Labour Process in E-Commerce Logistic Service Network: Analysis of Amazon in India

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Declaration

This thesis is the result of the author's original research. It has been composed by the author and has not been previously submitted for examination, which has led to the award of a degree.

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Date: 01/05/2025

To all the warehouse workers toiling to live a dignified and meaningful life.

Extended Abstract

The advent of e-commerce has significantly transformed retail and logistics services, driven by advancements in Information and Communication Technology (ICT). This transformation has reconfigured the retail landscape, leading to the rise of transnational e-commerce giants like Amazon. In parallel, the concomitant logistics services of warehousing and delivery have evolved to support digitally mediated retailing, fundamentally altering how goods are stored, processed, and delivered. Furthermore, e-commerce firms have subsumed several regional logistics firms into their operations through various inter-firm relationships, such as outsourcing, subcontracting, and subsidiarisation, converting e-commerce-linked logistics services into a production network. As logistics integrates more deeply with e-commerce operations, it has redefined labour processes, work organisation, and employment relations in the sector.

This thesis explores the labour process within Amazon's e-commerce-linked logistics service network (or e-LSN) in India through a year-long field study of functionally interconnected warehousing facilities across Karnataka and Kerala. Specifically, it investigates how interactions between technological innovations, managerial control mechanisms, inter-firm relationships, flexible labour utilisation practices, broader political economy of e-commerce, and that of the regional labour markets in which the different logistics facilities are embedded, shapes the labour process and employment relations at the different nodes or facilities in the network. The research objectives of the thesis are the following. First, it is to analyse the organisational structure, division of labour, and managerial control mechanisms within and across Amazon's e-LSN in India. Second, it is to examine the impact of Amazon's proprietary digital technologies on the labour process and managerial control mechanisms. Third, it is to investigate how Amazon's inter-firm organisational arrangements such as subcontracting and subsidiarising logistics operations to partner enterprises affects labour processes. Fourth, it is to assess how regional socio-economic conditions influence labour recruitment, and utilisation at the worksites; and finally, explore workers' experiences, and exercise of agency, including adaptation, recalcitrance, and resistance to changing their conditions at work.

In the quest to understand the source of economic value circulated across production networks, this thesis has synthesised Global Production Network (GPN) with Labour Process Theory (LPT) to address key theoretical gaps. The Global Commodity Chain (GCC) and Global Value Chain (GVC) frameworks have been instrumental in analysing inter-firm governance structures and value distribution but have largely confined labour's active agency to value distribution struggles. While these frameworks have provided critical insights into inter-firm relations, they remain limited in their treatment of employment relations, managerial control mechanisms, and labour's role in value creation. The GPN framework represents a theoretical advance over GVC, broadening the analytical scope by incorporating regional political economies, institutional actors, and the broader capitalist circuit of accumulation. However, despite these strengths, GPN continues to fall short in fully analysing labour's role in value generation, particularly in how workers shape and are shaped by production networks beyond their positioning in distributional processes. GPN scholarship has often overlooked the structural antagonism between capital and labour, failing to adequately incorporate how labour struggles, bargaining, and workplace control mechanisms shape production networks.

By integrating the labour process in the production network, this thesis has not only investigated the role of labour as an agency in the 'capturing the value' debate but also as an active agent in

creating value. Simultaneously, it has contributed to enhancing labour process theory by analysing how the labour process and managerial control mechanisms become reconfigured when integrated within the sites of and across a production network. In analysing the factors shaping the labour process and managerial control mechanisms in Amazon's facilities, previous studies have largely focused on how innovations in ICT and algorithmic-driven digital tools have transformed capital and employment relations within individual sites. However, these studies have treated the labour process in particular facilities as discrete entities, separate from Amazon's e-LSN. This thesis is the first study of the labour process in Amazon's warehouses in Global South that analyses the network comprehensively by integrating warehouse facilities, including receipt, stowing, picking, packing, and sortation, with last mile delivery services. Workplace employment relations in these facilities underscore that digitally mediated functionally interconnected production and service activities do not only create new jobs but also transform the labour process of existing forms of jobs.

Labour Process Theory (LPT) has explicated managerial control mechanisms and their transformation over time with technological innovation. While algorithmic control has received disproportionately greater attention from scholars than established forms of control (simple, bureaucratic, technological, normative), this thesis demonstrates how algorithmic control melds with and transforms other forms of control, further reducing workers' ability to exercise discretion or autonomy at work. This finding debunks technological determinism by highlighting the enduring significance of widely recognised human mediated control mechanisms. Algorithms themselves do not exercise power autonomously but rather, agency is conferred by management, which interprets and acts upon algorithmic-generated data. The thesis provides evidence that a certain degree of management discretion persists, albeit within the constraints imposed by Amazon's digital ecosystem. For example, tolerance of worker errors and underperformance may vary based on fluctuations in market demand and order volumes, bolstered by flexible labour utilisation practices. Given that these sites are functionally linked, their operations and performance reciprocally influence one another. Amazon integrates warehousing and delivery functions through algorithmically generated performance monitoring metrics at site and individual levels. Algorithms serve to coordinate operations across these interconnected sites by calculating the required time to dispatch each order from each facility so that it reaches the customer within strict temporal parameters. Site-level performance metrics cascade down through functions, ultimately determining individual worker targets, and exacerbating pressure on warehouse workers and delivery drivers.

Amazon's global dominance in e-commerce, including in India, is well acknowledged. After critically reviewing the role of financial capital, investment in digital capital, and Amazon's extra-firm relationships with the government, the thesis highlights how Amazon has occupied the position of lead firm in its e-LSN. Leveraging its dominant position, Amazon orchestrates competition across its network to reduce labour costs and the share of value distributed to partner enterprises. Algorithmically generated site-level performance metrics rank and evaluate facilities, with lower-performing sites penalised by reducing their operating capacity and payment rates. This site-level competitive pressure is transmitted to workers through ever-demanding productivity targets, job insecurity, and layoffs, further leveraging flexible labour utilisation practices and strategies.

By integrating LPT with the political economy of labour in India, this thesis identifies the effects of informal national and regional labour markets on recruitment, utilisation, and workforce composition with each facility in the network. Amazon extensively hires workers on part-time or

short-term contracts, reducing labour costs but increasing workforce vulnerability. This contractual segmentation differentiates not only workers, but also managers, a case found unique to India. Further, differential labour utilisation practices between migrant and local employees and on gender lines reinforces disparities. This growing tendency of informalisation of previously formal work has been observed in India but is now emerging in the Global North. Following GPN theory, this thesis highlights the dialectics of global-local relations, demonstrating how Amazon's strategic coupling with local suppliers reinforces informal labour practices, cheapening labour through intensified work, precarious employment, and reduced job and income security.

Labour remains indispensable in production networks, with agency to disrupt value distribution and transform value creation. Amazon employs a combination of managerial control mechanisms, integrating simple, technological, bureaucratic, normative, and algorithmic controls to intensify work pressure, overcome labour indeterminacy, and thwart imminent labour counter actions, including resistance. Consequently, workers experience reduced autonomy, increased job insecurity, and severe concerns over health and wellbeing. In response, workers do exhibit, however limited, resistance through sabotage, slowdowns, and, in some regions, collective action. Regional political economies influence these responses; in Karnataka, resistance remains individualistic, while in Kerala, with a stronger labour movement tradition, collective actions such as strikes have occurred. However, Amazon's strategies of segmenting workers and discouraging association-building undermine organised resistance. Moreover, this dialectical relationship between control and resistance indicated from this study resonates the persistence of structural antagonism in employment relationship under contemporary mode of production.

Finally, this thesis delivers insights into the elusive connectivity problem of LPT by situating Amazon's labour process within both the broader circuit of capital accumulation in e-commerce sector and the national and regional socio-economic factors structuring employment. These broader forces beyond the network further configures work intensity, division of labour, and surplus value extraction. By incorporating the political economy of labour in India and the global e-commerce market into LPT and GPN, this research offers a deeper understanding of how labour process and employment relations are simultaneously shape and are being shaped within global production networks.

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My PhD journey has been a maze of challenges, discoveries, and growth. As one of my early ventures into social science research, it brought me face-to-face with the complexities of the real world, an experience that was both daunting and enlightening. From initial apprehensions to a sense of satisfaction, this journey has been shaped by the support, guidance, help, care, and invaluable love of many. Each of them has enriched my experience, making this journey not only memorable but truly colourful, a chapter of my life I will always treasure.

I sincerely want to thank my first supervisor, Philip Taylor, for being a constant support in this journey. He has been instrumental in this journey, be it in giving leads in finding potential respondents, or helping me in articulating and sometimes even in identifying the key concepts which have been segued to build this thesis. It has been an honour to get the opportunity to get him as a guide, giving the opportunity to discuss with him ideas, literature, and share thoughts while comprehending the transcripts and field notes. In this journey, he has also been a true companion. Walking alongside him, I have been inspired by his relentless enthusiasm for social causes, ranging from racism and immigration to refugee crises and labour exploitation. His dedication and passion for research, as well as his ability to merge academic work with praxis, are the virtue which I deeply admire. Lastly, I cannot thank him enough for those exhilarating weekend football evenings. Go Killie!

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Manikantha Nataraj
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List of Abbreviations

3PL	Third Party Logistic
4PL	Fourth Party Logistic
ADE	Assistant Delivery Executive
AIGWA	All India Gig Workers Association
AITUC	All India Trade Union Congress
AIWA	Amazon India Workers Association
ASIN	Amazon Standard Identification Number
ATS	Automated Transfer System
AWS	Amazon Web Service
B2C	Business to Consumers
BMS	Bharatiya Mazdoor Sangh
BOOSTA	Blocking Overhanging, Overstuffing, Same vs Similar, Types of bins, Above divider
BPO	Business Process Outsourcing
CITU	Centre for Indian Trade Union
CPT	Critical Pull Time
CR	Return Centre
CRM	Cluster Regional Manager
CTL	Cluster Team Leader
DIH	Devanahalli Industrial Hub
DIPP	Department of Industrial Policy and Promotion
DM	Deputy Manager
DNC	Did not Connect
DNR	Did not Reply
DS	Delivery Stations
DVN	Digital Value Network
EAN	European Access Number
EDD	Estimated Delivery Date
e-LSN	E-Commerce Integrated Logistic Service Network
EMD	Early Morning Delivery
ESI	Employee State Insurance
FC	Fulfilment Centre
FDDS	First Day Delivery Service
FDI	Foreign Direct Investment
FNSKU	Fulfilment Network Stock Keeping Unit
GCC	Global Commodity Chains
GDP	Gross Domestic Product
GPN	Global Production Networks
GVA	Gross Value Added
GVC	Global Value Chains
HHD	Handheld Device
HR	Human Resource Manager

IB	In Bound Functions
ICQA	Inventory Check and Quality Assessment
ICT	Information and Communication Technology
INTUC	Indian National Trade Union Congress
ISBN	International Standard Book Number
L and T	Learning and Training
LH	Line Haulage
LPT	Core-Labour Process Theory
MSF	Multi Seller Flex
MSME	Micro Small and Medium Enterprise
NCNS	No Call No Show
OB	Out Bound Function
OM	Operations Manager
OT	Over Time
P/COD	Pay/Cash on Delivery
PA	Process Assistant
PDD	Provisional Delivery Date
PF	Provident Fund
PLFS	Periodic Labour Force Survey
PO	Participant Observation
POC	Proof of Concepts
PS	Problem Solver
QPH	Quantities Processed per Hour
RBI	Reserve Bank of India
RC	Receive Centre
RF	Radio Frequency Scanners
RM	Regional Operating Manager
RTS	Return to Station
SC	Sortation Centre
SLA	Service Level Agreements
SLAM	Scan Label Apply Manifest
SL	Site Lead
SLP	Security and Loss Prevention
SOP	Standard Operating Protocols
SPOO	Shipping Package Number
SS	Station Supervisor
TFS	Tote Filler System
TL	Team Leader
TNC	Transnational Corporation
UNITES	Union of IT and ITES Employees
UPC	Universal Product Code
UPH	Units Processed per Hour
VoC	Varieties of Capitalism

VRC	Vertical Reciprocating Conveyor
VRID	Virtual Rider ID
WHS	Warehouse Health and Safety
WMS	Warehouse Management System

Chapter 1: Introduction

1.1. Advent of E-Commerce and Transformation in Retail Service

Retailing has evolved significantly over time, from mail-order catalogues to e-commerce websites, and the 'brick-and-mortar' stores like department stores, malls, and supermarkets have been supplemented with B2C home delivery services (Hortacsu and Syverson, 2015; Alexander, 2016). A key driver of this transformation has been developments in Information and Communication Technology (ICT) (O'Mahony and Van Ark, 2005; UNCTAD, 2017; Kern, 2018), which have transformed the nature of retail services. E-commerce consumers can now access 24/7 shopping, browse extensive product catalogues online, and see personalised shopping pages tailored to their search and purchase history. Moreover, digital platforms have the capacity to process vast amounts of consumer data, including their preferences, purchasing patterns, sales, and market forecasts, much more extensively than the insights sellers traditionally possessed about their markets (Lichtenstein, 2009). Concomitantly, the technological transformation in retailing reconfigured the retail market with a handful of tech-driven multinational supermarkets such as Walmart and transnational e-commerce giants like Amazon, rising in prominence (Hamilton et al, 2011; Ellickson, 2016; Bank Munoz et al, 2018; Ives et al, 2019).

The transformation in retailing services cannot be fully acknowledged without considering the concurrent change in logistics services. Logistics, a critical component of distribution activities, has evolved from distributing essentials to war troops during the World Wars to an essential facilitator of day-to-day economic activities, mediating connections between raw material suppliers, manufacturers, wholesalers, retailers, and consumers (Allen, 1997; Cowen, 2014). In ICT embedded retailing services, logistics is an indispensable complement to the digital services of e-commerce firms in completing the customers' shopping orders. This integration of technologically driven e-commerce with logistics has not only transformed the retailing sector but also has redefined the functioning of logistics itself. The guiding principles of logistics, minimising distribution time and cost (Daugherty, 2011), are deeply embedded in the business models of e-commerce giants, fundamentally altering how goods are supplied, warehoused, distributed and consumed. The appeal of e-commerce services to customers rests not only in providing access to an unprecedented volume and variety of items from a more extensive range of sellers and vendors, but also through the swiftness and seemingly smooth transition of products from placing the orders online to receiving them at the doorsteps. E-commerce companies often proclaim their ability to provide one- or two-day delivery guarantees, inciting impulsive buying (Ramadan et al, 2021).

Simultaneously, the nature of work and employment in retail and the associated logistic sectors have undergone transformation. While a few roles or types of job have become redundant, several others have become re-characterised. For instance, shelf stockers and salespersons in shops have been replaced by web developers of shopping sites and delivery drivers. In parallel, the role of in-store cashiers has been displaced by digital payment gateways (Kenny, 2015; Kenny and Stecker, 2018; Americo and Veronico, 2018; Chava et al, 2018). Further, the positions of warehouse workers and delivery drivers have become critical in ensuring timely order processing and delivery (Levy, 2015; Briken and Taylor, 2018), which itself have been reconfigured as technology, imbricated with software packages and algorithms, came to dictate the pace and intensity of logistic

operations (Delfanti, 2019). This thesis aims to analyse the changing nature of logistic work as it integrates with e-commerce services. In other words, it aims to bring to the fore the hidden activities which facilitate the transference of shipment orders from sellers to the consumers, set in motion immediately after the clicking of the 'buy now' button in the shopping websites.

1.2. E-Commerce Logistic Service Network

Traditionally, logistic services were confined to shipping and transportation with storing and warehousing activities undertaken by manufacturers and sellers themselves (Christopher, 2016). Transformation in retail to e-commerce have connected real time spatially dispersed consumers with an unprecedentedly expanded range of sellers. In parallel, the ease and comfort of shopping enhanced the frequency and volume of consumption. To maintain this large-scale consumer demand and meet their desire for instant gratification (Huang, 2008), e-commerce firms increasingly focussed on investing in and expanding logistic activities to specialised warehousing services comprised of stowing, sorting, parcelling shipment orders while subsequently expediting traditional shipping and transportation services. Further, e-commerce companies started resorting to outsourcing and subcontracting logistics activities to third party specialists (Coe and Jordhus-Lier, 2011; Hamilton et al, 2011). As logistic firms increasingly integrated their operations with e-commerce companies, their functioning became recalibrated as they were increasingly entwined with the latter's contractual obligations to deliver their services at minimum time and cost (Newsome, 2015). In parallel, e-commerce companies prioritised developing IT services in-house (Fernie.et al, 2010), designing inventory management software for coordinating and monitoring the logistic services executed by their subcontracted partners. Thus, logistic firms were subsumed into a network of inter-firm linkages with the e-commerce operations. Further, logistic networks became denser and more complex with the introduction of specialised warehousing facilities, specifically fulfilment centres, sortation centres, delivery stations, freight stations and fast delivery hubs (Rodrigue, 2020).

A pertinent observation is the absence of a distinctive, universally agreed terminological definition for this e-commerce integrated logistic network. While practitioners and economists commonly articulate it as an e-commerce supply chain (Golicic et al, 2001; Bakker et al, 2008; Vanelslander et al, 2013) economic geographers use the term 'distribution network' (Rodrigue, 2020) or 'distribution space' (Henaway, 2022). Supply chains solely focus on the functional linkages between respective sequential sites with the aim of achieving operational efficiency, while the distribution networks or space depictions place emphasise on the spatial characteristics of these logistic services. However, it is argued, neither approach captures the complexities and variations which may arise in the inter-firm linkages between the e-commerce and logistic firms and particularly the ways in which the employer-worker relationships within warehouses and delivery stations are reconstituted. Prominent and related frameworks rooted in economic geography, that mapped and conceptualised inter-firm linkages have been the Global Value Chain (GVC) or Global Production Network (GPN) (Henderson et al, 2002; Gereffi et al, 2005). Although GVC and GPN frameworks have distinctive orientations and lines of inquiry, they extend their analytical reach beyond the functional linkages to discern the power dynamics between the organisational actors, and their effects on value creation, distribution, and development in general. Moreover, the related GVC/GPN frameworks were not formulated specifically to analyse logistic services. Besides, neither the supply chain, distribution network/space, nor GVC frameworks incorporate the role

of labour in networks other than considering them as input to production activities, whereas GPN does seek to consider labour agency (Henderson et al, 2002; Cumbers et al, 2008).

With the aim to investigate the changing nature of logistics work and assess the impacts on work organisation, labour and employment relations, this thesis takes conceptual substance from the GPN framework in conducting the study. Acknowledging the limitations of existing formulations, this thesis coins the terminology, e-commerce Logistic Service Network or e-LSN, to articulate the e-commerce integrated logistic service network. Resonating with the GPN framework, the e-LSN captures the inter-firm linkages not only functionally, but also relationally. While the functional dimension of e-LSN encompasses the operational interdependence between the warehouses, delivery stations and the e-commerce platforms, the relational dimension captures the agential interaction between the employers, managers, and workers in the network. Essentially e-LSN can be understood as a conceptual extension of GPN, particularly focused to analyse the e-commerce integrated logistics services. The key difference, however, between the GPN frame and the e-LSN is the central role of labour as the source of value in the network. Much of the debates on labour in production networks have focussed on how value generated in the network can be *captured* by labour (Barrientos et al, 2011; Milberg and Winkler, 2011), whereas only a few have highlighted the central role of labour in value *creation* in the network (Taylor, 2010; Taylor et al, 2015). Consistent with the latter, e-LSN seeks to extend the analytical purchase of GPN by considering the production or service networks as equally a system of embodied labour, in which workers are not only active agents in the value distribution process, but are the very source of value, captured and distributed in the network. In e-LSN the labour process is the central mechanism which articulates the value creation process. By bringing in labour process in as the genesis of value generation/creation, this thesis distinctively investigates and critiques the nature of work organisation and the employment relations in e-LSN.

1.3. Work in the e-LSN: The Case of Amazon

An apposite case for investigating the labour process in an e-LSN is Amazon, one of the five giant big tech companies shaping the international economy with innovative business models (Fuchs et al, 2022). From its inception as an online book retailer today, it is the world's largest e-commerce TNC with its e-commerce website launched and e-LSN operating sites (diverse specialised warehouses and delivery stations) established in 21 countries in the Global North predominantly, but also latterly in Global South. Further, through its inter-firm linkages with regional partner firms Amazon's e-LSN reaches over 100 other countries[1]. Several critical investigations have been undertaken to understand the labour process in Amazon's owned and operated warehouses, which include analysis of managerial control mechanisms, algorithmic control and management, digital surveillance, and their effects on workers' experiences and wellbeing (Staab and Nachtwey, 2016; Briken and Taylor, 2018; Delfanti, 2019; Struna and Reese, 2020; Massimo, 2020; Kellogg et al, 2020; Delfanti, 2021; Vallas et al, 2022; Kassem, 2022; Gutelius and Pinto, 2023). However, all these works have focussed on discrete warehouses extricated from Amazon's expansive logistic network. Further, research on Amazon's contribution in shaping national and regional markets, regulation, digital architecture, and digital governance reflects on its influential role in configuring

[1] https://www.gourmetads.com/articles/what-countries-does-amazon-operate/#:~:text=Then%20on%20the%20world%20scale,and%20Brazil%20to%20name%20some.

contemporary political economy (Wu and Gereffi, 2018; Rahman and Thelen, 2019; Culpepper and Thelen, 2020; Coveri et al, 2021; Hassel and Sieker, 2022). However, it is contended that, there is a deficit in explicitly integrating labour and the labour process in this analysis. Accordingly, a lacuna is identified in situating Amazon in the broader circuit of value creation and distribution or, in what Taylor et al (2015:19) articulate as, the "forest of a capitalist world economy".

An integrated analysis of labour process with broader political economy, is a problematic referred to as the 'connectivity issue' in the labour process theory tradition (Thompson and Newsome, 2004; Thompson and Vincent, 2010). Limited but pertinent investigations of what has been termed the connectivity issue have highlighted the role of financialization (Thompson, 2003), and market crises and competition (Taylor et al, 2005) on labour process. In the same vein, this thesis seeks to investigate the extent to which, and the mechanisms by which, the labour process in Amazon's e-LSN is not solely constructed by employment relations within the workplace. It is also configured by the causal forces arising from the functional linkages between the operating sites, the inter-firm relations between the employers and agents of capital in Amazon's e-LSN, and the broader political economic drivers of the firms' behaviours emanating both from the regions where the networks' operating sites are embedded and the global e-commerce market where Amazon dominates.

The study that comes closest to the connectivity issue in spatial, regional terms for analysis of Amazon's labour process is Briken and Taylor (2018) which drew causal linkages from the regional labour market condition in Swansea, UK on labour process and managerial control mechanism in an Amazon's warehouse. However, it singles out the warehouse from Amazon's wider e-LSN. Thus, to the best of the author's knowledge, this thesis is the first attempt to investigate Amazon's labour process within the firm's logistic service network as a whole, while situating the network within the broader political economic context and with respect to Amazon's accumulation strategy and distinctive, innovative e-commerce model. By situating the labour process not solely in an Amazon's warehouse alone but in 'nodes' across Amazon's e-LSN, enables one to discern and analyse the interrelationship between the sites and the ways in which the labour process is reconfigured through their functional linkages within the inter-firm governance and interaction between Amazon, as lead firm, and their regional network partners. An additional contribution this thesis makes is to investigate, contra many studies which focus on the Global North, Amazon's labour process in the Global South, in which India constitutes its fifth largest market[2]. This thesis is the first empirical study to examine the labour process within India's Amazon warehousing and delivery network in a comprehensive and integrated manner.

1.4. E-Commerce in Global South: Situating Amazon in India

The consequences of the Covid-19 pandemic abruptly raised e-commerce to the status of an essential service category in many countries, prompting its prolific expansion in the Global South (Reardon et al, 2021; CEPAL, 2021; Hossain et al, 2022). Many new, or recently formed, regional e-commerce enterprises expanded their operations, including Mercado Libre in Argentina and Brazil, Takealot in South Africa, and Flipkart in India, the latter in competition with Amazon. However, Amazon's strategic investment in building a digital ecosystem constituting inventory management software such as Amazon's Warehouse Management System (WMS) and cloud

[2] https://www.innovell.com/amazon-market-watch-the-top-10-amazon-markets/

computing platforms such as Amazon Web Service (AWS) elevated its scale and significance above other regional competitors, making it a distinctive actor in the contemporary 'platform economy' (Kenny and Zysman, 2016; Kenny et al, 2021). Moreover, many regional competitors themselves utilised Amazon's digital software and platforms, such as Mercado Libre which is built on the AWS (Atzeni, 2023).

Amazon entered in India in 2013 by launching its website Amazon.in and establishing their first warehouse or fulfilment centre in Bhiwandi, Mumbai, owned and operated by its regional subsidiary, Amazon India. Incrementally, it enlarged the reach of its operation to 60 FCs encompassing 15 states by 2024[3]. Eventually it established a 'network of warehouses' (Wani and Dar, 2023), comprising specialised facilities such as receive centres (RC), sortation centres (SC), delivery stations (DS), and return centres (CR), whose operations are integrated sequentially to expediate logistics and delivery services over expanded spaces across the country. Not all facilities are owned by Amazon India. Many were subcontracted to regional enterprises, including large established logistic companies or small and medium enterprises (Govindarajan and Warren, 2016; Kundu, 2021) making their e-LSN larger, denser and more complex.

This thesis investigates how the functions of these specialised facilities are coordinated to move orders from vendors to consumers. A key focus is on the labour processes both within these facilities, and, distinctively, how the interconnectedness between functionally linked sites impacts the e-LSN labour process in toto. Furthermore, given that many of these facilities are operated by national or regional subcontracted third parties, the thesis will explore how inter-firm relations between Amazon and its partners influence the labour processes within the latter owned and operated facilities in and across Amazon's network.

These operating sites are dispersed across various states and regions within India, each of which is characterised by a combination of shared national political economy and region-specific socio-economic dynamics (Harriss-White, 2001; Kumar, 2016). While there is a national framework governing capital regulation and investment patterns, regional diversity emerges through unique labour market characteristics. These variations are influenced by local state labour laws (Bhattacharjea, 2006; Bhattacharjea, 2021), specific patterns of labour migration (Mitra and Murayama, 2009; Keshri and Bhagat, 2013), and region-specific cultural factors, including workers' aspirations, expectations, values and attitudes to work (Singh, 1990; Panda and Gupta, 2004; Abdullah et al, 2024). This thesis seeks additionally to enquire how the region-specific socio-economic features, particularly pertaining to labour, influence the labour recruitment strategies and the subsequent labour utilisation and labour process dynamics inside the operating sites of Amazon's e-LSN.

1.5. Research Objectives and Research Questions

This thesis pursues five interrelated research objectives. First it seeks to analyse the labour process within Amazon's e-LSN facilities in India, with particular attention to how the interconnections between functionally linked sites shapes the process. Second, it investigates the implementation of

[3] https://press.aboutamazon.in/news-releases/news-release-details/amazon-boosts-its-logistics-network-ahead-festive-season

Amazon's bespoke digital technologies in logistics management and examines how these technologies configure managerial control mechanisms. Third, it explores the consequence of subcontracting logistics operations to partner enterprises, focusing on how such arrangements affect the labour process and managerial control within partner facilities. Fourth, it assesses the influence of region-specific socio-economic and labour market dynamics on labour recruitment, utilisation, and management strategies across Amazon's e-LSN in India. Finally, the thesis aims to evaluate how managerial control mechanisms impacts workers' everyday experiences and to analyse the forms of response and resistance that workers develop to relation to the evolving nature of their work.

To operationalise these objectives, the thesis addresses the following research questions:

1. What are the organisational structures, labour utilisation strategies, divisions of labour, and managerial control mechanisms in operation at each of Amazon's logistics sites in India?
2. How does Amazon's deployment of digital technologies in logistics management constitute the labour process and managerial control mechanisms within individual sites and across the wider Indian logistics network?
3. What role do the functional interlinkages between different facilities within Amazon's e-LSN play in shaping the labour process and managerial control mechanisms at each site?
4. In what ways does subcontracting logistics operations to third-party enterprises alter the labour process and managerial control within Amazon's partner firms?
5. How do regional socio-economic conditions and labour market characteristics influence recruitment and utilisation strategies within Amazon's logistics network in India?
6. What impacts do managerial control mechanisms have on workers' lived experiences of work and their broader aspirations, and how do workers respond to the changing nature of work within Amazon's e-LSN?

1.6. Synthesising Labour Process Theory and Production Network Frameworks

To answer these research questions this thesis strives to synthesise two theoretical foundations with a particular focus on analysing the role of labour in value creation and distribution in a production network. The first focuses on understanding production networks through the lens of two inter-related but distinct frames: Global Value Chain (GVC), and Global Production Network (GPN). GVC primarily centres on inter-firm linkages and governance in a network composed of lead firms and varied types of dependent suppliers, and their impact on national economic development (Kaplinsky and Morris, 2000; Gereffi et al, 2001; Gereffi et al, 2005; Baldwin, 2006; Attenburg, 2006; Humphry and Schmitz, 2008; Ponte and Sturgeon, 2014; Taglioni and Winkler, 2016). The GPN's point of departure is on the processes by which value creation shapes, and is shaped by, regional socio-economic and political factors, with a particular emphasis on the relational aspects between the economic and extra-economic agents in the network (Dicken et al, 2001; Henderson et al, 2002; Bair, 2005; Hess and Young, 2006; Bair, 2008; Coe et al, 2008; Bair and Werner, 2011; Coe and Young, 2015; Dickens, 2015; Coe et al, 2017). In the former framework, labour participates primarily in the value distribution process as a recipient of the outcome of what is called the 'capturing the value' debate in the form of better wage, job security, and rights, including right to bargain (social upgrading) (Barrientos et al, 2011; Milberg and Winkler, 2011; Rossi, 2011; 2013; Gereffi and Lee, 2016; Nathan et al, 2018; Rossi, 2019). In the

latter frame labour is considered as an active agent in shaping their share of value through exercising their bargaining power (Cumbers et al, 2008; Coe and Jordhus-Lier, 2011; Coe and Hess, 2013; Selwyn, 2013; Carswell and De Neve, 2013; Alford et al, 2017; Lopez, 2022) While both the frames embrace an interdisciplinary approach (economic, social, political, developmental) to understand labour in production network, the former focuses on the outcome of the value distribution for labour, whereas the latter focuses on the mechanisms through which the value distribution process might be shaped by labour. Although the GPN frame acknowledges that labour also contributes towards value creation process in the network (Henderson et al, 2002; Castree et al, 2003; Cumbers et al, 2008), the critical thrust in this aspect comes from the second theoretical foundation focussing on labour process.

In Capital Volume 1 Marx conceptualised the labour process.

> *"The labour-process, is the process by which the capitalist consumes labour-power, exhibits two characteristic phenomena. First, the labourer works under the control of the capitalist to whom his labour belongs; [….] Secondly, the product is the property of the capitalist and not that of the labourer, its immediate producer" (Marx 1867: Chapter 7, Section 1:194).*

Essentially, the ability to work, the labour power, is the source of economic value which under capitalism is utilised by the employers, managers, and other agents of capital to create products and services in return for profits. This labour power is bought from the workers in return of a share of the economic value generated through the labour process in the form of wages. Once workers are bound in a waged relation, employers take the prerogative to dictate the labour process, which Marx described as 'control'. Marx further elucidates three *"elementary factors of the labour-process are 1, the personal activity of man,* i.e.*, work itself, 2, the subject of that work, and 3, its instruments" (195).* Employers thus cannot control the labour process without controlling the work, and the workers. This control is executed to extract the labour power from the workers. Instruments become a crucial complement to orchestrate the labour process, representing the state of development attained by the mode of production (Marx, 1867).

After a considerable impasse labour process was brought back into the academic debate by the seminal work of Braverman (1974) which emphasised how scientific management exemplified by Taylorism configures it and the constituting employment relations under contemporary capitalist mode of production. Subsequent scholars have explored labour process, its control, and their interplay with instruments and its historical transformation (Edwards, 1979; Friedman, 1977; Burawoy, 1979). In what Thompson and Newsome (2004) calls as the second wave of labour process theory, a workplace specific analysis of labour process, called the 'core' labour process theory (LPT) was formulated (Thompson, 1989; 1990, Smith and Thompson, 1998; Thompson and Smith, 2000). LPT is an evolving theoretical set of principles, drawing analytical currency from previous and subsequent theories on several aspects, two of which being particularly relevant for this study. The first, is the effect of technology and its development on transforming labour process, and how it is controlled (Edwards, 1979; Noble, 1979; 1984; Thompson, 1989; Frenkel et al, 1999; Taylor and Bain, 1999; Staab and Nachtwey, 2016; Gandini, 2019; Graham and Woodcock, 2019; Howcroft and Taylor, 2022). The second is how workers respond to the implementation of control mechanisms. These responses may range from resisting to regain or challenge the loss of workplace autonomy in individual and collective capacities (Ackroyd and Thompson, 1999; Bain and Taylor, 2000; Smith and Nai, 2006; Ackroyd and Thompson, 2016;

Joyce and Stuart, 2021), resulting in workplace conflict (Edwards and Scullion, 1982; Edwards, 1986), to workers subordination to control through ideological, cultural and normative prescription (Barley and Kunda, 1992; Sturdy, 1992; Knights and Willmort, 1989; Knights, 1990; Willmort, 1990; Ezzy, 1997). An employer's purpose for controlling the labour process can be attributed to the need to overcome labour indeterminacy (Littler, 1990; Ackroyd and Thompson, 1999; Knights and McCabe, 2003; Smith, 2006; Thompson and Smith, 2010), to dictate the pace and intensity of work (Delridge et al, 1992; Ogbonna and Harris, 2004; Chesley, 2014 Kello et al, 2020; Howcroft and Taylor, 2024) and to accommodate, mitigate or combat workers' responses and resistance through consent building or outright retaliation to workers' collective and union actions (Burawoy, 1979; Wood, 2021; Vallas et al, 2022; Wiggin, 2025).

However, LPT's emphasis on workplace specific analysis created an analytical distance from the broader political economy which embeds the workplaces in the circuits of capital (Jaros and Jermier, 1995). In a renewed attempt to reconnect workplace employment relations with the broader political economy, the GPN framework has been brought into the analysis of labour process (Taylor, 2010; Thompson and Vincent, 2010; Rainnie et al, 2013; Taylor et al, 2013; Newsome et al, 2015; Thompson et al, 2015). Further, with the eventual prominence of production networks connecting workplaces in Global North with Global South, several critical labour economists from India, quite independently of the LPT tradition, have sought to integrate labour process in production network analysis (Roy, 2014; Jha and Chakraborty, 2016).

With the aim of investigating labour process and control mechanisms in the facilities of Amazon's e-LSN in India, the thesis seeks to draw causal linkages from workplace employment relations, inter-firm relations between the workplace agents in the service network, the political economy of the firms, and the socio economic and political factors of the regions in which facilities are embedded. The analysis is conducted by synthesising LPT theories, particularly related to technology, control, and resistance (or its scope), and GPN theories related to inter-firm relation, governance, and regional socio-economic and political impacts on workplace relations. It aims to provide some empirical insights of LPT's 'connectivity' from workers' positions and perspective in a developing country context, specifically India.

1.7. Structure of the Thesis

Chapter 2 critically reviews the different frameworks employed to map, describe and analyse production networks under global capitalism. It ventures into the substantive content of GCC, GVC and GPN frameworks, emphasising their differing approaches to understanding the functional and relational aspects of inter-firm linkages among the organisations in the network. Then, it argues for the analytical strength of the GPN 2.0 variant to study production networks, highlighting its conceptual advantages, its limitations and how the latter might be overcome by modifying the framework with concepts from labour utilisation strategies. Further, it reviews how labour is conceived and analysed in production networks and their shortcomings. Then, the analysis shifts to the e-LSN particularly, elaborating on what political economic factors contribute to making the e-commerce firms attain and maintain their lead positions in the e-LSN transnationally. The chapter concludes by discussing the essential characteristics of Amazon's e-LSN; to identify the strategies the corporation undertakes to construct their network, and to delineate the network's operating sites and their functions.

Chapter 3 places the labour process at the forefront of analysing labour within production networks. After examining the origins, development, and current state of LPT in analysing the labour process, this chapter highlights how LPT literature conceptualises key elements: technology, managerial control, and labour's agency as both the source of value and as an expression of resistance. It explores how these integral elements of labour process shape the nature of capitalist employment. Then the chapter discusses the literature critical to LPT's workplace specific approach, often termed as relative autonomy (Jaros, 2010), and the proposed attention to the 'connectivity issue', although only marginally realised in research practice, to overcome this limitation, emphasising its analytical importance for studying labour process in an e-LSN. This chapter acknowledges similarities between logistics service work and contemporary digital platform-mediated gig work, especially in the conditions when logistics work becomes integrated with e-commerce. It then critically examines literature on various aspects of the labour process in gig work, logistics, and e-commerce, including Amazon. Further, the nature of the work and labour process across warehousing and delivery work in Global North and Global South is explored.

Chapter 4 situates Amazon's e-LSN in India in two ways. First, in highlighting the studied regions, the chapter horizontally embeds the operating sites of the network in the national and regional socio-economic and political contexts, the national labour regulatory framework and state labour markets. In this endeavour, this chapter argues for a variegated form of capitalism within India as a national geographical entity. Second, it situates Amazon within the e-commerce sector in India, emphasising its pivotal role in configuring the sector in the country. Further, it investigates the key features which contribute to positioning e-commerce companies in general, and Amazon in particular, as lead firms in India's logistic service networks.

Chapter 5 examines the philosophical paradigms that inform and underpin the thesis' research strategies, with a particular focus on Critical Realism. Critical Realism is justified as an appropriate paradigm for this study as it aligns with the logic of inquiry by recognising both the objective existence of social structures and the subjective interpretations of the stakeholders in understanding and analysing labour process. The chapter also details the research methods undertaken to collect and analyse the data. It provides an overview of the study's location, a summary of the e-LSNs studied sites, and the participants' profiles. Additionally, it discusses the ethical considerations addressed in the study and the limitations in the method of analysis.

Chapter 6 to 8 presents evidence of the organisational structure, labour utilisation strategies, and the workflow- articulating the labour process of distinct but functionally connected operating sites in Amazon's e-LSN: namely a receive centre (RC) and a fulfilment centre (FC) (chapter 6), a sortation centre (SC) (chapter 7), and delivery stations (DS) (chapter 8) respectively. Each chapter investigates the managerial control strategies in the sites, highlighting the pivotal role of Amazon's WMS in configuring the control mechanisms directly and indirectly by modifying other forms of controls. Further, each chapter provides testimonies of workers' experiences and concerns to understand their workplace experiences and various forms of resistance they have undertaken in response to managerial operating strategies. Given that the SC and DSs examined in Chapters 7 and 8 are owned and operated by Amazon's partner firms, these chapters further explore how the interfirm relationships between Amazon and its local partners, both large and small, shape the labour process within these partner-operated sites in Amazon's e-LSN.

Chapter 9 analyses the commonalities and differences in the labour process and managerial control mechanisms across Amazon's operating sites, emphasising how control is executed trans-organisationally across the functionally connected facilities in Amazon's e-LSN and the key role of algorithmically embedded Amazon's digital architecture in configuring them. The chapter then investigates Amazon's inter-firm relations, demonstrating how the company exerts extensive governance over its partner firms within its logistics network to regulate their operations. In doing so, it critiques the GVC governance framework for overlooking the diversity and dynamism within production networks. Additionally, it assesses Amazon's market power and its influence on the labour process, illustrating how competitive pressures, driven by site-level performance metrics, cascade down to individual performance targets, which are compared and ranked across similar operating sites. This analysis also brings to light the tensions and conflicts in Amazon's relationships with its partner firms, as well as the tactics it employs to maintain control and coordination over these operations. Next, the chapter evaluates the effects of regional and state labour markets, particularly how contractual segmentation, gender, and migration-based segregation shape labour recruitment and utilisation practices. It critiques the flexible labour model for exacerbating worker vulnerability in the pursuit of operational efficiency. Furthermore, the distinction between core and peripheral employees, outlined in the flexible firm model, is challenged, as real-world evidence shows that even managerial positions are subject to flexibilization. The chapter concludes by reflecting on broader industrial relations and the role of the state. It particularly examines the gap between labour regulations on paper and their enforcement in practice, highlighting how this disparity contributes to the exploitation of workers within Amazon's logistics network.

Chapter 10 concludes the thesis by highlighting its key contributions and limitations. It synthesises the findings on managerial control mechanisms, inter-firm relationships, flexible labour recruitment and utilisation, and the influence of labour markets and regulations. This synthesis leads to a central contribution of the thesis, which lies in addressing the elusive connectivity issue by situating Amazon's logistic service network within the broader circuit of capital accumulation in e-commerce (vertical embeddedness) and the political economy of labour in India, shaped by regional dynamics (horizontal embeddedness). The chapter then discusses the study's limitations and scope for future research. Finally, it concludes the thesis with some broad reflections on labour and nature of work in Amazon's warehousing and delivery services.

Chapter 2: From Global Production Network to E-Commerce Logistics Service Network

2.1. Introduction

This thesis aims to understand how the relations of production between capital and its agents and labour structure and shape the labour process and how value is extracted in the e-commerce logistic service network. The thesis employs the term, abbreviated as e-LSN, to refer to networks of functionally interconnected warehousing sites arranged sequentially. These nodes include receiving centres, fulfilment centres, sortation centres and delivery stations. It conceives of a potential theorisation of the labour process beyond a single 'point of production' (Edwards, 2010). Accordingly, this thesis proposes to draw on and synthesise two theoretical frameworks, LPT and GPN. A production network is formed of interconnected enterprises with three key participants. First is the lead firm, which controls, coordinates and governs the entire production process across the network. Second are the partner firms, which enter into contractual agreements with the lead firm to manage and execute production and distribution activities. Lastly, there are the workers, whose labour power is converted to concrete labour in generating value that is accumulated and distributed among the different participants within the network.

Over the past 30 years, stimulated by Gereffi and Korzeniewicz's (1994) pathbreaking work, sociologists, economists and geographers have made successive attempts to describe, map, understand and analyse the growing global dispersion, yet interconnectedness, of economic activities. These diverse efforts may be regarded as a related endeavour but nevertheless the different iterations have distinctive conceptual and empirical interests and orientations, manifest in three prominent formulations- Global Commodity Chains (GCC), Global Value Chains (GVC) and Global Production Networks (GPN) (Dicken et al, 2001; Henderson et al, 2002; Gereffi et al, 2005; Bair, 2005; Coe et al, 2008; Gibbon et al, 2008; Coe and Yeung, 2015; Taglioni and Winkler, 2016). GCC focuses on the linear sequence of activities in commodity production and the governance by lead firms. GVC expands on this by emphasising the creation and distribution of value across different stages of production, offering a more nuanced analysis of governance types and global labour division. GPN takes a broader, network-based approach, considering the complex interconnections between all actors, processes, and influences, including economic, social, political, territorial and environmental factors, emphasising how global and local contexts shape production networks.

This chapter critically evaluates a corpus of pertinent literature focussing on inter-firm relations within production networks. Section 2.2 reviews the conceptual development of GPN from its predecessors and argues for the potential advantage of adopting the GPN 2.0 framework, as proposed by Coe and Yeung (2015) for the purpose of the study. It also reviews how GPN framework problematise labour and contends that existing conceptions can be enhanced by acknowledging the importance of LPT and engaging more fully with it to deliver greater analytical purchase (Taylor et al, 2015). Section 2.3 argues for studying logistic and distribution services through the lens of GPN and calls for an alternative conceptualisation of the supply chains under the rubric of e-Commerce Logistic Service Network (e-LSN). Here a detailed, although not exhaustive, exploration is undertaken of several driving factors which construct and condition the e-LSN and make e-commerce enterprises the principal coordinator and regulator of the service network. Section 2.4 concludes the chapter by considering the distinctive case of Amazon,

emphasising its salience for a study of the social relations of production and the labour process within its production network.

2.2. Production Networks

2.2.1. Global Commodity Chains, Global Value Chains and Global Production Network

In theorising globally fragmented production activities under capitalism, Gereffi and Korzeniewicz's (1994) pioneering work developed the concept of the Global Commodity Chains (GCC). Drawing on world system theory (Hopkins and Wallerstein, 1986), as interconnected, globally dispersed production and distribution processes, Gereffi and Korzeniewicz (1994: 97-98) identified two types of inter-firm relations: buyer driven, and the supplier (producer) driven[4]. By highlighting the relative contrasts between monopoly power and firm competitiveness, they argue that when buyers are fewer in number vis-a vis suppliers, a buyer driven chain prevails, in which lead firms can exercise oligopolistic market power and negotiate contracts that enable them to capture a larger share of the value generated in the chain (p:213). In contrast, when the suppliers are fewer, supplier driven chains may predominate, in which a greater degree of market power can enable suppliers to negotiate contracts whose terms are more in their favour (p:11). To gain market power and shift value distribution in chains towards themselves, each firm relies heavily on innovation and specialisation to augment their influence and increase the lead firm's dependence on them.

Subsequent empirical research demonstrated that the buyer and supplier-driven binary was insufficient to account for the complexity and diversity of really-existing inter-firm relationships (Sturgeon, 2002). In other words, within buyer/seller driven chains the distribution of power, the nature of contracts between lead firms and suppliers and the governance structure could express greater diversity. Such potential variation prompted others, notably Gereffi et al (2005), to theorise inter-firm governance relations by focussing on the process of production, the complexity of organising, and managing across firms. Drawing on preceding work on trade and industrial organisation in value added activities (Kogut, 1985), transnationally fragmented and disintegrated production practices (Arndt and Kierzkowski, 2001; Feenstra, 1998), trade in intermediate goods (Yeats, 2001), and vertical specialisation-based trade (Hummels et al, 1998), they developed a systematic conceptualisation of governance within what had become termed Global Value Chains (GVC).

Depending on the degree of complexity of the transaction between lead firm and supplier, the ability to standardise (codify) the process of production, and the capability of the supplier base, five varieties of inter-firm governance structure were configured (Gereffi et al, 2005:98). Arranged in ascending order, according to the degree of explicit coordination between lead firm and the suppliers, they proposed five governance structures: market, modular, relational, captive, and hierarchical. The complexity of transaction included the cost of transferring the information specifications required for production to other firms and that of monitoring their production activity. For instance, "Lead firms increase complexity when they place new demands on the value chain, such as when they seek just-in-time supply and when they increase product differentiation"

[4] The term 'producer' is used originally as the focus of study on GCC were the manufacturing firms. I am using the term supplier to situate the framework beyond manufacturing.

(ibid:84). The complexity to codify related to the difficulty in the "adoption of technical standards that codify information" and enabled "the conservation of human effort through the re-use of system elements - or modules - as new products are brought on-stream" (ibid:85). The more standardised the production process, the easier it was to codify and the lower would be the transaction costs of transferring activities to external suppliers. The capability of the supplier referred to the degree of skill resource of the partner firms, to which the activity is transferred. These three criteria determined the requisite degree of explicit coordination between the lead firm and its third-party supplier(s).

However, it is essential to bear in mind that the degrees of complexity, codifiability and capability associated with the externalisation of productive activity are subject to modification, whether from the adoption of new technologies that might reduce (or increase) complexity or codifiability, or from enhancement of the skills, resources and experience of suppliers, their capability. It follows that Gereffi et al's (2005) categorisation, albeit considered heuristically, eschews a potential dynamism that subjects the inter-firm relationships to change, reconfiguring the specific forms of governance. Gereffi et al's (2005) framework has been challenged on two further grounds. First, it is contended that it overemphasises the dyadic relationship between a lead firm and its suppliers(s) and simplified the power relations to a unipolar dimension, where either the lead firm or the supplier(s) dominate the terms of transactions, obviating the prospect of dynamic bipolar or multipolar inter-firm relations where power relations are distributed between the lead firms and different suppliers in a network (Ponte and Sturgeon, 2014). Second, the framework is too narrowly focused on governance mechanisms from the lens of transaction cost theory, as to successfully incorporate the social aspects of inter-firm and intra-site relations of production, which articulate the labour process among other factors and influences (Bair, 2008; Selwyn, 2012).

To overcome the shortcomings of this dyadic framework, Ponte and Sturgeon (2014) proposed distinguishing inter-firm relationships at three levels; at the micro level where all the dyadic inter-firm relationships are captured within a chain, at the meso level where different dyadic inter-firm relationships in the same chain are compared and the impact of one dyadic relationship to another is analysed, and at the macro level where the governance of an entire chain is determined by assimilating the micro and meso level relationships of the firms involved. In addition, given that the nodes in a chain are geographically dispersed, with each influenced by distinctive political, economic, and regulatory factors, Ponte and Sturgeon (ibid) advanced the concept of governance as 'normalising', which advocated the attempt to introduce certain conventions or standardised practices across different firms from different societies and regions. These conventions are associated with formulating and maintaining cross regional standards in the quality of the product, the process of production, labour rights and the practice of environmental protection.

By incorporating the meso level into their analysis, these authors embraced the possibility of a dynamic governance structure by acknowledging the possibility of unipolar as well as bipolar and multipolar power relationships within production networks. While their endeavour does direct attention to an analysis of conventions and standards that may include labour rights, or labour standards, it remains a corollary in this account. The conditions of the labour process at the specific points in the production network, where labour rights might be upheld or violated, remain neglected.

In its endeavour to focus on the inter-firm relationships and governance structure in the chain, the GVC framework, it is argued, appears to neglect the broader conceptions of world system theory, which strives to understand the underpinning capitalist relations of production and their impact on the socio-economic development of the regions in which productive activities are embedded (Bair, 2005). In a departure from, and critiquing the limitations of, the GCC and GVC frameworks, economic and human geographers posited the more expansive Global Product Network (GPN) perspective (Henderson et al, 2002; Gibbon et al, 2008; Coe et al, 2008; Coe and Hess, 2012; Selwyn, 2012). GPN sought to reintroduce the overlooked geographical and territorial aspects into GVC analysis, critiquing its emphasis on governance through a linear lens. Preferring the term 'network' over a 'chain,' GPN stressed the importance of how global production processes intersect with local contexts, embedding transnational activities within specific territories, where they are shaped by economic, social and institutional factors, including labour. GPN maintained that to understand functionally integrated and spatially disaggregated production activities "chains are [to be] articulated within and through the larger social, cultural and political-economic environments in which they operate" (Bair, 2005:168). The implications of "competition between capitals and the exploitation of labour by capital" (Selwyn, 2012:22) on production networks gets overlooked in the narrow frameworks of GCC and GVC. It was necessary to go beyond a firm centric focus and bring labour in along with state and capital agents relationally to each other in investigating inter and intra-firm relations within production networks (Coe and Hess, 2012; Newsome et al, 2015). Cumbers et al (2008) referred to the relative oversight of the role of labour, arguing that it should be incorporated as an active agent with the ability to shape the relations of productions in the network. Accordingly, labour should not be regarded as passive subjects nor as the 'victims' of global (re-)location of productive activity. (ibid:1).

It follows that production networks are to be understood in the broader context of the different capital accumulation strategies and the social relations of production under capitalism. Informed by the political economic dynamics, GPN literature has pushed for an analytical framework that goes beyond the GCC and GVC frameworks, which overemphasise the functional and transactional relations between lead firms and suppliers, at the expense of the specific social relations between labour and capital, which produce and reproduce regional labour forces and deploys them to generate value within a firm's network (Taylor, 2010).

2.2.2. GPN 2.0, Organisational Fix, and Flexible Labour Utilisation

The GPN framework expanded the analytical scope for studying production networks, by emphasising the strategic coupling of transnational firm networks with territories and the consequences for development. In this undertaking, to draw causal linkages between global corporate actors and participants in a production network and territorial influences and outcomes, Coe and Young (2015) proposed a reconfigured version of the GPN, which they designated GPN 2.0. In contrast to the original GPN framework, in which studies of the firm or industry were, although territorially contextualised but not integrated as causal forces, GPN 2.0 considers the strategic decisions of network actors as crucial for the configuration of production networks and its territorial effects. Further, GPN 2.0 enhances an understanding of the influence of regional political economic factors by considering them as constituent of important causal forces, instead of mere background of or context to the articulation of production network dynamics. They state, "Our core approach to this challenge is to seek to uncover the causal links [….] from the structural

capitalist dynamics that underpin global production network formation and operation to the on-the-ground development outcomes for regional economies" (ibid:22). Finally, GPN 2.0 amplifies GPN's critique of GVC for its narrow focus on development consequences as limited to firm centric value capture or upgrading. It deepens the understanding of strategic coupling and acknowledges its potential variations. This geographically fragmented production process involving multiple actors and institutions, both regional and trans-national, is defined as follows:

> *"We define a global production network as an organizational arrangement, comprising interconnected economic and non-economic actors, coordinated by a global lead firm, and producing goods or services across multiple geographical locations for worldwide markets".* (ibid:2)

Driven by the capitalist imperatives to achieve competitive advantage, they argue, lead firms undertake several "organisational fixes", including outsourcing, subcontracting and subsidiarisation with "strategic partners", that shape its GPN in the process. Notably, the GPN 2.0 framework indicates crucial causal links between different organisational strategies of intra-firm, inter firm and extra-firm actors based on coordination, control, partnership, and bargaining and underlying motives of optimising the cost-capability ratio, sustaining competitive advantage, creating market power, and maintaining financial discipline (ibid:25). In comprehending how market imperatives drive the strategic decisions of lead firms in constituting their GPNs, it considers the markets in which they operate as dynamic and evolving, contingent on several dimensions, including the reach of and access to market, the concentration of market share by the lead firm, and customer pressure. Similarly, optimising cost pertains to efficient and productive utilisation of assets and reducing the time to profit realisation by optimising the time to market. Thus, GPN 2.0 provides additional analytical purchase to facilitate a causal analysis of the formation of varied inter-firm organisational arrangements under capitalism.

However, the GPN 2.0 framework's consideration of labour as an extra-firm actor (clubbed together with governments, NGOs, and wider civil society) falls short of explicating the role of labour and labour power in the value generation process and eschews the impacts of lead firms' and suppliers' strategic decisions on the labour process, managerial control mechanisms, and the experience of the workers. In addition, it overlooks the potential of labour to reconfigure production networks through strategic actions, such as bargaining and negotiations, which is characteristically different from other extra-firm actors. Building on the GPN 2.0 conceptualisation, while acknowledging certain of its limitations, this study seeks to investigate those organisational fixes that lead (e-commerce) firms might adopt that have consequences for the labour process within and between its productive sites or nodes, to provide a concrete understanding of the value generation in its production network. Organisational fixes may pertain to inter-firm organisational (re)arrangement such as subcontracting, outsourcing, and subsidiarising sections of business activities to strategic partners by the lead firm along with the associated labour utilisation practices.

It is suggested that revisiting the model of the flexible firm, first proposed by Atkinson (1984) may provide some conceptual insight into the organisational fixes, in relation to labour utilisation strategies and practices of firms in production networks. Driven by the capitalist imperatives of cost and risk minimisation, firms may adopt flexibilisation over rationalisation to address market fluctuations. Atkinson's model (1984: 13) proposes three forms of flexibility: numerical, functional, and financial. Numerical flexibility may be achieved by recruiting through short-term contracts or

part-time employees, that enable firms to flex the workforce size more easily up or down in response to, or in anticipation of fluctuating market and production. Functional flexibility refers to circumstances when workers are transferred between tasks within the firm to minimise idle time, prompted by fluctuations in volumes of work. Finally, financial flexibility refers to paying workers as per their outputs, best reflected in the piece-rate payment system. To these three forms of flexibility might be added that of temporal flexibility, by which employees seek to obtain greater freedom to match staffing levels more closely to fluctuations in the volume of demand (Deery and Mahoy, 1994). As an illustration, in contact centres software scheduling packages calibrate to a microscopic degree the precise number of workers required to meet fluctuations in demand as management strives to eliminate 'non-engaged' labour (Taylor and Bain, 2007: 355).

Atkinson' model has been critiqued on several grounds, of neglecting power dynamics between labour and capital, of abjuring workers' agency (Ackroyd and Proctor, 1998) and of disregarding gender and class inequality, which might intersect with labour force segmentation (Pollert, 1988). Nevertheless, the model's propositions might contain enduring validity in labour utilisation strategies within GPN in general and e-commerce supply chain in particular. These intended organisational fixes may reinforce a firm's flexibilisation strategies, profoundly impacting the labour process and managerial control strategies both within sites and across the production network.

Here subcontracting and outsourcing strategies may not be only inter-firm fixes where an entire section of the operation is transferred to a third-party but may also address numerical and financial flexibility at the intra-firm level by transferring recruitment decisions to third-party recruitment agents (Forde et al, 2008). Segregating the operation into core and periphery and focussing on core for direct recruitment and training, with the purpose of retention on the one hand, and transferring the responsibility for recruiting workers for peripheral activities to agencies or transferring the entire peripheral tasks to strategic partners may be an organisational fix to achieve numerical and functional flexibility. The possibility for core employees to receive better terms and conditions than those on temporary contacts as peripheral workers, may have salient consequences, intended or unintended, including the creation of divisions within the workforce, the weakening of labour solidarity and the strengthening of managerial control over the labour process. Changes to the nature and terms of employer-employee contracts, employee recruitment, and training may reflect a strategic lead firm shift, or even tactical or pragmatic adjustments by third-parties, in labour utilisation.

These principal elements of the flexible firm model can be incorporated into this inquiry on the organisational fixes of the lead firm within production network. Nevertheless, in so doing, it is necessary to be mindful of the critique of Atkinson's model. First, a flexible labour utilisation organisational fix within the context of production networks, may neglect inter-firm conflicts. For example, a lead firm's prerogatives may dominate over those of partner firms in decisions such as recruitment and labour utilisation. Second, the model is constructed as a potential solution to managerial problems and labour is relegated to the status of passive object. Third, the model overlooks the uncertainty and insecurity which the flexible labour utilisation strategy bears upon workers (Pollert, 1988). Fourth, Ackroyd and Procter (1998) highlighted, that flexibility through contractual segmentation may not necessarily create a homogenous division of labour between core and peripheral workers, so the possibility of two workers engaged on same task, but employed

on different contracts may arise. Flexible labour utilisation practices, it can be argued, may instigate labour discontent, constrain worker effort, and even generate resistance to managerial control and capital's order, especially from 'peripheral' workers on inferior contracts (Barnes and Ali, 2022). Put simply, these putative organisational fixes have consequence for the labour process and workers' experiences at work which the flexible firm paradigm does not consider. This thesis, therefore, seeks to inquire into the extent to which the flexible firm model has applicability and may contribute to an understanding of the lead firm's organisational fixes and how they may entrench management control, deepen workforce divisions, and undermine the potential for collective labour actions and resistances within and across the sites in the production networks.

2.2.3. GPN and Labour

Most studies that incorporate consideration of labour in GPN have focussed on the notion of 'social upgrading', the ability of the workers to improve their rights and the quality of employment. Such an emphasis reflects the disciplinary influence of development studies. Barrientos, Gereffi and Rossi's (2011) study of the prospect of social upgrading for developing countries by participating in GPNs, where lead firms are predominantly from the global north, analysed the impact of a firms' economic upgrading on labour and working conditions. The latter are evaluated through the International Labour Organisation's (2016) norms of 'decent work', which comprise measurable standards (including wages, hours of work, tenure of contract) and enabling rights (including freedom of association, transparent communication). Drawing on past empirical studies of GPNs in developing countries (e.g. Gereffi and Güler, 2010; Rossi, 2011; Plank et al, 2012; Barrientos, 2013), it is argued that economic upgrading can result in social upgrading depending on the nature of a firm's employee contracts and the skills of the workers. Contracts can be full-time or part-time and either permanent or temporary. Full-time permanent workers have the greatest opportunity for better working conditions and achieving social upgrading. Barrientos et al (2011) argue that high skilled workers and those participating in knowledge intensive sectors have a higher scope for achieving secure jobs with better remuneration and social protections, although these tend to be few with limited prospects for their generation. Conversely, low-skilled, or unskilled jobs are plentiful, but have an adverse tendency to be insecure, devoid of social protection and are of low remuneration.

Developing this argument, Milberg and Winkler (2011) contend that economic upgrading can lead to social upgrading through two channels. First, is the endogenous mechanism by which, it is argued, firms seek to increase productivity across their GPNs. According to this logic, productivity improvements will generate higher profits, a proportion of which can be shared with workers in terms of higher wages and other monetary benefits. Second, is the enforced mechanism, which argues that a rise in profits through productivity gains, will not automatically ensure an increase in wage share to workers. Owing to the conflicting interests of workers and employers, which market mechanisms do not resolve, the bargaining ability of the employees and the supporting role of the states will be essential to compel firms to transfer gains to employees. Hence the relative bargaining power of employers and the employees plays a crucial role in ensuring, or failing to realise, better working condition because of economic upgrading.

To summarise the foregoing discussion, the GCC and GVC frameworks, and especially the latter's preoccupation with inter-firm governance, generally neglect considerations of labour, as a source

of value in the accumulation and distribution process (Taylor, 2010). GPN and GPN2.0 do include labour in their more holistic consideration of the territorial and geographical factors, widening the analytical frame beyond the dyadic focus on governance of GVC (Henderson et al, 2002; Bair, 2008). However, two limitations are evident. First, labour is either addressed exogenously as a corollary to the economic upgrading of the firms (Barrientos et al, 2011; Milberg and Winkler 2011) or as a beneficial consequence of strategic coupling within the regions where the firms are embedded (Yeung, 2009; Bair and Werner, 2011). Considering working conditions and social upgrading as exogenous to the production process overlooks the underlying mechanisms of value generation in the production network and tend to limit the concerns of workers to value distribution rather than value generation. Second, others within the GPN school although encouraged to consider labour as source of value and active agents in shaping the production networks (Cumbers et al, 2008; Rainne et al, 2011; Coe and Jordhus-Lier, 2011), they fall short of integrating the labour process, the essential mechanism of value generation, in their elaboration of production networks, notwithstanding the close attention they put to labour as an agential actor in an associational sense (Wright, 2000).

This thesis seeks to widen the analysis of GPN as equally a system of embodied labour in which workers actively participate in the production process, simultaneously influencing and being influenced by the plethora of organisational fixes and inter-firm relationships initiated and implemented by the lead firm(s). The aim, then, is to integrate labour as the source of value creation and, from the perspective of capital, its appropriation, within production networks. It follows that analysis of the labour process at the nodes or sites of the e-commerce network becomes a central focus of inquiry. Integrating GPN, particularly GPN 2.0, with LPT can deliver greater analytical purchase to the concrete investigation of the really-existing relations of production across and within the nodes of the e-commerce network. Their complementarity overcomes the former's deficit in incorporating labour as the source of value creation and appropriation, the concrete outcome of capitalist social relations at the points of production and distribution (warehouses and delivery stations), while the latter seeks to identify causal forces driving, structuring, and interconnecting the disaggregated units of the production process (Taylor et al, 2015).

2.3. From Global Production Network to Logistic Service Network

GPNs are not confined to manufacturing activities. Coe and Young (2015) have insisted that multiple business services "including finance, logistics, information technology services, and human resource management" can be regarded as both strategically significant inputs for diverse global production networks, "*but also as organized through global production networks in their own right* [emphasis added] (ibid:25)". The defining feature of production in chains or networks are the inter-firm and/or inter-site linkages and the relationships which develop through the organisational strategies and decisions of the 'lead firm' made manifest in their varied contractual and operational arrangements with their 'strategic partners'. One novel aspect of early 21st century networks, in contrast to those of the late 20th century has been the emergence and growing prominence of retail companies in the role of lead firm in organising the distribution services comprising of inventory, transportation, and other logistic services through their own governed production networks (Hamilton et al, 2011). Proliferation of discount supermarket chains, department store, multinational retailers, and hypermarkets, such as Aldi, Tesco, Walmart, are examples of retail-driven production network or supply chains.

Owing to the growing development in, and application of, information and communication technology (ICT), the contemporary global economy is not only constituted by physical spaces and specific places. New markets have been established through the digital space created by internet and social media. Innovation in ICT has transformed traditional retailing services from 'brick and mortar' shops and warehouses to online e-commerce retail services (Shankar et al, 2021). Multiple factors and outcomes of this transformation include the ready availability of services such as 24/7 home shopping, delivery to the consumers' doorsteps often within a few hours from the placement of orders. All these characteristics have contributed to an enormous enhancement in the volume of consumption. Furthermore, e-retailers have access to huge database repositories, comprising consumers' details, their preferences and purchasing patterns and associated information, including product sales and market forecasts, which far exceed hitherto knowledge of any single seller's own markets and customer behaviour (Lichtenstein, 2009). E-retailers have captured market intelligence bases and have become an indispensable means for sellers to reach expanding volumes of customers, an increasingly important aspect of realising the value of the product for producers and sellers (Grewal et al, 2017).

Thus, it can be argued that the e-retailers are getting an increasing leverage in adding value to the products and gain competitive advantage by bundling the product with the online retail and associated logistic services, to both end customers and suppliers (Bonacich and Wilson, 2008; Bhatnagar and Teo, 2009; Coe, 2013). As e-commerce has brought spatially dispersed consumers within the reach of suppliers, the consumer base has expanded dramatically. In parallel, the ease and comfort of shopping has enhanced the frequency of consumption. To maintain this large-scale consumer demand and meet customers' desire for instant gratification (Huang, 2008; Roberts, 2014), e-retailers have resorted to several organisational arrangements notably outsourcing and subcontracting by externalising logistics activities to third-party traditional logistic service providers, and subsidiarising to their regional branches. Amazon as a case, par excellence, utilises different organisational arrangements in their logistic network. It may operate its own logistics services but may also contract them out to third parties, ranging from large, dedicated logistic companies to multiple smaller operatives, even to the local level of owner-drivers. In any event, logistics providers are incorporated within their production and distribution networks and are subject to Amazon's governance protocols (Govindarajan and Warren, 2016; Rodrigue, 2020).

Studies on distribution, storage, logistic and transportation services have tended to fall into supply chain analysis. In much of this work, the business model, operation optimisation and cost rationalisation have been the primary foci (Daugherty, 2011; Vanelslander.et al, 2013). Others have acknowledged the role of social capital which the e-retailers develop through their inter-firm relationships with their strategic partners, to diversify the risks of operation and tackle market uncertainties (Hughes and Perrons, 2011; He et al, 2022). This thesis investigates e-retails' organisational strategy and practices, division of labour, and the labour process at specific nodes of the production and distribution networks and the ways in which these relationships between lead firms and their third-party partners have consequences for the conditions of work and the experience of workers. Almost universally (*pace* Taylor, 2010; Newsome et al, 2015) GVC discussions of supply chains have disregarded labour and how its conditions and the nature of work are decisively shaped, if not completely determined, by e-commerce lead-firm's economic imperatives, the construction and articulation of their networks and within them the inter-firm linkages that govern them.

In contrast, this thesis attempts to remedy this deficit by bringing to the fore the centrality of work organisation, the labour process and workers' conditions and experiences in the e-commerce enterprises' supply chains and networks. In this endeavour, it is suggested that an appropriate nomenclature for the study of this networks is e-commerce Logistic Service Networks (e-LSNs). The growing complexity and variation in the distribution networks of the e-retail firms and their diversity of interconnected services, comprising inventory, storage, packaging, transporting and delivery at different nodes or sites, justifies the appellation network rather than chain. This approach has both conceptual and empirical validity when applied to the prominent transnational corporations (TNCs) such as Amazon, that regulate, govern and co-ordinate the operations of their respective e-LSNs.

2.3.1. Political Economy of E-Commerce Sector

The growth in e-commerce has transformed the content, processes, and loci of service delivery. In common with lead firms in a GPN, e-commerce firms, particularly the TNCs in the e-LSNs, are characterised by market concentration and a degree of dominance that raise concerns regarding anti-competitive business practices (Davis, 2015). In the USA and United Kingdom, five companies are responsible for 50 per cent of Business-to-Consumers (B2C) e-commerce, with Amazon.com having 33 per cent and 27 per cent shares respectively. Market concentration in developing countries is even more pronounced. In India and China, more than 85 per cent and 71 per cent of the B2C e-retail market are held by only five companies. Furthermore, the trend of compound annual growth rates, according to the Hirschman-Herfindahl-Index, is positive for several developed and developing countries, which suggests that e-retail markets will become even more oligopolistic over time (Husain and Vats, 2021). Mergers and the acquisition of start-ups by incumbents further undermine competition (Cassiman and Ueda, 2006).

According to Rahman (2018), given their distinctive business model, nature of investment, and organisational strategies in relationship to investors, employees, customers, and governments, these e-commerce companies represent a new form of economic and political institution. They have constructed a digital infrastructure, on which an entire economic system, comprising several agents, including third parties and direct business competitors, is reliant. Multiple political and economic factors have contributed to their exponential growth which, when coupled with their business strategies and practices, have enabled them to acquire their dominant positions and, based on projected trends, to extend them. Their investment strategies have been complemented by the rise of a new breed of finance capital investors such as angel investors and venture capitalists (Rahman and Thelen, 2019: 184). Further, the comparatively slower development of government rules and regulations, pertaining to competition, taxation, and labour laws in comparison to the ICT development contributes towards these lead firms' market power (Rahman, 2018). What follows is an elaboration and critical discussion of these three factors to deepen the understanding of e-LSNs in respect of their governance and regulation.

2.3.1.1. Role of Financial Capital

A consequence of, and accompaniment to, the emergence of neo-liberal capitalism has been the proliferation of TNCs aided by the rising prominence of finance capital in business transactions (Dicken, 2015:15). A feature of financial capital is that its liquidity and mobility facilitate their

ability to transcend geographical boundaries, when making or subverting locational investment decisions. The mobility of financial capital, along with IT enabled digital capital (section 2.3.1.2) facilitates corporations to trans-nationalise by providing them with a flexibility in deciding their strategic partners and establishing their subsidiaries and branches in different geographical territories. In this regard, Hall and Soskice (2001) contended that TNCs benefit from the opportunity to 'regime shop' between territories, exercising 'institutional arbitrage', to access the most amenable regulatory environment for maximising value and optimising profits. However, Dicken (2015) highlighted that, while choosing their locations with reference to the national-regulatory environment, an evaluation of factors such as proximity to consumers, or access to strategic assets such as skilled labour and raw materials, plays a critical role. Moreover, financial capital provides TNCs with an expanded range of choices regarding strategic locations, selecting partners and organising activities globally (Häusler, 2002).

Rahman and Thelen (2019) argued that, with the aim of creating market concentration instead of generating immediate profit, e-commerce firms have resorted to 'patient' capital as a source of funding. Patient capitals are those which seek long term returns and, hence, are less sensitive to immediate performance indicators, such as a firm's annual turnover rate or profitability. In the 21st century investors implicated in e-commerce are predominantly venture capitalists or angel investors who were also 'patient' in nature. However, unlike 20th-century investors, whose role in business decision-making was limited despite being equity holders, leaving most control in the hands of company managers (Anderson and Rangan, 2015), venture capitalists are not only shareholders but also active participants in corporate governance (Rahman and Thelen, 2019).

Venture capital's interests are aligned with those of the e-commerce companies to create and expand market power, these authors argue. A shared strategy of their nexus is to focus on creating market power through not only expanding market share, but also through controlling the terms of negotiation and determining the process of interactions with their potential competitors and other economic agents in their respective sectors. This tendency resembles the 'network of contract' (NOC) based capitalism (Davis, 2015). Here, firms divide their activities into core and ancillary activities and focus on creating core competencies in a limited number of key activities, while 'slicing off' ancillary activities to third parties through subcontracting and outsourcing (Grossman and Rossi-Hansberg, 2008). Owing to the trans-nationalisation of retail services it has been observed that comparatively new practices of contracting out traditional retail services such as warehousing and delivery to subsidiaries, and third-party partners by the e-commerce enterprises is becoming common. By contrast, e-commerce firms tend to focus on creating and developing IT tools and technologies as their core activity (Dicken, 2015). In other words, e-commerce enterprises resemble IT companies in their operations and activities on one hand, while on the other, they take on the role of lead firms in traditional retail services by establishing arm's-length contractual relationships with other enterprises, positioning themselves as both upstream and downstream firms within their e-LSN. However, unlike early 20th century NOC capitalism, this arms-length contractual relationship is facilitated through innovation in, and application of, digital ICTs.

Being extensively supported by big financial investors, these e-commerce firms are enabled to undertake anti-competitive business practices. They may incur economic losses over a considerable period which micro, small and even medium-sized enterprises are unable to absorb. They may

practice predatory pricing, where revenues earned are lower than the costs of production and distribution. Existing, and an expanding number of new, customers are disincentivised to shift to competitor companies. Further, e-commerce companies can offer additional incentives, such as discounts or exclusive subscription offers (e.g. Amazon's Prime Subscription), to capture and retain customers. Not only do such practices hinder competitors from reaching their required minimum sales values to break even, since they cannot compete on price, they also erect barriers to market entry (Segal and Whinston, 2000).

2.3.1.2. Role of Digital Capital

While analysing the transformation in the UK retail sector, Fernie et al (2010) identified that e-commerce companies have strategised to keep the IT development services in-house as a core element in their business activity and to subcontract out traditional retail services, such as warehousing and delivery, to reduce service costs and maximise efficiency. Furthermore, e-commerce firms, in particular Amazon which arguably is a case *sui generis*, by heavily investing in their digital capabilities have created new forms of warehousing and delivery service activity (Delfanti, 2019:3) which directly compete with traditional logistic service provision.

E-commerce firms, to re-iterate, have characteristics more in common with technology companies than with traditional retailers. This capability, quintessentially, means that they are not confined to providing the retail services of pick up, parcel, storage, dispatch, and delivery. Their uniqueness lies in the extent to which, and how, they capture, process, and utilise information in their business strategies. Information is used extensively to manage the entire e-LSN comprising of managing and controlling labour, determining the terms of negotiations with their seller clients, and managing customer demand and supply (Harrison et al, 1999; McMichael et al, 2000; Fernie et al, 2010). This information is simultaneously a product, a capital, and provides the digital architecture, the technological means that imbricate in its e-LSN. Consequently, their utilisation of physical, tangible capital such as machines is complemented with digital capital in the forms of algorithmic processing interfaces (API), cloud computing software, geographic information system (GIS), QR codes and MICR codes among others. The mechanisms through which e-commerce firms utilise the expanded set of capital to process the information to sustain their market power, govern their e-LSN and control the labour process are key points of investigation in this thesis.

Although enterprises historically always utilised information and data as essential to the production process, in the 21st century information has been transformed to more granular and detailed forms through digitalisation, which creates the opportunity to micromanage the entire production process. Digital capital can seamlessly acquire information on workers' productivity, consumers' preferences, and sellers' performances. Digital capital not only extracts and stores an unprecedented amount of knowledge from all the stakeholders engaged but analyses it to minute detail and converts the accumulated knowledge into capital used for determining and redefining production practices. Drawing from the Autonomous Marxist theory's understanding of the capital and labour relationship, Cardenas-Gracia et al (2017) argue that digital capital is not a dead capital but a digitised 'live' storage of the labour power; a 'virtual live labour' which is sold, rented, and kept for future use by its owner, the e-commerce enterprises. Thus, digital capital's exclusive capacity to store and process massive amount of data enables retailers to simultaneously generate immediate surplus and create capital for generation of potential future surplus. Briken (2020)

further argues that digital capital can capture not only the tacit knowledge of workers, but also the situated knowledge embodied with them, through capturing their cognitive and behavioural information. For instance, the pulse beat measuring watches are now used on workers' wrists to evaluate their mental state and are used as an input to evaluate individual performance[5].

