Within this work process, management exerts control over the speed and the efficiency of workers’ job performance to deliver their goods quickly and undamaged (Cattero & D’Onofrio 2018; Delfanti 2019; Rodrigue 2020).

Studies in social sciences on labour in online retail have mainly examined labour control in large warehouses, in particular Amazon’s ‘fulfilment centres’ (Briken & Taylor 2018; Cattero & D’Onofrio 2018; Delfanti 2019; Delfanti & Frey 2021; Schein 2017). In Germany, these large warehouses are predominantly located in the outer metropolitan area (Hesse 2020). Recent studies have characterised Amazon’s standardised, repetitive and highly technologically controlled work organisation as ‘digital Taylorism’. This term refers to a new, digitally enabled type of work organisation that exerts labour control through digital devices (Butollo et al. 2018; Cattero & D’Onofrio 2018; Delfanti 2019; Delfanti & Frey 2021; Schein 2017). Literature concerned with ‘digital Taylorism’ has focused on labour processes at the workplace level (the micro-scale) while also considering labour regulation as framework conditions (the macro-scale). However, past studies have largely ignored that the organisation and control of warehouse work is also shaped by particular locational contexts (the meso-scale).

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Indeed, there is some theoretical evidence for the relevance of local particularities influencing the organisation of warehouse work in inner and outer metropolitan areas. Real estate costs and the labour market (costs and skills of labour) differ spatially. The *outer metropolitan area* is usually characterised by lower land costs and cheaper labour (Briken & Taylor 2018; Cattero & D'Onofrio 2018). Due to a lack of alternative income sources, there is often a large amount of less skilled labour available on the labour market (van Doorn 2017). Such conditions align with 'digital Taylorism' with its standardised, repetitive and technologically controlled work organisation, as can be found in Amazon's 'fulfilment centres', with usually several thousand employees (Briken & Taylor 2018; Cattero & D'Onofrio 2018; Delfanti 2019; Delfanti & Frey 2021; Schein 2017).

In contrast, warehouse work in the *inner metropolitan area* has hardly been examined until now. Warehouse work in these central areas is largely dominated by online retail start-ups that operate warehouses. Additionally, there are subsidiaries of large online retailers, which operate small distribution centres to shorten the 'last mile' to consumers (Altenried 2021; Dederichs & Dannenberg 2021). There is hardly any affordable land available in German inner metropolitan areas for large logistic centres, such as those of Amazon (Fuchs et al. 2022). At the same time, the inner metropolitan areas are generally characterised by the presence of employees with high and intermediate skills, in addition to the segment of low-skilled workers. The skilled workforce is, however, often only available on the labour market to a limited extent and can generally demand and enforce better payment (Leslie & Catungal 2012). This is particularly true for the digitised New Economy and urban start-up culture (Hutton 2006; Hutton 2009). Such local conditions impact management's control of work processes through digital technologies and by practicing 'friendly' consent-oriented modes of social control, such as by fostering intrinsic motivation of workers. This issue, however, has not been examined until now.

To develop a spatially sensitive analysis of labour control, this article builds on the theoretical concept of the local labour control regime (Coe & Kelly 2002; Jonas 1996; Hastings & MacKinnon 2017). This concept is useful for geographical research as it goes beyond a narrow focus on the workplace and beyond general ideas of a single prevalent labour control regime at the macro scale. Instead, it focuses on the 'meso-scale' of a region, into which work processes and workplaces are embedded. The concept of the local labour control regime thus shifts analytical attention from the workplace to the 'work-place' with its location-specific conditions, such as labour market, consumption and socio-cultural dynamics (Jonas 1996). However, studies on

local labour control regimes have, so far, largely neglected spatial differences that occur *between different areas* within a region. We address this research gap and argue that the concept of the local labour control regime and studies on warehouse work in online retail can profit from a higher sensitivity related to spatial differences between typical inner metropolitan areas and outer metropolitan areas. Therefore, our research question is: *How does the technological and social labour control in online retail vary between inner and outer metropolitan areas?*

In the following, this contribution outlines the theoretical concept of the local labour control regime, explains strategies of labour control and defines the spatial dimension. The next section first explains technological and social labour control (see part 2.1). Subsequently, the section clarifies that labour control is embedded within specific places and introduces the 'local' labour control regime as a theoretical approach (see part 2.2). In addition, the section specifies the 'local' with regard to the differences between inner and outer metropolitan areas. Then, the design and the qualitative methodology is described (see part 3). By focusing on the characteristics of warehouse work in inner and outer metropolitan areas, the results section explains how labour control in online retail warehouse work differs spatially (see parts 4 and 5). The paper ends with a discussion of the results (see part 6) and conclusions for future research (see part 7).

2 Labour control strategies and their location-specific particularities

2.1 Technological and social labour control

The concept of the local labour control regime builds on the basic ideas of the Labour Process Debate (Braverman 1974), Regulation Theory (Aglietta 1976) and its adaptation in economic geography (Bathelt 1994; Jessop & Sum 2006; Leborgne & Lipietz 1988). These discourses focus on the basic idea that management controls workers at the workplace to steer production and sales processes. Control can occur in different ways, which are generally characterised as *technological control* and *social control* (Maguire 1988). In Taylorist-Fordist work organisation – which emerged in the large factories of the 20th century – the increasing automation by machines and devices has set the pace for human labour, in addition to the direct observation of the work process by the supervisor. Work was increasingly

organised in a highly standardised manner; repetitive task design allowed management to employ mainly unskilled workers (Jonas 1996). Regulation Theory suggests that, since the 1980s, there has been a turn from Taylorist-Fordist work organisation towards increasingly consent-oriented forms of social control. Such Post-Fordist work increasingly requires skilled workers who perform their (partly openly structured) tasks responsibly. Management practices foster intrinsic motivation, for example through participation, flat hierarchies and teamwork (Bathelt 1994; Jessop & Sum 2006). However, recent studies suggest that various kinds of technological and social control co-exist. Besides space for workers' involvement, neo-Taylorist (again repetitive) labour control prevails in many firms today. The digitised New Economy also stands for 'digital Taylorism' (Butollo et al. 2018; Fuchs 2020; Kenney & Zysman 2020). In addition to fostering motivation, coercion plays a role, especially through a 'hire-and-fire' strategy and the implicit threat of job loss for low-skilled workers (van Doorn 2017). Low-skilled and low-paid work exist not only in factories but also in service work. In both sectors, the repetitive work organisation can downgrade labour to "an abundant, calculable, and easily substitutable commodity" (van Doorn 2017: 904). Additionally, in 'digital Taylorism', social control also can mean that management undermines unionisation (Cumbers et al. 2008; MacKinnon & Cumbers 2018).

Regarding technological control, specifically in *online retail*, the case studies that refer to large warehouses, such as those of Amazon, show that 'digital Taylorism' prevails (Briken & Taylor 2018; Cattero & D'Onofrio 2018; Delfanti 2019; Delfanti & Frey 2021; Schein 2017). These studies show that digital technology can comprehensively control workers via data accumulation, algorithms and artificial intelligence (AI). Online retail is thus a platform-based business that allows management to strategically combine information from the process organisation of stowing, picking and packing with information about workers' performance and information provided by customers about their satisfaction with packaging and delivery (Kenney & Zysman 2020). Amazon, in particular, provides examples that technological control accelerates the work process by eliminating slow or delayed work performance (Delfanti & Frey 2021). Digital technologies prescribe exactly how workers conduct their tasks (pick-by-light or pick-by-voice) and digitally observe individual performance (Delfanti 2019; Fuchs et al. 2022; Schein 2017). In addition, gripper arms and automatically moving shelves reduce workers' movements. Besides some ergonomic relief, these technologies often limit the radius of action of workers and inhibit social contact between colleagues (Delfanti & Frey 2021). Regarding social control, in line with the contributions

mentioned above on 'digital Taylorism', studies mainly describe union busting in large warehouses and management's attempts to prevent workers' striving for higher remuneration and better working conditions (Delfanti 2019; Jaehrling 2019).

2.2 Embedding labour control within places: The 'local' labour control regime

Studies of local labour control regimes highlight how local conditions influence employers' labour control strategies (Newsome et al. 2015). These studies focus on how managerial control uses the local labour market, which comprises various segments of workers with different skill-levels and who are, consequently, replaceable to different extents. In addition, studies of local labour control regimes analyse how managers constrain the agency of labour representatives, such as trade unions and works councils, and how labour representatives contest, resist and challenge such efforts of labour control (Jonas 1996; Kelly 2013; López 2021).

The concept of the local labour control regimes further pays attention to specific local settings. One such setting is the real estate market, which, for example, influences the conditions of the reproduction of the workforce that often constrain the workers' bargaining power in relation to employers (Pattenden 2020). As this study will show, the location-specific real estate market also impacts the size of commercial buildings (such as warehouses) and related labour control dynamics (see Hesse 2020). Furthermore, the concept of the local labour control regime pays attention to place-specific socio-cultural contexts, such as location-specific industrial relationships between employers, workers' representatives and the state. Hence, the overall regulatory setting is analysed in its location-specific shape (Jonas 1996; Neethi 2012).¹

In many studies on local labour control regimes, 'the local' refers to a specific sub-national region (Neethi 2012; Padmanabhan 2012; Pattenden 2016). However, these studies do not explore spatial differences *within* 'the local' (such as between inner and outer metropolitan areas). The reason is that in this debate the local labour control regime is predominantly conceptualised as a place where various

¹ For example, the German labour legislation and the co-determination law distinguishes between works councils who represent the interests of the employees within the firms, and trade unions as political actors. The workforce may elect works councils in firms with at least five employees. Hence, there are various settings, which open up and restrict the location-specific room of manoeuvre for the collective bargaining power of labour (Bathelt 1994; Bathelt & Gertler 2005).