The quantity and quality of information which the e-commerce firms can acquire, owing to the properties of digital capital, provides them with significant competitive advantages over other retailers. This accumulated information facilitates the augmentation of market power in at least three ways. First, it allows e-retailers to cater to an enormous consumer base, which enables economies of scale and reduction in costs of production and distribution, a strategy that is not viable for traditional and local retailers (Kurz, 2017). Second, as digital capital's capability increases exponentially through network effects, those with larger captured consumer and seller bases can leverage this capital to its fullest potential (Langley and Leyshon, 2017). Hence, even if local retailers attempt to create their e-retail segments through creating web pages or smartphone apps, they do not gain the advantage of network effect as the major share of any consumer or seller base has already been captured by the first movers, TNCs and the large e-commerce organisations. Moreover, the investment costs associated with innovation and application of digital technologies are a barrier to entry for most small and medium enterprises (Hussain and Vats, 2020). Third, the digital capital acquired by these e-commerce companies transforms the market infrastructure of the retail sector. Many small enterprises, to survive, are forced to purchase digital solutions from the dominant enterprises (ibid). Further, the constrained access to databases of consumers and sellers compels smaller retailers to change their business strategies, focusing on creating new digital capital or providing retail services through the e-commerce giants. Rather than attempting to compete they become subsumed within the latter's e-LSNs as third-party service providers (Rahman, 2018).

Alongside changing the market infrastructure and the associated business and managerial strategies of the retail sector, digital capital has impacted the social and cultural milieu. Imbued by commodity fetishism, it has been argued that peoples' identities have shifted from being citizens to becoming consumers (Bauer et al, 2012; Naoi and Kume, 2015). Digital capital enhances the ease of shopping and provides the scope for attaining instant gratification for consumers (Roberts, 2014). Rahman (2018) contends that digital capital, comprising apps, web browsers, digital payment systems, one click buying facilities among others, have become deeply engrained in the 'infrastructure of consumers' lives. It is argued that this enhanced consumerism facilitates a customer loyalty to e-commerce companies that creates an alliance that serves to resist government attempts at regulation. Culpepper and Thelen (2020) articulate this social change as a reflection of the 'platform power' of the enterprises, which pits consumers' interests against governments' regulatory interventions. The customer-enterprise nexus is essential for sustaining the latter's market power. In tandem with platform power, additional mechanisms enable e-ecommerce enterprises to exploit the inadequacies of legal and regulatory frameworks.

[5] https://www.wareable.com/features/amazons-warehouse-wearable-patents-are-terrifying

2.3.1.3. Regulatory Weakness

National governments confront difficulties in their efforts to regulate the market power of large TNCs (Wu and Gereffi, 2018). Particularly in the developing countries, existing laws, such the Competition Act of India, are undergoing amendments due to the novel business practices introduced by digital transformation led by large tech companies. Amazon is a significant and the only e-commerce player among a group that includes Google, Meta and Microsoft. Legislation is proving insufficient to combat the adverse effects of almost monopoly power of e-commerce TNCs in this transition phase for the medium and small enterprises within the retail sector (Rahayu and Day, 2015; Mukherjee, 2018). Concerns related to national security and citizens' privacy have emerged in the context of corporate data sovereignty (Hathaway, 2014), where e-commerce TNCs have capitalised on legislative and regulatory loopholes and ambiguities (Rahman and Thelen, 2019:195). For instance, by virtue of the digitalised nature of the service, many e-retailers can exercise extensive transfer pricing strategies (Oguttu, 2006). Their 'asset light' business model (Liou et al, 2008) reduces their reliance on physical establishments to deliver their services and enables them to avoid national and state taxes. In jurisdictions in the USA, many regulatory authorities have yet to include internet-based sales within the ambit of taxation (Hertel-Fernandez, 2019). Furthermore, as indicated above, the consumer-business nexus of e-commerce pits citizens against government regulation, even though business practices may compromise consumer privacy (Culpepper and Thelen, 2020).

Scholars have highlighted the importance of the state in shaping production regimes (Burawoy, 1983). One issue of contestation between states and corporations is related to market concentration of the internet-driven production regimes. Influenced by criticisms from Chicago School of Economics in early 1970s, anti-trust laws shifted focus from preventing cartel and mergers only insofar as they would affect prices and thus consumer 'welfare' (Bork, 1978). Given rising concerns regarding the aggrandised market power of e-commerce firms, price cannot be an appropriate criterion for measuring market concentration because of the frequent adoption of predatory pricing strategies which, at least in the short run, ostensibly benefits consumers at the cost of disrupting competition (Ergen and Kohl, 2017; Birkinshaw and Laurance, 2018). This development has prompted calls for the revision of the US anti-competition policies. Since much anti-competitive legislation across the world was formulated in response to the adverse impacts of late-1980s monopoly capitalism, e-commerce corporations have capitalised on institutional gaps to augment their market power without having to face legal repercussions. India provides another case. The Competition Commission of India (CCI) approves FDI in e-commerce sectors for the marketplace model only to keep small and medium enterprises protected from competition, but TNCs like Amazon by entering strategic partnership with local established enterprise (for example Infosys) have exploited legal loopholes to develop inventory-based business models (Singh, 2020).

The rise of the e-commerce platform model has undermined governments' regulatory effectiveness. Many US states, in the attempt to attract TNCs, notably Amazon, relax sales taxes. Setting up their headquarter in Seattle enabled Amazon to take the advantage of tax benefits. The company avoided sales tax in sixteen states, which incurred estimated cumulative losses of $704 million from 2015 to 2016 (LaVecchia and Mitchell, 2016:57). Similarly, Amazon registered their European Union headquarter in the tax haven of Luxembourg (ibid:9). Limiting the construction of physical establishments permits avoidance of property taxes. Fiscal loss is exacerbated by the

closure of traditional retail stores due to unbearable market competition. For instance, in 2015, the property tax revenue of US government had fallen by $528 million (ibid:57), a substantial part of which was attributable to the impact of e-retail.

Additionally, driven by the objective of labour cost reduction, e-commerce firms have tended to degrade the terms and conditions of employment, First, they frequently substitute the definitional category of employees. In most developed countries, employees are entitled to certain benefits, including a minimum wage and written job contracts which ensure job security, social security benefits, including pensions, insurance, and paid leave. However, a significant proportion of those engaged in e-commerce, such as delivery drivers, are not considered to be workers, but independent contractors or self-employed (Wood.et al, 2019). Consequently, companies evade the legal obligation of providing income, job and social securities. Second, they adopt the common practice of casualisation of labour, substituting permanent work positions inside warehouses and delivery stations with temporary workers or sub-contracted employees (De Stefano, 2016; Briken and Taylor, 2018; Barnes and Ali, 2021). Third, e-commerce firms transfer labour costs to other upstream and downstream agents in their e-LSN through subcontracting or outsourcing.

While the growth of the platform economy in general, and e-commerce firms, in particular, have eroded labour standards in the developed economies of the Global North, it is worth emphasising that workers in most developing countries of the global South have not benefitted from the minimal protections of formal employment and decent work standards and practices (Jose, 2023). Such legacies have served to contribute to TNCs decisions to shift labour-intensive activities to the Global South. Accordingly, developing countries may be less concerned with precarious employment relationships than the more regulated employment relationships developed in the post-world war era in many developed countries, particularly the Co-ordinated Market Economies (Hall and Soskice, 2001; Dicken, 2015; Wood.et al, 2019). Instances of TNCs explicitly avoiding legal obligations and later buying out market power through payments of fines are common. Pollman and Barry (2017) argue that one element of e-commerce enterprises' business strategy is 'regulatory entrepreneurship', by which the inherent cost of illegal actions and the potential cost of regulatory transformation through lobbying in their favour are already incorporated into their business models.

2.3.1.4. Summary: What Makes E-Commerce Lead Firm in e-LSN

E-commerce TNCs organise functions at, and between, warehouses and delivery stations that they directly own, but also become lead firms, coordinating activities between themselves and multiple third-party partners and subcontractors. These e-commerce TNCs operate at transnational, national and sub-national/regional scales, utilising their bespoke platforms to provide the technological infrastructure, eco-system in business parlance, to connect suppliers to customers, facilitate the transaction of orders and then to organise and undertake the shipment of products and items. The e-LSN formulation explores the network of logistic services from a wider conceptual lens than the supply chain frame. The e-LSN framework conceives the network to be equally a functional linkage between different logistic sites, such as warehouses, and delivery stations, and a relational arrangement between the lead firms, (e-commerce TNCs), suppliers, governments, and labour. Inspired by the GPN framework, unlike the supply chain approaches that focus solely on transactional and operational interactions, the e-LSN framework extends its

analysis to the political and economic forces that shape the relationships between the varied players in the network. Further, instead of assuming labour as an extra-firm agent (as does GPN 2.0), the e-LSN considers labour to be the source of value in the network, bringing the labour process, the fundamental mechanism of value generation, at the centre of the analysis through labour process theory.

Overall, this review of pertinent political and economic factors has analysed the factors and conditions that enable e-commerce TNCs to position themselves as lead firms in the e-LSN. It is argued that the governments have been constrained in their attempts to regulate e-commerce companies, at transnational, national and sub-national scales. In this context, advantageous access to financial, venture and digital capital have created the conditions for a cluster of e-commerce corporations to greatly expand their market power. The different forms of inter-firm relations between the lead firms and the suppliers and the capital-labour relations between and within the production sites in the e-commerce TNC led production network are a primary inquiry for this thesis. Having established the salient political-economic and organisational characteristics, the narrative turns to Amazon's specific e-LSN, before bringing labour and the labour process explicitly into analysis of the network.

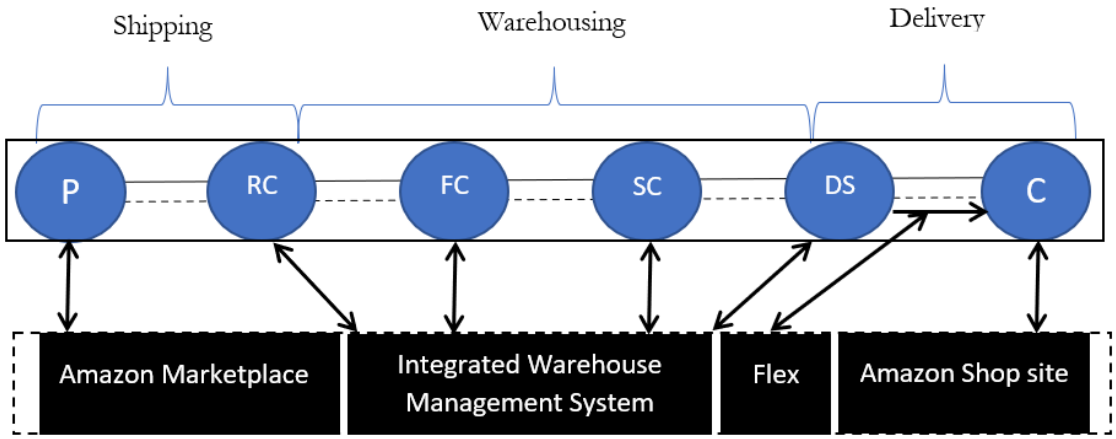
2.4. Amazon's Logistic Service Network

Amazon is one of the prominent TNCs globally, distinguished for integrating retail, logistic, and IT services in its e-commerce operations, connecting the sellers with customers. Since its inception in the USA, Amazon's operations have proliferated across numerous countries, establishing independent subsidiaries tailored to meet country-specific consumer demand (Govidarajan and Warren, 2016), while navigating diverse government regulations (Wu and Gereffi, 2019). Although as subsidiaries, they enjoy a certain degree of discretion in formulating their business model and operational strategies, they commonly utilise Amazon's technological architecture and digital platforms, notably the cloud computing software, Amazon Web Service (AWS), which function globally and are transferred or extended throughout their operations (Coveri et al, 2021). This indispensable digital infrastructure complements Amazon's physical infrastructure, comprised of warehouses and delivery stations, in operationalising their parcel processing and distribution services. With the expansion of customer bases and service locations, the physical infrastructure has become denser and multi-faceted with the creation of specialised warehousing services, including fulfilment centres, sortation centres, delivery hubs, freight stations and cross docks (Rodrigue, 2020), segmenting the distinctive functions of shipping, warehousing and delivery, which themselves are coordinated through Amazon's digital platforms and bespoke software. The digital infrastructure comprises not only the Amazon Marketplace for sellers and vendors to list and display their products, and customer shopping websites, notably Amazon.com and its regional alternatives- Amazon.in, and Amazon.uk-as examples - which become the digital alternative to retail stores. It also encompasses an integrated warehouse management system (WMS) which serves to govern and control the labour process across the diverse warehousing sites. It also constitutes labour sourcing platforms, particularly, Amazon Flex, primarily for delivery drivers (Aćimović et al, 2020).[6] These digital infrastructural elements complement the physical

[6] Its crowdsourcing platform Amazon MTurk is another prominent platform, but it is used for gig works and micro tasks, which are distinct from Amazon's e-commerce service and hence should not be included in Amazon's e-LSN. For a detailed study of MTurk functions see Bergvall-Kåreborn and Howcroft (2014).

infrastructure by feeding in data generated from the activities in the latter and by processing the information to algorithmically control its function for seamless progression of orders from sellers to customers (Struna and Reese, 2020). The network of physical and digital infrastructural components and artefacts form the material base of Amazon's e-LSN.

Figure 2. 1. Schematic Diagram of Key Physical and Digital Infrastructures in Amazon's e-LSN



Note: P=producers, sellers, vendors. RC=Receive Centre. FC=Fulfilment Centre. SC=Sortation Centre. DS=Delivery Station. C=end Customers/online customers. The horizonal black lines represent subcontracting relationships between Amazon and 'strategic' partners and broken black lines represent subsidiary activity of Amazon. The solid horizontal arrow represents crowdsourcing contracts. The solid black bordered rectangle represents the physical infrastructure of the e-LSN. The broken black line bordered rectangle represents the digital infrastructure of the e-LSN while the double headed arrow represents the interconnection between digital and physical infrastructure.

Figure 2.1 provides a schematic diagram of Amazon's physical and digital infrastructure spanning the shipping, warehousing, and delivery functions across and within its e-LSN. It demonstrates that Amazon's e-commerce model integrates its digital architecture, through its bespoke platform and cloud, with a network of warehouses, storage centres and delivery stations dispersed within and/or across states and regions, which perform the logistic functions of inventory, sorting, parcelling and distribution of packages from vendors to customers. Each unit is dedicated to executing a specific function.

First, the Receive Centre (RC) accepts the orders from sellers and integrates the orders and items in codable form into the digital platforms. Second, the warehouse or the Fulfilment Centre (FC) stows, picks, packs, and performs the preliminary sorting of the packages according to delivery locations. Third, the Sortation Centre (SC) undertakes the penultimate sorting of the packed orders, according to customers' addresses. Fourth, the Delivery Stations (DS) are the 'last mile' facilities, from which orders are dispatched and delivered to the customers' nominated addresses by drivers[7].

While Amazon does develop its digital infrastructure in-house (Kimble and Bourdon, 2013), it does not necessarily own all the physical infrastructure used in its operations. Instances of Amazon

[7] This schematic diagram is based originally on Amazon's shareholder letters which are around thirty years old (Bezos, J. 1997. Letter to Shareholders. US Securities and Exchange Commission). As elaborated, operational specialisation and complexity have developed over time with growth in scale and reach leading to increased differentiation. Decades later Rodrigue (2020) could identify six distinctive types of operating sites in the network, although in USA particularly.

relying on established independent postal and third-party transport service providers for delivery is acknowledged by Rodrigue (2020). As the physical infrastructure of Amazon becomes denser, with more specialised types of sites emerging, the practice of subcontracting or outsourcing of warehousing and shipping services might also become more prevalent. This development raises a pertinent question regarding the means and mechanisms by which Amazon engages with third-party partners to form its logistics network. The nature of these inter-firm relationships is pivotal to achieving a comprehensive understanding of Amazon's e-LSN. To what extent do these relationships correspond to the purely transactional or are much more deeply integrated or lie somewhere in between? To what extent do partner firms maintain independent decision-making or adhere closely to Amazon's operating protocols, or does a combination of both prevail? Subsequently, how does Amazon leverage its digital infrastructure in mediating their inter-firm relations alongside regulating the third-party activities conducted on its behalf? Exploring these questions might reveal how different governance structures emerge and their potentially variable impacts on capital-labour relations and labour processes within Amazon e-LSNs warehousing sites or physical infrastructures. This thesis aims to investigate these dynamics.

2.5. Conclusion

Following the exploration of various production network frameworks and how they have treated labour in their analysis, this chapter further examined the political economy of e-commerce, and Amazon's operational model and what might be best termed its e-LSN. Based on what is known from the extant literature, the functional units within this network have been elaborated, and the digital infrastructure integrating the network's operation described. It remains to be seen how these units are articulated concretely in a region-specific context, through evidence from this study of a really-existing e-LSN. While understanding the inter-firm relationships between the network's nodes, and Amazon's governance mechanisms, an indispensable component of the company's e-LSN, this study seeks to address a lacuna in scholarly research by focusing on labour and specifically on the labour process within the units of, and across, Amazon's e-LSN. The theoretical and analytical resources that will inform this endeavour derive from labour process theory to which this thesis now turns.

Chapter 3: Labour in e-LSN: The Need for Labour Process Theory

3.1. Introduction

In Chapter 2 critical attention was paid to the extent to which, and the ways in which GVC and GPN theorising incorporated labour within their respective frameworks. It was established that the GVC perspective, with its concentration on governance between lead firms and third-party suppliers, contractual arrangements between them and the dyadic links in chains neglected to consider labour in all its facets (Bair, 2008; Selwyn, 2012). Indeed, it could be argued that GVC concepts privileged the mechanisms of governance, abstracting them from the social relations of production, including labour. The irony, from a Marxist perspective, that Global *Value* Chain analysis eschews labour as a source of value has been noted (Taylor, 2010). The GPN framework, in departing from the parsimony of GVC, argued for a more expansive framework that re-instated the geographical and the territorial, that includes consideration of the role of labour (Cumbers et al, 2008; Selwyn, 2012). Acknowledgement of the necessity to incorporate the active role of labour in analysing networked production process, led to the introduction of the notion of social upgrading in GVC and GPN. Another alternative is the power resource approach that argues to include the active role of labour agency in this restructuring phenomenon through multiple forms of bargaining power (Wright, 2000; Silver, 2003).

However, neither of these approaches includes labour in GPN as the very source of value in the production network (Taylor, 2010; Taylor et al, 2015). This thesis proposes to include the imperatives on labour in the GPN by drawing on the analytical salience of labour process theory, analysing production networks as a manifestation of social relations of production, acknowledging the pervasiveness of the structural antagonistic relationship between labour and capital in the form of control-resistance dialectical relationship (Edwards and Scullion, 1982; Edwards, 1986; Edwards and Hodder, 2022).

Section 3.2 evaluates the trajectory and development of 'core' labour process theory (LPT), particularly related to aspects of control imperatives, structural antagonism, and the role of technology. Section 3.3 delves into a pivotal aspect of the LPT to be extensively investigated, the 'connectivity issue', where the interrelationships and interconnections between the labour process and broader economic contingencies are established. Section 3.4 considers pertinent empirical studies of labour process in contemporary ICT driven work, comprising gig and platform work and work in production networks particularly related to the logistic, e-commerce and distribution sector, including Amazon. Section 3.5 summarises the chapter and concludes by raising some critical questions which this thesis seeks to answer.

3.2. Labour Process Theory

The mechanism through which the value embodied in labour gets transformed into output is what can be termed the labour process (Marx, 1867). Within capitalism, this process entails the conversion of means of production, such as materials and instruments of labour, into surplus value, with labour serving as the principal agency in this transformation. Although the concept of the labour process originates in Marx, in Capital Volume 1 (1867), its influence can be credited to the seminal work of Braverman (1974). He posited that, driven by the imperative to appropriate value, capital holders exercise control over the labour process, overcoming the indeterminacy of

labour, to convert labour power into concrete labour. The essential requirement in the capitalist labour process is to organise and manage labour to ensure the maximum utilisation of labour power for capital accumulation and to maximise profit. However, this endeavour is far from straightforward. Firstly, buying the labour power with wages does not confer the knowledge of using it which remains embodied with the labour. Secondly, leaving the process of using the labour power in the hands of labour brings uncertainty for the capitalist, because the objective of workers and capitalists in using this labour power are not aligned. The former prioritise remuneration and consumption, whereas the latter is driven by accumulation and profit generation (Marx, 1867).

To reconcile these inherent contradictions, Braverman (1974) argued, based on his critical evaluation of Taylorism (Taylor, 1911), that capital is driven by three principles. The first is to fragment the labour process into discrete tasks dispersing the knowledge of production across multiple workers who are confined to the execution of specific assigned tasks according to divisions of labour, thereby comprehensively removing them from conceptualising the production process. Second, capitalists aggregate the knowledge hitherto embedded in production to determine the most efficient means of deploying labour power to achieve their objectives. Third, employers, or their managerial representatives, accumulate this knowledge through first-hand experience, systematic observation of worker activities, detailed recordkeeping and utilises it in imposing productive and efficient work practices on workers. Within capitalism, the role of managers in organising the labour process, subdividing tasks and maximising control over them, monitoring performance and enforcing optimal work practices becomes indispensable.

Braverman's seminal work prompted theoretical elaboration, often referred to as second wave LPT, that in certain significant respects, revised his original thesis (Thompson and Smith, 2024). Since Braverman's seminal work, labour process theory was influenced by three seminal works, by Richard Edwards (1979), Michael Burawoy (1979) and Andy Friedman (1977). Both Edwards and Burawoy posited their ideas to complement Braverman's idea of the "separation of conception and execution" (Braverman, 1974:86) as a fundamental organising principle in workplaces. Edwards introduced the notion of an internal control system at workplace comprising of task instruction, work monitoring, and performance evaluation through rewards and punishments to discipline the workers within the dictums of capital, and minimise the indeterminacy associated with buying labour power from the workers, but not fully possessing the knowledge or control of the labour power to utilise it for the purpose of surplus extraction (primary indeterminacy). He contended that this control mechanism, along with market influence and technological innovation and adaptation, impacts work structures and shapes the labour process in workplaces.

The book's pivotal contribution is to argue for the historical development of distinctive, successive control regimes comprising, first, of simple control, characterised by direct obtrusive managerial intervention or 'rule of command', found predominantly in small organisations at early nineteenth century. The second was technical control, characterised by machine and tools determining the pace and intensity of work, the canonical example being Taylorism and Fordism in late nineteenth century. The third was bureaucratic control, characterised by organising work through workplace specific rules and regulations exercised in the twentieth century monopoly capitalism. This chronological study depicts how, in response to market uncertainties and workers' resistance, each control system evolved to strengthen capitalist prerogatives at the workplace. Edwards emphasised the dialectical relationship between control and resistance, in which the contradiction between

them transforms their respective nature and form. Further, Edwards maintained that the terrain of contestation between workers and employers has transcended the domain of the workplaces to impact upon the political sphere. It is a tantalising suggestion that Edwards' approach, in identifying distinctive control regimes, may be applied to incorporate extended new forms of control, such as algorithmic control, in the twenty-first century ICT driven capitalist mode of production (section 3.2.2).

Burawoy (1979) contended that the separation of conception and execution has, over time, evolved and taken new forms, which have been guided by the managerial objective of obscuring the capitalist motives from labour. Early industrial capitalism is marked by direct explicit coercion and discipline of workers, legitimised by state laws. As capitalism evolved with the advent of welfare state and policies like national insurance, unemployment benefits, minimum wage, recognition of trade unions, the need to persuade workers to cooperate with capitalist imperatives became necessary, making obscuration a required method in constituting and controlling the labour process (see also Burawoy, 1983). Obscuration methods include incentivising workers to coordinate with capital's interest through rewards in cash, kind, and symbolic forms (status, position), thus building consent over coercion as forms of control (ibid 1979:81). Burawoy focus of analysis was on how capitalists instil their ideology and norms on the workers through different practices or 'games', so that workers end up consenting to their exploitation (ibid 1979:77).

In a somewhat similar vein, Friedman (1977) developed the concept of responsible autonomy as part of his broader analysis of workplace control systems, which allows employees some degree of discretion in work related decision-making, as long as they remain productive, and their productive performance align with the employers' interests. This managerial approach contrasts with more traditional, direct control, where supervisors strictly monitor and enforce rules. It reflects a form of managerial strategy that seeks to mitigate worker resistance by granting them some, constrained agency, albeit subject to the dominance of managerial prerogative.

Baldamus (1961) previously had argued that workers' cooperation is not necessarily a reflection of their consent but of adaptation. According to his analysis, when a worker expends effort to perform an ordered task, it is an expression of deprivation in the work practice and dispossession of workplace autonomy from the workers. This gives rise to boredom, tedium, and weariness. To overcome the adverse effect of their workplace efforts they resort to adaptation, traction and contentment. These compensating mechanisms are "feelings of temporary relief from discomfort of certain work realities, feelings which arises when these factors have become workers customary interpretation of his situation" (ibid:53). In this regard a few essential questions arise which this thesis seeks to investigate. How might adaptation, unlike consent, reveal rather than obscure the underlying contradictions within the capitalist labour process? Could it be that adaptation is driven more by a sense of pessimism and inevitability than by the infusion of employers' beliefs and motives into the workers? If so, does this suggest that adaptation holds a broader conceptual relevance, where workers can both play a role as seemingly consensual employees, while simultaneously harbouring their discontent with and frustrations at the very structure and consequences of their work?

These essential studies of labour process theory from early 1970s to late 1980s reflect the Marxist understanding which emphasises the structural antagonism between labour and capital at the point of production. While acknowledging Braverman's theoretical legacy and building on the post-

Braverman 'second wave', what was termed 'core' labour process theory (LPT) was established in early 1990s (Thompson and Smith, 2001; 2009; Thompson and Vincent, 2010). It is a conceptual framework, a codification even, designed to explain the capital-labour relations at the workplace and does not claim to be a general theory of social relations within capitalist society (Elger, 2001). Edwards et al (1990) have argued that the strength of LPT lies in the empirical interest in the experience of work at the point of production and in a theoretical concern with the contradictory relationships between capital and labour at the workplace. LPT adopted an approach narrower than the class struggle envisaged by the traditional Marxist understandings of Braverman, Burawoy and Edwards at the societal level, yet it is broader than the economistic understanding of wage-effort bargain. Core LPT is based on the following four principles, as articulated by Thompson and Vincent (2010:48),

1. Labour process is the privileged point of enquiry to study the role of labour and capital-labour relationship under capitalism as it generates the surplus[8] and is the central aspect of human experience in their endeavour to produce and reproduce economy.

2. There exists an underlying logic of accumulation that drives capital to continuously innovate the means of production, driven by competitive pressure and responses to labour's actions. This logic limits capital's willingness and capability to eliminate hierarchical relations and integrate conceptualisation with execution.

3. LPT problematises the double indeterminacy of labour power, in which the first is the primary indeterminacy between labour and labour power which argues that though employer buys labour hours, this alone does not and cannot determine the degree of effort expended by workers, their output and productivity when set in motion by capital. Hence, arose with scientific management the need to separate knowledge from workers, concentrate it into management and subject workers to mere execution of detailed tasks. The second indeterminacy is associated with mobility power, or wage labourers' ability to choose between employers (Smith, 2006). These indeterminacies introduce uncertainties for the employers and management, and LPT is applied to studies of the capitalistic methods to overcome indeterminacy. It has been highlighted that since market mechanisms alone cannot overcome indeterminacies, capital's agents adopt a plethora of control mechanisms into production.

4. Considering the dynamics of exploitation and control, the interactions between capital and labour within the workplace can be characterised by 'structured antagonism' (Edwards, 1986). Simultaneously, for capital to continually innovate the work process, it requires a degree of creativity and collaboration from labour. This leads to a spectrum of potential responses from workers, influenced by situational and often overlapping factors, ranging from resistance to accommodation, adaptation, compliance, and consent.

This thesis critically evaluates the analytical purchase of these 'core' principles or elements for the concrete study of the labour process at the specific nodes within the e-commerce e-LSN. The second principle with its emphasis on technology may have salience for the examination of algorithmic management and controls, in reconfiguring the labour process with the pursuit of capital accumulation and the corporate objective of achieving competitive advantage. Similarly, by

[8] Although surplus value is elided or indeed eschewed in favour or surplus labour power.

investigating how control imperatives have evolved and continue to structure and shape the labour process, this thesis addresses the third core element of LPT. Finally, this thesis is informed by the fourth principle, by observing the labour process through the prism of structural antagonism, investigating the control-resistance dialectical relationship to analyse capital-labour relationship at workplace.

3.2.1. LPT and technology

This thesis is informed and framed by LPT in respect of its consideration of the centrality of technology to the labour process and how it is appropriated, deployed and developed by management for organising work and controlling and discipling workers, for the purpose of sustaining capital accumulation and gaining competitive advantage (Berg, 1979; Noble, 1979; Slater, 1980; Noble, 1984; Liker et al, 1999; Hall, 2010). The distinctive feature of analysing technology from the lens of LPT is acknowledging the political character of technology in its implementation and its subsequent effects (Howcroft and Taylor, 2022). Being in the hands of the agents of capital, technology is implemented to enhance the managerial prerogatives in the labour process. The effects of technology on labour process and labour relations can be manifold, comprising labour displacement and emergence of new forms of jobs (Acimoglu and Restrepo, 2019), deskilling and reskilling of workers (Grugulis and Lloyd, 2010), intensification of control (Hall, 2010), and marginalisation or revitalisation of unions and changes in bargaining power between parties (Webster and Bhulungu, 2004). LPT maintains that the effects of technology are contingent on the outcomes of struggles between capital and labour which can be observed at different levels, ranging from workplace, enterprise, organisation, to economy and even society. In other words, technology is shaped by the class relations and the antagonistic relations of production inherent in the capitalist system (Thompson, 1989).

Much of the literature on the future of work is dominated by the notion of technological determinism (Kelly, 2016). Here, technology is considered as a self-contained, neutral entity which determines societal development and change (Williams and Edge, 1996). Determinism is visible in the presentation of technology as a homogeneous group of artefacts, with the frequently disparate qualities of emergent technologies - robotisation, AI, big data, 3D printing, and cloud technology - bundled into a composite that foreshadows a predetermined future. This line of thinking influenced the theories of information economy which have been mistakenly heralded as transforming capitalism into some sort of post-capitalist society (Rifkin, 2000; Mason, 2015), neglecting the purpose of capital accumulation driving the creation, deployment, and exploitation of scientific knowledge into technological innovation and application. Notions of artificial intelligence, automation and algorithmically driven technical apparatuses performing more objectively than humans have dominated their thoughts (Christin, 2017). LPT critiques these assumptions on the grounds that technologies and algorithms are not neutral artefacts but are politically shaped by the purposes of its owners and adopters (Newlands, 2021; Howcroft and Taylor, 2023; Joyce et al, 2022).

In this regard, this thesis endorses a political materialistic perspective of technology as envisaged by LPT theorists, where technological artifacts are interpreted as having distinctive features, mechanisms of deployment and purposes. Although technology is considered to have objective characteristics, it is also not conceived to be deterministic in the sense that the way in which

technology is configured and utilised crucially relies on the result of the conflicts and terms of bargaining between labour and capital (Taylor, 2018). Further, neglect of the individuality of specific technologies and their differential implications can lead to over-generalisation and unfounded speculation regarding its effects, to what has been termed 'singularity' (Howcroft and Taylor, 2022).

A vibrant debate stimulated by Braverman relates to the consequences for the skill of workers. A common misconception has been to regard the deskilling of workers to be an inevitable outcome of the principles of Taylorism and of the application of technologies to the process of production, to the extent that Braverman's core argument is conceived as the 'deskilling thesis' (Noon et al, 2017). As capital's insatiable search for surplus accumulation and gaining competitive advantage drives them to renew the labour process, its implication on everlasting demands for new skill and technologies can be anything from deskilling to upskilling to even partial realisation of both (Milkman, 1997; Taylor and Bain, 1999; Thompson and Smith, 2009). This dynamic understanding of the role of technology on labour process adds complexity and nuance to the advocacy of universal, although Thompson (1989) contended that deskilling remained the dominant 'empirical tendency' at workplaces. In contrast, Armstrong (1989) insisted on considering the long-term effect of new technologies on the deskilling tendencies. Nonetheless, labour control remains the central preoccupation of Braverman (1974) rather than deskilling, notwithstanding its significance. How does technology shape the execution of tasks, the pace of execution, the division of labour, and task organisation at the value generating sites in production networks is a point of inquiry in this thesis.

3.2.2. LPT and Control

The control imperative in the labour process arises from the fundamental contradiction between capital and labour that underpins the social relations of production, the requirement to convert labour power into concrete labour and to overcome the indeterminacy of labour (Thompson and Smith, 2010). Control may take different forms that have the objective of maximising the extraction of surplus value from the labour power embodied in the workers. Braverman (1974:57), critiquing Taylorism, stated that, "The control over work that capital exercises are not confined to the purchase of labour power but extends to the direction and control of the labour process itself". Controlling the labour process ensures separating conceptualisation from execution, allowing management to monopolise production knowledge, enabling capitalists to dictate work methods and pace to increase efficiency and profits. Edwards (1979), as discussed, identified three forms of control – simple, technical, and bureaucratic - which, he claimed, superseded one another over the course of capitalist development.

Friedman (1977) argued for a reconsideration of control as only a direct and coercive process and directed attention to the managerial practice of 'responsible autonomy', whereby employees are accorded certain discretion in decision making, thus not entirely separating conception from execution. Nevertheless, employees' discretion is ceded only within constrained parameters and the ultimate objective of enhancing employer prerogatives and the creation of value remain paramount. Friedman further highlighted that segmentation of workforce along the skill, gender, ethnicity and labour market positions of workers within firms and dividing the workforce into core and periphery across firms, through subcontracting, aids overall managerial control. Burawoy

(1979) emphasised that employers strive towards consent building by arranging competitive factory games with incentives to win, which creates an illusion of autonomy, making workers compliant and consent to their own exploitation. He explained, "The capitalist labour process is organised in such a way that the worker is induced to extend his own subordination" (85). This blending of control with consent makes control appear less direct and more consensual.

Thompson (1989) argued that capitalist control is adaptive and varied and is not tied to one particular method. He emphasised the role of indirect control mechanisms, such as working in teams, which foster a sense of autonomy but ultimately serve to align workers' behaviour with managerial goals. Additionally, Thompson emphasised that technology is often introduced not just to increase efficiency, but to provide management with more sophisticated means of supervising and controlling the workforce. This multifaceted approach to control highlights how management adapts strategies to maintain authority while balancing coercion, and consent within the labour process.

In parallel, technological innovation has enhanced surveillance mechanisms from CCTV cameras to different tracking devices, thus transforming the monitoring mechanism and data extraction process on workers' efforts. This advancement has led to the collection and commodification of personal data, which are then used to exert control (Zuboff, 2019). Transformation in the surveillance mechanisms from obtrusive and overtly demonstrative supervisory monitoring to technologically mediated monitoring mechanisms led to the popularisation of the metaphor of the workplaces as 'electronic panopticon' (Sewell and Wilkinson, 1992; Fernie and Metcalf, 1998; McKinlay and Taylor, 1998). However, the 'electronic panopticon' metaphor, as applied by Fernie and Metcalf (1998) to call centres, was subject to thoroughgoing critique (Bain and Taylor, 2000).

Many pertinent works (Taylor and Bain, 1999; Taylor and Bain, 2005; Thompson and Harley, 2007; Hall, 2010) also demonstrate that as science and technology developed, new forms of technical apparatuses have been executed in workplaces, enhancing managerial control over the labour process. For instance, from technical control being exercised by machines such as conveyor belts (Edwards, 1979), or NC machines (Noble, 1979) to computer mediated instructions and monitoring (Thompson, 1989), and recently via algorithmically driven digital platforms and software-based application, the frontiers of control have been pushed to new horizons along with a general intensification of work. This led to formulation of new forms of control such as info-normative control (Frenkel et al, 1999) and algorithmic control (Woodcock and Graham, 2019).

In the context of the emergence and growth of the platform economy, particularly the gig economy, algorithmic control has been proposed as a concept to explain digitally generated forms of control. Gandini (2019) contended that algorithmic control mechanisms enable micro-management[9] of the labour process in real time through micro-processing of data on workers' efforts. The novelty of such apparent revelations may be qualified by reference to a considerable body of work on call centres that presented evidence decades ago of digitally integrated micro-monitoring and micro-management (e.g. Bain et al, 2002; Taylor and Bain, 2007). Algorithms have the capacity to evaluate workers' performance through rating and ranking criteria, converting

[9] Although micro-management predates the digitalization of the labour process. Braverman's analysis characterised by task fragmentation were foundational to early micromanagement practices. Thus, micro-management, while not a product of digital technology, the advent of digital tools has enabled more precise tracking and regulation of worker performance.

workers' efforts into standardised metrices such as 'reputation scores' or 'stars', thus erecting a 'techno-normative' form of control structure (ibid, p:1041). Gandini also identifies in gig work control being exerted through consumer feedback and rating, resonating with the notion of 'management by customers' (Fuller and Smith, 1991). How far and in what ways algorithmic control is reflected in e-commerce regulated e-LSNs is an important line of inquiry in this thesis.

Knight and Wilmott (1989), in departing from principally materialist explanations, argued that control systems under the managerial prerogatives have over time incorporated substantial new forms, which goes beyond bureaucratic and technical control. They emphasised the contribution of culture and norms in shaping control imperatives. A prominent form of control in this regard is normative control (Barley and Kunda, 1992), by which it is conceived that workers are subject to control of "their thoughts and emotions" (ibid: p 3). Normative control arises from the belief that the systematic specification of tasks, essentially forms of technical and bureaucratic control, and the close monitoring of the workers with explicitly defined, roles or responsibilities, or rational control, are insufficient. Arguably, normative control is a sophisticated form of 'manufacturing consent' (Burawoy, 1979), a sustained effort by management at an ideological level to encourage workers to accept the legitimacy of their organisation's goals and adopt a shared interest. Often it involves instilling corporate or organisational norms and values on the workers by diverse formal and discursive means, where the role of the floor managers expands to motivate and inspire the workers. Further, owing to prominence of neoliberalism and the ideological hegemony of market imperatives (such as competition and consumerism) across society, Sturdy et al (2010) have argued that companies no longer need to construct distinctive organisation-specific cultures but can draw on practices and norms from outside the workplace to shape a company's culture. Crucially, though, for the logic of inquiry of thesis, the fact that different forms of control might be exercised in combination is pertinent. However, full acknowledgement must be accorded to the essential condition, that all forms of control remain within the overriding domain of managerial decision-making, choice and discretion (Thompson, 1989; Taylor and Bain, 1999; Thompson and McHugh, 2009).

Within the recent context of digital surveillance and algorithmic control, and the potential continued relevance of forms of management control elaborated throughout the rich LPT literature, particularly in its second wave, but also cultural and normative perspectives, several pertinent questions arise for this inquiry into Amazon's e-LSN and at the specific sites within the network. What forms of control can be identified in Amazon's e-LSN, and to what extent do they differ between different nodes or sites? Are there over-arching forms of control that span the e-LSN that the lead firm privileges? What combinations of control are being used to overcome labour indeterminacy and maximise labour power utilisation and value? Are some controls more important than others from an overall management perspective? To what extent and in what ways do forms of control differ between sites owned and operated by Amazon directly and those operated by Amazon's third parties?

3.2.3. Resistance, Absenteeism and Structural Antagonism

Joyce and Stuart (2021) have argued that the emergence of the platform economy and gig work, has led to a disproportionate focus on the novel forms of algorithmic control. There has been a tendency to overlook the fact that control mechanisms are source of conflicts, and that

contestation is unavoidably "linked with the dual control-resistance dynamics within capitalist labour process" (ibid:10). Given the antagonistic capital-labour relationship, management control and specific mechanisms, historically, have been contested, so that worker recalcitrance and resistance have taken different forms[10]. Resistance can vary from soldiering, sabotage and deliberately working slow, to strikes, and for some, may include absenteeism or exit (Edwards and Scullion, 1982). These acts of resistance arise because of the inherent contradiction between workers and employers, where the former might *inter alia* pursue improved or defend existing conditions of work, while the latter may strive to reduce labour costs, or increase work intensity with the objective of pumping out greater labour power and maximising the accumulation of value. Resistance by virtue of diverse forms of the exercise of labour agency has the potential to disrupt the established order by impeding value generation and appropriation inherent in the labour process. Edwards and Hodder (2022) describe that the structural antagonism "exists because workers are exploited in a very specific technical sense, namely, that they generate value in the labour process, and some of that value is taken from them" (p:223). To enhance the purpose of surplus maximisation, employers erect a plethora of control mechanisms with the aim of minimising workers' autonomy. This imperative may then create discontent among workers and become manifest in forms of resistance. Hence structural antagonism is characterised by the dialectical control and resistance employer-employee relationship at the point of production. It can be argued that the advantage of conceptualising employment relation through the prism of structured antagonism is that it connects the overt conflicts between employers and employees with the underlying conflict in the principal of using the labour power (Edwards, 2018). Although drawing inspiration from the Marxian theory of exploitation (Cohen, 1987), the concept of structural antagonism does not incorporate class conflict and other broader social relations and are focussed on analysing conflicts at the workplaces particularly. It also refutes the argument that antagonism is tendentially present and gets expressed at certain specific contexts which undermines the structural nature of the antagonism embedded in the capitalist relations of production (Jaros, 2010). Interpreting contradiction as a 'clash of interest' (Edwards and Scullion, 1982), Edwards and Hodder (2022:224) assert that "it is not for the observer to say which [interests] are more important than others or to offer implied criticism if presumed real interests are not pursued".

Edwards and Hodder (2022) further emphasise that although conflict, or clash of interest, inevitably arises from discontent, it may not become extant in a form of resistance, let alone be successful. Discontent is insufficient to impede the employers' objective of surplus accumulation. Further, to understand whether an action of discontent is an expression of resistance or not, it is essential to consider the context and the background leading to that action. For instance, resigning from a company or absenteeism can indicate workers' withdrawal from the value generation process, allowing them to retain autonomy over their labour power. Alternatively, such actions can also serve as a managerial strategy to prevent low productivity as well as to avert more severe forms of resistance. In the former case, absenteeism can be viewed as a form of resistance, while in the latter context, it becomes part of the managerial challenge to optimise labour utilisation and control the labour process. As Edwards and Scullion (1982:557) stated "Absenteeism is not simply the result of an interaction between the individual worker and the organisational environment, for that

[10] Recalcitrance is a reluctance to embrace or accommodate to managerial prescription, is distinct from what might be more explicit and overt resistance (see Mckeown, 2016 for recalcitrance in nursing sector).

environment is itself the product of relationships between managements and workers in which the possibility of collective shopfloor challenges to managerial rules is central".

This study attempts to trace contingent links between concrete workers' and managers' behaviour, actions and expressions within the structural conditions of the firms' operation characterised by market imperatives of capital accumulation and surplus maximisation. Workers' resistance may have a material consequence for the employers. Discontents may not be a sufficient, but a necessary condition, for resistance to occur in one form or another. In other words, identifying discontents or grievances are important to understand the continuing relevance of conflict and contradiction in the labour process. This study seeks to investigate the forms of discontent, recalcitrance and resistance that workers have expressed or adopted across Amazon's e-LSN, to identify potential differences and similarities within and between sites, and to locate the source of resistance(s) towards the exercise of managements' control mechanisms. A compelling line of inquiry would be to investigate whether resistance manifests in response to algorithmic control.

3.3. LPT and The Connectivity Issue

Carter (2021) has criticised LPT for its decoupling of labour process and the social relationships at the workplace from wider political economy. Jaros and Jermier (1995) referred to this as the 'boundary problem'. LPT might have acknowledged this deficiency, even identifying it as a research agenda to be pursued but has demonstrated a limited ability to concretely evidence and engage with this connectivity problem. Attempts to excise the value generation process from core Labour Process Theory (e.g., Thompson, 2003) have often failed to fully situate the workplace within the broader circuits of capital. This oversight disconnects the labour process from wider social antagonisms and class struggles beyond the workplace (Carter, 2021).

Edwards (1986), consistent with the LPT formulation of Thompson (1990), has 'privileged' the study of labour process at the point of production. It represents a conscious decision to analyse workplace relations with a degree of relative autonomy from the wider relations of capitalist political economy for analytical purpose (Thompson, 1990). Earlier attempts with the aim of capturing the dynamic and transforming nature of the accumulation process under capitalism, had emphasised the role of different social and economic modes of regulation (Aglietta, 1979), which dominated considerations of the labour process and employment relations in analysis (Thompson and Vincent, 2010). Hall and Soskice (2001) situated workplace relations and labour process within national institutional settings, but their perspective was essentially on comparisons of political and economic institutions between countries. This approach has been criticised for considering that the institutions are being endogenously formed within national boundaries and does not acknowledge that each variant of the capitalism are not present in isolation but relationally to each other (Jessop, 2014).

Notwithstanding the significance of these expansionary attempts, the recurrent, if not insistent, appeal to connect the labour process and employment relations with the dynamics of capital accumulation led to the renewed attempt to broaden the analytical currency of LPT. This has been termed the 'connectivity issue' (Thompson and Newsome, 2004; Thompson and Vincent, 2010). Thompson and Newsome (2004) emphasised the need to reconnect workplace relations, job regulations, and employment relations at work with the wider industrial relations, and national labour regulations. It aids in investigating how the process of transforming the labour power to

labour is shaped by the "social and economic forces that structure the transformation" (Hyman, 1994:171). Thompson (2003) in his 'disconnected capitalism' thesis identifies labour process within the corporate strategies and governance structures against the backdrop of financialization. Following the global financial crisis Thompson (2013) re-emphasised the causal linkages between financialization and the drive to maximise shareholders value with the labour process and work organisation. More concretely, Taylor et al (2005) analysed how the broader economic pressures consequent upon arising the dot.com crash and intensified market competition at sectoral level, notably in financial services, and telecommunications, compelled firms to implement cost cutting strategies, particularly reducing the share of value accrued to the employees, in call centres. Further, competitive pressure across different sectors translates into work intensification. Taylor (2021) revisits the call centre workplaces in the context of the Covid-19 pandemic to emphasise how macro-economic pressures, particularly in crisis conditions, impels firms and their managers to intensify work with adverse consequences for workers' health and wellbeing.

In another purely theoretical endeavour, to advance the analytical strength of 'core' LPT, Thompson and Vincent (2010) conceived of a stratified interrelationship between structural conditioning and agential reactions across five entities- regulatory regime, value chains, workplace, vested interest groups and other non-economic agents. Thompson et al (2015) further substantiated this attempt by advancing governance dynamics in value chains (Gereffi et al, 2005) with the power resource approach (Wright, 2000; Silver, 2003), to capture the agential role of labour in the gaming and digital entertainment industry.

This section has demonstrated how one of the tenets of 'core' labour process privileged the workplace as a relatively autonomous domain for empirical analysis (Edwards, 1986; Thompson, 1990). Carter (2021) recently delivered a trenchant critique of this self-limitation which excised the consequences for workplace social relations from broader capitalist political economy. Others had referred to this interconnectivity, or absence thereof, between the capitalist economy more widely and the workplace, of the labour process and control at the point of production as the 'boundary problem'. Thompson's later response (2003) acknowledges the significance of the impact of political-economic context on the labour process with his 'Disconnected Capitalism' thesis, albeit that he identifies financialization as predominant, a position he elaborates in Thompson (2013). Meanwhile, the problematic of the relationship between workplace social relationships and broader political economy was cast as the 'connectivity issue' (Thompson and Newsome, 2004; Thompson and Vincent, 2010), although few attempts were made to trace and analyse the concrete linkages (Taylor et al, 2005; Taylor and Bain, 2007; Carter et al, 2011; Taylor, 2010; 2021). Newsome et al (2015) renewed the case for LPT-informed studies to operate at multiple levels of analysis, thereby rendering more explicit the connections between the dynamics of workplace transformation, political economy and shifting regimes of accumulation. In acknowledgment of the importance of addressing the connectivity problematic in production network research, this study seeks to analyse the extent to which, and the ways in which, political-economic imperatives at the macroeconomic or sectoral levels affect firms in an e-commerce e-LSN. How precisely does this compulsion translate into changes in the labour process at the point(s) of production within the network, including cost-cutting, work intensification or increased micro-management? Furthermore, how do the mechanisms of control within firms align—or fail to align—with the market imperatives of competition and capital concentration? Finally, what regulatory role does the state play in shaping particularly the capital-labour relations and the labour process in the e-LSN?

3.4. Gig and Logistics Work

Much scholarly attention has been directed towards understanding the forms of control, labour process, and industrial relations in digitalised platform mediated gig work, and contemporary logistic service work. Mindful of the lines of inquiry to be pursued in this study of Amazon's e-LSN in India, this section will provide a critical review of this literature. It will consider, in turn, studies on gig work, on warehousing and distribution service works, and then will focus specifically on what is known of work organisation, and labour process at Amazon particularly, at its warehouses, and delivery stations.

3.4.1. Labour Process and Gig Work

Huws et al (2017) describe gig work as platform mediated task-based work and classifies it as either 'geographically tethered work' or 'remote cloud-work'. The former comprises services such as food and parcel delivery, takeaways, transportation and ride hailing services, cleaning, and haircutting (Deliveroo, Amazon, Uber, Urban-Claps). Here workers need to be physically present with customers to complete their task. Tasks require physical activities including driving a vehicle, cleaning houses, social care or cutting hair. Hence, workers are visible while performing their tasks. The allocation of work is controlled by the software installed in the smartphones of workers and customers. The latter is comprised of freelancing activities and microworks (Up-Work, Amazon Mechanical Turks). Latter tasks vary in degree of complexity and skill requirement, covering activities such as designing webpages, transcript editing, data entry, writing algorithms, labelling of photos and videos, and transcribing products. Unlike the geographically tethered tasks, these workers do not develop any physical contact with their clients (Huws, 2017). The task can be done remotely from wherever the internet is accessible. Cloud-work is managed and delivered through digital platforms.

These works are temporary and unstable with no long-term job contracts (Woodcock and Graham, 2019). Payments are either piece work or hourly based (Stewart and Stanford, 2017). Most of the time, gig workers are not recognised as employees but as 'independent contractors' or freelancers (De Stefano, 2016; Woodcock, 2016), which enable the platform enterprises to surpass legal obligations to contribute to workfare and transfer the entire risk to the workers (Bergvall-Kareborn and Howcroft, 2014; Kalleberg and Vallas, 2017). These workers are found to be juggling competing tasks, often spending long periods of unpaid time in their search for work (Cini, 2023). The nature of the tasks also obscures the labour-leisure choice for the workers by combining personal space and time with workspace and work time (Berg et al, 2018).

Workers are compelled to acclimatise to a new labour process configured by algorithms, among others, with intense demanding workflows (Gandini, 2019; Joyce and Stuart, 2021). In addition, these app-based works suffer from restricted employees' voice, grievance sharing and redressal process, often over-structured with pre-determined multiple-choice question and scripted responses (Berg et al, 2018). The contracts replicate piecework, with absence of long-term contract, social security provision and other benefits from which formal workers benefit. Lack of sustainable income, absence of workers' grievance redressal mechanisms, weak or the absence of communication, voice and representation, unclear contract terms, ambiguous worker

/employee/self-employed status and technologically driven management activities are some pressing concerns for gig workers (Behrendt et al, 2019; Fredman et al, 2020; Graham et al, 2020).

3.4.1.1. Remote Cloud Work

Building on Marx's labour theory of value, Cini (2023) rediscovered the process of obscuration in the surplus extraction mechanism in platform-based cloud-works, such as online freelancing, and microtasks. The labour process characterised by pervasive, yet remote algorithmic controls, created a standardised managerial practice where the digitised platform became a veil, behind which managerial activities ensues . The platform created an 'invisibilisation' process by capturing workers' unremunerated labour-time, including time required in creating a profile, searching for work, completing eligibility tests without a guarantee of attainment. Yet performing these unpaid activities were essential for the workers to access paid work. Using Amazon's digital platform MTurk, as a prominent example of microtasks, Bergvall-Kareborn and Howcroft (2014) provided evidence that click-workers conceived microtasks as tedious, repetitive and poorly paid, where arms-length managerial control is mediated through the digital platform via a plethora of productivity scores and metrics.

Wood *et al* (2018), in studying the work experience of Southeast Asian and Sub-Sahara African cloud workers, identified that, despite national heterogeneity in culture, institutions, and nature of governance, job quality tends to converge towards a common precarious condition. They elaborated that the algorithm embedded in remote platforms created 'symbolic power' by ranking workers based on number of gigs completed, leading to an inequality in job opportunity, with the lower ranked workers spending time disproportionately in search for jobs or getting in a greater number of rejections, adding to their unpaid labour time (See also Howcroft and Taylor, 2023). Lack of alternative job opportunities for the workers, accompanied by the access to virtually the entire global labour market for the employers enabled by the digital platform, skewed the employer-employee bargaining power in favour of the former.

Informed by GVC and GPN literature, Howson et al. (2022) developed a framework of 'digital value networks' (DVN) to study the labour process and employment relationships in cloud-work, where they highlighted the role of digital platform owners as a principal coordinating and controlling agent in the DVN. Platform owners leveraged their market power in the DVN, coupled with the benefits of spatial flexibility in labour sourcing for remote cloud-works and regulatory unaccountability, ensuring systematic accumulation of unpaid labour time that, they argued, was a crucial value extraction mechanism.

However, these studies did not explicitly analyse the dialectical control and resistance relations between the employees and the platform owners in articulating the labour process in remote cloud works. In parallel, Irani and Silberman (2013) indicated how computer science activists created browsing extensions, such as Turkopticon, to rate and review the different employers listed in Amazon Mturk, which provided a platform to raise and share the voice of click-workers. This example demonstrated that the inherent contradiction in the capitalist labour process may generate novel forms of resistance in the contemporary digital platform ecosystem.

3.4.1.2. Geographically Tethered Work

In a study of algorithmic management in food delivery in Germany, Heiland (2023) found the role of digital platforms obscures the labour process in which a 'black box' power is created through 'anticipatory obedience'. Consistent with the recent perspective of algorithms as socio-technical control structures (Rahman, 2021; Bucher et al., 2021), Heiland argues that algorithms are formed through interactive practices. This process always allows some degree of agency for workers and other users, such as end customers and clients. Algorithms erect a strict wall of 'technological rigidity' where workers' behaviours are micromanaged through a gamut of metrics and rating systems that "do not tolerate deviation" (Heiland, 2023:4). Further, since workers possess unequal access to the algorithms vis-a-vie the platform owners, an imbalanced power relationship is inexorably created in favour of the latter.

Focussing on the surveillance aspect of the labour process Newlands (2021), building on the concepts of 'multimodal assemblage' (Haggerty and Ericson, 2000) and 'spatial triad' (Lefebvre, 1991), infers that in platform work algorithmic surveillance is accompanied by both traditional face-to-face managerial surveillance and customer surveillance. The article raised concerns regarding the organisational knowledge building capacity regarding the material reality of working lives. Machine-readable data were used to evaluate workers' productivity, to assign tasks and to determine remunerations, but takes limited account of workers' experiences and conditions at work. Newlands argued that there is an epistemological gap between digital and human surveillance in understanding the material and psychological reality of workers. This contradiction can be treated as a scope for resistance for the workers, playing on managerial lack of knowledge of workers' lived experience.

Acknowledging that the labour process is characterised by structural antagonism at its core, Joyce and Stuart (2021), in considering sporadic yet riveting recent cases of platform mediated gig work, identified that the 'channels of resistance' are concentrated around algorithmic management, pay and regulatory issues. They identified that resistance might take different forms, varying from manipulating the process at an individual level, such as 'training algorithms to offer higher pay' to classical forms of resistance, such as strikes or picketing. The latter expresses digital variation in the form of logging off collectively from the platform application, to even formalised regional and transnational union organised protests, legal actions, and campaigns for regulatory reforms.

Arguing that algorithmic control cannot completely undermine the agency of gig workers, Ferrari and Graham (2021) show that workers undertake several tactics to steer the algorithm's effects in their favour. In analysing the ride hailing drivers (e.g. Uber, Deliveroo), they found that drivers engage manipulation tactics, such as registering their vehicle to multiple competing platforms, to expose themselves to compare several passenger requests, enabling them to choose the one paying higher rates, or using bot apps and mock GPS locations to enforce the algorithm to misinterpret their actual location. Similar instances of temporal and spatial actions by the gig workers were identified elsewhere (Adegoke, 2017; Chen, 2018). Drivers also creatively delve into subversion tactics such as collectively logging off their apps to create a temporary price surge (Mamiit, 2019), or even outright disruption tactics, including using the algorithmically determined physical meeting points (near restaurant clusters for food delivery apps) as a stage of demonstration and capitalising

on their collective visibility to raise their concerns, challenge the status quo and gain solidarity (Ferrari and Graham, 2021).

Similarly, Tassinari and Maccarone (2019) argued that issues on pay, job related insecurities and uncertainties, and algorithms' arbitrary management decisions are the source of antagonism in food delivery gig work. These issues of potential conflict may lead to collective actions and create solidarities among gig workers through the mutual sharing of common concerns to contest the power relations with platform owners. Incidents of mass protests and court battles, which have gained traction recently, reflect the fact that, despite the platform model erecting obstacles through the individualisation of work, dispersing the workers geographically and creating a 'fissured workplace' (Weil, 2014) and inducing a practice of pervasive monitoring, the dialectical relationship of control and resistance continues to form, reform, and transform industrial relations and the labour process in the platform economy of 21st century.

Studies on work under the platform mediated gig economy from the Global North highlighted that flexibilisation of work has undermined the standardised employment practice (Taylor, 2010; Moore et al, 2018). With respect to the Global South, where informal work prevails, where no, or limited, labour rights are prevalent, platform mediated work has been regarded as just another new form of job (Wood et al, 2018). Souza (2023), drawing insights from the food delivery workers in Brazil, has shown that in developing countries these platform works have further exacerbated the casualisation of jobs. By replacing jobs previously governed by standard employer-employee contracts and payments, hours of work and other legally stipulated conditions of work with task-based contracts and converting workers to self-employed or independent contractors, platform work is not necessarily creating new jobs. Instead, it is converting old jobs into a new form characterised by individualisation of workers, intensification of competition, subversion of collective actions and voice and re-enforcement of hierarchy along the lines of race and gender (Castel-Branco et al, 2023). In similar vein, using the power resource approach (Wright, 2000; Silver, 2003), Schmalz et al (2023) argue that, due to the prevalence of a substantial reserve army of labour in developing countries, the structural power of gig workers in the platform economy are limited. Coupled with the absence of standardised employment practice or strong regulatory frameworks of governments regarding these new forms of jobs, the institutional power of workers is undermined.

3.4.2. Labour Process in Logistic Networks, and E-commerce

Although gig work quintessentially relies on a digital platform, platform mediated work *in toto* is not necessarily gig or task-based work. The Just-in-Time or Total Quality Control Management model originating from Japanese automobile manufacturing sector comprising *Kanban*, a visual quality checking approach, inventory and scheduling scheme along with its pervasive notion of control, surveillance, and discipline of workers (Lewchuk and Robertson, 1997; Stewart et al, 2009; Carter.et al, 2011) to reduce deviation from standardisation, minimise waste and unreasonable work (Womack et al, 1990; Brophy, 2013) is extensively used in organising gig work (De Stefano, 2016) but also found in banking and finance (Autor et al, 2002), information technology (Feuerstein, 2013), and call centres and BPOs (Taylor and Bain, 2007; Taylor, 2021) work. Moreover, these lean production methods have undergone transformation due to the implementation of ICTs, such as Automatic Call Distribution systems in call centres, and

sophisticated software, and algorithmically processed interfaces. The ubiquitous barcodes and QR codes have become essential perquisites for the functioning of new technologies in product flow and monitoring, imbricating algorithmic controls.

Within the logistics and distribution sectors, predominantly in the Global North, Haidinger and Flecker (2015), identified two types of logistics networks, fragmented networks, where activities are outsourced, and highly integrated networks, where tasks are managed by one firm or its subsidiaries. They argued that subcontracting diminished collective bargaining power, though workers retained some individual power due to their strategic positions in the network. They highlighted the challenging working conditions, weak unions, and social degradation in logistics. Newsome (2015) discussed the competition between sellers and e-commerce enterprises, where sellers opt for cheaper logistics services to maintain profits, while e-commerce enterprises imposed contractual pressures on logistics companies and worsening working conditions. Gutelius (2015) examined how third-party logistics firms in the U.S. hire vulnerable, temporary workers via subcontracting, leading to precarious working conditions, driven by competition among jobbers and lenient labour laws. Important cases from the Global South, such as that of South America's dominant e-commerce platform, Mercado Libra, in Argentina (Atzeni, 2023) and of South Africa's leading e-commerce enterprise Takealot (Atzeni and Kenny, 2021) also recognised the precarious nature of work in e-commerce warehouses, coupled with the weakening of union actions and collective bargaining, because of the enterprises' profit driving and cost minimising business practices.

3.4.2.1. Work Organisation, Management Control, and the Labour Process at Amazon

It is instructive to critically review the academic literature on Amazon, and what is known about work organisation, management control and worker resistance from existing studies. This section will provide important knowledge and insights that can foreground this study's investigation into the labour process of Amazons e-LSN and its networked sites in India. With the rising prominence of Amazon in transforming the nature of work, several scholars investigated how e-commerce enterprises empowered with their ICT invested tools and software have shaped the labour process in their warehousing services (Briken and Taylor, 2018; Delfanti, 2019; 2021; Struna and Reese, 2020; Massimo, 2020; Vallas et al, 2022).

From interviews with warehouse workers, activists, and journalists; Vallas et al (2022) accumulated evidence of a control structure driven by algorithmic technologies and generating a precarious workforce, which they described as 'techno-economic' despotism. Further, they suggested that many controls are mediated through consent generation, and identified three forms of control in this regard at the warehouses or Amazon's fulfilment centres; normative control, relational control, "which fosters a sense of obligation among the workers who are aware of the low esteem in which their labour is held and are thankful to the firm for hiring them, as if the job resembled a gift" (p:3), and governmental control, which "articulates a system of rules and resources that interpellate the workforce and imbue workers' positions with a semblance of individual choice." (p: 4). In a similar vein, Delfanti (2019) explicates the role of algorithms and digital tools such as barcodes and QR codes in 'datafy'-ing workers' efforts in Amazon's Italian warehouses into information for managers to process, evaluate and take decision on its basis. Additionally, Delfanti (2021) raises concerns revolving around patenting of the future nature of the work by the e-commerce

companies, notably Amazon. He argued that Amazon's extensive use of technology in its warehouses is not merely about streamlining operations or enhancing productivity, but also involved laying claim to and shaping the future of work itself. Through patents and proprietary technologies, Amazon asserts control over the methods and processes employed in its operations, effectively shaping the direction of technological innovation and the future of labour. This argument underscored the broader implications of Amazon's technological dominance, highlighting its potential to influence not just its own operations but also the broader landscape of capital-labour relationship within the logistic sector.

Struna and Reese (2020) explored the impact of automation and digital technology used in Amazon warehouses in USA on labour process and work experiences. They argued that electronic surveillance enabled Amazon to control and discipline workers, driving them to work quickly to 'make rates' and to avoid being terminated. Digitally mediated surveillance and control mechanisms "flexes its workforce up or down in sync with fluctuating consumer demands" (ibid: 90) and made work stressful with severe physical and mental health effects. Further, although many workers considered that the workplace technology simplified their work, it was at the cost of a sense of alienation arising from repetitive tasks and working continuously in isolation under surveillance. Massimo's study of Italian Amazon warehouses emphasised how the company employs a "distinct combination of coercion, surveillance, and consent in the workplace" (2020:130) to manage and resolve workplace conflicts through "algorithmic bureaucracy" (141). This approach blends algorithmic management with managerial decisions to determine the warehouse division of labour, setting the required pace of work and the overall workload. Additionally, the algorithmically mediated labour process normalises managerial actions to the workers, while minimising reliance on them for organising tasks. Massimo also emphasises how the company uses its doctrines on ensuring customer satisfaction and workers' safety to legitimise themselves to workers, although they are mainly used extensively and primarily to discipline and monitor the workers' performance. Further, local labour market conditions, marked by high unemployment and a fragmented workforce divided between temporary and permanent employees, in tandem with Amazon's strategies to undermine union activities, eroded workers' structural and associational bargaining power and reinforced managerial control in the warehouses.

Situating their studies in comparative political economy, Hassel and Sieker (2022) investigated the impact of Amazon's business model on employment relations in the courier express and parcel delivery services of the USA, UK, and Germany. They demonstrate that Amazon utilised multiple recruitment strategies, including independent contracting, subcontracting to third parties, to even direct recruitment, depending on the institutional characteristics of the respective countries. Independent contracting and subcontracting strategies are accommodated within the liberalised market economies of the USA, characterised by weak labour standards and limited state covered welfare benefits, and of the UK characterised by weak labour regulations but universal welfare benefit coverage. They argue that universal coverage of the welfare schemes in UK further enabled Amazon to recruit self-employed workers through crowdsourcing and independent contracting as it can comfortably avoid providing social security benefits to their employees with limited retaliation from employees. On the other hand, in a coordinated market economy, such as Germany, characterised by moderately strong labour standards and social partnership of the state in the legacy delivery firms, platform enterprises were compelled to hire employees directly and the practices of independent contracting and subcontracting were limited.

Particularly in the context of UK, Briken and Taylor (2018) critique flexible and lean managerial practices in Amazon warehouses. They emphasised the effects of workfare programmes and benefit sanctions, which compelled workers into undertaking precarious working conditions which, in combination with recruitment through temporary worker agencies, eroded workers' autonomy, entrenched economic insecurity, and strengthened employer control, particularly in regions with limited job opportunities. They emphasised that Amazon's control strategies were characterised by strict surveillance, harsh productivity targets and algorithmic management in the form of real-time tracking and data-driven assessments to monitor workers' activities. This control is further intensified by the threat of benefit sanctions and the dependency on workfare programmes, in the context of highly constrained labour market opportunities, and thus curtailed mobility power, limiting workers' ability to resist or challenge unfavourable working conditions, leaving them with little autonomy while consolidating Amazon's power over labour.

3.4.2.2. Amazon in Global North and South

Most studies of work organisation, management control and the labour process in Amazon have focussed on the Global North, particularly the UK (Briken and Taylor, 2018), Italy (Delfanti, 2019; 2021), Germany (Boewe and Schulten, 2017) and the USA (Vallas et al, 2022; Struna and Reese, 2020), with a small number of additional cross-country analyses (Massimo, 2020; Hassel and Sieker, 2020). As a consequence of the Covid-19 pandemic, the growing prominence of e-commerce in the Global South prompted a detailed study of regional e-commerce in Argentina (Atzeni, 2023) and an overview of activities in South Africa (Atzeni and Kenny, 2021). While the Global South is a 'less examined terrain [for] e-commerce workers' (Atzeni, 2023:182), a lacuna exists on labour relations and the labour process in India, Amazon's largest market in the Global South. That India is now the most populated country in the world and has a huge number of young workers seeking or participating in various forms of gig and platform work (Niti Ayog, 2022) additionally contributes to the significance of this study. Given the effects of national institutional/regulatory frameworks on work, employment, the labour process and employment relations at Amazon and e-commerce warehouses, which have underpinned several studies (Briken and Taylor, 2018; Massimo, 2020; Atzeni and Kenny, 2021; Kassem, 2022; Atzeni, 2023), it will be additionally instructive to consider the broader socio-economic and political contexts in which Amazon operates in India. The extent to which, and the ways in which, government regulation (central and state), local labour markets and labour organisations might exercise an influence on employment relations and the labour process are important considerations.

Existing studies have tended to specifically centre on either the delivery stations (Hassel and Sieker, 2020) or warehouses or fulfilment centres (Struna and Reese, 2020; Delfanti, 2021), separating them from the interconnected network of sites within which warehouses and the delivery stations are functionally linked. More nuanced analyses have made comparisons across similar nodes in different networks (Newsome, 2015; Hassel and Siekel, 2021). These accounts provided valuable insights into Amazon's labour process, including its control structure, but studies have yet to capture the effects of functional linkages between the differing nodes in Amazon's e-LSN on the labour process and employment relations within and across the operating sites.

3.5. Summary and Conclusion

Chapter 3 has evaluated theories, themes and theoretically informed empirical research that are germane to this study. Following a critical review of labour process theory from its origins in the work of Marx, through the seminal contribution of Braverman, the chapter traced the development of studies it inspired in what has been termed second wave LPT (Thompson and Newsome, 2004). It then examined the elements of what has been widely termed 'core' LPT. Given capital's overriding objectives of overcoming the indeterminacy of labour and of converting labour power into value-generating concrete labour, the chapter considered the diverse, often historically contingent (e.g. Edwards, 1979), forms of managerial control imbricated in these objectives. Attention was paid to what has been termed the 'boundary problem', or relatedly the 'connectivity issue', of the relationships and interconnections between the labour process at the point of production and wider political-economic pressures operating at macro, sectoral and organisational levels. Such a focus has salience when the subject of study is the production network, whether at global, national, or regional scale, as in this case of e-LSN of Amazon and other e-commerce companies in India.

The chapter then turned to consider platform-mediated work, the diverse kinds of labour process associated and the recent preoccupation of many academics with what has been termed algorithmic management or algorithmic control, which included studies on gig worker resistance. A precis of extant work on logistics and warehousing was followed by an extensive review of the literature on work organisation, management control, the labour process, and workers' experiences at Amazon specifically which concerned the company's activities in the Global North, although fledgling research on the Global South was considered.

An important outcome of, and conclusion to, this chapter has been to identify pertinent lines of inquiry for this study that align with the research questions, and which, to the best of the author's knowledge, is the first systematic attempt to research work organisation, the labour process, management control and workers' experiences of work in e-commerce, particularly Amazon, in India. In addition to adding significantly to our very limited understanding of Amazon's operations in the Global South to date, the study aims to make a distinctive contribution by providing extensive evidence of the e-commerce network *in toto*, focusing not merely on one node in the e-LSN but on the functional linkages and interconnections between and within its fulfilment centres, sort centres and delivery hubs. In this endeavour, a labour process informed analysis of the mechanisms of control and their effects on workers will take precedence, but in acknowledgement of the salience of the connectivity issue, due explanatory purchase will be accorded to macro-economic and sectoral economic factors but also to the potentially influential labour market and regulatory-institutional contexts in which the e-LSNs and their nodes or sites are embedded.

Chapter 4: Settings: Political Economy of India and Amazon

4.1. Introduction

Although Amazon is a TNC with a global reach encompassing more than one hundred countries, its operation in India is conducted entirely by its wholly owned subsidiary, Amazon India. The e-LSN, that is the subject of this study, consists of four types of sites, two of which are in the adjacent south Indian states of Karnataka and Kerala. This chapter analyses, firstly, some of the principal political economic characteristics of these two states, notably their respective regional labour market constitution and government regulation. Secondly, it situates Amazon within the broader e-commerce sector in India, with a requisite emphasis on e-LSN in question as part of Amazon's country-wide logistic network. Section 4.2 provides a broad overview of contemporary political economic conditions in India. Given India's federal government structure, the relation between central and state governments is an important factor, framing both common and contrasting contextual influences of Karnataka and Kerala in which Amazon's operations are embedded. This examination culminates in the conclusion that affirms the existence of variegated forms of capitalism within India and between these two states. Section 4.3 examines labour regulation and the segmented nature of the labour markets in the two states. It provides an overview of Indian labour laws, the principles they reflect, their implementation and practical enforceability. Section 4.4 evaluates Amazon's position in India's e-commerce market and, in addition, the role of financial capital, India's technological ecosystem and government regulations which have impacted and continue to shape the development of the e-commerce sector. In the concluding section 4.5, observations are made on the relationships between Indian political economy more broadly and Amazon's regional market position.

4.2. Political Economy of India

Although Amazon's e-LSN intersects different regions, each node (warehouse, sort centre, delivery station) in this network is territorially embedded (Dicken, 2015). A crucial feature of India's political economy is its federal structure which distributes roles and responsibilities between the central and state governments. The regulation of capital, industrial investment, and infrastructure, among others, are reserved matters for the central government, whereas trade and commerce, social services, health, and education are state governments' responsibilities also (Mitchell.et al, 2014). As for labour regulation, the central government forms the overarching rules, within which state governments can exercise their authority to modify and implement them. Therefore, the regulatory framework governing labour in India can vary considerably between states, which may have distinctive consequences for each state's workforce.

The socio-economic contexts of Karnataka and Kerala have witnessed profound transformation since the central government's neoliberal drive around 1980, which led to the end of the India's dirigiste politics and the termination of the license raj (Dasgupta, 2016). It also paved the way for a much smoother entry of multinational and transnational enterprises along with other forms of foreign direct and institutional investment (Banaji and Hensman, 1990). For both large companies and small producers, the opening of the economy brought competitive pressure from imports,

which prompted several enterprises[11] to reduce labour costs and to push for a relaxation of the ostensibly rigid labour laws (Chandrashekhar and Ghosh, 2000). At the sub-national level, all states were impacted by these liberalisation measures.

4.2.1. Political Economy of Kerala

Distributive justice has been a guiding principle of Kerala since the state's formation (Heller, 1995). The outcomes have been remarkable achievements in the realms of health, education, poverty alleviation, and reduction in inequality through the public distribution of economic resources, which have placed the state at far more favourable levels than the rest of the country (Kannan, 1998). Table 4.1 and Table 4.2 demonstrate that Kerala has fared substantially better than India on indices of poverty and human development. One prominent factor contributing to the state's distinctive position is organised labour and trade unionism, which have created a strong, sustainable bargaining power, to the extent that governments are obliged to respond to labour's concerns when mediating capital-labour conflicts (Isaac and Harilal, 1997). Given the enduring influence of organised labour, civil society has become a pivotal partner in steering the state's administrative and planning capacities towards Kerala's socio-economic development (Evans, 1992; Sreekumar et al, 2010).

Table 4. 1. State wise Poverty Rate and Multidimensional Poverty Index (1993-2020)

	HCR1		HCR2			HCR3	
Year	1993-94	1999-00	2004-05	2009-10	2011-12	2015-16	2019-20
Karnataka	33.2	20	33.4	23.6	20.9	12.77	7.58
Kerala	25.4	12.7	19.7	12	7.1	0.7	0.55
India	36	26.1	37.2	29.8	21.9	24.85	14.96

Source: RBI Handbook of Statistics on Indian States, 2022-23. Note: Head Count Ratio (HCR) 1 is based on poverty line as per Lakdawala Committee, 1993; HCR2 is based on poverty line as per Tendulkar Committee, 2009; HCR3 is as per Multidimensional Poverty Index, calculated from National Family Health Survey, multiple rounds, Indian Institute of Populations Studies.