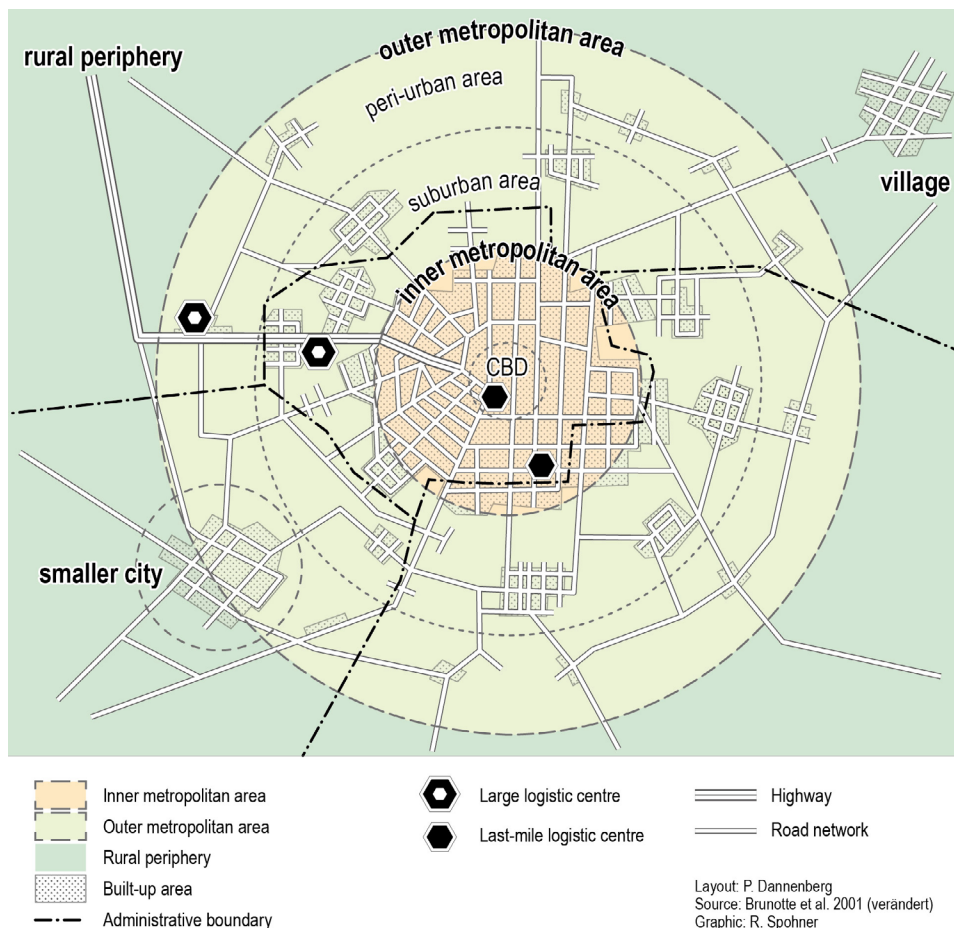


Figure 1: The inner and outer metropolitan areas (own illustration)

multiscalar relations meet, such as global value chain sections, national policies and local stakeholders (Kelly 2001; López 2021; Smith et al. 2018). Pattenden (2016), who suggests a more spatially differentiated view, provides a notable exception. His study of local labour control regimes in the Indian State of Karnataka highlights the distinct ways in which the macro-labour control regime (characterised by broader dynamics of work informalisation and workforce segmentation) manifests in two different places within Karnataka. Mediated by differences in local labour markets, in one place, these broader trends give rise to patterns of circular migration and daily commuting to semi-urban industrial sites around smaller and nearby cities and, in the other place, to patterns of seasonal migration to the construction sector in the distant metropolis Bangalore. While we cannot simply transfer such insights to our study in Germany, Pattenden's (2016) analysis illustrates that the local labour control regime shows variations, which is the starting point of the research presented in this paper.

2.3 Differences between the inner and outer metropolitan areas

Certainly, the juxtaposition of the inner and outer metropolitan areas is stylised and used as an ideal of areas that are, in fact, further differentiated and interrelated. In line with recent ideas of space in economic geography, in this study, the 'local' neither refers to a clearly delineated territorial entity nor to distinctive urban or rural 'zones' (Böltken et al. 2007). Instead, the 'local' here refers to complex interconnected localities (Lier 2007; López 2021). As this spatial differentiation is based on structural (e. g. building density) and relational (e. g. transport relations) issues, it does not necessarily reflect administrative boundaries. Following Piore et al. (2010) on general definitions of urban and peri-urban areas and Luxen et al. (2022) on locations of logistic centres in online retail, this paper defines the city centre (central business district) and inner urban neighbourhoods (with their high density of population) together as the *inner metropolitan area*. The suburban area (with a lower density of contiguous built-up areas) and the peri-urban area (with