Table 4. 2. State wise Human Development Index (1990-2021)

Year	1990	1995	2000	2005	2010	2015	2019	2021(Rank)
Karnataka	0.447	0.474	0.512	0.561	0.599	0.662	0.679	0.667 (18)
Kerala	0.550	0.565	0.593	0.675	0.709	0.763	0.766	0.752 (1)
India	0.434	0.458	0.491	0.534	0.575	0.629	0.645	0.633

Source: Retrieved from Global Data Lab Subnational HDI. Note: Human Development Index (HDI) is a weighted average of per income index, education index and health index, calculated by United Nation Development Programme (UNDP). UNDP reports HDI at the national level across countries. Following the same method, HDI is calculated at the state level. The figures in bracket in the rightmost column shows the rank of the respective state in HDI for 2021 among the Indian states.

Despite Kerala's considerable achievements in reducing inequality and absolute poverty, the government had failed in investing and attracting private investment in productive activities (Kannan, 1998). Comprehensive welfare reforms generated labour costs that deterred private

[11] Includes Tata Group, Hindustan Uni Liver, Bajaj among others (for more details see Dasgupta, 2016).

capital to invest. Further, when business sought to introduce technological change to tackle labour costs, they were forcibly contested by militant labour organisations which created the impression of a 'labour-problem' state, despite its highly educated and skilled workforce (Kannan, 1998; Zacaria, 2013). This response caused capital flight to the neighbouring states of Tamil Nadu and Karnataka and resulted in unemployment significantly higher than the Indian average (Thomas and Jayesh, 2019) (Table 4.3 and 4.4). Many workers seeking employment migrated to other Indian states or abroad to the Gulf countries (Rajan, 2004).

Table 4. 3. Employment Statistics of population (all ages) in Karnataka, Kerala, and India 2022-23 (%), by educational level

States	*Below Graduate*	*Above Graduate*	*Total*
Workforce Force Participation Rate (WPR)			
Karnataka	41.81	61.52	43.90
Kerala	39.31	54.08	41.19
India	39.56	57.24	41.09
Unemployment Rate (UR)			
Karnataka	1.18	9.11	2.44
Kerala	3.74	20.31	6.97
India	1.63	13.08	3.17

Source: Calculated from Periodic Labour Force Survey (PLFS) 2022-23, Unit level Data. Note: PLFS data is a primary survey conducted annually by National Statistical Office, Government of India. WPR is the total number engaged in employment as a share of the total population. UR is the total people searching for work but not employed as a share of total labour force. A person is considered as employed if she/he is engaged in a job for at least one month in the one year from the survey date.

Table 4. 4. Employment Statistics of youth population (age 18-29) in Karnataka, Kerala, and India 2022-23 (%), by level of education

States	*Bellow Graduate*	*Above Graduate*	*Total*
Workforce Force Participation Rate (WPR)			
Karnataka	49.83	50.86	50.06
Kerala	34.58	38.78	35.94
India	49.00	43.55	48.02
Unemployment Rate (UR)			
Karnataka	4.46	20.45	8.63
Kerala	20.94	40.32	29.00
India	5.34	28.40	10.08

Source: Author's calculation from PLFS unit level data 2022-23

The profound impact of liberalisation across India had consequences for Kerala's approach to addressing the crises of capital creation and unemployment. Heller (1995) articulated this transition as from 'redistributive-welfarism' to 'democratic corporatism', characterised by the opening of an

export processing zone in Ernakulam district (*Udyogmandalam*) and the commissioning of a Technopark in Thiruvananthapuram in 1989 (Vidyanathan, 2008).[12]

4.2.2. Political Economy of Karnataka

Karnataka's socio-economic and political trajectory has differed significantly from that of Kerala's, aligning more closely with national trends predating neoliberal reforms. Karnataka largely mirrored central government neoliberal policies, including opening the economy to TNCs, privatising the public sector, and relaxing labour laws to improve the ease of doing business for both domestic and international capital. Subsequent policy amendments have facilitated the acquisition and utilisation of agricultural lands by agribusiness (Bakshi and Bhattacharya, 2021), while leasing land for non-agricultural activities to private companies. Although the high proportion of the agricultural workforce in Karnataka is like that of India as a whole (Table 4.5), the state's GDP is led by service sectors (Table 4.6), notably IT and ITES, biotechnology, logistics and related services, which are urban or peri-urban based. Bangalore and its surrounding urban district (Table 4.7) have dominated this service-led industrialisation. The Karnataka government has made a significant contribution since the 1980s by creating and in investing in nineteen IT-ITES special economic zones, five software technology parks and several logistic hub regions. Consequently, Bangalore and its surrounding area have been termed the 'Silicon Valley of India' (Roychowdhury, 2010).

Table 4. 5. Workforce by Broad Industry Classification in Karnataka, Kerala, and India 2022-23 (%)

Industries	*Karnataka*	*Kerala*	*India*
Agriculture	45.63	27.27	45.76
Manufacturing	10.36	10.91	11.42
Construction	9.25	15.37	13.03
Utility Services	0.51	0.52	0.54
Mining and Quarrying	0.36	0.31	0.31
Trade (Wholesale and Retail)	9.86	14.67	10.2
Transport and Storage	4.89	6.24	4.13
Other Services	19.13	24.7	14.6

Source: Calculated from Periodic Labour Force Survey (PLFS) 2022-23, Unit level Data. Note: Industrial categories of economic activities are as per the National Industrial Classification, 2008, published by Central Statistical Organisation, Government of India.

Table 4. 6. GSVA Share by Broad Category of Kerala and Karnataka, 2017-2022 (%)

State/Year	*2017-18*	*2018-19*	*2019-20*	*2020-21*	*2021-22*
Kerala-Agriculture	5.35	4.89	4.66	5.35	4.96
Kerala-Industry	30.27	29.00	28.40	31.32	28.88
Kerala-Service	64.38	66.11	66.94	63.33	66.16
Karnataka-Agriculture	7.32	6.19	6.77	8.02	7.73

[12] One sector which can be considered as an example of this transition is the transportation and headload service sector where one can observe a state led concerted effort in redefining their image from a militant working class to a class amicable to class compromise (see appendix A1 for further discussion).

Karnataka-Industry	28.55	28.65	26.07	26.23	26.31
Karnataka-Service	64.13	65.17	67.16	65.75	65.96
India-Agriculture	15.29	14.75	15.07	16.37	15.58
India-Industry	23.36	23.17	21.74	22.89	23.26
India-Service	61.35	62.08	63.19	60.73	61.17

Source: Reserve Bank of India (RBI) Handbook of Statistics on Indian States, 2022-23. Note: GSVA is Gross State Value Added. All percentages are calculated after adjusting for inflation over time using the wholesale price index for base year 2011. Industry comprises manufacturing, mining, and quarrying and construction.

The concentration of value generating economic activities in the urbanised service economy, coupled with dwindling agriculture and allied activities and a stagnant, low job absorbing manufacturing sector, have resulted in a huge pool of workers migrating from rural to urban regions (Narayana, 2011; Ghosh, 2014; Paridha, 2019). A significant number become engaged in salaried jobs with some provision for job related security in the software and IT sector, but most remain outside the booming urban technology and service sectors (Roychowdhury, 2003) becoming absorbed into precarious employment in construction or contractually insecure jobs in transportation and storage, with no or limited job-related benefits. Even in the secured service sector jobs there has been growing informality in terms of ineffective implementation of labour laws, the absence of unions, high turnover, and no provision of written job contracts, which has led to the proliferation of low-end formal sector jobs in BPO, call-centres and the retail trade, (Gooptu, 2013; Taylor.et al, 2013; 2014; Upadhya and Roychowdhury, 2022).

Table 4. 7. District share of GDP/GVA for top and bottom three districts in Karnataka and Kerala, 2021-22 (%)

Karnataka (GDP)	Share in State GDP	Kerala (GVA)	Share in State GVA
Top Three	45.48	Top Three	32.84
Bangalore Urban	35.59	Ernakulam	13.07
Dakshina Kannada	5.70	Thrissur	10.16
Belagavi	4.20	Thiruvananthapuram	9.62
Bottom Three	2.95	Bottom Three	8.07
Kodagu	0.86	Wayanad	1.90
Yadgir	1.04	Pathanamthitta	2.76
Gadag	1.05	Idukki	3.40

Source: Kerala Economic Review, 2022; Karnataka Economic Survey, 2022-23

Trade union activity in Karnataka has been confined to pockets of industries at formal enterprise. The national level trade unions, backed by different political parties (AITUC, INTUC, CITU, and BMS) have not been able to consolidate workers across different sectors and industries in Karnataka, to create a state-wide working-class alliance for several reasons. First, the local unions, although backed by central bodies, have been compelled to relate to employers at enterprise level and to focus on issues arising from job-related disputes on quality of work, and parity between productivity and pay, rather than on the broader welfare of the working class under the marketized economy. Thus, "while the issues generating industrial disputes are about the structural opposition between the interests of labour and capital, the dynamics of the disputes are not articulated within this broader framework" (Roychowdhury, 2010:174).

Second, and closely related, is the failure of the central trade union federations in the state to unionise informal sector jobs, which contrasts with the developments in Kerala. Third, since the 1980s there has been a gradual detachment of central trade unions from enterprise level union bodies, due in large part to the absence of a prominent labour-centric political party participating in organised politics at state level, as in Kerala (Roychowdhury, 2010). Fourth, Karnataka being dominated by 'pro-capital' political parties, has discouraged union opposition to employer legislative breaches. Instead, labour laws have been revised to make union formation extremely difficult, let alone capable of undertaking effective actions (Roychowdhury, 2019). Fifth, many public sector enterprises, which had strong union presence, have closed several of their units and gone through downsizing (Roychowdhury, 2003).

A notable difference between the unionised working class in Kerala and Karnataka is that most in Karnataka were in urban public sector organisations or in a few large-scale formal manufacturing enterprises, whereas in Kerala they were distributed more broadly across different levels and sectors. Nair (2015), appositely, characterised the unionised formal sector workforce in Karnataka to be middle class, more embracing a culture of consumerism than proletarian solidarity, in contrast to the working-class movement in Kerala. Consequently, the number of registered union members in Karnataka is low at around 8 per cent of total members in India while Kerala is far higher at 37 per cent (Table 4.8).

Table 4. 8. State wise union Membership in India, 2018

Region/Status	*Central Union (% of All India)*	*State Union (% of All India)*	*Total (% of All India)*
Karnataka	19021 (1.95)	805172 (8.54)	824193 (7.93)
Kerala	233742 (23.97)	3577662 (37.97)	3811404 (36.66)
India	975069	9421864	10396933

Source: Trade Union Report 2018-19, Labour Bureau, GOI.

4.2.3. Variegated Capitalism in India

The neoliberal narratives on hyper-globalisation led to a crude understanding that the institutional structures inexorably converge (Ohmae, 1995; Friedman, 2005). This conception has been challenged by many who consider that national and regional characteristics cannot be fully homogenised. Rather, depending on the socio-economic and political structures of nations, the process of capital accumulation is modified and generates a combined and uneven accumulation process (Held, 1999; Jessop, 2014; Dicken, 2015). One influential rebuttal of the universalist notion, propagated by proponents of free market capitalism, was the varieties of capitalism (VoC) thesis (Hall and Soskice, 2001), which received close attention from scholars of comparative political economy and economic geography. The arguments can be summarised into two main elements. First, each country's distinctive political economic features—such as labour markets, regulations, financial systems, and technology—combine to shape a distinct form of capitalism. This, in turn, influences industrial relations, labour practices, investment patterns, innovation strategies and firm governance. Second, the regulation of market competition differs across countries, with responses to competitive pressure varying based on each country's institutional advantages. The VoC thesis identified two ideal differentiated types of capitalism: liberal market economies and coordinated market economies.

Subsequent scholarship challenged this binary classification, proposing instead that capitalism exists within a diverse, transitory, interconnected and hybrid spectrum. This conceptualisation led to the theory of variegated capitalism, which recognises a broader range of institutional configurations and economic practices (Jessop, 2014; Dixon, 2014; Dicken, 2015). It highlights how capitalist practices and institutions vary across countries, regions and over time, shaped by interactions between global, national, and local factors (Jessop, 2014). Variegated capitalism emphasises the interconnectedness of different capitalist forms, acknowledging that economic practices and institutions often hybridise, borrowing elements from various 'ideal forms' and adapting to local conditions. It views economic systems as dynamic and evolving, influenced by historical trajectories, political decisions, and social struggles, considering how economic crises, technological changes, and policy shifts drive transformations in capitalist practices. By emphasising complexity, interconnectedness, and change, variegated capitalism offers a nuanced framework for analysing contemporary economic systems and their development over time.

Mazumdar (2010) highlighted that Indian capitalism does not conform neatly to the established typologies, primarily due to its unique historical trajectory and structural conditions. Two significant factors shape Indian capitalism: its emergence from colonialism and the absence of a thorough agrarian transformation both pre- and post-independence. The "VoC approach does not explicitly bring into the picture the extreme economic unevenness across national economies and inequalities in their respective positions in the international structure of capitalism" (Mazumdar, 2010:4). In addition, the two 'ideal forms' are seemingly resilient rather than transitory. Further, the VoC scholarship attempts to compare countries *in toto*, overlooking the possibility of variations within a country across regions or localities. These limitations of the VoC approach were critiqued and theoretically advanced by the scholars of 'Variegated Capitalism' (Peck and Theodore, 2007; Jessop, 2014) but empirical analysis remains limited, more so with developing countries of the Global South. Previous sections indicted that the political and socio-economic features make India itself variegated. In short, each state has certain distinctive socio-economic and political features, albeit within the general India-wide context shaped, if not determined, by central government. While Karnataka has broadly followed a 'pro-capital' government strategy with limited union actions, resonating broadly with the national framework, Kerala has been a vivid illustration of a 'pro-labour' state (Besley and Burgess, 2004). India experiences variegated capitalism from within and Kerala and Karnataka provide examples of two contrasting forms.

4.3. Labour Laws and Segmented Labour Market in India

India's industrial relations and market regulations are structured around a complex set of labour laws, comprising more than 150 pieces of legislation formulated by central and state governments. Post-independence laws were formulated on the principles of providing labour protection and ensuring industrial peace. The labour conventions of International Labour Organisation (ILO) were instrumental in the law formation period before independence and which provisioned for substantive rights (minimum wage, hours of work) and procedural rights (right to form association, right to bargain) for employees, recognising that they are the source of value and wealth of the nations. The trade unions, particularly of the manufacturing and plantation sectors, were pivotal in enforcing the laws according to the conventions in India (Jose, 2023). However, many of these laws retained the purpose of the factory regulations since the colonial era, implemented for disciplining labour and securing labour supply for employers (Mitchell et al, 2014). The subsequent

neoliberal drive towards the deregulation of labour laws, through amendments to legislation and the introduction of new rules, were executed in three phases: 1970-80s, 1990-2000, and 2015-20 (Acharya, 2004; Sharma, 2006; Bhattacharjea, 2006; Sood and Nath, 2020). Each reform phase was directed to creating a flexible labour utilisation strategy at the cost of employee vulnerability and bargaining power, all legitimised under the sophistry of achieving efficiency and ease of doing business. Four particular labour laws are scrutinised here to elucidate the causal link between the state and labour agency, with a particular focus on institutional bargaining power, and the capacity to organise and develop resistances. These are the Industrial Dispute Settlement Act 1947, Trade Union Act 1926, Contract Labour Act 1970, and Migrant Workers Act 1979.

Labour unions were accorded legal status with the Trade Union Act in 1926, which permitted executive members to come from external, political, and allied bodies and facilitated union formation under the auspices of national and regional political parties. To this day, the influence of political parties in unions remains substantial, with 80 per cent of membership in 2013 concentrated in five unions, all affiliated to national political parties (Badigannavar et al, 2021). This alliance enabled the linking of industrial relations and workplace conflicts with broader national issues and societal class. However, it also resulted in a top-down organisational structure (Mahmood, 2016). The first wave of neoliberalism brought a marked reduction in union membership from 36 per cent of the total non-agricultural waged workforce in 1989 to 19 per cent by 2001 (Pal, 2008). The second wave introduced several amendments to the act in 2001, especially the inclusion of clause 9A, which stated that unions can register at enterprise level only if they have 100 members or 10 per cent of the workforce. This clause hindered union formation in small and medium enterprises, the overwhelming majority in India. Further, the registration process was convoluted by increasing the requisite number of documents and the reasons for cancellation of registration. Finally, the union members outside the workers were limited to two which were previously varying from one-third to half (Secki, 2015).

Moreover, these amendments were enforced nationwide and state governments' ability to revise these added clauses, especially 9A, was rescinded (Secki, 2015). This phase prompted a relative detachment between trade union functioning at national and at enterprise level, restricting union activities predominantly to the public sector, and hindering the ability of national unions to consolidate labour issues, especially those pertaining to informal workers, as national concerns (Roychowdhury, 2010). In the third phase of liberalisation and deregulation, the Act was further diluted by consolidating it into a labour code on industrial relations in 2019 with amendments that expanded the grounds for cancelling registration (Mathews and Jain, 2018)[13].

Arguably, the labour law most central to industrial relations in India is the Industrial Dispute Settlement Act 1947, which included provisions for employees to raise dispute on discharge, dismissal and retrenchment, irrespective of whether they were represented by unions. Labour courts were established in each state to mediate disputes. Over time, mandates to inform workers three months before retrenchment and lay off (the notice period), preventing lay-off without

[13] For instance, union executive members must be elected every two years, failure to do so leading to cancelling of registration. Further, the Act provisioned employers to deduct from employees' salaries the sums of money to be paid to the unions and added it to a state welfare fund. Finally, the onus of proving a registration's validity was shifted from government appointed registrars to union leaders (Mathew and Jain, 2018).

government approval, and provisions for compensating exiting employees for lay-off or industrial closure, were instituted. The applicability of the law was expanded from establishments with a minimum of 300 to 100 employees and mandated the formation of Works Committee and Grievance Redressal Machinery at enterprise level.

These amendments made employers' hiring and firing in direct response to market fluctuations difficult and became a bone of contention when they sought to introduce flexible labour utilisation strategies. However, early signs of deregulation were manifest in the 1982 amendment, when the definition of retrenchment was revised and excluded termination due to non-renewal of contract. This change especially affected contract workers. Flexible labour utilisation was further effectuated through the introduction of the Voluntary Retirement Scheme in 1999, which legitimised retrenchment with limited compensation. These relaxations resulted in informalisation in formal sectors (Sood et al, 2014). The Act was again significantly altered in 2019 when it was incorporated in the industrial relations code. The applicability of notice period now applied only to establishments with a minimum 300 employees (increased from 100), and the labour court was substituted with industrial tribunals, where the discretion of conciliation officers was strengthened. Further, the applicability of decisions on dispute resolution was confined to the concerned parties who raised the dispute and not across the entire enterprise, thus further individualising the bargaining procedure. Restrictions on strikes were increased (Sundar and Sapkal, 2017; Mathew and Jain, 2018).

A crucial element of the 2019 industrial code is fixed term employment as an alternative to employing through contracts (Mathew and Jain, 2018). The Contract Workers Act 1970 had protected workers from employers' practice of labour cost reduction through hiring through short-term contracts instead of full-term employment, and provisioned recruitment of contract workers only for roles or activities peripheral to the enterprise's functioning and were seasonal in nature. However, contract workers were excluded from any social security benefits and other entitlements from which the full-time employees had previously benefited. Nevertheless, the practice of recruiting contract workers in core activities was widespread especially in the organised manufacturing sectors, with increasing wage differentials identified between full-time and contract employees (Sood *et al*, 2014; Sundar and Sapkal, 2019). Instances of contract workers working alongside full-term workers were observed, violating the Payment of Wages Act 1936. Overall, this law, like many others in India, was not implemented in practice. Moreover, the introduction of fixed-term employment legitimised employers' strategies to reduce labour cost and transfer market risks to employees by hiring workers on a short-term basis.

Another under-implemented law is the Migrant Workers Act 1979, which is the sole nationwide legislation regulating inter-state migration in India. This Act and the legislation governing contract workers often intersect as most of the migrant workers in India are employed seasonally (Manjal and Bamba, 2023). Further, this legislation acknowledges the role of intermediaries or recruitment agents who supply workers to employers. They were given responsibilities to provide workers with accommodation services and support for living expenses. However, many agents worked without official licenses and violated their responsibilities without legal detection. Further, the agent's role is revised in practice from solely supplying labour to negotiating between employer and employee to the point where the former becomes invisible to the workers, so that maintaining control over

labour undermines the ability of workers to bargain, and thwarts potential resistance (Pattenden 2011, Barrientos, 2013; Srivastava, 2020).

The incremental deregulation of labour law, the reduction in its coverage, coupled with enforcement obstacles have contributed to a segmented labour market in India, with around 90 per cent of workers uncovered by legal provision. Besides the large pool of precarious informal workers, the recruitment of contract workers and fixed term employment created informalisation in the formal sectors (NCEUS, 2008; Sood et al, 2014). More than 80 per cent of employees are recruited with no or on short-term contracts in India, with the corresponding figures for Karnataka and Kerala being 75 per cent and 82 per cent respectively (Table 4.9). Segmentation is exacerbating the predominant segregation on gender and caste lines (Thorat and Neuman, 2012; Sood et al, 2014).

Table 4. 9. Workforce Segregation by Types of Job Contracts in Selected States and India, 2023 (Age >15)

Region/Contract	*Full time, Permanent Contract*	*Full-time, Short-Term Contract (less than a year)*	*Full time No Contract*	*Part Time /Casual Wage Labour*
Karnataka	24.59	6.46	21.67	47.28
Kerala	18.7	7.03	28.76	45.52
India	16.65	3.64	28.59	51.12

Note: Full time is regular salaried, part-time is causal wage workers. Permanent is having contract of more than one-year, short term means having contract of less than one year. Source: PLFS unit level data 2022-23.

Gendered segregation was somewhat institutionalised through legislation, particularly the Shops and Establishments Act, which prevented women from working after 7 pm on safety and security grounds. Recently, several states, including Kerala and Karnataka, have relaxed these constrains on condition that employers ensure women employees' safety and security, but in practice it is still rare to find women working night shifts, resulting in reduced employment opportunities (Mazumdar and Neetha, 2011). Further, women were found to be earning less than their male counterparts in India's organised sectors, which raises doubts on the enforceability of Equal Remunerations Act 1976 (Sood et al, 2014). Table 4.10 shows that the percentage employed in the working age group is substantially lower for women, which can be partly attributed to the legislation in addition to the prevailing gendered norm which limits women from working outside household premises (Naidu, 2016; Samantroy, 2021).

Table 4. 10. Worker Population Ratio (WPR) by Gender in Selected States and India, 2023 (Age >15)

Region/Gender	*Male*	*Female*	*Total*
Karnataka	73.58	37.16	55.58
Kerala	70.18	33.47	50.51
India	75.97	35.89	56.03

Source PLFS unit level data 2022-23.

Another segregation in the Indian labour market relates to the migration status of workers (Table 4.11). According to Economic Survey of India 2017, there were around 9 million interstate migrants. The share of the migrant workforce in India is around 5 per cent, and in Kerala is around 3 per cent and 7 per cent in Karnataka. The proportion of migrants is higher among men than

women. The flow of migrant workers from North to South India is well documented where two patterns dominate; first is the migration from agriculture to urban sector jobs in construction and logistic sectors, and second is an urban-to-urban migration within the IT and software sectors (Pattenden, 2012; Tumbe, 2012; Rajan, 2016; Srivastava, 2020). Among the Southern states, Karnataka and Kerala are the two migratory foci, owing to their service sector clusters in and around Bangalore and Kochi. To safeguard migrant workers from discrimination, the Migrant Workers Act legislated for equal payment with local workers for similar work, alongside provision of journey allowances, accommodation and medical facilities (Rajan and Rajagopalan, 2023). However, the recent plight of migrant workers during the Covid-19 pandemic exposed its widespread violation. Its enforceability is a grave concern, abetting employers to discriminate against migrants in multiple ways without legal repercussion (Kesar et al, 2021).

Table 4. 11 Share of Inter-State Worker Migration in Karnataka, Kerala and India, 2011 (Age >15)

Region/Status	*Male*	*Female*	*Total*
Karnataka	11.3	2.55	6.99
Kerala	5.17	1.29	3.14
India	8.88	1.71	5.39

Note: Inter-state worker migration as percentage of total working age population (Aged 15-64) by gender. Source Population Census 2011, GOI

4.3.1. Summary

Since the neoliberal drive of the late 20th century India's central government has pursued labour market deregulation, which has taken varied forms when implemented at state level. Government initiatives to facilitate the ease of doing business increased the volume of informal jobs alongside growing informalisation in the formal sectors through recruitment of contract labour, and part-time and temporary workers. While the national workforce has remained predominantly agrarian, workers migrated in growing numbers to urban regions in search of employment. While some have been integrated into formal sectors with relatively better working conditions, the overwhelming majority have been confined to the informal non-farm economy with limited pay, security and higher vulnerability. The regional labour market remains segmented by gender, as did the composition of migrants (along with other dimensions such as caste). In formal sector organisations workforces were further segmented by diverse contracts with different provision for income, job and social security.

While Kerala and Karnataka are distinguishable from each other in significant political and socio-economic respects, India's economic liberalisation has had similar impacts on policy deregulation. Both states actively welcomed private capital, yet their contrasting political-economic environments led to different labour market outcomes. Kerala's higher investments in education, healthcare and more equitable income distribution created a more skilled workforce with higher expectations for returns on labour. Additionally, its tradition of organised collective bargaining and union activism has created a legacy effect by which workers are inclined to resist exploitative working conditions. However, Kerala's relatively high unemployment rate, compared to Karnataka, has weakened workers' bargaining power. In contrast, Karnataka's lower unemployment rate may suggest a more active labour market, although access to formal secured jobs is more limited, which reduces their expectation from jobs and may increase their vulnerability

to exploitative working conditions Furthermore, Karnataka's weaker organised collective bargaining limits workers' ability to resist unfavourable workplace practices.

Labour market features and government regulations in the two states, and in India in general, generate profound effects on the internal labour market composition of the warehouses and delivery stations of Amazon's e-LSN. What implications do labour market deregulation have for workers' income, job conditions and social security? What are the consequences of labour regulation for the labour utilisation strategies inside the operating sites? Given that deregulation has taken distinct paths between the states, to what extent might the specific regional location of the operating sites affect labour recruitment and utilisation practices, workers' rights and conditions their exercise of agency? Finally, in what ways is the segmentation by gender, migration status and employment contract of the workers reflected in the workforce composition in the warehouses and delivery stations of Amazon's e-LSN? This study seeks to answer these pertinent questions.

4.4. Political Economy of E-Commerce in India

Since the early 2010s India has experienced significant change in retail and logistics to e-commerce and B2C services with the totemic entry of transnational companies Amazon and Walmart (Saraswathy, 2019). By 2018, the e-commerce market in India had grown to $19.5 billion worth of transactions with 80-100 million active online shoppers. The e-commerce affiliated logistic market was valued at $1.35 billion, with a projected growth rate of 36 per cent according to this report's projections for the forthcoming five years (KPMG, 2018). Recognising the sector's potential for employment generation, the Indian government established a dedicated logistics wing under the Department of Commerce and Industry in 2017 to facilitate an integrated development of logistics (Draft National Logistics Policy, 2018)[14]. The rise of digital platforms has also had a significant impact on labour. Among 6.8 million gig workers in India engaged in jobs mediated through digital platforms, retail, transport and storage services have created the greatest number, their share increasing substantially from 30 per cent in 2017 to 50 per cent by 2020 (Niti Ayog, 2022). In 2020 alone, Amazon and Flipkart together generated 140,000 contractual jobs (MEA, 2021).

4.4.1 Competition and Market Power of E-Commerce in India

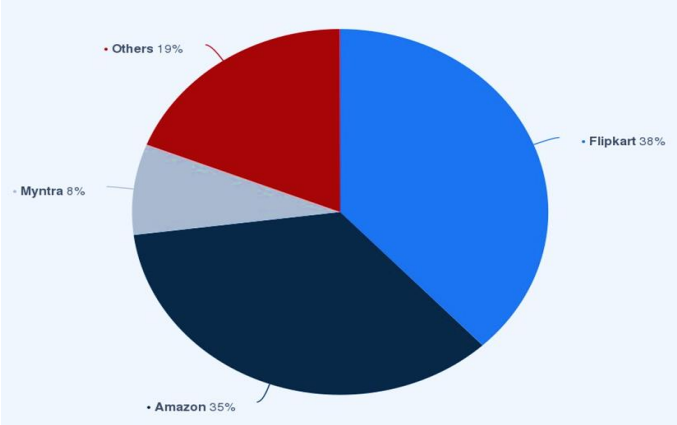
E-commerce firms' share of total retail services in India increased from about 1 per cent in 2013-14 to 4.7 per cent by 2019-20[15]. The e-commerce market is dominated by two companies, Amazon and Flipkart. In October 2020, Flipkart's market share was 31.9 per cent and Amazon's was 31.2% reflecting an oligopolistic market[16]. Concentration has been accentuated by the multiple acquisitions of e-commerce companies and service providers by Flipkart (Myntra, Jabong, PhonePe) and by Amazon (Tapzo, Emvantage Payments, Westland, GlowRoad). Fierce competition between Amazon and Flipkart has come at the cost of local retail markets. Most marketed products through e-commerce are electronics and apparels, comprising 80 per cent of

[14] https://logistics.gov.in/media/cmoizi4e/warehousing-model-policy-v4.pdf
[15] https://www.ibef.org/industry/ecommerce-presentation
[16] https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/flipkart-is-no-1-in-india-but-faces-formidable-foe-in-amazon-say-experts-54083920

India's total share. Gaurav Jain, an electronic retail owner in Mumbai stated that "People come into my shop, and they look at the phones and ask questions, but then they go and buy them online because they're cheaper"[17]. Local small and medium retail owners are concerned that the impact of heavy discount offers, often associated with the predatory pricing strategy, of e-commerce enterprises will make their businesses unsustainable.

Considering that the number of micro, small and medium enterprises (MSMEs) are staggeringly high, at around 95 per cent of the total number in India[18], Amazon launched a 'Local Shop' online portal for small enterprises in April 2020. In less than one year almost 50,000 offline shops from 450 cities joined this venture which enables local sellers to offer their products through the e-commerce platform.[19] The combined market share of Flipkart and Amazon has increased to more than 80 per cent by 2022. As discussed, factors influencing the market power of e-commerce enterprises are the impact of financial capital, technological innovation, and the role of government. How these factors strengthen Amazon and Flipkart in India's e-commerce sector are now evaluated.

Figure 4. 1. Market Share of E-commerce Companies in India (2022)



Note: Amazon here is Amazon India, the subsidiary of Amazon registered in USA. In 2014, Myntra was acquired by Flipkart. Source: PWC India.

4.4.1.1. Financial Capital and E-Commerce in India

The oligopolistic market structure in the e-commerce sector is heavily leveraged by finance from venture capital. According to the India Brand Equity Foundation, a trust established by Ministry of Commerce, Government of India in 2021, e-commerce companies received around $15 billion from venture capital, five time greater than in the previous year. Walia (2020) has shown that both Flipkart and Amazon have acquired enormous liquid funding from international investors over the last decade. Flipkart accumulated $7,951 million compared to almost $2400 million for

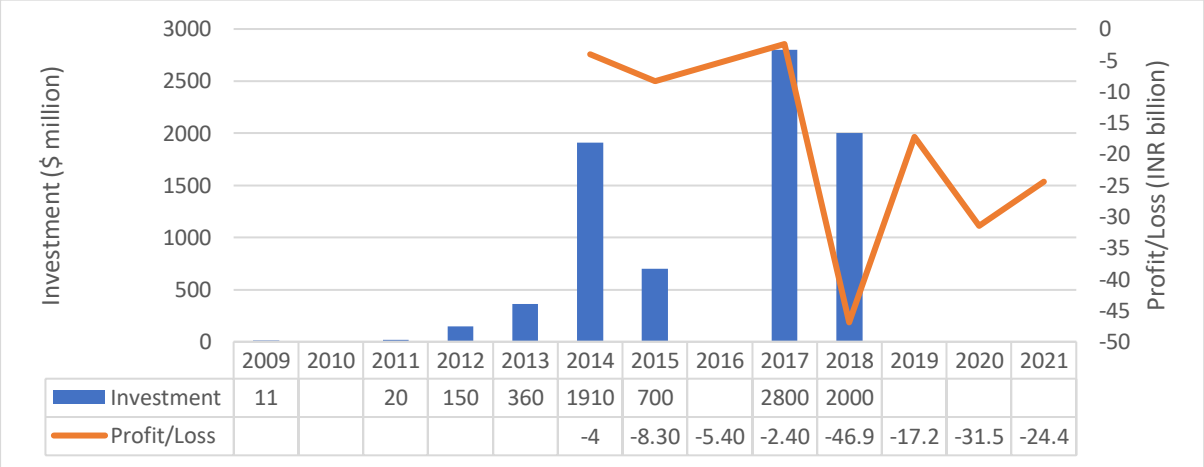
[17] https://www.thenationalnews.com/business/economy/why-small-traders-in-india-fear-the-amazon-effect-1.965981

[18] Figure retrieved from National Sample Survey Office's report on Unincorporated Enterprises Survey in India 2015.

[19] https://www.thehindu.com/business/Industry/over-50000-offline-retailers-neighbourhood-stores-now-part-of-local-shops-amazon-india/article34012400.ece

Amazon.in since its inception in 2013. Major funding for Flipkart has come from international venture capitalists including Accel Partners, Tiger Global Management, Vulcan Capital, ICONIQ (USA), Naspers International (South Africa), Tencent Holdings (China), Softbank Group (Japan), DST-Global (Russia) and the Qatar Investment Authority, the sovereign wealth fund of the government of Qatar, even before the much-celebrated investment of $2,000 million by Walmart in 2018. In contrast, most of the investment for Amazon.in has come from their parent body Amazon.com (*ibid*).

Figure 4. 2. Flow of Investment and Profit for Flipkart



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Investment	11		20	150	360	1910	700		2800	2000			
Profit/Loss						-4	-8.30	-5.40	-2.40	-46.9	-17.2	-31.5	-24.4

Source: Compiled from Walia (2020). Profit figures retrieved from Flipkart Annual Reports.

Even when experiencing a reported loss of between $30 million to $60 million in 2014, Amazon invested $2 billion in India during that time[20]. Figure 4.2 demonstrates, similarly, that Flipkart continued to receive considerable investment even when they were making trading losses. This pattern confirms the observation that venture capital driven e-commerce prioritise long-term returns over immediate profits (Rahman and Thelen, 2019), permitting them to adopt business strategies for aggressive market capture even in the face of losses. These strategies are beyond the capacity of local small and medium retailers, predominantly endowed with working capital generated from sales, and have limited fixed capital or access to loans. Thus, instead of competing with Amazon or Flipkart, MSMEs tend to accommodate themselves within the former's network to sustain their viability and market position.

4.4.1.2. Technology and E-Commerce in India

The Indian Government's initiative to build a digital public infrastructure led to the formation of the national flagship project India Stack in 2009. This public-private partnership project aimed to create a digital ecosystem for multiple purposes, including direct benefit transfers from government to welfare programme beneficiaries, facilitating credit and financial capital to businesses, and enabling digital payment and transaction through a unified payment interface. India's digital inclusion has subsequently increased. According to the Telecommunication

[20] https://angryworkersworld.wordpress.com/2015/11/11/amazon-in-india-the-e-commerce-jungle-and-workers-reality

Regulatory Authority of India, the number of internet subscribers increased from 251 million in 2010 to 881 million by 2023. Average data usage per subscriber increased from 3.2 GB in 2014 to 141 GB in 2020[21]. Moreover, the number of smartphone users, the primary mode of accessing internet and digital contents for more than 90 per cent of the population, increased from 34 million in 2010 to over 1 billion by 2023[22]. The government's role in facilitating access to digital infrastructure to wider public is to be noted in this regard (NDCP, 2018). However digital inclusion is not commensurate with digital literacy, and the country experiences digital divides across urban and rural people and by gender[23]. Nonetheless, e-commerce firms reaped benefits from government investment in the construction of digital infrastructure, facilitating a readily accessible consumer base for their services. To illustrate the impact, the Flipkart shopping app is the fourth most downloaded app in India[24], and Amazon was the highest visited marketplace website in 2023[25].

In addition, several firms increased their inhouse investment in software and algorithm development, and web building, along with increasing their online transactions, which has reflected an overall shift in business activities towards digitalisation. Table 4.12 suggests that among those industries investing in web building, retail trade, comprising of e-commerce enterprises, are faring better than most other sectors. Moreover, the share of transactions and sales online for the retail sector is greater than the national average in 2022.

Table 4. 12. Share of Firms Invested in Web Building and Share of Online Sales Across Industries, India 2014 and 2022.

Sectors	2014	2022	
	Web Building	Web Building	% Sales Online
Construction	1.35	4.41	17.45
Manufacturing	36.13	42.49	18.55
Wholesale Trade	6.12	12.27	17.95
Retail Trade	21.84	21.48	20.12
Transport and Communication Services	9.13	4.52	23.38
Hotel and Restaurant Services	21.90	12.65	17.94
Other Services	3.52	2.19	22.77
National Average	48.87	46.50	19.01

Source: Author's calculation from World Bank Enterprise Survey 2014-22 Panel Data.

The state-capital nexus reached a qualitatively new stage in 2023 when Amazon signed a memorandum with Directorate General of Foreign Trade for digitalising and expanding the

[21] https://www.indiamobilecongress.com/docs/India_Digital_Inclusion.pdf
[22] https://www.statista.com/statistics/467163/forecast-of-smartphone-users-in-india/
[23] https://www.itu.int/hub/2022/12/improving-digital-literacy-in-india-a-review/
[24] https://www.statista.com/statistics/1459751/india-leading-apps-by-downloads/
[25] https://www.statista.com/statistics/1239038/india-monthly-visits-on-leading-marketplace-platforms/

capacity of MSMEs, alongside a cumulative investment of $26 billion by 2030. In effect, Amazon was accorded a significant role in expanding India's e-commerce market.

4.4.1.3. Government Regulation and E-Commerce

In India government regulation of e-commerce firms encompasses three fronts: payment and settlement systems, consumer protection, and foreign direct investment. To regulate digital payments, the Payment and Settlement System Bill was enacted in 2008, defining a valid payment system and creating rules related to online transactions and payment dispute settlements. The Reserve Bank of India (RBI), the central Bank, was given the authority to regulate and monitor online transactions through this act (Zafar et al, 2016). All firms, including e-commerce, were required to comply with RBI rules to be considered a legitimate online payment system (Gupta, 2020).

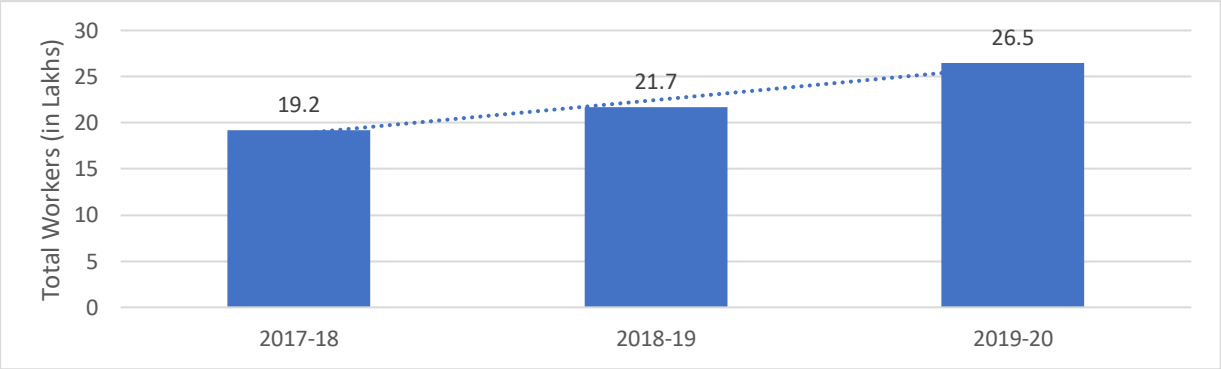
The second regulation is the Consumer Protection Act, 2020, to regulate unfair trade practices and address consumer grievances. The rules cover all goods and services exchanged over digital platforms or electronic networks, including e-commerce activities. All retailers selling online are required to share their details and product information on their websites. They also are required to ensure that client sellers provide accurate and easily comprehendible descriptions, image and other content pertaining to their goods or services on their online platforms. Moreover, in regulating online prices, the aim is to curb 'unreasonable' profits. However, no clear specification of penalties for violating price regulations were detailed, making the clause more of a customary statement (Gupta, 2020).

The third e-commerce regulation relates to FDI policy. E-commerce functions primarily through two key business models: the marketplace-based model, where the platform serves as an intermediary connecting buyers and sellers, and the inventory-based model, where the e-retailer purchases products from sellers, stores them and sells them directly to customers as its own merchandise. According to the Department of Industrial Policy and Promotion (DIPP), any e-commerce entity engaged in business-to-customer (B2C) service activities are allowed 100 per cent FDI for the market-based business model but does not permit FDI for an inventory-based model (Saraswathy, 2019). However, e-commerce corporations, including Amazon and Flipkart, have constructed convoluted business strategies combined with complex inter-firm linkage structures to overcome these restrictions and evade taxes (Banerjee, 2016). Flipkart registered their online retail service businesses overseas in the tax haven of Singapore and partnered with local enterprises registered in India as subsidiaries, to overcome regulations on foreign investment (Prasad and Rao, 2015; Banerjee, 2016).

The legal loopholes are starker when labour regulation is considered, with adverse impacts for workers. The proportion of online workers in India has increased substantially from 25 per cent in 2017 to 33 per cent in 2021 (Stephany et al, 2021) who are designated as participants *"in a work arrangement […] outside of traditional employer-employee relationship"* (The Code on Social Security, 2019: 2(35)) by the Indian Ministry of labour and Employment. Substantial number of delivery drivers in B2C last mile delivery services who are recruited through crowdsourcing and digital platforms (Amazon Flex), fall into these categories. Figure 4.3 shows that the number of gig workers engaged in e-commerce retail have risen substantially from 1.9 million in 2017 to over 2.6 million in 2019.

However, they remain outside the purview of Indian labour laws and are recognised as independent contractors or self-employed, essentially making them informal, devoid of employer provision of income, employment and social security benefits and curtailing the right to bargain collectively (Anand, 2020).

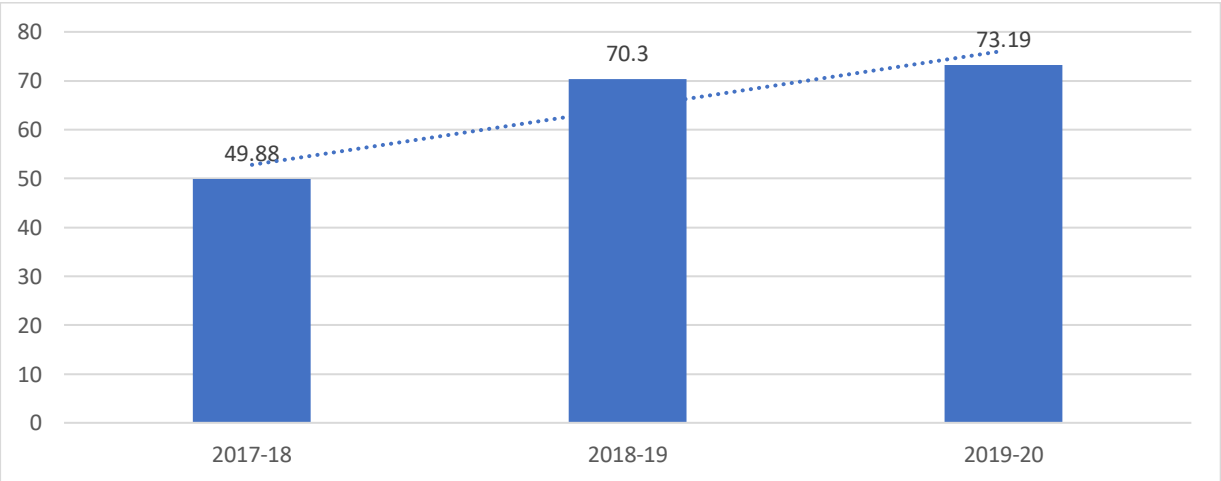
Figure 4. 3. Total Employment in E-Commerce Retail Sector in India (in Lakhs)



Source: Niti Aayog (2022).

Leaving aside gig-workers, a large pool of logistic workers are engaged in warehouses. Warehouse workers are potentially torn between formal sectors with either employer-employee contracts along with provision of endowments tied with labour rights, or workers in informal sector with short term to no written job contracts. Figure 4.4 shows that the proportion of workers in e-commerce without a written contract has increased over time. This indicator demonstrates that e-commerce is predominantly contributing to temporary jobs with no or limited job security. Outsourcing and subcontracting contributed to this rising informality in the country (Basole et al, 2015), with e-commerce enterprises contributing to this trend (Murty, 2020).

Figure 4. 4. Share of E-Commerce Workers with No Written Job Contract in India (per cent)



Source: Author's Calculation from PLFS unit level data.

4.4.1.4. Summary

In summary, e-commerce corporations, including Amazon, capitalise on the ambiguities and loopholes within complex labour laws and in the construction of networks of inter-firm linkages can evade their legal obligations of providing secure jobs for their employees. These companies,

backed by 'patient' finance capital, prioritise heavy investments in digital infrastructure and market share acquisition, over immediate profit (Rahman and Thelen, 2019). This strategy is reflected in their continued support from venture capital firms, even during loss-making phases. Moreover, these companies benefit significantly from public investment in infrastructure, such as in internet bandwidth, transportation, and communication systems, even partnering with the government on digital infrastructure development projects, such as Amazon's memorandum with the Directorate General of Foreign Trade. All these factors leveraged e-commerce firms to gain a competitive edge over regional enterprises of various sizes, strategically circumventing regulations on competition, foreign investment, and workfare. These factors enhanced Amazon's unrestricted ability in its governance with partners, solidifying its position as the lead firm within its e-LSNs in India.

4.5. Conclusion

This chapter has established some of the principal Indian socio-economic and political contexts within which Amazon has embedded its e-LSN, since the company's entry into the country in 2013. It has emphasised how Indian polity became increasingly, albeit incrementally, influenced by and subject to neoliberalism, to the dominant tenets of privatisation, marketisation and de-regulation, and departed from the hitherto dirigiste statist model. Through the seductive lure of the prevailing narrative of globalisation, successive Indian governments sought to develop its economy through building on its comparative advantages in the spheres of the IT and ITES sectors, striving to redefine and strengthen its role in the competitive state system, making the country attractive to FDI. The chapter has also critiqued the validity of the Varieties of Capitalism thesis, concluding that variegated capitalism is more useful analytically for understanding specific national and sub-national systems, the interconnectedness of different forms, their hybridisation and dynamism and contingency in dialectical relationships to local conditions.

Mazumdar (2010) specifically emphasised that Indian capitalism does not conform neatly to any established typology. Unlike the VoC conceptualisation, variegated capitalism avows analysis at sub-national or regional levels, which is applicable to India's heterogeneous state distinct political-economic, institutional, and historical legacies. Such differentiation is particularly apposite for the purposes of this study, which evidence and analyses e-commerce, particularly Amazon's e-LSNs, as they straddle and are embedded in two adjacent but, in many respects, contrasting states: Karnataka and Kerala. In passing, it is noted that differentiation in important characteristics of these states prompts caution in too readily generalising to a singular Global South typology for Amazon's work organisation, labour process and working conditions, apropos the critical observations made in Chapter 3. This chapter has provided important, granular detail on these states' respective political-economic and institutional arrangements, with a focus on labour force composition, labour markets and their characteristics, as essential foregrounding for the study of e-commerce, particularly Amazon's, e-LSNs. A series of questions were posed regarding the consequences of labour law de-regulation and potential impacts for labour utilisation strategies and practices by e-commerce firms, not least in relation to workers' rights, gender and for migratory workers. The chapter then turned to the more specific contextualisation of e-commerce in India, the growing market power of Amazon and Flipkart, reflecting on the influential academic work on the platform economy evaluated in Chapter 2. The growth of e-commerce in India and the intersection between Amazon and the Indian central state, deregulation and the implications for labour were then considered.

The thesis now turns to investigate how the political and economic conditions of regions hosting Amazon's operational sites, along with the company's relationships with local enterprises—both large and small—affect its workforce composition, recruitment, and labour utilization strategies. Subsequently it discusses, how it shapes the lived experiences of workers, and their exercise of agency at workplaces. Prior to presenting the empirical evidence from the e-LSN and its constituent, interconnected sites, the study's philosophical positioning and methodology are explicated, the data collection methods presented and justified, the analytical strategy explained, and a full account of the workplace location and the characteristics of its research participants is provided.

Chapter 5. Methodology and Source of Data

5.1. Introduction

The previous chapter situated the facilities of Amazon's e-LSN in Karnataka and Kerala. In addition, in presenting an account of socio-economic and political characteristics of the respective states, with a focus on their contrasting labour markets, it suggested underpinning characteristics that might have implications for Amazon's and its third-party partners' labour utilisation strategy and practices. A core argument informing this thesis is that the labour process, the mechanisms by which labour power is converted into concrete labour, within and across Amazon's e-LSN, and the forms that employment relations take at the points of production, are framed and conditioned by broader political-economic forces and factors external to these nodes. The latter includes Amazon's corporate strategy, its e-commerce digital platform architecture, the inter-firm relations in the network, and the political and economic context of the regions, in which the network's nodes are embedded. To understand how the labour process of Amazon's e-LSN is constituted by the different causal forces and factors internal and external to the nodes in the network, the research studies four distinct, but functionally connected, facilities: - receive centre, fulfilment centre, sortation centre and delivery stations. Each facility in the network has a distinctive function, undertaking dedicated operations to facilitate the flow of shipment orders from vendors to consumers. Although varied labour processes may prevail at each facility, the interconnected network is analysed holistically to understand its overarching mechanisms and their influence on the labour process within the individual nodes. In this approach, each node represents a specific case, which when considered collectively, forms the broader entity of the e-LSN. These cases are investigated separately but are not evaluated in isolation from each other but sequentially, serving as interconnected building blocks that contribute to a comprehensive understanding of the entire networks, rather than the cases simply be being compared or contrasted against each other.

5.1.1. Locating the Study

The e-LSN, that is the object of study in this thesis, spans two adjacent south Indian states- Karnataka and Kerala. As detailed, the e-LSN of Amazon comprises multiple warehousing units categorised into four types – receive centres (RC), fulfilment centres (FC), sortation centre (SC) and delivery stations (DS). The fulcrum unit in Amazon's network is the FC. Accordingly, the fieldwork centred on the latest functioning FC in India, situated in Karnataka, which was also the largest operating Amazon unit in the country at the time of the fieldwork, and is identified by the unique code, BLR8. The FC is located 40 km north-east from Bangalore city, strategically 10 km away from the Bangalore International Airport in a Special Economic Zone, Devanahalli Industrial Hub (DIH), which provides tax benefits and input subsidies from the Karnataka state government[26]. In September 2021, Amazon India negotiated an agreement with Logos Logistic, a Singapore-based company, which owned more than 5 million square feet of logistics space in India.

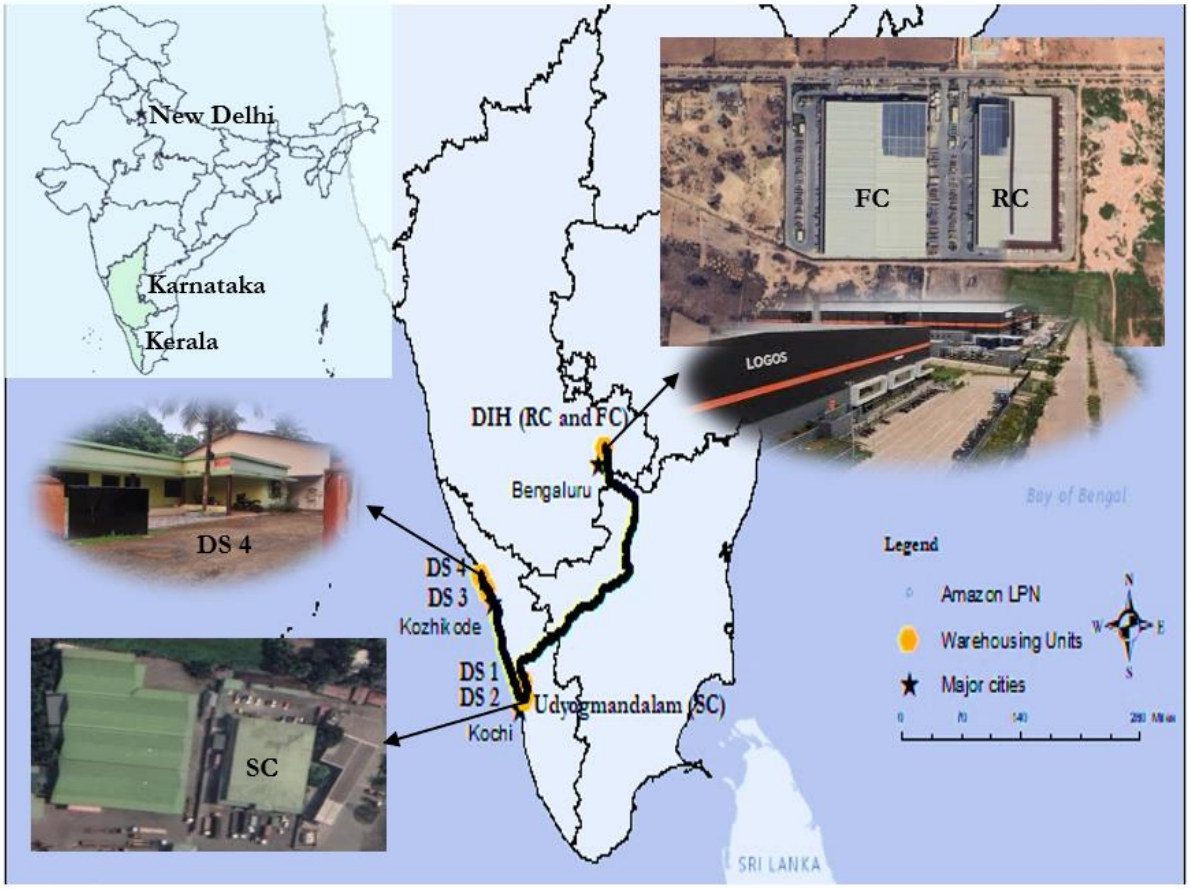
[26] https://www.brigadegroup.com/blog/general/how-devanahalli-is-emerging-as-a-major-commercial-hub-of-bengaluru

Amazon India subsequently acquired, on a 20-year lease, one million square feet of operational space[27]. Amazon established an 'integrated logistic service park', comprising the FC along with one RC and one SC. The FC receives most parcels from the adjacent RC, identified by BLR4 and transfers the packed orders to the adjacent SC and to other SCs across South India. With the focus on the labour process of the facilities within the e-LSN, the RC in the DIH was also included in the field research, although the SC was omitted owing to practical constraints that hindered sufficient data collection (see section 5.5.2.2).

The other locations studied were in Kerala, where Amazon did not operate any FCs at the time of the research. Instead, most incoming orders were shipped from outside the state to a SC in the *Udyogmandalam* export processing zone at the outskirts of the metropolitan city of Kochi in Ernakulam district, identified as COKE. This SC, the third facility in the sequential study of the e-LSN, is owned and operated by a third-party firm, Mahindra Logistics. Including this site thus expanded the scope of the study to analyse the relationship between the lead firm (Amazon) and its partner firms, including functional and operational differentiation, mode of governance and potential consequences for management control and labour process. This was the first SC of Amazon's e-LSN in Kerala, although in 2023 a new SC was established in Amazon's logistic service network in Kozhikode, North Kerala. Nonetheless, with no FC in Kerala, this SC remained Amazon's pivotal warehousing unit for its market expansion in the state. Evidence indicated that the second SC was opened to relieve the volume of work on the studied SC. The SC receives parcels from several FCs, predominantly from Tamil Nadu and Karnataka, including from the FC in the DIH that was the subject of study, and dispatches them to DSs, predominantly in Kerala.

[27] https://www.livemint.com/companies/news/logos-leases-warehousing-centre-to-amazon-in-100-million-rental-deal-11631799801291.html

Figure 5. 1: Location the Studied Amazon e-LSN in South India



The fourth facilities of the e-LSN were the DSs, four randomly targeted from those to which orders were dispatched from the studied SC. This stage enabled research to be conducted on the tracking of the parcels' journeys to the end customers and on the labour processes associated with the organisation of production and distribution. These DSs are small 'go-downs' (small garage sized warehouse/storage spaces). One each is in the cities of Vadakada and Koyilandi in Kozhikode district, 170 km from the SC, one from Chalakudy city in Thrissur districts, 77 km from the SC, and the fourth in Aluva city within the Ernakulam district, 30 km from the SC.

The field work was conducted in two phases. The first was from September 2022 to January 2023 and involved the two warehouses in the DIH, the FC and the RC. The second from April to June in 2023 in Kerala focussed on the SC and the four DSs (see figure 5.1). The studied sites reflect the unit of analysis of this thesis. The composition of the sites followed the rationale that, while an e-LSN is comprised of functionally different and similar operating sites, the studied sites were chosen based on the operational diversity of sites within an existing e-LSN. The assumption, derived from insights from the literature review, is that the analysis may still reflect the influence of other similar operating units within Amazon's e-LSN on the studied sites. The scale, scope and nature of the interconnectedness of, and related causal factors underlying and between different sites, and thus the e-LSN in its totality constitute the core, and novel, focus of this study.

This chapter presents the research design. Section 5.2 reiterates the thesis' logic of enquiry that informs the research questions. Section 5.3 elaborates the underlying philosophical paradigm of

the research design, and how the approach that follows contributes to pursuing the logic of inquiry and to answering the research questions. Section 5.4 briefly revisits the GPN and LPT theories from the lens of the philosophical paradigm underpinning the study. Section 5.5 provides the justification for the research methods adopted, mindful of the requirement to ensure that the methods are appropriate for answering the research questions. It further details the data collection techniques. Section 5.6 elaborates on how the data were analysed and interpreted. It further provides a profile of the participants of the studied sites. Section 5.7 elaborates the ethical considerations. Section 5.8 considers the limitations of the study, and the challenges experienced in collecting the data. Section 5.9 summarises the chapter.

5.2. Logic of Inquiry

The primary aim of this thesis is to understand the nature of the labour process in Amazon's e-LSN, in relation to *inter alia* the company's overarching governance and digital mechanisms, to broader political economy, the company's labour utilisation strategies and practices and their influence on labour process, to understand the consequences for workers and their experiences of work. The labour process captures a critical stage in economic activity, where human labour is transformed into economic value captured in goods or services. This process involves the conversion of abstract labour (the capacity to work) into concrete labour (actual work performed). In Amazon's e-LSN, this transformation is not confined to a single point of production but derives from multiple interconnected nodes. In Amazon's network, the labour process begins when orders are received at the initial receive centres and concludes when they are delivered to customers from the last-mile delivery stations. Each facility in this network plays a distinct role, such as packaging, sorting, or delivering goods. These roles are interdependent, forming a cohesive labour process that spans the entire network. Hence, the labour process *in toto* cannot be understood in isolation at any single node, although a detailed analysis of each is a prerequisite. Based on the overarching ambition of this thesis and the empirical and theoretical contributions it can make, the labour process must be analysed as functionally integrated, produced and reproduced, across the network.

In this vein, this thesis investigates the following factors that shape the labour process within Amazon's e-LSN, operating at different analytical levels:

- **Within nodes**: This level includes employment relations between workers and managers, the use of technology, the organisation of tasks, and managerial control mechanisms within a given facility.

- **Between nodes**: This level involves the functional linkages between the facilities in the network and the inter-firm relations, comprising governance and organisational fixes, between the lead firms and third-parties.

- **Beyond the network**: This level includes broader influences such as regional labour market dynamics, institutional frameworks, technology, market competition, socio-economic conditions, and the political economy of the e-commerce TNCs.

This thesis, therefore, adopts a multi-dimensional approach to analyse the labour process in Amazon's e-LSN. It focuses on the interplay between capital-labour relations, the usage of

contemporary technology, inter-firm relations, regional labour market conditions, and the broader political-economic context. This approach enables a comprehensive understanding of how labour process is organised, controlled, and experienced within the specific nodes or sites, and across, a complex and geographically dispersed production network.

5.3. Research Philosophy

A research philosophy provides a meta-theoretical framework for understanding the world, within which an inquiry is embedded, and its assumptions inform the nature of a research study. Fleetwood (2005:1) argues that research philosophy reflects "(t)he way we think the world is, influences what we think can be known about it; how we think it can be investigated; the kinds of theories we think can be constructed about it; and the political and policy stances we are prepared to take". The two most prominent philosophical paradigms used in social science research are positivism and interpretivism. This section argues that neither paradigm offers an adequate framework to grasp the complexities and nuances of the labour process. This thesis proposes, based on the theoretical assumptions and knowledge claims it envisages, that critical realism is most appropriate research paradigm.

5.3.1. Positivism and its Limitations

Positivism, as a research paradigm, assumes that reality exists (ontology) objectively and independently of human perceptions and actions. It suggests that reality can be understood (epistemology) solely through observable, measurable aspects, with the telso to identify the universal laws that govern social behaviours and phenomena. Positivism's foundational assumptions and limitations present significant challenges, particularly in the study of complex social phenomena, that in this respect might include the labour process.

One of the primary critiques of positivism is its rigid separation of reality from human agency. It assumes that reality takes its form independent of human intervention and denies the influence of human actions or agency in shaping what is "real." The labour process is inherently bound up with capital accumulation, the means of production, antagonistic employment relations, managerial control mechanisms, power dynamics, supervisory actions, the performance of labour, and the lived experiences of workers, combinations and interactions of structure and agency, and quintessentially the actions taken by agents based on their interests, organisational positionalities, experiences, perceptions and beliefs. Yet these are not easily observable or measurable in positivist terms. Further, positivism dismisses unobservable phenomena as non-existent (Smith and Hotkinson, 2005; Hammersley, 2013). It fails to account for subjective and experiential realities that shape human behaviour and actions. For instance, phenomena such as competitive pressure, though unobservable in a tangible sense, are experienced and articulated by class and collective interests and by individuals in varied ways. Managers and workers, for example, perceive competitive pressure differently, with the former perhaps describing it in terms of high demand or workforce shortages, while the latter might experience it as work intensification or burnout (Green, 2004).

Another significant limitation of positivism lies in its reliance on deterministic causality and the iron law of regular sequencing (Mingers, 2006). It assumes that if two events consistently occur in sequence, irrespective of context, time, or observer, the former causes the latter. This linear view

of causation is often inadequate in explaining the complexity of social phenomena, where multiple causalities interact in non-linear ways. The outcome of a decision or action may range from being realised as intended to being entirely unintended or even unrealised. These indeterminate outcomes challenge positivism's deterministic framework, suggesting that reality is far more intricate. To manage complexity, positivism often employs the *ceteris paribus* condition, if all other variables remain constant while analysing a particular phenomenon (Maki, 1992; Fleetwood, 2001). While useful for modelling and prediction, this approach oversimplifies reality by reducing it to a static snapshot of the reality at best or a hypothetical reality at worst. Realities are dynamic and influenced by countless interdependent factors, making it impossible to isolate variables without losing critical context. By focusing on simplified models, positivism, it is argued, falls short in explaining and understanding the multifaceted and evolving nature of real-world phenomena.

Although labour process possesses certain elements of objectivity, such as organisational structure, the techniques of productions, operation of the machinery, division of labour, which can be understood irrespective of the reference of experience, it cannot fully be understood without considering the subjective experiences of workers and managers, their exercise of agency, and the broader social, political, and economic contexts that shape their perceptions and actions. While positivism offers valuable tools for empirical investigation, its foundational assumptions conflicts with labour process theory as conceived in this thesis. By prioritising objectivity, measurability, and deterministic causality, positivism overlooks the complex, dynamic, and subjective understanding of the reality that shapes the actions, and decisions in configuring labour process. Positivist constraints do not permit a full understanding of the socially constructed nature of the labour process.

5.3.2. Interpretivism and its Limitations

The other prominent research paradigm in social science research is interpretivism. Interpretivism assumes that reality exists only through subjective perceptions and interpretations. It posits that understanding social phenomena requires exploring subjective experiences, expressed through words, sentences, metaphors, analogies and similes (Denzin and Lincoln, 1996). Unlike positivism, interpretivism rejects regular sequencing as a basis for causal inference, arguing that such sequencing cannot be tested without artificially isolating phenomena in laboratory-like conditions. Furthermore, it dismisses the necessity of deriving predictions or universal causal laws, focusing instead on providing meaningful and coherent context specific explanations of phenomena (Archer et al, 2016). While interpretivism acknowledges the importance of unmeasurable aspects of social reality, which are crucial for articulating social behaviours, it has its own limitations in studying complex phenomena such as the labour process.

One major critique of interpretivism is its sole reliance on subjective perceptions to not only understand reality, but it also assumes that social reality cannot exist without human intervention, so that reality rather is an expression of social agency. Interpretivism thus conflates epistemology (how we know what we know) with ontology (the nature of reality). This leads interpretivists to conceive of a relativist ontology- i.e. there are multiple realities or truths of reality (Archer, 1995; Fleetwood, 2005). By asserting that reality is entirely constructed through human interpretation and perception, interpretivism denies the existence of objective structures or phenomena that operate independently of human perception. This poses a significant challenge when studying the

labour process. For instance, the labour process is deeply influenced by structural factors such as power relations, organisational structures, institutional frameworks and market dynamics. These elements profoundly have causal implications for the lived experiences, interpretations, actions and interactions of workers and managers, but might exist independently of workforces' and managers' consciousness. Interpretivism's exclusive focus on subjectivity can obscure these underlying structures, leading to an incomplete understanding of the labour process.

The labour process as understood in this thesis is not only a site of experiences but also a domain in which structures and systemic forces become manifest. While interpretivism may offer insights into how workers perceive and make sense of their work experiences, its assumptions about the primacy of subjective experience fails to account for the structural dynamics that shape them. Exploitation, workplace intensification, and dynamic employment relations are deeply rooted in systemic market imperatives and institutional arrangements that extend beyond individual perceptions. Give this understanding of labour process, interpretivism falls short in addressing questions of structural drivers of conflict in the workplace. A more comprehensive understanding of the labour process requires an approach that retains the strengths of interpretivism, in the sense of its consideration of subjective meaning-making, while recognising the objective existence and influence of structural forces. This integration enables a fuller exploration of the interplay between subjective experience and systemic dynamics.

5.3.3. Critical Realism: Beyond Positivism and Interpretivism

Critical realism is a comparatively new philosophical paradigm developed to critique positivism and interpretivism, particularly in respect of the latter in its postmodern variant, for analysing social phenomena. It conceives a realist ontology comprising of the following three features. First, the reality is *transcendental* in nature, i.e. it constitutes several causal power bearing entities, which exist independently of human awareness or knowledge of them and are not entirely conceivable through empirical or experiential examination (Archer et al, 2013). Second, reality is *trans-factual* in nature, i.e. although entities emanate causal powers, they will not necessarily manifest deterministically. As Ackroyd and Fleetwood (2001) elaborated, the existence of managerial control mechanisms in an organisational setting does not necessarily imply its practice. Further, absence of its implementation does not make the control imperatives less real. The realisation of the effect of the causal powers of these entities is contingent on the interplay with other entities and their causal powers. Bhaskar (1977) explicated that the causal power of each entity cannot be understood through their constituent parts and in isolation. These entities can only be understood through their relation to, and their effects on, each other. Moreover, these causal powers of the entities interact in multiple ways, with the potential also to counter each other's effects. Hence, the effect of a causal power is never deterministic but is tendential. The third feature of the realist ontology is that reality is *transformational* in nature. Causal powers of the entities constituting the social reality take the form of institutions, conventions and other structures, which exert influence on the way humans act, understand, and articulate reality. Further, humans through their activities and actions ensure the recreation, reproduction or even transformation of the pre-existing structures (Bhaskar, 1989). As Bhaskar (1986:129) asserted "Society does not exist independently of human activity. But it is not the product of it." Hence, structures and agencies not only exist, but they also interact with each other to either reproduce or even transform the social reality. In other words, people either acting purposefully or unconsciously "draw upon, and thereby reproduce [or transform], the

mechanisms, structures, powers and relations that govern their action in daily life" (Ackroyd and Fleetwood 2001:14).

To understand social reality, critical realists assume a stratified ontology comprised of three distinct but contingent domains; empirical, actual, and 'deep' (Sayer, 1999; Pratten, 2001). While the deep is made of pre-existing structures with their causal powers, the actual domain comprises of social activities and events which are shaped tendentially by the social structures. The social agents understand the structures based on their experience, understanding, and perception of the events from the empirical domain. Moreover, events in the actual domain can occur even without being experienced or perceived in the empirical domain. Similarly causal powers in the deep domain might not always generate events, let alone perceived, as multiple causal powers might neutralise each other resulting in no effect on the actual or empirical domain (Bhaskar, 1975). However, if the entities possess causal power, they are real and are topics of study for the critical realists.

Although positivism and critical realism share an objective ontological position, i.e. conceiving of existence of one truth of the reality (Bhaskar, 1977; Sayer, 1999; Ackroyd and Fleetwood, 2001), there are certain distinguishing aspects. Critical realism considers that the reality is not entirely observable, let alone measurable. The materialistic entities are observable, but reality also constitutes social, conceptual and artefactual entities (Mingers, 2006). What makes these entities 'real' is that they have some causal power which can not only reproduce reality, but also transform it (Fleetwood, 2005). Again, while positivism adheres to an objective epistemology, critical realism assumes that reality could also be understood through subjective perceptions of the individuals. Further, subjective perceptions not only describe the appearance of the reality (in the empirical and actual domain), but also enable understanding of the essence of reality (in the deep domain), through recognising the underlying causal powers which shapes these perceptions (Thompson, 2017). Moreover, individuals not only understand the reality, but also possess agencies to reproduce and transform them. Hence, for critical realists regular sequencing is neither a necessary nor a sufficient condition of causal explanation, rather causality is transcendental, trans-factual, and transformational in nature (Bhaskar, 1977). Hence, in evaluating a theory critical realism "are not concerned with deduction or prediction, but with [the theory's] explanatory power." (Ackroyd and Fleetwood, 2001:15).

On the other hand, critical realism has a shared epistemology with interpretivism, but there is distinctiveness in several respects. Unlike interpretivism, which either conflates ontology with epistemology (Denzin and Lincoln, 1996) or assumes that reality exists in multiple ways (relativist ontology), critical realism assumes the existence of an objective reality which could be understood in multiple ways (relativist epistemology) (Archer et al, 2013). In other words, critical realism does not conceive that human interpretation of reality as the reality but aims to understand the reality through human perceptions and interpretation. The aim of critical realism in social science is to explain the underlying hidden causal powers of the society, which shapes a social event or an action and its understanding or perception (Bhaskar, 1975).

5.4. Labour Process from the Lens of Critical Realism

As indicated in chapters 2 and 3, to analyse labour process in Amazon's e-LSN, this thesis is grounded in two theories- LPT and GPN. LPT maintained that understanding workplace relations and experiences at work is central to labour process theorisation (Thompson and Smith, 2010).

LPT further seeks to understand the politico-economical, and hence very material, features and dynamics that mediate the conversion of labour power to concrete labour and subsequently shapes the lived experiences of workplaces (Hyman, 1989), an approach revitalised through the connectivity issue in LPT's latest wave of academic discourse (Thompson and Newsome, 2004; Thompson and Smith, 2024). Hence, LPT conceives of a multi-layered approach to analyse labour process, by which factors shaping it are identified both internal and external to the workplace, but in an interconnected manner. In this regard, critical realist's stratified ontology synergises with the multi-layered approach of LPT (Thompson and Vincent, 2010). Labour process is a pivotal social activity actualised through multiple factors residing both within, between, and beyond the workplaces. Moreover, these factors comprise social structures such as capitalist accumulation, market and competition imperatives, labour markets characteristics and labour laws. Further, they comprise social agencies such as labour and management, which articulates through structured formal conditions and informal practices of the employment relations in a workplace. Quintessentially, all these factors contain some causal power that contribute to constituting the labour process.

Through a critical realist lens, it can be argued that labour processes manifesting at the actual domain are reproduced or transformed through these causal powers residing at the deep domain. However, the key to discern how these causal power bearing entities become active in configuring the labour process resides in the empirical domain. This domain comprises participants' subjective understanding of the labour process from their social positioning, as well as observable and measurable aspects such as worker and manager actions, workforce composition, and the productivity of nodes within the e-LSN. Put differently, by adhering to a critical realis research frame, the underlying causal powers shaping the labour process could be understood and analysed through the perceptions, experience, and interpretation of the labour process by the workers and managers of Amazon's e-LSN, and observing the workforce composition, division of labour, organisational structure, and labour process in action inside the nodes of the network.

To understand the labour process in Amazon's e-LSN, a production network, this thesis additionally utilises GPN theorising. GPN provides a framework for understanding how the labour process is organised and governed across interconnected warehousing facilities in Amazon's logistics network (Newsome et al, 2015). It emphasises the multi-scalar nature of the service, where various agents, manager, and employers operate within a complex web of economic and social structures. This approach aids in analysing how labour processes are shaped, if not determined, by both global dynamics, such as TNC's strategies and competition pressures, and local conditions such as labour markets and regional institutional environments. By adopting a critical realist approach, GPN analysis and more so its GPN 2.0 variant can move beyond mapping network dynamics to uncover how the causal powers residing in the global and local structures and agencies shapes the labour processes. Critical realist-informed LPT highlights how structural forces—such as global capitalist imperatives, regulatory frameworks, and labour market dynamics—interact with the agency of managers and workers within specific firm or organisation of the network (Thompson and Vincent, 2010). This perspective segues remarkably with the GPN's focus on the interplay between global and local forces, providing a robust framework to analyse how social relations of production, economic imperatives, and institutional conditions impact labour practices. Thus, integrating GPN with LPT, within the critical realist paradigm allows for a more comprehensive analysis of the labour process. It enables this thesis to not only describe the labour

process within Amazon's e-LSN, but also to discern the underlying causal powers and mechanisms that drive these dynamics. This combined approach enhances the explanatory power of GPN and LPT equally, offering a deeper insight into how the causal powers emanating from within, between and beyond the network shapes the labour processes in Amazon's e-LSN.

5.5. Research Design: Organisational Case Study Method

With the aim to understand the labour process in a production network straddling different regions, this thesis adopts a qualitative research design. Gray (2004) and Eisenhardt et al (2007), have highlighted that the most suitable method for answering a process related question is the case study. The strength of the case study method lies in understanding a contemporary social process in a real-life context (Yin, 1994; Nichols, 1997) which, when informed by the appropriate methodological paradigm, can be a manifestation of multiple causal dynamics arising from different social processes. Eisenhardt (1989) lauded the case study method for its potentiality to reveal the underlying dynamics within a single setting.

Although case study research has been criticised for not being replicable and generalisable because of its context specificity (Stake, 1995; Grey, 2004), the aim of a critical realist guided case study is to identify how the dynamic social mechanisms become realised in particular instances (Ackroyd, 2004). Hence, the question regarding how representative the case is to the population becomes redundant, and "the basis for believing in the possibility of generalisation is theoretical rather than empirical" (ibid: 157). Ackroyd (2004) further acknowledged that the setting in which causal powers work out may be somewhat contingent on the context specific characteristics. Case studies allow the researcher "to tease out ever-deepening layers of reality in the search for causal mechanisms and influential contingencies" (Harrison and Easton, 2004: 195). Further, Vincent and Wapshott (2014:2) argued that "cases are worth knowing because they facilitate more informed interpretations of particular social realities. Cases communicate the multiple and frequently conflicting perspectives of diverse social agents [and] social processes become reduced to subjective systems of meaning and how these lead people towards particular activities".

This thesis undertakes the organisational case study method as suggested by Vincent and Wapshott (2014). This method aims to provide insights into specific organisational phenomena, behaviours, processes, or challenges within a real-world context. Quintessentially, it elucidates whether outcomes can be accredited to a mechanism or its context or both (Ackroyd, 2009). It is motivated to consider the intra-organisational dynamics, and their manifestation through complex relations of production at a point, or more accurately, points of production, with the broader structural features impacting from outside the organisation. Unlike any other case study method, where the purpose remains to either test an already existing theory (Yin, 2009) or abduct a new theory from the collected observations, organisational case studies encourage the identification and analysis of link between the phenomenon observed at the level of the organisation with the broader mechanisms arising from both regional and extra-regional social processes (Vincent and Wapshott, 2014).

In the thesis, the case study method is adopted because of its strength in piercing through the multiple layers of reality converging in a single setting. Moreover, the method can be applied to a single organisation or a group of organisations. The thesis analyses labour process in an Amazon

coordinated network of organisational arrangements, or its e-LSN- making it the overarching case discussed previously (section 5.1). This network is comprised of multiple organisations, each situated in a particular operating site. The organisations are functionally connected to each other and hence cannot be studied in isolation as a single case. Albeit a single organisational case study is reflective of the regional context where the organisation is embedded, the operation of each organisation is crucially dependent on other organisations in the network. Hence along with regional specificity, the functional specificity of the operational and organisational unit is essential for analysing the labour process as a totality in the e-LSN. Moreover, the organisations in the network are potentially under different proprietorship with both shared and distinct objectives. Just like the organisations are functionally related to each other, management are engaged in inter-firm relations (governance and organisational fixes, see chapter 2) with profound influential potential on the functioning of each organisation. It is only through analysing the organisations relationally in the network that the nature of operations, the labour process, and the relations of productions in the e-LSN and its constituent operating sites can be grasped concretely.

5.5.1 Data Collection Techniques

Kitay and Callus (1998) contend that the case study method offers the potential to integrate multiple data collection techniques, including interviews, focus group discussions, participant observation, document analysis, and quantitative techniques like surveys and questionnaires. The advantage of qualitative data collection techniques is that they aid an understanding of complex phenomena, exploring perspectives and interpreting experiences of the participants in a social setting from participants' social positioning. Qualitative techniques prioritise depth over breadth, striving to capture the richness of human experiences in real-world contexts (Denzin and Lincoln, 1996; Creswell and Poth, 2016). As elaborated, critical realism emphasises the interplay between participants' subjective experiences and the underlying structures influencing those experiences. Qualitative methods, by engaging with participants in their social positioning, facilitate this dual-level analysis. There are four commonly used qualitative data collection techniques in social science research.

First, focus groups gather data through dynamic group interactions, facilitating the exchange of ideas and capturing diverse perspectives. This method is particularly valuable for exploring shared norms and collective viewpoints (Morgan, 1996). By fostering interaction among participants, focus groups allow researchers to observe the interplay of social influences. Another qualitative data collection method is the researcher's observation, which systematically records behaviours or events in naturalistic settings. This method aids understanding of context-specific behaviours and events, with a scope for researcher's self-reflexivity, while accumulating the information (Angrosino, 2007). Observation can be either participant or non-participant, depending on the researcher's involvement. In participant observation (PO) the researcher immerses themself in the social environment which they are studying. PO requires researchers to momentarily detach from their own positionality and immerse themselves in participants' lives, thus minimising preconceived notions (Musante and Dewalt, 2010). It also emphasises a holistic approach, considering various aspects of participants' lives to understand their perspectives fully (Shah, 2017). This method involves observing both explicit actions and implicit, "unsaid" behaviours (Kawulich, 2005). Further, PO provides detailed, rich data that is otherwise difficult to obtain (Kawulich, 2005; Musante and Dewalt, 2010). By engaging directly with participants in their natural

settings, researchers can uncover deeper insights into behaviours, practices, and social dynamics (Merton, 1972). Critical realism values PO for its ability to capture the dialectical relationship between individual agency and social structures, reflecting its commitment to understanding both observable and unobservable events to decipher the underlying causal mechanisms (Porter, 1993; Barron, 2013).

Another widely used qualitative technique is the interview. In the interview method participants have the opportunity to explain the answers raised in their own words. It helps participants in conveying their perceived experiences and personal perspective on the raised questions, rather than limiting their responses to choosing from a predefined set of answers, like in surveys with closed questions[28]. In other words, answers can be open ended and are gathered through conversations (Kvale and Brinkmann, 2009). Interviews can be structured, semi-structured, or unstructured. Structured interviews use standardised, pre-determined questions, ensuring uniformity and replicability, but they limit flexibility and depth, which can constrain the critical realist goal of exploring underlying mechanisms. Semi-structured interviews balance standardisation and flexibility, allowing researchers to probe emergent themes while maintaining consistency (Creswell and Poth, 2016). Unstructured interviews are the most flexible, allowing participants to shape the conversation. Researchers start with a broad topic, facilitating an open-ended exploration of participants' views in their own context (Fontana and Frey, 2005). Across all types, the use of probes is essential to encourage participants to elaborate on their answers, revealing deeper insights (Graham et al, 2007). Moreover, semi-structured and unstructured interview techniques are guided by the concept of saturation, where data collection continues until no new themes or insights emerge, ensuring robust and comprehensive understanding (Francis et al, 2010). Finally, document analysis involves examining written, visual or digital materials including company reports, audit files, government inspection reports, or news media (Bowen, 2009). This technique when employed in combination with other techniques helps uncover patterns or meanings that might otherwise be obscured in existing records, enabling researchers to connect actions and events with contextual data from relevant institutions and structures.

In operationalising the organisational case study method (Vincent and Wapshott, 2014) to analyse the labour process in the studied e-LSN, the research primarily employed semi-structured interviews and participant observation. Occasionally, focus group discussions and document analysis were utilised to support the former. This multi-method approach enabled triangulation of data, which is crucial in critical realist research to validate findings across multiple sources and uncover hidden patterns, thereby constructing a nuanced understanding of the phenomena (Mingers, 2006; Maxwell, 2012). The study aimed to link participants' experiences of the labour process to broader contextual structures and causal mechanisms, capturing both observable and unobservable but perceivable events to discern deeper causal mechanisms and contextual insights. What follows is a detailed description on how semi structured interviews and participant observations were conducted in the sites of the overarching e-LSN case.

[28] Structured interviews might share similar limitations, at least partly, with that of surveys with closed questions.

5.5.2.1 Semi-structured Interviews

The interview method has its advantage in studying the labour process, particularly because of its in-depth investigative potential to reveal the subjective experiences of stakeholders. A semi-structured interview method was adopted for this study. Three interview guides were created, each for the warehouse workers, supervisors, or managers and last-mile delivery drivers. For the warehouse workers in the RC, FC and SC, the schedule comprised six sections, each covering the following topics or themes discussed with participants: (1) participants' roles and responsibilities in their respective warehousing units, elucidating what their tasks consist of, (2) their perceptions regarding work intensity and workplace relations with the supervisors, (3) their experience of the work and working with technology, effect of the work on their health, and what motivates them to work, (4) details of the job contracts, hours of work, time consumed in commuting, earning structure, and other benefits and endowments, (5) their grievances and perceptions of the company's redressal mechanisms, and perceptions on trade unions, and (6) personal demographic and family profiles (age, educational background, gender, social group, family size etc) and information on their past jobs.

A separate schedule was created for the last-mile delivery drivers comprising the previous six sections, with an additional section on the operational capacity of their respective DSs, gauged through the number of drivers working in the station and total area covered by the stations for delivery. Obviously, this section did not apply and was excluded from the schedules for the RC, FC, and SC workers. However, the schedule for the supervisors and floor managers comprised all seven sections, although the wording of the questions was reconfigured to make them applicable to their position within the employment relationship.

For each section of these three schedules, prompts were used to guide the interviews. These prompts were not entirely predetermined being formed additionally through interaction with the participants. The prompts were precise, appropriate and relatable to the participants through the acquired knowledge of company and sector, using appropriate terminology as the interviews developed. The schedule/guides were first piloted among warehouse workers in the same location to refine the framing of the questions to align with the appropriate, site-specific terminology. Further, the prompts were modified according to the participant's organisational positionality. For instance, the topic of work intensity was relatable to workers when prompted with questions on targets. Responses to inquiries regarding control mechanisms and supervision were easier to elicit when formulated on issues of monitoring and evaluation of their performance. Conversely, but complementarily, in supervisor interviews, prompts on work intensity were posited as issues of performance management and productivity assurance, while those on supervisory intervention were formulated as issues of labour utilisation and organisational practice. (Interview schedules are in Appendix A2, A3, and A4 for warehouse workers, delivery drivers and site managers respectively). These guided yet discursive interviews enabled the participants to deliberate on the questions and prompts and to volunteer their experiences, perceptions and reflections unhindered and comfortably. Moreover, when discussions and participants' flow of thoughts diverged onto related topics, conversations were not interrupted nor curtailed, enabling scope for emerging topics to be included.

Interviews were conducted in different locations and were of varied duration. Short interviews of around fifteen minutes occurred when employees were leaving or entering the warehouse premises at shift changes. Most of these interviews took place in small tea stalls or at bus stops adjacent to the warehouses. Interviews of medium duration, half an hour to forty minutes, were conducted with those workers who accepted the request to accompany them while returning to their homes. Many participants were revisited at their residences or in cafés, food courts or parks on non-workdays for longer interviews lasting up to two hours. Additionally, two group discussions with workers engaged at each site were conducted at their places of residence. Where possible, interviews were conducted in the participants native language to facilitate free and accurate expression. Hence, along with Kannada and Malayalam, the indigenous languages of the two states, Hindi and Bengali were used to converse with the migrants from North and East India.

Interviews were recorded with participants' consent, translated into English and transcribed. For those unwilling to have their interviews recorded, field notes were taken to document the conversations, and later composed into transcripts. All participants are anonymised. A total of 116 interviews were conducted, 16 from the RC, 46 from the FC, 38 from the SC and 16 from the DSs. In selecting the participants, a purposive sampling technique (Suri, 2011) was adopted to ensure that all differing roles in each warehouse across the logistic network and all management and supervisory positions within each organisation were included. Saturation was reached when a comprehensive understanding of all the topics from the schedule was achieved from all the different workplace positions and roles. Participants comprised warehouse workers, delivery drivers, warehouse operation managers, delivery station masters, truck drivers, security guards and recruitment agents. Table 5.1. provides a profile of the participants.

Table 5. 1. Interviewees

		Karnataka		Kerala		
S. No	Roles and Positions	RC	FC	SC	DS	Total
1	Receiving	1	2	3	NA	6
2	Loading and unloading	2	4	9	NA	15
3	Sorting and bagging	2	5	16	4	27
4	Staging and counting	1	1	4	NA	6
5	Picker	NA	6	NA	NA	6
6	Packer	NA	3	NA	NA	3
7	Stower	NA	5	NA	NA	5
8	Delivery Drivers	NA	NA	NA	8	8
9	Total Workers (1-8)	6	26	32	12	76
10	Line Mangers	1	7	3	4	15
11	Operation Managers	2	2	1	0	5
12	Total Managers (10-11)	3	9	4	4	20
13	Security Guards	4	3	0	0	7
14	Transporting Drivers	3	5	0	0	8
15	Recruitment Agents	0	3	2	0	5
16	Others (13-15)	7	11	2	0	20
17	Total (9+12+16)	16	46	38	16	116

Note: The counts are based on participants' most recent roles at the time of interview. Usually, workers rotate between roles in each warehouse. NA signifies that the role is not applicable to the warehouse.

Table 5.1 presents the roles or tasks of the participants. Of a total 116 participants, there were 76 workers, 20 line and operation managers, and the rest were security guards, transport drivers, and recruitment agents. Table 5.2 provides a demographic profile of these workforce samples, detailing age, level of education, gender and migration status, in aggregate and separately for the Karnataka and Kerala sites. It indicates a young workforce, with only six aged over 30 years, that is reflective of the general labour market in India (chapter 4). Thirty-four of the 96 employees have obtained at-least a graduate degree, 22 from Kerala, a distinction which resonates with the state's higher relative educational attainment. While all participants in management positions were at least graduates, in Kerala fourteen graduates were workers. No interviewed workers in Karnataka were graduates although they possessed diplomas. The gender breakdown is 84 men and 12 women, among whom 4 are female managers, 3 from Karnataka and 1 from Kerala. All female managers were local to their centres. Forty employees were migrants, from neighbouring South Indian states, but predominantly from East and North India. Thirty-four migrants were employed in Karnataka sites. Migrants are predominantly workers in the sites although a handful, particularly from nearby states, were in management positions. Kerala sites had a comparatively larger proportion of local workers than Karnataka. Finally, while in Kerala all female workers were local, in Karnataka one among five was a migrant.

Table 5. 2. Participants' Demographic Profile

	Categories of Participants	Number of Participants
The studied e-LSN	18 -20	16
	21-25	52
	26-30	22
	>30	6
	<=8th Standard	7
	9-10th Standard	15
	11-12th Standard	25
	Diploma	15
	Graduate and above	34
	Females Workers	8.
	Males Workers	68
	Female Managers	4
	Male Managers	16
	Migrants	40
	Local	56
Part of the e-LSN in Karnataka (RC and FC)	18 -20	12
	21-25	19
	26-30	12
	>30	1

	<=8th Standard	4
	9-10th Standard	9
	11-12th Standard	14
	Diploma	5
	Graduate and above	12
	Females Workers	5
	Males Workers	27
	Female Managers	3
	Male Managers	9
	Migrants	34
	Local	10
Part of the e-LSN in Kerala (SC and DS)	18 -20	4
	21-25	33
	26-30	10
	>30	5
	<=8th Standard	3
	9-10th Standard	6
	11-12th Standard	11
	Diploma	10
	Graduate and above	22
	Females Workers	3
	Males Workers	41
	Female Managers	1
	Male Managers	7
	Migrants	6
	Local	46

Table 5.3 classified participants according to their contract type (full-time permanent, full-time short-term, and part-time) for managers and workers. No other contract type was identified. The most common was the full-time short-term contract, usually provided by third-party recruitment agencies, as was found for 65 workers and nine managers. Interestingly not a single worker had a permanent contract, whereas 11 managers had this status. Ten workers had part-time contracts, six from Karnataka and four from Kerala.

Table 5. 3. Participants; Contract Types

Entire e-LSN	Full-Time Permanent Managers	11
	Full-Time Short-Term Managers	9
	Part-Time Managers	NA
	Full-Time Permanent Workers	0
	Full-Time Short-Term Workers	65
	Part-Time Workers	10
Part of e-LSN in Karnataka	Full-Time Permanent Managers	7
	Full-Time Short-Term Managers	5

(RC and FC)	Part-Time Managers	NA
	Full-Time Permanent Workers	0
	Full-Time Short-Term Workers	28
	Part-Time Workers	6
Part of e-LSN in Kerala (SC and DS)	Full-Time Permanent Managers	4
	Full-Time Short-Term Managers	4
	Part-Time Managers	NA
	Full-Time Permanent Workers	0
	Full-Time Short-Term Workers	37
	Part-Time Workers	4

The data presented in Tables 5.2 and 5.3 underscore the segregated nature of the workforce across the e-LSN and within sites by gender, migration status and contract type. They demonstrate how the Indian labour market segregation (chapter 4) is manifest in this sample of the warehouse workforce.

5.5.2.2 Participant Observation

The interview evidence was complemented with data from Participant Observation (PO), which was conducted between 15 December 2022 and 15 January 2023 in the FC situated in DIH. The researcher worked as a picker. The interviews in DIH and its vicinities revealed that the most effective way to get hired at Amazon was through a recruitment agency. The contact details of twelve hiring companies were given by participants and from flyers pasted on the walls of stalls, lampposts and bus stops near the DIH. Preliminary information on recruiting phases and the procedure for selection were garnered from interactions with warehouse workers and the recruitment agents prior to the researcher's job application. One agency was contacted by phone and interest to join the company expressed.

The company's selection procedure consisted of an online examination and a formal interview. The agents delivered examination questions in a hyperlink over WhatsApp to applicants, who were asked to complete the test and forward the screenshots of the final scores. Multiple attempts to attain the qualifying mark (>70%) were permitted, but every attempt required a log-in to the examination link with a different email ID. The examination centred on English reading and comprehension, counting and basic maths and product identification, where the applicant was asked to select a picture from four options, which matched a hypothetical order description. The link also included three or four instruction videos on parcel handling, rules on what to carry and wear in the FC and those to be avoided. For instance, hair must be always kept tied or short, wearing shoes is mandatory, and while lifting parcels an upright posture should be maintained. The interview was conducted one day before the joining date by an Amazon HR manager. In the interview, the documents (education certificate, national ID, bank account details) were verified, a few questions from the instruction videos were asked, and it was explained that the contract was for one month, subject to extension based on performance. The researcher was one among twenty-five applicants subject to the same procedure and given the same one-month contract.

During the month's work the researcher, while undertaking his own tasks, also closely observed the processing of orders throughout the FC and paid particular attention to technologies in operation. In addition, between tasks the researcher took photographs with his personal smartphone of the workstations, product labelling and bar codes. Throughout, the researcher was particularly attentive to the actions, behaviours, and expressions of workers, managers, and supervisors. Conversations with workers engaged in other roles, especially during break times, helped to comprehend the FC workflow beyond the direct experience of picking.

The researcher opted for the company-provided pick-up and drop-off transport service and took paying guest accommodation in a nearby town (Mynalahalli), where many warehouse employees, especially young males, resided. This arrangement afforded additional opportunities to engage with workers from different roles during leave days. These initiatives allowed the researcher to develop a profound understanding of workers' experiences of their work and non-work lives. The observations, interactions and personal reflections were rigorously documented in a research diary daily. Each day's entry was organised into six sections covering incidents encountered and reflections on different phases. These were (1) on commuting to the FC, (2) during the briefing sessions before the start of work, (3) those relating to personal task experience, (4) those relating to workers' and managers' actions and behaviours, (5) during break times, and (6) when returning to their accommodation. Compiling the diary was assisted by using a voice recorder to capture the researcher's daily experiences and reflections. Thirty such files were created and later transcribed.

Participant Observation was conducted covertly. It involves researchers immersing themselves within the group or organisation that they are investigating, disguising, or not revealing, their actual identity and assuming a different role (Vinten, 1994). Roulet et al (2017) argue that covert observation can uncover insights into social interactions and dynamics, that might otherwise remain hidden or unobservable. In this study, the researcher presented himself to the workers and managers as a potential job seeker following the completion of his studies. This strategy resonated with many employees, particularly since a significant number were in their mid-twenties and considered the job in the facility as one of their early career experiences. By positioning himself as a colleague and co-worker, the researcher was able to foster trust and confidence, facilitating open dialogue regarding the detail their workplace experiences. This approach ensured that workers did not feel pressurised to share their perspectives and less obligated to talk about issues which they might have preferred to avoid. However, a notable limitation of the adopted approach was the subsequent difficulty in continuing field work in the same location as either insider or outsider, hindering the ability to conduct interviews in the ancillary SC.

Interviews with managers and workers provided another layer of complementary insights, as they were reflections of different priorities and experiences of the same events (labour process) in the same organisational context. While managers may focus on control mechanisms, productivity metrics, and the coordination of labour to meet organisational objectives, workers provide insights grounded in their lived experiences of the labour process, including the realities of task execution, resistance, and negotiation of workplace demands. When these interviews were combined with PO, which captures real-time behaviours and interactions in their natural setting, they provided a more comprehensive evidence base. By comparing the perspectives of managers, workers, and observed phenomena, the data was cross-validated, consistencies or contradictions were identified,

and any potential biases inherent in the positionality of the researcher and participants were minimised. This layered approach ensured a more robust understanding of the labour process in the study. This outlined use of mixed methods followed the idea of triangulation to enhance the credibility and validity of findings (Paton, 1999).

5.6. Analysis of the Data

The interview transcripts and observational diary entries were subjected to thematic analysis (Clarke and Braun, 2017), chosen for its ability to identify, organise, and interpret patterns within qualitative data. Coding was conducted in two stages. In the first stage, initial codes were assigned based on the interview guide, focusing on participants' descriptions of their tasks, workflows within their respective facilities, perceptions of job characteristics, and interactions with peers, supervisors, and subordinates. In the second stage, these codes were aggregated into broader themes informed by LPT literature, encompassing areas such as control mechanisms, strategies for labour utilisation, employment relations, worker resistance, and the exercise of worker agency. A similar two-stage coding process was applied to the observational diary entries. Unlike the interview transcripts, the first stage of coding for diary entries was inductively conducted to capture emergent insights, although informed by the codes generated during the first stage of interview analysis. NVivo software was employed to facilitate systematic coding and ensure consistency in thematic classification across the datasets. After coding and thematic classification, the transcripts were further categorised based on the participants' positions within the facilities (e.g. workers, managers). This classification was further distinguished by facility type (RC, FC, SC, and DS) and geographical location (Karnataka, Kerala). This approach allowed the codes and themes to be contextualised in relation to the participants' positionality, as well as the regional and geographical location of facilities and their functions within the broader network, enabling abduction of new meanings of the LPT themes. Table 5.4. provides an illustrative example of how the thematic analysis of the transcripts was conducted.

Table 5. 4. Illustrative Examples of Doing Thematic Analysis on Interview Transcripts

Data Source	Transcript Excerpt	Initial Code	LPT Theme	Respondent Positionality	Facility Type	Geographical Location
Interview Transcript	They are continuously monitoring us. In case we get late at a particular point, they will call us. They will tell us to deliver the pending items fast.	Monitoring	Control mechanisms, Simple Control	Delivery Driver	DS	Kerala
Interview Transcript	Some delivery boys will get lazy in that sort of situation. Then they will try to mark that the item is "rejected" or "attempted" without actually going to the customer's location. So, we will tell them to call us from the location directly	Monitoring	Control Mechanism, Simple Control	Station Supervisor	DS	Kerala
Interview Transcripts	This is not my dad's job. They can't keep on shouting and yelling at us whnever they want	Conflict with superior	Employment Relations	Warehouse Worker	FC	Karnataka
Interview Transcripts	Everything is going though a scanner. Things come in a box. There will be QR code on the box. For those coming in sack, there will also be QR code. So, everything has a code to be scanned.	Nature of Instruction	Control Structure, Technical Control	Warehouse Worker	SC	Kerala
Interview Transcripts	A greater number of migrants are recruited to avoid unions. If Malayali are appointed, they will demand for salary hike. They might go for strike. That is why they are trying to recruit more ladies and migrant workers.	Perception on Unions	Worker's Scope for Resistance	Warehouse Worker	SC	Kerala
Diary Observation	X suggested me to not go behind targets. He told that if I run towards achieving targets I have higher chance of commiting error. Error is a more serious concern. He said me to avoid errors at all cost.	Evaluation	Control Structre, Bureaucratic Control	Researcher	FC	Karnataka
Diary Observation	At the last quarter of the shift I met Y. He was sitting on the floor. Looking very exahusted. I was pushing the cart. Seeing me he said that his legs are paining. He cant stand. He then jokinglig told me that since I am fat I have something to gain from this cart pushing activity. But he is already slim. All he gets is gout	Effect on Health	Burnout, Concerns over reproduction of labour power	Researcher	FC	Karnataka
Interview Trasncript	Somedays I work in picking, packing both. Especially when the load is high, the picking tasks need to be faster. Then after the first break I am moved to picking to expediate the process	Task, Roles and Responsibility	Labour Utilisaition Strategy, Labour Rotation, Functional Flexibility	Warehouse Worker	FC	Karnataka

5.7. Ethical Considerations

Social science research requires adherence to ethical principles to protect participants (Arifin, 2018). Key principles include respecting participant autonomy, minimising risks of participation, ensuring confidentiality and fostering mutual respect and trust (Mack et al, 2005; Halai, 2006; Haines, 2017). Interview participants were informed of the research aims and assured of their right to withdraw at any time, following informed consent protocols. Consent was obtained individually through written forms accompanied by an information sheet outlining the study's purpose, procedures, and researcher responsibilities (Appendix A5 and A6). Permission was also sought for recording, with alternatives, notably note-taking, used when permission was denied. Confidentiality was maintained by anonymising the participants' identities (Arifin, 2018). Ethical approval for the study was granted by the University of Strathclyde, and interviews were conducted at times and locations convenient for participants.

For covert PO, ethical considerations were carefully addressed given the inability to secure informed consent from those being observed. While covert PO allows for the observation of natural behaviours in specific contexts, it raises concerns about privacy, autonomy, and potential deception. Researchers must justify its use by demonstrating that it is essential to achieve research objectives and that alternative methods are insufficient (Homan, 1980). Holmes (2020) has further emphasised that the researcher's positionality significantly influences the ethical dynamics of qualitative research. Assuming a role that aligns with the relatively vulnerable group, such as workers rather than managers, can help mitigate ethical risks by minimising power imbalances and reducing the likelihood of harm to participants. Additionally, Fine and Shulman (2009) argued that covert research often involves navigating 'ethical dilemmas', where the researcher must balance the value of the insights gained through partial deceptions against the potential of harming the organisation or its members. In this study, the ethical issue was partly resolved as the researcher assumed the role of a worker, avoiding structural authority or supervisory roles that could have exacerbated ethical tensions. Observations were further confined to settings where privacy expectations were minimal, such as public or routine workplace environments. Anonymity of observed individuals was rigorously safeguarded through anonymisation of data, and findings were reported responsibly to protect participants' identities.

5.8. Challenges and Limitations

This research encountered several challenges during data collection. One primary difficulty, particularly during the interview process, arose from the researcher's positionality as a male bachelor in a society governed by India's patriarchal values (Momsen, 2006; Kunze and Padmanabhan, 2014). Accordingly, male family members and relatives often acted as gatekeepers, restricting women's interactions with unfamiliar men. Accessing female participants was therefore difficult, and their trust had to be gained further through the assistance of a female colleague, who accompanied the researcher throughout the process. While this support helped facilitate the interviews, this reliance on a female colleague also presented a limitation, as it reduced the opportunity for direct, unmediated conversations with female participants. This intermediary role may have limited the depth of the researcher's engagement with the female participants and the richness of their perspectives, thus impacting the overall comprehensiveness of the data collected from this group. However, her involvement facilitated access to participants who might otherwise

might have been beyond reach in this context. Additionally, interviews in industrial settings often occur against the background of hierarchical structures (Marglin, 2015), so that it must be conceded that some respondents may have been constrained in their frankness or freedom in exercising views critical of management practices, labour conditions or their resistance, for fear of potential repercussions, notwithstanding assurances to the contrary. Moreover, workflows were unpredictable, and participants' availability was often interrupted by work demands, further limiting the depth and consistency of interview data.

The integration of PO into the data addressed some of the limitations of the interviews, insofar as the FC was concerned. However, PO itself posed challenges. Engaging in work, while simultaneously observing and reflecting on the labour process, was both physically and mentally demanding. The researcher experienced first-hand the physical strain and fatigue associated with warehouse work routines, which at times made it difficult to apply the necessary analytical focus from observation. Combining work demands and close attention to surrounding work processes and the actions of fellow might have affected the depth and continuity of observational data collected. Further, while the researcher did engage with managers during PO, the researcher's role as a worker imposed additional challenge in investigating the responsibilities of mangers, their motivations and actions, within the hierarchical exercise of the managerial function. While being a worker provided greater access to workers' experiences, it also required caution about raising questions freely which might disrupt the natural organic setting of the workplace environment. Another limitation was the inability to continue research at the same site after the PO phase. Practical constraints arising from the covert nature of the data collection process made it difficult for the researcher to remain at the same location for long-term observation. This limitation constrained the ability to assess lasting impacts of the experienced labour process and/or changes to it as the research was conducted within a fixed timeframe, preventing longitudinal analysis.

Finally, language barriers brought challenges during data transcription and analysis. Most participants spoke regional languages, such as Kannada or Malayalam, and their responses were translated into English for analysis. Despite efforts to ensure accurate translation, certain nuances intrinsic to the original languages might have been lost. Expressions, idioms and cultural references with specific meaning in the regional languages might not have been fully captured, potentially impacting the depth and richness of the data.

5.9. Summary

This chapter outlined the research design employed to study the labour process within Amazon's e-LSN. After situating the studied e-LSN locationally in South India, spanning four functionally interconnected operating sites across the states of Karnataka and Kerala, the account justified a logic of inquiry that sought to identify the causal linkages both within, between and beyond the nodes of the studied network to investigate the labour process in the network, and its constituent' sites. The chapter then discussed the appropriateness of critical realism, rejecting both positivism and interpretivism for framing and underpinning analysis of the labour process, acknowledging that the paradigm proposes that multiple entities operate at differing layers of reality. It then revisited LPT and the GPN framework through the lens of critical realism, establishing the theoretical grounding of the study. This conceptual step was followed by a detailed explanation of

the research methods, emphasising the utility of an organisational case study approach informed by critical realism to address the research questions.

The chapter then explicated how this case study was implemented through qualitative methods, essentially semi-structured interviews and participant observation, with focus group and company document analysis as crucial complements in data collection. Next, it elaborated on data analysis, particularly the application of thematic evaluation, to analyse the qualitative datasets. The chapter then explained the ethical principles that guided the study, and the concrete steps taken to ensure their implementation. Finally, the chapter concluded with a discussion of the limitations and challenges encountered during data collection. Having established the research design, the forthcoming chapters will present the findings from each node or facility of the studied e-LSN.

Chapter 6: Labour Process in Fulfilment Centre in Bangalore

6.1. Introduction

In September 2021, Amazon India signed a forty-year lease on a 91,000 square kilometre area from Logos logistic in the Devanahalli Industrial Hub (DIH) and established an 'integrated logistic service park', comprising one RC, one SC and a FC[29]. This is the largest FC in India to date with a storage capacity of 2.4 million cubic feet, covering an area of 500,000 square feet. It contains about two million and one hundred and fifty thousand bins (storing boxes) in which items of all sizes and kinds are stowed. It is essential to re-iterate that the e-LSN is as much a network of relations across the different warehousing units as a system of embodied labour. This giant warehouse employs a large workforce to undertake a sequence of activities to 'fulfil' customers' orders. Although no official figure is available of the number of employees, the advertisements of recruitment agencies reveal that the FC has a capacity of over 2,000 workers at a time (Figure 6.1). One employee of the IT department provided insight into employment levels, reporting that 800 to 1,000 hand-held scanners (HHD) are active on any single shift in the FC. How is this large workforce controlled to timeously process the shipment orders? Subsequently what are the workers' workplace experience of this labour process and what are their responses?

[29] https://www.logosproperty.com/property/devanahalli-industrial-logistics-park/

Figure 6. 1. Weavings Recruitment Agency reporting more than 2000 vacancies in the FC.

This chapter endeavours to pursues these enquiries. Section 6.2 provides an overview of the organisational structure and managerial hierarchy, along with the composition of the workforce and nature of contracts within the FC. It further elaborates on the labour recruitment and utilisation practices of the FC and their relationship with management's cost minimisation strategy. After briefly discussing the operation of the RC and elaborating on how the RC and the FC is functionally linked in the e-LSN, section 6.3 provides a detailed account of the FC's operation, focusing on both the sequential stages of the throughput of items from inbound to outbound, and the associated divisions of labour, job roles and tasks found inside the FC. Section 6.4 analyses the control mechanisms of the FC, particularly the usage of digital platform, algorithms, software, and barcodes to simultaneously process the flow of orders and measure, monitor and evaluate the workers' performance. Section 6.5 elaborates other forms of control, including bureaucratic and normative control. Section 6.6 draws attention to workers' diverse concerns and grievances deriving from their workplace experiences. It also reflects on the different approaches workers took to make themselves heard and to resist to the demands placed upon them. Finally, section 6.7 provides some concluding remarks reflecting on the capital-labour relationship within the FC.

6.2. Organisational Structure, Nature of Contracts and Labour Turnover

6.2.1. Organisational Structure and Managerial Hierarchy

The primary functions of the FC spanning the transition from receipt of the shipment orders from sellers and RCs to loading the packed orders into the trucks for dispatch to the SCs are executed by the operation department which, according to one trainer of the FC, forms 90 per cent of the workforce *[BLR28-RC-4-LD2]*. This operation department is further divided into four sub-departments: the Inbound (IB) comprising of the stowing function, the Outbound (OB) activities of picking and packing, the FC-Dock of receiving and sorting and Inventory Check and Quality Assessment (ICQA) consisting of counting the inventory stocks. Workers, termed 'Associates', number between 500 and 800 per shift, and engage in activities including picking, packing, and stowing among other. The floor managers within each sub-department occupy positions in ascending hierarchical order included: 'Ambassadors', 'Problem Solvers' (PS), and 'Process Assistants' (PA), whose numbers vary from 10 to 20 per shift. Floor managers and associates, depending on the work pressure or 'load', are transferrable from one sub-department to another

within the operation department. The management positions above the PA apply to the entire department, for each shift consisting of two Operations Managers (OM) and one Site Lead (SL). Above the Site Lead sits the Regional Operation Manager (RM), who has the responsibility of supervising multiple FCs. This managerial hierarchy is similar for all Amazon owned or operated FCs irrespective of its location.

The central preoccupation of the PA and the PS is to monitor the FC's overall performance, to meet the successful fulfilment of customer orders according to Amazon's prescribed criteria, and thus to monitor associates to ensure they are achieving their requisite performance levels. The FC also hires Senior Associates and Ambassadors from the associates, who are responsible for training newly-recruited staff, in addition to performing their regular tasks, which are similar to those of the associates generally. The OM, SL, and the RM are scheduled to visit the FC, respectively on a daily basis, once a week and once in every fifteen days. At these visits, they conduct meetings with the PAs and PSs of each sub-department where they deliver briefings of the performance of the respective sub-departments. In addition, either the RM or in her/his absence, the SL address the associates directly at a stand-up session at the beginning of each shift, that are ordinarily delivered by the OM.

Other than the operations department there are six supporting departments. The first is Learning and Training (L&T) department, which plays a dual role of training new starts and evaluating associates' performance. They are responsible for identifying mistakes in the associates' work, correcting them, retraining them, warning underperforming individuals and, if deemed necessary, submitting reports of "incompetency", "inefficiency" or "misbehaviour" *[BLR28-RC-4-LD2]* to the Human Resource Manager. L&T comprise ten people in the FC. The second is the Security and Loss Prevention (SLP) department, to which is assigned the role of monitoring and surveillance to detect instances of theft, to help the PSs in finding any lost or missing products, and to identify and report any suspicious behaviour. Their duties are divided between patrolling the FC and the dock premise, screening the lorries and trucks which enter the FC premises, observing the CCTV screens from the control room, and standing at the gates scanning and checking the associates and the drivers when entering and exiting the FC. The protocol during entry is to deposit all the personal belongings on a tray, which included keys, wallets, belts, glasses, caps, headphones, mobile phones, earrings, and jewellery and then to walk through the metal detecting gates. If the gate beeps, security examines associates' pockets, shoes, waist, shoulders and shirt collars. On exiting, a similar process occurs. Guards are also posted in the High-Rate Value Area, where the racks contain only expensive items. There, only permitted associates are allowed entry after logging their name and ID at the register and, when exiting, are re-screened. On any one shift 20-25 guards are present in the FC.

Three other supporting departments, Warehouse Health and Safety (WHS), Information Technology (IT), and Procurement, additionally contribute to the FC's functioning. The WHS's purpose is to ensure that employees are aware of fire exits, provide safety equipment, such as gloves, helmets, and high visibility vests, train them in the protocols to follow in case of accidents and how to avoid injuries. In practice, though, their work encompasses certain monitoring activities, ensuring associates were using ladders to climb to higher racks, that they are shouting 'corner' when crossing junctions, and reporting to the OM and issuing warning letters if there are violations of these protocols. The IT department audits and monitors the usage of the hand-held

scanners, the printers, laptops, and desktops. They make sure that scanners are appropriately connected to charging points during associates' breaks and identify misplaced scanners and the associates responsible. They then reprimand that associate for breaching workplace discipline and report transgressions to the OM and HR for further action. The role of the Procurement department is to keep counts of pallets, totes and bins, which are used throughout the FC and, if required, place fresh orders of these equipment when one becomes damaged beyond the point of repair. Each of these three departments comprises four to five members each per shift.

Finally, the HR department of four or five members have the ultimate authority regarding the retention or termination of associates following reports of breaches of protocol from managers in the Operation Department and from the supporting departments. They are most active at the end of each month when decisions are taken on contract extension and termination and on recruitment. HR is also the primary point of contact for associates seeking redress. Requests for night shifts and overtime duties for additional earnings and leave are entertained in person or through a mobile phone application. One associate elaborated:

> We have an app, which the HR shares with us in our phone. In that app you can know how many days you have worked, when the salary will come, when you have night shift, when you have week off and so on. Through the site you can apply for the leave. If the status gets approved by the HR, then okay. Otherwise, we must go to the company next day, work for the day and ask the HR manager, that the request is not approved. They would ask our ID and through their computer, approve our request of leave. Sometimes, if work is more, they would tell us to take the leave later. It is completely on their will *(BLR8-SC27-AA27)*.

6.2.2. Nature of Contract and Pay Structure

Amazon relies on different types of contracts to recruit workers and managers in the FCs. Three were identified; the first is the permanent full-time contract which in the company's jargon is a blue badge contract; the second is the third-party full-time contract called the green badge contract; and third is the third-party part-time contract termed the yellow badge contract. Blue badge employees are recruited by Amazon directly and under the company's payroll, whereas green and yellow badge employees are recruited by Amazon indirectly through third-party recruitment agencies. Ten to twelve different recruitment agencies provide associates with full-time contracts. Depending on the nature of the contract, the employees' pay structure, tenure of contract, social security entitlements such as health insurance and retirement benefits, and other entitlements such as travel allowance and attendance bonus are determined.

Among these third-party contracts, the green badge employees are recruited for associate, senior associate and ambassador positions. These full-time workers have a work schedule of ten hours per day with eight days off in a month and are paid monthly. At the time of the field work, green badge associates reported a basic salary of 13,000 INR. Additionally, if they attended at-least twenty-one days out of twenty-two days a month they earned a lump sum attendance bonus of 2,400 INR. If they attended twenty days out of the twenty-two days and had received HR's approval for the two days' leave, they received an attendance allowance of 1,750 INR. Any further absence or leave resulted in no attendance bonus. Further, if green badge employees undertook overtime duty, working on their designated leave days, they got additional payment of 1,400 INR

per overtime shift on top of their basic salary. Finally, they earned 115 INR night shift allowance for each shift, irrespective of whether a regular shift or an overtime shift. On average, an associate got ten days night shift duties per month. They were also entitled to social security benefits, such as a provident fund and social security insurances. They also were provided with a free pick-up and drop-off service by the company or 65 INR travel allowance per day if they did not avail the service. This payment structure and entitlements were similar for all the associates, senior associates and the ambassadors, as explained by one FC ambassador:

> Being ambassador is easy. New employees come at the FC all the time; it is necessary to train them, so they recruit ambassadors from the senior associates. We are also under agencies. But becoming ambassador will not give you any higher pay. We earn the same amount as the newcomers whom we are training *(BLR18-FC7-AA33)*.

For these green badge employees, contracts are either of one month, three months, six months or eleven months duration. All associates are given an initial contract for one month only. Then, depending on their performance, either their contracts are extended for another month, or for three months, or not extended at all. Similarly, for those with a three-month contract, their contracts were extended for either another three months, or for six months, or not at all. In this regard, one full time associate explained:

> They keep on extending our contract tenure after the end of the contract on a short-term basis, depending on our performance of course. Like that they will stretch a one-month contract to three months, then six months but never more than eleven months, otherwise they have to make us permanent and have to increase our basic pay. With this short-term contract extension, they will keep one worker for one to two years and then lay them off *(BLR3-FC1-AA23)*.

These sequential short-term contracts inculcate a profound sense of insecurity among workers, compelling them to work intensively according to demanding company standards to maintain their employment. Thus, contracts' tenure is a crucial element of Amazon's labour utilisation strategy.

The third-party part-time workers, yellow badge associates, are scheduled to work a minimum of two shifts per week of ten hours duration. They earned 710 INR for a morning shift and 830 INR for a night shift. Other than the night shift bonus, they received no travel allowance nor attendance bonus unlike their green badge counterparts. Nor could they access social security benefits. There was only one recruitment agency issuing part-time contracts to job seekers. These part-time employees first register with the agent, who share the list of applicants with Amazon. When shipment orders are high, especially during the festival seasons, Amazon opens slots for part-time applicants. The registered employees are either informed by the agency about the vacancy or through the Amazon's software application which they are required to install on their phones. The slots got booked on first come-first served basis. Through field observation it was clear that many yellow batch employees waited outside the FC one hour before the start of a shift with their phones trying to book a slot. Once the shift started, many departed, disappointed at their lack of success in attaining work. Blue badge employees are recruited for the post of floor managers, comprising of PSs and PAs, and other higher managerial posts such as OM and SL by Amazon. Their monthly basic salary was 25,000 INR or higher, depending on their position in the management hierarchy. They are entitled to retirement benefits, health insurance, travel allowance and even home rent

allowance, among other perks which proportionately increase, according to the seniority of their managerial position. They also have longer paid holidays than green badge employees. Being a blue badge employee is the most sought-after contract given that it has a tenure of one year and above and is extended annually.

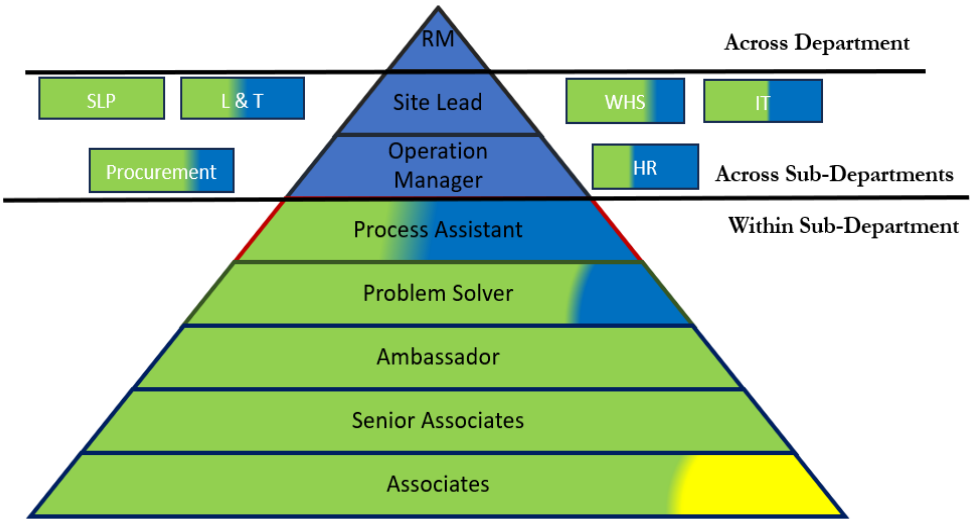
Over time several changes had been made to the rules and practices of contracts. While discussing the scope for promotion from green badge to blue badge contract one floor manager elaborated:

> Previously after working for three to four months as an associate in off-role (green badge) they would promote you to direct payroll of Amazon (blue badge). If you can meet the qualifications and the performance level, then three to four months was enough to get the promotion to on-role. However, now the FC is not recruiting anybody in the on-role position among the associates. So, all the associates are now in off-role, under the agencies' contract. Now the process has changed. One can get into the on-role post directly only, not through promotions *(BLR21-CR7-PS2)*.

A further change involved certain managerial posts to be recruited via third-party agents. One recruitment agent explained this addition to the main responsibility of recruiting associates:

> However, recently, after Covid we are providing people for HR department, PS and PA posts as well. Whoever, we provide, will remain as third-party contract. Along with us, Amazon also recruits directly. They mainly recruit for PA and above post; however, they are relying more on us for almost all the positions in the FCs nowadays *(BLR35-FC11-RA2)*.

Figure 6. 2. Organisational Structure and Contracts in the FC.



Note: Blue-Permanent full-time contract; Green- Third-Party full-time contract, Yellow-Third-Party part-time contract. Pyramid is for the Operation Department. Sub departments comprise of IB, OB, FC DOCK and ICQA; SLP- Security and Loss Prevention department; L and T-Learning and Training department; WHS- Warehouse Health and Safety Department; IT-on floor Information and Technology department. HR-Human Resource department. RM-Regional Operating Manager

Figure 6.2 provides a diagrammatic representation of the FC's organisational structure. It shows the distribution of employees across the different positions and roles, and contracts pertaining to each position. It demonstrates a labour cost minimisation practice by substituting permanent

positions inside the FC, with short term contracts to all the workers and even substantial number of shopfloor managers and managers in supporting departments. Moreover, it illustrates that the recruitment strategy of Amazon India reproduces and exacerbates the trend to increased informalisation in formal sector predominant in India (Chapter 4).

6.2.3. Cost Cutting Strategies and Labour Turnover

Amazon's recruitment decisions are greatly influenced by their strategic implementation of cost minimisation. Along with the practices employed to address fluctuations in seasonal demand by using part-time employees, Amazon execute layoffs and turnover to minimise labour costs. One associate gave a vivid illustration:

> During the offer time (festival season and Black Friday sales when heavy discounts are given to the online customers), the agencies intake a lot of workers. If there are vacancy for 1,200 workers on normal time, they will intake 2,000 workers during this period. After the end of the offer period all the additional workers are released in one go by Amazon. They are hired only for one or two months *(BLR4-CR2-AA24)*.

Further, Amazon also rely on labour rotation between the departments to manage high shipment orders with a fixed number of employees, resembling the strategic use of functional flexibility (section 2.2.2). For instance, to expedite outbound progressing of orders, many inbound stowers could be shifted to picking and packing roles. In executing these practices Amazon relied not only on 'green badge' employees, but utilised all employees, including floor managers from the operations department and members of supporting departments. One blue badge IT employee elaborated on this labour rotation practice:

> Whenever the load is high, the Ops department will ask from the employees of other supporting departments to provide one or two members for one to two hours in the shift. To do cost cutting, they won't hire new people. For example, when the Ops department need more people, they will ask from IT, WHS, and Procurement departments one or two people for one to two hours to work as pickers and packers. They will ask to HR to send a handful of people from each supporting department to the Ops department. So, from each team if they get at-least one person for one hour, total seven persons and seven hours will be acquired by the Ops from other departments. So, for these seven hours, they have saved the labour cost *(BLR25-RC5-IT1)*.

As the numbers of orders fluctuate and labour rotation and layoffs are implemented, so the size of the workforce rises or falls. Arguably, then, Amazon transfers the risks associated with market demand onto employees. In this regard, one third-party full-time employee explained:

> During October, Dussehra season, around 600 to 800 workers will be working in each shift. After the end of the festival, there is a massive layoff. Now hardly 100 people are working combining all the departments in each shift *(BLR7-CR5-AA26)*.

This push and pull in the FC's employment size was easier to achieve because of the short-term contracts which were extended only incrementally. Hence *"in Amazon after every two to three months the batch of the associates changes completely" [BLR30-RC6-SG2]*. Further, this short-term recruitment is sustained by the reserve army of labour in the region owing to which:

> whenever FC needs more people, one mail from the HR to the recruitment agents will be sufficient to attract innumerable people at the FC's doorsteps. After all, those whose contracts are terminated are not going anywhere, they will be rehired as and when required. The job market is bad, and Amazon knows this; hence they can afford to be arrogant and greedy *(BLR32-FC10-AA39)*.

A longer-term trend is reported, by which the overall recruitment intake, including both associates and managers, is reduced. Evidence was provided by interview testimony, as the following response by an ambassador indicated:

> Initially when I joined, in one shift there was eighteen to twenty PAs. Now that post have been reduced to ten. Amazon has put everyone under target. They don't want to keep extra PAs also. They want to work with only the bare minimum required number of people *(BLR7-CR5-AA26*).

The impetus for reduction in the numbers employed, combined with the company's objective to minimise wage cost was accelerated by the Covid-19 pandemic. The company capitalised on the conditions to justify workforce reduction. One blue badge employee of the L&T department described how:

> After corona Amazon have removed several employees. Mainly they have removed contract employees, but blue badge guys are also hired less now. They are using a drastically smaller number of employees now to operate the FCs. The company have moved into cost cutting. So, they are laying off very vigorously. They have not removed all the people yet. They are collecting all Key Performance Indicators of everybody. The lower managers need to take the report of the performance and produce it to their higher authority. Then they will decide who they will keep and who they will lay off. They have targeted to reduce the resources to 20,000 people from these units by one or two financial cycles *(BLR28-RC4-LD2)*.

Notwithstanding these layoff and labour rotation practices, the widespread recruitment of part-time, short-term contract employees, and the smaller workforce, it was imperative that the execution of picking, packing, stowing, sorting and other tasks essential for seamless progression of shipment orders did not get undermined. The evidence for this overriding priority from both interviews and field observation is detailed in the following section, where the FC's functions, the flow of orders between the sub-departments, and the division of labour is presented and subject to preliminary analysis.

6.3. Flow of Work and Circulation of Shipment Order Inside the Fulfilment Centre

6.3.1 The integration of items into Amazon's Fulfilment Centre

All items dispatched by sellers proceed initially to a RC, where they are labelled, to integrate them into Amazon's distinctive Warehouse Management System (WMS), Amazon's in-house software application, designed to manage warehouse operations and control the labour process algorithmically. Just like any algorithms, its effective usage relies on input of data, which in the FC are the outcome of workers' identification codes. All items have a unique seller given barcode,

either an UPC (Universal Product Code) or an EAN (European Access Number)[30] or an ISBN (International Standard Book Number)[31]. Once the item enters the RC, its details comprising brand, weight, flavour, colour and other information, alongside the sellers' details are uploaded onto the WMS. This data set is compiled into two new labels, the first consisting of only the product details in a unique alphanumeric barcode, ASIN (Amazon Standard Identification Number). This ASIN code gets displayed on Amazon's shopping websites for customers' reference. In the organisation's internal terminology, the ASIN code becomes the 'BOO label' following the ASIN code's first three characters. The second is FNSKU (Fulfilment Network Stock Keeping Unit), which contains the seller's information along with product information and are loosely translated to 'XOO label' in the FC's working parlance, because of its first three characters. Associates are formally trained by the L&T to identify the items based on these XOO and BOO labels, and items without either are called 'Orphans' and are marked as damaged for PSs to relabel them.

Figure 6. 3. Items with ASIN and FNSKU label

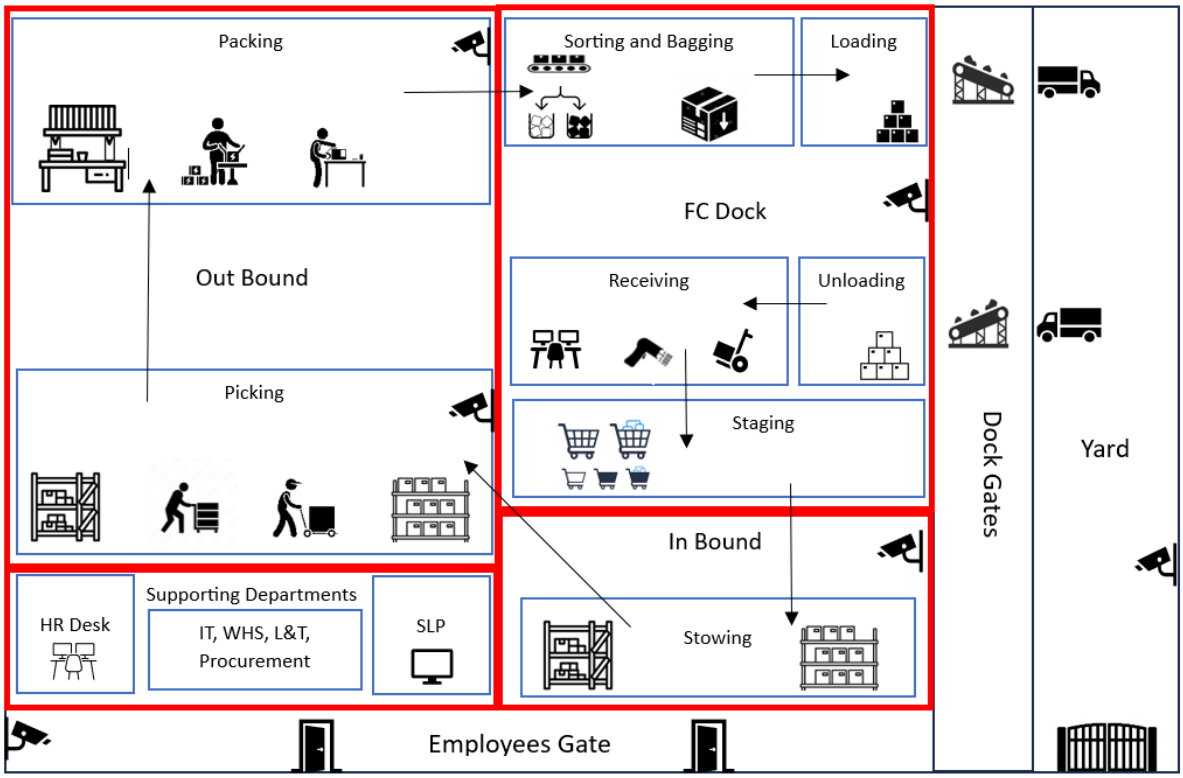
After an item receives an FNSKU and ASIN, and is integrated into the WMS, both product and the seller's details are updated, so that they can be accessed across all the Amazon units, including FCs, SCs, DSs and other RCs across India. Then the labelled items are relocated from RCs to FCs. While the RC geographically closest to the seller receives the items to be integrated into the WMS, they are transferred to the FC nearest to the order-placing customer.

[30] For electronic goods mainly
[31] For Books and magazine

6.3.2. Division of Labour, and Processing of Shipment Order in the Fulfilment Centre

Items in the FC progress through different stages and are delivered to either the DS nearest to the customer's address, or to the SC for customers at distant locations. These interlinked activities are undertaken and performed by associates under the supervision of floor managers, particularly PAs. Each item is processed sequentially through a series of functions and is constantly kept in motion within the FC. Figure 6.4 provided a schematic diagram of the series of functions inside the FC through which the items are progressed and processed.

Figure 6. 4. Processing of the products in the FC



Source: Author's representation of the FC's Floor Map based on direct observation

As the figure shows, the three main sub-departments encompassing all the essential activities as the items progress from the unloading to loading through the different functions in the operation department are inbound, outbound and FC-dock.

6.3.2.1. FC Dock: Unloading and Receiving

Items enter the FC in brown boxes via the FC-Dock, where they are unloaded from trucks and placed on wooden pallets. The FC has twenty-two dock gates, where the lorries, coming from different RCs, are parked and their containers attached to conveyor belts. Two unloaders enter each container and place each box containing the item onto the belt, which carries it into the FC. At the end of the belt, another couple of unloaders pick the boxes and place them on wooden pallets. This is the *unloading* process. Prior to belt being attached, the lorry's key is taken from the driver to prevent any unwanted movement of the vehicle when attached to the belt, that may cause accidents. Once the boxes reach the pallets, they are opened, and the FC-dock's PA count the items inside the box and match them against the emailed invoice received from the seller. While

counting, an associate scans the item's FNSKU to update its location in the e-LSN in the WMS. The scanner is a hand-held device, like a mobile phone placed over a frame or grip with a button in its handle. When the button is pressed a laser light hits the barcode or QR code and scans it. Once scanned, the items are officially *received* into the FC and the WMS is updated. Then, the items are placed on a conveyor belt, which carries them to the staging area where the items are arranged in carts for transfer to the IB department for *stowing*.

In transferring items from the FC-Dock to the IB department, two or three associates, called *water-spiders* or simply *spiders*, pick the items from the receiving planks and place them on the conveyor belt in the FC-Dock area. This belt is also called the receive line. At the end of the receive line, another water-spider lifts the items from the belt and places them on a two racked *stow-cart*, located in what is termed the *staging area*, marked out on the floor with blue tapes. The carts are supposed to be kept within this designated space, and only when full are pushed by *transporters* to the 'drop zones' on different floors of the FC. First, the ground floor's drop zones, named P1, are filled with the carts. Then, the VRC (Vertical Reciprocating Conveyor) transports carts to the designated drop zones on the first floor. One transporter explained that *"We would push the trolley in the lift (VRC) and then use the stairs to go up. We are not allowed to enter the lift because of accident risk." [BLR14-FC5-AA30]*. Similarly, when the drop zone P2 is filled, carts are transported to P3 and, finally, P4. The floors of the drop zones are also blue taped, with pillars having QR codes pasted on them to mark the exact drop zone location. Once the full carts are parked in the respective drop zones, the movement of the items from the FC-Dock to the IB department is complete.

Unlike the FC-Dock, the roles in the IB and OB departments are less variable. For example, a stower is expected to remain in that role for at least a month before being permitted to relocate to another function or department. However, in the Dock, except for the loaders and unloaders, the other roles are not fixed. An associate working as a water-spider for an hour might be assigned to the role of a transporter for the next couple of hours. Similarly, a receiver might be a water- spider in his/her next shift. So, to work in an FC-Dock, means performing a range of tasks within the same shift. They are put under intense pressure by the Dock PA and PS, who shout at them periodically to work *"faster, faster"*. These floor managers closely observe associates for evidence of shirking, which promptly leads to waning letters or at least to the receipt of a feedback form, following scolding often in the foulest of language, as explained by one associate *[BLR32-FC10-AA39]*. Finally, it is worth mentioning that the water-spiders and transporters are among a few roles in the FC, which did not require hand-held scanners, so digital supervision was not possible.

6.3.2.2 Inbound: Stowing

After the carts are parked in the drop zones, the *stowers* pick a cart, scan the zone's QR code and stow-cart's bar code. Scanning the cart with the associate's hand-held scanner connects the stower's unique ID, and subsequently the identity of the stower, to the particular cart and its items which are simultaneously updated on the WMS. The stower must scan the drop zone QR code to enable the carts to be scanned.

On every floor close to the drop zones there are desks where the line PSs of the IB department stand. The line PS shares a leaflet, called the bin-list, which details the floor's empty or stowable bins. The stower takes the bin-list, which has a printed descriptor, such as 'P3L518B230', which signifies that on the second floor (P3), a bin in the aisle for the large category (L) is empty at the

rack number 518 in the second shelf from the ground (B) numbered 230 (e.g. Figure 6.5). Separate bin lists indicate different item categories. Without the bin list, the stower would not know which bins were empty and therefore usable for stowing. In practice, the line PS *"sometimes neglects to provide appropriate bin lists as they know that we would ask anyway because without which we will be clueless where to go"* as one stower *[BLR32-FC10-AA39]* explained. There are a few locked empty bins which are used to keep only damaged items or those with problems. If a stower mistakenly scans these locked bins while stowing, the scanner displays 'error' and the stower will be heavily criticised by the IB PA for ignoring the bin list. Such a transgression will generate a feedback form or even warning letter, depending on that stower's past performance and rapport with the PA.

Figure 6. 5. Bin list of 'large' category on second floor

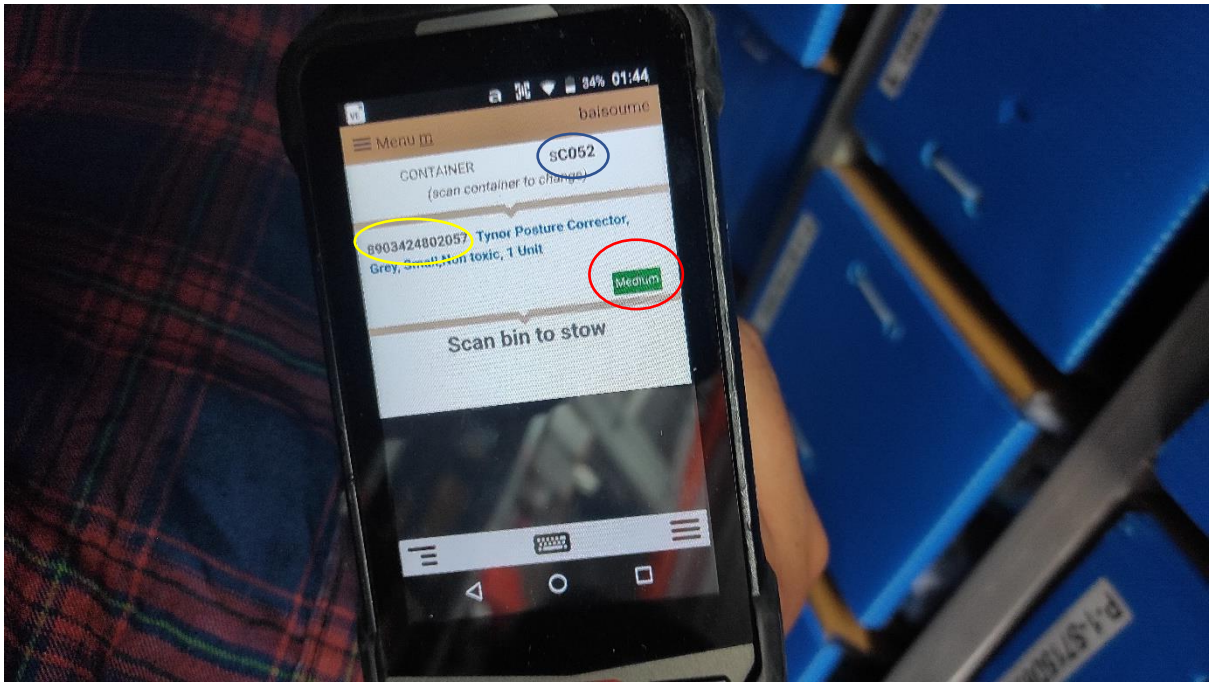
Having collected the bin list from the line PS, the stower takes the cart to the appropriate empty bins and places the items inside. Scanning is the indispensable action for auto-updating the WMS about the precise bin location of a particular item, information that is essential for picking and further processing. Thus, the stower scans the item, the scanner notifies the stower whether the item is Small, Medium, Large, clothing, footwear, or the pallet category (Figure 6.6). An additional category, 'groceries', is not explicitly identified on WMS, but the associates are instructed to separate them and place them in distinct bins at any of the first four racks of each category aisle on P1 only. The items are identified by the scanner as S, M or L and the stower needs to check for the FSSAI (Food Safety and Standards Authority of India) stamp, to identify a grocery item.

The stower uses the stow-cart's second rack to separate items according to the appropriate item category. They then push the cart to the aisles with racks for small items first, locate empty bins from the list and park the cart. Next, they scan the empty bin, gain approval from the scanner's screen that the bin is correct, scan the items, place them in the bin and rescan the bin. The scanner then registers the items as 'stowed'. The stower has discretion to stow any small items as they perceive will fit into the bin. A completely empty bin may stow twenty-five to thirty small items. A medium category bin can stow around six items. However, it is important to acknowledge that these quantities are not organisationally prescribed but are understood by stowers through experience. Only the company protocol which the stowers needed to keep in mind while stowing adheres to the BOOSTA norms, described in detail in section 6.5. After completing the small

items, the stower proceed to the aisle with the medium bins and continue stowing until the cart is emptied.

However, there are certain exceptions to this prescribed routine so that, to a limited extent, stowers are required to be adaptable. For example, if a cart has a large item remaining, and no empty large bins are available for stowing, then the stower might use any sized bin. So, a bin might be seen to contain safety pins alongside dumbbells. The inability of the WMS, via the hand-held scanner, to detect whether an empty bin was for large items or small items, compels the adoption of this rule of thumb. This is also the same reason why the line PS sometimes does not provide the stower with bin lists of all categories and often only for large bins, since small and medium items could be comfortably accommodated. This inventory management strategy of Amazon follows the principle of 'organised disorder' (Muralidhara and Vijai, 2016), which obscures the logic of storing from the workers' comprehension into the algorithms running the WMS.

Figure 6. 6. Stowing scanner



Note: Stowing scanner identifying the category of the item (Red Circle), notifying the cart number (Blue Circe) and giving description of the item along with the item's EAN (Yellow Circle).

6.3.2.2 Outbound: Picking

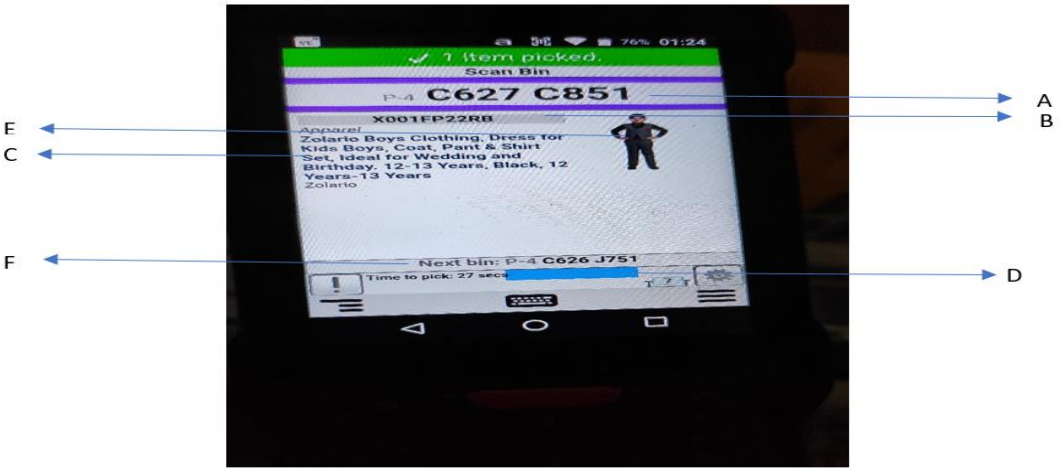
Stowing work is followed by *picking*. According to the testimonies of many participants, picking is the most difficult role in the FC and is pivotal to determining the speed of processing the orders. The basic role involves selecting the exact customer-orders from the bins, placing them in totes which are taken to and dropped onto the conveyor belt, which transports the items to the next function. However, pickers' activities are more diverse and challenging than this simple description suggests. A picker first logs onto a hand-held device, just like the stower, and similarly is provided with a list but, unlike the paper bin-list, the picklist is assigned digitally via the scanner itself by the OB PA. Then, the picker scans the empty tote's QR or barcode (Figure 6.7) and collects it. The scanner then displays, in turn, the items to be picked. The displayed information includes the bin location of the item, its label code, a picture of the item and a brief description and, crucially, a

count-down timer prescribing the time to reach the bin, scan the bin, pick the item and scan it. The bin location of the next item required to be picked is also be displayed on the screen (Figure 6.8).

Figure 6. 7. Totes with barcodes and tote numbers for picking

Note: Yellow totes are for zone pick and grey totes are for transhipment pick.

Figure 6. 8. Hand-held scanner displaying picking information



Note A: Bin location of the immediate item to be picked. B: Label code of the item. C: Item's short description. D: Countdown timer. E: Picture of the item. F: Bin location of next item.

The picker selects a pick-cart, with stacked totes, pushes it to first location displayed, scans the bin, and searches for the item that has a label code matching that displayed on the scanner screen.

After finding the item, the item's barcode corresponding to the label code is scanned, and then the scanner acknowledges the item as picked. The scanner immediately displays similar information for the next item to be picked, and the process continues unabatedly. Sometimes, pickers are told to pick more than one item with same label code from the same bin. Then, the rule is to pick as many items instructed by the screen, but scan only one and type the number on the scanner and press enter. This is called multi-item picking. After completion of multi-item picking, the picker must rescan the tote immediately. The picker can make a judgment as to whether a tote is full or not, adhering to the BOOSTA norms (see section 6.5). If they find it to be full, before picking the next item, they press 'F' on the scanner, which instructs the picker to scan a new empty tote. When the tote becomes full, the WMS is updated when 'F' is pressed in the HHD scanner, and the tote is dropped onto the conveyor belt. Sometimes, the scanner instructs the picker to scan a new tote and automatically close the previous tote without the picker typing 'F'. This occurs when the tote's items are all for the same customer, or all items are in the same time slot for dispatch and the next item to be picked falls under a different time slot. So, sometimes the picker is instructed to scan a new tote even if the 'active' tote has only two items or even one item and sufficient space exists for additional items. These time slots for dispatch of the shipment orders are called CPT (Critical Pull Time) which get distorted in the common parlance of the FC as "Customer Promised Time" (See section 6.5).

This basic functioning of picking does have certain variations, identified by the colour of the totes or the type of carts. Differing picking types are important for distinctive labour processes, because of the consequences for performance evaluation. There are five broad picking types: zone picking, single non-sort picking, multi-non-sort pick, transhipment picking and fracs picking. Zone picking is the most common, in which pickers are assigned to a preassigned zone in the pick area (also called pick-towers). In zone picking, a picker has thirty seconds on average to scan the bin and pick the item from the bin with a range varying from fifteen seconds to two minutes. Zone pick items are predominantly B2C orders.

Pickers of single and multiple non-sort picks are mainly those who manage to remain in employment for more than four to six months. In these cases, a single picker is assigned to cover an entire floor in the FC and the bin locations of the picklist are at longer distances in comparison to those for zone picks. Unlike zone picking, the average prescribed picking time permitted to pick the item is one minute instead of thirty seconds, ranging from forty-five seconds to four minutes per item. Non-sort items are mainly, although not exclusively, large and pallet items like washing machines or televisions, that have even longer promised delivery times than others. Unlike zone pick carts, which can carry three totes at a time, non-sort pickers use either a bigger cart, called U-Boats, which can carry six to eight totes, or big cages with no totes. Filled cages are not placed on conveyor belts, but are kept beside the VRC or in the 'buffer' shelfs near the conveyor belts, from where the transporters convey them to the designated non-sort packing area.

Transhipment involves moving items from one Amazon FC to another and is not concerned with direct customer delivery. Transhipment picking is a form of bulk picking, where the bin locations are closer to each other than even in zone picking and, from each bin usually multiple items are picked. Items must be picked in less than ten seconds on average with a five to fifty second range for individual items. The final type was frac picking, a variant of bulk picking. Here, the distances between the bins are not significantly different from those of zone picking but, from each bin,

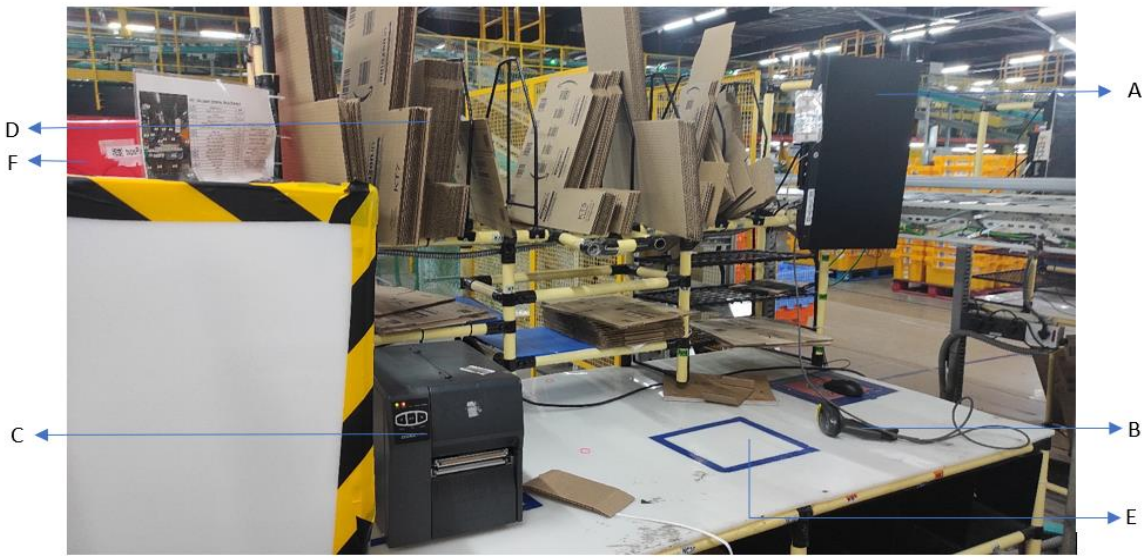
items must be picked in bulk. For instance, for small items, the number of items can be seventy-five or even one hundred. These items are generally picked for relabelling, or for returning to vendors for restowing in the FC.

6.3.2.3. Outbound: Packing

The next stage in the circulation of items within the OB department is *packing*. Packing, unlike picking, is a stationary job, where packers stand at designated stations. The station (Figure 6.9) is a desk with a monitor screen, a label printing machine, a tape machine, an airbag machine and piles of cardboard boxes of different sizes. On each desk there is a blue taped area, where items to be packed are placed. The packing stations are located adjacent to the conveyor belts, also called packing lines, onto which pickers have dropped their filled totes.

First, the packer takes a tote and scans it. Then the monitor displays details of the items in the tote. If any discrepancy between the items and its description displayed on the screen is detected, the entire tote is separated, and the packing PS is informed. In the absence of discrepancies, the packer takes one item from the tote and scans its FNSKU label. The monitor then displays the item's details and recommends a box type to be used for packing. For example, for a single small item a paper envelope might be suggested. Scanning the box updates the WMS with the detail of the selected box. To pack the box tightly after inserting the orders the remaining space is filled with airbags, then the lid is closed and the mouth sealed by heavy tape, automatically supplied by separate machines nearby following the scanning of the package. In parallel, a stickered barcode, the SPOO label (Figure 6.10), containing the order, shipment and customer details is printed and pasted to the package. Then the package is placed on the conveyor belt which carries it to the SLAM machine for the final processing.

Figure 6. 9. Single sortable packing station



Note: A: Monitor. B: Packing scanner. C: Seal tape machine. D: Cardboards for packing. E: Pre-packing area to keep the items. F: Bin for damaged or wrongly picked items.

Of the thirty-six active packing lines in this FC, around twenty are for single packing and sixteen for multi-packing. Each packing line has ten to twelve stations. Non-sort items' packing does not require a SPOO label and thus have no packing lines. Such items are placed on a pallet after picking

and taken directly to FC-Dock for loading and dispatch. A final line exclusively packs gift items, and processes around twenty packages per shift by one or two packers summoned from other stations by the OB PA.

Figure 6. 10. SPOO Label

Note: The barcode containing information of shipment detail and the invoice with the human readable shipment detail retrieved from scanning the SPOO by the SLAM machine.