Table 1: Overview of the interviews in the inner and outer metropolitan areas

Inner metropolitan area			Outer metropolitan area		
Interview Number	City	Position/Responsibility of the interviewee	Interview Number	surrounding the city of ...	Position/Responsibility of the interviewee
1	Berlin	Executive	1	Berlin	Executive
2	Berlin	Executive	2	Berlin	Executive
3	Berlin	Quick-commerce worker	3	Berlin	Worker, Labour Activist
4	Berlin	Executive	4	Berlin	Consultant
5	Berlin	Works Council	5	Berlin	Trade Unionist
6	Berlin	Business Association	6	Berlin	Chamber
7	Berlin	Consultant	7	Hamburg	Trade Unionist
8	Berlin	Business Association	8	Hamburg	Economic Dev. Agency
9	Berlin	Business Association	9	Hamburg	Executive
10	Hamburg	Executive	10	Hamburg	Vocational School
11	Hamburg	Executive	11	Hamburg	Executive
12	Hamburg	Executive	12	Hamburg	Executive
13	Hamburg	Executive	13	Munich	Trade Unionist
14	Munich	Trade Unionist	14	Munich	Trade Unionist
15	Munich	Trade Unionist	15	Munich	Executive
16	Munich	Executive	16	Munich	Chamber
17	Munich	Executive	17	Munich	Executive
18	Cologne	Worker, Labour Activist	18	Munich	Trade Unionist
19	Cologne	Executive	19	Cologne	Executive
20	Cologne	Regional Development	20	Cologne	Executive
21	Cologne	Works Council	21	Cologne	Consultant
22	Cologne	Executive	22	Cologne	Executive
23	Cologne	Executive	23	Cologne	Executive

discontinuous built-up settlements) are conceptualised together as the *outer metropolitan area* (Figure 1). The outer metropolitan area is characterised by intense interaction with the inner metropolitan area, such as through commuting and transporting of goods. This interaction distinguishes the outer metropolitan area from rural-peripheral, remote areas (Scholvin et al. 2019). In the outer metropolitan area, there are several commercial parks located specifically at transport nodes. With its combination of lower cost requirements (land prices and labour costs) and transport connections to inner metropolitan areas, the outer metropolitan area has developed to become a preferred location for large warehouses (Coe 2020; Rodrigue 2020). Usually, the locational conditions (particularly land prices and labour costs) impact the size of warehouses, corporate strategy, technology and skills (Hesse 2020; Scholvin et al. 2019). Against this backdrop, the empirical analysis scrutinises to what extent locational conditions shape labour control patterns in the German online retail sector and what differences can be observed between inner and outer metropolitan areas.

3 Design and method

This study focuses on warehouses of the online retail sector in the four largest cities in Germany (Berlin, Hamburg, Munich and Cologne) and related outer metropolitan areas (BBSR 2021). Our research interest was not in comparing the four metropolitan regions with each other. Instead, our aim was to compare the inner and the outer metropolitan areas as two types of spaces. To include the different perspectives of employees and employers as well as of related organisations, we identified and approached a variety of different actors and stakeholders. As a result, we identified companies from both types of spaces (inner and outer metropolitan areas) through extensive web research. Following this, snowballing procedures were employed in which representatives of employers' associations, chambers and trade unions were key persons. We approached 95 potential interview partners asking whether they would agree to an interview. Ultimately, we gained insights into 20 firms, based on 23 interviews with executives. These insights were supplemented with 23 additional interviews with representatives of trade unions and works councils, workers and labour activists, representatives of business develop-

ment agencies, employers' organisations, and consultants of online retail (see Table 1). In some cases, multiple people participated in an interview. Moreover, follow-up interviews were conducted with several participants. The interviews lasted about 60 minutes, with some being shorter due to time constraints and some being longer (up to two hours). Observation of protest marches and discussions in online expert workshops with unionists and union-oriented researchers further supported the insights gained from the interviews. The investigation was conducted from March 2020 to May 2022. Given the setting of the COVID-19 pandemic, most interviews were conducted online. As the interview partners were interest-driven and, for example, the executives illustrated their 'friendly' consent-oriented modes of social control, we included a broad spectrum of representatives of different interest groups. The variety of interview partners from different organisations allowed us to triangulate the results (see Gerring 2008).

Interview guidelines were established based on current literature (outlined above in part 2) and the research question. The main topics were locational conditions (land prices and labour costs), warehouse size, corporate strategy, applied technology and workers' skill profiles. Secondly, the interview guidelines included references to labour agency and bargaining power, co-determination, and the role of unions and works councils. The focus was on labour-related business strategies that integrate measures of social control and technological control, teamwork, hierarchies and employees' responsibilities. Most interviews were documented with a recording device or recording software (e. g. videoconferencing software Zoom) and transcribed verbatim. A few interviews were documented in memory logs due to confidentiality concerns of the interviewees. Given the qualitative framework, the results were interpreted and explicated in several discussion rounds within the team. We used explanatory, interpretive procedures to analyse the statements within the interview protocols (Flick 2009). In this process, the meaning of relevant statements was explicated through an in-depth analysis of interview protocols. This careful procedure then allowed for abstraction of the logic of meaning (Soeffner 2003). For the coding and classification of the comprehensive interview material, we used MAXQDA software. Quotes used in the results section were translated from German to English.