Figure 6. 11. Black Non-Sort Carts behind the conveyor belt

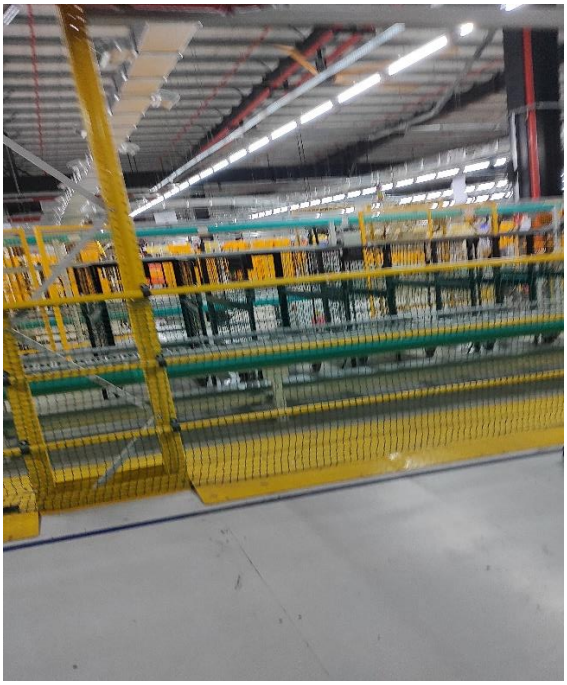
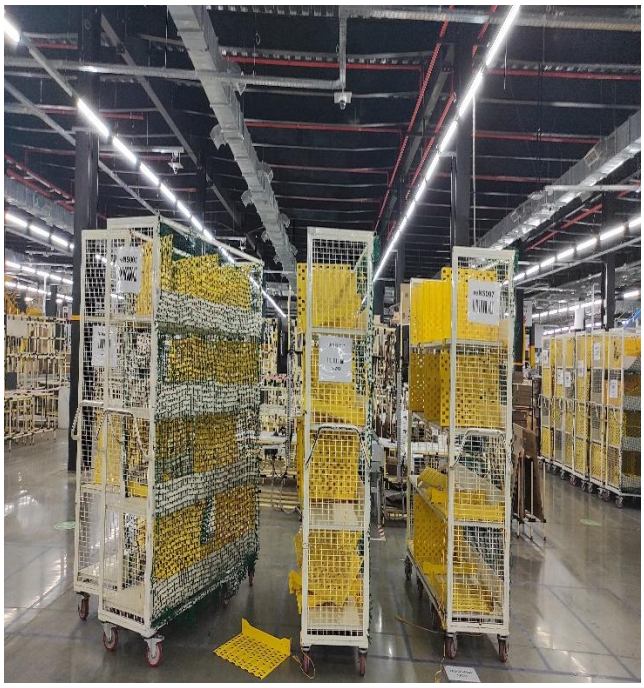


Figure 6. 12. Non-Sort Re-bin Racks



Four additional roles in OB are performed by associates: *tote-wrangling, re-binning, water-spiders,* and *lifting*. Tote-wrangling occurs after picking and before packing. Wranglers take filled totes from the conveyor belt and scan them, to crosscheck the number of items on the tote with that displayed on the scanner screen. After checking the number of items against the scanner figure, the wrangler scans each item which informs them whether the item was for single packing, multi-packing, transhipment or fracs. Accordingly, the wrangler places the items into separate totes, closes the totes (by pressing 'F') and places them on appropriate packing lines. The role of tote wrangler is pivotal in ensuring that the different packing lines carry only the appropriate items. Usually tote wrangling is done by one associate per shift. An OB PA reported that this work is *"cumbersome and because the required level of skill is higher than for other roles, it is assigned to an expert." [BLR2-CR1-TL4].*

Re-bin re-stacks items from the tote to shelves, which occurs after tote wrangling and before packing commences. Re-bin associates pick one item at a time, scan it, and place it in any available empty bin in re-bin carts beside the packing station. From there the packers take the items, place them in their station and start packing. Re-binning and the packers taking the items from the bins happens simultaneously. The packers have discretion over selecting items from the bins. Re-binning is exclusively used for non-sort items processing and in multi-item packing lines and almost never in the single packing lines.

Water spiders in the OB department carry empty totes and place them throughout the picking areas on all four floors near the points where pickers drop filled totes onto conveyor belts. Their role is important to minimise the time pickers require to find empty totes, and thus contribute to the continuous flow of items through the facility.

The lifter's work follows packing and prior to the packages being sent to the SLAM machine. The lifter ensures that the SPOO labels are on the upper side of the package only, turning the packages when necessary as they move along the conveyor belt. Although a simple role, it is a crucial step in ensuring that the SLAM machine operates effectively. Unlike pickers or packers, tote wranglers,

lifters, water-spiders and re-binners are not dedicated roles. A handful of associates per shift in OB department engage in all four activities rotationally. Most have at least one month's experience of both picking and packing. Only re-binning of these four roles has some targets regarding the number of parcels to process in one hour (Section 6.4).

6.3.2.4 Back to Dock: SLAM, Sorting, Bagging, Loading

After packing, the SPOO labels are attached, the packages are sent via conveyor belts to a SLAM (Scan, Label, Apply, Manifest) machine which scans the SPOO label and retrieves the human readable invoice of the shipment and attaches it. The SLAM machine also performs the crucial final quality check, weighing the parcel and comparing it to the expected weight contained on the SPOO label. SLAM is the only function in the FC which was completely automated without need of human intervention, excepting the activity of the lifter. Items are transported upwards by conveyor belts to the SLAM machine, which has inbuilt scanners.

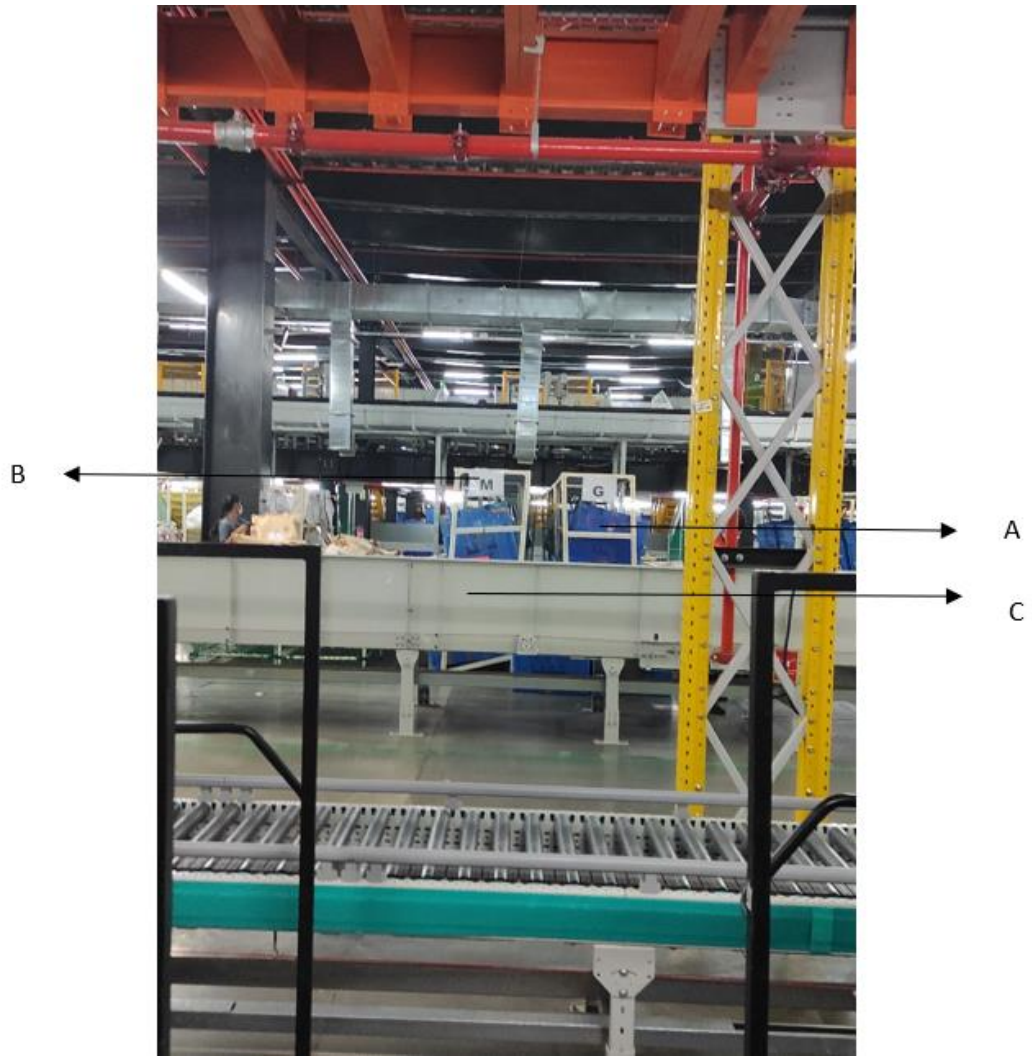
Once 'Slamming' is completed, the belt carries the packages to the sorting area, were a machine segregates them according to delivery location with two distinct sorting lines. The most common line is line haulage (LH). There are around four different LH lines, each with around twelve different branches, which are separated alphabetically by cities. For instance, orders for Hyderabad, Delhi or Kolkata are sorted on the LH lines. Another sorting line is the milk-run category, which has around twenty lines for items within Bangalore, which are transferred to regional delivery stations. For both LH and the milk run, sorting is done automatically by the sorting machine reading the SPOO labels. The milk run sorting machine is located above a conveyor belt at the side of several chutes, each for separate locations (Figure 6.13). The machine drops packages from the belt to the appropriate chute. The next stage is *segregation and bagging*. Segregation was done automatically for milk run items, and *bagging associates* are stationed at the foot of the chutes. Opposite each chute a paper is pasted either on a wall or on a rack with a QR and alphabetic code representing particular Bangalore locations. Bagging associates scan the QR code, select either one big grey tote or a blue sack and scan its barcode. Then, they pick one item in turn from the chute, scan it and fill the tote or the bag with the packages. Once the bag/tote is full, the bagging associate closes the lid of the tote or seals the mouth of the bag and pastes a machine-printed label on the bag/tote. The bags/totes are then placed on a conveyor belt and carried to the dock gates for loading into vehicles. One dock's floor manager explained that the *"recent introduction of cardboard boxes for bagging have been replaced with plastic cartons to prevent the risk of spilling of liquids which can damage the orders" [BLR31-RC7-TL6]*.

Figure 6. 13. FC Dock Milk run sorting.

Note: A: chutes connecting conveyor belt with bagging area. B: QR code identifying the location of the items. C: grey totes for bagging. D: conveyor belt for carrying totes to the dock gates. E: amnesty bins for those items fallen from the chutes to the floor and location is unidentifiable.

For the LH, the conveyor belt transports items downward from near the ceiling to P1, where FC-Dock water-spiders stack them on pallets. Another spider or transporter takes the pallets to the segregation and bagging area. Here, each rack has two shelves numbered with a separate alphabet and QR codes identifying different locations. Each shelf has a grey tote or blue sack like those in the milk run (Figure 6.14). However, unlike the milk run, associates segregate items manually by scanning the packages.

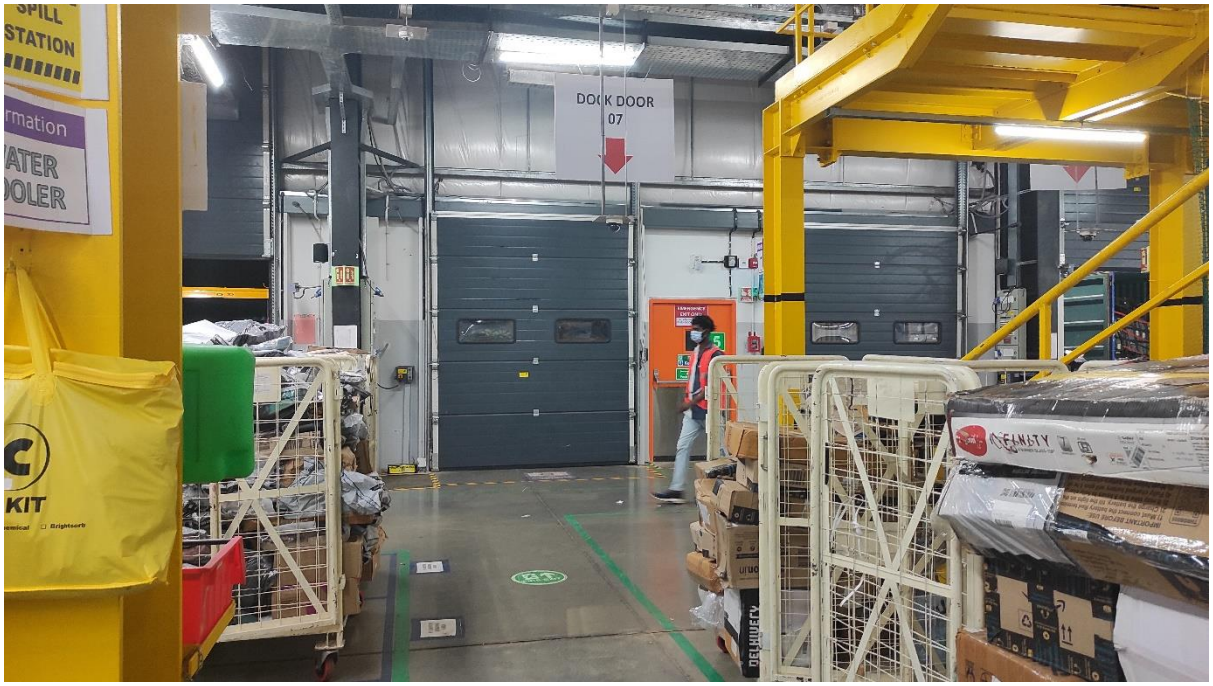
Figure 6. 14. LH sorting area in FC Dock



Note: blue bags (A), alphabets identifying delivery locations (B), and segregating station (C).

Once the belt has carried the tote/bags to the dock gates, they are picked by spiders and are crosschecked one final time by the ICQA associates under the supervision of dock PA or an operation manager, whoever most senior is on duty. This function is called *counting*. Vehicles are parked at the gate. A portable conveyor belt is attached to the truck, and one *loader* selects the items from the cart/pallet and drops them on the portable belt. Another loader stationed inside the vehicle, picks packages from the other side of the belt, and carefully arranges them inside the vehicle. Thus, the loading process, the final function in the FC, is completed.

Figure 6. 15. Dock Door, closed with packages on carts awaiting loading.



6.4. Labour Process and Control Mechanism: Technological and Algorithmic Control

Almost all the functions in the FC involve both digital and human interactions. All require scanning to keep the WMS continuously updated on every step as the item progresses through the FC and beyond. In parallel, the associates performing sequential roles in the FC's division of labour are pivotal complements to the digital processing of orders. Given the essential interconnectedness of the digital and the human in the labour process, it might be futile to rank the respective degrees of each at the different stages, but one might say that slamming function represents the most automated and with the least human intervention, while the converse is true for the loading and unloading functions.

A common characteristic, though, was that the technological architecture, notably the WMS, not only tracks the progress of items, but also measures, monitors, and evaluates the associates' actions. Managerial supervision is intimately informed by, and melded with, the array of digitally constructed and displayed metrics and thus technological control is imposed upon and experienced by associates simultaneously.

Inside the warehouses, associates work day and night. They are obliged to maintain certain criteria which were observed when the researcher attended a training session on 16th December 2022 and also described by one of the OB PA during an interview:

> …determined by [first]; not committing any error, [second]; meeting the productivity rate, and [third]; good behaviour. *(BLR31-RC7-TL6)*

Put bluntly, adhering to these criteria means keeping their jobs, failing to adhere to them means losing their jobs. By what mechanisms and means is management able to determine whether associates are complying with these prescriptions? It is instructive to discuss each in turn.

6.4.1. No Errors

An error is understood to be any form of incorrect scanning or scanning a barcode or QR code other than the one required. For instance, bins might contain several items. A picker after scanning the bin might incorrectly select a different item to the one displayed on the scanner screen and scan it. Another potential error is when a picker did select the correct item but scanned the wrong label. Usually, all items would have multiple scannable barcodes. To avoid confusion, pickers are instructed to scan the label which has the code displayed on the scanner. However, frequently the label displaying code is missing from the item. Although all items have the manufacturer's product label (UPC/EAN), they might not have Amazon's own labels (FNSKU/ASIN). This deficiency might originate during receiving, when the Amazon label was generated and the WMS was updated, but the receiver has neglected to paste it on the item. However, to maintain seamless processing, pickers are instructed to follow a label priority, as follows:

> First, check for LPN (Licence Plate Number). If that is absent then look for the FNSKU (XOO label), then look for ASIN (BOO label), then UPC/EAN/ISBN *(BLR36-FC12-AA40)*.

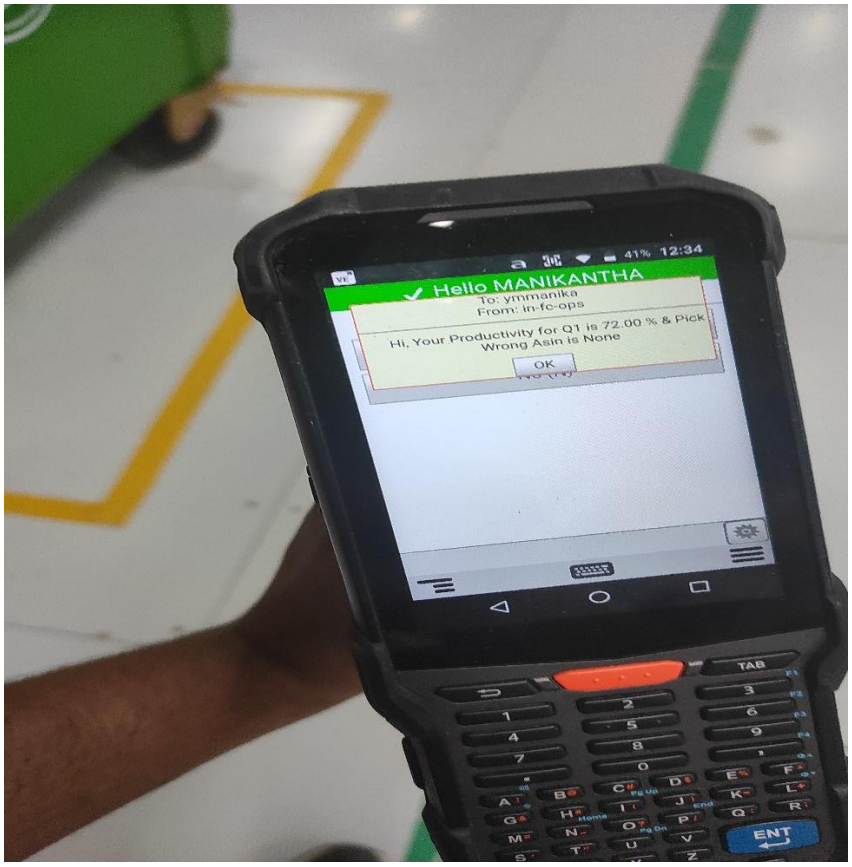
An error occurs whenever a picker scans an item's barcode when it has another barcode of higher priority. In the parlance and practice of the FC, errors are distinguished from mistakes. A mistake is the receiver's blunder of not pasting the label on the item, but an error occurs when the wrong item is scanned. The basic distinctions between mistakes and errors are threefold. First, not all mistakes are identified or captured by the WMS, but all errors are captured by the WMS. For instance, the mistake of not pasting the FNSKU/ASIN on the item by the receiver goes unrecognised by the WMS, as it is only sensitive to scanning the FNSKU/ASIN. However, if a picker scans a wrong bin or wrong item, this activity is recognised by the WMS, which can record the number of wrong bins or items from each scanner and identify the associate responsible through their log-in ID. In terms of disciplinary consequences, incorrect scanning can lead to job loss, but pasting the wrong label will not. Second, errors are used in a negative evaluation of an associate's performance. For instance, if an associate commits a single error on a shift, they will be given a corrective talk by a PS and if more than one error is committed, they will be issued with a feedback form. Seven to ten feedback forms will prompt a warning letter, and three warning letters will lead to termination. When asked about the potential consequences of scanning a wrong location or item, a picker explained:

> If you are scanning the wrong ASIN or a wrong location, the device will beep and give a red light. Which means- error. Lesser the error you make more secured your job will be. Your performance will be observed by the PA and the managers, those who are on duty in charge. These PA and PS keeps on siting in the system and observe your work all the time. If you do an error, the entire FC will get to know that. The PAs will know who the error has done, will scold that guy, for sure issue a warning letter. If it is the third warning letter, then bye-bye *(BLR1-SC26-AA22)*.

Third, all associates are informed of their performance by the OM, through pop-up messages on their scanners, the errors committed during their shift are enumerated, but not the number of mistakes (Figure 6.16). This distinction between errors and mistakes reflects the fact that the crucial

evaluation of the performance of the associates are highly dependent on whether WHS has registered the action and converted the actions into quantifiable metrics. In this regard, one blue badge employee of the supporting department explained that *"Amazon keeps on altering their rules and metrices. There is no guarantee that tomorrow mistakes will not be part of associates' performance metrices". [BLR29-RC5-IT1]*

Figure 6. 16.Scanner screen showing the number of wrong items scanned (picked) and productivity index value for first quarter of a shift.



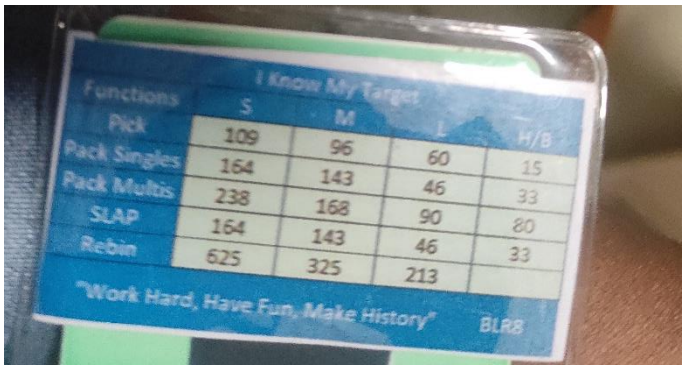
The WMS also instructs associates to rectify an error, after registering it and negatively evaluating it against them . For instance, when a picker scans a wrong item or a wrong barcode, the scanner instructs the picker to replace the item in the bin, scan the bin and then re-scan the correct item (Figure 6.17). So, even if the correct item is picked but the wrong barcode scanned, the picker must rescan the bin, then scan the correct barcode. Thus, the system simultaneously prevents the associate from progressing with the work with the associated error to ensure the final outcome of processing the product is error free, but continues to place the associate under the threat of disciplinary action with the looming possibility of termination.

Figure 6. 17. Scanner instructing that wrong item is scanned and the item should be returned to the bin and the bin rescanned.

6.4.2. Meeting the Productivity Rate

All the functions in the FC are driven by a race to meet time targets. Productivity essentially translates to the imperative of 'making rates', in the terminology of the FC. Almost all associates are required to process prescribed numbers of items each hour. Rates vary between functions and within a function. For instance, for small items, zone pickers are required to pick 120 items per hour and for single sortable items 350 items per hour. Associates are given a rate card as a constant reminder of these targets (Figure 6.18).

Figure 6. 18. Rate card for different functions and category of items

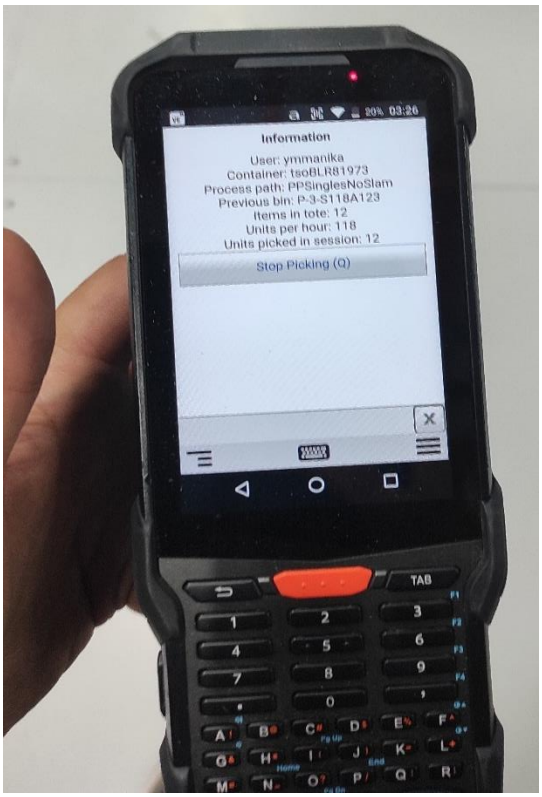


These 'rate' numbers are not autogenerated by the WMS, but are determined by senior management, who establish these targets which determine the requisite pace and intensity of task performance. One PS explained that *"The managers have their meetings regularly where they revise the salaries and the targets of the different departments and posts as per the estimated shipment amounts" [BLR27-CR7-PS2].* These meetings are attended by all the operation managers, the FC site lead, and the regional manager as the company's routine assessments, which are designated as 'deep dive' sessions. The PA, PS and members of L&T department continuously monitor associates through the WMS to ensure they are and have been achieving their rates. The WMS captures a plethora of information on the productivity of the associates, monitoring each individual on key productivity indicators,

including units processed per hour (UPH), quantities processed per hour (QPH)[32], total number of units processed per shift, total quantities processed per shift, total hours active on a shift, total hours not active while on duty (hours lost or idle time), and the average times taken to process each step in their respective functions in a shift (lc hours and lc curve). All this data, including the 'rates', are combined using a weighted average method to produce a productivity 'index' per quarter for each of three quarters in a shift for each associate. The index with a 100 per cent value translated to successfully attaining the preassigned requirement criteria or 'meeting the rates'.

Although the productivity 'index' is shared with associates for each of the three quarters in each shift separately (Figure 6.16), all the component indicators which are taken into consideration to arrive at the productivity value are not shared. However, QPH and total quantities picked per shifts can be ascertained by associates from their scanners (Figure 6.19), or by asking the PAs and the PSs directly, since they have direct access to the WMS's recorded performance indicators for all associates. This data on different productivity indicators, are retrievable from the WMS when associates punch their barcode enabled ID card to enter or exit the FC, log into their scanners with their ID or use the scanner when undertaking tasks. Hence, the very mechanism through which associates register their attendance and execute their functions are simultaneously used to capture their performance and generate productivity metrics. Management accesses these metrics via the WMS for evaluating associates' performance.

Figure 6. 19.Performance of associate as displayed by the hand-held scanner

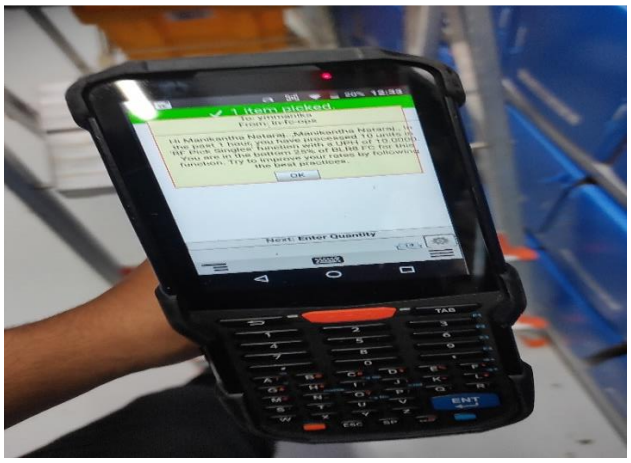


Note: Units per hour, the rate of work, is compared with the preassigned targets of the respective process paths to evaluate an associate's performance.

[32] Units are items with separate labels and label codes. Quantities means total number of units. So, if an associate, say, picked three blue pens of Raymonds Brand and two black pens of the same band, he/she has picked two units but five quantities.

There is a third way, by which the WMS is used to evaluate associates' performance. The productivity index is generated for every associate for each quarter of a shift separately. Then, the WMS ranks the associates accordingly and the bottom 25 per cent of performers in their respective functions are sent pop-up messages on their scanner automatically via the WMS system (Figure 6.20).

Figure 6. 20. Pop-up massage warning associate of being among the bottom 25% performers in the session.



Inevitably, because of this ranking and the statistical segmentation of these associates' performance, a cohort in the bottom 25 per cent becomes the target for the PA, L&T, and the PSs[33]. So, instead of disciplining the associates, whenever they are perceived to be shirking, the supervisors use WMS data to identify those who were to be the focus of corrective or disciplinary action. Thus, they transfer their role of detecting 'misbehaviours' to the WMS which generates ostensibly objective metrics of performance and productivity.

This obsession with high productivity monitored and evaluated through the imperatives of 'meeting the rate' by Amazon is revealed in the following response shared by an associate of Amazon who had also worked in Flipkart, Amazon's competitor in the e-commerce sector:

> In Amazon the rate is very high in comparison to other companies. We must give very high production. Amazon is very strict with the rate. If the target is 100 then you must do 100. If the rate is low by ten to twenty, the PA will target you and will come continuously to you and tell you to work faster. If you can't pick up rate, then they will give you feedback form. A paper will be handed to you, it will have the name of yours, will tell that you have failed to meet the rates by this much. A warning sentence will be written on it which will tell to increase our rating and work properly and don't waste time. In one month if you get three feedback forms, then they can even sack you *(BLR9-FC2-AA28)*.

6.4.3. Good Behaviour

The third criteria against which associates are evaluated is appropriate behaviour. Consistent with

[33] This focus on 'bottom' performers is consistent with the Jack Welch's (CEO of General Electricals) performance management system that spread widely from General Electricals. It is related to the forced distribution of employees' performance where "however well employees are performing a certain proportion in advance must *necessarily* be deemed to be underperforming." Taylor (2013:27).

Amazon's preoccupation with productivity, especially regarding the pace, volume and accuracy of customer order fulfilment, considerable emphasis is placed on adherence to appropriate behaviours. Conversely, inappropriate behaviours are regarded as undermining operational excellence. Consequently, the virtues of minimising 'idle time', of ensuring a 'fast start' and a 'strong finish' are disseminated as examples of 'good' or 'appropriate' behaviour.

Each associate is incorporated into WMS with a unique ID and is given a barcode enabled ID card which they must be used throughout their shift. On a typical day, an associate punches in their ID cards eight times; once each while entering and exiting the FC, three times at the security check before entering the work area at the beginning of the shift, and after returning from breaks, and three times at security check when leaving work area for break and at shift end. Further, during one of two breaks, a member of the HR department waits at the canteen entrance and scans associates' IDs to track who are entering that space. The other eight punches are to monitor exactly when associates started and finished their work. During each shift, associates are instructed to complete processing at least one item within five minutes after entering the work area for the three separate occasions. These measured behaviours constitute what is termed Fast Start. If associates miss fast start, they are informed by the OM of 'misbehaviour' via a scanner pop up (Figure 6.21), and their names are publicly announced over loudspeaker to shame them in front of colleagues. Similarly, two minutes before exiting the work area for the two breaks and at shift's end, associates are obliged to process an item. This is known as Strong Finish and the consequence of missing it is similar to failing to ensure Fast Start. An associate elaborated:

> They will check, we must process at least one item within the first five minutes of the start of the shift and also one item in the last two minute of the end of the shift. If the PA finds that we are not processing items till the last minute, they will warn us. If we miss processing the first and last-minute items for three to four times consecutively, they will give us feedback. We are always under their radar and are squeezed till the very last moment when inside the FC *(BLR7-CR5-AA26)*.

Good behaviour is refined through digital monitoring, which tracks associates through their unique IDs on the WMS in real time. To re-iterate, the WMS is the digital fulcrum, the indispensable mechanism to simultaneously process the products and to monitor and evaluate the performance of the associates. This stower depicted this process:

> There is one search software, where they input your ID, and they can find your performance from the screen by that. The software will say the number of items processed, rating, number of errors done, number of idle time- everything corresponding to the ID. It is like a candidate tracker *(BLR32-FC10-AA39)*.

It has a third purpose. In every process, the WMS tracks the time between two consecutive scans, termed 'idle time'. For instance, the short interlude between scanning a bin and scanning an item for a picker is considered idle time. If an associate accumulates more than five minutes of idle time, they are sent to HR desk (Figure 6.22), and sometimes issued with feedback or even a warning letter. Further, if a logged-in device is not active for ten minutes, the device is automatically logged-out from the ID, which invariably catches the attention of the PA, who then identifies the worker whose ID has been excluded *[BLR9-FC2-AA28]*. The micro-monitoring and measurement of idle time, ensuring fast start and strong finish reveal the scanner to be a critical supervisory and

disciplinary device contributing to maximising the amounts of labour power to be extracted from workers.

Figure 6. 21. Pop-up message informing associate of missing fast start

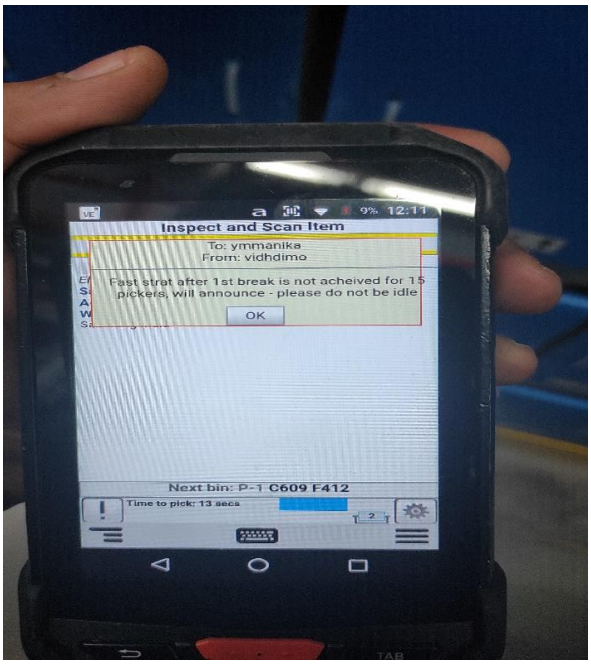
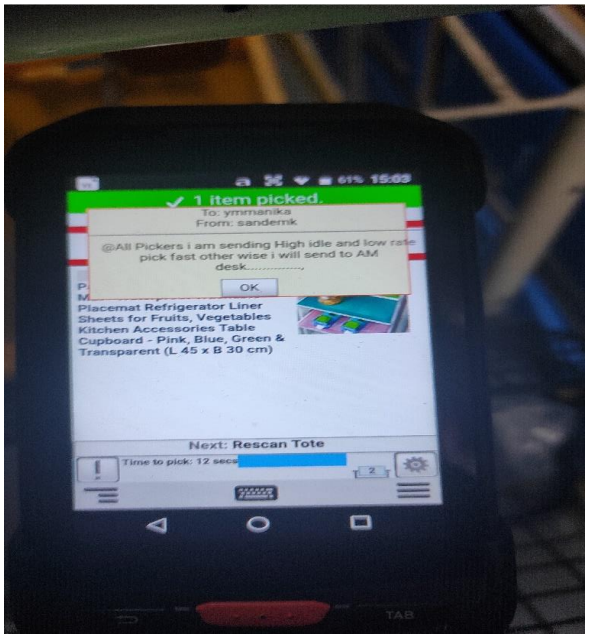


Figure 6. 22.Pop-up warning about idle time accumulation



6.5. Other forms of Control: Bureaucratic, Normative and Simple Control

Amazon's extensive reliance on technical and algorithmic controls through the WMS in instructing, monitoring, and evaluating the workers in the FC contributes essentially to its imperative to overcome labour's indeterminacy. However, the company does rely on other forms of control which, in parallel, amount to direct human supervisory intervention. What is observable in the FC is a complex combination of simple and structural controls along with normative and

apparently unobtrusive control, which are exercised on workers by management to discipline, instruct and inculcate workers with the company's hegemonic objective of rapid and seamless processing of orders. It is essential to highlight that these different control mechanisms, alongside technological controls imposed on workers at each stage in the flow of items ingrained in interconnected divisions of labour, operate simultaneously. They are mutually reinforcing and are often experienced by worker in their combined effect and are not necessarily distinguished individually.

6.5.1. Simple Control: Briefing Sessions, Rewards and Punishments

One salient form of human intervention are the briefing sessions. Each ten-hour shift commences ordinarily with briefing sessions, termed 'stand-ups' in company parlance. They are conducted for IB, OB and FC-dock sub-departments separately and are attended by all workers, full-time and part-time, and by the floor managers, both PSs and PA of the corresponding departments, and are usually undertaken by the PA. They are brief, lasting five to ten minutes. Once a week, the session is conducted by the operations manager who does a round trip of all sub-departments. These sessions serve multiple purposes, ranging from instructing the workers about the different rules and protocols to be followed, reminding them of the targets to be achieved, and for rewarding or punishing workers based on their performance evaluation. A senior associate provided the following account:

> In the morning meetings, they (PA) give you a full lecture, like a proper school classroom. Will give us instruction that today there is this much workload, remind us about the individual targets, repeat 'scan, check, and drop' slogan and will also tell you 'do not do errors'. Then one of the PS will shout out the names of those who did error in the previous session. They are separated out. The manager scolds them in front of everybody, will tell 'you can leave the job, you are not doing school assignment, this is a profession. If you can't work then leave' They will quiz us on different rules-, the PA yells "Quality?" we will answer "six side check". Then the PA yells "safety?" we will answer "5S". Then will ask us to repeat the barcode priority rule. Then they will motivate us by saying we are the best FC if we work properly and so on. Will call out one person who worked well and everybody will clap. Will create a mood for the day and then deploy us to our tasks *(BLR23-FC9-AA37).*

Through these briefing sessions workers' requisite behaviours are (re-)emphasised, through obtrusive communication strategies. No active participation by workers is solicited. Interviewees frequently complained of the session being 'boring' and 'repetitive'. Additionally, the sessions are used to instil both a competitive and a collaborative mindset among the workers, by reminding them of the total number of shipment orders processed by the FC and comparing that number with those of other FCs. Workers would be incentivised by the fact that the best performing units would receive more gift cards and rewards.

The rewards distributed at these sessions are Amazon gift vouchers worth 100 INR for the weekly best performer, and 500 INR for the monthly best performer. Further, *"they will put your photo on the company's 'Wall of Fame'[BLRH-BLR1]*, which has more symbolic value than any significant material gain for the workers. One worker commented, *"it is more a matter of pride and respect than money" [BLR36-FC12-AA40]*.

Other instances of simple control are during the performance of work routines, when floor managers receive WMS reports that pickers and packers, for example, are underperforming in real time against prescribed targets. L&T members are then instructed to intervene, shouting at the offending workers to increase their pace of work. A picker described:

> There will be people from the L&T department behind you all the time. Their work is to chase you all the time. Your performance will be observed by the PA through the computer system. Whenever you are slow, they will come and say that; "what bro so many people are working, why are you casual? Pick faster" *(BLR32-FC10-AA39).*

Consequently, associates became cognizant of the power floor managers possess and try to remain in their 'good books', to avoid reprimand or sanction. A migrant associate from the Hindi speaking belt claimed that widespread favouritism prevailed:

> There is so much dirty politics inside the FC. Most managers are local (Kannadigas), they will have their favourites. They have the power to send you to HR and issue to you warning letters. If you are a friend with them then they will overlook your errors and will delay in giving you feedback forms, otherwise even one error and they will send you to HR desk *(BLR2-CR1-TL4).*

6.5.2. Bureaucratic Control: Critical Pull Time, BOOSTA, and Amazon Wiki

From entering to exiting the warehouse, all workers are subject to rules and regulations on how to perform specific tasks, to rules on dress codes, and as evidenced fully above on the acceptable levels of performance, dictated by the WMS-generated metrics, all designed to overcome labour indeterminacy. Violation of certain of these binding rules potentially leads to dismissal and are worth highlighting to demonstrate the extent of bureaucratic control.

The strictest rule applies to adhering to the delivery times promised to customers. When orders are placed on Amazon's shopping site, the estimated delivery time is based on whether the customer is a standard customer or a prime subscriber. Based on this criterion, the times for each step in the sequence of processing orders from vendors to the customers are calculated and implemented with operational rigour. Accordingly, the exact times for receiving, stowing, picking, packing, sorting, bagging and dispatch from the FC are prescribed. These precise timings for each processing stage are 'non-negotiable' *[BLR4-CR2-AA24]* and are termed Critical Pull Time (CPT). To meet the CPT workers' individual targets per hour and other metrics are accordingly set algorithmically by feeding the CPT of individual orders into the WMS. Thus, technological control is shaped by the stringent rule of meeting the CPT for every order, which concomitantly establishes the pace and intensity of work and structures and coordinates associates' activities throughout the FC. This is the crucial performance indicator of the entire facility, and failing to meet the CPT brings serious consequences which, the company threatens, might even lead to the facility's closure[34]. An associate explained:

> Amazon has CPT, each item has to be dispatched within a given time period. That is the responsibility shared among all the employees and supervisors. For instance, one group of

[34] For further discussion on how CPT orchestrate inter-site, inter-firm control and rationalises it through competition see Chapter 7 and Chapter 9.

> items need to reach the customers by tomorrow then it needs to be dispatched by today 4:00 pm. Similarly, another set of items' CPT is today evening, then it needs to be dispatched by 4:00 am. Like that, every item has a predetermined time by which it needs to be dispatched from BLR8. To ensure the CPT, each are given hourly targets. Managers would ensure that CPT of all the orders are met. Otherwise, the unit will get low performance rating, and its operation reduced. It will hit our job *(BLR19-FC27-AA34)*.

Other rules direct and regulate workers' individual actions. For instance, workers must follow certain protocols while stowing items which are termed BOOSTA. This acronym represents six rules of stowing. Associates must avoid 'Blocking' items in the bin from being visible, avoid keeping items which "Overhang" or "Overstuff" the bin, keep "Same/Similar[35]" items in the same/different "Type of bins" and "Avoid" keeping any item above the bin dividers (Figure 6.23). Similarly, while picking, checking the six sides of the item is a rule geared to quality check, and in packing, maintaining the 5S[36] rule corresponds to keeping the pack station clean and tidy, which complies with safety rules. Again, failing to follow these rules generates feedback forms and potential termination.

Figure 6. 23. Displayed BOOSTA rules.

[35] 'Same' items are those which have identical maximum retail price, package colour, weight. The FNSKU will be same for all the same items, whereas 'similar' items are almost same, but differ in one of the criteria and the FNSKU will be different. Workers' ability to differentiate between same and similar type of items are tested during the recruiting selection test.

[36] The 5S pillars, Sort (Seiri), Set in Order (Seiton), Shine (Seiso), Standardize (Seiketsu), and Sustain (Shitsuke), provide a methodology for organising, cleaning, developing, and sustaining a productive work environment. These terms and protocols are derived from Japan's auto manufacturing business practices, especially that of Toyota. For further details see Ohmori (2024).

These different rules and regulations are standardised across all Amazon operated FCs. Specific site-level targets are subject to constant revision by floor managers, operation managers, site lead and members of supporting departments and, once a consensus is achieved, are updated onto a portal, "Amazon Wiki", to inform senior management of other FCs for their deliberation and modification, with the ultimate objective of becoming generalised and standardised across all facilities. Managers are held accountable for ensuring this rule, as their own performances are, in turn, monitored and evaluated based on their contribution to this portal. An Amazon Area Manager for South India, explicated the purpose and the mechanism of Amazon Wiki:

> Amazon Wiki is the Wikipedia for Amazon employees. Any responsible guy can update the rules and regulation, the dos and don'ts in the Amazon wiki. These are mainly the blue badge employees. They can edit and improve any existing rule through this portal. By doing so, they can show their work for the company and even get promotion. Whenever they find somewhere some issues, some points, some scope for enhancing the function of the facility while auditing, [they] will upload it there. Most importantly, this Amazon Wiki is the way to document and standardise Amazon's new ideas into the company rulebook. That sets the Amazon standard. Wherever you go in the world all the Amazon facilities will have the standard policy. For example, if you go to the policy data in Amazon Wiki, and check the 'safety rules', all the policies are written and documented. To access this Amazon Wiki, you will need a designated ID *(BLR38-FC14-E1)*.

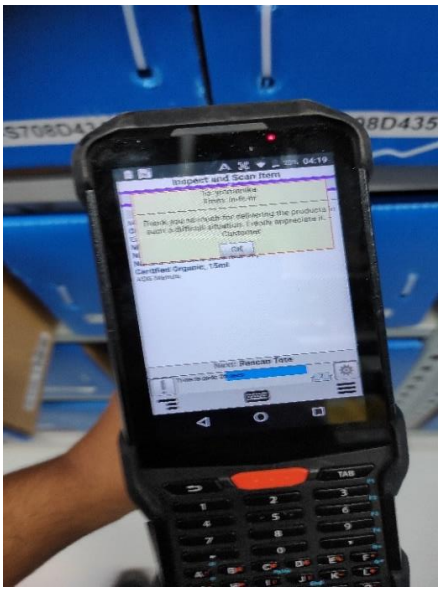
6.5.3. Normative Control: Customer Satisfaction, Amazon Radio, and Power Hours

Over time Amazon had curated, arguably, a unique company-specific value system based on three particular factors: technological superiority to the point of a claimed reshaping of the future, competitive prowess, and an obsession with customer satisfaction, as revealed through its two official slogans: '*Work Hard, Have Fun, Make History*' and *"Earth's Most Customer Centric Company"*. These slogans have been utilised strategically by the company to inculcate their norms and value system into its employees and to construct dominant narratives. In the FC, Amazon rely on different forms of intermediation. The first is in the briefing sessions, which frequently end with the PA reminding associates that behind every order there is a customer waiting for an order, to ensure the packages must be handled with 'care'. In this regard, the following response from one associate revealed the frustration of many, contrary to the company's intentions:

> It is all the time hammered in our mind. Every day in the morning, in the introduction meeting the manger come and tell us customers are everything, they are the god *(BLR18-FC7-AA33)*.

The second way of inducing normative control is by displaying the slogans in large fonts at the crowded junctions throughout the FC. The third way is through pop-up messages on the screens of the hand-held scanners, which appear routinely around five minutes before the end of each shift. The messages congratulate associates for their efforts and although they are scripted by the site lead or operation manager, they are undersigned as 'customers' (figure 6.24).

Figure 6. 24. Pop up Message showing customer thanking associates.



A fourth, and the most ubiquitous, way of disseminating company norms and seeking to create feelings of belongingness among workers is through Amazon Radio, which continuously plays music through a central sound system and is used to transmit information on, for example, fitness tips, healthy diet tips and safety instructions while driving. Additionally, it broadcasts selected associates' success stories and how Amazon has changed their lives, featuring famous personalities, such as film actors (Amitabh Bachchan) and sport stars (Virat Kohli) who convey their gratitude to the workforce, referring to them as 'Amazonians'. Sporadic announcements remind workers to handle packages with 'care' and 'love' in the tone of popular English nursery rhyme with the local Kannadiga accent to forcefully match the rhyme.

> *"Twinkle Twinkle little Star-u, Love the Package More-u More-u.*
>
> *Twinkle Twinkle Little Star-u, Handle with Care-u Care-u"*

Further, through the radio a loud and heavy resonating voice states in assertive manner:

> *"Where is the (channel frequency) number? The number is nowhere else but in your head. If you don't remember the (channel frequency) number, that's not a problem because the number will remember you".*

Another interesting way of disseminating the company's norm of competitive prowess is through intermittent mini-competitions between associates within each sub-department, which are called 'power hours'. They are purposively introduced during the last quarter of the shift when workers have become tired and tend to slow down. This associate provided a vivid illustration:

> During a shift, suddenly through the screen of the scanner, they will declare that now the power hour starts for one hour or two hours. In this time, who does the maximum work, or achieves the maximum rating, are given an Amazon gift card. This is like a mini competition among us. I have Amazon gift cards also. Let me show you. The manager or the HR gives it to those who has the highest ratings during this time *(BLR18-FC7-AA33).*

6.6. Workers Concerns, Complaints and Scope for Resistance

Although Amazon resorts to a plethora of mechanisms to control, discipline, and inculcate the workers into the company's values, norms and narratives, they are not able overcome the underlying contradiction at the heart of the employment relationship, which manifests in diverse concerns and complaints. The concerns reported by workers included inadequate pay, insufficient breaks and leaves, work pressure and its effects on their physical and mental health. Further, workers' efforts to voice their concerns are often countered by the company through varied mechanisms which undermine their ability to form collective resistance. Notwithstanding these challenges, instances of sporadic resistance, albeit most often in individual capacities, are observable.

6.6.1. Concerns over Pay

Amazon operates a convoluted pay structure which incentivises longer hours of work. Although it could be argued that given the local labour market conditions, characterised by large informal and low paying jobs, the FC's salaries are at least on par with other jobs which the associates have engaged with previously (predominantly in construction, and other logistics works), many workers resonated with this associate's response: *'the pay amounts are low compared to the work efforts which the company demands' [BLR18-FC7-AA33]*. Although the company provide increments to the basic salary if workers remain in employment for at least one year, Amazon's strategy of recruiting through short-term contracts and high layoffs, does not leave many eligible. Further, that increment was a meagre INR 500 (£5) which, according to many workers, was simply not worth the effort required for them to retain their job for the required time. One participant elaborated:

> Increment in pay is of a slower rate. One year of work is needed to get increment of 500 rupees. By that time the price of onions and potatoes will also be double. Hence, we have effectively no monetary benefits. Experience is not valued here. Senior associate and regular associates are basically a difference in name and nothing else *(BLR13-FC4-AA29)*.

This insight provides an illustration of a persistent tension in the effort-reward bargain between the workers and the company along with incidence of 'wage theft', through the latter's refusal to adjust basic salary to compensate for inflation.

6.6.2. Workplace Pressure, Demanding Targets, and No Breathing Time

All workers are under intense time-bound pressure to meet demanding targets, which many refer to as *'impossible' [BLR13-FC4-AA29]* to achieve and sustain throughout an entire shift of nine to ten hours. Additionally, all tasks are physically strenuous, requiring workers either to be continuously *'under motion for thirteen to fourteen kilometres' [BLR32-FC10-AA39]*, such as in picking and stowing, or constantly standing in one location at packing, sorting, and receiving for the entire duration of the shift. The universal imperative is to 'meet the rates', determined by senior management through cascaded down metrics into individual targets, and imposed through disciplinary intervention. The failure to do so jeopardises job security and creates a hostile work environment, characterised by looming fear and threat, as expressed by this picker:

> Once you get the first feedback, you will feel scared of losing job, that itself will trigger you to run faster. You will run like a mad bull. The first feedback you will see in your hand,

> you will feel like if they remove me, how long will I have to wait outside before getting a job. Everybody is working with this fear *(BLR36-FC12-AA40)*.

Unable to cope with this excruciating pressure, one worker, who had resigned a few days previously, articulated his frustration:

> I don't want this kind of pressure and work. It's better to stay at home than doing this kind of work *(BLR14-FC5-AA30)*.

The hourly targets assigned to individual associates are dependent on the number of shipments the FC was required to process. During the festival seasons, among others, when Amazon promoted attractive heavy discounts and offers, hourly targets inevitably increase, and workers are compelled to work at an even greater excruciating pace and intensity. One participant expressed:

> The difficult thing is continuous work pressures. Especially during the offer period. Then the target becomes very high. You won't get a single time to breath also. Load becomes overwhelming *(BLR17-FC6-AA32)*.

Another employee, when comparing Amazon's targets with those of its competitors, such as Flipkart, went into a tirade:

> Amazon is an arrogant and snob company. They will always set the highest target among every other companies. They believe that without binding the people into high targets, people will get lazy. They won't work and Amazon won't make profit. This is precisely the reason why most of the people can't survive in Amazon for long. Not many people can sustain in this environment. Targets over time always increases, they never reduce *(BLR7-CR5-AA26)*.

Contributing to worker discontent is the strict rule of tightly restricting, if not entirely preventing, gaps during task performance, which are continuously monitored by not only floor mangers implementing metrics, such as 'idle time', but also by the security guards from their control room and the CCTV footage from throughout the FC. An associate revealed:

> No time to sit or rest. You have to be on your heels all the time. It is compulsory to keep on walking. If the SLP see you resting, then they would come and interrogate you *(CCU3-FC14-AA43)*.

Due to technological dissemination of work data, notably the promotion of the picklist digitally from the WMS, through the computer software of the PA to the individual logged-in handheld (HHD) scanners, the rapidity of the work has increased over time and breaks are further squeezed. An associate explained:

> Previously the picklist was a paper printed out and handed over by the PA from his pick desk. Once you finish your picklist, you go to the desk to take the next one. This was a small gap from work for two to three minutes. Now, once the picklist is completed, the PA will add another picklist in your device immediately. That two to three minute is also gone now *(BLR3-FC1-AA23)*.

6.6.3. Effects on Health

Detailed accounting of this demanding labour process reflects the company's extractive labour utilisation strategy, where labour power is squeezed from their working bodies to maximise surplus to the point, which causes adverse physical and mental effects. Many workers provided testimony of the severe impacts of work on their bodies. Complaints included myalgia, sclerosis, osteoarthritis, and blepharitis, while fatigue, exhaustion and finding difficulty to sleep even after work were widely reported. One worker in the loading and unloading function shared his experience:

> You are sleep deprived. Your mind and brain won't work properly. You will feel body weakness because of odd and long timings. Above that the loads are challenging to lift and transfer on the lorry. This problem happens especially when you do day shift for a week or so and then suddenly you get to be transferred to night shifts. The shift changes are difficult to adjust. It creates health issues. Headaches and eye burns are a constant companion in this job. Sometimes we experience waist and neck pains also *(BLR37-RC9-AA41).*

Although the unit was equipped with medical facilities, the solutions provided did not extend beyond first aid, such as pain relief sprays and bandages, and their services to the workers was described as 'cooling time', which fell far short of what workers required. At the very best, the medic provided workers with a permit to leave early with the day's pay being deducted. Another aggrieved associate reported on the attitude of the floor mangers:

> If you are complaining about your body pain a lot, they would tell you to leave the job. Will say to you that the job is beyond your ability *(BLR13-FC4-AA29).*

6.6.4. Insufficient Leave

Against this background of relentless and gruelling drudgery, the provision of two leave days per week was reported as insufficient by many workers, particularly given the prevalence of over-time working. During induction sessions, the researcher witnessed HR explaining that almost eighty percent of workers' lives would be in the company, and it would be 'tomfoolery' for workers to chase leave days, denying them the opportunity to earn money. The HR manager ended the session by asking the question with a degree of sarcasm, '*Who does not want to earn money please raise your hands?'* No one responded. Another apposite testimony came from a former Amazon employee, when asked about his perception of the adequacy of leave and holidays.

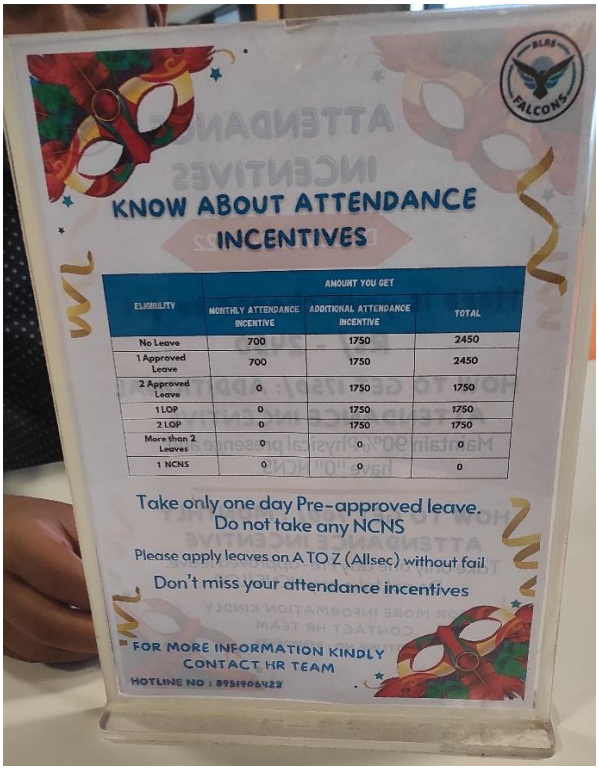
> Today (11 November) is Karnataka day, all the government offices are closed, even other warehouses like DSP, Delhivery, and Big Basket is closed, Flipkart has half day, but all the Amazon units will operate for the full day. The police if comes on holidays to enquire, they would say that they pay crores of taxes, so government is surviving on them, so they are entitled to keep on operating. They are too big. Police would tell them to close the shutters and work inside *(BLR8-SC27-AA27).*

6.6.5. Absenteeism and (Lack of) Mobility Power

While Amazon discourages even stipulated leave, it went one step further, penalising workers from taking additional leave by first giving the decision to grant it to the discretion of the HR, who evaluated the shipment load against the manpower ratio for upcoming shift. More than one additional leave day granted came at a cost of reduction in the attendance bonus by INR 700, and anything further led to its elimination along with loss of pay for the day (figure 6.25). Further,

> If you are absent without informing (described as NCNS stands for 'no call no show'), then your salary for the day and the attendance bonus is gone *(BLR15-FC29-AA31)*.

Figure 6. 25. Attendance Incentive scheme in BLR8



NCNS is treated as a punishable act, the penalty for which could be as severe as blocking the worker's ID, which essentially means immediate termination of their contract. One such incident occurred during participant observation when a worker took an uninformed leave to attend a health emergency affecting his mother. Moreover, continuous leave is impossible without incurring deduction in earnings, which is of paramount importance, especially to migrant workers, who wish to travel home for family events (e.g. weddings, child rearing, health emergency) which might take at least four days to commute. As a result, many migrants resign the job altogether and try their luck at re-joining on returning from their home.

6.6.7. Workers' Responses: From Adaptation to Sabotage

The responses of these Bangalore workers to their work experiences and the effects of the Amazon's distinctive labour process were extensively shared in interviews and through the participant observation. They took two main types, manifesting at the individual level. The first,

can be designated as workers 'adapting' to their situation, which may reflect both the contradiction between the demands of work and the necessity of maintaining paid employment, and the power asymmetry between employer and the employee in the employment relationship. In this respect, the influence of several political and economic factors come into play, particularly the labour market and its characteristics, the prevalence of informal and low-quality jobs, the weakness or lack of government regulation protecting the interests and conditions of workers. Reponses, such as the following, illustrate how adaptation is perceived to be a potential solution to their challenges of working as warehouse associate:

> We are doing this work from compulsion, who will give us a work of 15,000 INR? Everywhere the situation is same. The work has nothing interesting; it is boring. But adjustment is the solution. When they increase the shift duration, or target number, of-course it won't be pleasant, but we will adjust *(BLR9-FC2-AA28)*.

Several workers expressed a sense of fatalism similar to this loader:

> But we have to do our work, it is our compulsion. That is why we are labourers *(BLR37-RC9-AA41)*.

A second type of response is consistent with forms of resistance or misbehaviour identified in academic literature that may be considered, if not sabotage, certainly tampering with the equipment to interrupt the relentless flow of work. Instances include removing and hiding the batteries of hand-held scanners or removing the computer plugs from sockets, then complaining to IT that scanners are damaged. Such actions might comply with company protocols, but at the same time bring relief from the unceasing pressure of work. There is the possibility that such subversive acts might be recorded by the CCTV cameras and accessible on footage, but only if the SLP team was assigned with the task of investigating the reason for tools not working properly. Ordinarily, such faults are dealt with by the on-floor IT support team exclusively. Members of the IT department are responsible for triggering any investigation. However, it is significant that although they might be fully aware of this tampering, they choose to ignore these deliberate acts, for it appears that it is in the interests of IT workers themselves to resolve the problems, for it demonstrates their worth to senior management and might assist in their promotion prospects. This behaviour by IT support staff could be seen as a practice of indulgence, by which as 'blue badge' permanent employees of Amazon they were complicit in the endeavours of the 'green badge' third-party associates to gain some respite from the demands placed upon them, while retaining some autonomy over the exercise of their labour power.

> Sometimes, they remove the battery or log out to stay idle. Some will unplug the cord of the printer and will say that the printer is not working. If we find any device is damaged, then we will pass the issue from us to SLP and HR. But we will not escalate the issue to HR or SLP, will go and find that the plug is open, will plug it in and report that the issue is resolved *(BLR29-RC-IT1)*.

6.7. Summary and Conclusion

This chapter has presented an account of the labour process and employment relations within the FC, as items passed through the sequential stages from inbound to outbound, from receiving shipments into the warehouse to finally dispatching the orders as packages. It delved into the

supervisory measures to monitor, evaluate, and control the labour process. The mechanisms of control are formulated and executed to extract the maximum labour power from the workers and overcome labour indeterminacy. The chapter further reflected on the employee experiences of, and responses to, these mechanisms of control and discipline, that include workers' concerns, complaints and grievances and attempts to raise their voices but undertake forms of resistance. The evidence demonstrated that the ubiquitous platform and its technological architecture provided the digital synchronisation of processing customer orders *and* of controlling the workforce through prescribed timings, metrics, and monitoring. Managerial supervision, predicated on the digital data of workers' performance against targets, was inextricably entwined with, but veiled by, the functional separation in the flow of items through the warehousing unit. Supervisory practices, engrained in the organisational structure and the rules and regulations of the company, complemented the technical and algorithmic control structures to shape the labour process in the FC. This essential functioning of the FC was supplemented by a consideration of flexible labour sourcing and utilisation strategies at the FC and, leveraging a contractually segmented, informal, and low paid labour market in Karnataka, revealed distinctive features, that not only influenced workplace employment relations, but also prompted the broader question of the intersection of market imperatives with the point of production. Consequently, workers' reflection of their experiences revealed agitation, frustration, disappointment, and helplessness in their daily struggles in the labour process to ensure that their efforts meet their minimal rewards. The efforts of these workers employed in the FC resonated throughout the e-LSN beyond their operating sites as the mechanism to convert the order placed online into a package ready to be opened in the hands of the customers continued. The next operating site in this e-LSN is the SC to which attention now turns.

Chapter 7: Labour Process in Amazon Sortation Centre

7.1. Introduction

Next in the sequence of operating sites in Amazon's e-LSN are the SCs, specialised warehouses used for the short-term stowing of orders and sorting them according to the subsequent DSs. These SC units are functionally different from those of the FC and DS. At the inception Amazon's business practices of providing inventory services to vendors and delivery services to customers, they were conducted through an integrated process exclusively within the FCs. FCs both received and sorted packages, alongside their dedicated function of stowing to packing. As the company's customer and seller base grew alongside its expanding market reach, the need for this inter-site functionality and, integrally, additional divisions of labour arose. Such growth in the economies of scale prompted the creation of dedicated RCs and SCs.

The SC analysed in this chapter is owned and operated by Mahindra Logistics, Amazon's strategic partner and is the older of only two SCs within Amazon's e-LSN in the state of Kerala. The SC is situated at the outskirts of Ernakulam city, Kerala's most vibrant city. In size terms, it is smaller than the FC, at around 40,000 square feet. This chapter situates the labour process of the SC, albeit investigated fully in its own terms, within the inter-firm relationships of Amazon and its strategic partner and the broader labour market situation of Ernakulam city in central Kerala, where the SC is embedded. It explores the tasks of the SC in a detailed manner, to understand the labour process and explore the 'detailed control' system (Edward, 1986) at this point of production. Accordingly, evidence from interview responses substantiate this analysis of work organisation, workflow and labour process at the SC.

The rest of this chapter is arranged as follows. Section 7.2 investigates the inter-firm relationship between Amazon and Mahindra, focussing on how market imperatives moulded this interaction. Section 7.3 discusses the SC's workforce composition, highlighting its segmented nature and how it is related to the SCs labour recruitment and utilisation strategies and practices. Subsequently, the organisational structure and the managerial hierarchy of the SC are discussed. Section 7.4 delves into a detailed documentation of the sequence of different tasks in processing the orders in the SC. Section 7.5 investigates the managerial control mechanisms and emphasises how control imperatives are strategically linked with the inter-firm relations between Mahindra and Amazon. Section 7.6 reports the experiences, concerns, grievances and different forms of resistance expressed by the workers and how control mechanisms and managerial decisions evolved over the course of three years in the SC. Section 7.7 provides concluding remarks.

7.2. Market Imperatives, Inter-Firm relations, and Labour Process

Across all Amazon e-LSN's operating sites, market imperatives are manifested in the form of the highest number of shipment orders that can be processed in the shortest time span and at the lowest labour costs. The interests of the partners, in this case Mahindra Logistics, are intimately entwined with those of the lead-firm, Amazon. While the former seeks to sustain its position in the e-LSN of the latter, Amazon strives to utilise Mahindra Logistics' facilities to minimise their operation costs and transfer operational risks. This intersection of interests translates into an

articulation of the labour process by Mahindra, which adheres closely to Amazon's overall business imperatives and thus to the contractual obligations and service level agreements that ensure.

Because of contractual agreement that specified arrangements, Amazon delivers instructions on processing orders and items, monitors and evaluates the performance of the workers and, in determining the targets for the unit, prescribes those for individual workers. The discretion that Mahindra is permitted in their inter-firm obligations to Amazon relates to worker recruitment and labour utilisation. They directly recruit executives and their operations manager, but further subcontracted floor managers and the large pool of workers to third-party recruitment agencies. Accordingly, Mahindra possesses a certain degree of autonomy in determining the size of the SC's workforce. In executing these decisions, HR often faces a conflict of interest with floor managers. To process increasing numbers of orders, floor managers require experienced workers and/or a larger pool of workers. However, HR pressurises floor managers to meet targets with fewer workers to minimise labour costs and maximise their own, Mahindra's, profits. A floor manager volunteered this apposite comment:

> The online market is highly competitive. In the beginning it was only Amazon and Flipkart. Now there are many more. So, our Amazon customer's base has been divided. In the beginning when I joined, the highest peak here was 1 lakh 40 thousand [0.14 million] shipments (per day). Now, on an average it is only 80 thousand to 90 thousand per day. So, Mahindra does not have any profit. For them to run, they will cut down the number of associates to save cost *(KL12-SC-12-TL2)*.

The outcome of this negotiation with HR is that floor managers are obliged to work with fewer workers to meet the SC's demanding targets, in order to maintain Mahindra's position within Amazon's e-LSN. The ultimate consequence was that workers are compelled to work at excessive pace and intensity to meet their cascaded-down demanding targets. A supervisor shared his frustration from his experience of negotiating with HR:

> So instead of 80 people, they will try to run with 65 people. That's how Mahindra increases its productivity. It's very difficult to run the operation with 65 people. The operation is like that. All the time there will be shipment coming. So, in such situation TL will also have to work as associates *(KL12-SC-12-TL2)*.

This quote revealed a recurrent characteristic of the labour process across all the nodes in the e-LSN. Along with their given responsibilities of observing, monitoring, and instructing the floor work, and auditing and reporting the performance of the SC, floor managers (called the Team Leaders or TL in the SC) are sometimes required to directly participate in processing the parcels. Prima facie, this incidence of supervisors engaged in task work alongside workers might suggest that a certain sense of solidarity between them might be created. However, the principal material differentials between them in terms of respective pay and conditions dominates nor more importantly does it transcend the essentiality of their contrasting positions in terms of the employment relationship. The fundamental contradiction in the interests of managers and workers at the point of production, embedded in the capitalist relations of production cannot be overcome by this occasional correspondence in the concrete execution of tasks.

In this SC, at the time of fieldwork, Amazon paid Mahindra 3 INR per package processed and provided the tools and equipment required for processing, for Mahindra, which included totes, bins, bags, boxes, scanners and shared access to its in-house software, the WMS, for managing the work process. The inclusion of Mahindra in Amazon's the digital architecture and infrastructural elements has the dual purpose of transferring managerial skills of the lead firm to their subcontracted partners, and further enables them to exercise control remotely over the labour process of their partners with minimal human-supervisory intervention. For instance, the bags into which workers put packages after scanning have certain criteria, regarding the numbers they should contain, the level to which they should be filled and the maximum weight they carry. To meet these criteria, workers must adjust the number of packages per bag before closing them. This requirement impacts their performance, captured in the numbers of packages they could scan per unit of time. If a bag had larger capacity the volume of scanning per hour would also be greater since time would be lost in having to exchange bags. There is consequence from this bagging prescription for the productivity of the SC and workers' target fulfilment. A supervisor explained:

> The only problem with TFS bag is that it is little heavy. It can only take 25 to 30 shipments. There is one condition that we have to bag all the package which are till shoe size. All the small shipments such as eyeliner, can be kept in larger amount in the TFS bags. But if shoe size items, then the TFS bag can hold not more than two to three items [by keeping them side by side]. This will also affect scanning rating *(KL12-SC12-TL2)*.

The terms of payment between Amazon and Mahindra reflected a regressive transition towards piecework, directly linking worker output and time in the payment systems, thus representing the precarious 'gig' aspect of the contract even in the warehousing activities in the e-LSN. Literature on platform work identified the usage of this kind of pay system in remote cloud works, food delivery and ride hailing works (section 3.5.1). Here, this practice was executed between the lead firm and their strategic partner, thus binding even floor managers to the dictates of effort-reward bargain and internalisation of the priorities of the lead firms into their e-LSN's subcontracted parties. Amazon's inter-firm cash nexus with Mahindra reflects the fact that the piece rate system enables the lead firm to control the labour process at the partner's operating sites. The pace of work is dictated by Amazon indirectly by pushing floor managers to pressurise SC workers to work at higher intensity, through tying the rewards of their subcontracted partners with number of their orders processed. Moreover, the rate per item processed had been INR 5 a few years previously which was then reduced as the SC missed certain key performance indicators. This financial operational arrangement that has operational consequences unequivocally demonstrates Amazon's dominant bargaining power in their e-LSN vis-a-vis their regional partners.

7.3. Organisational Structure and Workforce Composition in the SC

7.3.1. Segmented Workforce

7.3.1.1. Contractual Segregation

Workforce segmentation in the SC has several aspects, including differing contracts and benefits, workers' migration status and gender-based segregation. Two types of contracts apply to workers, full-time contract and part-time. Both contracts are with third-party recruitment agencies. Depending on full-time or part-time status, their number of workdays, earnings, and other social

security benefits are determined. However, irrespective of contract, all workers engage in similar functions or tasks. Accordingly, receivers, sorters, baggers, loaders, and unloaders could be either full-time or ad hoc workers. Full-time workers have twenty-six days' work duty with four days paid leave per month. Each work duty was either nine or twelve hours depending on the shift allocation, which is entirely at management's, specifically HR's, discretion. The four leave days are distributed into one per week, but the specific day is again at managers' discretion, conveyed to workers through the weekly attendance roster and shared via WhatsApp every Fridays by the recruitment agencies. One supervisor explained that HR prepare the roster for each shift, depending on the volume of orders and how many workers are required:

> The HR team will divide the associates and will assign their offs. It is weekly one day off, it won't necessarily be Sunday. It can be any in the weekdays as well. A day before making the roster, they will know how many trucks are coming and how many associates are required. They will plan the roster accordingly. HR team will know how many associates are required and will inform to Mahindra and Amazon [operating heads] *(KL2-SC2-TL1).*

There are four shifts each day in this SC, three nine hours shifts (morning, evening, and night) and one of twelve hours which intersect with the other shifts. Each shift has a separate workforce and floor managers. A notable difference is found in the levels of pay among full-time employees across the shifts. For the twelve-hour shift, the basic salary at the time of the research was INR 18,500 (£185) per month, whereas for the other shifts it was INR 12,500 (£125). However, this higher pay did not attract employees as adequate compensation for longer hours of tiring work that took its toll on the body. One local worker on the nine-hour night shift commented on his refusal to work in a twelve-hour shift:

> 9 hours shift is itself very exhausting. The work effort is tremendous. On top of that, it is a night shift. "You want us to work more?" *(KL22-SC22-AA17).*

All full-time employees have two social security benefits: provident fund and employee state insurance. The provident fund is an accumulated fund through tripartite contribution from employees, employers, and the state government, which employees receive a lump sum when they resign or retire. The social security funds receive contributions from the employees, Mahindra, and the Kerala state government. An obligation is that employees must work for a certain minimum number of days. A full-time associate shared:

> We will have 15,000 INR as salary [per month]. After deducting for ESI and PF, we will get 12,500 INR as the basic salary. Now my accumulated PF is 60,000 INR. In a year I get 20,000 as PF. But we will have to try to stay in the company for long to get the benefit of PF. Only after 6 months we can withdraw the PF money. Sometimes we will get fed up with the work and will leave early and loose on the PF benefits *(KL21-SC21-AA16).*

Every month Mahindra transfers employees' contributions to the recruitment agent along with their basic salary. The agents hold the fund contributions and transfers the basic salaries to employees' bank accounts. It is understood that the contributions of those employees who leave before six months are kept by the recruitment agents, in addition to commissions received from Mahindra.

The insurance amount is an accumulated fund to which employees contribute from their salaries through monthly premia, deducted from their pay. Insurance amounts cover expenses for treatment arising from work-related health issues. A migrant worker on the twelve-hour shift explained:

> ...if you are facing accidents while at work the HR will take you to the nearest ESI hospital. So, they are cutting a part of our salary for ESI premium. From that we are getting service of the ESI hospital *(KL11-SC11-AA9)*.

Two bonus payments are applicable for full-time employees. Firstly, an overtime bonus of INR 130 is paid for each full hour worked over the shift duration. A sorter explained:

> We stay for 9 to 18:00. Even after that duration, if there are pending load and trucks are still coming, they will offer OT to all of us in that shift. Its upon us if we want to stay or not for the OT. If we stay, we get 130 INR per hour. Mostly it is one or two hours, not more than that *(KL4-SC5-AA4)*.

A second bonus is for full-time employees who work public holidays. A women stager reported:

> During, May 1st, Id-ul-Fitr and other public holidays you get double payment. And we are given a comp-off, that is if we work on the public holiday, we are given another additional off (paid leave) on another day (*KL3-SC3-AA2*).

Given that customer orders tend to surge during public holidays and festival seasons, the number of 'loads' also increases. Consequently, HR incentivise employees to not take leave on those days and substitute them with other leave days during the off season, when shipment orders ae low. This practice of substituting paid leave to overtime duties during the high demand phase and shifting paid leave during low demand phase are managerial practices designed to transfer the risk of fluctuating orders to the workers, by transforming the workers' reproductive time to SC's productive time as per market demand. Another initiative to meet order pressure is to recruit part-time or 'ad hoc' employees, who are given a very different contract.

The 'ad hocs' earn on daily basis but do not work daily. Whenever additional labour is required to process excessive orders, they are summonsed by HR through the recruitment agents with whom they are registered. At the SC, their details are documented in a register at the security check. Then they enter the 'go-down' and attend the briefing session, where they are informed of their tasks for the day. However, many part-time employees who come to the SC are not engaged if the required additional employment has been met. Mahindra, thus, seeks to implement maximum numerical flexibility in labour utilisation through recruiting part-timers. If the monthly salary of full-time employees is converted into a daily amount, then part-time employees earn more, albeit at the cost of job insecurity. A part-time employee observed:

> As we are going on a daily wage basis, per day we get 800 INR. When we get the call from the agency, all the daily wage workers will go to the SC. We will be gathered in the assembly, then the supervisors will come and send us to different sections according to the need. So, if there is no requirement we are returned, we must come back. The job is hence not assured, we must wait and see if there is work for the day *(KL23-SC23-PT1)*.

He commented further on the recruitment agent taking a portion of their earnings.