4 Local labour control in the inner metropolitan area

Large open spaces are rare in inner metropolitan locations. The identified inner metropolitan distribution centres are small and usually serve to overcome the 'last mile' to the customer. A central location and short distances are vital to deliver goods effectively in heavy city traffic. Compared to the large logistic centres in the outer metropolitan area, inner metropolitan warehouses handle smaller volumes. They are set up close to the respective target markets where inner metropolitan space is available, for example in former shops.

4.1 Dominance of social labour control over technological control

The firms examined are predominantly young start-ups, most founded in the 2010s. Our interviews show a prevailing work culture where social control with a consent-oriented mode of leadership is predominant. For example, an expert of an e-commerce support agency explained that there are "very flat hierarchies and work according to agile management methods, that is, self-organised teams, no hierarchies, so nobody tells you what to do, in principle." A managing director of a start-up of local lifestyle items in the inner metropolitan area of Hamburg described labour relationships based on self-responsibility and motivation in the warehouse as follows:

"The guys in the warehouse, they actually (...) have an emotional connection to the customers and the products and simply work better than someone who only does it for money (...). It's not just a job. With us, it's really a bit of passion (...). We do that through passion. We are really hard-working merchants. But I also know about the fun factor, which usually gives them a boost."

The same interviewee illustrated that, in this spirit of leadership, time efficiency is high. There is also strong market-driven pressure to work fast and perform tasks perfectly. Managerial control operates through and disguises itself behind the commitment to customers. The interview partner specified that such employee work attitude does not occur automatically but requires management's conscious task design:

"The logistics stories are basically old. So, warehouse workers (...), these jobs have been around for forty years. However, with regard to the change (ordered today, delivered today), you also need a significantly higher level of skills. And we do it like this, for example: You probably don't believe, but I have an Abitur [A-level

graduation] rate of one hundred percent in the warehouse. (...) And everyone who works in our warehouse does not just stupidly pack goods from a shelf but is always responsible for (...) processes. (...) So, someone who works in our warehouse has a really high level of responsibility (...). And we have a corporate culture where everyone has responsibility. I don't need to control anyone. I never control someone in terms of the quality of their work. They all control themselves, celebrate successes together."

The quotation above shows that, at least in this case, employees in the warehouse have a high skill level and thus belong to the valuable core workforce, which characterises post-Fordism. The study showed that, in inner metropolitan small warehouses, neo-Taylorist automation and digital control is less practised compared to in large warehouses of the outer metropolitan areas. This is because smaller warehouses have a clear layout and managers can observe how workers perform their tasks at a glance. This kind of predominantly social labour control is also inspired by the 'family' spirit that can often be found in small businesses. The same interviewee explains the subordinate role of technological control in the workplace:

"We have [digital] hours tracking, and only so that people can see where they have invested their time to optimise themselves. I've never looked into the time recordings, I don't have any time, I don't feel like it. I look at the KPIs [Key Performance Indicators], how (...) the product ranges are developing. But definitely not whether someone is working enough."

Although control of the retail process and labour control are interrelated, an online retailer in Cologne explained that he has good reasons for not using the data in an individualised manner to control the employees:

"As soon as you monitor numbers, key figures, how much someone achieves or does not achieve, there must be certain monitoring. I have to know in the evening what is done and what is not, but I don't see how much the individual has done. (...) We are a family business; we are all very close here (...). So, as I said, the work has to be fun in some way, otherwise, the employee won't gladly come to us."

However, 'friendly' consent-oriented modes of social control, with which managers describe themselves and thus present themselves positively, also follow the main objective of time efficiency and customer satisfaction. This kind of labour control harkens back to Arvidsson et al. (2010) who critically discuss 'passionate' work in the fashion industry, which is generally considered creative and satisfying work but instead is generally difficult and overburdening. The management as decision maker disappears behind the time efficiency (Hardaker 2021), and the employees internalise "the imperative to perform, a subjectification process"

(Moore & Robinson 2016, 2774). In our interviews, a representative of an employers' association explained the weak collective bargaining power in start-up culture by saying that "because of this non-hierarchical way (...), we have resolved this issue of co-determination a bit, *nolens volens*".

4.2 Labour control in form of digital surveillance in the quick commerce segment

Our interview material shows that even though social labour control is predominant both as a motivational strategy and in the form of subjectification and individualised time pressure, some online retailers also use digital surveillance. This is particularly the case in the delivery process of quick commerce online retailers.

In quick commerce, workers' movements are tracked in real time through a mobile application. This is not only the case for couriers but also for the workers in the warehouses, albeit to a lesser extent. The main reason for digital control is that the quick commerce sector has experienced tremendous economic growth since the early 2010s and especially during the COVID-19 pandemic (Dannenberg et al. 2020; Luxen et al. 2022). Quick commerce companies have expanded as much as they can, even if it is not profitable at first. Given these constraints, firms exploit the local labour market as extensively as possible. Often, the firms use temporary worker agencies. Their mobile apps direct the communication between employer and employee.

Many migrant workers are employed; migrant workers use the quick commerce sector as a first low-barrier entry point into the German labour market. Without German language skills and with hardly any social contacts to employers in Germany, newly arriving migrant workers are in a particularly weak position on the German labour market and thus use the flexible labour conditions of this economic segment. Particularly in Berlin, our study showed highly conflictive labour relations and workers' protests against the severe time pressure and related digital surveillance mechanisms.

4.3 Weak workers' representation

It has to be considered that it is particularly difficult for trade unions to organise workers in the various small warehouses of inner-metropolitan online retail. In general, the retail sector as a whole is a difficult area for trade union activities in Germany. A trade union representative illustrated this:

“In retail, we don’t have the usual social partnership relationship that prevails, for example, in chemical sectors or something like that. Rather, we tend to have a very conflictual relationship with one another. (...) Some would say it’s up to us [the unions], I would rather not. In principle, there has been a dramatic cut-throat competition in retail for 25 or 30 years, which is causing enormous pressure on corporations. This also leads to different capital strategies in retail, and that, in turn, leads to a changed relationship with works councils and with us. This means that the employers in the retail sector are trying to prevent works councils from being set up and trying to prevent co-determination structures due to fierce competition.”

In our study, only some larger hybrid retailers, which have several locations in inner metropolitan locations and the outer metropolitan area, have works councils that are responsible for the whole firm. This includes the employees of the warehouse and the employees in administration, sales and so forth. An interviewee from a retailer in Munich expressed:

“The works council is there for everyone; it has to deal with all areas and is logically the contact for all employees in the firm. It doesn’t matter in which area they are responsible.”

However, in general, it has to be concluded that the power of trade unions and works councils is weak in the inner metropolitan warehouses. Therefore, the prevailing kind of leadership style is up to the manager (consent-orientation or conflictive).

In particular, the quick commerce segment is a challenge for workers’ representation. Particularly in Berlin, workers in the inner metropolitan quick commerce sector have held several strikes for higher wages and better working conditions. A prominent example is the quick commerce food retailer Gorillas, where institutionalised labour representation by trade unions is missing. In response, new grassroots forms of labour organisation have recently emerged. The protesting Gorillas workers, who were supported by grassroots migrant organisations, were able to push through the election of a works council (see also Fairwork 2021). However, due to lacking affiliation of the works council to the trade union, this council has limited resources and power to act.

5 Local labour control in the outer metropolitan area

As shown in the following, ‘digital Taylorism’ is pronounced in the investigated large logistic centres that are located in the outer metropolitan area. However, there are unions and works councils who represent the interests of the workers.

5.1 Strong technological labour control (digital Taylorism)

In the large warehouses, run by food, garment, electronics and mixed assortment retailers, the processes of stowing, picking and packing of goods and preparing them for sending is highly automated. Moreover, digital technologies often prescribe exactly how workers conduct their tasks, monitor workers’ performance and reduce social contact. Two key quotations from local unionists (who were formerly works council members) illustrate the neo-Taylorist work organisation:

“The work is totally monotonous and of course, you have the whole time in your mind: ‘I’m being watched here, and I don’t want to have such a conversation [with my supervisor]’. There are other activities here where people work a little more freely, but only a few.”

“[There is a] certain monotony in work. (...) The algorithm tells the workers completely what they have to do, and they walk 8 to 14 kilometres a day through these distribution centres. The algorithm tells me when and how to pack. The algorithm also tells me the path I have to take. So, that is absolutely not self-determined work, it is actually an alienation from work. And the algorithm also specifies when the supervisor has to have a conversation because there were too long periods of inactivity.”

Our findings are therefore in line with prevalent findings about the high degree of control (‘digital Taylorism’) in large logistics centres of online retail, such as Amazon warehouses (Briken & Taylor 2018; Schein 2017). They also align with the findings of Delfanti (2019) who argues that Algorithms ‘datafy’ the activities of warehouse workers, and Delfanti and Frey (2021) who illustrate that human work extends the scope of warehouse automation. Cattero & D’Onofrio (2018) speak of ‘Tertiary Factories’ to illustrate that, in such large warehouses, the working conditions are similar to large factories with automated Taylorist organisation.

5.2 Social labour control as additional pressure on employees

In addition to such detailed technological control of the work process, social control is performed through the general threat of replaceability of the workers, for example, by robots, automates and digital devices. Moreover, and much more immediately, there is the threat of replacing one worker with another, given the generally low-skilled nature of tasks that allows managers to implement ‘hire and fire’ practices. This illustrates the relevance of van Doorn’s argument (2017) that service work in the logistics

sector is increasingly performed by a fungible and superfluous workforce. For example, Amazon tapped into the migrant labour markets and employed refugees who came to Germany in the 2010s. The migrants who had just immigrated particularly faced language barriers (see 4.2). They were a vulnerable group in the labour market, because they did not know their rights and faced barriers to finding employment due to the non-recognition of many qualification certificates received in their countries of origin. Additionally, they were difficult to approach for trade unions and works councils – at least initially – because many were socialised in different political systems where unions are not regarded positively. This allowed Amazon to exert social control by implicit threats, as a unionist described:

“Of course, there is our biggest opponent that we find there, the fear: the fear of reprisals, the fear of losing the job, the fear of unpleasant conversations [with the supervisor], so that’s a hurdle that makes the whole thing difficult.”

As our interviews with former works councils of Amazon and unionists confirm, this kind of control by the threat of job loss is a common practice of social control also in other large warehouses (see Jaehrling 2019; Staab & Geschke 2019). However, our interview partners also reported that many Amazon employees have learned to use their labour rights over time. Interview partners from trade unions consistently stated that they have gradually achieved better conditions through co-determination in the large warehouses.

While these results generally confirm a high degree of technological and social control in the large warehouses in the outer metropolitan area, we also found some exceptions. Similar to the case of the inner metropolitan case studies, where we also found some opposing tendencies to the predominant social labour control, our qualitative study revealed that there are some managers in warehouses of the outer metropolitan area who reject tight digital control. Instead, these managers combined consent-oriented leadership styles with limited technological control. For example, a manager of an online food retailer said:

“The requirements in terms of qualifications are not so high; however, [the requirements are high] in terms of motivation and team spirit. We make sure that people want to be part of a team and have fun to provide people with food. And we make sure that we create a good working environment, for example, everyone can eat and drink free of charge here at any time and they can listen to music as they want in their warehouse. In other words, all the freedom we can give there, we do give. And those who advance will have a good chance of developing with us.”

While the same interviewed manager explained that the firm also uses ‘wearables’ for personal control (“Everything is registered in the software, measured and that enables us to determine directly at the end of the day, how the day went”), he emphasised that he used the information obtained from digital technology in a reflective manner to promote the employees’ willingness to work and not to discourage it:

“So, we are careful (...). We don’t want to immediately reflect every single piece of feedback back to the employee and say, here you did it wrong, that’s why I say yes, it’s actually much more about motivating than about controlling. To be honest, we don’t have the time to follow up on every single piece of feedback and to discuss it with each individual, it’s more about patterns. (...). And that’s the cool thing, that we can really play it back and then talk about it and improve it.”

5.3 Workers’ representation

In large logistic centres, trade unions and works councils often play an important role for collective worker representation. Works councils control managers’ compliance with work contracts and monitor the use of technologies (such as automation, robots and devices for digital control). Works councils are endowed with strong co-determination rights when management introduces new technologies in the workplace and have the option to veto management decisions. German unions have the right to strike for higher wages and to negotiate collective agreements about workers’ payment, working time and further work conditions (see Streeck/Hassel 2003).

Such collective labour representation is a specific characteristic of Germany if we compare it to labour representation in other countries (Briken & Taylor 2018; Cattero & D’Onofrio 2018; Delfanti 2019; Delfanti & Frey 2021; Schein 2017). For example, as our interviews with trade unionists have shown, there are works councils and a unionised workforce in every large Amazon warehouse in Germany. However, the influence of works councils on the organisation and control of work processes in ‘digital Taylorism’ is limited because they cannot participate in the development of technology that is designed in international research networks. Thus, despite works councils’ co-determination efforts, work processes generally remain repetitious and tightly controlled by technology.

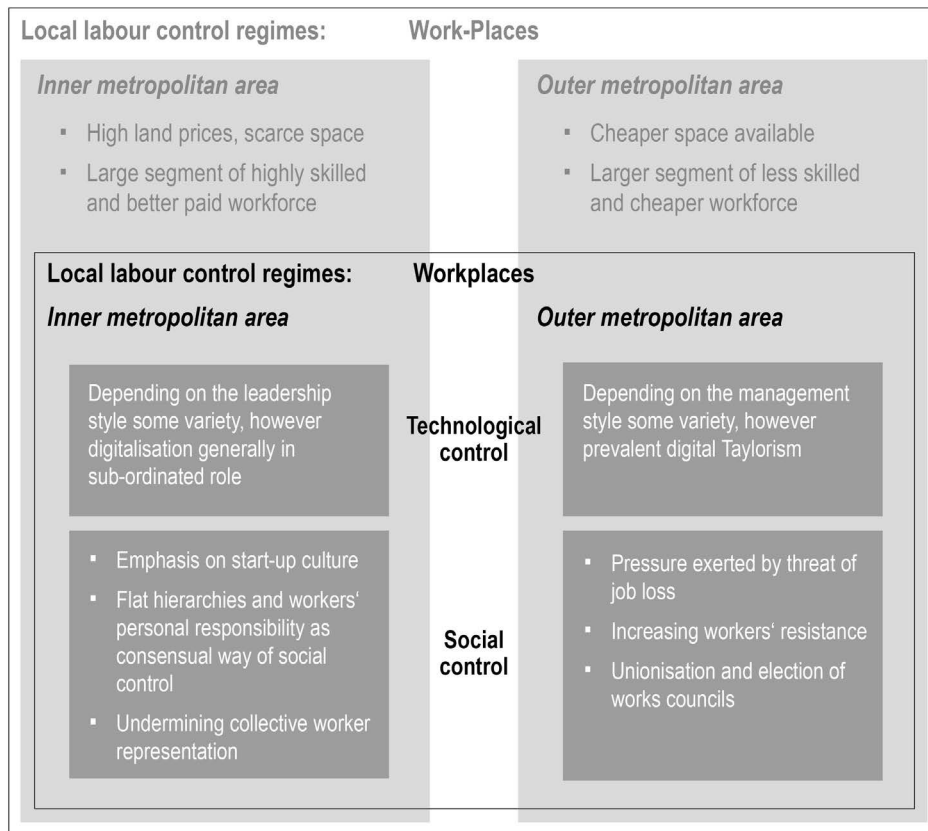


Figure 2: Labour control in different warehouse locations (own illustration)

6 Discussion

The results illustrated that the concept of the local labour control regime, as well as existing studies on warehouse work in online retail, can profit from a nuanced view of the spatiality of local labour control regimes. The advantage of our qualitative analyses is that it shows the broad spectrum of technological and social control in a single sector and value chain function, and how it varies between inner and outer metropolitan areas. However, overarching tendencies also emerged. The results show that local availability and cost of land influence the size of the warehouses. In addition, local availability and costs of skilled labour play a role. In smaller warehouses of the inner metropolitan area, a start-up culture prevails, and digital control generally plays a subordinate role. In large warehouses of the outer metropolitan area, ‘digital Taylorism’ is prevalent. While powerful collective worker representation is lacking in smaller inner metropolitan warehouses, unionisation and works councils play an important role in large warehouses in the outer metropolitan area.

In sum, our study has shown, with all existing variety, the high interdependence of technological and social

control. For example, if digital technologies indicate that a worker’s performance does not meet the productivity standards, a critical conversation with the superior can follow. Due to the repetitive and standardised mode of work organisation, workers can be easily replaced. This causes a permanent threat to workers in large warehouses, especially to those who belong to low-skilled and vulnerable parts of the local labour market (see Butollo et al. 2018; van Doorn 2017; van Doorn et al. 2020). However, in contrast to prevalent findings about the high degree of technological and social control, such as in the Amazon warehouses (see Briken & Taylor 2018; Cattero & D’Onofrio 2018; Delfanti 2019; Delfanti & Frey 2021; Schein 2017), our study illustrated that some managers of large warehouses invest in labour and create better working conditions. Finally, our analysis has shown that works councils and trade unions can gradually improve labour conditions.

Thus, the study illustrated *that* there are spatial differences in labour control and has shown *why* they matter (see Figure 2). For future research, it would be interesting to explore how such spatial divisions of labour, as this study revealed for the local land and labour market, could influence managerial labour control patterns in other industries,

for example in productive industries or in stationary retail (see Coe 2020; Hesse 2020; López et al. 2021).

7 Conclusion

Certainly, there are some limitations to this study. Based on qualitative methods, generalisability is limited. However, the results of our study break down existing ideas that only point to the dark side of working conditions in online retail warehouses. Our study shows that grey zones also exist, where different variants of technological and social control intersect.

Future research on warehouse work could include further characteristics of particular places, such as former manufacturing areas that undergo processes of reconstruction and emerging logistic hubs, which could provide interesting regional cases. Another stimulating topic is how local labour control regimes differ between German cases and those in other countries. Hence, the insights from this study could profit from international comparative research (see Cattero & D'Onofrio 2018). The spatial division of labour, which we found in the German cases, may differ in other countries (see Hesse 2020; Rodrigue 2020), also due to internationally varying industrial relations (Bathelt & Gertler 2005). Labour control might be more coercive in other countries. For example, the use of temporary worker agencies is common in warehouse work in the UK (Briken & Taylor 2018). Moreover, studies show that migrant gig workers who depend on the low entry barriers of this highly flexible labour market segment are often particularly affected by exploitative working conditions (Altenried 2021; van Doorn & Badger 2020). Thus, further academic knowledge is necessary on how labour in the digital age differs internationally.

Our findings are relevant for practitioners, as they show that there is scope for shaping task designs in favour of humane and decent work (see Fuchs 2020; ILO 2021). Using digital data to control the logistical processes does not necessarily imply using the data in an individualised manner to control employees. Managers have some freedom to generate and implement digital innovation in a more employee-friendly way. Moreover, institutionalised co-determination allows extending the scope of action at the workplace and limits digital surveillance of workers. A stronger awareness of practitioners for variations of labour control dynamics between inner and outer metropolitan areas seems promising because it sharpens the attention to problematic implications of 'digital Taylorism' and further social control mechanisms in the New Economy, and for opportunities to improve working conditions. In a nutshell,

the study showed that institutionalised and practised economic democracy plays a crucial role for labour agency and society (Cumbers et al. 2020).

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