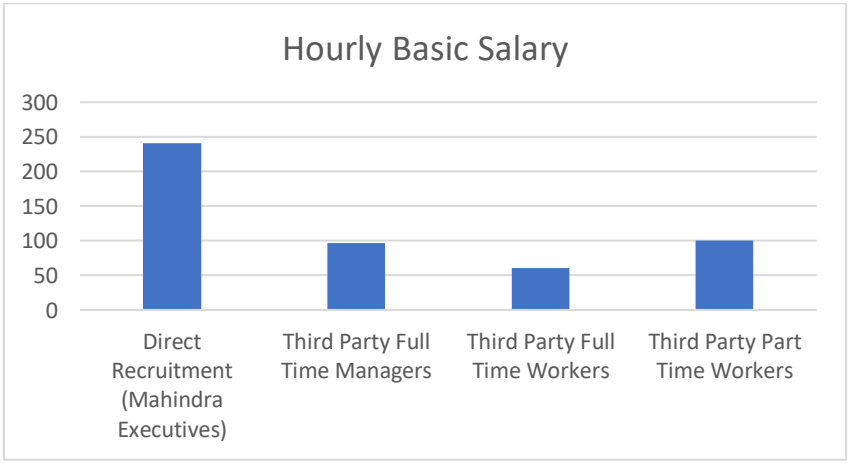
> There are many people coming through agency. The agency is taking a share from our pay. He [Agency] is the one who is recruiting us, so he takes some fee. We are getting INR 1200, he is taking his share and giving us 800 *(KL23-SC23-PT1)*.

In addition, part-timers do not receive the provident fund or health insurance. Despite the distinction between full-time and part-time contracts, there are two common characteristics. First, if part-timers are engaged, they must work the same shift duration as full-time employees. Second, neither have written job contracts specifying the tenure of work or given any document to show they are employees of the SC. The only document they have is their ID card provided by their respective recruitment agencies. Only Mahindra employees have written job contracts, their absence for the remainder underscoring their job insecurity. However, some workers regard the absence of a written contract as freedom to exercise their mobility power:

> There is nothing like a job contract. It is up to our wish to stay as long as we want. There is no bond. If there was bond, we would have been trapped *(KL7-SC7-AA5)*.

This difference in shift hours, 12 compared to 9, reveals a greater amount of absolute surplus extraction for the former (10.5 work hours) than the latter (8 work hours). Pay rates differ marginally: INR 53 per hour for nine-hour shift, compared to INR 59 for the twelve-hour shift. Figure 7.1 shows the difference in earnings of the interviewed employees and managers in the SC according to their type of contract. To make the figures comparable the hourly equivalent of the basic salaries of the different categories are considered. For the full-time workers and managers, the provision for night allowance and bonuses are additional benefits to those of the part time workers, which are not included in the figure. It is worth remembering that, although the figure might present a misleading impression of part-time workers earning more, wages are earned only when engaged in a role, that is entwined with achieving numerical flexibility for the SC and pits them adversely in terms of job security against the others. In other words, the total hours worked are much lower for the part-time employees, which diminishes their overall earnings.

Figure 7. 1. Hourly Basic Salary Across Contract Type



Source: Author's calculation from interviewees' job profile

For full-time employees there is an additional obligation. If they wish to resign, they are compelled to inform HR and to work 15-days' notice. Failure to do so means loss of the last month's salary.

A full-time employee explained:

> If you joined on 1st and you resigned on 15th, you will have to work till 30th. You will get payment for the whole month. But to get the salary you will have to complete the fifteen days' notice period *(KL17-SC17-AA13)*.

A supervisor indicated that the constraints imposed on third-party employees are less severe than those for Mahindra employees:

> For the Mahindra employees, the notice period is minimum of 45 to maximum of 60 days. For the Mahindra's staff there are privilege leaves. If they have not taken that privilege leave, they can take it at this notice period. If there is 25 days privilege leave, they can take it during the notice period and serve the rest of the days *(KL12-SC12-TL2)*.

An additional observation is the absence of increments for experience. Experienced senior workers, who often got responsibilities to train new commers, earn the same amount and have the same benefits as any other full-time employee. Problem solvers earn almost the same pay. For floor managers and other senior executives recruited by Mahindra, the salary is higher.

7.3.1.2. Other Forms of Workforce Segregation

This contract-based difference in earnings and other endowments does not constitute workforce segregation in its entirety. One associate, who had worked different shifts, hinted on gendered division of labour across shifts:

> Girls are working only in the morning shift which is from 9:00 AM to 6:00 PM. Then there are 3 other shifts; from 4:00 PM to 1:00 AM, 9:00 PM to 6:00 AM and finally the 12-hour shift from 6:.00 PM to 6:00 AM. Out of these 4 shifts girls only work in the morning shift. They are posted at every level [in the managerial hierarchy] *(KL11-SC11-AA9)*.

This norm of not recruiting women for night shifts is found elsewhere in India on the grounds of concerns over their safety while travelling at nocturnal hours. However, this constraint reduces their overall employability and earning capacity as the night shifts and the shift of longer duration have additional allowances and higher basic pay, from which they are deprived. However, many women workers considered this recruitment limited to the morning shift justifiable as it gave them the time to take care of their families *[KL16-SC16-AA12]*. This evidence gestures towards the gendered division of labour in care work activities essential for the reproduction of labour power. Moreover, within a shift although women are assigned all roles, many testimonies revealed a preference for allocating them to scanning and counting, as these tasks do not involve heavy lifting, which were uncritically assumed to be beyond capacity of feminine bodies.

Another norm was found, by which shift allocation depended, is on whether employees are Kerala locals or are migrants, mainly from East and North India, including Bengal, Bihar, Orissa, Assam, and Uttar Pradesh. One recruitment agent stated that *'migrant workers are preferred for the twelve hours shift over the Malayali' [KL15-SC15-RA1]*. The ability to leave employment in response to workplace insecurity and vulnerability is limited to migrants, as they were constrained by limited social capital, such as language and social networks which locals possessed to a greater extent, which compelled

them to accept longer working hours. Migrants further face exploitation from recruitment agencies, as illustrated by the following team leader's testimony:

> Once there was a peak time and the need was for 100 associates. So, the recruitment agents brought migrants from Mumbai. They were initially offered food and given place to stay for a week. After that, agents told them that they will deduct the food amount from their salary (*KL12-SC12-TL2),*

7.3.2. Organisational Structure and Managerial Hierarchy

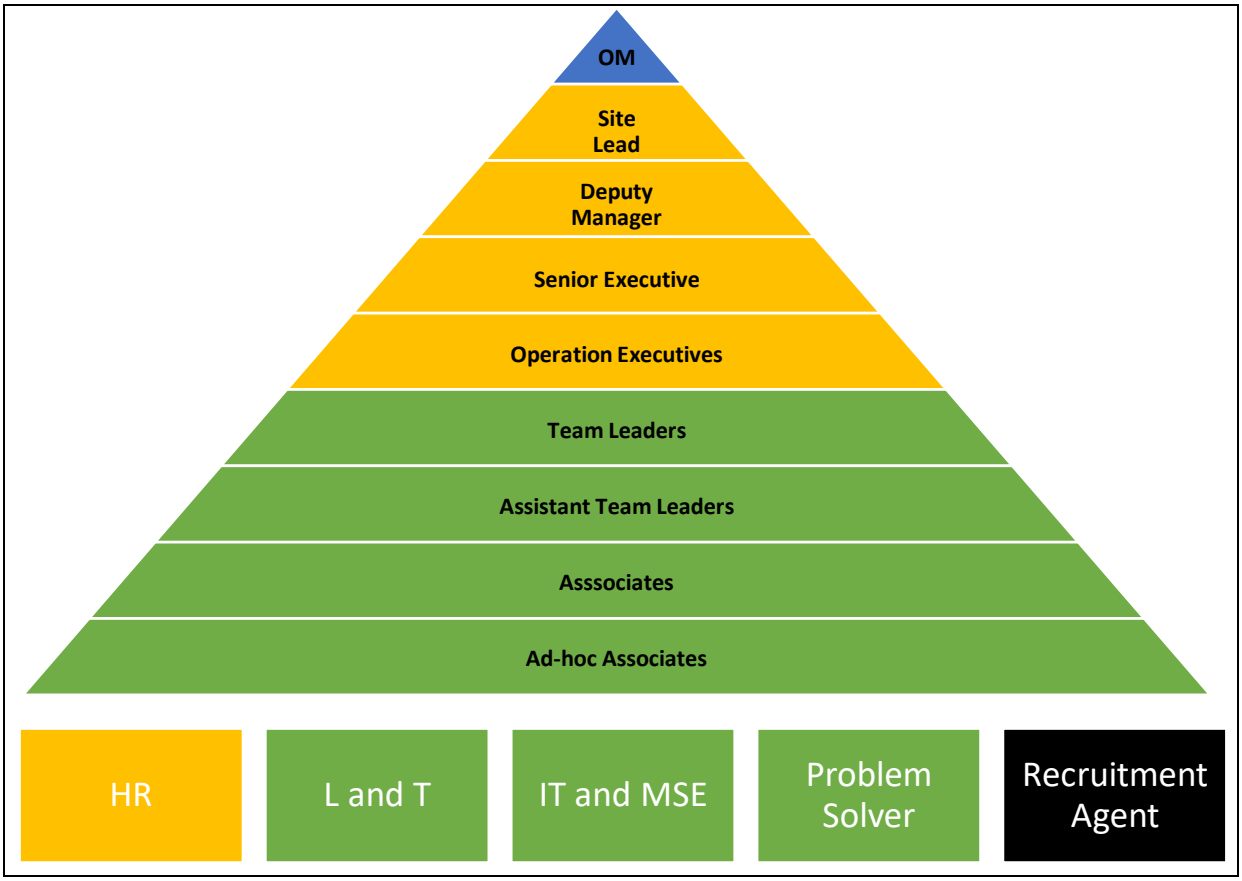
Amazon and Mahindra's inter-firm relationship is contingent on minimum direct human intervention from the lead-firm, yet real time updates of the SC's performance are assured by the WMS. This arrangement is reflected in the SC's organisational structure and management hierarchy, depicted in Figure 7.2. Only two managers are directly recruited and employed by Amazon (in blue) and hold the most senior positions of operations managers (OM) in the SC. Their primary role is to ensure the facility's conformance with the standard operating protocols (SOP) as specified by Amazon. Below the OM is the site lead, recruited by Mahindra. The site lead has the remit of ensuring that Mahindra adheres to its contractual obligations and performance standards. Below the site lead are two deputy managers (DM), also employed by Mahindra, who head the IB and OB departments respectively. Deputy manager of each department collect the performance reports from two Mahindra recruited and employed senior executives of the respective departments.

Below senior executives are four operation executives employed by Mahindra, two each for IB and OB, whose responsibilities are two-fold. The first is to collect and finalise the performance auditing report from the floor managers, alternatively called team leaders (TL) and to report to their respective DMs. The second is to transmit managerial decisions from Mahindra and Amazon to the TLs. These positions from site lead to operation executives recruited by Mahindra are identified by workers as 'in-charge' (orange). However, the 'in-charges' and Amazon representatives combined number not more than thirteen on each shift. The majority of those engaged in the SC are recruited neither by Amazon nor by Mahindra, but through third-party recruitment agencies. They comprised TLs, one each for IB and OB, assistant TLs, one for each function (unloading, de-bagging, sorting, bagging, staging, and loading) and the workers (associates).

The role of the TLs is twofold; first to supervise the workers, which they describe as the "floor work", patrolling the SC and observing who was shirking, and second to prepare audit reports which detail the performance for each shift and submit them to their respective operation executive. Assistant TLs are recruited from the senior workers, or from those with work experience in the logistic sector outside the SC. The workers (associates) form the majority of the workforce, although their exact numbers vary because of high turnover rate and the practice of using part timers to address market fluctuations. One full-time assistant TL commented:

> There are no fixed number of workers. Whatever the number of workers is, we will adjust with them to do all the functions. If there are many workers, the work will be easy. If there are a few workers, then the work will be difficult. Then one worker has to do multiple functions in the same shift *(KL5-SC5-AA4).*

Figure 7. 2. Organisational Structure of the SC



Extrapolating from the evidence of multiple interviews, a reliable estimate was around 50 workers for each shift, comprising both full-time and part-time employees, with the former in the majority. One TL elaborated on how information is shared bi-directionally through the management hierarchy via a daily video conference:

> So basically, there is an Ops call. In this call the Amazon ops lead (OM) will give a lecture. He will get the report of all the incident, such as how many packages arrived, how many packages handled. He must send that report to the reporting manager of Amazon [in Mumbai]. Mahindra's site lead will also have to report to Mahindra's pan-India level DM [not the one in the SC]. There is an app called Amazon Chime where these ops calls are happening. In that call everybody will be here, DM, site leader, senior executives. They will discuss about previous day's performance in terms of how many packages came. There is no TL in that ops call. After this 'ops call', OM of Amazon and Site lead of Mahindra will call all the TLs and will conduct another meeting. They will tell us these many Controllable (C) CPTs have missed yesterday (discussed later in section 6). Before them telling, we should be updated about the Cs. In WhatsApp group there will be C reports of night shift. Will have to be updated about all the audit reports of the previous shifts. In the meeting they will quiz us, and we should be capable of answering that *(KL12-SC12-TL2)*.

It is worth highlighting that the information flows are not confined to the SC, but also reach Amazon and Mahindra's head offices daily. The nature of this communication containing daily

performance evaluation vividly illustrate the degree of explicit control and coordination Amazon maintains with their partners in the e-LSN at arm's length.

Other five positions found in the SC comprise HR, L&T, PSs, IT and 'multi-skill executives (MSE)*' [KL12-SC12-TL2],* and recruitment agents. There are three HR personnel with one on duty per shift. They prepare the TLs and workers' attendance and leave rosters and assign them to different functions. They are responsible for addressing employees' complaints and grievances. The IT executives are recruited through third parties. One IT executive per shift has the responsibility for solving technical issues related to scanners and conveyor belts. An additional task is to prepare audit reports on the condition of the totes, bins, trolleys, carboard boxes and other equipment. Two L&T executives, recruited via third party, train and monitor new associates' performance and, whenever found underperforming, they inform the relevant TLs and are sent for retraining. L&T are pseudo-supervisors and most of the associates see them, ironically, as 'problem seekers'. The problem solvers' (PS), also recruited through a third party, job is to identify missing and damaged packages and, if possible, repair the damage or return the packages to sellers. One problem solver explained his work:

> Our work is to clear the damaged products and the products without label. While sorting, if there is some damage identified on the products, they [sorters] will keep it aside in a buffer area. We will take those items from there. If it is peak time, the probability of damage is more. That is a difficult time for us. In the [WhatsApp] group massages keep on coming that this package is missing with this ID. We will cross check with the items received in a day through our system and if we could track the ID, we will connect the items accordingly back to the sorters for further processing. We are not supposed to do the sorting but there are some occasions, where we must help. So, in the peak time, the unit is super busy. Then we must lend our hands in sorting as well. We all will try to find and process the item before the time within which the item must be loaded in the truck *(KL6-SC6-PS1).*

The role of the PS involves technical work requiring skills to understand the WMS, the software used for workflow monitoring and order processing. Every package had a unique ID (XOO, BOO, UPC etc.). When packages are scanned, WMS updates the stage (debagged, sorted etc.) and the section the package has reached (CITY, OTH) in the SC, along with the package's weight and the number of it contains. If there is any discrepancy in the information, then the PS is informed. The response further showed an underlying contradiction in the PS's work. When the order volume is high, the probability of packages with issues increased, intensifying the work of the PS, which is exacerbated by the informal sorting which the PSs were obliged to undertake to compensate for insufficient associates to process the enhanced number of packages during peak seasons.

Undergrad students are recruited for the role of PS as interns with part-time contracts. They are paid similar to ad-hoc associates, but received certificates acknowledging their work in the SC. These students appear less concerned about earnings but were optimistic about possessing the certificates for their future prospects. The following response from this PS illustrates the influence of Amazon as a technical education provider:

> In a shift there are 13 PS. But among these 13 those who have come for internship are also included. So, if we keep them in the sorting section, it won't be beneficial for them.

> By being PS, they can learn the system and the mechanism of the logistic unit *(KL6-SC6-PS1)*.

The final position are recruitment agents, who are pivotal in articulating the labour recruitment practices in the SC and were HR's indispensable assistants. Around eight different recruitment agencies hire associates and floor managers. Their power in recruiting employees, especially migrants, has been previously emphasised. Their work continues after recruitment, especially in providing leave provisions for associates. A sorter explained the process:

> We have four days off in a month. There will be a representative of our agency. He will tell us, which days are week off for us. And if we want to take additional leave, we have to inform him. *(KL10-SC10-AA8)*.

One agent per agency is present in the office located outside the SC. If associates want to take a few days of holiday, they must inform the recruitment agent who has the discretion to grant leave. Agents must inform HR before granting leave. Agents act as intermediaries between associates and HR, also grievance handlers on behalf of the HR, so that they become an important buffer for Mahindra in avoiding any direct conflict between workers and managers. A recruitment agent reported:

> You can take leave for 2 or 3 days by informing us. If you exceed more than 3 days, then a warning letter will be issued. After two warning letters then it's termination. If it's termination you won't get the salary. Salary will be automatically called off *(KL15-SC15-RA1)*.

The following response from an associate confirmed the power the agents hold.

> Our agency is Macho Recruiters[37]. There is an HR, representing Macho Recruiters, who sits outside the warehouse. He has an office there. If we inform him before leaving, then no issue. Obviously for those days, we will not get our money, it will be deducted from our salary. But when we return, we will join the job immediately. If we do not inform and go away, then they will terminate our job, and we won't be able to return to the job *(KL14-SC14-AA11)*.

The organisational structure in the SC has only minimal direct presence from Amazon, but its subcontracting terms with Mahindra transfers the risk of labour recruitment strategy to the latter, which in turn further passes the responsibility to recruitment agents. Amazon leverage their self-defined role of educator, to additionally cheapen recruitment costs by substituting employees with interns. The workforce composition undoubtedly reflects the broader segmented nature of the labour market in India, particularly Kerala. Attention turns to a detailed analysis of the labour process and utilisation strategy in the SC.

7.4. Workflow in the Sort Centre

While certain general tasks are common to all sites in the e-LSN, notably unloading, receiving, and loading, the function exclusive to the SC is to sort the packed orders according to the DS nearest to the delivery of each shipment. The SCs receive orders from both FCs and directly from vendors.

[37] Name anonymised.

For the former, the stowing, and packaging services are provided by the FCs, but for the latter, the functions are performed by the sellers themselves. However, the specifications for packing and labelling are determined by Amazon, to which the sellers must adhere. A supervisor explained the primary task of the SC in the following way:

> Sorting is the biggest and most important work here in the SC. For sorting, there are several stations. For example, within a city there are many small places and outside the city, there are several small places. We must sort all the items according to the places within the city as well as to those outside *(KL2-SC2-TL1)*.

Much like the FC, tasks inside the SC could also be considered as either inbound (IB) or outbound (OB) activities. IB included all tasks related to processing the packages *into* the site, and OB includes all tasks directed to processing the packages *out of* the SC. IB comprises unloading and receiving and OB comprises all stages from sorting to loading into vehicles for dispatch.

7.4.1. IB: Unloading and Receiving

Managerial control mechanisms are embedded into the flow of activities and the division of tasks within the SC. To seamlessly progress the shipment orders from the FCs and local vendors to the DSs in South India, the SC's functions are organised sequentially. The first activity at the SC is unloading, which takes place at three docks, as an associate unloader explained:

> First the packages come in here via truck. Then the truck is parked in one of the many platforms [dock gate]. Each platform has a separate conveyor belt. Then with the help of a machine, the conveyor belt is brought near the vehicle and attached with the gate of the container of the vehicle. Then with the help of conveyor the items are brought out from the truck. There will be 12 empty boxes kept at the edge of the container's gate, as a protection cushion. First, these boxes will be removed from the truck. Then the big boxes with packages are put on the conveyor which moves them out of the vehicle *(KL4-SC4-AA3)*.

Two unloaders are assigned, who enter each vehicle, pick the boxes containing packages and transfer them to conveyor belts. The next activity is concerned with inputting barcode data on the incoming packages through scanners into Amazon's WMS. The WMS, the scanners and the technological architecture as a whole are provided by Amazon to Mahindra. A TL explained:

> Amazon gives to Mahindra the scanners, TFS boxes and other equipment. Mahindra maintain those things. But out of 40 RF scanners 18 will be damaged. This affects our operation. Some scanners get off while scanning. This will all affect our rating *(KL12-SC12-TL2)*.

This response reveals a recurring concern for managers, supervisors and associates across the SC, the pressing need to meet rates, an imperative that was emphasised by many interviewees. It also reflects a source of potential conflict in the relationship between Amazon and Mahindra, arising from an unmet contractual requirement by Amazon to ensure the effectiveness of their leased equipment.

Most of the scanning, while receiving, is undertaken by unloaders and thus does not require dedicated roles. However, when volumes of incoming packages are high and time pressure intensifies, then boxes are required to be immediately transferred from vehicle to belt to free the truck and dock gate as quickly as possible and to minimise the waiting time for other vehicles. During this phase, scanning work is separated from unloading work, and additional workers are assigned to the former. One unloader described the IB unloading and receiving activities:

> To unload, two people will get inside the truck. They will lift the box and keep it on the conveyor belt. When the boxes are shifted from the truck to the conveyor belt, they will scan them. When the load is more, there will be two people assigned exclusively to scan the box *(KL13-SC13-AA10)*.

7.4.2. OB: Sorting

The stage following receiving is sorting, which is undertaken inside the SC's largest space. The area is divided into two 'sections', according to the geographical location of the appropriate delivery destination. An associate explained:

> There are two sections [in the sorting area], CITY and OTH. I am in OTH sorting now. In OTH, the packages are going outside to Chennai, Delhi, Punjab, Haryana. For the deliveries within Kerala, such as to Aluva, Ernakulam and all, it goes from CITY *(KL4-SC4-AA3)*.

A supervisor further explained that the CITY section sorts only those packages destined for delivery stations within a fifty-kilometre radius of the SC, while those for the remaining destinations are processed in the OTH section. In total, there are fifteen delivery stations within, and eighty-nine outside this 50-kilometre radius, the latter additionally including delivery stations beyond the state *[KL12-SC12-TL2]*.

Sorting is a two-stage process. After the boxes filled with packages are scanned and placed on the conveyor belt, they are moved to a point where the belt becomes divided into three different directions, one branching leftwards to the CITY section, one rightwards to the OTH section and one further directly into the SC. The main belt, which conveys the boxes from the dock to inside is automatic, its pace is regulated from a control panel. However, the two lateral belts are skates, where boxes are pushed through those belts by hand. In the first sorting stage four associates pick boxes from the automatic moving belt and, having read the tags, place them on the skates, pushing them to the appropriate sorting area. One sorter elaborated:

> Packages will come in a box. On that box there will be a tag, mentioning CITY or OTH. From the conveyor belt, the CITY side associates will keep the CITY boxes in a belt and similarly the OTH sides associates will pick OTH boxes and keep them in a belt. We will bring that box and will de-bag it and keep all the items on a table. Before de-bagging, we will scan the box *(KL20-SC20-AA15)*.

Scanning is executed by a radio frequency (RF) scanner, which resembles a mobile phone with a grip handle like a gun, and a button to 'shoot' the laser to scan barcodes or QR codes that fall in its beam. This scanning for the second time updates the WMS that the boxes have reached their correct sorting station. The use of scanner illustrates its integral importance for managing

workflow, ensuring remote control, and monitoring all activities in the SC particularly, and extensively for all the units in the e-LSN.

In the CITY and OTH sort areas, boxes are brought to tables and are opened or "de-bagged". Inside the customers' packages are already packed and labelled. An associate described the process:

> The items are coming in big boxes. These are all mixed up. The box will have items for different locations. Sorting is checking the package, see the code, match the code with a crate having the same code. Then scan the package and put it on that crate. Then scan the crate *(KL11-SC1-AA9)*.

As packages are "all mixed up", the workers refer to a four-digit alpha-numeric code attached to each package. An example, given in figure 7.3, shows the code 'C209' below the particular SC's unique Amazon-provided identity code, 'COKE'.

Figure 7. 3. Alpha numeric code used for sorting in the SC

This code displays two elements of information. The first two characters denote the geographical region within CITY or OTH. The last two depict the exact DS location for dispatch. For example, C2 is for packages for the city Aluva, in the Ernakulam district. Similarly, if the first two characters were C1, the packages were for Kochi, another city in the same district. The letter two number, '09' are for a particular DS in Aluva. Amazon name that DS, ALWD. If the last two characters are different but the first two characters remain unchanged then the packages would be for a different DS inside the same city. Adhering to these codes is crucial for successful sorting. To clarify an important point, the packages received by the SC already have been sorted according to the first two characters of the code at the FC from where the boxes have come, so the sorting work at the SC applies to the latter two characters only.

Surrounding the 'de-bagging' table several blue bins, or totes, are placed on the floor, each displaying a two-digit label. This second sorting stage involves matching the last two numeric characters with those on the totes. An associate in OTH described:

> In the centre table, every box will be opened. There will be eight persons assigned to sort the packages from the box to the bins according to the latter two numbers of the code. One person will pick the package with number 01 to 49. Other person will pick number from 49 to 89. These packages will be kept in two bins, one bin with numbers from 01 to 49 and the other bin with numbers from 49 to 89. Then from the bin for 01 to 49, three people will pick the packages and keep it to 49 separate smaller bins. Similarly, three people

> will do the same for the packages from 49 to 89. These small bins are like fishing crates. These are blue bins *(KL20-SC20-AA15)*.

7.4.3. OB: Bagging, Counting and Loading

The OTH processed packages for 89 DSs and CITY for 15 DSs. The next task in the SC is bagging, where the packages are placed inside sacks or bags from the small crates. Certain criteria govern the number and size of packages, that can be put in a single bag. A supervisor explained:

> Earlier this bagging was done in ATS bags, now they have introduced TFS bags. ATS bags were the normal plastic bags, now these TFS bags are foldable and reusable. The problem with TFS bag is that it is little heavy. It can only take 25 to 30 shipments. There is one condition that we have to bag all the package which are till shoe [box] size. All the small shipments such as eyeliner, can be kept in larger amount in the TFS bags. But if shoe size items, then the TFS bag can hold not more than two to three items *(KL12-SC12-TL2)*.

Bagging work is undertaken by dedicated workers, although many have previously done both sorting and bagging, but not simultaneously. An associate described:

> These sorted packages are put inside another bag from the blue crates. Before putting them into the bag, we must scan the individual packages. We must keep a count of the number of packages which are going inside the bag. In the scanner we will press the 'create bag' option. We will scan each product and then we will manually count how many products we are keeping in the bag. We will write the number (of packages) on that bag using a marker *(KL13-SC13-AA10)*.

Bagging combines lifting, scanning and counting tasks. Filled bags are transferred to a table with a printer and a laptop, the workstation of the floor manager where invoices addressed to the DS's operating head are attached. This is called 'closing' work, where the floor manager checks whether the bagging work has been successfully completed. Once checked, each bag is sealed with a tag, which is scanned to update the WMS that the bag has been officially 'closed' and ready for dispatch to the subsequent designated DS. A floor manager explained the closing task:

> Associates will close the bag by putting a tag on its mouth. The tag will have a barcode which we will scan and print a detail of the number of packages from the system and will paste that on the bag. This is called the closing work. Here, the number of counts on the bag written with marker should match with that on the printed paper[38]. Then the bag will be put on the conveyor belt, which will carry that to the staging area *(KL2-SC2-TL1)*.

These 'closed' bags are transferred via the skates to the conveyor, which takes them to the staging area. Here, orders are 'staged' before being loaded onto trucks for dispatch. The main conveyor ends and merges with a perpendicular belt, called the A/B belt which separates the 'closed' bags to left and right sides, 'staging' the bags from the CITY and OTH sections respectively. From this A/B belt, 12 small conveyor belts are connected, each leading to a dock gate. A supervisor described staging:

[38] The closing function is the first among many evaluation stages of the workers' performance inside the SC.

> From this main conveyor, the packages go to A and B belt. There are smaller conveyors belts, called the power flex conveyor connected to the A and B belt. These power flex conveyors are known as 'lines'. There are around 9 such lines in the OTH side *(KL12-SC12-TL2)*.

Three similar belts operate for the CITY staging area. Each 'line' carries bags for 4-5 DSs which are closest to each other geographically. The supervisor elaborated:

> Basically, adjacent stations will be arranged sequentially. For example, Koretty, Angamaly, Thrissur all will be in a single line. In each line there will be around three to four associates. These associates will pick the bags from the line and will keep them on the staging area according to the code of the delivery stations *(KL12-SC12-TL2)*.

Each line carries bags to two staging areas, identified alphabetically from A to L. Each staging area has stages numbed 1 to 4. The invoice on the closed bag displays the first two digits of code for each package as, for example, A1, A2, B1, B2 and so on. Two workers are assigned to the A/B belt to push the bags to the respective power-flex conveyors using the alphabets of the code. On either side of each power-flex belt one worker lifts the box from the belt and places it on the staging area, corresponding to the numerical digit of the code. This 'staging area' consists of numbered cages or pallets on which the closed bags are stacked. One participant explained the work process in staging:

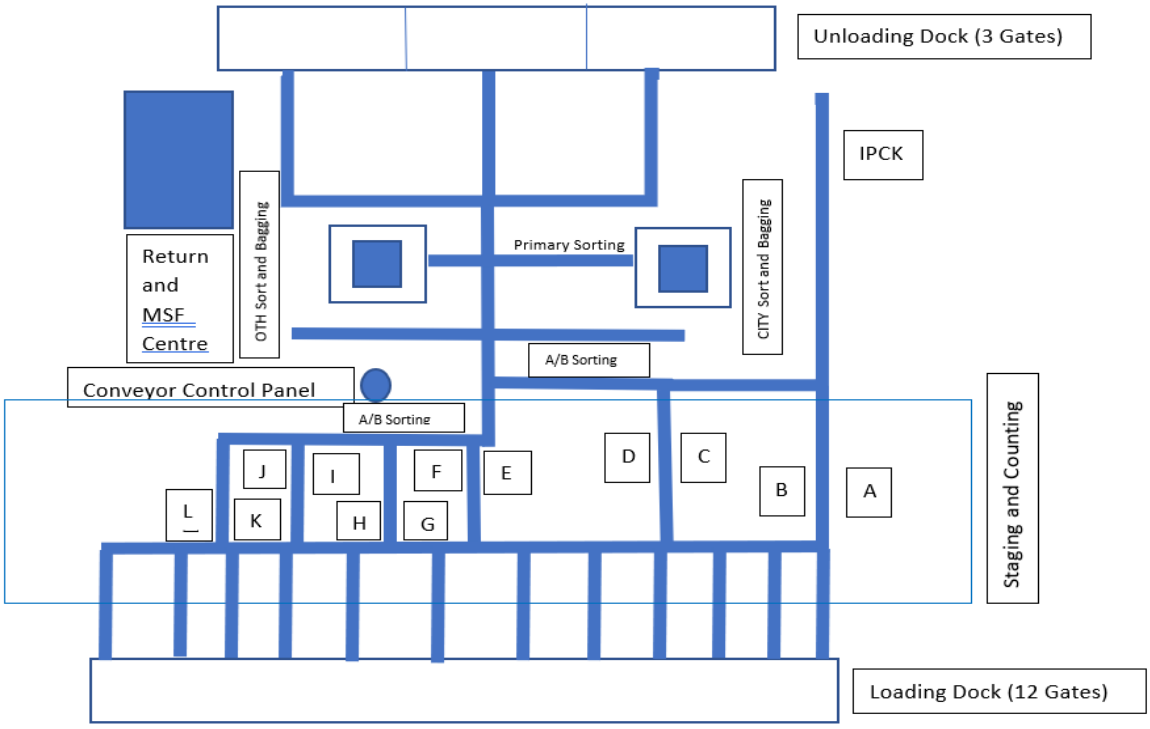
> There will be two people on each line to put the item from A/B conveyor to the A and B line, C and D line and so on. There will be two more people to put the bags in A1, A2, A3, A4 staging area and B1. B2, B3, B4 staging area for the A and B line. Similarly for C and D, E and F and so on there are other people assigned *(KL5-SC5-AA4)*.

Each bag has a prescribed time within which it must be loaded onto the truck. Workers are assigned to load bags from the staging area to the truck in the presence of a supervisor. Before the bags are placed in the truck's containers, they are scanned to update the WMS that they are ready for dispatch. This final scanning work is termed 'counting'. Once completed, one loader places bags onto the power-flex belt which is connected to the vehicle's container. Another loader inside the container lifts the bags off the belt and arranges them inside the vehicle. A senior associate explained:

> There will be two people inside the truck. The conveyor in the staging area is not automatic, we have to push to move it. There will be two of us assigned to push the bags on the belt and keep the belt rolling. One person, mostly a senior associate or a Team Leader (TL), will be there to scan before the item is kept on the belt *(KL5-SC5-AA4)*.

Once loading is completed, the container is closed and the truck leaves the dock, immediately followed by the next truck which in freed space.

Figure 7. 4.Workflow and Division of Labour inside the SC



Source: Constructed from interviewee testimonies and group discussions. Thick lines depict the conveyor belts, blue squares are the de-bagging tables.

7.4.4. Other Tasks in the SC

While unloading to loading is the primary SC workflow, there are certain ancillary activities. The first is 'non-sort' bagging, which involves unloading bags from vehicles in the IB and directly transferring them to the dock for loading to another SC for sorting. A senior associate explained that non-sort bagging means transferring bags to a SC in Kozhikode around 180 km north.

> Earlier, there were staging area named POP-UP and UP-COUNTRY. Now these stages have been changed and a new stage named IPCK has been introduced. The UP-COUNTRY and POP-UP stations were used to shift packages from one truck to another directly, without unbagging and sorting. Now all those items are coming with the code IPCK. This IPCK is a new SC in Kozhikode started in the previous month *(KL7-SC7-AA5)*.

IPCK is a new SC dedicated to sorting orders for north Kerala. Around 20 staging areas for DSs in north Kerala, including Wynaad, Kozhikode, Mallpuram, and Kasalgod, are transferred to this new SC, which creates the ancillary non-sort bagging work in the Ernakulam SC.

Similarly, another dock gate on the right-hand side of the unloading dock receives returned items and packages coming from sellers directly through Amazon's third-party 'fulfilment' service providers, called Amazon Multi-Seller Flex (MSF). This MSF is a third-party, subcontracted facility of Amazon's inventory, with storing, picking, and packing services provided for its vendors. Their work resembles that of an Amazon FC, but they are owned and operated by third parties. A

manager of a Kochi MSF described:

> Under the MSF service, you [seller] can store the products in our go-down. Then we will use the Amazon box or Amazon envelope for the packing, and we'll sent it from here [to the SC]. The benefit is that using this service your product will get a prime tag and FBA [Fulfilled-By-Amazon] tag *(KL38-MSF)*.

Figure 7.4 gives a diagrammatic representation of the division of labour within the SC, depicting the workflow, the different sections and the tasks associated with them.

7.5. Managerial Control Strategies

As indicated, Mahindra has discretion to recruit and utilise the workforce to minimise the risk of market volatility and fluctuations in shipment orders. While numerical flexibility is achieved by recruiting through part time contracts, functional flexibility is attained by rotating workers between tasks. Workers undertake at least two tasks each shift. An experienced associate explained, when asked about his tasks:

> I have done all the works. I am here for almost three years now. I have done loading in the night shift (9 pm to 6 am) for 9 months. This has been my most spent task. Then I did sortation work for six months in the morning shift (9 am to 6 pm). Then I spent 6 months in unloading. Then, I also did line sorting for 7 months to 1 year on evening shift (4 pm to 1 am). I did all the works *(KL4-SC4-AA3)*.

As a long-term employee, the likelihood of having carried out multiple tasks during his tenure was high. However, rotation between tasks could be frequent with daily rotation among two or more tasks common. Another associate reported:

> When the number of workers is less, after sorting and stacking the packages in staging area, we will go to the OB and load the packages. Then once the truck is gone, we will stop the conveyor line in the staging area and will go to the IB for unloading a new truck *(KL13-SC153-AA10)*.

This exercise of numerical and functional flexibility to address fluctuations in orders is taken independently of Amazon by Mahindra. Other management operations and decisions receive close attention from Amazon, which translates into different forms of control over the labour process.

7.5.1. Bureaucratic Controls

The dominant form of control derives from adherence to continuous time pressure and the targets which operate throughout the SC. An associate at the counting and staging function illustrated the unavoidable, customer-driven imperative:

> There is CPT, it has date and time, within which the items should be processed and dispatched from the SC. All packages have CPT. When we scan the package, the details will come. In which date, within what time it should leave the SC is mentioned. *(KL3-SC3-AA2)*.

This CPT, Critical Pull Time, was the most important performance measurement and evaluation parameter. A supervisor explained its purpose:

> Every package and shipment have specific time according to each customer. This is called the CPT. If you have ordered a package on 1st Amazon will say that PDD (Provisional Delivery Date) is 5th. This PDD for the customer is the CPT for us. For you to receive the package on 5th the shipment has to come from various FCs on 3rd or 4th. From here, it will go to the Delivery station. Each DS has a separate CPT time. So, if the CPT time is 1:00, then only around 4:00 or 5:00 it will reach your last mile delivery station. Our primary focus is to ensure that the CPT time is achieved *(KL12-SC12-TL2)*.

To ensure customers receive their orders timeously, each node within the e-LSN connecting the seller to the customer is assigned strict times within which the order has to be processed. The functions within each node in the e-LSN, whether Amazon owned and controlled or partners, must meet their assigned CPT targets. The sites are evaluated based on processing and dispatch against these CPT targets. When asked about how Amazon rated the performance of this SC, the supervisor elaborated:

> Suppose the total number of packages is around 90,000. Among the total packages, Amazon will see the number of CPT missed packages. The missed package can be either C or NC. C is the controllable package which arrived at the SC on time, but due to our mistake we could not keep the CPT. Non controllable (NC) packages are those which were on transit and did not reach the SC on time *(KL12-SC12-TL2)*.

Those packages which fail to be dispatched from the SC within CPT time are evaluated on the basis of whether the upstream node missed their CPT or whether the SC missed their own CPT. In the latter case, the SC is held responsible. To ensure that the SC meets its overall CPT, the entire workforce is given individual targets. Another supervisor explained:

> Target is main here. Each associate has target. Every section has target. For instance, in the bagging section in an hour each has to bag 600 packages and above *(KL19-SC19-LD1)*.

The performance of each worker is accordingly monitored. Amazon follow a traffic light signal method in evaluating and ranking individual worker's performance. An associate explained:

> If the dashboard gives red [to the associate] it means they have not achieved the target at all, yellow means missing the target marginally. The TLs duty is to tell associates that they will have to speed up scanning *(KL3-SC3-AA2)*.

As previously detailed, each function requires workers to scan at the start and end of their dedicated task, thus capturing their real-time performance. The WMS records the time of scanning, the tasks being scanned and the associate responsible. As an output, the WMS creates spreadsheets, in which each row contains an individual associate's name and displays the number of packages processed hourly. Each cell is coloured according to the number of packages processed against target, with green meaning meeting or exceeding target, yellow missing the target marginally and red missing the target. These sheets are shared by Amazon with the SC managerial and supervisory teams. Table 7.1 replicates a section of a spreadsheet provided by a supervisor.

Table 7. 1. Rates achieved by the associates in bagging function (Number of packages scanned per hour)

Name	Function	Timings								
		9-10	10-11	11-12	12-13	13-14	….	17-18	Total	Average
	Bagging	<400								
			400-600							
				>600						
⋮										
Total										
Average										

Note: Cells coloured in traffic signal mode; Green (safe), Yellow (warn) and Red (danger).

Amazon both evaluate individual workers' performance against prescribed targets and compare them with other workers, thereby instilling competition between associates. An aggregated sheet is compiled from WMS for the entire unit, in which each row represents the performance of the SC in its entirety. Table 7.2 replicates this aggregated performance sheet. Through this output, Amazon compares the performance of each SC within its e-LSN, and this competition between SCs is interpreted irrespective of whether the SC is operated by Amazon or by a partner. Another crucial observation is that the high target benchmark, by which an SC is 'red flagged' for missing the CPT for only 5% of the entire orders processed.

Table 7. 2. Performance comparing Matrices of the SC with respect to other SCs.

Region	Node	Total Packages	CPT Performance (%)	Total CPT (missed packages)	Controllable (packages on time)	Controllable (Packages not arrived/late)	Controllable (Percentage)
West	SC1		>99.3				
East	SC2		95-99.3				
South	SC3		<95				
North	SC4						

Note: Cells coloured in traffic signal mode; Green (safe), Yellow (warn) and Red (danger).

Both tables demonstrate the cascading down of centrally determined targets from the e-LSN as a whole to each facility, to sections or areas of activity, and which ultimately become manifest as individual targets. Individual associates adhering to these targets are the fundamental requirement for Amazon in meeting its customer fulfilment objective through its owned and controlled facilities or, by virtue of contract prescription, from those of its partners. Further, the quantification of worker performance through digital means, through the volume of scanned items, provides the basis for human supervision.

The potential consequences of being red flagged were explained by a supervisor by reference to a particular episode:

> Once the SC faced a problem when the senior associates and the TLs [supervisors] resigned. The salary was very low for everyone so many did not find the job suitable for them. Then the number of controllable missed packages became high. That time Mahindra

> tried to run the warehouse by hiring migrant workers ad hoc. But it could not reduce the missed controllable packages. In response, Amazon have cut the rates they used to give to Mahindra. Earlier if it was 5 INR per package, they have cut to 3 INR. To manage the situation, Mahindra cut down the number of workers and try to run the SC with a smaller number of associates, making them work more *(KL12-SC12-TL2)*.

7.5.2. Technological Control

To meet the time bound targets the barcode scanner is a crucial management device. It enables the simultaneous collection of data on the number of packages processed and the performance of employees, but it also feeds this data into the WMS for sharing extensively within and beyond the SC and across Amazon's e-LSN. In this succinct comment, a sorter explained how scanning, essential to all the SC's activities, becomes the means to capture and evaluate workers' performance and to facilitate the processing of packages.

> Whatever we are scanning gets immediately entered in the laptop. So, if any mistake is happening, they will know immediately. They will know how many packages are bagged, loaded, everything *(KL13-SC13-AA10)*.

A sorter elaborated how scanners are used to instruct the workers:

> Scanner is like a mobile phone. During debagging if we do any mistake, it will show 'don't move'. After unloading from the truck there are two sections (CITY. OTH) among which the packages are distributed. If a package from one section come to another section, and the package is scanned, the scanner will show 'don't move' *(KL18-SC18-AA14)*.

Another associate explained that during bagging:

> ...we have to scan each package and put them in the bag before closing. The scanning machine will show the count and the cumulative weight of the bag after putting the package in it. In one bag you can't put more than 25kgs. Once the bag has 25 kg weight, it won't scan anymore new packages. So, if you scan another item when the bag is already 25 kg, the scanner will say 'wrong scan' and will tell you to 'don't move' *(KL11-SC11-AA9)*.

So, the scanner not only documents processing, and the number of packages processed per worker, but also directs workers to behave appropriately. It is a signalling device for the manager to intervene and instruct workers. All associates' activities, in addition to being subject to detailed control, are also intensively surveilled. CCTV cameras installed throughout the warehouse, capture workers' movements and actions. The rationale for using CCTV was twofold, according to a sorter:

> There are CCTVs everywhere inside the unit. Those who are watching the CCTV footages are working from a control room inside the unit. In the peak time, all will be in a rush. If some package went missing in the rush, CCTVs are used to find the packages. They can also find if somebody is making mistakes or misbehaving through this CCTV *(KL7-SC7-AA5)*.

What is considered as a misbehaviour could be as serious as stealing or manhandling packages to as trivial as simply conversing with fellow workers or loitering. Any action not stipulated in the Standard Operating Procedures (SOPs) can be deemed misbehaviour by management. Although

the justification for using the CCTV is either to prevent serious misbehaviour or to identify missing packages, mostly it is used to thwart informal conversation. Whenever security observe a group of workers talking together for any length of time, the floor manager is informed and immediately intervenes. A supervisor who had worked in the SC for one year before being transferred to an Amazon FC reported:

> In the control tower, along with the security, DM and senior executive will be monitoring everything. If they are spotting some shipments getting piled up and people working casually, then they will ask the TL (floor manager) of that section, 'what is happening'. The company's focus is not to allow team to form within the associates. They (company) feel that, if they (associates) are becoming a group, they will talk to each other, joke with each other and won't work properly. Even if the associates are working properly even after forming group or camaraderie, the group will be dispersed, by shuffling their shifts and departments *(KL12-SC12-TL2).*

Here, CCTV, just like the WMS, does not substitute for management decision making, but becomes a critical complement to it. After all, the duration of conversation deemed 'misbehaviour' is a matter of judgement.

7.5.3. Simple Control

Other than technological control, simple control with direct supervisory intervention was vigorously exercised on every shift. One such example of direct control and supervisory interaction is the daily briefing session at the beginning of each shift. Most often it is given by floor managers, who transmit target information they have received from their seniors at meeting of supervisors. One sorter explained the briefing:

> Each day we will have a prespecified number of packages to be processed. There will be trucks coming accordingly. In the morning assembly they will gather everyone, and everyone will be informed that this many trucks will be coming, and we must take care of the packages. For instance, today it was around 60,000 packages in the shift. In some days it will be 70,000 packages per shift. Basically, we must clear all the trucks which are coming during our shift. Then they will tell us, don't delay the work, speed up, work to your maximum potential and so on *(KL13-SC13-AA10).*

Sessions are attended by all full-time and part-time sorters, baggers, and unloaders. Thereafter, supervisors frequently push associates to increase their pace of work. Participants unanimously reported that supervisors are obsessed with the need for workers to work as fast as possible. A few examples are given:

> Supervisors will try to make us do the work faster and faster, as they are getting the pressure from people above them to finish the job as soon as possible, they will pass on the pressure to us *(KL23-SC23-PT1),*

> They will keep on telling us to speed up. There is this constant pressure to work faster. The work environment gets even more stressed during the peak time. If the workload is more, there is an option to increase the pace of the conveyor belt, during the peak time,

> the TL will start a process called 'stress management' where the supervisors will increase the pace of the belt from the control room *(KL13-SC13-AA10)*.

These quotes also reveal that the progression of the orders, via either the automated belt or the skates, regulate the pace of work, resembling classical technical control, alongside algorithmic control. Another important control imperative relates to attendance rules. Associates must report at work fifteen minutes before the start of the shift for completing security checks. A part-time employee explained:

> We reach at around 8:45 am for security check. We will enter the warehouse exactly at 9:00. If we are not on time we will be sent back home, even if it is just five minutes late *(KL23-SC23-PT1)*.

Another worker recounted the consequences of being late:

> If we are late at entry, we can't join the work for that particular day, we will go back home, and that day's salary will get deducted *(KL22-SC22-AA17)*.

Another sorter described how management discretion comes into play regarding attendance and entry, a quote that is followed a supervisor providing management's perspective:

> If we are late by more than five minutes, we must meet the HR. Now everything depends on HRs mood. They can sometime tell us to go home with half days pay. Sometimes they let us continue *(KL7-SC7-AA5)*.

> When the number of trucks [or orders to be processed] is low, if associates are not reporting exactly at 9, [for the morning shift] they will have to go back home empty handed [without the day's pay]. Basically, if more associates come than the required amount to process the shifts' number of orders, then if they are late by even a few minutes, then they will have to go home. This is true for both ad hocs and regulars. That amount saved [by not paying the day's wage] will be profit for Mahindra. If they are coming on exact time then, by rule, Mahindra cannot do anything, and they must accept them for the shift. Again, if the load is high, even if the associate is late by ten minutes, the HR could decide to allow them to work *(KL12-SC12-TL2)*.

7.5.4. Normative Control

In addition to being a technology intensive company, Amazon self-portrays as a uniquely customer-centric business, principles which it strives to inculcate into the workers. Managers orchestrate a narrative that, to maximise customer satisfaction, workers must work harder to raise their productivity. When working under intense pressure to meet targets as demanding as processing one package per second, the probability of making mistakes increases as workers might throw them recklessly onto belts. To prevent these actions, Amazon through SOPs had introduced package handling rules, displayed on the walls of the SC as a reminder to handle packages with care. A worker explained:

> There are certain rules in handling the packages. You can't sit on the products you can't kick the products. Don't spit on the items, keep the items clean. Also, we are not supposed to throw the boxes, even if we are throwing them should be very careful, it should not

> cause any damage to the packages. Like that there are several rules. If you are a newcomer, the senior among us will read all these rules to you. These all are written in "vendakya aksharam" [big letters] on a board at the entry point. The rules are also pasted at a very visible manner and very vividly at all the walls inside the warehouse *(KL21-SC21-AA16)*.

A trainer explained the rationale for these explicit rules:

> We are also customers. We also order through Amazon. So, we will also have that responsibility as a worker. Somebody is waiting for the parcel. So, it is our responsibility to reach the products to them in good state and timely *(KL19-SC19-LD1)*.

These normative controls are evident in supervisors' briefings, as a sorter explained:

> They have kept everything there to remind us that we are working for customers. There are quotes and slogans for making customers happy written inside everywhere in the SC. Then on top of that, the TLs tells us to respect the packages, remind us that customers are waiting for the packages to come *(KL5-SC5-AA4)*.

However, a supervisor explained the challenges in ensuring these protocols, especially for the third-party operations, and how they attempted to overcome them:

> By Amazon's rule a package cannot be put on the floor. But in our warehouse, it is impossible [not] to do so. Sometimes the number of packages coming are too many with respect to the number of hands to do the work. Then the workers lift all the boxes from the belt and keep them on the floor *(KL12-SC12-TL2)*.

Stacking boxes on the floors prevent congestion on the conveyor belts: The supervisor continued:

> After all the boxes are removed from the belt and kept in the floor, they start processing them. This is against the rule….. When the Amazon reps come for the audit from Mumbai, everything will be kept neatly and perfectly as per Amazon's rule just before his visiting session. No packages will be kept on the floor at that time, packages in the staging area will be stacked properly. The Amazon rep will click a picture of inside the warehouse and go away *(KL12-SC12-TL2)*.

In sum, a combination of control mechanisms is implemented by Amazon, mediated through their partners within their operating sites. The imperative of management control over the labour process to overcome labour indeterminacy, convert labour power into concrete labour that maximises value creation is manifested through multiple mechanisms. Although, the different control mechanisms may be heuristically divided into different categories, they operate simultaneously, often re-enforcing each other in erecting a comprehensive control infrastructure in the SC where Amazon's presence is vividly present, albeit indirectly through the labour utilisation protocols and regulations. What are the consequent workers' experiences and how do they respond to this heavily controlled workplace environment?

7.6. Workers Concerns, Grievances and Scope for Resistance

It is worth re-emphasising each control mechanism might have specific objectives, they work in concert. Simultaneously, workers might perceive and experience the consequences of these control measures in combination as they perform their target-driven, microscopically measured, micro-

managed tasks at relentless pace and subject to tight discipline. However, in the interests of clarity the experiences that workers articulated and the concerns they expressed are thematically categorised.

7.6.1. Intense Work Pressure and Insufficient Breaks

The most frequently and reported grievances relate to the experience of excessive management demands on workers' performance. Many find the targets stipulated by the operating protocols impossible to achieve. Indeed, floor managers identified this failure to meet the targets as an issue, due to too many newcomers or inexperienced workers. However, several experienced workers reported that they had not been able to acquire the skills or the expertise to meet their targets, but rather they were compelled to adapt mentally to work for longer hours, under intense pressure *[KL7-SC7-AA5]*. A senior associate working as a sorter for around one year described the pressures placed upon him and his colleagues:

> When you join in the beginning, it is not possible to meet the rate. Only it may be achievable after you gain experience and stay in the company for a considerable time. Initially it will appear very difficult, to the point of impossibility. If you really require this job, then you will keep fighting and maybe also achieve the target one day *(KL7-SC7-AA5)*.

The sorter's final comment illustrated the compulsion to work at such a demanding pace merely to keep their job. He added:

> Mainly its hard physically draining work over here. Sometimes hands will start aching, but we must keep on working, keep on picking, packages and keep them on the conveyor. We must push ourselves. Otherwise, the pending packages will be creating a blockade on the belt…It is also not a job suited for young age as we at young age are taking heavy loads and reducing our body's lifespan (*KL7-SC7-AA5)*.

A blockage, or an excessive glut of packages at a particular part of the line, might trigger floor managers to intervene and exercise direct control. The relentless flow of the packages and the unforgiving time pressures monitored and implemented by management lead to an intensity where workers might have to process one package per second. Inevitably, this pressure generates serious adverse effects for workers' body and mind. Shoulder pain, neck pain and severe headaches are common complaints. One sorter reported:

> Once I got sick and the company took me to the hospital. I fainted and fell on the conveyor belt. I did not have enough sleep the night before. Had to rush through my breakfast as the shift was starting. If we do not have proper breakfast, then the chance of getting faint is high. If we did not have breakfast, then by 11 am we will be very tired *(KL20-SC20-AA15)*.

Deleterious effects are exacerbated for night shift workers, with disturbance to the circadian rhythm leading often to a state of permanent tiredness and body fatigue. Some workers reported several weeks lack of sleep. One night shift worker, when returning home from work at 6 am, revealed:

> Will go and sleep now. We will wake up at 14:00. After we wake up, then also we will be feeling tired. We won't have energy to do anything else. Alas, it is again the time for the

> next shift. So, after work we do not even get the time to talk to our family or go out with friends. Work takes away all our energy, whatever time is left outside work will go away in sleeping, doing the daily chores like grocery shopping cooking, eating, and travelling to work *(KL22-SC22-AA17)*.

Similar accounts of the effects of arduous work on their bodies, were given by many interviewees, but particularly by those on night shifts.

> Already the work pressure is there, along with that we are deprived of sleep. So, it is difficult. And we are standing for so long continuously. That adds to our difficulty *(KL9-SC9-AA7)*.

Many resorted to humour to relieve the hardship. One worker shared his dream with comic intent:

> I have a recurring dream that I am working in the in-bound, taking the packages from here to there. So yes, the dream of unloading is not a merry dream for sure *(KL13-SC13-AA10)*.

Another salient concern is the duration of breaks. For a nine-hour shift, one hour is divided into one fifteen minutes break for tea and one forty-five-minute break for lunch or dinner for the morning and night shift respectively. Break timings differ depending on employees' task or department. The break times for sorters, loaders and baggers vary to prevent interruption to the continuous processing of orders. The cafeteria is the only location with seating provision. Participants stressed how precious breaks are and being able to sit down gives some respite from the relentless intensity of work and from pressurised by floor managers if they take a breather between tasks. A common complaint was that breaks were neither long nor frequent enough to enable them to recover from fatigue. An additional complaint was that the formal duration of breaks was shortened in practice because workers are obliged to be screened through security before entering the cafeteria. Moreover, workers must bring their own food. The company's failure to offer meals, although it did provide water, tea, and glucose drinks, was a source of discontent especially given the job's physical demands. The response of one sorter on the morning shift resonated with several of his colleagues:

> Break is only just one hour. 45 minutes for lunch. It is not sufficient to have lunch. On top of that, by the time we will enter the canteen after security check, ten minutes will be gone. There is only one gate, and all will have to form a queue and get screened by the guards one by one. By the time we finish the lunch, the break will be over. *(KL16-SC16-AA12)*.

7.6.2. Concerns over Pay:

A pressing concern, raised almost universally, related to payment. A full-time sorter believed that his 12,500 INR (£125) salary was insufficient to meet his living expenses.

> Salary is a matter of concern for everyone. For the work we are doing, at least we should be paid 15-16k. The thing is, I am coming here by bus. Every day, I spend 100 INR for travelling. So, every month it is 3000 INR. So, when I get the salary, 3000 goes for travelling. I have a phone EMI to pay. So, every month on the second day I have to pay the EMI, but my salary comes on the 10th day of the month. When I am paying my EMI,

> five days after the due date, extra 500 will be the late fee. So, 2000 is my EMI, but I am ending up paying 2500 every month *(KL7-SC7-AA5)*.

This 26-year-old graduate from Ernakulam was one of several young employees aspiring to create a career and increase opportunities who reported similar discontents. A supervisor, sympathetic to workers' concerns, added:

> There are people working for last four to five years. For them also the salary did not increase, it remains the primary concern for all *(KL12-SC12-TL2)*.

No increments are given beyond entry level, resulting in reduction in real wage owing to inflation. Another complaint related to delays that workers experience in receiving salaries into their bank accounts. As indicated, SC workers are legally employed by recruitment agents and are paid by them and not by Mahindra or Amazon. Some receive their salary timely, but others were paid late, sometimes as late as the 15th day of the month. Most of these are young, with responsibilities that may require them to send money home to their families and dependents, or to pay off education loans. These difficult circumstances provoked some desperate responses, such as the following: '*if the salaries are not credited on time, then how will I sustain my parents and siblings?' [KL18-SC18-AA14]*.

7.6.3. Scope for Resistance and Managerial Response

These profound and widespread concerns over pay had prompted attempts by workers to collectively bargain with management, specifically HR, to press for a salary increase. A demand was raised by full-time associates on a morning shift in May 2020, who organised a two-day strike that halted the entire operation of the SC. A supervisor, sympathetic to the workers, recalled:

> Here they only get 12,500 as salary, which means per day around 450 INR. To get that they have to do everything: unload, bagging. There work is hectic, and the payment is low…There was a strike. Associates went for a strike for salary hike. TLs were not part of it, but we were morally supporting them. Operations stopped for two days *(KL12-SC12-TL2)*.

However, due to multiple factors the strike did not result in a pay rise. Notwithstanding this lack of success, this mini-strike reflected the degree of discontent among workers and the conviction that the level of remuneration did not reflect the harsh work demands and their efforts. The action was spontaneous, without official union representation or sanction. The SC actively discourage union activities and exploit the labour market situation of the high unemployment rate to disperse collective actions, by pitting SC insiders against outsiders, a potential reserve army. One sorter, who engaged with the HR during the strike, recalled:

> I said to her that the salary is not sufficient. We used to talk to each other that the workload is hectic, but the salary is very low. So, we raise the concern to the HR. She just told us to leave the job if unhappy. She said that there are many people outside who are willing to work for this salary *(KL20-SC20-AA15)*.

It is suggested that an unfavourable labour market, from the perspective of workers seeking and gaining employment, acts to restrict labour's mobility power. The evidence also suggests that Mahindra's adopt a 'sacrificial' HR strategy, in that employee are treated as expendable human capital and not as 'associates' in any meaningful sense to be developed for the longer-term.

Corporate HR policy thus contradicted the perceptions of many floor managers who valued the contribution of experienced employees. The floor managers' relationships with employees are critical to ensuring that the workforce can deliver on the productivity targets prescribed by senior management. One supervisor reported that due to the low salary "*many senior associates left the company" [KL12-SC12-TL2]*.

Many senior employees reported that Mahindra had adjusted starting salaries upwards since 2022, but only by reducing other benefits and increasing the hours of work. A migrant sorter from Bihar with five years' length of service reported:

> When I joined here, the salary was 10,800. We had a bonus. At the peak season, if we had proper attendance, they would give an attendance bonus of 1,700. But when Mahindra started incurring loss, they stopped giving the bonus. They divided this bonus amount and added to each month's salary. Now it is 12,500 INR. Considering the inflation, almost all companies have increased the salary. But what Mahindra did was instead of increasing the salary, they divided the bonus and gave it on a monthly basis as added salary. Along with that, we had two days of leave and one-half day work in a week. Now we have one day leave only in a week *(KL10-SC10-AA8).*

So, Mahindra manipulate their payment structure to effectively increase its share from the revised terms and condition, at the expense of workers' incomes and interests. The salary revision to 12,500 INR from 10,800 INR, was accompanied by increasing the monthly days of work from twenty to twenty-six. In reducing daily pay from 540 INR to 480 INR, Mahindra had expanded its absolute surplus value from workers.

A more general complaint widely expressed in workers' testimonies is the failure by management to respond to the very limited, permitted exercise of employee voice. The company has a complaints box in which workers can anonymously raise concerns with HR. In practice, though, the complaints are not processed appropriately, because management breach anonymity, targeting individual workers who raise specific grievances. One worker, who submitted a request for increased break times, reported having been summoned by HR individually, then interrogated about his complaint, castigated for not meeting rates and even threatened with dismissal. He recalled:

> There is a complain box, but nobody cares about it much. If we are saying something, they will threat us to leave the job. Once, I complained about giving fifteen minutes extra break. The HR told me that it is good to complain but since we are not meeting the rates this request can't be granted. The HR said that given the load the work effort from me was below par. The problem here is that if we are reacting to something individually, then we will get isolated, so nobody is reacting *(KL9-SC9-AA7).*

Finding relief in taking unauthorised absence was evidently a relatively common coping mechanism. For absenteeism to translate into resistance may require a conscious attempt by workers with the purpose of modestly nudging the unequal power relations between themselves and the management in their favour. However, the evidence does not support absence to be a purposeful decision by workers to impact the functioning of the SC but were reactive attempts to regain their time for social reproduction of labour power. Nonetheless, these were responses to

the effects of managerial control strategies and excruciating work intensity. Workers' actions added to managerial concern over labour indeterminacy, also that pay deductions were implemented by management in order to discourage workers from taking leave. However, it was only one element in management's attempts to curb this recalcitrant behaviour. They also would publicly shame individuals. One recalled:

> After I left to attend my sister's wedding, they wrote in the notice board that I left for five days. Everybody will be knowing it now. At that time if anybody wants to leave, that won't be granted because I have taken a long leave *(KL11-SC11-AA9).*

To take leave, workers must inform their recruitment agent who has discretion to approve requests, but only after informing Mahindra's HR. HR, in turn, use this information to generate animosity among other workers by publicly shaming this worker, justifying their stance of not granting leave to others for the same reason.

Other concerns were revealed by participants. First, no travel allowance is provided. In this regard, many workers, especially on the night shift, must remain in the SC after shift end for one to two hours, because public transport has not begun to operate. Many are compelled to walk around five kilometres daily to and from their homes. Other workers use their own vehicles to travel, incurring fuel costs. One worker expressed his frustration:

> Night shift should provide travel facilities. Many are very young, almost child. They are staying and working at the unit though out the night without sleep. There is no consideration for them at all *(KL9-SC9-AA7).*

Second, many workers complained that the HR and managers spread rumours regarding pay rises and bonus payment to lure workers from leaving or absenting.

> Two months before, they said those who have worked for 26 days without taking any extra leave in a month will get 1000 rupees bonus, but they're not giving it yet. These are all false promises they just keep on saying but no action *(KL11-SC11-AA9).*

Additional reported concerns included the unsatisfactory temperature and air quality in the facility. A sorter stated, '*we need more fans; it is hot inside'* (KL18-SC18-AA14). The discomfort experienced by workers was exacerbated by management's refusal to provide seating. One sorter said, '*I will ask for a chair. It is extremely exhaustive to stand for hours continuously' (*KL22-SC22-AA17). In attempting to alleviate tiredness, fatigue and frequent excruciating pain, workers sometimes '*sit on the pallets, in between one truck gone and another truck coming (*KL20-SC20-AA15).

Taken together, these various concerns, complaints and frustrations reported by very many participants, reveal a tightly monitored, target-driven, high-paced, fragmented labour process governed by a combination of technological, bureaucratic, normative, and direct control mechanisms, supplemented by strict absence management policies, surveillance, and severe disciplinary actions. Numerical flexibility, the engagement of part-timers, and functional flexibility, the moving of workers between tasks, are utilised to maximise value-adding productive output and to minimise labour costs. Long working hours, unalleviated by unsatisfactory breaks, contribute further to the physical and mental strain experienced and reported by workers. Nor was the harshness of the labour process compensated for by, according to participants, adequate

remuneration. The complaint box, a fraudulent contrivance, appears to merely threaten workers, and epitomises the antipathy towards employee voice, reflecting the more general anti-union policy of Mahindra and Amazon.

These worker testimonies also reveal the dialectical relationship between control and resistance within the SC. While management utilised its organisational strategies, managerial discretion, and different control mechanisms to maximise surplus extraction and minimise workers autonomy and mobility power, they instil widespread and varied discontents. Workers respond by recalcitrance and even resorting to forms of resistance towards, be it collective bargaining through spontaneous strikes or individual absenteeism. Further, workers reported that management adopt a plethora of tactics to dismantle any organic association and embryonic collectivism, ranging from dispersing workers to different shifts, dividing the workforce between migrants and local, full-time, and part-time, and even threatening to terminate and even to dismiss 'delinquents' from the job. In this regard, the segmented nature of the labour market and the high unemployment rate of the region are also capitalised by management to enhance capital's prerogatives and to use their untrammelled ability to formulate and revise the operating rules of the SC, to curb resistance and other expressions of worker discontent.

7.7. Summary and Conclusion

This chapter examined the labour process, and labour utilisation strategy of SC, the third operating site in the e-LSN of Amazon. It presented evidence of the effects of Amazon's inter-firm relationships on labour process and control mechanisms in its partner's operating site, and their consequences for workers. Multiple control mechanisms combined in the imperative to overcome labour indeterminacy. Mahindra's integration with the lead firm, Amazon's, digital architecture and platforms underscores the pivotal role of algorithms and software to ensure the latter's arms-length control. Further, the chapter evidenced the SC's workforce composition, how it reflected labour market conditions and its impacts on the labour utilisation practices, including the undermining of mobility power. Finally, the chapter highlighted the concerns, grievances, and sporadic forms of resistance and exercise of agency. A major observation was that Mahindra's discretion in recruitment and labour utilisation did not translate into autonomy in configuring the labour process in its owned operating sites, owing to Amazon's predominant role in governing their strategic partners' establishments and indirectly dictating the pace and intensity of their operations through competitive pressure orchestrated within its network and the algorithmic monitoring and evaluation of each site's performances. This enforced certain similarities in the control mechanisms and managerial strategies with the FCs owned by Amazon, albeit there were clear functional differences in the operations of the two sites and difference in the size of respective operations. It now remains to be seen how the labour process is configured in the last phase of processing the shipments to the customers at the Delivery Stations.

Chapter 8: Labour Process in the Delivery Station

8.1. Introduction:

The final sites in Amazon's e-LSN comprise several geographically dispersed DSs, including its competitor Flipkart's subsidiary E-Kart and the Government of India's postal and courier delivery India Post. Many delivery stations are owned and operated by vendors registered in the Amazon marketplace (Govindarajan and Warren, 2019). According to an Amazon report, more than 2,000 delivery stations operate across 750 cities in India[39]. The majority are in the densely populated metropolitan cities of Bengaluru, Chennai, New Delhi, Mumbai, and Kolkata that have sizable customer bases, access to better digital connectivity and consumer awareness. Subsequently, Amazon's e-LSN has extended to semi-urban areas and the peripheries of core cities.

This chapter presents evidence from four DSs, functionally connected to the SC examined in Chapter 7. While two DSs are located in north Kerala, near the port city Kozhikode, the other two are in central Kerala, near the metro city Ernakulam. The labour process in the DSs can be divided into station work and delivery work. The delivery stations resemble a small or medium sized garage space, where the work consists of receiving parcels from SCs or sometimes directly from FCs and sorting them according to customers' pin code (post code). Delivery work consists of picking orders from the station, conveying them in their vehicles and delivering them to customers' doorsteps. The sorting and driving work are assigned, controlled, coordinated, and monitored, mostly remotely, by a group of managers from both Amazon and the owners of the particular DSs and their on-site supervisors. The delivery station also serves to monitor the orders and drivers when they are in motion.

The chapter is structured as follows. Section 8.2 evidence the varied inter-firm relations between Amazon and DS owners called 'delivery service partners' and discusses employee contracts pertaining to pay and other endowments. Section 8.3 details the labour processes of station and delivery work and analyses the diverse but complementary mechanisms of management control. Section 8.4 presents evidence from the testimonies of workers' experiences, their concerns and grievances, resistance, and the prospects of bargaining. Section 8.5 provides concluding remarks.

8.2. Inter-Firm Relations, Organisational Structure and Workforce Composition in the DS

Unlike the FC or SC, where divisions of labour occur within the boundaries of the operating sites, the last mile function comprises activities occurring within the sites, office works, and those outside, delivery work. There are at-least two managerial positions in each DS consisting of station supervisors (SS), and team leaders (TL). Management responsibilities include assigning deliveries to drivers, communicating with drivers and with Amazon representatives, resolving problems of missed and lost deliveries, delayed payments, making performance reports, and handling the cash registers. A supervisor at a delivery station in Kozhikode described:

> In the delivery station there are 2 TLs, one primary TL and an assistant TL. Then there are 2 SS. When there is no TLs in the morning, then I will be responsible to coordinate the

[39] https://www.aboutamazon.in/news/operations/im-a-logistics-entrepreneur-visit-an-amazon-delivery-station-with-me

> operation. Either of the two TLs, or 2 SS, whoever is here, will be coordinating the operation in the hub. Ideally one TL and one SS will come every shift. But sometimes only one TL or one SS will come in the hub *(KL31-DS6-TL3)*.

The central work in the DS is performed by sorters. However, all supervisors frequently participate in sorting work. A delivery station driver in Ernakulam added:

> There are 8 people in the station. Among them 4 do sorting jobs, rest are supervisors. But all present in the hub will become a sorter when the loads come. There is no separate sorting position *(KL26-DS1-DR1)*.

Although office management and sorting activities can be distinguished in the stations, in practice several roles can be assumed by an individual. Multi-tasking becomes even more demanding for a few employees when station work is combined with delivery work, as a delivery driver at Kozhikode confirmed:

> There will be constant work for me. In the morning, I will go to my hub. I will get the loads. Will sort the loads based on the pin-codes. I am doing delivery also. I will do sorting, delivery and, I am an office worker also *(KL27-DS2-DR2)*.

These testimonies demonstrated that managers often perform each other's roles, along with those of sorters and even delivery drivers on occasions. Although the division of labour might be imprecise or overlap, the organisational structure in each visited DSs exhibited clear hierarchy in decision making between SS and TL on one side, and sorters and drivers on the other. The exact managerial hierarchy within each DSs is highly contingent on the inter-firm relationship between the station proprietors and Amazon. Table 8.1 demonstrates the variation in inter-firm relations, organisational structure, size of operation, and workforce composition across the four studied DSs.

Table 8. 1: Inter-Firm Relations, Organisational Structure, and Workforce Composition in DSs

Delivery Station (DS)	**Organisational Structure**		**Amazon-DS Inter firm Relations**	**Drivers' Contracts**
	Position	**Size**		
TCRE (Owned by Brijesh)	Team Leaders Supervisors Delivery Drivers	2 10 35	Franchise	4PL
QLDA (One World Logistics)	Cluster Regional Manager Team Leader Supervisor Sorters Delivery Drivers	1 2 2 2 20	3PL	4PL, Direct Recruitment
ALWD (Continental Infrastructure)	Assistant Delivery Executive Supervisors Sorters Delivery Drivers	1 4 4 25	3PL	4PL, Crowdsourced (Flex)

KLZA (Xpress Bee)	Supervisors Delivery Drivers	3 12	Franchise	Direct Recruitment

8.2.1 Inter-firm Relations between Amazon and DSs

All these sites in Kerala are owned and operated by Amazon's 'delivery service partners'. Two types of inter-firm organisational fixes deployed by Amazon incorporating DS partner companies into its e-LSN are observable, subcontracting and franchising. The DSs which are subcontracted third-party (3PL) to Amazon have some autonomy in labour recruitment but are contractually obligated to adhere to Amazon's SOPs. While all DSs had at-least either a SS or TL, the 3PLs have additional positions of Cluster Regional Manager (CRM) and Assistant Delivery Executive (ADE), who are off-site managers recruited by the third-party enterprise One World logistics and Continental Infrastructure. They supervise the DSs' operations remotely, make occasional visits for auditing and inspection, but regularly conduct video-conference meetings and briefings with on-site supervisors and share the performance stats with Amazon for evaluation. From Amazon's side, a Cluster Team Leader (CTL) is appointed to evaluate whether the 3PLs are adhering to the prescribed SOPs, to whom the CRM and ADE report, and who take the crucial decisions on extending or terminating the contracts of the 3PLs with Amazon.

The other two DSs are franchisees of Amazon which, alongside operating under Amazon's brand name, and complying with the lead firm's SOPs, are assisted in the employee recruitment by Amazon, through advertising job vacancies, conducting interviews and verifying documentation. In these two franchises it is the role of the SS and the TLs appointed by the DS owner, following consultation with and approval from Amazon, to evaluate, audit and ensure Amazon's contractual agreements are met. However, one sorter explained that owners often resort to personal networks when recruiting supervisors, and negotiate with Amazon to hire their preferred persons in decision making posts:

> TCRE is a mini hub, owned by [Owner Name]. He has appointed two TLs who have learned logistics. They often visit the delivery station, and they provide suggestions to improve the performance. [Owner Name] managed to convince Amazon to recruit his son-in-law in one post here *(KL36-DS11-AA21)*.

Just like the SC, Amazon paid the DSs on piece rate with the fee per package varying across the four DSs from INR 3 to 5, depending on the station's performance, with no discernible distinction arising from the type of organisational arrangement (3PL or franchise) between Amazon and the DS operating partners. However, as a part of their contract, while the franchises can access Amazon's tools and equipment and software, in exchange of a royalty, the 3PLs use their own equipment, but are required to report to Amazon on the DSs performance in a standardised prescribed format.

8.2.2. Organisational Structure and Workforce Composition in the DSs

All four DSs have between 2 and 10 SS. Two of the four DSs had two TLs above the SS, who rotate, one at a time, between morning and evening shifts. In parallel, two DSs recruit sorters separately numbering between 2 and 4, and two DSs have one post for off-site supervisors. The

delivery drivers constitute the largest share of the DSs' workforce ranging from 12 to 35. Overall, the DSs employed around twenty to thirty people which, in contrast to the SC and FC, are much smaller operations. This differentiation also reflects the comparatively lower volume of shipments processed per day by each DS vis-a-vis other operating sites.

All employees were recruited by the DSs, either after consultation with Amazon (for franchises) or independently (for 3PLs). Although all the SS and TLs were recruited directly by the DS on full-time salaried contracts, irrespective of the DSs inter-firm relationship with Amazon, delivery drivers are segregated by three different contract types. The first is where they are neither directly employed by Amazon, nor by the DS owner, but are recruited through independent transport and delivery companies who own the vehicles, and drivers are their direct employees. For instance, in one DS, *"there are mainly 4 contractors who recruits the drivers. Some covers 5 pin-code, other cover 4 pin-code". [KL36-DS11-AA21]*. These transport companies (contractors) are 3PL to the company owning the DS and fourth party service provider (4PL) to Amazon. The second involved crowdsourced drivers engaged through the Amazon Flex platform as independent contractors. The third form is direct recruitment by the delivery station company.

Although the multi-tasking character of work in the stations blur a strict capital-labour relationship, pay grades and employment benefits were unequally distributed on clear lines of organisational hierarchy. While a TL earned monthly INR 22,000 (£220) a SS earned INR 18,000 (£180) and a sorter earned INR 10,000 (£100), even though their roles overlapped. The payment structure for delivery drivers is of two types. The first and dominant form is piece rate, the value of which varied from INR 15-20, with the rate being around INR 10 per package picked up from vendors or received from customers returning orders. In explaining the variation in the piece rate, an Amazon employee working in the off-road delivery support team for Amazon Flex workers reported, *'Amazon follows a logic of higher the number of orders, lower the rate per delivery' [KL13-SDS1].* Amazon, thus, appears to calculate a wage fund for expenses on delivery drivers. The greater the number of delivery orders, the more that price per order is reduced to ensure that the overall share of wages for drivers remains within a stipulated amount. Conversely, if orders were lower, the price per delivery is higher. This pattern broadly matches the difference in the reported average rate per parcel between drivers in the DSs near Kozhikode and those near Ernakulam. While the DSs near Ernakulam handle more shipments per day (around 2,000-5,000), than those in the less populated and less commercial city of Kozhikode (around 400-700), the former gives a piece rate of around INR, 15 while it is INR 17 for the latter.

The second payment method is where the drivers are paid a monthly fixed salary. In one of the DSs near Kozhikode, drivers are given the choice of delivering at either a piece rate of INR 17 or as a fixed salary of INR 16,000. One driver explained:

> In per piece rate the chance remains to earn more depending on how many you can deliver. In the salaried earning, the drivers are assigned long distance routes, where both time and money on oil gets spent for delivering a handful of orders. Besides the maximum you can earn is fixed *(KL37-DS12-DR8).*

However, from the perspective of the drivers, which was a better pay structure was a constant point of debate. Although the piece-rate was the dominant contract amongst drivers, mostly the two wheelers, several drivers, especially the four wheelers, are on monthly salary. Drivers also

reported that their requests to transferring from one pay structure to the other, after initially selecting one, went unheeded *[KL26-DS1-DR1]*. Finally, although all the supervisors and sorters, whether in dedicated roles or engaged on multiple tasks, have access to social security benefits, such as a provident fund and health insurance, the drivers lacked any such benefits other than a conditional health insurance (see section 8.4).

8.3. Labour Process and Control Mechanism in the DSs

8.3.1 Flow of Work in the Last Mile Delivery Service

Similar to the FC and SC, the DS labour process can be divided into inbound and outbound activities. The former comprised receiving, debagging and sorting the packed items inside the stations, and the latter comprised picking up the parcels from the stations and delivering them to customers' doorsteps. The entire workflow can be divided into 'station work' and 'delivery work'. The former consists of a blend of parcel processing tasks and managerial activities of supervising and monitoring the drivers while they were on the road, and latter of delivering the parcels in two wheelers or trucks to the customers.

8.*3.1.1 Station Work: From Receiving to Bagging*

Consistent with the labour process of the other sites in Amazon's e-LSN, the office work of DSs depends heavily on scanning, with the purpose of continuously generating real time updates of the status of shipment orders. Each stage at the station consists of a combination of the physical movement of orders and scanning to update these actions on the digital platform, the WMS built on Amazon's inhouse cloud computing software, the AWS. Scanning enabled both floor managers (SS and TL) and off-site managers (CTL, ARM, CRM) to monitor processing and processors of the shipments inside the DSs. An inbound office worker explained:

> Shipments will arrive here in the container vehicles. We will unload it, here we have scanners, will scan the packages, and receive it. Here shipments arrive in a bag with a tag. We will have to scan that tag first then unbag and scan each package. If they have sent 100 packages, here we should receive (scan) 100 packages. After we receive the shipment we will sort it according to the pin-code *(KL36-DS11-AA21)*.

Receiving the shipped orders is the first activity in the DSs. Scanning at this stage updates the WMS to register that the shipments have reached the DSs. First, the bags are unloaded from the vehicles and the bag tag is scanned, the information stored on the tag detailing the number of orders in the bag, and location of delivery of each order, displayed simultaneously on the computer screen monitored by supervisors. This information is crosschecked against the invoice sent by the operation manager of the previous operating site (FC or SC) to receive the bag in the DS. Where discrepancies are detected, bags are kept aside and processed later.

After the bags are received, they are debagged after scanning the tags. Then, the sorting work commences. Although, as indicated before, a few stations have dedicated sorters, all the office staff participate to process orders as speedily as possible. It is the hub's most important function and processing orders timeously is the crucial performance parameter for the station work. Inside the station, several boxes or cages are labelled by pin-codes. Individual packages are taken from

the bags, scanned separately, and dropped in the boxes according to pin-codes. One office staff explained:

> For us big boxes will be coming in container vehicles from different regions. It will be huge box, which are fibred TFS boxes. It will be stacked up. We will take each box from the stack. There will be tag on each box, will scan that. The number of packages inside each box will also be written on the tag. We will open that box by pouring all the individual shipment orders on a table, then we will take each package, scan it, and put it into a cage according to pin-code kept in the station. If some packages are torn, or if there are leakages, we will keep such products aside and come back to that after the drivers are released for delivery. And, if in the tag of the sack it is written 10 products and we found 9 products inside, we will keep the entire sack aside *(KL32-DS7-AA20).*

After sorting, the SS or the TL assign the parcels to the delivery driver via the WMS. One of the office staff enters the delivery driver's unique Virtual Driver's ID-VRID on the software and assigns the orders to them under their ID. Then, the drivers bag the orders by scanning the parcels individually with the scanner after logging it to their VRID. One driver reported:

> Every package is scanned before we bag it. The office staff gives the scanner to us, we have to scan each pack and assign it to us. So, in the system the number of packages assigned to me will be updated corresponding to my ID *(KL29-DS4-DR4).*

However, the WMS-linked scanners require an additional input to instruct whether an outbound or inbound activity is occurring, before they are used for bagging the individual parcels in the delivery drivers' bags. Separate QR codes are pasted on walls near the dock gates for inbound and outbound activity. One supervisor informed:

> We use the Amazon's logistics apps. If it's inbound, we will have separate QR code. After scanning the inbound QR code, we can now only scan inbound shipments. It will reject if we scan outbound shipments *(KL36-DS11-AA21).*

Drivers are needed to scan the inbound activity's QR code through their logged-in scanners before commencing bagging. Any item scanned but not assigned in the WMS by the supervisors would be unregistered. Supervisors assist the drivers in scanning the parcels for bagging. This scanning device is called Rabbit and is a digital inventory log platform with an embedded GPS tracker. Here, it is worth noting that instead of the 'Rabbits', the drivers could download the Amazon Flex app on their personal smartphone and attach the phone with an overhead scanning tripod while scanning. The tripods were provided by the DS. In either case, logging in to the app is an essential prerequisite to commence bagging for the drivers.

8.*3.1.2. Station Work: Managerial Activities in the Station*

Once drivers have bagged orders, on-road delivery work begins. Yet, this does not end the station work, but rather the station work shifts entirely to management and supervisory roles comprising the following five activities: monitoring and communicating with the drivers, handling customer complaints, scrubbing, problem solving, and closing. On-road drivers are monitored through WMS and communicated by WhatsApp group chat regarding targets and pick up instructions.

Monitoring drivers is essentially platform-mediated supervision that is inseparably entwined with the objective of tracking shipment orders. Several metrics, created by Amazon, are utilised by the supervisory team to track and evaluate the drivers' performance. A supervisor at a Kozhikode DS explained:

> There will be constant work for us. Not heavy task. Everything is system work here mainly. Here there are so many POCs (Proof of Concepts) and metrics. We will be assigned the responsibility of tracking a particular metric. One supervisor will scan how many 'bad scans' are occurring and by whom. There are some other metrics like DNC (Did not Connect) and DNR (Did not Reply). These metrics shows how many calls the drivers made to the customers while delivering their orders. There will be another supervisor to track the RTS (Return to Station) products. This is tracking the orders which were failed to deliver in the previous day. If some product is missing in the RTS list, then the supervisor who is responsible for that will need to give explanation to the Amazon audit team who will interacts via video call or email *(KL31-DS6-TL3)*.

'Bad scan' was an algorithmic rule entered into the WMS, a performance metric against which the accuracy of drivers' deliveries to prescribed locations is measured. Data is displayed on managers' laptops which monitor the work of drivers through the application on the latter's smartphones. When a delivery is marked as complete by drivers, their location is compared with that of the customer. If the distance between the two is more than 50 meters, the delivery was recorded as a 'bad scan'.

The second management task is related to handling customer complaints, as this supervisor reported:

> We should deal with the complaints that is coming from the customers. By morning the details of the complaints from the previous day will be on the WhatsApp from the superior [Amazon] officers. We will resolve it after the drivers are dispatched *(KL32-DS7-AA20)*.

The third management activity is scrubbing, which is essentially counting the inventory of the DS once the orders have been dispatched. In this function the unpicked packages are scanned by the supervisors and a report on the number of orders present in the station is created and updated onto the WMS. No shipments, other than those on which issues are raised while receiving and those returned by the customers or sent by the sellers the previous day, are supposed to remain in the station after the day's shipments are dispatched. This scrubbing report establishes whether orders for delivery have been missed. A supervisor stated:

> After dispatch is complete, we will do 'Scrub', that is 'at station' marking to find out if there are any products missing. We have to scan all the products that are there present at the station after the dispatch. That is how they [Amazon reps] are checking if there are any missing products *(KL31-DS6-TL3)*.

If, as a result of this 'scrubbing' work, orders are discovered not to have been picked-up, supervisors will either re-assign them to on-road drivers who are nearby the station, or will deliver them themselves, particularly when orders have a promised delivery time of a few hours. These are the Prime Orders.

The fourth management function is to report to Amazon on damaged items received by the DS or those that were not received. This responsibility is described as 'problem solving' or 'issue resolve' management. Evidently, the third and the fourth tasks are closely related. While 'scrub' work involves feeding the WMS with data, problem solving involves utilising the WMS-generated data to create the audit report and share with the CTL for performance evaluation of the DS and for identifying shortcomings in its service. A supervisor explained:

> There are two office staffs assigned to make the report. There will always be issues like item missing, empty packet, driver would have given the package to the neighbour in the customer's absence. These issues are handled by the in-charge in the morning session, these issues come under problem solving *(KL36-DS11-AA21).*

The fifth management task, termed 'closing', occurs when drivers return to the DS having completed their deliveries. Here, the cash paid by customers to drivers is collected and a report for each driver on their performance compiled. Supervisors are informed by the WMS of the amounts of cash and digital payments made at the time of delivery. Only once drivers return to the station are they logged out of the WMS by the supervisors after receiving the cash. An office worker described this post-delivery work:

> After that, the delivery boys will start returning after completing their day's routes. Then we have to 'close' their routes by updating the system of their route's status. Then by night we have to make many reports. How many rejects are there? How many attempts are there? How many POD [Pay on Delivery-cash or digitally] made successfully. This will be for each of the delivery boys. We must collect the cash from them. Next day a banker will come, we will hand over the cash. I tally the amounts of cash to be collected, which will be shown in the Amazon's app against each driver's ID *(KL35-DS10-AA20).*

The management activities in the DS are essentially off-road supervision of the delivery drivers. Supervision is mediated through the WMS monitoring; the drivers' performance being captured through their digital cartographic representation in their smartphones. How do workers experience the labour process while on the road?

8.*3.1.3. Delivery Work*

Delivery work is the final task of conveying the parcels and delivering to customers' doorsteps. This seemingly simple task consists of micro-processing essentially demanding timely scanning of the parcels, once while bagging the parcels, and second when delivering and within 50 meters radius of the customer's delivery location. The WMS is updated to record that the parcel has been both bagged and delivered. While the work routines of all drivers are similar, certain differences can be identified according to a drivers' contract type, and consequently the degree of discretion they have in selecting delivery routes and schedules or slots (timings). As mentioned, delivery workers comprise 4PL drivers, those recruited by the DSs, and drivers crowdsourced through registration in Amazon Flex, and are either salaried employees or engaged on a piece rate basis. For 4PL and directly DS employed drivers, schedules are fixed, irrespective of the mode of payment in their contract. While the delivery routes fall within certain predetermined areas for piece rate drivers *[KL37-DS21-DR8],* in contrast, for the salaried, mainly truck drivers, routes are

not fixed, although they are always of comparatively longer distance than those of piece rate drivers, and involve bulk delivery orders of ten products or more per customer. Moreover, all non-flex drivers have discretion in choosing the sequence in which they can deliver to the pin-codes (within the designated areas for the piece rate drivers). An unavoidable constraint on the degree of autonomy for their preferred delivery sequence is to adhere with the strict performance parameters of the customer's Estimated Delivery Date (EDD).

All non-Flex drivers have fixed scheduled times to reach the station, which they register by logging onto the WMS by scanning their ID cards with either the Rabbit or their smartphones. This driver described their morning routine:

> I will go to the station at around 7:00 to 7:10 in the morning. Our routes are fixed. Based on the route, which is created by the customers' location, the orders will be kept before we arrive to the hub. Based on my assigned route, I will collect my packages one by one by scanning them. I will then arrange the packages according to the order of delivery from last to first inside the bag. I will leave the station for delivery by 9:00 *(KL27-DS2-DR2)*.

Creating individualised ID cards for the drivers and scanning them before scanning orders is necessary to track the driver responsible for each order. However, in practice difficulties arise, for as a supervisor revealed:

> Since drivers are changing every day, there are no point in creating ID for all the drivers. Hence, we use our ID to scan and then pass the scanner to the drivers to scan and allot the orders by themselves. In the system [WMS], it will show that I am delivering, whereas I am monitoring from the office the driver who is delivering under my name. *(KL30-DS5-AA19)*.

Drivers also swap ID cards among themselves to squeeze out leave. This common practice reveals potential contradiction between Amazon's remote digital platform management and their preference in flexible labour utilisation strategy, which leads to a very high turnover of drivers in the DSs. It also indicates the extent of the pressure on supervisors to ensure that the service level agreements are met by drivers, so that they do not spend time in properly registering the drivers before allotting them with assignments.

Other contract types, namely the Flex drivers with independent contracts were regarded by supervisors as an additional resource to respond to daily fluctuations in market demand. Arguably, they have more autonomy in choosing schedules and routes. Whenever a station is short of drivers, or all were already assigned and orders are outstanding, the station's senior manager email the Amazon CTL, who opens 'gigs' in its delivery platform, Amazon Flex, to recruit drivers from crowdsourcing. One Amazon Flex's delivery support manager explained:

> …a driver can book or accept a block of either 2 hours, 4 hours, or 6 hours from their app. They need to accept the block the night before the day they have to deliver. Once accepting the block, they can cancel the block at max 45 minutes before the start of the block. If they cancel the block after that, it is a violation. It becomes difficult to get a replacement during that time *(KL13-SDS1)*.

Depending on demand traffic, block times and preassigned regions are created and shared with all registered drivers via app notification. The process of assigning orders for the Flex drivers differs in that they are instructed entirely through the Flex App. After selecting a slot, they log into the app with their registered ID at the station, which directs them to the particular cage and the items to bag. The station's supervisor uses the driver's VRID to assign orders to them through their laptop. Drivers scan each package to be picked, which the app then acknowledges. Once items are placed in their bag, the diver swipes the 'ready to deliver' button in the app. The app displays a preferred route. Just like the 4PL and directly recruited drivers, Flex drivers have some autonomy to deliver according to their chosen order provided all orders are delivered within the stipulated EDD.

While picking orders, all drivers must ensure items are undamaged, otherwise negative customer feedback will be attributed to them. One driver stated, *"If some products get damaged or missed by us, we must bear the cost of it" [KL26-DS1-DR2]*. After items are picked, they are delivered as to the customers and their status which are updated in the WMS, by scanning the order within a 50-metre radius of the delivery location. Following completion of the delivery runs, the drivers return to the station to complete 'closing'. On their return journey, they also collect returned orders from customers and from sellers. At the station, these returns and failed deliveries are scanned by office staff. The next morning, the sellers' orders and returns are loaded for transporting to a FC and the previous day's undelivered packages prepared for re-delivery. A supervisor explained that a failed delivery would be yellow-stickered, and a second fail was given a red sticker. Subsequent delivery failure prompted return to the seller via a FC *[KL13-SDS1]*.

8.3.2. Control and the Labour Process

In processing the last mile delivery, workers are closely monitored and continuously evaluated by station supervisors. Managers implement a combination of control mechanisms in the DSs; simple, bureaucratic, algorithmic and normative. Heuristically, these controls are categorised to discern how each operates.

8.*3.2.1. Simple Control*

Historically identified as the first and most basic form, simple control is still an explicitly utilised mechanism. Before leaving delivery stations all drivers are obliged to attend briefing sessions, as this driver explained:

> Yes, in the morning there will be assembly almost every day. They [managers] will talk about the mistakes which we have to avoid in the job. They will ask us, 'When did you leave from here yesterday? If you try you can leave a bit early'. They will remind us to avoid calling customers and ensure delivering within 50 meters of their location of delivery. They will say that 'You have delivered not within 50 meters, it was 75 meters, hence will be marked as bad scan'. In between they will ask 'Are you listening?', it will be like a proper school, classroom. If say only one person did a mistake at work, they will call everybody the next day. They will give a lecture to all of us for one person doing a mistake *(KL27-DS2-DR2)*.

Another driver shared how briefing sessions, which served to constantly remind them to complete deliveries as quickly as possible, placed them under pressure.

> They tell us to produce maximum number of deliveries in a day and reduce 'attempts'. Also, they tell us to maximise the digital payment of the COD (Cash on Delivery) orders. They have some kind of target for making digital payment. So, they pressurise us to maximise our delivery payment in digital payment. They say the same things every day in the briefing session. They keep on saying to us to keep increasing the performance. We feel the pressure to enhance our performance from whatever level we are working at now *(KL33-DS8-DR5).*

8.*3.2.2. Algorithmic Control*

While en-route, drivers were continuously monitored by office staff through the WMS, which connects the software installed on supervisors' laptops (CORTEX) with the Rabbit or drivers' smartphones, which had an embedded GPS system alongside the Amazon Flex software.[40] One supervisor explained:

> We have a software called CORTEX. This is used to track the delivery boys. We will get the correct location of the delivery boy on real time basis. The software identifies the GPS location of the Rabbit device used by the drivers. If he is sitting somewhere without delivery. Or if he is going to the wrong route, we will know it immediately *(KL31-DS6-TL3).*

From the list of orders, drivers select one to be dispatched. The Rabbit, or the smartphone, display the delivery location, the order status as 'pending', and the EDD which is the target for completion. At the precise location, the driver uses the device to inform the customer. Once the order is received the order and payment is made, the driver updates the status from 'pending' to 'completed'. If the customer fails to receive the order for whatever reason, mostly because they are not present, the status changes from 'pending' to 'attempted'. Then from a multiple-choice menu, the driver selects an appropriate reason for non-completion: 'customer did not pick the call' or 'could not connect to the customer' *[KL37-DS12-DR8]*. Similarly, if customers reject the order, the chosen status is 'rejected'. Selecting these statuses creates a parallel metric in the WMS which generates outputs of the number of orders completed, attempted, or rejected, which are used to evaluate the drivers' performance. A supervisor explained:

> If they (drivers) are making any 'attempts' or 'rejections', they have to call and inform us from that exact location right away. We will call those customers directly from here and we will check if it really is 'rejected' or if it is rescheduled, we will negotiate with the customers and try that it is delivered on that day itself *(KL31-DS6-TL3).*

These reports show that the system is underpinned by mistrust of the drivers by supervisors, an

[40] The Amazon Flex software is used by the 4PL, and the DS-recruited drivers to commence the delivery process installed in the rabbit. They use the software to see the list of orders and locate the customers' delivery addresses. Flex drivers use the software for registering as a driver in Amazon's e-LSN, along with assigning themselves with tasks, commencing the task and getting payments. This reflects the dual role of the Flex App, to crowdsource drivers and control the delivery work. Irrespective of the driver's contract type, all are integrated into Amazon's WMS through this Flex platform.

expression of the structural antagonism embedded in the capitalist labour process between capital (and its agents) and labour.

8.3.2.3. Bureaucratic Control

The stations are required to maintain a performance metric called the 'conversion rate', which is a calculation of the proportion of pending orders completed on the same day. The service level agreement states that a station must ensure a 97 per cent conversion rate. Failure to achieve this percentage triggers *'a reduction of 10paise per item not delivered [from the commission given by Amazon to the station]* (KL34-DS9-DR6). In this regard, another supervisor stated:

> We have to convey the reason for not meeting the Delivery Standard Rate [conversion rate] to the superiors. If it is satisfactory, then saved, otherwise they can terminate the contract altogether for the entire hub, if failure happens repeatedly *(KL32-DS7-AA20).*

Station level targets cascade down onto individual drivers, although they are not explicitly ascribed an exact number of parcels to be delivered in a given time period. Nevertheless, they have an individual target, a metric labelled FDDS (First Day Delivery Successful), which tracks the percentage of orders delivered on the first day of attempted delivery. A driver explained:

> Here, only our performance matters. We can earn according to our performance. More we deliver, more we earn. There is FDDS. It's a part of Amazon company metrics. Even if there is no target, we have to follow this metric. FDDS tracks whether today's parcel is delivered today or not. Try your best to not return the products to the hub and achieve FDDS. To ensure FDDS, I will try to convince the customers not to reschedule the delivery. I will tell them to take the delivery and pay later. I will pay for the product to the company by myself on that day. Thus, I ensure no rescheduling. If too many orders under my ID are not completed in the first day of delivery, then the supervisor will ask a lot of question to us and demand reasoning *(KL34-DS9-DR6).*

This code reflects that the mode of payment - piece rate- acts as a pivotal controlling mechanism and intensifies the labour process. Two additional individual level targets operate. The first is EMD (Early Morning Deliver), ensuring that at least 50 per cent of a day's orders are completed by noon. The second, is that a minimum of 30 per cent of orders are paid by customers opting for COD, digitally through Amazon Pay. Supervisors constantly remind drivers to adhere to these targets. For instance, if a driver is falling to meet EMD, they are called from the station and asked for a justification. To instil competitive pressure between drivers, supervisors occasionally share through a WhatsApp group screenshots of spreadsheet pages listing drivers and the number of orders delivered by each. A supervisor explained:

> If it's 30 drivers, their name, the packages assigned to them, COD packages, how many POD they have done, how many packages delivered, pending delivery etc will be marked in an Excel sheet. This excel sheet is posted in the group after every 2 hours *(KL30-DS5-AA19).*

The metric eliciting the greatest comment from drivers and supervisors interviewed was 'bad scan'. Before completing delivery, drivers must scan orders one final time, and hand to the customers and select the 'completed' option. If scanning takes place more than 50 meters distance from the

specified location, it is considered a 'bad scan' to avoid mis-delivery. The consequence of bad scan is an earnings penalty:

> Bad scan will affect our performance. I work in Koratty station. Each stations performance is being evaluated. If there is not proper network, the app will mark it as bad scan. Last month onwards they are considering bad scan as a serious issue and deducting 1 Rs per package for bad scan. For example, if you are being paid 20rs per package with a bad scan you are only paid 19rs. In a day a driver may do 5 bad scans. This is small number but when you scale it up to a month it's a huge amount *(KL35-DS10-DR7).*

Thus, drivers are monitored and evaluated on multiple metrics and are compelled to meet direct and indirect targets accordingly. In combination, these metrics form the basis for a performance score for each driver. A member of Amazon's delivery support team explained the scoring system:

> Amazon have five ratings. Best is 'FANTASTIC', then 'GREAT', then 'FAIR' then 'AT RISK' and finally 'UNACCEPTABLE'. The last rating means the driver's contract is terminated. If one driver fails to deliver say five items in his schedule, it will affect the rating. Failed delivery will lead to customer report. Five failed delivery and customer complain can result in reducing the rating from 'FANTASTIC' to 'FAIR' *(KL13-SDS1).*

Score reductions result in drivers being retrained and, in certain situation, blocking their account and terminating their contract.

8.3.2.4. Normative Control

As indicated, drivers are reminded during briefings to minimise calls to customers. The appropriate metric shows how many calls a driver makes to complete a delivery, so that the fewer the number of calls the higher their performance scores. One driver reported:

> Calling the customers while delivering will be a mistake which we are being strictly said to avoid or keep to the minimum. Sometimes, we need to call them to ensure the location and find their availability, for COD customers mainly. But the calls get recorded. They want justification from us why we called even if we make one call *(KL27-DS2-DR2).*

8.3.2.5. Techno-Normative Control

In addition, all drivers have daily obligatory platform-based training on how to behave with the customers, how to handle packages and how to drive safely. These briefing sessions and app-based training inculcate drivers with what constitutes desired or ideal workplace practices and norms. One driver elaborated:

> There is an app called LM, that app will ask us questions every-day. It will play five videos: about things to keep in mind while driving. Things to be taken care of while delivering the packages. Mostly the videos are repetitive. Sometimes there will be new videos as well. The video instructs us to keep left while driving, will remind us to avoid calling the customer. In between the video, they will ask question 'what will you do in such and such situation?' and will give three options. Will have to choose the correct answer. If the answer is not

> correct, we must watch the video again. This video can't be skipped or paused. I will play the video and keep the phone on the pocket while driving to the station. We will have to put our helmet and take a selfie and upload it in the app *(KL37-DS12-DR8)*.

Without the selfie, drivers are unable to demonstrate they had maintained workplace safety, and they might not be eligible for the only social security benefit they are entitled to, the company's health insurance arising from any work-related accident. This reflects a potentially novel form of control which induces in workers' appropriate behaviour with digitally mediated training apps. This could be related to the established Techno-Normative control, but was digitally mediated through software and mobile apps, and not through any tool or equipment.

9.3.2.6. Summary

Although a mix of control mechanisms are evident, technological and algorithmic control stand out as dominant. The ubiquitous intervention of scanning throughout and beyond the station work is essential for ensuring Amazon's indirect, but micromanaged control over workflow and worker performance in all the different DSs of its e-LSN. Amazon's WMS capture and update in real time all activities. It provides the evidential platform for frequent communication from Amazon's management through email, video conferences and occasional site visits, to their strategic partners operating the DSs. Simultaneously, the WMS generates a plethora of data that inform the metrics which are the basis for instructing, monitoring, and evaluating workers' individual performance. These platform-mediated control mechanisms are complemented by, and fused with, bureaucratic controls through binding service level agreements. They specify station-wide performance criteria which translate into individual targets which drivers are obliged to achieve. If drivers' scores fall short of these metrics, corrective or disciplinary action ensue. They might be compelled to undergo retraining. Ordinarily though, they are disciplined through reduced commission payments and salary deductions and in extreme cases with their ID being blocked. Normative control is exercised though inculcating company-specific values with drivers for engaging with and responding to customers. This chapter turns now to the ways in which the drivers experience and respond to these control mechanisms.

8.4. Worker Experiences, Responses and Resistance

Drivers' testimonies are filled with many compelling concerns arising from work pressure. This section discusses the concerns, complaints and the potential for resistance expressed by delivery station drivers in the performance of their work routines.

8.4.1. Piece Rate and Unpaid Labour Time

The most common concern raised by drivers is the inadequate level of pay, but most pertinently by those working under the piece rate arrangement, by which earnings are conditional on the number of orders successfully delivered. This payment method compels drivers to deliver larger volumes of packages after spending on refuelling and maintaining their vehicles. However, insufficient orders lead to compromised living standards. A driver explained that when one of the Kozhikode stations changed ownership in August 2022, the piece rate was reduced by one rupee, leading many to face challenges in meeting fuel costs:

> Not at all happy with the pay amount. It was INR 18 per piece when the hub was under SAAS. Then it got reduced to 17. Now they want to reduce it to 16. When thy are reducing 1 rupee, I am getting a reduction of 2,000 INR per month. Petrol price is rising every day. Petrol price is 107 now. I have to fill fuel of 200 INR every day. I have loans to pay with this money. I can't do any savings from this amount. With this money there are some people who are living with family as well *(KL34-DS9-DR6)*.

Through this piece rate, the DSs has been able to accumulate a larger amount of surplus value, by exploiting the workers through unpaid labour time. Several drivers explained that this mode of payment did not account for the time required to complete orders, the distances to be covered and hence fuel costs. A flat piece rate payment arguably extracts a higher amount of unpaid labour time from assignments covering longer distances.

As indicated, stations also provide monthly salaried payments for some drivers. However, the interviews revealed that managers encourage drivers to take piece rate contracts by emphasising the promise of earning more than on fixed payment contracts. Yet, managers do not explain the risk of lower earnings if the volume of orders fall. One driver explained his frustration regarding festival periods, when Amazon offer heavy customer discounts, the number of shipments increase and newly recruited drivers are encouraged to take piece rate payment contracts, but when the discount periods end and orders decline, drivers are not allowed to revert to fixed payments.

> When we joined here, they told us we can switch between salary and per piece basis. During the offer period, the piece rate is more beneficial for us, so we choose that. But after the end of the sale, when we ask for a shift to the salary section, the reply of the supervisor is always; '*The company don't need salaried drivers now' (KL37-DS12-DR8)*.

Further, drivers must complete all deliveries picked up at the station on the same day, a critical performance parameter according to Amazon's service level agreements. Many drivers complained that the total hours necessary to complete all deliveries is not fixed, but highly contingent on the delivery locations of orders. Consequently, on many days they have no choice but to be on the road for eight to ten hours to complete all orders. This requirement to work extended hours under a 'standard' employment contract would be designated as overtime work with stipulated bonus payments (as for salaried drivers and warehouse workers elsewhere in the Indian e-LSN), but the piece rate mode of payment did not provide overtime remuneration.

Additional factors contribute to extended labour time and reduced income for piece rate drivers. Heavy and/or large items restrict the number of orders that can be carried and delivered in one round and for an entire day, especially for the two-wheeler drivers. Poor and crowded roads lengthen delivery times, as do long queues of drivers at delivery stations at the time of pick-up. Breakdowns in the server or network systems can interrupt scanning and updating. A station supervisor described factors contributing to delays:

> Delay by the vehicle can be because of multiple reason. It can be because of rainy day, 'meechil' or political processions. Sometimes 'system' glitches or technical defaults arises. For instance, barcode scanner not getting scanned, even if scanned it is not updated in the monitor of the computers. These glitches cause delay in the functioning and affect the scores of the driver's performances *(KL22-SC31-AA42)*.

All these kinds of delay add to the workers' unpaid labour time.

8.4.2. Pace and Intensity of Work, Pressure and Stress

The second most reported concern relates to the pace and intensity of work that cause drivers pressure and stress. Compelled by tight targets to complete their assigned orders, drivers are not able to carve out the time to eat food or even go for toilet breaks.

> There is no break or buffer time when we are on the road. We have to ensure that we are delivering within the time range. Taking a lunch break and going to toilets are adding delay to delivery. The supervisors will start calling us if they find we are slow or lagging. Besides, with these heavy bags on our backs it is not possible to access public toilets. We are always worried that no orders are lost, so we can't keep the bag away from us either *(KL35-DS10-DR7)*.

These pressures are accentuated during the periods when Amazon offer heavy discounts and the volume of orders and thus the drivers' workloads increase. One explained:

> When the load is high, we have problem as there will be a lot of pending orders at the station. So not much time to sit and eat. Once one set of order is finished, we must go to the station and start with another set of orders *(KL26-DS1-DR1)*.

The SLAs obliged workers to complete orders timeously, but they are not permitted to take discretionary decisions to overcome unforeseen contingencies. One driver reported:

> If there is a problem while delivering like sometimes when customers are not there and have already paid for the order, then we keep the package with the neighbours or at their door to save time. But office staffs will scold us, will say that we are not supposed to do so. We are supposed to carry the package back to the station. If I follow their orders, it will affect my score. Either way we are victimised *(KL35-DS10-DR7)*.

An absence of breaks and fluctuating order volumes, combined with the contradictory demand to deliver on time but yet to maintain their scores and not deviate from the SLAs, create immense stress.

8.4.3. Leave, Covering Extra Routes, and Mobility Indeterminacy

Another concern was the lack of provision for taking leave days. Since drivers' earnings depend on the number of parcels delivered, it discourages them from taking leave, since to do so results in loss of income. However, as testimonies revealed, their problems are intensified in practice. Many reported having difficulties in taking leave for family emergencies or personal health reasons. They are required to inform the station supervisor well in advance and must find an alternative driver to cover their route. It is in this context that the practice of swapping IDs occurs most frequently. Such instances indicate the prevalence of informal practices designed to squeeze out leave days, often with the indulgence, if not explicit cooperation, of station supervisors. These informal practices of ID swapping and finding temporary alternative drivers as prerequisites for acquiring leave days reveal how the stations utilise local networks and social capital to ensure targets are met and SLAs adhered to. The substituted drivers are not registered to Amazon and

their details are concealed from its audit and invigilation, as they-work under the names of registered driver they are replacing. A driver elaborated:

> We have to work every day. No holiday for us. Even the supervisors have four leaves in a month. But not us. So, if we want to take leave, we give our ID to our cousins or other close friends to deliver on my behalf. If I am not well, I will call the supervisor and tell them. I have to arrange an alternative person to cover my route. Otherwise, when we will call and inform the supervisor "chettah, today I won't come". Then they will tell us that there is nobody in that route, please try to come somehow, deliver the forty pack and then you are free. If we can provide alternative person for the day, the supervisor will not nag, but if we don't find alternatives, we just can't take the leave *(KL33-DS8-DR5).*

Sometimes, when no alternative driver from their personal networks can be found, a supervisor might still grant leave provided other drivers agreed to deliver an absent driver's route. This intervention pits drivers against one another, as it results additional work. This response was representative:

> I go and come back for the day. I see others have not come, so I deliver their items as well. We find it very difficult. When drivers are absent, we cover our delivery and then their routes as well. We will start from 8:00, deliver our orders and come back by 14:00. We will think, now we can go home and have our lunch. Then the supervisor will say to deliver another forty orders. Imagine how you will feel *(KL28-DS3-DR3).*

The severity of the consequences of absence are aggravated when drivers take unannounced or unapproved leave. Then, in response, the station might even block their ID and terminate them. One driver reported:

> I had bad experience from the manager. I asked for leave for my mother's health check-up, and they rejected it, saying there is no back-up drivers now available. They could have easily sent some other person on that day, but they didn't. But their priority was only delivering the products. A few days after this incident, one person just switched off his phone after taking leave and they asked me to deliver 150 packages covering his route as well. I rejected and they replied by saying *'You are not required for the company' (KL35-DS10-DR7).*

Underlying these differing restrictive responses to leave requests - from informally permitting the swapping IDs to intensification of work of the attending drivers, or even to terminating drivers' accounts - is Amazon and its partners' strategic imperative to insulate them from labour indeterminacy and to challenge the mobility power of drivers.

8.4.4. Workplace Accidents and Emotional Labour

As indicated, drivers lacked social security benefits such as access to a provident fund or health insurance. For drivers, this was a major concern, particularly because they are not provided with sufficient protective equipment. Given the time-bound pressure, along unsafe and crowded roads, the mandatory training reminders repeating *'Do not drive rashly'* are patently inadequate. Drivers face considerable risks, including exhaustion, fatigue, dehydration, and sickness from having driven long hours and being exposed to excessive rainfall or heat. A driver described the harsh conditions:

> The issue is when it's raining, although there is a raincoat for the bag, no raincoat for us. There was an incident once. I fainted, lost balance, and fell from the bike. I was driving continuously for more than five hours delivering orders one after the other. Did not drink or eat anything during that time. After that incident I understood that prioritising my health is most important *(KL27-DS2-DR2).*

The intense pressure on drivers to reach their designated locations frequently cause carelessness that might lead to accidents, harming them and damaging their vehicles. Since the use of vehicles is principal means for acquiring income, damage essentially meant not only loss of earnings but also incurred the expense of repairs, as companies do not provide insurance or access to repair services. One driver reflected:

> We call the office and inform them to assist us. They will try to arrange someone to fix the vehicle. But truth is that we have to arrange things ourselves, we ourselves have to get up, find a workshop, or tools and repair the vehicle then and there, and continue with the delivery work. There is no helping mentality, their aim is to finish the job as fast as possible and that's it *(KL35-DS10-DR7).*

However, as indicated, the stations do provide some accident insurance, which is conditional on evidence of 'helmet scanning' before the start of delivery. Many drivers complained that employer generally placed the onus on drivers, finding loopholes in their insurance claims. This driver gave an example, *"If one day in one week I forgot to update in the app my photo with helmet, they will recall that to proof I am ineligible for insurance claim"* (KL33-DS8-DR5).

Another factor contributing to drivers' vulnerabilities arise from their engagement with customers. It could be argued that drivers perform emotional labour during these customer interactions, which conform to a set of appropriate behaviours consistent with company values and not to display natural behaviours. In contrast, customers encounter drivers as the only human face behind their orders and, as revealed by participants, expect the drivers to be the sole accountable person for their orders. One driver explained:

> Amazon don't have 'open delivery' policy. We are not told to open the package in front of the customer for them to inspect. This is a policy followed by Flipkart. But the customers expect us to do so as they see other drivers are doing. This delays our delivery. If by any chance the customers find any discrepancy in the item that they have ordered, they demand refund from us immediately. There is a process to request for return with refund through the customers' mobile app. We have to waste time helping them in putting the return request, then only they will calm down. It is frustrating. I will get delayed and face apprehensive customers' panicked behaviour. A few even behave rudely and curse us. One even raised hand on me when I refused to open the parcel in front of her. She thought I was behaving suspiciously *(KL27-DS2-DR2).*

Further, complaints about customer attitudes and behaviour towards drives are often dismissed or ignored. Drivers must behave cordially with customers and are discouraged from complaining about them. The company's obsession with customer satisfaction and retention leads to bias towards them in disputes with drivers.

> We can report to the office. Though, they will stand with the customers all the time. They tell us, *"Ignore if customers are misbehaving. it's normal to have negative experience from customers. Just deliver with a smile and move ahead'*. It's all about customer satisfaction. Nobody cares about us *(KL35-DS10-DR7).*

8.4.5. Grievance Redressal Mechanism

The discussion so far has concentrated on the different concerns, grievances, and complaints reported by delivery drivers arising from their experiences of work. Drivers revealed the difficulties encountered while completing their tasks and how the control mechanisms contribute to their pressures by placing additional and often contradictory demands and expectations upon them. The company instituted two measures aimed at redressing drivers' concerns: on-road support and off-road support. The former is a station-specific team recruited by the owner and is part of the office worker complement, while the latter is a cluster-specific team, whose role encompasses multiple stations within a particular regional delivery area, members of which are recruited by Amazon directly. The role of on-road delivery support is in practice part of the station managers' multitasking portfolio, whereas the off-road support team is specialised. An Amazon's off-road support employee reported on how the grievance redressal mechanism functioned:

> It happens in two ways. First when the delivery partner raises the complaint to the on-road support, then they create a ticket and share it with us if they can't solve it. Otherwise, we get direct mail from the delivery partner and then we create a ticket. Sometimes both can happen, getting ticket from on-road support as well as getting mail from the delivery partner. To contact us, the drivers first use the app to raise the issue. They use the dialogue box. Most of the issues which they face are categorised into options and sub-options in the dialogue box in the app. They have to find the appropriate category to raise the issue. If they don't find any relevant option, they can select the 'others' option. But they can't write the issue in the app. For which they have to call or mail us *(KL13-SDS1).*

What this response reveals are that the grievance redressal mechanism diverts the often complex and profound complaints into a set of predetermined multiple-choice questions. Most choices are limited to the issues drivers face in completing the orders, so that options such as 'customer not present' are included but not, for instance, 'not feeling well'. This itemisation is unsurprising. given that the support teams are essentially agents of capital, so that only the concerns of the drivers that converge with order completion are given salience.[41] This participant elaborated on how they must adhere to the coded and scripted responses constructed by Amazon.

> There is an issue code for every issue we receive corresponding to the relevant category of options. If the driver selects 'others' option, then we have to generate a ticket. Whenever we receive a mail, or call from the driver, first we try to identify the issue with the pre-existing codes. If it does not fit, then we add a note describing the issue and generate the ticket and pass it to the 'escalation team' *(KL13-SDS1).*

[41] However, issues related to delay in payment are sometimes handled by the off-road support team and get resolved when the cause is a glitch in the system.

The following instance demonstrates the scripted communication between the drivers and delivery support team. If a driver, while delivering an order calls the customer but does not connect, then the appropriate category to select from the app to process the pending order is 'customer could not be connected'. To address this issue, the support team first checks whether the driver has called the correct number, and then whether the driver was in the correct location. If these responses are acceptable, they try to call the customer directly with a message. If that does not resolve the issue, drivers are instructed to select the 'attempted' status on the app and return the order to the station. If a driver who makes a call and hears ringing, but the customer does not pick up, then the appropriate category is 'customer did not receive the call'. In these cases, the delivery support team's response differs, for additionally they examine the driver's call logs. The actions of the driver and the support team are prescribed by Amazon and resonate, for example, with the intensive manner in which contact centre's function and call-handlers are micro-monitored.

The scripted, predetermined response rituals observable from the actions of the support team, coupled with drivers' experience of and expectation from them, reveal the limitations of the grievance redressal mechanism and the inability of capital and its agents to resolve the tensions and the conflicts between workers and themselves.

8.4.6. Collective Bargaining, Sporadic Resistance and Perception of Unions

The concerns discussed amongst the drivers serve to build a certain degree of collective consciousness. Many reported that, through sharing their individual experiences, they developed a common awareness of their situation. Exchanging experiences has been instrumental in constructing some preliminary forms of resistance. One example revealed at one of the delivery stations was a three-day strike by all delivery drivers following one having been harassed by a customer. A participant reported:

> While the station was owned by SAAS nine months back, there was an issue faced by one delivery boy. There was a bad customer who used to order regularly four to five items at a time and next day she used to return the orders. This was happening regularly with that customer. We face problem when we need to carry return items along with the other orders for delivery-especially if the return order is large. So, he told the supervisor that he does not want to deliver to that customer. The supervisor complained to the CTL about the driver and next day he was fired. We all stayed together at that time and refused to deliver any orders. We stopped going to the station for three days and demanded from the station owner to recruit back the driver and launch an official complaint against the customer. Initially, the station kept a blind eye and deft ear to our demands. But after three days of our boycott, the station owner recruited back the driver, although no complaint was filed against the customer *(KL34-DS9-DR6).*

This example demonstrated the potential collective strength of workers in challenging a company's one-sided decision in favour of the customer and not the driver. Other forms of resistance, such as *"taking advantage of the glitches in the app" [KL10-SC41-AA42]* to justify overlooking the app instructions and reporting late about the glitch to regain some autonomy, might correspond to classic sabotage. Resistance would seem to encompass both individual and quasi or embryonic collective forms. Given that these stations are in Kerala, the state with a high level of trade union

density and legacies of organised union actions, the general absence of unions amongst these workers is notable. Although no explicit presence of union activity to organise the delivery drivers to form collective resistance was found in the four stations, interactions with the drivers revealed that many drivers expressed a desire for union activity to enhance their voice and represent their issues to the company. One driver expressed his frustration:

> No, we don't have any union. They can fire us anytime they wish if we complain about the workload. They just say it in the face to get out if we demand lower load or ask higher pay. Nobody is there to raise voice for us and nobody to hear us. Sometimes I feel like we need a union so company cannot take arbitrary and independent decisions with our life *(KL35-DS10-DR7).*

However, a few drivers shared one of the challenges to forming union:

> But the delivery boys will keep fluctuating, they will not be permanent, that is the main issue in forming a union. The people here will be temporary. So, union will not be possible with temporary people. If you want to form a union in a very successful way, permanent employees are necessary *(KL34-DS9-DR6).*

Along with Amazon's much-documented union busting strategies[42], this rotating workforce and temporary or rather gig nature of contracts, undermines the potential for establishing union organisation at site level. Even with these obstacles, the possibilities of collective resistance were detectable in these documented sporadic incidents.

8.5. Summary and Conclusion

This chapter discussed work organisation, management structure, division of labour and the mechanisms of control and the labour process of the DSs located at last mile delivery stage of Amazon's e-LSN in India, specifically in the state of Kerala. The chapter highlighted that the delivery station was a unique 'point of production', an intersection of seasonal factory type work or warehousing work as found in the other warehousing units of Amazon, and the geographically tethered gig work found in the delivery function of the last mile service of Amazon. To substantiate the labour process, the chapter divided the workflow into two parts: station work and delivery work, where the former comprises inbound and management activities and the latter outbound delivery functions. It demonstrated how the station works, and the delivery work were closely integrated in shaping the control structure of the labour process. It identified multitasking employees, who were the floor managers with responsibilities ranging from typical supervisory activities to participating in sorting and even delivery work itself.

Analysis of management control reveals that Amazon strategically implements technical and algorithmic control, complemented by bureaucratic controls through its service level agreements and the cobweb of metrics, simple control through routine briefing sessions, and occasional site visits, and platform mediated normative control through 'video coaching' on appropriate behaviour, which inculcate company values and ideals into the drivers and to influence their

[42] https://www.theguardian.com/us-news/2023/feb/26/amazon-trader-joes-starbucks-anti-union-measures

interaction with the customers. This analysis also revealed how Amazon microscopically govern the labour process remotely by varied means, but predominately through its WMS.

Further, this chapter presented evidence of the experience of work and the concerns, complaints and grievances of the drivers, and sought to evaluate them as contributing to the potential for resistance. It considered inter alia the issues related to earnings, leaves, breaks, and workplace security and workers struggles to achieve onerous targets and the harassment they might encounter from customer interaction. It also highlighted the limitation of the grievance redressal mechanism, biased in favour of the customer and company, and its systemic inability to redress the structural contradiction inherent in the labour-capital relationship. Further, informal practices by drivers to regain a degree of autonomy, however modest, were reported. The chapter also revealed sporadic instances of informal collective and individual forms of resistance and indicated some workers' conviction of the need for an organised union to formally represent their interests. In conclusion, this case of the DSs, a component node of Amazon's e-LSN, reaffirms that the control and resistance dynamic inherent in any capitalist labour process resurfaces in diverse forms even when the labour process undergoes technological transformation as it has in this 21st century ICT driven platform economy.

Chapter 9 Discussion

9.1. Introduction

The previous three chapters analysed the labour process at each of the sequential operating sites in Amazon's e-LSN. Employment relations were analysed, first, through the managerial imperative to overcome labour indeterminacy through the implementation of diverse control mechanisms, with the systemic objective of pumping out maximum labour power and increasing the extraction of value (Braverman, 1974; Smith, 2006; Thompson and Smith, 2010). Second, within these sites, the functional divisions of labour were analysed from the perspectives of workers' experiences of task performance and the impact of these control upon them which generated widespread concerns and expressions of discontent, including recalcitrance and resistance. This dialectical process of control and resistance manifesting within each point of production were an outcome of the effects of multiple factors arising from within the workplaces and beyond. The workplace managerial control mechanisms were imbricated with Amazon's digital architecture and its component technologies and algorithms, particularly the novel combination of its bespoke WMS and the HHD scanners. Further, Amazon as the lead firm, vis-a vis their strategic partners, enabled the former to dictate the pace and intensity of operations in the latter's sites by inculcating competitive pressure between similarly functioning facilities within Amazon's e-LSN. The influence of the structure and characteristics of the labour markets of the states/regions, in which the sites are embedded and the inter-firm governance relationships between Amazon and their strategic partners influenced workforce composition, organisational structure, and labour recruitment strategies inside these productive units.

Although all the studied operating sites, comprising the RC, FC, SC, and the DSs, have their own distinctive organisational structures, workforce composition, and managerial control mechanisms, a comprehensive understanding of the e-LSNs labour utilisation strategy necessarily involves consideration of the functional relationships between these operating sites and their reciprocal interactions with and impacts on the sites' performance. This functional interconnectedness prompts Amazon's requirement to control the labour process trans-organisationally, to facilitate the timeous processing of orders from vendors to customers across the distribution network. Leveraging its dominant market power Amazon formulated favourable inter-firm relations, based on SOPs or SLAs, and their ancillary algorithms, with their strategic partners in the e-LSN to control the labour process and prescribe the pace and intensity of labour across all the operating sites irrespective of whether owned by Amazon or not. The partner enterprises, in most cases, are left to make decisions on labour recruitment, which are greatly influenced by the prevailing labour market conditions of a large volume of low paid, unsecured jobs, characterised by segmentation along the lines of labour contracts, gender and migration status. This chapter discusses how the labour process manifests in the operating sites of the e-LSN as a whole and how it is shaped by inter-firm relations between Amazon and regional enterprises, inter-site functional relations, and the socio-economic situation of the two states and India in general.

Section 9.2 discusses the managerial control mechanisms of the functionally interconnected operating sites in Amazon's e-LSN. Section 9.3 analyses the inter-firm relation from the perspective of Amazon's governance arrangements with their strategic partners and how they shape the labour process across the operating sites. Section 9.4 emphasises how the segmented

nature of the labour market in respect of contracts, gender and migration status of the employees impacted the composition of the respective workforces in the operating sites of Amazon's e-LSN and subsequently configured the labour recruitment and utilisation strategies. Section 9.5 draws attention to workers exercise of agency and the scope for resistance in each of these sites. Section 9.6 introduces the role of state to discern the implications of Amazon's labour process and utilisation strategies on industrial relation in India.

9.2. Managerial Control Mechanisms in Amazon's e-LSN

Amazon's entire e-LSN runs on a lean, just-in-time business model with the objective to minimise inventory holding time (Womack et al, 1990; Brophy, 2013). This is executed by implementing strict inventory and time management schemes and controlling and disciplining the workers to regulate the pace, precision, strict timings and quality standards of the flow of items through all the interconnected operations. An assemblage of different control mechanisms is exercised across the e-LSN, the subject of this study. These mechanisms are utilised in combination by management, ensuring supervision by shop floor managers to reduce labour indeterminacy, enhance the efficiency of workers and maximise overall productivity of the units. Additionally, Amazon prioritised strategic usage of its universal digital platform architecture, the WMS, that imbricated the operations across the nodes in the e-LSN, encompassing contemporary digital capital such as data analysis algorithms and cloud computing software to enable scalable and flexible operations.

9.2.1. Trans-Organisational Algorithmic Control

The efficiency and productivity of each site, individually and collectively, are dictated and evaluated on the volume of items to be processed and their fulfilment. Amazon's digital architecture underpinned by extensive use of software and algorithms was the most prominent form of control for determining the pace of operations, the speed of the progress of order, and was ubiquitous across all the operating sites. The pivotal Amazon's bespoke WMS depended on the continuous flow of data that workers are compelled to input through barcode scanners, at each and every task in the warehouses. The function of the WMS-scanner integration may be deconstructed into the three purposes of instructing, monitoring and evaluating. The scanner screens display detailed stepwise instructions to workers on how to execute their tasks and process parcels. In the FCs scanners instruct pickers on which shipment to select and from which inventory location, and for the packers it instructs the exact materials to parcel the orders. Similarly, in the SC the scanner specifies the sorting steps for the orders, and the totes to use for bagging. Managers continuously message workers to speed-up their work efforts, driven by Amazon's centrally determined imperative to fulfil orders according to its preeminent customer centric protocols, warn them when they commit errors, and order them to rectify them. In the DSs the WMS-scanner combination is used to assign parcels to drivers. Moreover, Amazon's digital architecture, through the integration of the scanner with the WMS, distances workers from both the conception and execution of their tasks (Braverman, 1974), gradually diminishing their role in configuring their own labour. This weakening of labour agency is exemplified by the 'organised disorder' stowing technique (Muralidhara and Vijai, 2016), predominantly used in FCs, which obscures the logic of warehouse operations from workers. By shifting a substantial portion of the decision-making to the algorithms

governing the WMS, Amazon reduces workers to mere extensions of the technology, limiting their involvement in the labour process and deepening their dependency on automated directives.

Scanners, bar codes and QR codes are thus indispensable for capturing workers' activities, the execution of their tasks, into measurable and comparable indicators, which are instantaneously updated to the WMS, which converts this real-time data into performance metrics that managers access. This scanner data inputted onto the WMS provides the basis for monitoring the productivity of each individual workers, in the RCs, FCs, SCs and in the station work of the DSs. For the last mile delivery, managerial oversight is maintained through additional platform-based software, Amazon Flex, installed in drivers' smartphones and connecting to WMS. This GPS embedded software directs drivers to the exact delivery destinations by recommended routes provides them with details of the parcels being conveyed and continuously monitors their live locations.

Numerous performance metrics are generated by the WMS, following workers' input from scanners and through Amazon Flex software. They may be categorised into two, those pertaining to individual associates and those at site level. In the FCs, individual metrics include a productivity index, a combined weighted index of several granular indicators of activities for time and volume of tasks, the number of errors and mistakes committed and 'behaviours' "fast start", "strong finish", and 'idle time'. Compared to the FC, the SC generates fewer individual metrics, with the number of items processed per hour (UPH) being the most prominent. The DSs' used individual metrics extensively to monitor drivers, including the numbers of 'completed', 'attempted', 'rejected' parcel deliveries, those completed on the same day of arrival in the DS (FDDS). Another measure is whether 50 per cent of the total orders are delivered within four hours from the start of a shift. Given that in the FC and SC individual metrics are calculated hourly but in the DSs are on daily basis, the former are more granular, detailed and controlling. However, the 'bad scans' monitoring of DS work has similarities with the error measurements of the FCs and SCs.

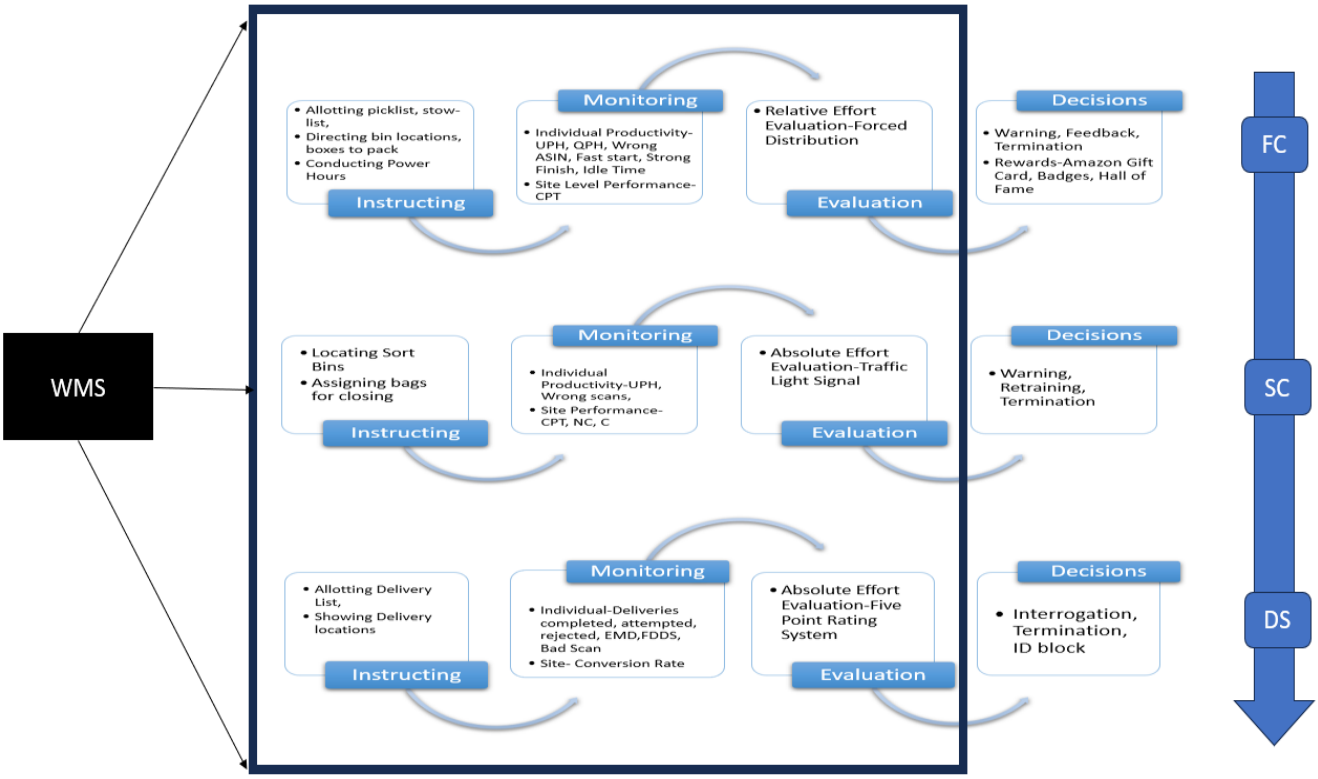
Site level metrics in the FCs and SCs are the number of parcels missing the CPT, adjusted in the latter to take account of delays externally. The site level metric measuring DS productivity is the 'conversion rate'. These varied metrics, is argued, are mechanisms designed and implemented for Amazon to realise its strategic objective to optimise the extraction of surplus value from its workers.

Management decisions to retain, promote, lay off, reward, or penalise workers are based on their algorithmic interpretations of individual work performance. In FCs, the WMS algorithm ranks workers by creating a forced distribution of these metrics, deeming those at the bottom as underperforming and who become the target for corrective and disciplinary action by managers and trainers. This evaluation mechanism does not necessarily reflect employees' actual performance. Instead, it relies on *a priori* statistical classification, which tends to create underperformers rather than identify them. By using relative ranking among employees, it ignores the possibility that all could achieve an absolute performance standard (Taylor, 2013; Murphy, 2020). However, forced distribution is not applied in the SCs or DSs, reflecting it as Amazon's distinctive preoccupation. Rather, absolute performance productivity of individual workers is compared against the set time and volume targets for each task, which are entered into the WMS. In the SC workers are marked according to traffic light signals. Those marked red are judged to be performing significantly lower than the demanded targets, and are subject to managerial

interrogation, retraining, warning letters and potential termination of contract. A five-point rating system evaluates drivers in the DSs, with those having "At Risk" status facing consequences similar to the red marked workers in the SC.

It is worth clarifying that neither the WMS software, nor the GPS embedded Amazon Flex application, nor the WMS connected scanners are algorithms per se, but serve to enable algorithmic control of the labour process by instructing, monitoring, and evaluating workers activities and performance. This distinction is important. The WMS is constructed by algorithms designed for inventory management, to enable item stowing and picking in the warehouses, for shipment stock replenishment, to optimise the shipping and routing paths, and maximise labour productivity. The Flex GPS tracker uses algorithms to calculate location, distance, and timing for delivery. Moreover, the WMS-scanner or WMS-Flex combinations integrate the control of operations across all the operating sites, by retrieving data on each sites' performance, converting them into performance metrics, and comparing individual worker metrics at the points of production with site level metrics between similar operating sites within the e-LSN. Literature on the labour process has identified algorithmic control to micro-manage the labour process either in gig-work of last mile delivery (Gandini, 2019) or in warehouses (Woodcock and Graham, 2019) in isolation. Figure 9.1 demonstrates that WMS software is the core mechanism by which the functionally related but physically separate operating sites in Amazon's e-LSN are integrated algorithmically. However, as the figure also demonstrates, WMS itself does not take decisions on rewarding or disciplining workers on their performance, but rather and crucially the algorithmic evaluation of individual performance merely provides the evidential basis, however questionable, for managers, particularly HR, at each site, to decide whether to warn, retrain, or terminate the workers.

Figure 9. 1. Algorithmic Control across the warehousing units in Amazon's e-LSN



This graphic representation of algorithmic control in e-LSN is necessarily heuristic and incomplete, not least because other forms of controls are prevalent, and which complement algorithmic control.

9.2.2 Transformation in Other Forms of Control Across the Operating Sites

Entwined with algorithmic control, Amazon utilise other more established and recognisable forms, including bureaucratic, normative, and simple controls. In FCs and SCs automated conveyor belts, with buttons to adjust the pace of the movement of shipments through the warehouses. Resonant with the classic form of technical control in assembly line manufacturing, they eliminate workers' ability to set the pace of work, and thus seek to address the central managerial problem of overcoming labour indeterminacy (Edwards, 1979). Manual conveyor belts, or skates in the workplace parlance, are present, predominantly in the SCs, which semi-automated the pace of operations, leaving workers some discretion in determining the pace of the workflow. In contrast, belts or skates were absent in the DSs and the movement of orders within the stations are wholly dependent on manual labour for lifting, handling and pushing packages. Further, technologies are fused with other forms of control to reconfigure their usage, especially in the DSs. For instance, the video-coaching, helmet scanning, and tracking of drivers' conversations with customers through call and text message recordings are notable examples of techno-normative controls that have been identified in platform-based gig work (Gandini, 2019). Moreover, technological monitoring of workers is implemented, additionally through close surveillance of workers' actions. CCTV cameras with monitor screens situated in a central control panel operated by the security in all the e-LSN sites. While the 'electronic panopticon' (Sewell and Wilkinson, 1992) has been critiqued (Bain and Taylor, 2000), the widespread implementation of CCTV surveillance is acknowledged, and its operation identified for Amazon warehouses in Italy (Delfanti, 2021).

Another widely used method of controlling workers in all Amazon's facilities is evident in the routine briefing sessions held at the start of each shift. These sessions are conducted by managers to instruct workers on parcel handling protocols, the required level of work effort, which should be reflected in the volume of parcels processed per unit time, the practices to be avoided which might cause errors in the workflow and ultimately delay the processing time. The FC briefings combine normative, bureaucratic and simple controls. Bureaucratic control is reinforced by reminding workers on package handling and processing protocols, which are simplified into quizzes with long answers being shortened to memorable acronyms (such as answer to "quality?" was simply BOOSTA), reminding workers to meet the stipulated rates and follow workplace safety rules. Normative control is exercised by attempts to motivate workers to work for customers' satisfaction and clapping together to celebrate the FCs successful performance. Workers are subject to critical evaluation during these briefings with consequences varying from harsh recrimination from the shopfloor managers to the issuing of warning letters, immediate contract termination and ID blocking in front of colleagues. During these sessions, top performing workers are rewarded in cash, in kind, and with symbolic gestures.

Similar briefing sessions take place in the SCs, although they of shorter duration and not as extensive in scope as in the FCs, mostly limited to sharing with workers the entire unit's order volume for the shift and reminding them to work quickly. The DS briefings are even shorter and not as routinised as in the other units. Supervisors and the drivers alike reported finding the

briefings time consuming and delayed the start of the delivery process. The reward and punishment system in the SCs and DSs contrasted to that in the FC. Whereas multiple forms of rewards, such as giving Amazon gift cards, putting photos of workers in Wall of Fame, and rewarding them with star badge, however insignificant in the reproduction of labour power, are distributed in the FC, these incentives and symbolic gestures to motivate workers to greater effort ceased in the SC, and the DS never had such initiatives. Management in all the units have disciplinary mechanisms in place. The briefing sessions an arena at which managers frequently threaten workers with lay off or ID blocking which causes ripples of fear among associates. Notwithstanding these differences, the briefings are an essential mechanism for directing the required pace of work and worker effort, which cannot be controlled by conveyor belts and algorithms alone.

Although the briefing sessions reflected a convergence of bureaucratic, normative, and simple controls, these mechanisms were implemented more directly and tangibly on the shopfloor, directed to workers as they undertake their designated tasks. In the FC and SC, floor managers frequently intervene to discipline underperformers, detect 'organisational misbehaviours' and prevent the growth of any incipient 'groupism' among the workers. Inevitably, these forms of direct or simple control involve the exercise of managerial discretion. This direct intrusive control is not possible to impinge on drivers when on road, one reason perhaps why algorithmic control appears more comprehensive in the DSs than other sites in the e-LSN.

Further, in the FC exclusively, two additional initiatives were employed beyond the briefing sessions and also without direct managerial intervention. First, mini competitions with incentives, such as "power hours" were sought to boost worker effort and productivity by instilling competitive attitudes between the co-workers. This "Power Hour" represented a form of top-down gamification that differs significantly from Burawoy's (1979) conceptualisation of workplace games. In Burawoy's analysis of factory labour, gamification emerged as workers developed informal competitions and "making out" strategies to cope with the monotony and pressures of production. These self-generated games obscured exploitation by making work more engaging and served as a mechanism of ideological control, subtly reinforcing the capitalist labour process by giving workers a stake in their own exploitation. In contrast, Amazon's Power Hours are explicitly managerial tools designed to intensify labour. The introduction of structured mini competitions where workers compete for rewards like gift cards, aligned their short-term incentives with management's productivity goals. Unlike Burawoy's bottom-up gamification, Power Hours reinforced top-down control by fostering hyper-competition, individualising performance, and extracting additional labour effort without improvements to working conditions. Second, Amazon Radio broadcasts motivational shows with celebrity, and Amazon senior executive managers, and plays regional songs, with the purpose of distracting employees from their gruelling work. These instances are redolent of Barley and Kundra's (1992) identification of management's use of normative controls to motivate workers and cultivate identification with their organisation.

9.2.3. Summative Conclusion

Evidently, algorithms expediate the instructing, monitoring and evaluating process and enable managers to micromanage and intensify the labour process across all the operating sites in the e-LSN. They are a crucial mechanism for the simultaneous monitoring and evaluating of the efficiency and productivity of the warehouses and delivery stations. As Braverman (1974) argued,

in controlling the labour process, the dissociation of conception from execution is a fundamental managerial objective, and algorithmic control enabled this in a much more detailed and granular way. By codifying tasks, prescribing workflows, and tracking performance in real time, algorithmic management further entrenched managerial oversight. Moreover, algorithmic control does not substitute for other forms of control, but rather underpins them across the interconnected sites in order to augment the control system of the e-LSN in its entirety. This analysis resonates with literature that has emphasised the enduring significance of multiple forms of control operating in tandem, rather than the historical, sequential substitution of one dominant form for another (Edwards, 1979) to overcome labour indeterminacy (Thompson, 1989; Taylor and Bain, 1999; Thompson and McHugh, 2009). Any novelty in Amazon might be the systemic permeation of platform-based algorithmic control, notwithstanding precedents extant with digital micro-monitoring and measurement in, notably, mass production call centre regimes (Taylor and Bain, 2007).

Controls, when implemented simultaneously, arguably alter their effects. For instance, algorithmically generated metrics are compared to the SLA or SOP stipulated targets to evaluate the performance of both individual workers and at site level for the entire operating unit. Thus, bureaucratic controls become denser, when rules are expanded and get more detailed from company level to individual level owing to the algorithmic control that generates microdata. Hence, bureaucratic control is reconfigured through the implantation of algorithmic control. Building on Massimo's (2020) conceptualisation of Amazon's disciplinary mechanism as 'Algorithmic Bureaucracy', this thesis explicates how this combination of forms of control materialises. Further, algorithmic bureaucracy, practiced simultaneously across different operating sites, became a prerequisite for ensuring the timely transfer of orders from vendor to customers. Each site has strict performance criteria, essentially the monitoring of the processing time of each shipment for all the individual functions against their respective stipulated CPTs. Through identifying algorithmic bureaucracy's prominence in and across the sequential, functionally related operating sites across Amazon's e-LSN, the thesis arguably expands the concept's analytical reach and purchase.

A compelling case can be made that Amazon across their e-LSN do strategically utilise algorithmically generated performance metrics to control and discipline workers' performance, to overcome labour indeterminacy and to maximise the appropriation of value. In taking decisions regarding workers continued employment, for example, algorithms are inextricably bound up with, rather than replacing, managerial intervention in critical decisions about labour utilisation. Although final decisions rest with the managers, their discretion is not diminished by the use of algorithms, but rather is based upon them. Managerial discretion is central for adapting the workforce size to market fluctuations, aligning with what Sturna and Reese (2021) refer to as "flexing the workforce." Consequently, during periods of low demand, management enforces stricter policies on workers to minimise the workforce through abrupt layoffs and ID blocking, aligning with their lean management practices of eliminating unnecessary tasks and excess staff. These findings substantiate Delfanti's (2019) concept of "augmented despotism," observed in Amazon warehouses in Italy in which, he argued, control mechanisms are not entirely devolved to algorithms, rather algorithmic control mediates other forms of control. This thesis further argues that algorithms not only mediate, but transform, the other forms of control enabling a granular, stricter, intensive and more pervasive monitoring and evaluation of the labour process.

Finally, the reward system embellished with symbolic gestures identified during the briefing sessions, particularly in the FC, resonates with Vallas et al's (2022) insight from Amazon warehouse in the United States of the significance of normative control for motivating workers to become ideal 'diligent' or 'trusted' workers. However, these rewards are materialistically insignificant for the Indian workers, incapable of binding them to their employing organisation. These illusory rewards could not transcend the fundamental contradiction in the capital-labour relationship at the point of production, evidenced by widespread concerns and complaints reported by the workers interviewed. Moreover, these symbolic rewards ensure neither higher job security, nor workplace promotion, and those rewarded workers are subject to same oppressive demands to deliver productivity against strict performance parameters in common with their colleagues.

9.3. Inter-Firm Relations, Market Power, and Labour Process in Amazon's e-LSN

Amazon's e-LSN is not only a network of functionally related operating sites but also a network of inter-firm relationships. As indicated, not all the operating sites in the network are owned and operated by Amazon, but other regional large, medium and small enterprises, not owned by Amazon, are integrated. The labour process materialising in each site is shaped by the nature of the inter-firm relations between Amazon and their regional partners.

9.3.1. Inter-firm Relations in Amazon's e-LSN

Of the four operating sites in Amazon's e-LSN, the subject of study, two (RC and FC) are owned and operated by Amazon India, a subsidiary of the transnational corporation (TNC), while the SC is owned and operated by Mahindra Logistics, one of Amazon's regional third-party logistics partners. All four DSs are owned and operated by regional third-party small and medium enterprises. Thus, Amazon employ diverse organisational fixes (Coe and Young, 2015), operating the FC through a subsidiary, subcontracting the SC and DS operations and franchising other DSs to local enterprises. Key differences exist in the contractual agreements between Amazon and its regional partners based on the nature of the requirements of the lead firm (i.e. Amazon). In the case of the FC, being a subsidiary, management not only access Amazon's proprietary software (WMS) but also collaborate in its design and updates through the digital platform Amazon Wiki. The SLAs or SOPs are not only imposed, but collaboratively formulated. Conversely, in subcontracted sites, third-party managers have little to no involvement in setting SLAs or SOPs, or in tweaking the WMS. However, they are still required to meet Amazon's SLAs and use the WMS to monitor and evaluate labour.

These differences in contractual arrangements have significant implications for Amazon's governance structure and the characteristics of inter-firm relations in the e-LSN. Drawing from Gereffi et al (2005:84), it could be argued that the governance strategy for the subsidiary FCs follow a hierarchical approach, where Amazon retains centralised control over operations, workforce management, and logistics. However, the collaborative formulation of SOPs and SLAs between Amazon and its subsidiaries, facilitated by digital platforms like Amazon Wiki, introduces elements of relational governance as well. This interaction allows subsidiary FCs a degree of input within Amazon's corporate structure, even though Amazon ultimately oversees key decisions on which SOPs/SLAs to standardise. In contrast, subcontracted and franchised units operate under a more captive governance model, where Amazon unilaterally sets the SLAs, and partner managers

are required to ensure performance without participation in decisions. Despite strict performance evaluations across all enterprises, Amazon's response to underperformance differs based on the nature of the inter-firm relationship. In the subsidiary FCs operating under a hierarchical governance model with integrated decision-making processes, underperformance leads to a reduction in shipment volume, and reallocation of it to other competitor sites. However, in the subcontracted sites with captive governance, Amazon reduces its share of revenue and capital, transfers essential equipment. like scanners and totes to other sites, or even terminates contracts. For example, it was reported that one subcontracted SC lost several scanners to a neighbouring SC, due to underperformance *[KL12-SC12-TL2]*, and the ownership of a DS changed hands from one regional enterprise to another *[KL31-DS6-TL3]*. In these cases, Amazon systematically reduced the operating capacity of subcontracted partners or replaced them entirely, while in the subsidiary FCs, only shipment volume was adjusted, leaving capacity intact.

Despite these differences in inter-firm relationships and forms of governance, Amazon maintains certain common practices across all sites, regardless of ownership. Amazon strategically transfers the risk of market fluctuation in consumer demand to the site-owning firms by giving to them the responsibility for labour recruitment and configuring the workforce size. The partner firms, in response resort to recruiting through short-term or part-time labour contracts to transfer the risk to the workers themselves, resonating with the practice of numerical flexibility (Atkinson, 1984). Moreover, Amazon maintains authority over their procurement of essential tools and equipment (totes, carts, bins, and scanners) for all sites in its e-LSN. Furthermore, it enforces the universality of WMS, the platform-based digital architecture, across all firms to monitor and evaluate simultaneously the processing and progress of orders and the site-level labour process. This standardisation enables Amazon to compare performance across different sites and retain decision-making power, especially when punishing underperforming firms by reallocating resources or reducing capacity.

By owning the technology, devices and equipment used across the e-LSN, Amazon can swiftly enforce consequences, like reallocating equipment to better-performing sites. In essence, while the inter-firm relationships vary based on the type of organizational and governance arrangements, they impact Amazon's the management actions differentially, but insofar as the labour process is concerned Amazon's digital eco-system and standardised control mechanisms prevail across all sites. This uniformity allows Amazon to maintain centralised performance evaluations, fostering competition based on comparative productivity, quality and cost, and ultimately determining the fate of the firms within its e-LSN. In this regard, Gereffi et al's (2005) treatment of the firms as integral entities does not permit a more nuanced investigation of the role of different agency within firms. In the Amazon case this might include how workers experience the effects of governance strictures or how management practices and actions in the operating sites might be moulded by the specific inter-firm relationships, within the concrete economic context, neglected in GVC theorising. Through analysis of the linkages between specific inter-firm relationships and the labour process at and across the points of productions, the thesis explicates how different governance structure might still engender common labour utilisation strategies. Newsome (2015) has demonstrated how lead firms in supply chains instil competitive pressure among the 3PLs to drive down operating costs. The thesis' findings substantiate the ways in which competitive imperatives manifest, by underlining the less acknowledged role of lead firms' strategic investment

in digital architecture which orchestrates finely grained competition between operating sites across a network, in this case Amazon's e-LSN.

9.3.2. Market Power and Labour Process

Evidently, Amazon holds disproportionate power in the inter-firm relations with its partners, strategic or otherwise, which enables them to impose standardised labour process practices across the differently owned operating sites. As argued earlier, Amazon's authority in its e-LSN essentially derives from three inter-related factors: their market power in the Indian e-commerce sector, their access to finance capital, and their in-house investment in technology. Being an early entrant in Indian e-commerce sector, Amazon faced little to no competition barring the regional firm Flipkart. Amazon's market power was augmented by virtue of its strategic partnership with the government which endowed it with a unilateral authority to configure the digital infrastructure of the country's e-commerce sector, and subsequently pushed the regional retail and logistic enterprises to subsume their activities within Amazon (see Rahman, 2018 for a related study). Further, owing to Amazon being endowed with financial, particularly 'patient', capital (Rahman and Thalen, 2019), it outcompeted regional retail and wholesale businesses through predatory pricing and heavy discounting. Finally, the strength of its in-house investment in technology has been evident in the pivotal role of its WMS in controlling and coordinating the labour process across the operating sites and firms in the e-LSN. Essentially, these latter two factors further enhanced Amazon's market power in the Indian e-commerce market.

Amazon's market power enabled it to set metrics for all its operating sites in the e-LSN and compel its partners to adhere to its prescribed SLAs and SOPs. These site level metrics are translated into time and volume targets for each site across its e-LSN, which cascade down through the respective sites' functions and ultimately are imposed on individual workers. In this way, the volume of items and pace of work are determined for all sites, including those owned and operated by partner firms. Further, Amazon leveraged its market position and considerable resources to instil and intensify competitive pressure among their partners in the e-LSN, which in turn are transmuted into the intense and demanding work efforts extracted from the workers, often at the detriment of workers' health and wellbeing.

9.3.3. Summative Conclusion

In conclusion, Amazon capitalised on its market power to orchestrate competition among its partner firms, in which this dominant lead firm's organisational arrangements and governance prescriptions enabled it to transfer to them operational risk, while ensuring their functional assimilation within its platform-based digital architecture. This integration served to synthesise the fulfilment of simultaneous objectives, to enable the most efficient, rapid process of orders from vendor to customer *and* to impose control of the labour process within and between its facilities. This manifested in a melange of different control mechanisms and labour utilisation strategies to maximise flexibility, minimise labour cost, striving to ensure the seamless articulation of the different operations across its e-LSN. Overcoming labour indeterminacy depended in large part on the reification of competitive pressure from lead firm through governance and contractual strictures, into targets at functional for enterprise or unit level and finally to individual worker.

9.4. Labour Market Segmentation, Workforce Composition and Labour Process in Amazon's e-LSN

Chapter 4 evaluated the segmented nature of the Indian labour market, including the regional labour markets of Karnataka and Kerala. Segmentation could be observed in terms of different types of labour contracts, with varied degrees of job, income, and social security and was reflected in the workforce composition of the e-LSN's operating sites. Here, workers were engaged on varied labour contracts. Other forms of segmentation, detected in the sites' labour utilisation strategies, were based on employees' gendered roles and migration. The thesis argues that Amazon and its partners resort to diverse mechanisms in reaping the benefits of this segmented labour market for controlling workers' efforts, countering potential workers' resistances and configuring the labour processes in its e-LSN.

9.4.1. Contract-based Segmentation and the Labour Process

Three types of labour contracts are issued in the FCs, SCs and DSs. The most secure is the full-time permanent contract of companies both operating and owning their sites, giving a minimum tenure of one year. In Amazon's FC these contracts were provided for senior executive managers and most floor managers (PA and PS). In the SC, owned and operated by Mahindra, these contracts were only afforded to senior executive managers, while in the DSs, owned and operated by several medium to small regional enterprise, no permanent contract was available. In contrast, no warehouse workers in either the FC or SC, or delivery drivers in the DSs, had permanent contracts.

The most common form for FC and SC workers is the full-time short-term contract issued by third-party recruitment agencies, with significantly lower job tenures varying from one month, to a maximum of eleven months. A handful of floor managers in the FC and all the floor managers and station managers in the SC and DSs respectively have this short-term contract from recruitment agencies, albeit with better remuneration than the workers. Moreover, a predominant majority of the workforce at these sites receive this full-time, short-term contract with limited job security, subject to periodic evaluation, for extension but monthly, and not for more than one month in most cases. A third form is the part-time, or ad hoc contract, for warehouse workers in the FC and SC issued by recruitment agencies. These part-timers' have day-to-day contracts, resembles zero-hour contracts in UK (Taylor et al, 2017), devoid of job security, making them formal sector but casual wage workers in the Indian context. The contract issued to the DSs' delivery drivers is predominantly an independent contract, which categorises them drivers as independent employer or self-employed, removing them from the workers status.

Contractual differentiation had significant implications for the labour process and labour utilisation practices in the operating sites. Amazon and their regional partners commonly implement short-term contracts to discipline workers by binding workers' performance to prospects of job security. Short-term contracts create a looming threat of termination and lost earnings, compelling workers to subjugate themselves to the inescapable, target-driven and gruelling demands of work. In addition, short contracts, particularly those for part-time workers, enable managers to exercise numerical flexibility by recruiting many during market boom and subsequently retrenching them, when the market demand subsides, thus transferring the risk of

market fluctuation to workers at the cost of their job security. The effectiveness of flexible labour utilisation strategy to discipline workers and overcome labour indeterminacy is further strengthened by high unemployment, especially among young graduates in the two south India states (Table 4.4), which reduce the cost of laying off, as hiring workers from a reserve army of labour remains an easy alternative.

Additionally, part-time workers face further challenges as many are committed to returning after lay-off but were unsuccessful as the number of applicants outnumber vacancies. This undoubtedly adds to their unremunerated job search time. Moreover, use of part-time workers reduces employers' labour costs as they are not entitled to social security benefits, such as health insurance and post-retirement support schemes (provident funds). Precarity is similarly experienced among drivers because their independent contracts are devoid of labour rights. Moreover, drivers are predominantly paid on piece rate, thus ensuring the pace and intensity of work by closely aligning their remuneration with task performance. Further, payment based only on the numbers of orders delivered neglects the impact of contingencies when commuting and during delivery.

9.4.2. Gender and Migration Status based Segmentation and Labour Process

Field observations, particularly in Kerala, further inform us that gender influences enterprises' labour recruitment and utilisation practices. Of four shifts in the SC, women were recruited for only the morning shift of nine hours. Thus, women's access to employment is structurally limited. The justification for this managerial decision is compliance with the state's labour laws, which previously prevented women from working after 7 pm on safety and security grounds. However, several states including Kerala had amended the law since 2007 and women could work nights shifts, provided employers provide safety measures, particularly commuting services between workplace and home. This legislative change provides the possibility for employers to assume responsibility for women workers' safety, which in practice they tend to avoid because of added cost, that they perceive as undermining their competitive advantage, and ultimately jeopardising the sustainability of their position in Amazon's e-LSN. However, women demonstrated their disinclination to work night shifts as they intruded on their domestic commitments. It challenges labour power reproduction by disrupting sleep cycles, adversely affecting household caring responsibilities and negatively impacting on their health. These behavioural norms, concretised by managerial practice, undermines women's employment opportunity in Kerala and re-enforce gendered segregation.

In contrast, Bangalore's FC Amazon provides women workers with mandatory transportation services for home to warehouse commuting. This undoubtedly enhances employability and reflects in women's higher labour force participation rate vis-a-vis the SC. This transport facility extends to male workers as a choice, which many avail enthusiastically. Although Amazon provide travel facilities in their owned and operated FC, it was not the case for their partner firms, including the large company Mahindra. Partners, squeezed between the dual objective to maximise their surplus share and to contribute to Amazon's profit share resort to their discretion in labour recruitment. Consequently, they avoid incurring labour costs involved in commuting services by avoiding recruiting women in night shifts. Thus, while Amazon transfer labour costs to their partners, they are further transferred by the partners to the workers, particularly women, contributing to gendered segregation in workforce composition. In addition, a gender-based division of labour is

observable. Women are tended to avoid in assigning unloading and loading tasks in the FCs and SCs.

Segmentation is also detectable between migrant and local workers particularly in the FC and SC. Migrant workers in both units come from other states in India, mostly from the east (Assam, Bihar, Bengal) and north (Uttar Pradesh), and are recruited on full-time short-term contracts through agencies. Although their tenure of contract and remuneration are comparable with those of the local workers, they are exposed to additional vulnerabilities. Due to weaker social capital and unfamiliarity with local language, they lack mobility power and, as testimonies of several managers and recruitment agents demonstrated, they are less prone to complain and more likely to accept longer hours of work, which make them preferable to local workers. In other words, migrant workers' limited access to other jobs and their higher dependency on agencies make them easier to discipline and control. Further, to compensate for more limited social capital they tend to form groups among colleagues with whom they share their language and state of domicile. This sort of 'groupism' created an otherization with their fellow workers from other states, thus potentially reinforcing divisions in the workers and potentially affects workers' associational bargaining power.

9.4.3. Summative Conclusion

Field observations and interviews suggested at least three types of segmentation in the workforce composition of the operating sites in Amazon's e-LSN. First is contract-based segmentation. Recruiting workers on short term contracts reflects the broader trend of increasing informalisation in the formal sector in India (Sood et al, 2014). This phenomenon had been documented extensively in warehousing work in general (Gutelius and Theodore, 2019; Barnes and Ali, 2021) and in Amazon in particular (Briken and Taylor, 2018; Delfanti, 2021). Scholars have emphasised that it enables managerial 'despotism' (Delfanti, 2021) and aids the practice of numerical flexibility (Briken and Taylor, 2018). The thesis, resonating with these conclusions, further argues that the short-term contracts were not only the norm in recruiting workers, over time in India it has been extended to recruiting floor managers, a practice not found elsewhere. Further, unlike in the Global North, where temps are used to complement permanent workers, all workers in India are temps at best if not also part-timers. Accordingly, these two observations gesture to a limitation in Atkinson's (1984) generalised claim that a flexible labour utilisation strategy would be practiced for peripheral workers particularly. It implies that cost cutting, and transfer of market risk, are superseded over maintaining a core workforce in India's Amazon's business model. Moreover, the purposeful use of part-timers complementing full-time short-term workers augmented the flexible labour utilisation practices, perhaps even justifiably termed strategic. Additionally, part-timers are found to be expending unpaid labour time in search of jobs, and delivery drivers are not remunerated for the time taken for commuting, which underlines similarities in the practice of 'invisibilisation of labour time' observed elsewhere for remote cloud work (Bergvall-Kareborn and Howcroft, 2014; Cini, 2023). Similar to cloud work, where digital platform serves to veil unpaid labour time, it is executed by the Amazon Flex software for the delivery work but is instituted through the nature of the part-time contract itself for the warehouse workers.

Furthermore, identity-based workforce segregation observed in the operating sites resonates with those found in respect of gender and ethnicity in the warehouses of USA (Gutelius, 2015) and

Australia (Barnes and Ali, 2021). However, Zanoni and Miszczyński (2024) suggest that algorithmically driven management practices in Amazon might homogenise the precarious labour process across different workers' identities. This thesis' findings suggest gender-based segmentation in labour utilisation, arising from task-based variation in the use of algorithm and human labour. Further, recruitment is segmented across the gender and migration status of workers. Moreover, the premediated recruitment of migrants for the longer hour shifts and the gender-based division of labour arguably resonates with Friedman's (1977) contention of identity-based segregation aiding managerial control from outside the domain of production to shape the labour process.

9.5. Workplace Relations and Labour Agency

Concentration on managerial control mechanisms discovered, evidenced and analysed above that are integral to the labour process within the sites of, and across, Amazon's e-LSN should not lead to neglect of worker responses, and the exercise of their agency. Workers did not passively accept the consequences of hugely demanding work in the punitive workplace regime. A necessary precursor to labour agency is workers' concerns, complaints and grievances, which when ignored or inadequately addressed, become accumulated and may lead to one or more forms of action. Concerns revealed from the field observations indicate challenges to the reproduction of labour power. The impact of excruciating work intensity and long hours of work without sufficient break or breathing time impacts on workers' bodies and minds. Pains in all parts of the body, headaches, eye burns, muscular sclerosis, were widely reported by worker respondents. Many workers described how they carried with them the fatigue and exhaustion from work to their homes, which impaired their ability to care for themselves and their partners or families. They experienced disrupted sleep patterns accompanied by vivid, work-related dreams, reflecting the intrusion of their punishing work and insecurity and the effects on their mental and emotional well-being. The weekly leaves and limited personal time away from the workplace were insufficient, according to many testimonies, to recover their health. These were common concerns, widely reported and observable in the FC, SC and DSs alike. Additionally, delivery drivers raised concerns over working without adequate protective equipment from scorching heat and sporadic rainfall. Overall, a precarious and exploitative work environment was imposed on the workers across the e-LSN. The work intensity demanded by Amazon was arguably unsustainable, as it depleted labour power at a rate that outpaced the time needed for recovery, thereby jeopardising workers' health. Inevitably, the accumulated concerns manifested into frustrations and was expressed through labour agency, in whatever capacity was available to them.

In the studied e-LSN, labour agency was exercised in three ways. First, the company, specifically HR, organised grievance redressal mechanism should be considered. Second, is the exercise of mobility power, such as resignation in response to the exploitative and hostile workplace relations. Third, are the expressions of resistance, which challenge the workplace power relations and skew the value distribution system. These actions encompassed individual and collective forms.

9.5.1. Company Initiated Space for Exercising Labour Agency

As far as company provided space for workers to raise their voices is concerned, in the FC and SCs official complaint boxes are provided for workers to raise their grievances anonymously, while

in the DSs it is substituted for with an on-road and offroad delivery support team although anonymity is not assured. However, in practice this provision was underutilised and has not reaped any fruitful results for workers because of several factors. First, the usual response from the HR managers is to frame the problem raised by complainants as a singular case particular to a specific worker, thereby relegating a common problem to an isolated case. Instances where HR managers engaged in gaslighting practices with aggrieved employees, attributing their difficulties to personal inadequacies and skill deficiency, were pertinent exemplars of this phenomenon. Secondly, numerous testimonies indicated that workers' complaints received attention only if the complaining individuals were considered to be in the "good book of the managers" and consistently "meet the rates" *[BLR36-FC12-AA40]*. Conversely, complainants not belonging to this select category were not only disregarded, but also were publicly humiliated, and their performance openly criticised and used against them. Thirdly, the labour process, contingent on repeated execution of tasks to strict time targets, stole from workers the time to lodge complaints within the company stipulated protocols. A particular instance was the challenge to file a complaint when the algorithm would deem this as 'idle time', activity away from productive work. Consequently, workers hesitated to voice their concerns promptly, fearing potential repercussions such as reprimands or disciplinary actions for underperformance. Thus, algorithmic micro-monitoring of time off tasks effectively silenced dissent and perpetuated a culture where workers felt inhibited from raising complains as they arose.

Finally, even when workers manage to register their complaints, management address them lackadaisically and hastily. Those pertaining to workers' health and safety in the FC are directed to on-site healthcare services, such as first aid kits and designated physicians. However, these provisions often fail to meet minimal medical standards, such as bandaging broken fingers. Moreover, on-site medical facilities are inaccessible or non-existent in the SCs and DSs, where injured workers are referred to local public hospitals for treatment at the best. Notably, referral to local hospitals is contingent on health insurance coverage, such as ESI, which remains unavailable for part-time workers in the FC and SC and for the delivery drivers in the DSs. Additionally, all injured workers suffer wage loss during treatment absences. Consequently, these complaints are often addressed in an ad-hoc manner, with healthcare provisions, wherever provided, primarily serving to shield management from additional costs and responsibilities, rather than effectively resolving underlying issues. Additionally, delivery drivers' complaints over customer harassments are disavowed promptly. The procedure for lodging complaints with the support teams in the DSs entail selecting from multiple-choice questions, with no provision for written or detailed descriptions of a problem. Responses were scripted and de-facto structured to maintain an uninterrupted workflow, often without effectively addressing workers' concerns.

9.5.2. Resignation and Mobility Power

The second channel for the workers to assert their agency is utilisation of their mobility power, that is to resign from the job for better employment opportunities elsewhere. Worker's ability to resign is induced by two main factors: their skill and labour market situation. In the studied e-LSN 69 per cent (Kerala, 62 per cent, Karnataka, 76 per cent) of the workers were below graduate level proportions significantly higher than those for the state and national level workforce participation rates (Table 4.3). So, skill requirements for warehousing jobs were relatively low compared to those of the majority of the workforce in the broader labour markets. Consequently, the labour market

for the pickers, packers, sorters, loaders, and delivery drivers was slack, with low entry level barriers for these jobs due to lower skill requirements. This slackness was re-enforced by the relatively high unemployment rates in the respective states and across India, especially among educated youths (Table 4.4). Many interviewees recounted the fear of losing their jobs and the looming uncertainty in finding alternatives in both the states. Many even preferred to adapt to the punishing working conditions rather than resigning. Therefore, the mobility power of the warehouse workers was structurally limited in the Indian logistic sector because of low skill requirements, that made them easily replaceable, and to the slack labour market condition in this sector.

Notwithstanding these structural constrains, two types of resignation patterns are evidenced. First, migrant workers especially resign because the company provides insufficient leave, that prevents them from attending family occasions and fulfilling their responsibilities. The second trend is to acquire a better job, especially found among those with college degrees. While the first kind of resignation trend arises from compulsion, the second trend evidences some exercise of mobility power. Although resignation *per se* might not translate to resistance as long as employers can easily substitute departed employees from the reserve army in the wider labour market, an example of resignation transcending to resistance was the incident of the mass resignation of many experienced employees in the Kerala SC in retaliation to insufficient pay. This case resulted in underperformance at the SC, leading to the reduction in value earned per shipment processed from Amazon. Accordingly, this individual form of labour agency when exercised collectively demonstrated its effectiveness and had a significant impact on operations. At the same, Amazon sought to immunise itself from the effects of mass resignation by transferring labour recruitment, and subsequently this aspect of indeterminacy, to their partner in the SC.

9.5.3. Expressions of Resistances

Resistance in the studied e-LSN can be classified into two categories: individual resistance and collective resistance. Individual actions comprise sabotaging the workflow and manipulating with the algorithm to gain respite from the demands of unrelenting toil. For example, in the FC removing scanner batteries or unplugging hardware are attempts to reduce the pace of operations and squeeze out some breathing time. Workers also developed innovative ways to counter particular control strategies, such as ensuring 'strong finish' and avoiding errors. While to meet the former requirement, they delay the time between starting and finishing the processing of the last order to ensure that the last processing step converges to the last minute of the shift. Similarly, to avoid the WMS from recognising errors, workers enter a 'missing' command into the scanners, before scanning items with dubious barcodes. Without this command, scanning an incorrect item would count against them, but with it, the WMS interprets the scan as a search for the missing item rather than a processing error. These examples which, by way of reflection, might be minimal in their effects, but counter the 'total control' perspective of the 'electronic Panopticon' advocates (Sewell and Wilkinson, 1992; Fernie and Metcalf, 1998).

Individual attempts to resist and counter the production regime were more effective when undertaken collectively. The instance of mass resignation in the Kerala SC is a telling illustration. When individual actions are coordinated, they significantly impact the value distribution process in the e-LSN. Other reported forms of collective action include the two-day strike over low pay in the Kerala SC, and the drivers at the Kerala DS unanimously deciding to boycott delivery in protest

at customer harassment faced by one of their colleagues. Interestingly, no parallel collective actions were found in the Bangalore FC. Two factors could be attributed to this difference in the incidence of collective actions between the two states.

The first may be explicable by reference to the contrasting socio-political characteristics of the two states. As elaborated, Kerala has a rich legacy of trade union actions, bolstered by pro-labour state governments, and was currently the state with highest number of registered unions in India (table 4.12). All workers in Kerala interviewed were aware of unions and their purpose. Many workers interviewed related the capability of union representation to protect them from excessive individual targeting, and understood the benefits of organised action, and the potential for greater bargaining power. Nevertheless, some expressed apprehension about the militant nature of union actions and feared that Amazon might close their unit, thus jeopardising their employment. In a general sense, though, the historical legacy and legitimacy of trade unionism exercise an effect on workers' attitudes, even though actual union representation in the studied SCs and DSs was absent. In contrast, in Bangalore, general awareness of union action was lower. In part, this difference may be attributable to the more powerful pro-business institutional influence in Karnataka, which undermines union actions, and the fact that labour court sanctioning decisions in favour of enterprises are more probable.

The second may be the influence of the respective ownership status of the sites which generated variation in the strength of measures taken to counter potential or actual resistance. The Bangalore FC was owned and operated by Amazon, which is renowned for its determined anti-unionism both ideologically and in practice (Massimo, 2020)[43]. It's anti-union strategy took tangible form in practices that include curbing potential group formation by dispersing workers found sitting together during breaks or spending time together into different shifts, identifying and targeting individuals who were perceived to be argumentative and diverting issues raised from HR to the recruitment agents. While in the SC, Mahindra practiced the last tactic to undermine labour agency, other anti-union measures to counter to potential resistance were not within the capacity of Amazon's partner, as much they were for Amazon and its directly implemented actions.

9.5.4. Summative Conclusion

The hostile workplace environment rooted on intense work pressure and demanding targets to 'meet rates' culminating in serious concerns for workers physical and mental health have been acknowledged as prevalent elsewhere in Amazon's sites in Italy (Delfanti, 2021), the USA (Struna and Reese, 2020; Gutelius and Pinto, 2023), Germany (Boewe and Schulten, 2017) and the UK (Briken and Taylor, 2018). This thesis demonstrates that these oppressive conditions in Amazon's workplaces are strikingly similar across different regions and nations. The responses to these workplace experiences and grievances were distinct in the operating sites of this study when

[43] Amazon has historically used legal manoeuvres and intense opposition to block unionisation. The company has been accused of creating a hostile environment for unions, using surveillance, anti-union messaging, and workforce restructuring to weaken collective bargaining efforts. Recently, in the UK, the GMB union sought formal recognition at Amazon's Coventry warehouse after its membership exceeded the statutory threshold in 2024. However, Amazon reportedly increased its workforce from 1,400 to 2,700, diluting the union's membership percentage and blocking recognition. GMB accused Amazon of engaging in "dirty tricks," such as aggressively recruiting workers to undermine the union's strength rather than negotiating better pay and conditions. See: https://www.lrd.org.uk/news/union-loses-agonisingly-close-vote-recognition-amazon

compared to others. While instances of organised actions, coordinated by trade unions resulting in organising efforts, picketing and strikes in Amazon warehouses in USA[44], Italy[45], UK[46], France, and Germany[47] have been documented in the media and in academic publications alike (Fuchs et al, 2021; Massimo, 2020), they have been wholly absent altogether in this studied Indian e-LSN. This can be partly attributed to certain labour recruitment practices found particularly in the Indian warehouses, albeit to varied degrees across all the units in the Indian e-LSN, including sustaining high labour turnover, providing overwhelmingly short-term labour contracts (to the point where it becomes the norm rather than to specifically address demand fluctuations) and recruiting through multiple recruitment agencies, all of which undermine workers' associational power (Wright, 2000; Silver, 2003) and subsequently the potential to form unions. Many workers interviewed identified these factors as significant barriers to collective action. Despite explicit management efforts to constrain union formation at workplaces, instances of workers' resistance, were recorded within the studied e-LSN, albeit sporadically, mostly unorganised and in individual capacities. In another Amazon India's owned and operated FC in Manesar, workers faced extreme disciplinary action from the managers, when denied sufficient drinking water and bathroom breaks. Workers' occupational health and safety was compromised when they were compelled to work unabatedly in scorching heat during summer of 2024[48]. Workers resorted to labour organisation and wider civil society to strengthen their collective bargaining power in developing their resistance.

Issues of exploitation in Amazon's e-LSN have received global attention from labour rights activists, labour organisations, national and transnational unions, and workers conditions have been exposed and solidarity offered by progressive sections of Indian civil society. In India, one such labour organisation was Amazon India Workers' Association, an informal collective of Amazon employees, active predominantly in North India, which was formed to advocate for rights, fair wages and job security, and has represented them in deliberations with management in legal and public fora. They have frequently contested excessive working hours, unprecedented performance targets, lack of adequate breaks and hostile work environments in the Amazon FCs. This association has been supported by transnational unions such as UNITES[49] and participated in international collective campaigning with Make Amazon Pay[50]. In organising and collectively raising the concerns and complaints of delivery drivers, AIWA sought solidarity from national labour unions organising gig and platform workers in food delivery, ride hailing, and care services such as All India Gig Workers Union (AIGWA)[51] and traditional political party affiliated unions such as Centre for Indian Trade Union (CITU)[52].

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[44] https://www.npr.org/2022/04/02/1090353185/amazon-union-chris-smalls-organizer-staten-island
[45] https://uniglobalunion.org/news/amazon-workers-on-strike-in-italy-over-frenetic-pace-of-work/
[46] https://www.bbc.co.uk/news/articles/ckrx15kex58o
[47] https://www.reuters.com/business/retail-consumer/amazon-workers-called-strike-across-globe-black-friday-2022-11-25/
[48] https://www.business-humanrights.org/en/latest-news/india-amazon-workers-denied-water-and-bathroom-breaks-during-50c-heatwave/
[49] https://uniglobalunion.org/news/amazon-workers-win-india/
[50] https://itforchange.net/index.php/node/2248
[51] https://www.context.news/big-tech/indias-women-gig-workers-organise-with-whatsapp-secret-meetings
[52] https://www.europe-solidaire.org/spip.php?article60032

This thesis has acknowledged that all forms of labour agency do not necessarily translate to resistance (Edward and Scullion, 1982), and further substantiates this recognition by documenting and analysing the forms of labour agency in the operating sites in the e-LSN. While the management provided space for labour agency, the grievance redressal fora, was structurally limited to address any workers' concerns, workers were found to resort to mobility power (Smith, 2006) to improve their working life experiences. The thesis has further elaborated that mobility power is heavily skewed towards skilled or educated workers, owing to their higher structural bargaining power (Silver, 2003). This difference in the mobility power has a geographical relevance, Kerala, with a comparatively more highly educated workforce vis-a-vis Karnataka, has managed to successfully demonstrate mass resignation, which qualifies as resistance by hindering the value distribution process between Amazon and Mahindra in the SC. Other forms of resistance, acknowledged elsewhere as 'organisational misbehaviour' (Ackroyd and Thompson, 2016; 2022), were found in the studied sites in the forms of sabotaging the tools and machines. Further, this thesis has observed workers to invent novel ways to squeeze out breathing time and obscuring and manipulating the algorithms from capturing workers' errors, providing a real-life exposition to Newlands (2021) claim that workers hold the potential to build resistances by hinging on the epistemological gap between algorithms and humans regarding understanding the material and psychological reality of the workers. Thus, although resistance in organised forms under coordinated leadership of any unions or in bottom-up sustained collective organising efforts were absent in the studied e-LSN, unorganised forms of resistance were extensively detected. Moreover, the thesis has drawn attention to the wider socio-political contexts and the ownership status of the enterprises in their effects on forms of resistance, evidenced in the contrasting experience of labour agency in Kerala and Karnataka.

9.6. Role of the State and Industrial Relations

Labour agency discussed in section 9.5 is a workplace phenomenon. The exercise of agency can transcend to broader industrial relations, encompassing dynamic interactions among employers, employees and state entities. In India, these relations have been embedded in legal frameworks including the Indian Constitution of 1949, the Indian Trade Union Act of 1926, the Payments of Wages Act of 1936, the Indian Industrial Disputes Act of 1947, the Equal Remunerations Act of 1976, and the Migrant Worker Act of 1979 among others. These laws have ensured workers' rights to form association, bargain collectively, and protect themselves from exploitation and discriminatory treatment. Labour laws in India fall under the Concurrent List of the Constitution, where both the central and state governments formulate the rules, while the implementation of these laws fall under state jurisdiction. For ensuring compliance with and resolving any disputes in implementation of these laws, labour courts were established by state governments under the Industrial Disputes Act, 1947. Labour courts have provided a legal platform for workers to seek redress for grievances, ensuring their rights are protected against unfair labour practices. Despite India's legal framework supporting the formation and recognition of trade unions, Amazon's aggressive union-busting managerial strategies has resulted in no unions being recognised in its warehouses. Moreover, a chasm exists between the laws on paper and implementation in practice (Mitchel et al, 2014). Furthermore, recent amendments to labour laws by the central government, aimed at enhancing the ease of doing business, have hindered worker resistance and union actions

including strikes (Sundar and Sapkal, 2017; Mathew and Jain, 2018). Instances of violation of certain labour laws were evident in the studied e-LSN.

According to the Industrial Dispute Act, no employee can be retrenched by a company without informing them at least three months before the layoff date. This period, called the 'notice period' in the act, empowers employees to exercise their mobility power and secure them from going through a prolonged unemployment phase. While Amazon and Mahindra comply with this law for its senior executive managers, who are directly under their payroll, they relax this notice period for floor managers and workers who recruited through agencies. Mahindra gives a forty-five day and fifteen-day notice period to its floor managers and workers respectively, while in Amazon they are retrenched immediately. Amazon achieves this outcome by tweaking the interpretation of retrenchment as a 'voluntary separation policy' (VSP). In other words, Amazon claim that workers leave their jobs by choice, directly contradicting their flexible labour utilisation strategy discussed above. Moreover, the VSP had been challenged in the Karnataka high court by the Nascent IT Employees Senate (NITES), on the grounds of workers being forced to resign owing to the hostile work environment prevalent in Amazon[53]. Although the union represented the IT workers, parallel representation was lacking for warehouse workers in the e-LSN, even though they were equally affected by Amazon's pernicious practices. Although recruiting workers through agencies transferred this legal obligation to them, Amazon remained accountable through the 'Principal Employer' clause of the Contract Labour Act, 1970. Further, recruiting through agencies is legitimate, according to this act, only for seasonal works and cannot be used for recruiting perennial works. However, Amazon has violated these clauses as well by recruiting contract labour in managerial positions and for core works in their logistic services.

Additionally, doubts have arisen on whether the amount of pay adequately compensates for the demanding work undertaken. Instances of delivery drivers being paid at piece rate which 'invisibilised' the labour commuting time, and stagnant basic salary without adjusting with inflation, raised by the several participants signalled 'wage theft', a practice found also in the Indian textile industry as well (Lopez 2022). Violation of the Payment of Wages Act 1936 is indicated. Other instances of 'wage theft' have been found in the actions of the recruitment agencies, such as deducting cost of living and home rents from migrant workers' salaries, and delaying their payments, which potentially violate the Migrant Workers Act, 1979.

In conclusion, the injustices perpetrated against Amazon workers in India underscores the urgent need for stronger enforcement of labour laws and greater support for worker rights. Despite the comprehensive legal frameworks designed to safeguard workers, including the Indian Trade Union Act and the Industrial Disputes Act, the reality falls short of this legal provision. Amazon's aggressive anti-union tactics and exploitation of legal loopholes highlight the challenges workers face in asserting their rights and in securing fair treatment. However, the resistance and collective action of labour organisations, such as the AIWA, has demonstrated a powerful pushback against these injustices. These workers' efforts to organise, protest and seek legal recourse shines a light on the critical need for robust enforcement of labour laws and stronger protections against corporate exploitation. As India strives to balance economic growth with social justice, the

[53] https://timesofindia.indiatimes.com/city/pune/labour-dept-summons-amazon-over-voluntary-separation-policy/articleshow/96954719.cms

experiences of Amazon workers serve as a powerful reminder that progress is futile without the empowerment and just treatment of workers.

Chapter 10: Conclusion

10.1. Introduction

This thesis has investigated the labour process in an Amazon Logistic Service Network, or e-LSN, in India. The abbreviation e-LSN, as adopted in this study, recognises that the distinctive characteristics of a production network emerge not only from its functional interconnectedness across geographically dispersed operational sites but also from the relational dynamics between workers and managers both within and across these sites. Quintessentially, e-LSN recognises that the value generated and distributed in a production network is derived from the labour power, actualised into concrete labour through the labour process. Drawing on extensive evidence from organisational/site level case studies of four functionally connected facilities of Amazon's e-LSN situated in two adjacent states in South India, it has analysed the involvement of diverse actors: Amazon as lead firm, its third-party partners, senior and middle management, recruitment agencies and, principally, workers, within their respective regional contexts. A principal originality of the thesis is that its investigation has been based not only on in-depth data from a single site as self-contained, stand-alone facility, as many have (Briken and Taylor, 2018; Delfanti, 2019; 2021; Struna and Reese, 2020; Massimo, 2020; Vallas et al, 2022), but distinctively has undertaken an analysis of the inter-relationships between and spanning sites in an e-commerce driven logistics network. In this respect the subject of study has been *the network as a case*, composed of its sites or nodes as constituent (sub-)cases, that transcend them dynamically to understand the network as a holistic entity. Accordingly, the thesis has analysed the ways in which the labour process, configured at the network scale, is made manifest at its separate, but crucially, interconnected sites. What is universal to the network, principally Amazon's (as the lead firm's) platform-based, digital architecture, its technological eco-system, notably the WMS, imparts a centralising, albeit not total, control over its component operations, whether owned by Amazon or subcontracted to third-parties which are essentially beholden to it. This central characteristic does not mean that management at individual third-party are unable to execute some discretion, particularly in respect of recruitment, workforce composition and contractual status, and in variable combinations of labour control, but they are impelled to comply with, even to submit to, Amazon's overarching imperative. This inescapable obligation includes fundamentals of the labour process, in implementing detailed controls over labour in instructing, monitoring, and evaluating the sequential tasks within and between sites, which synthesise with the flow of orders/items progressing through and between sites, seamless by design, from vendors to consumers.

In having unpacked this intertwined endeavour, this thesis has discerned and analysed managerial control, their constituent forms and purposes, and, innovatively, how they are reconfigured with the integration of algorithms as a predominant managerial mechanism. By fusing in the multiple interconnected operating sites of Amazon's studied network, the thesis has revealed the functional linkages across them and how they articulate the labour process trans-organisationally. Moreover, the thesis has placed emphasis on the dominant market position of Amazon in India's e-commerce sector and has analysed the factors contributing to its pre-eminence. Further, the thesis has demonstrated how Amazon's dominant position has reconfigured, through contractual terms and governance protocols, favourable inter-firm relationships with its, albeit subordinate, partners and how these in turn influence, although not completely determining, the labour process and control

mechanisms at their operating sites. The thesis has also demonstrated the ways in which the latter are shaped by and reflect the influence of regional and national labour market conditions, labour regulations, and the political economy of labour on recruitment and utilisation practices. Finally, the thesis has explored the diverse experiences, concerns, challenge, and grievances of the workers engaged in the labour process and their individual and collective responses to their workplace, that include consideration of resistance. The remainder of this chapter establishes the case for the contribution this research and the thesis makes both empirically and academically, to our body of knowledge. Furter, its limitations and the importance of future areas of research on e-commerce work organisation, management control and the labour process, particularly in the Global South are explicated.

10.2. Thesis' Contribution to Knowledge

In the quest to understand the source of economic value circulated across production networks, this thesis has synthesised GPN with LPT. In doing so, it addresses several key theoretical gaps. The GCC and GVC frameworks have been instrumental in analysing inter-firm governance structures and value distribution. However, scholars have critiqued them for neglecting labour's active agency in shaping production networks, reducing workers to passive factors of production (Bair, 2005; Selwyn, 2012). While these frameworks have provided valuable insights into inter-firm relations (Gereffi et al, 2005; Ponte and Sturgeon, 2014; Taglioni and Winkler, 2016), they remain limited in their treatment of employment relations, managerial control mechanisms, and labour's role in value creation. This thesis extends these frameworks by explicitly foregrounding labour agency, thereby addressing their core limitation.

The GPN framework represents a theoretical advance over GVC, broadening the analytical scope by incorporating regional political economies, institutional actors, and the broader capitalist circuit of accumulation (Henderson et al., 2002; Gibbon et al., 2008; Coe and Jordhus-Lier, 2011; Coe and Hess, 2012). However, despite these strengths, GPN continues to fall short in fully analysing labour's role in value generation, particularly in how workers shape production networks beyond their positioning in distributional processes (Cumbers et al., 2008; Taylor, 2010). GPN scholarship has often overlooked the structural antagonism between capital and labour, failing to adequately incorporate how labour struggles, bargaining, and workplace control mechanisms shape production networks (Selwyn, 2012). By highlighting the structural antagonism between capital and labour, this thesis overcomes the limitations of GPN and extends its analytical scope. GPN 2.0 (Coe and Yeung, 2015) does attempt to address these gaps by emphasising strategic coupling and causal mechanisms tied to inter-firm relations and regional embeddedness. This reformulation provides a more dynamic understanding of territorial development within production networks, linking firm strategies to regional economic transformations. However, despite these advancements, GPN 2.0 continues to marginalise labour agency, treating workers as extra-firm actors alongside institutions and civil society. This thesis overcomes this limitation by showing how labour can reconfigure production networks, and by incorporating managerial control and labour utilisation practices as central to the analysis. By integrating labour process in the production network, this thesis advances debates not only on the role of labour as an agency in the 'capturing the value' debate (Selwyn, 2007; Barrientos et al, 2011; Milberg and Winkler, 2011; Rossi, 2011; 2013; Selwyn, 2013; Rossi, 2019), but also about labour as agency in creating value. In doing so, it both extends and deepens LPT by analysing how the labour process and managerial control mechanisms are reconfigured when situated within and across production networks.

Empirically, this study breaks new ground by examining Amazon's last-mile delivery services and warehouse operations together. Although existing literature has extensively examined Amazon's last-mile delivery service in the context of gig or platform work (Gandini, 2019; Nair, 2023; Henaway, 2022) and has explored Amazon's warehousing operations, primarily in the Global North and more recently in the Global South (Briken an Taylor, 2018; Delfanti, 2021; Atzeni, 2023), no study to date has investigated warehouse labour processes in India. This thesis addresses that lacuna and augments existing literature by linking warehousing labour process; including receipt, fulfilment, and sorting with last-mile delivery services, demonstrating how Amazon's logistics operations function as an integrated network rather than as discrete units.

LPT theorists have explicated the managerial control mechanism, and its transformation over time with parallel technological innovation and implementation (e.g. Hall, 2010). It is argued here that algorithmic control has received disproportionately greater attention from scholars than established, widely-recognised forms of control (Joyce and Stuart, 2021). While several academic have argued for the superiority of technology in controlling the labour process over other forms of control (Drew, 2016; Kelly, 2016; Christin, 2017), this thesis, challenges such notion by discerning a plethora of extant managerial control mechanisms and practices and demonstrating how algorithmic control melds with and transform other forms of control, further reducing workers' ability to exercise discretion, let alone be, autonomy at work in constructing ever tighter, micro-monitored and micro-managed work regimes. This observation on one hand, elaborates on the illustration of what Struna and Reese (2021) have described as a 'brutal ballet' in Amazon's warehouses, as workers actions are inhumanely choreographed. Yet, on the other hand, the thesis has sought to debunk a technological determinism, that eschews the enduring significance of other recognisable and widely-understood forms of control, (Thompson and Laaser, 2021; Joyce et al, 2022). In this way, it refines LPT literature by showing that algorithmic control cannot be understood in isolation but must be situated within a hybrid regime of managerial practices.

It is of incalculable importance to establish an essential truth, that algorithms in and of themselves can exercise no autonomous power, but rather agency is conferred by management which action its outcomes. Put bluntly, 'algorithmic management' does not and cannot take decisions on whether an employee is to be disciplined, terminated or has their contract extended, but rather managers monitor and interpret algorithmic-generated granular data that inform and assist these decisions. In clarifying this point, it contributes to debates on algorithmic management by overcoming the common misconception that technology displaces managerial discretion (Drew, 2016; Kelly, 2016; Christin, 2017). In fact, the thesis argues, on the basis on evidence from observation and worker testimonies, a degree of managerial discretion can be exercised, albeit in compliance with Amazon's overarching imperatives subsumed within the parameters of its digital eco-system. For example, a certain tolerance to workers committing errors and underperforming was detectable because of fluctuations in market demands and the variation in order volumes.

In analysing the factors shaping, if not wholly determining the labour process and managerial control mechanisms in Amazon's facilities, previous studies have largely focused on how innovation in and application of ICT and algorithmic-driven digital tools have transformed capital and impacted employment relations within individual sites (Delfanti, 2019; 2021; Massimo, 2020; Struna and Reese, 2020). However, these studies have tended to treat the labour process in particular facilities as discrete entities, separates from Amazon's e-LSN. Given that the sites are functionally linked, the operation and performance of each are reciprocally influential. To paraphrase John Donne's poetic epithet, no site is an island, entire of itself. This thesis overcomes that approach by demonstrating that facilities are functionally linked, and that warehousing and

delivery are coordinated through algorithmically generated performance metrics. Algorithms serve to coordinate operations across these interconnected sites by calculating the required time to dispatch each order from each facility so that order reaches the customer within the strict temporal parameters that are integral to Amazon's business model and appeal to its customers. To monitor this requirement, site level performance metrics are generated, which cascade through functions and reside ultimately as individual targets. As this thesis has demonstrated in detail, the unrelenting pressure to process orders on time means that any delays at one site create a domino effect, impacting other firms' ability to fulfil orders within the prescribed timelines. This accumulated pressure bearing down on warehouse workers and delivery drivers, has been evidenced by substantially higher individual level performance targets against site-level metrices. Algorithmic control, therefore, not only structures the labour process within each production point, but also enables cohesive, network-wide control across all facilities in Amazon's e-LSN, impacting the intensity and pace of workers spending their efforts, notwithstanding the caveats relating to managerial discretion discussed above. By situating Amazon's operating sites within its production network, the thesis has inventively extended the existing account on the effects of inter-firm relationships on the labour process as a source arising from outside the individual workplace.

Amazon's global dominance in e-commerce, including in India, is well acknowledged (Rahman and Thelen, 2019; Gupta 2020). After critically reviewing the role of financial capital, investment in digital capital, and Amazon's extra-firm close relationships with the government, coupled with the latter's weak regulatory implementation, the thesis has highlighted how Amazon achieved the privileged position of lead firm in its e-LSN. Leveraging their lead firm position in the network, Amazon orchestrated competition across its network to reduce the labour cost and the share of value distributed with their partner enterprises. In this regard, this thesis extends existing insights from both GPN and LPT school on the role of subcontracting, outsourcing and other organisational fixes adopted by lead firms in transferring operational risk to their suppliers in a production network by inducing competitive pressure (Henderson et al, 2002; Castree et al, 2003; Cumbers et al, 2008; Taylor and Bain, 2005; Taylor, 2010; Newsome, 2015; Coe and Young, 2015). This thesis has elaborated how the competition was orchestrated in Amazon's e-LSN. Algorithmically generated site level performance metrics are evaluated and compared across similar sites, both operational and potential, owned by both Amazon's subsidiary and their third-party partners. Each site's performance is ranked, and lower performing sites penalised by reducing their operating capacity, the volumes of orders to be processed, and the value paid for processing per parcel. This site level competitive pressure is then transmitted to workers by imposing ever-demanding productivity targets, cheapening their labour power, reducing their job security, and downsizing the workforce through abrupt layoffs and contract termination, aided by flexible labour utilisation strategies.

In a renewed attempt to link LPT with the wider political economy, theorists have identified that increasing financialization of capital, outsourcing and subcontracting strategies and capital's response to crisis in profitability have resulted into extensive labour cost reduction, and intensification of the labour process (Thompson, 2003; Taylor et al, 2005; Taylor and Bain, 2007; Ellis and Taylor, 2007; Taylor, 2010; Thompson, 2013; Newsome et al, 2015; Taylor, 2021). The limited number of studies focussed exclusively on Amazon, predominantly from Global North, have highlighted the consequences of labour vulnerability in regional labour markets, of labour market segmentation and the effect of labour regulation at national level on site- specific labour processes (Briken and Taylor, 2018; Barnes and Ali, 2021; Hassel and Sieker, 2022). In integrating LPT with salient aspects of the political economy of labour in India, this thesis challenges the

above mentioned Global North perspectives in existing Amazon studies. It demonstrates how Amazon leveraging labour market informality in India, has resorted to hiring extensively on a part-time or short-term basis and enforced execution of recruitment to its partners experiencing intermittent internal labour shortages and resolving it through extensive labour rotation. Thus, companies have cut labour costs, but increased workers' vulnerability and job insecurity. This approach not only intensified work, accentuating the accumulation of relative surplus value, and both degraded their labour and devalued workers' efforts by cheapening their labour. By highlighting these practices, the study extends LPT to contexts where informalisation is the norm (Kannan and Papola, 2007; Marjit and Kar, 2011; Gunther and Launov, 2012; Rogan et al, 2017).

Further, contractual segmentation of the labour market is reflected in the workforce composition. While managers are predominantly recruited on permanent long-term contracts, all workers were recruited either on short term contracts and/or on a part-time basis. Consequently, the great majority of workers were found to be engaged on similar, if not identical, tasks but with differentiated rewards. Moreover, line and shopfloor managers were also recruited on short-term contracts, an observation that contrasts from the evidence of all extant research on Amazon's practices in the Global North and for the much more limited data from the Global South (Briken and Taylor, 2018; Struna and Reese, 2020; Massimo, 2020; Atzeni and Kenny, 2021; Delfanti, 2021; Kassem, 2022; Vallas et al, 2022; Atzeni, 2023; Gutelius and Pinto, 2023). Segmentation is further reinforced by instilling differentiated treatment of migrants and women workers, particularly in Amazon's regional partner operating sites. This increasing tendency towards informalising erstwhile formal workforce have not been observed in Global North until recently (Gutelius, 2015; Barnes and Ali, 2021; Hammer and Ness, 2021). These findings extend the existing accounts of workforce segmentation by showing how distinctions between contract types, migration status, and gender are strategically mobilised in Amazon's Indian operations, reinforcing vulnerability and insecurity. Moreover, by grasping the dialectics of global-local relations, this thesis advances the GPN theory by demonstrating how the firm-centred production networks are deeply influenced by the concrete socio-political contexts in which they are embedded (Dicken et al, 2001; Henderson et al, 2002; Dicken, 2015; Coe et al, 2017). The study explicates how the 'strategic coupling' of Amazon, as a case of a TNC, with local suppliers in India are manifest in, and have reinforced, informalisation in the limited formal sector and have cheapened labour by intensifying work in return for lower reward and greater insecurity.

This thesis also contributes to debates on control and resistance dynamics. While previous studies have highlighted how Amazon resorts to a plethora of managerial control mechanisms to overcome labour indeterminacy, this thesis demonstrates how the integration of simple, bureaucratic, technological and normative controls (Edwards, 1979; Barley and Kunda, 1992) with algorithmic controls (Staab and Nachtway, 2016; Gandini 2019; Woodcock and Graham, 2019) reconfigured the management mechanism and enabled micro-management to an unprecedented extent, thus advancing the understanding of managerial control mechanism in Amazon eco-system. Workers are subject to the combined effects of these varied controls in the form of job intensification, the pressure to meet demanding targets, and reduced workplace autonomy. These effects coupled with short term contracts and the continuous threat of job termination makes workers vulnerable and exposed to job insecurity. Further, the increased efforts demanded from them did not match the earnings they received. Thus, the labour process articulated at the facilities resulted into a hostile, insecure and vulnerable work environment for workers. Complaints over remuneration remined the predominant issue among the workers. Further, demanding work pressure and the need to work at excruciating pace affected the workers' health and wellbeing

adversely. Many workers complained about permanent body pains, disturbed sleep and a disruption in their work-life balance owing to long working hours, insufficient breaks, and even inadequate breathing time. Further, company provided spaces for workers to share their views and concerns were synthetic, often criminalising the whistleblowers through public shaming, and threat of contract terminations. These concerns were the kernel of workplace conflicts and workers resorted to diverse mechanisms to express their discontent and resist to the status quo, in individual and collective capacities. This thesis contributes to the discourse by contextualising structural antagonism in contemporary labour processes, illustrating how managerial control mechanisms intensify workplace conflicts and provoke diverse resistance strategies among workers (Joyce and Stuart, 2021; Edwards and Hodder, 2022). It underscores the dialectical nature of control and resistance, demonstrating how discontent manifests in both overt and subtle forms within capitalist production relations. By highlighting the dynamic between managerial strategies to maximise surplus value and workers' agency in resisting exploitative conditions, this study advances Edwards' (2018) argument that employment relations are inherently conflictual due to the structural antagonism embedded in capitalist production.

Furthermore, while the complaints were largely similar across the sites in two states of South India, the thesis has proposed a particular effect of the regional political economy on how workers respond to the perceived unjust labour process practices. In Karnataka, a state characterised as 'pro business' (Baisley and Burgess, 2004; Hasan et al, 2007), workers predominantly exercised resistance in individual capacity through sabotaging, and organisational misbehaviour. By contrast, in Kerala, a state with legacy experience on labour movement and organised trade union actions, workers have resorted to collective actions such as strike and picketing. Although these collective actions were largely unorganised and were formed from below. Moreover, in both states, managerial strategies to recruit workers on short term basis, recruiting through agencies, and thwarting formation of any association by segmenting the workforce on the lines of contracts, migration status and gender undermined the prospect of accumulated workers' concerns and sporadic actions to transcend into effective resistance. However, this dialectical relation between managerial control to overcome labour indeterminacy and workers' resistance to gain workplace autonomy keeps the labour process in motion, with the potential for its transformation. By demonstrating how regional political economies shape forms of resistance differently in Karnataka and Kerala, this thesis challenges and overcome any homogenising tendency in existing accounts of worker agency.

Finally, this thesis delivers insights, both theoretically and empirically, into the elusive connectivity problem of LPT on two interrelated dimensions: the market logic of Amazon's positioning within competitive dynamics and the consequence of national and state regulation on labour process. The first dimension explains how Amazon's ecosystem, shaped by the wider political economy of e-commerce, its business model, inter-firm relations, and algorithmic governance, drives capital accumulation. These forces influence workplace functions, productivity, division of labour, work intensification, and the extraction of absolute and relative surplus value. This perspective aligns with other analyses of consequence of capitalism under crisis on labour exploitation and valorisation of labour through labour control and work intensification (Taylor et al., 2005; Taylor, 2021). Second, the thesis examines how regional labour regulatory frameworks and labour market situations intervene with labour recruitment, and utilisation, with consequences varying from employment precarity and vulnerability to recalcitrance and resistance. Similar arguments have been made in studies exploring the effect of political economy of labour on labour process and outcomes (Briken and Taylor, 2018; Barnes and Ali, 2021; Hassel and Seiker, 2022). By situating

Amazon's labour process within these dual forces of market logic and regional political economy of labour the thesis contributes in an original manner to a deeper understanding of connectivity in a production network. This endeavour both extends and challenges existing approaches, offering a deeper understanding of labour process connectivity within production networks.

10.3 Limitation of the Study

A valuable addition to this study could have been the integration of caste dynamics within the analysis. Caste plays a significant role in Indian social structures, with profound effects ranging from social mobility to workplace interactions and employment practices (Harriss-White, 2002; Deshpande, 2011; Jodhka and Naudet 2012). In the context of Amazon's logistics network, caste could influence hierarchical relations between managers and workers, access to certain roles, and workers' experiences of control and autonomy. Excluding caste as a variable limits the study's ability to fully grasp these dynamics, especially given that caste-based discrimination and stratification are prevalent in various employment practices in India (Thorat and Neuman, 2012; Sood et al, 2014). Including this perspective might have offered additional insights into how caste-based dynamics may intensify workplace discrimination, reinforce hierarchical workplace structures, and shape both the control mechanisms employed by managers and the avenues of resistance available to workers. Secondly, while the study thoroughly analyses managerial control mechanisms and sheds light on various worker concerns, complaints, and grievances as core components of workplace conflict, it emphasises managerial control somewhat more than workers' exercise of agency. Additional focus on the complexities and challenges that workers encounter when formulating resistance strategies might have added depth to the analysis, offering a more comprehensive view of the interplay between control mechanisms and worker agency.

Thirdly, the cross-sectional nature of this study offers a snapshot of Amazon's labour processes at a single point in time but does not examine how these processes evolve. A longitudinal approach, examining changes over months or years, could reveal how control mechanisms adapt to technological, economic, and political shifts and how worker resistance also transforms in response. Without a longitudinal perspective, the study might miss key shifts in the labour process, such as the development of new resistance strategies, the refinement of controls, or responses to external pressures like regulatory changes. A longitudinal study would allow for a more dynamic view of the labour process, highlighting how control and resistance evolve in tandem and have reciprocal effects. Fourthly, while the study attempted to situate the operating sites in the context of regional and national political economy, the focus remained predominantly on engaging with the labour market and regulation aspects as background or context. It did not fully integrate these findings within broader socio-political forces, such as government labour reforms, e-commerce policy shifts, or public sentiment regarding labour rights. This deeper integration could provide additional insights into why certain labour practices persist and how they might be challenged at policy, industrial and societal levels. Fifthly, while the study provides insights into algorithmic control mechanisms, it analysed them from workers' perspective. Thus, it was not able to take account of the technical specificities of the algorithms used by Amazon. A technical examination of how these algorithms were designed, implemented and adjusted over time could further clarify how algorithmic management affects labour outcomes and workplace relations. Finally, by focusing exclusively on Amazon's logistics service network, the study lacked comparative insights with other e-commerce or logistics firms in India. Including other firms could provide a more

robust understanding of sector-wide practices and the specific role of Amazon's market dominance in shaping labour practices. These additional perspectives could offer a more nuanced and comprehensive picture of labour processes within Amazon's logistics network and the broader socio-economic and political factors influencing them.

10.4. Concluding Remarks

This thesis undertakes a comprehensive exploration of labour processes and employment relations within Amazon's Indian e-commerce logistics network, examining case studies across three functionally interconnected sites: fulfilment centre, sortation centre, and delivery stations. It sheds light on Amazon's intricate managerial control mechanisms, revealing that these are shaped not only by on-site interactions between workers and managers but also by powerful external forces. These forces include Amazon's partnerships with third-party logistics providers, the functional interdependencies between various operational sites, and broader political-economic dynamics such as region-specific labour market regulations, socio-economic condition of labour and the competitive market forces of modern capitalism. Central to this study is the impact of algorithm-driven technologies, which have fundamentally transformed control mechanisms, resulting into unprecedented work intensification and demanding work pressure. This thesis also brings workers' experiences to the fore, capturing their concerns, grievances, and responses—both individual and collective—and highlighting how these responses differ across two South Indian states, shaped by distinct regional political and economic conditions. As the first in-depth study of Amazon's labour process in India, this thesis lays the groundwork for future research avenues, including longitudinal analyses of labour processes, studies linking labour dynamics with regional cultural contexts, and comparative research situating Indian labour practices within the global Amazon ecosystem. Ultimately, recognising the critical role of labour in Amazon's operations is essential to fully appreciate the societal impacts, both benefits and burdens, that the company brings. Such an understanding reveals the foundational importance of the workforce, without whom Amazon's contribution to society would be impossible.

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Appendices

A.1. From labour problem to an employer friendly state: The case of Headload Workers in Kerala

Historically, the state of Kerala has been a trading economy with Calicut (Kozhikode) being a pivotal port city known for trading spices, and precious stones since 1320s (Menon 1998). Even today Kerala is extensively dependent on its merchandise trading activities with around 22% of the state's workforce being engaged in trade and related logistic activities comprising of storage and freight transportation services predominantly via railways and land. An integral part of the logistic activities is the loading and unloading services which are being carried out by the headload workers (*coolies)*. These headload workers had been one among the two largest casual workforces (the other being construction workers) in the state who have been socio-economically marginalised and exposed to several exploitations in terms of no fixed wages, deprivation from any social security benefits or any other entitlements (Heller, 1996). Their socio-economic situation has been comparable to those of serfs of feudal era, "compelled to attend to even the domestic tasks of employers." (Noronha, 2006 p: 4)

However, with the rising prominence of communism in Kerala, many headload workers eventually managed to form unions, tacitly supported by the communist political parties enhancing their collective bargaining power. Initially, around 1960, unionisation of these headload workers was confined in the urban trading centres of Calicut and Kochi which by 1970s expanded to rural areas as well following the expansion of trading activities into the villages and other semi-urban regions of the state (Nambiar, 1995). Soon these unionised workers almost monopolised all the loading and unloading works in both domestic and industrial activities in the state with the workers charging exorbitant wages. As the economic condition of the headload workers became better, many workers started showing interest to join in this occupation which led to the creation of spot market for labour where the union memberships were being sold by the existing members to the outsiders as unions became the gatekeepers of this occupation (Haller 1996, Nambiar 1995). Further, several other unions started sprouting backed by competing political parties and incidence of inter union street fights and violence between union and non-union members became common leading to the proliferation of labour militancy in the state. One extraordinary example of the rise of labour militancy is the practice of charging *nokku-kooli,* which literally translates to 'gawking - wages', where the unions members started deploying themselves to different potential work areas for lookouts and even if the employers opt to not assign them the task of loading and unloading, and do it by themselves, the union members demanded for full wage otherwise they would retaliate by fighting with them and creating brawl.

As most of the union members in this headload work where informal casual workers there were no labour legislation regulating this occupation in the state. Owing to the rising disputes and conflicts, the state government introduced the Headload Workers Act in 1978 which was followed by the establishment of Headload Workers Welfare Scheme in 1983 thus institutionalising the casual labour market. Through the Scheme the government established a Labour Council which became the employer of the headload workers and two-third of the members of the Council were traders and rest comprised of workers (especially past union leaders) and government representatives. This council determined the wage rate, disbursed the salaries to the workers by

collecting the wage pool from the employers beforehand, took decisions on how to hire, whom to hire, and introduced a welfare fund to provide the workers with healthcare and educational benefits and provisions for loans for household emergencies and other social security benefits. The fund received contributions from all the three members of the Council. The act also specified the particular areas within the state where the act will be valid which they extended over time through subsequent amendments of the act. However, as the employment crisis started becoming serious and traders started relocating their businesses away from those regions covered by the act, many workers also proactively started leaving unions and informally started accepting lower wages than that stipulated by the council by striking deals independently with the traders (Noronha, 2006).

A.2. Interview Schedule for warehouse workers (FC and SC)

A. These questions are related to understanding the **roles and responsibilities** of the interviewee (worker).

1. How does a typical day's work of you look like?

- What is your daily schedule at the warehouse?

2. Describe your current role at the warehouse

- How you process (pick, pack or stow) the parcel?

B. These questions are focussed on understanding the workers perception on the **nature of interaction, monitoring and evaluation.**

1. How many parcels you have to process in a shift?

- What is your target in a shift?

2. How you get to know what your day's target is?

- Who instructs you about your days target?

3. Whom do you report to about your job? How do you report?

- How your supervisor knows when you complete processing a parcel?

4. What happens if you don't meet your target?

- How does the supervisor react when you don't meet the target?
- What does the scanner show to you when you don't meet the target?

5. What happens if you meet your target?

- How does the supervisor react when you achieve your target?
- What does the scanner show to you when your targets are achieved?

6. How you feel like working with the barcode scanner?

- What makes the job easier by the barcode?
- What makes the job difficult by the barcode?

7. How much choice in decision making you have in your task?

- How detailed the instructions are to accomplish the job?
- Can you choose which task to do during the shift?

8. How do you interact with your supervisor?

- What are the possible reasons to interact with your supervisor?
- How often you have to interact with your supervisor?
- How is the attitude of the supervisor?

9. How do you interact with other employees?

- What are the possible reasons to interact with your peers?

- How often you interact with your peers?
- What are the differences in the attitude of the permanent employee's vis a vie temporary employees?

10. How does the promotion system work at the warehouse?

- What is the process to get promotion?
- Who decides and how do they decide that you get promotions?

11. How does your break time during the work look like?

- When do you get any break during work?
- What do you do during the break?
- What happens if you choose not to take breaks?

C. These questions are related to understanding the interviewees **perceptions of her/his job**

1. How do you feel doing this work?

- What do you like about your job?
- What things would you like to be changed to make this job better?
- What do you don't like about your job?
- What things will make you want to leave your job?

2. How is your job compared to the other jobs in the warehouse?

- Have you done any roles other than your current role?
- How was that role like in comparison to this current one?
- Given the opportunity which role in the warehouse would you prefer to work?

3. Does the work have any effect in your mind and body?

- How much stressed do you feel after completing a day's job?
- After finishing your shift, can you switch your mind away from the job?

4. How much do you think that you are working for the customers while you work?

- How does the information that you are meeting customers' demand influence you?

D. These questions are related to understanding **the nature of contract, hours of work, payment structure, holidays, and bonuses** of the worker

1. How did you get this job?

- What procedure you followed to get this job?
- Is your job through direct recruitment or through a contractor?

2. How many hours you work in a day?

- How long is your daily schedule?

3. How many days you come to the warehouse in a week?

- How many days you have to work in a week?

4. Do you have any written job contract?

- How did you come to know that you got the job?
- Was there any written document given to you explaining the terms and conditions of the job?

5. What is the tenure of your contract?

- Do you have a permanent or temporary contract?

6. How much you can earn from each day's shift?

- How much you earn from each shift?

- When do you get paid?
- How do you get your payment?

7. What is your opinion about the payment amount you receive?

- Will you consider that the payment amount is good for your requirements?
- Considering other job opportunities outside, is this pay amount better?

8. How does the bonus system work?

- If you want to earn more what you have to do?
- How much additional hours you have to work to earn bonus?
- How much extra can be earned by working extra hours?

9. Do you have any of the following benefits?

- Health Insurance
- Paid Leave
- Maternity Leave
- Financial Loan
- Educational or training scholarship
- Provident Fund/Pension/Gratuity
- Others

10. What you have to do to get paid holidays?

- How many paid holidays can you get in a month?

E. These questions are pertaining to the interviewee's perception on **grievance redressal mechanism and on unions.**

1. What sorts of problems you face while commencing your task?

- Do you face problems while working with scanners, conveyer belt, other supporting devices showing glitches?
- Are you getting slow because other peers are causing problems?
- Are you getting slow because of some physical or mental strain while working

2. If you face any problem while working, how do you go about to resolve it?

- Whom do you inform your concerns coming from the work?
- Is there a complain box?

3. How are the responses to the raised concerns?

- Do you feel your issues are being heard sufficiently to your liking?
- What can be done to make the responses better?

4. Do you think trade unions have any role to play here?

- What is the perception of unions according to you?
- Are you aware of any unions beyond the Indian context?
- How is the general perception about unions in the warehouse?

F. These set of information are related to the **personal characteristics and past job** of the interviewee.

- Age

<18
18-29
30-45

46-60
>60

- Gender (No need to ask this question)

Female
Male
Trans-Gender

- Social Group

Schedule Caste
Schedule Tribe
Other Backward Caste
Others

- Religion

Hindu
Muslim
Christian
Buddhist
Sikh
Jain
Others

- Marital Status

Married
Unmarried
Others

- How many members are there in your family?
- How many earning members are there in your family?
- Where does your family stay?
- How far is your current place of residence from the work site.
- How do you travel to your work?
- How is this job in comparison to your past job?
  - What was your past job?
  - What are the better things in this job?
  - What were better in the past job?
- General Education

No formal Education
School less than class 8
School till 10th Standard
School till 12th Standard
Diploma Degree
Undergraduate Degree
Above UG

A3. Interview Schedule for Delivery Partners

A Roles and Responsibilities

1. **Can you explain your normal day's routine as a delivery partner?**
    - When do you start your day's work?
    - Do you have a particular delivery station where you go every day?
    - What are your tasks at the delivery station?
    - Which packages are assigned to you?
    - What is the procedure to pick an order from the station for delivery?
    - Do you have to use scanner? How you use it?
    - While delivering the products how do you chose the route for delivery?
    - After completing the deliveries of your route what is the next step?
    - When does your day's work end?

B. Nature of interaction, monitoring and evaluation

2. **Are you being tracked while on your route?**
    - If yes, who tracks you
    - If yes, how are you being tracked
    - What is your opinion about being tracked?

3. **Do you have targets?**
    - Is there any predetermined number of items to be delivered on hourly or daily basis?
    - What happens if you meet the target?
    - What happens if you fail to meet the target?
    - What happens if you surpass the target? Is there any incentive?

4. **If at all, how is your interaction with your peers?**
    - What are the top three topics of discussion with your peers?
    - How do you interact with your colleagues?

5. **Is there any consequence of the ratings which customers give you on your job?**

6. **Are there any other rating system or metrics which are used to evaluate your job?**

7. **What happens in the assembly or briefing session?**
    - Is there any briefing session?
    - Who gives the briefing session?
    - When does it happen?
    - What is the content of the session?
    - Can you skip the session?
    - According to you is the session helpful?

C. The nature of contract

8. **How did you get your job?**
    - Are you recruited by Amazon or agency or contractor?
    - Are you using Amazon Flex?
    - What are the documents required to get the job?
    - What are the qualifications required?

9. **The vehicle you use, is it yours or your agencies?**
    - Who bears the cost of oil and vehicle maintenance?

10. **Is there any insurance provided to you for any accident?**
    - Who provides the insurance, agency or Amazon or contractor.
    - Do you have ESIC? PF?

11. **Is there any vehicle insurance?**
    - Who provides the insurance, agency or Amazon or contractor**.**

12. **What is the nature of your salary?**
    - How much you earn in a month? Day?
    - When do you get paid?
    - Is the payment dependent on number of parcels you deliver?
13. **Is there any written contract which you have?**
    - Who is your employer?
    - How long are you working here?
    - What is the duration of your contract?
    - Do you get a payslip while payment?

14. **Is there any potential threat to lose your earning or job?**
    - If a package is damaged or lost, then can you be accountable?
    - How do they know you are the cause of damage or loss?
    - How can you prove that you are not the cause of damage or loss?
    - What is the penalty, if at all any, if they find you as the cause of damage or loss?

15. **What are the potential ways to earn bonus?**
    - Onam, Vishu, Eid, any festival bonus?
    - Is there any best performer award?
    - Is there any concept as Overtime duty?

16. **Is there any obligation to drive a minimum number of hours in a day or minimum number of days in a week?**
    - How many hours you must work in a day?
    - How many days you have leave?
    - What happens if you take uniformed leave or extra leave?

- Is there any provision for sick leave?

D. Perceptions and Suggestion

17. What is your opinion about the payment amount you receive?

- Will you consider that the payment amount is good for your requirements?
- Considering other job opportunities outside, is this pay amount better?

18. How do you feel doing this work?

- What do you like about your job?
- What things would you like to be changed to make this job better?
- What do you don't like about your job?
- What things will make you want to leave your job?

19. How is your job compared to your previous job?

- Have you done any work other than your current role?
- How was that work like in comparison to this current one?
- Given the opportunity which work would you prefer to work?

20. Does the work have any effect in your mind and body?

- How much stressed do you feel after completing a day's job?
- After finishing your shift, can you switch your mind away from the job?

21. How much do you think that you are working for the customers while you work?

- How does the information that you are meeting customers' demand influence you?

E. Grievance, Complains, and other Concerns

22. How you manage your food, restroom and break or breathing time while at work?

23. If you face any harassment from customer, how do you approach?

- What form of harassment, if any, you face from the customers?
- How do you resolve it? Do you ask for any help?
- Is the response sufficient and timely?
- Suggest how to improve the resolving mechanism?

24. What happens if you face other issues at work?

- What happens if your vehicle stops working?
- What happens if you feel sick or discomfort while at work?
- Whom do you approach to resolve or register the issue?
- How is the response?
- Any suggestion to improve the redressal mechanism?

25. What is your opinion regarding Union?

- Is there any union?
- Do you think Union has a role to play?
- What are the union you are aware of outside your workplace related to your work?
- Are you aware of other movements and strikes related to Amazon work in India and abroad?

F. Number of Parcels delivered, size of the team, and coverage of the unit

26. How many parcels you deliver in a day?

- Is there any minimum number of parcels to be delivered?

- What is the weight limit of the packages you deliver?

27. **How many drivers are working in the unit?**
28. **How many office staffs are working in the unit?**
    - How many are sorters?
    - How many are supervisors
    - Is there any other role among the office staffs
29. **How many pin-codes you deliver to?**
    - How many pin-codes the unit deliver to?

G. Personal Characteristics

30. **Age, Gender, Social Group, Religion, Educational Background, Marital Status**

A4. Interview Schedule to Supervisors

A. Process and Mechanisms

1. **What are the different mechanisms followed in the warehouse?**
    - What are the different sections/departments which this warehouse has?
    - How are the sections/departments coordinated?
2. **In the entire logistic chain of Amazon where is the unit falling?**
    - What is the role of this delivery station?
    - What are the different stages through which a parcel goes through before reaching the unit?
    - What are the different stages a parcel goes through after leaving the unit?
    - How is the agency owning the unit related to Amazon? How much the agency earns from Amazon?
3. **What are the different tools and machines used in processing the products?**
    - Can you explain the function of a scanner?
    - According to you, how is the scanner helping you in the job?
    - What is the other software used to track the package?
    - What is the learning curve of these software?

B. Size of the Operation

4. **What are the different shifts in the unit?**
    - How many shifts are there in a day?
    - How long are each shift?
    - How many supervisors are there in each shift?
5. **How many parcels you deliver in a day?**
    - How many trucks come in a day?
    - Is there any minimum number of parcels to be delivered?
    - What is the weight limit of the packages you deliver?
6. **How many people are working in the unit (per shift)?**
    - How many drivers?
    - How many are sorters?
    - How many are supervisors?
    - Is there any other role among the office staffs?

- Can a worker choose a shift timing? What is the process to do so?

7. **How many pin-codes you deliver to?**
    - How many pin-codes the unit deliver to?

C. Roles and Responsibilities

8. **Describe your normal day's routine at work**
    - When do you come at work?
    - What are the different responsibilities which you have to execute at work?
    - How much work is system work and how much is floor work for you?
9. **Is there any target which you have to meet?**
    - Is there a preassigned time for a parcel to get dispatched/vehicles to get cleared from the unit?
    - Are there any targets to the drivers, and sorters?
    - How do you ensure that the targets are met?
    - How do you keep a track of the target being achieved or not?
    - What happens if you fail to miss the target?
    - What happens if you can surpass the target?
10. **What are the potential mistakes which can arrive at the work?**
    - What happens if an item is lost?
    - What happens if an item is damaged?
    - How do you identify who is the cause of the item being lost or being damaged?
    - How do you resolve the issue of lost or damaged item?
    - What happens if the targets or timings are missed continuously?
    - What can be the reason for someone to lose their job?

D. Nature of Interaction with others

11. **How do you interact with other workers?**
    - What are the potential reasons to interact with the drivers/sorters?
    - When do you interact with the drivers/sorters?
    - How do you resolve if the team is not cooperating with you?
12. **Is there any assembly or briefing session you have to coordinate?**
    - How frequently does this session occurs?
    - What are the contents of discussion in the session?
13. **How do you interact with your superiors?**
    - Do you have any superior?
    - Do you have to create a report and submit to somebody else?
    - What are the occasions or potential reason to interact with your superiors?

E. Nature of contract

14. **How did you get your job?**
    - Are you recruited by Amazon or agency?
    - What are the documents required to get the job?
    - What are the qualifications required?
15. **What is the nature of your salary?**

- How much you earn in a month?
- Do you have PF and ESIC?

16. **Is there any written contract which you have?**
    - Who is your employer? Amazon? Agency?
    - How long are you working here?
    - What is the duration of your contract?
17. **What are the potential ways to earn bonus?**
    - Onam, Vishu, ID, any festival bonus?
    - Is there any best performer award?
18. **Is there any obligation to drive a minimum number of hours in a day or minimum number of days in a week?**
    - How many hours you must work in a day?
    - How many days you have leave?
    - What happens if you take uniformed leave or extra leave?
    - Is there any provision for sick leave?

F. Perceptions and Suggestions

19. **How do you feel doing this work?**
    - What do you like about your job?
    - What things would you like to be changed to make this job better?
    - What do you don't like about your job?
    - What things will make you want to leave your job?
20. **Does the work have any effect in your mind and body?**
    - How much stressed do you feel after completing a day's job?
    - After finishing your shift, can you switch your mind away from the job?
21. **How much do you think that you are working for the customers while you work?**
    - How does the information that you are meeting customers' demand influence you?
22. **How is your job compared to your previous job?**
    - Have you done any work other than your current role?
    - How was that work like in comparison to this current one?
    - Given the opportunity which work would you prefer to work?

G. Grievance, Complains, and other Concerns

23. **What about the concerns and complains?**
    - What are the concerns which the workers share with you?
    - Is there a complain box?
24. **What is your opinion regarding Union?**
    - Is there any union?
    - Do you think Union has a role to play?
    - What are the union you are aware of outside your workplace related to your work?
    - Are you aware of other movements and strikes related to Amazon work in India and abroad?

H. Personal Characteristics

25. **Age, Gender, Social Group, Religion, Educational Background, Marital Status**

A5: Participant Information Sheet: Department of Work, Employment and Organisation

Title of the study

Labour Process and Working Condition in the Logistic Production Network: Analysis of the e-Commerce Retail Logistic Sector in India

Introduction

My name is Manikantha Nataraj. I am a PhD student in the Department of Work, Employment and Organisation at Strathclyde University. I am carrying out research on warehouse workers of the e-commerce industry in India for my PhD thesis. I would be grateful if you could read this statement which explains the research purpose. Hopefully this will inform you whether you wish to take part or not.

What is the purpose of this investigation?

The main purpose of the research is to understand the process through which workers participating in warehousing activities in the e-commerce industry in India are engaging in their tasks.

Following are my research aims

1. To understand how the warehouse activities are being carried by the workers.
2. How workers interact with their colleagues and supervisors in the warehouse during the working hours.
3. What are the hours of work, payment criteria, and other statutory benefits which the workers realise?

Do you have to take part?

Your participation is entirely voluntary. If you wish to take part in this interview/focussed group discussion, we assure you that your information will be kept anonymised, and you are free to withdraw your participation at any point of your convenience.

What will you do in the project?

Your participation will involve taking part in an interview/group discussion. The process should last no more than 30 mins. If you agree to take part, I will contact you within the next couple of days and we can arrange a time and place that suits best for you to conduct the session. For the purposes of accuracy, and with your agreement, I will record the interview/group discussion, but I am equally happy just to take detailed notes if you'd prefer.

Why have you been invited to take part?

My interviews are focussed on getting the perspective of the workers who are daily engaging with warehousing activities in an e-commerce industry. As you are a warehouse worker, it would be invaluable for my research to know from you how your daily engagement in the work contributes to your betterment.

What are the potential risks to you in taking part?

The research will take place at your place of convenience and comfort. There are no problematic risks associated with participating.

What information is being collected?

In the interview/discussion I will ask you a series of questions related to your work-life experience. A few personal information regarding your household members and your demographic background will be asked. If any question you feel uncomfortable to answer, you are entitled to not answer. If you permit, I will record the interview/discussion. If this is unacceptable to you, I will take notes of what you say. At any case your name and other sensitive information will not be made public without taking your consent.

Who will have access to the information?

In line with the University of Strathclyde's Privacy Policy, the information you provide will be treated as confidential. No-one other than myself and my supervisors will have access to this data.

Where will the information be stored and how long will it be kept for?

This data will be securely stored and then destroyed after my dissertation has been marked. No individuals or organisations will be identified in my dissertation. Any illustrative quotes that I may use will be anonymised.

Thank you for reading this information; please ask any questions if you are unsure about what is written here.

What happens next?

If you are happy to be involved, please sign the attached consent from. If you do not wish to be involved, I thank you very much for your interest.

I will analyse the data from the interview along with other similar data I am collecting from other participants. Once the research is completed, the findings will be shared to you if you are interested. The findings will be used for academic writings and PhD thesis dissertation.

This investigation has been granted ethical approval by the Research Ethics Committee of the Department of Work, Employment and Organisation.

If you have any questions/concerns, during or after the investigation, or wish to contact an independent person to whom any questions may be directed or further information may be sought from, please contact:

Dr Tony McCarthy
Chair, Department Ethics Committee
Department of Work, Employment, and Organisation
University of Strathclyde
Sir William Duncan Building
130 Rottenrow
Glasgow
G4 0QU
Scotland, UK

Email: joseph.mccarthy@strath.ac.uk

Researcher Contact Details: **Manikantha Nataraj**: manikantha.nataraj@strath.ac.uk

PhD Student Supervisor: **Professor Phil Taylor** (philip.taylor@strath.ac.uk) and **Dr Kendra Briken** (kendra.briken@strath.ac.uk)

A6: Participant Consent Form: Department of Work, Employment and Organisation

Title of the study: Labour Process and Working Condition in the Logistic Production Network: Analysis of the e-Commerce Retail Logistic Sector in India

- I confirm that I have read and understood the Participant Information Sheet for the above project and the researcher has answered any queries to my satisfaction.
- I confirm that I have read and understood the Privacy Notice for Participants in Research Projects and understand how my personal information will be used and what will happen to it (i.e. how it will be stored and for how long).
- I understand that my participation is voluntary and that I am free to withdraw from the project at any time, up to the point of completion, without having to give a reason and without any consequences.
- I understand that I can request the withdrawal from the study of personal information that identifies me and that whenever possible researchers will comply with my request.
- I understand that anonymised data (i.e. data that do not identify me personally) cannot be withdrawn once they have been included in the study.
- I understand that any information recorded in the research will remain confidential and no information that identifies me will be made publicly available.
- I consent to being a participant in the project.
- I consent to being audio and/or video recorded as part of the project Yes / No

(PRINT NAME)	

Signature of Participant:	Date: