Implications of algorithmic management on careers and employment relationships in the gig economy – a developing country perspective

Abstract

Purpose – This article explores the implications of algorithmic management on careers and employment relationships in the Nigerian gig economy. Specifically, drawing on labour process theory, we provide an understanding of the production relations beyond the 'traditional standard' to 'nonstandard' forms of employment in a gig economy mediated by digital platforms or digital forms of work, especially on ride-hailing platforms (Uber and Bolt).

Design – We adopted the interpretive qualitative approach and a semi-structured interview of 49 participants, including 46 platform drivers and 3 platform managers from Uber and Bolt.

Findings – This study addresses the theoretical underpinnings of the labour process theory as it relates to algorithmic management and control in the digital platform economy. The study revealed that, despite the ultra-precarious working conditions and persistent uncertainty in employment relations under algorithmic management, the underlying key factors that motivate workers to engage in digital platform work include higher job flexibility and autonomy, as well as having a source of income. We captured the human-digital interface and labour processes related to digital platform work in Nigeria. Our findings also revealed that algorithmic management enables a transactional exchange between platform providers and drivers, while relational exchanges occur between drivers and customers/passengers. Finally, we highlighted the perceived impact of algorithmic management on the attitude and performance of workers.

Originality – The research presents an interesting case study to investigate the influence of algorithmic management and labour processes on employment relationships in the largest emerging economy in Africa.

Keywords: Algorithmic management, Uber, Bolt, digital platforms, careers, employment relationship, gig economy, labour process theory, Nigeria

1.   Introduction and background

Working patterns over time have changed, and freelance, contractual, and temporary labour are increasingly becoming more frequent due to the rise of the gig economy (Duggan et al., 2020). Ravenelle (2021) defines a gig economy as a free market system in which temporary positions are predominant and firms recruit independent workers for these commitments. A 'gig' is a slang term for employment that lasts for a set and defined amount of time, and in the gig economy, the employment relationship wears a new non-traditional outlook (Pangrazio et al., 2021). The gig economy boasts of the rapid rise of platforms such as Uber, Lyft, Deliveroo, and similar platform firms, which has resulted in over 40 million platform workers globally and over US$ 52 billion in global revenue (International Labour Organization – ILO, 2021). While there are many variants in the gig economy, our study focuses on ride-hailing platforms, which constitute a dominant subset of the gig economy and are projected to reach a revenue of USD 330 billion in 2023 (Statista, 2023a). Moreover, the ride-hailing platform is a large-scale example of a platform influencing developing country marketplaces, such as Uber, with operations in 350 cities across 31 developing nations (Uber, 2020).

Furthermore, the gig economy has grown significantly in Africa, providing Africans with an alternative career option. For example, as of 2019, over 300 active digital platforms were employing nearly five million people, with the aim that the expansion of digital platforms

in Africa will provide new chances to bridge the present gap between often-insecure informal labour and formal employment (World Economic Forum, 2019). Ride-hailing platforms such as Uber and Bolt operate in dozens of cities across eight African countries, capitalising on African governments' emphasis on the potential of the fourth industrial revolution to generate opportunities for the region's young unemployed and the lack of strong labour protection laws in Africa (Howson, 2023). There are nearly 250,000 ride-hailing drivers in eight African countries (Smit et al., 2019). Consequently, as careers in the gig economy continue to grow steadily, they are gradually becoming the new normal in the employment space (Spurk and Straub, 2020).

On the one hand, existing research shows that the gig economy provides workers with additional economic opportunities, flexibility and autonomy at work and the balance of work, life and domestic work (Graham et al., 2017). On the other hand, it also imposes some risks in that previous studies have often highlighted that employment in the gig economy is habitually precarious, with employees frequently not receiving the same benefits as those in traditional employment. This can include a lack of social safety, no paid sick or holiday leave, and low earnings (Stewart and Stanford, 2017; Duggan et al., 2020). African countries are beginning to enact legislation and regulations in response to the issues the gig economy poses. In South Africa, for example, the Labour Relations Act of 1995 was changed in 2018 to safeguard gig workers and provide them with the same rights and protections as traditional employment workers. In Kenya, the National Employment Authority has recently adopted legislation to safeguard gig workers, including the right to fair wages and the ability to join trade unions (Hunt et al., 2019). However, there is a lacuna in the literature on careers and work relations in Africa's gig economy. The gig economy is still in its infancy in Africa, and there has been limited research into the implications of algorithmic management on labour markets and processes in the region. Additionally, in Africa, research is needed to explore how algorithmic management impacts the career trajectories of gig workers and how the nature of work is changing employment relations (Graham et al., 2017; Idowu and Elbanna, 2020).

Algorithmic management is a key characteristic of the gig economy that describes the contemporary management practices used by many managers to manage business operations (Huang, 2022; Kinowska and Sienkiewicz, 2022). Algorithmic management involves using practically instantaneous responses to collated data that improve automation in decision-making, systems to schedule and assign work to workers, and formulation of performance criteria to assess their work (Duggan et al., 2020). Consequently, despite its benefits, there are various concerns and uncertainties associated with the use of algorithmic management. More specifically, extant research on popular ride-hailing apps (e.g., Uber) has found that the top three issues listed by the employees are constant surveillance; little transparency and asymmetric information on the part of the employer, as drivers find that they know close to nothing about their employer who has more information about them, creating an imbalance of power; and isolation and dehumanisation of the drivers who feel they do not have an avenue to interact or socialise with their colleagues (Wiener et al., 2021; Lamers et al., 2022). These issues significantly affect individuals' careers and development in the gig economy, as well as implications for employment relationships (Lamers et al., 2022). For instance, while algorithmic management has been evidenced to be prone to bias from the rating and feedback systems utilised by platform operators (Basukie et al., 2020), it may limit opportunities for individual growth and career success of workers who perceive unfair evaluations and decisions. Moreover, the use of algorithmics distances the company from its workers, preventing them from seeing the impact of their decisions on their staff and how these management decisions affect the lives of their employees, thus causing a strain on the employment relationship (Duggan et al., 2020). Ultimately, AI-enabled and algorithm-based digital platforms are having

significant effects on the relationship between workers and their employers (Braganza et al., 2021)

Nigeria, the most populated nation and largest economy in Africa, offers an interesting case study to investigate this phenomenon, as it is estimated to have the largest number of platform workers (Porteous, 2020). While the overall statistics are hard to come by in Nigeria, it is estimated that the largest number of drivers can be found in Abuja and Lagos, where there are over 19,000 workers within Uber and Bolt (Akinosun 2021). Notably, platform workers (i.e., drivers) in Nigeria have considerable challenges due to their contractual status and the demand for reclassification and recharacterisation, which asks for justice in working conditions, compensation, contracts, management, and representation (Idowu and Elbanna, 2020). These challenges are exacerbated by the distinctive characteristics that set developing economies apart from developed economies. One of the main challenges is the weakness of Nigeria's institutional and regulatory frameworks for establishing and enforcing labour rights protection, protecting vulnerable workers, enforcing the minimum wage, and guaranteeing decent working conditions (Folawewo, 2016). Moreover, the political, economic, and sociocultural elements that affect the segmentation of Nigeria's labour market, particularly those in the informal sector, have an impact on the effectiveness of the country's regulatory framework and its institutions for the labour market (Asaju et al., 2014; Rani and Furrer, 2021). These have detrimental consequences on outcomes related to the labour market, such as unemployment, low incomes, reduced productivity, and unpalatable labour relations. Additionally, transportation occupation in Nigeria, a patriarchal society, is 92% male-dominated (Banya et al., 2022). These jobs are important within the country, with a population of almost 200 million spread across over 250 ethnic groups (World Population Review, 2023) and an unemployment rate as high as 41% (KPMG, 2023). The monthly minimum wage in Nigeria is pegged at 30,000 Naira (approximately US$65) (Statista, 2023b), with both public and private sector employers often defaulting on paying salaries. For Arubaiyi (2022), the e-hailing sector platforms projected a message that drivers would earn between US$286 and US$477 a week in an attempt to attract potential drivers. Another significant issue is the rise of precarious work in the digital platform economy, which many job seekers see as their only option for surviving and making a living. This is particularly exacerbated by the decline of Nigerian labour unions, the absence of unions in certain sectors of the gig economy, and the ascendancy of managerial prerogative and control within Nigeria (Folawewo, 2016; Idowu and Elbanna, 2020). Currently, while workers in Bolts and Uber are organised as an association in Nigeria by the Professional E-hailing Drivers and Partners Association (PEDPA) and the National Coalition of Ride-Sharing Partners (NACORP), the associations carry no legal or organisational recognition (Enwukwe, 2021).

Against this backdrop, this study aims to explore the implications of algorithmic management on careers and employment relationships in the Nigerian gig economy. Essentially, our study focuses on ride-hailing platforms, particularly Uber and Bolt – the two renowned platforms in Nigeria – due to their large market share and broad operational coverage within the industry (Banya et al., 2022). In addition, we adopt labour process theory (LPT) to understand the employment relationship, which, according to Gandini (2019), provides a unique resource for evaluating dynamism in the digital evolution of work. The theory focuses on people's daily experiences in the workplace, how power is utilised to shape the production process, and how employees respond to power dynamics in the workplace (Vincent, 2011).

To achieve this aim, this study adopts interpretive qualitative research to provide detailed insights into the subjective experiences of Nigerian ride-hailing app workers and platform providers. This study makes two essential contributions. First, analysing the lived

experiences of the drivers and the platform providers within a developing country context allows us to fill the gap in the literature on the impact of algorithmic management on the career trajectories and employment relationships of gig workers in a unique context. Second, adopting labour process theory further validates Gandini's (2019) contention that the LPT provides a distinctive toolkit for understanding production relations beyond the 'traditional standard' to 'nonstandard' forms of employment in a gig economy mediated by digital platforms or digital forms of work. This is subsumed in the ways that the managerialisation and monitoring of workers through algorithmic management is predicated on the feedback and rating systems employed on the platforms for determining workers' productivity and performance, as well as their continuity or termination on the platforms. As a result, it enables us to contribute to the algorithmic management and information systems literature by improving our understanding of how workers and employers innovate, adapt, define, and use technology (i.e., algorithms), as well as how they are bound by their features.

Following the background on the gig economy, we explore the literature on algorithmic management and a review of labour process theory. Next, we provide details of the methodology adopted, followed by the presentation and discussion of our findings. Finally, we present the conclusions and research implications.

2.   Literature review

2.1.   *Algorithmic management in the gig economy*

With the rise of the gig economy, people are increasingly likely to work multiple jobs or switch jobs more frequently to pursue their interests and goals (Wood et al., 2019; Anwar and Graham, 2021). Overall, research has shown that pull and push motivations play a significant role in career decisions in the gig economy. The pull factor refers to the positive forces that attract individuals to pursue a career in the gig economy (Graham et al., 2017). For instance, research has shown that gig workers are often attracted by the perceived autonomy, flexibility and task variety that digital platforms offer (Graham et al., 2017; Wood et al., 2019; Anwar and Graham, 2021). Other pull factors in African countries include the unemployment rate in the formal sector requiring individuals to engage in gig work for survival and high-income earnings from taking up multiple gig jobs (Ayentimi et al., 2023). On the other hand, push factors refer to the prevalent unfavourable forces that motivate individuals to leave their current work in the gig economy and pursue alternative opportunities. Extant research has demonstrated that lack of job satisfaction, job insecurity, precarity, and vulnerability are primary push factors in the gig economy (Stewart and Stanford, 2017; Anwar and Graham, 2021).

A particular feature of the gig economy, especially ride-hailing apps, is the use of algorithmic management through digital technology to manage gig workers (Basukie et al., 2020; Huang, 2022). Algorithmic management was first coined by Lee et al. (2015: 1603), who defined it as relating to 'software algorithms that assume managerial functions and surrounding institutional devices that support algorithms in practice.' According to Lee et al. (2015: 1603), this algorithmic management entailed human jobs being 'assigned, optimised, and evaluated through algorithms.' Likewise, Mateescu and Nguyen (2019:1) define algorithmic management as 'a diverse set of technological tools and techniques to remotely manage workforces, relying on data collection and surveillance of workers to enable automated or semi-automated decision-making.' According to Zheng and Wu (2022), critical research on the effects of algorithmic management frequently treats the algorithm or platform as a 'black box', an unseen force that organises, manages, measures, and manipulates employees' behaviour. In contrast, information systems researchers frequently concentrate on the management or transactional aspects of these platforms, particularly algorithmic matching, coordination, and

control (Sutherland and Jarrahi, 2018; Möhlmann et al., 2020). Sociotechnical researchers have often focused on socially constructed and enacted relationships between technological systems and social actors, where algorithmic management should be viewed as a sociotechnical process arising from ongoing interactions between organisational members and the algorithms that mediate their work (Bader and Kaiser, 2019; Jarrahi et al., 2021).

Extant research has viewed algorithmic management from three main perspectives. First, algorithms are used to assign work on ride-hailing platforms by sharing information regarding work availability with users/drivers (Muñoz and Cohen, 2017). Second, algorithms are utilised by platforms for performance and rating, as many ride-hailing firms adopt a performance level and rating system to make decisions on employees' pay and employment continuity, as well as to improve the reputation of their business (Basukie et al., 2020). Third, in a bid to use algorithms to make data-driven decisions, several legal and ethical concerns emerge. This perspective is based on the use of algorithms to control and monitor the activities of platform users (drivers and riders), sometimes even beyond the activities taking place on the platforms, leading to platform operators ignoring users' consent for their own benefits (Wood et al., 2019; Duggan et al., 2020). Similar to Basukie et al.'s (2020) findings, Parent-Rocheleau and Parker (2021, p.1) aver that algorithms serve as work designers based on their function of "monitoring, goal setting, performance management, scheduling, compensation, and job termination". Bucher et al. (2021) contend that platforms employing algorithmic management serve as "latent employers". These platforms significantly influence the dynamics between clients and workers, compelling workers to invest additional effort in the cognitive, social, and emotional aspects of their work to maintain their access, visibility, and reputation.

In addition, Kellogg et al.'s (2020) work on the '6Rs' model demonstrates that algorithmic control in the workplace operates through six main mechanisms. Employers can use algorithms to direct employees by 'restricting' and 'recommending', meaning that algorithms can be used to limit worker behaviour by establishing restrictions on the tasks they can perform, how and when they can perform them, as well as recommending tasks, resources, or other information to employees, even though it can cause workers to lose their autonomy and become dependent on algorithms (Lee et al., 2015; Rosenbalt and Stark, 2016). Employers can also use algorithms to evaluate employees by 'recording' and 'rating' their behaviour, including the tasks they complete, the time spent on each task, and their interactions with customers, leading to a loss of privacy and discrimination in task allocation. They can also use rating and ranking systems (or predictive analytics) to forecast future employee performance (Lehdonvirta et al., 2019; Wood et al., 2019). Finally, employers can use discipline to encourage cooperation and compliance by 'replacing' underperforming or defiant workers and 'rewarding' those that exhibit prescribed proper behaviours, leading to precarity, frustration and stress (Graham et al., 2017; Kellogg et al., 2020).

Recent debates on algorithmic management have also oscillated around the importance of 'time and space' associated with work on digital platforms. For instance, Zheng and Wu's (2022) research on the phenomenon of 'speed' in digital platform work takes a performative view of spatiotemporality as "practiced, material, multiple and political". The authors argue that platform workers are often exposed to making decisions based on their skills, knowledge and interaction with the algorithms to quickly navigate spatial conditions (e.g., traffic) to meet customers' needs and gain platform incentives. Moreover, the materialisation of speed on the platforms is contingent on the interactions between the worker and algorithms, such that maintaining work speed requires the worker to navigate several material factors, such as weather conditions, traffic and the maintenance of equipment. In addition, to facilitate the speed at which work is performed, workers are required to navigate algorithms' multiple

perceptions of timelines and a sense of speed for all stakeholders involved (i.e., workers, platforms and customers) regardless of the pace and distance to be covered to perform the assigned work. Speed is further politicised by algorithms that ensure workers' spatiotemporal movement is closely tracked and assessed by the platform system, as well as panoptic control and gamified performance regulation. The authors propose that in the gig economy, algorithms pose spatiotemporal systems of inequality and neo-liberal precarity. This is consistent with Krishna's (2020) findings that spatiotemporality on digital platforms is intertwined with social justice in three ways: the spatiotemporal trade-offs between risk and stress against the benefits of employment, concerns with imperfect digital representations, and an asymmetry of power and information. These outcomes pose spatiotemporal injustice for platform workers, particularly those in the global South.

Furthermore, in recent times, although gig workers enjoy a greater level of autonomy than traditional workers (Basukie et al., 2020), algorithmic management has recently raised considerable concerns about how it may impact careers and employment relationships (Duggan et al., 2021). It has been argued and demonstrated that algorithmic management could improve service supply, enhance efficiency, lower costs, reduce deficiencies and unproductiveness in existing markets, facilitate the creation of new markets, promote flexibility, and increase accessibility for workers (Glavin et al., 2021). The gig economy presents a variety of attractive incentives and career prospects. For example, Jiang et al. (2015) discovered that gig work gives career opportunities for stay-at-home parents, elder caretakers, people with disabilities and older adults. However, it also faces certain challenges in employing algorithmics in its employment relations. For instance, studies have examined how algorithmic management affects the level of transparency between platform operators and users, engendered through information asymmetry (Rosenbalt and Stark, 2016; Duggan et al., 2020); the inability of drivers to negotiate the terms and conditions of their work and excessive platform control (Kaine and Josserand, 2019; Wiener et al., 2021); the categorisation of drivers as employees or independent contractors or self-employed (Stewart and Stanford, 2017; Cornelissen and Cholakova, 2021); the inaccuracy and unrepresentativeness of performance and rating metrics, as well as the bias in work allocation (Basukie et al., 2020); and several unethical practices (e.g., safety, privacy issues, and puffery) that occur over the platform (Chee, 2018; Kaine and Josserand, 2019). Walker et al. (2021) put forth the perspective that algorithmic management within the gig economy can be interpreted as a manifestation of biopower, harnessing life itself for productive purposes. They contended that this approach runs counter to the sense of solidarity necessary for collective resistance and industrial action. Drawing from an empirical analysis of Uber, Walker et al. (2021) posited that the utilisation of algorithms constitutes a key factor in the effective suppression of resistance within platform capitalism. Furthermore, they highlighted how, with the assistance of artificial intelligence, any resistance that does emerge tends to be redirected towards fellow workers or other stakeholders instead of being directed towards employers.

Additionally, Graham et al. (2017) concluded that even with the wide range of benefits in the gig economy (accessibility, independence, variety, diversity and cost-effectiveness), there is also a correspondingly extensive array of risks and costs associated with the economy that largely affect gig workers. Interestingly, Jarrahi et al. (2018) assert that gig workers develop literacy and understanding of algorithms after working on the platform over time, thus keeping active control of their work and even leveraging and manipulating the application to maintain some degree of professional autonomy and flexibility. Nevertheless, studies also concur that algorithms are erratic and unpredictable, leaving gig workers with little or no knowledge and control over the algorithms on the digital platforms where they work (Glavin et al., 2021). Similarly, gig workers tend to have no control over how, when, where and how

much of their work, ultimately resulting in low pay, social isolation, working unsocial and irregular hours, overwork, sleep deprivation and exhaustion (Wood et al., 2019). Moreover, gig workers usually see themselves undervaluing their own work, staying under the radar, curtailing their outreach to clients, and keeping emotions in check to ensure their continued participation on the platform, which takes on the role of a shadow employer (Kinowska and Sienkiewicz, 2022). Ultimately, it is important to understand the factors motivating individuals' career choices in the gig economy despite the drawbacks of algorithmic management and the mode of employment relationship, especially between platform providers (employers) and platform users (workers).

2.2. Labour process theory and the gig economy

Labour process theory presents a unique theoretical perspective for understanding the employment relationship in the gig economy (Gandini, 2019). Labour process theory (LPT) is not only a theory of workplace behaviour (Braverman, 1974; Ackroyd, 2009) but also useful for uncovering the relationship between the employer (service providers) as the owner of production means and the worker (drivers) as the possessor of labour power (Burawoy, 1979; Edwards, 1979). According to the labour process perspective on how work is organised, managerial decisions are primarily influenced by the relationships between capital and labour. It is also impacted by management methods that tend to dominate and control labour to maintain it as a crucial component of production (Adler, 2007). However, there have been several contentions to the understanding and application of the LPT. For instance, the Brook-Bolton controversy in LPT provides a broad spectrum to understand how it directly pertains to workplace emotions. Unlike Brook (2009a, b), who takes a largely Marxian approach to the LPT and argues that the material and commodity status of labour is pervasive throughout the economy of feelings, Bolton (2005, 2009) argues that people's emotions at work are complex and transcend labour processes by fusing the LPT with a more interactionist viewpoint. In a sense, Bolton disagrees with Brook's contention that employers' perceptions of workplace emotions are likely to be influenced by their "higher" interests, regardless of the types of emotion displayed or the subject's experience of those displays, contending that outcomes are solely explainable if analyses are sensitive to local experiences and how these differentially connect agents to the structural interactions they express (Vincent, 2011).

Nevertheless, in addition to workplace emotions, LPT acknowledges the inherent autonomy, control and consent that guide the employment relationship (Braverman, 1979). According to Gandini (2019), the LPT has faced remarkable criticisms for being less equipped to deal with the dynamics of temporal and spatial work, among other issues. Thus, in the context of the gig economy, Gandini (2019) strongly advocates that the LPT can be understood under three main notions.

First, as a *point of production* relating to 'where' work is undertaken, which in this study context refers to the ride-hailing platforms (or apps) where the social processes of production are managed. As a result, there exists a digital interaction not only between the drivers and service providers but also between the drivers and service users (i.e., passengers). Based on this digital interaction created by the platform for transforming labour power into a commodity, algorithms serve the purpose of connecting all three parties (employers, workers and passengers) at a particular point of production (the platform) (Parent-Rocheleau and Parker, 2021). At this point of production, the possessor of labour power performs the order fulfilment based on the time and location of the order (after winning the bid to execute an order) and how much money they receive for executing the order (Gandini, 2019). This digital platform experience provides a unique point of production given its 'decentred' nature, where data metrics are used to communicate and manage the platforms (Basukie et al., 2020).

Second, as a form of managerial control through *emotional labour*. From this perspective, emotional labour is seen as fundamental to the labour process resulting from the performance and rating systems (the feedback mechanism) that affect the social relations between drivers and passengers, such that positive or negative feedback affects managerial aspects (e.g., performance evaluation, monitoring and control) (Gandini, 2019). In essence, emotion management is a key component of the ride-hailing platform determined by how drivers can manage their emotions in their daily social relations with passengers, whose feedback is significantly important as a form of managerial control over apportioning work, remuneration/bonuses and continuity or termination of drivers (Wu et al., 2019). Consequently, to achieve a desirable outcome (i.e., customer satisfaction), drivers are expected to exhibit conforming behaviour regardless of natural conditions (Parent-Rocheleau and Parker, 2021). Emotional labour is even more pronounced within the context of platform work because of the visibility of the 'reputational metrics' used for various managerial control purposes, which coerces drivers to establish a form of emotion management in their relations with the passengers and apply soft skills to secure favourable feedback (Chen, 2018).

Third, as a case of *managerial control,* platforms exert a form of 'techno-normative control' over their workers (Gandini, 2019) by using technology to determine various aspects of the working relationship, including the contract continuity or termination and evaluation of workers' performance. For instance, platform operators utilise discreet controls through client-led practices described as 'management by customers' (Fuller and Smith, 1991), resulting from performance and rating systems while monitoring worker-client interactions (Rosenblat and Stark, 2016). In addition, platforms exert control through gamification, such that drivers are incentivised to take on more tasks or increase their engagement on the platforms (Gandini, 2019). Essentially, algorithms place workers in a gamified environment such that work looks like playing games where they need good ratings to remain in the game. In a sense, this has led to drivers being objectified by treating them as mere objects as opposed to human beings who have needs, feelings and emotions (Purcell and Brook, 2022).

Nevertheless, the labour process is not only limited to the digital interaction that occurs over the platform but also to digital surveillance purposed for measuring a driver's productivity and performance (Parent-Rocheleau and Parker, 2021; Mosseri, 2022). Moreover, whether directly or indirectly, platform providers give control to service users to act as 'middle managers' over drivers based on the metrics derived from the feedback they provide (Rosenbalt and Stark, 2016). In addition, Wu et al.'s (2019) findings align with Gandini's study of the gig economy under the LPT. They suggest three main control strategies used by ride-hailing firms, including economic control (incentive pay system), emotional labour (customer evaluation system) and consent-giving (flexible work arrangements). Consequently, algorithmic management of the platforms limits the workers and forces them to adapt their behaviours, which may significantly affect their career development and employment relationships.

Note that Burawoy and Thompson's work argue that the State, through legislation, regulating collective bargaining, direct intervention and providing education and training, plays a significant role in shaping the labour process. They both argue that any workplace regime cannot be fully understood without considering the political, economic and social contexts (Burawoy, 1974, 1983; Thompson, 2003, 2010). Against this backdrop, understanding the labour process within the context of algorithmic management can provide important implications for careers and employment relationships in the Nigerian gig economy.

3. Methods

This study adopts a qualitative approach to produce detailed and rich insights into the issues of concern associated with algorithmic management used on ride-hailing platforms – a subset of the gig economy. Previous studies (e.g., Wood et al., 2018; Spurk and Straub, 2020) have called for increased insights by conducting more qualitative studies in Africa and Asia, representing an emerging gig market. Following the qualitative method, an interpretive philosophy is used. Interpretivism allows researchers to focus on participants' subjective experiences and make inferences from their shared meanings and perceptions (Bryman, 2018) of the impact of algorithmic management on their careers and employment relationships.

Our research sample comprises 46 drivers and 3 platform managers of ride-hailing apps in Nigeria, specifically Uber and Bolt. Data collection took place between June and September 2022. The first author visited Nigeria for data collection and went on a few rides using Uber and Bolt. This led to using a multitiered participant recruitment strategy that began with convenience sampling of readily available participants (Saunders et al., 2019), considering that it was convenient for the first author to embark on rides, making it easier to gauge the availability of the drivers. During the rides, the first author collected the drivers' details after a short conversation (to avoid distractions while driving) to further explore their lived experiences. However, to mitigate the occurrence of sampling bias and unreliability associated with convenience sampling, purposive sampling was employed to select knowledgeable participants who could provide detailed and diverse information based on their experiences. Thereafter, because it was difficult to reach many of the drivers due to their transient lifestyle and not having a fixed address, the snowballing sampling technique was employed to recruit other participants who met the research criteria through initial participant referrals (Creswell and Creswell, 2018). The criteria included drivers (male and female) who were registered and active on the ride-hailing apps and those with at least two years of working experience (see Table I for detailed participant profiles). The first author visited the service providers in one of their offices in Lagos (the city with the largest market share) to schedule times when they were available for discussions.

[Insert table I here]

Following their informed consent to participate in the research, the first author conducted semi-structured interviews. We ensured that we first interviewed all the drivers before interviewing the platform providers to address some of the issues discussed with the drivers. Furthermore, all interviews were conducted virtually using WhatsApp video and Zoom. The participants primarily requested virtual interviews, especially the drivers who preferred this form of communication given their nature of work, which made it difficult to meet at a physical place except when driving, which was discouraged due to the safety of the drivers and the researcher. The service providers also suggested a virtual interview due to their unavailability during office hours and that they were only available at odd times during nonoffice hours. During the interviews, we asked a set of predetermined open-ended questions, such as: What is the nature of your platform work? What is your motive for taking up ride-hailing work? What are the work-related challenges you face as an Uber/Bolt driver? Further questions that aligned with the research enquiry were explored based on the conversation. For instance, we inquired more about their career choice, work process, work experiences, the control and performance measures used, and the interactions between the drivers and platform providers. The interviews lasted between 25 and 40 minutes and were recorded to enable the researchers to record the responses of the participants verbatim. After interviewing 41 drivers, we reached data saturation after observing a repetition of themes and information redundancy, but we decided to interview five more drivers to guarantee that we were not missing any

important information. Participants' names were concealed using pseudonyms to ensure anonymity and confidentiality.

The interview transcripts were subjected to thematic data analysis to arrive at the main themes from the interpretation and analytical inferences guided by our research aim. The main steps in our thematic analysis are summarised in Table II. Consistent with Braun and Clarke (2006), all authors started by familiarising themselves with the transcribed data, involving a thorough reading of the data in an iterative manner. This was followed by coding the data through colour coding to match similar meanings, words, phrases and texts. We facilitated intercoder reliability by jointly coding the data (O'Connor and Joffe, 2020) to ensure consistency in the coding process until all authors reached a consensus. This led to a pattern-based analysis to identify patterns in the data relevant to the research aim and those that were surprising facts (Braun and Clarke, 2006). Thereafter, we searched for themes and reviewed and finalised the themes. Here, the authors concentrated on the already identified patterns and relationships that emerged from the coded data to create provisional themes and subthemes relevant to the research aim. After carefully reviewing and revising the main themes by going through the data continuously, the main themes were finalised.

[Insert table II here]

4.   Findings

Our findings were divided into four main themes. First, we explored the motivations of the drivers' career choices to understand how and why they got into gig work. Second, we enquired about the functioning of the app to understand the labour processes involved. Third, our findings indicate that platform work engenders a transactional-relational type of employment relationship. Fourth, our findings bring to fore the perceived impact of algorithmic management on the attitude and performance of workers.

4.1.   Drivers' career choices and motivations for working on the platforms

Among our participants, there were various reasons for choosing to work on ride-hailing platforms. These were largely divided into two categories. First, for different reasons, many drivers were motivated by the higher level of flexibility and autonomy that gig work provides compared to working in the traditional workplace. For many, choosing a career as an Uber or Bolt driver allowed them to work in a way that suits their needs:

> The most important benefit of this type of work is that I can choose when and where I want to work… (Participant 3).

> Flexibility is a motivation for being a Bolt or Uber driver because I can decide when I want to work and switch from one platform to another if one is not fetching me enough passengers (Participant 42).

Some people felt like 'entrepreneurs' because they compared themselves to have the entrepreneurial mindset and attribute when they had some autonomy:

> I like to feel independent and make certain decisions regarding how and when I work. So, being a driver gives me that feeling of ownership and independence to an extent (Participant 8).

> I have vowed to myself not to work for any man again because of my awful experiences. I joined Uber because I wanted to have some level of control… You know that we are transportation entrepreneurs, right? [laughs] (Participant 24).

The second broad reason for the career choice as a ride-hailing driver was to have a source of income. Our participants were identified as 'full-time earners' who were solely dependent on income from the platforms or 'supplementary earners' who had regular jobs but took ride-hailing jobs to augment their income. Regardless of their categories, their career choices were largely influenced by poor economic conditions (e.g., unemployment, poverty), lack of good education, and family size. The quotes below are representative of the participant's responses:

> I was formerly an accountant, but after the downsizing of my company in 2019 due to the pandemic, I was encouraged by my friends to use my car for Uber rides. I have a family, and I must make ends meet, feed them and ensure that economic conditions do not destroy our lives totally (Participant 11).

> I took up this Uber work because since I graduated in 2020, I have searched for good-paying jobs, but none have been forthcoming. I don't even have the money to further my master's because a good job in Nigeria requires a higher degree, so for now, I have to keep doing this job (Participant 16).

> As for me, I'm only doing this work as a way to get extra money because my main job doesn't pay as much. I have a family of 6, and if I depend on what I earn from my main job, we won't be able to survive in this bad economy... Right now, this is what I'm able to do because I don't want to get involved in any criminal work (Participant 2).

The foregoing quotations align with previous studies (e.g., Graham et al., 2017; Ayentimi et al., 2023) that argued that income is a crucial motivation for workers who take up jobs in the gig economy.

4.2.   The human-digital interface and labour processes

Digital interactions on ride-hailing platforms are mediated by algorithms enabling connectivity between drivers, passengers and platform providers. It is important to note that the majority of the drivers (32 out of 46) operated on both Uber and Bolt platforms, reinforcing Stewart and Stanford's (2017) assertion that gig workers generally tend to exhibit a lack of commitment to any single employer and may at a time render their services to more than one employer. Notwithstanding, before operating on either platform, the drivers must follow some processes that are similar across Uber and Bolt. Generally, these include signing up online to complete the driver's personal and vehicle information, uploading relevant documents for verification, virtual information session/training, vehicle inspection to ensure that it fits the type of vehicle option requirement and finally, account activation.

After setting up on the platforms, there is a similar labour process on both platforms, which begins with ensuring that the drivers' app is active online to receive incoming ride requests from nearby passengers within the set driving radius. The algorithms ensure that a driver is notified and must indicate acceptance within 15 or 20 seconds for Uber and Bolt, respectively; otherwise, the order will be automatically directed to another driver. Once acceptance is confirmed by both the driver and passenger, the driver makes the pick-up and confirms on the app, followed by clicking the navigation button on the app and riding to the destination. Once the order is complete, the drivers notify the platform, and earnings, if paid with a card, are recorded for payout on a weekly basis; otherwise, cash payments are earned directly by the driver, and the platform makes deductions from the driver's overall earnings. Ultimately, from the LPT perspective, the digital interaction and processes on the platform are fundamental to how the platforms operate because they relate to what Gandini (2019) called the 'point of production', which is where work is undertaken – the ride-hailing app. Therefore,

registering their presence on the app (i.e., the digital workspace) to receive ride requests is analogous to the traditional workplace, where employees may have to clock in to register their presence in the physical work environment.

In addition, most drivers benefit from a higher degree of autonomy and flexibility on the platforms compared to the traditional forms of employment. However, as they revealed, autonomy and flexibility are often restricted to specific areas, such as deciding when or not to be active on the platform, taking alternative routes regardless of the suggestions provided on the platform navigation systems, planning earnings based on the number of rides they get and accept, self-selecting a driving radius, and deciding to accept or reject ride requests – which sometimes comes with consequences when rejected.

When we interviewed one of the platform providers to address the issue of autonomy and flexibility, we obtained the following response:

> Uber is very considerate in regard to providing drivers with flexibility and the ability to act in certain ways, such as choosing when and how they want to work; the way that the platform operates has been programmed on the system (algorithm), but we are trying our best to improve our services (Participant 47, Service Provider).

In addition, similar to previous studies (e.g., Wood et al., 2019; Veen et al., 2020), performance and rating systems are employed as part of the labour process on digital platforms. Uber and Bolt deployed similar performance and rating systems, broadly divided into three. First, acceptance ratings measure the number of ride requests accepted or rejected within the limited pop-up time. Cancellation ratings measure the proportion of orders cancelled after drivers' acceptance. Third, customer satisfaction ratings – implied by most drivers as the most important performance rating – measure the rate of customer satisfaction with the driver after service delivery. The following quotes are typical of the participants' responses:

> As riders, we are under constant monitoring when we accept or reject any order and, passengers can rate us after the drop-off… The rating is very important to how many orders I receive because of how Uber sets up the system. Currently, I have a rating of 4.73, which is good… a friend of mine (another Uber driver) was terminated because of a low rating, so one can't undermine the extent that these ratings can be used to decide one's future [laughs] (Participant 4).

> I have always mentioned to those who care to listen at the Uber and Bolt offices that these ratings are based on individual's perceptions… Another problem is that on many occasions, many people tend to forget or ignore the ratings when they have a good experience, but when they have a bad experience, they are eager to run to the app to provide a low rating or complain [laughs]… (Participant 37).

Additionally, the participants revealed some country-specific challenges that affect their performance ratings:

> Sometimes, customers can be rude to us on issues beyond our control, affecting their perception and how they rate us [drivers]. For example, traffic issues are a major problem for drivers in Lagos, and some customers complain that the app showed them 10 minutes to pick-up, but I may arrive 25 minutes or more because of hectic traffic or bad roads. Is that my fault? When they keep cancelling rides, it also affects our bonuses and ratings (Participant 1).

> …at times, I've had to cancel ride requests from customers who live in rural areas because of the bad roads. Uber and Bolt are charging so high, and the amount left after

deducting the commission may not be sufficient to repair my car if I ply those dangerous roads. Additionally, cancelling or rejecting too many rides isn't good for my ratings (Participant 18).

A platform provider shed some light on their performance and rating systems:

Many of our partners don't understand how the rating works and that it's not manually set up. The algorithms we use automatically collect the data that help us manage our operations and services. For instance, the algorithm's work is to collate the statistics of the number of acceptances, rejections or cancellations on each driver... Additionally, our drivers are aware of our customer satisfaction rating system… and we have explained to them that it [performance and rating systems] serves many purposes, like protecting our customers and themselves and the interest of the business… (Participant 47, Service Provider).

As the above quotes reveal, the performance metrics collected via the apps remain crucial to the platforms' operations and labour processes. From the LPT perspective, assessing the rate of acceptance, rejections, cancellations and customer feedback forms a pivotal part of the digital surveillance used to measure drivers' productivity and performance and the managerialisation and control of what happens on the platforms (Parent-Rocheleau and Parker, 2021). Moreover, most of the quotes are consistent with previous research (e.g., Krishna, 2022; Zheng and Wu, 2022) showing how digital platforms' spatiotemporality affects the labour process. The importance of maintaining work speed is specifically emphasised by our participants regarding picking up passengers on schedule and reaching the destination in a timely manner to satisfy consumers. However, while the drivers aim to ensure that speed expectations are met, the materialisation of speed is often affected by country-specific challenges, which impacts negatively on the labour process. The country-specific challenges peculiar to Nigerian ride-hailing drivers, such as the inadequacy of good infrastructure (e.g., roads and transport networks) and high insecurity levels, which is unlike developed countries with better security systems and adequate infrastructure, debar them from having good experiences and contribute to the unfair rating system. Although the drivers expressed their concerns about the subjectivity of these politicised algorithmic rating systems, which determine the frequency, continuity or termination of work on these platforms, they do not have direct control over the algorithmic systems. However, in a way, it motivates (or pressurises) them to maintain good scores or ratings to remain active on the platforms. However, we find that, similar to the assertion of previous studies (e.g., Duggan et al., 2020; Mosseri, 2022), algorithmic bias could occur beyond the control of platform providers, such that repeatable errors that feed into the system lead to unfair outcomes. These factors that affect labour processes have significant implications for gig workers' careers and employment relationships within the study context.

4.3. *Platform work employment relations: The transactional-relational continuum*

The employment relationship on digital platforms is increasingly becoming an important discourse in attempting to understand the working relationship in the gig economy. The fragmented nature of digital platforms, especially given the role of algorithmic management, makes this relationship intricate (Duggan et al., 2020). Tassinari et al. (2020) suggest the concept of solidarity, both within the gig economy and in broader contexts, is best theorised as a continuum. This continuum encompasses a range of behaviours, from the everyday acts of reciprocity that reflect the collective nature of labour processes (such as couriers assisting and supporting one another) to individual engagement in less risky forms of resistance and dissent (such as refraining from work or engaging in online actions that impact reputations). It extends

further to include more conventional expressions of collective labour mobilisation, such as organised protests, spontaneous strikes, and picketing. Based on our study, we find similarities with previous research that contends a heavily deep-rooted transactional relationship between drivers and platform providers. Contrary to some studies (e.g., Graham et al., 2017) that find relational exchanges between platform providers and workers, all drivers interviewed in our study deny any 'meaningful' form of relational exchange with platform providers:

> Once you register on the app and after the initial training, you are on your own… There is no form of relationship other than I fulfil the order, get paid, and they [platform providers] deduct their service charge. Even recently, after many months of drivers' strike actions to increase the prices charged, they increased the price and to our surprise, they also increased their commission [looking disappointed] (Participant 5).

> Establishing any meaningful relationship with Uber or Bolt is just a waste of time because it doesn't lead to any useful outcome. For instance, whenever they decide to hold a virtual meeting for us to express our issues, it is either not well organised or they don't take us seriously despite the number of strike actions we have embarked on…they keep telling us that they will do something about it, but now we are tired of complaining (Participant 16).

> I am fed up with this work because it is very [with emphasis] difficult to communicate with the company… if you have any complaints, they tell us to report them on the app, but they rarely respond… But for the situation that we find ourselves in this country, I don't think many of us drivers are happy doing this work. For me, it's temporary because I'm still looking for a better job, or do you have one for me? [laughs] (Participant 25).

Regardless of the complaints of these drivers, the platform providers interviewed claimed that their companies are putting in efforts to resolve the issues reported by their drivers:

> We are often aware of these issues, but here in Nigeria, it is sometimes difficult to provide a quick response to our partners because, despite having a regional head office in Nigeria, Uber is a multinational organisation, and we don't make certain decisions without the approval of the headquarters in the US… One of the problems I have tried to discuss with other managers is that we should focus more on assisting our current drivers instead of onboarding new ones (Participant 48, Service Provider).

> …You see, Nigeria is a different country, and when you compare our operations here with those in foreign countries, it is quite different. Many determinant factors impede us from taking certain actions. For example, Nigerian government regulations are not entirely the same as those where Bolt originates from or in other countries. Additionally, some of our regulations are globally standardised, with little room for adjustments to the Nigerian environment. For example, Bolt charges between 15% and 25% in all countries, but the percentage varies in the cities of operation; thus, even in Nigeria, where the inflation and poverty rates are very high, the same commission rates apply (Participant 49, Service Provider).

Generally, there is an implied deep-rooted transactional and self-serving relationship, one that was described as a 'parasitic' relationship by the President of the National Union of App-based Professional Drivers in Nigeria (Elimian, 2022). However, given their experiences and the need to maintain continuity on these platforms, owing to the performance and rating systems utilised on the platforms, the drivers reported the need to ensure a relational exchange with the passengers:

In this line of work, once you please the passenger, you have also pleased the service provider… I try my best to observe the kind of passengers that I drive. If they are the type that likes to gist, I make an attempt to start a conversation, but for the quiet types, I normally speak less and ensure that I maintain full concentration to avoid mistakes because it's usually their type that will give a low rating if they are not satisfied [laughs] (Participant 8).

Ah! My customers are the real boss [heavy laughing]; they are the ones I fear most, not the company… In fact, I go the extra mile to offer customers bottled water and some edibles because I want them to be very comfortable, but not all of them accept it because they are also safety conscious with the high rate of kidnapping these days (Participant 19).

Like Participant 19, some other drivers (e.g., Participants 2, 3, 10, 16, 19, 25, 33, 41) also claimed to make provisions for refreshments to entertain passengers and ensure that they provide the best possible service in exchange for good customer satisfaction ratings. From the LPT perspective, this reinforces the notion that emotional labour/management is ingrained in the social relations of production in the digital platform economy, particularly ride-hailing platforms (Wu et al., 2019).

However, to our surprise, we found that some drivers are subverting the labour process and taking advantage of the relational exchange between themselves and the passengers to create other rewards, even those that the platforms do not provide:

…It may interest you that some of us [drivers] have found ways to help ourselves since the company is negligent to our concerns, especially the low payout and high commission. For instance, sometimes, when I see a ride request and the destination is far than usual, I may accept it and then call the customer to tell them that I will pick them up at the location, but they have to cancel the ride. This means that I will collect cash from the customer without paying any commission, and since I'm not the one that cancelled, there are no consequences (Participant 6).

The good part of the interpersonal relationship that I form with my customers is that sometimes they collect my personal mobile number, and rather than order a ride on the app, they call me directly, and we negotiate how much it would cost them; sometimes, it could be cheaper than what they would pay on the app…but the customer must trust me and be convinced that they are safe before they can relate to me personally (Participant 13).

Notably, while a transactional exchange is dominant between drivers and platform providers, a relational exchange consisting of trust, bonding and empathy is created with passengers, which is often reciprocal and naturally rewarding. Therefore, the relational exchange absent in their relationships with the platform providers is often compensated by the relationship created with the customers. Notwithstanding, as Participant 13 echoed, most drivers asserted that trust is a primary determinant for establishing a rewarding relational exchange and interpersonal relationship with their customers, whether the drivers' activities, as described, are deemed ethical or not by the service providers. When we confronted the service providers with these issues, they were aware but reported being unable to act in any way that would stop the act. For instance, Participant 48 responded, "we know of these issues, which is why we prefer that customers pay with their cards, not cash, but the majority pay by cash because they are also conscious of internet fraud". More specifically, from the LPT perspective, there is a case of a change in the point of production and how the social processes of production are managed when the drivers and passengers decide to bypass the app to fulfil

a ride request. Consequently, these acts always alter the labour process mediated through the platform. Moreover, while emotional labour/management may still be dominant to ensure the continuity of relational exchanges, managerial control is likely to be significantly reduced in favour of drivers.

4.4. *Perceived impact of algorithmic management on the attitude and performance of workers*

In previous studies (e.g., Rosenbalt and Stark, 2016; Kaine and Josserand, 2019), issues around the transparency and objectivity of algorithmic management practices on platforms shape the attitude and performance of workers, particularly when they have little or no influence over decisions that affect them as a result of excessive algorithmic control. Algorithmic management systems are typically opaque, and it is difficult for drivers to challenge decisions made by the system, meaning that drivers cannot effectively contest unfair decisions. For instance, while drivers are able to accept or reject rides, they do not choose how much commission they pay to the platform operators, which affects their revenue due to economic conditions, and neither do they set the amount charged for each ride, which can be favourable or unfavourable given the price flexibility on the platforms depending on the demand and supply mechanisms. The following quotes are illustrative of the shared perspectives:

> I use both apps [Uber and Bolt], but while there are some benefits, there are also disadvantages. Besides the lack of job security, employers can sack you if they are unhappy with you for any reason. I do not have power over how much I want to charge a customer if they order on the app, and the prices set by the company are not always favourable… I'm beginning to think seriously about this work and the need to look for a job with a permanent income (Participant 34).

> Although there is flexibility when you do this work, it is also difficult to know how much you can earn monthly because of how the app operates and allocates ride requests…thankfully, I've got another job because if not, I would have left this work (Participant 12).

The narratives suggest that the perceived lack of control caused by platforms' 'price fixing' raises concerns about drivers' jobs and income [in]security. Because the processes are automated and do not have to comply with labour laws, platforms can set wages at whatever level they want. This shapes the attitude of the workers, particularly regarding their career trajectory on the platforms, with some contemplating intensifying their search for permanent jobs with high job and income security. In addition, the drivers' performance is impacted by their unpleasant experiences with their labour categorisation:

> …Uber and Bolt use the word 'partners' instead of employees… I don't even care how they regard us because they always act selfishly. For instance, there is no support from them [platform providers] whenever there is an accident or police harassment… Things like this affect our income; sometimes, we can't meet the targeted number of rides (Participant 45).

> I believe that because we are not seen as their employees, these companies do not truly care what happens to us as long as they get their commission… The companies should know that if our needs are unmet, our ratings will also be affected (Participant 23).

Problems with labour categorisation also affect how workers exercise their rights, leading to job dissatisfaction:

Rights? In Nigeria, the laws are not supportive of workers like us… You must battle tooth and nail to stand a chance to get what belongs to you... We are unhappy that our rights are not enforced by the company or the federal government (Participant 2).

Don't even talk about rights in Nigeria. This is not the UK or some developed country where the legal system works effectively… Did you hear about our case in court and how it was dismissed? Abeg [meaning *'please'*] forget anything that has to do with rights, but we hope the companies can be fair to us… (Participant 6).

The narratives suggest that the complex employment law issues associated with the gig economy affect drivers' labour categorisation and the benefits they accrued as workers or employees. As Participant 6 noted, there is a need for stronger legislative systems in Nigeria. Unlike some developed countries, especially those in Europe, where gig work is regulated and negotiations now underway may result in the recognition of gig workers as employees with rights to pensions, paid leaves, and workplace accident insurance (World Economic Forum, 2023), such deliberations in Nigeria have been dismissed as having no chance of resulting in a regulated gig economy. For example, the case presented before the National Industrial Court of Nigeria between Oladapo Olatunji and Daniel John (representing themselves and other Uber and Taxify [now Bolt] Drivers in Nigeria in a Class Action) versus Uber Technologies System Nigeria Limited & Taxify Technology Nigeria Limited to adjudicate the categorisation of the drivers under the law was dismissed because the claimants were unable to prove their claims since they did not provide sufficient evidence, as the court deemed it "speculative, conjecture, academic and hypothetical" (National Industrial Court of Nigeria, 2018).

5.   Discussion and conclusion

Our study explores the implications of algorithmic management on careers and employment relationships in the Nigerian gig economy. We find specific key commonalities in the experiences of app workers and platform providers as they relate to the broader gig economy. For instance, similar to previous studies (e.g., Wood et al., 2019; Anwar and Graham, 2021), our findings indicate that individuals' engagement in gig work in the Nigerian context is mostly driven by pull factors – mainly autonomy and flexibility – and as a means to make ends meet. We demonstrated that the economic and sociocultural environment also influences these factors. More specifically, drawing on the LPT, we uncover the benefits and barriers of algorithmic management practices, especially on ride-hailing platforms (Uber and Bolt). Specifically, similar to previous research (e.g., Basukie et al., 2020; Huang, 2022), we found that algorithmic control is a critical component of digital engagement and surveillance used to monitor productivity and performance, as well as the management and control of what happens on digital platforms.

As part of the benefits of working on digital platforms, workers enjoy a considerable amount of autonomy and flexibility, some of which are yet to be fully enjoyed by workers in traditional forms of employment. Although, in more recent times, organisations are beginning to promote hybridity in the workplace by allowing workers the autonomy to choose when, how and where they want to work (Kane et al., 2021), this phenomenon remains vastly disputed in the modern workplace due to fear of the managerial loss of control, whereas workers on digital platforms steadily enjoy such flexibility (Harvey et al., 2017). Nevertheless, despite the autonomy and flexibility gained on digital platforms, algorithmic control tends to hamper the labour processes of working in the gig economy, resulting in uneconomical outcomes for workers in this budding economy. Moreover, platforms continue to be the culprit for transferring the economic costs and risk to workers, limiting their access to control the labour process. Furthermore, peculiar to our study, we discovered that some drivers had found ways

to subvert the process for their economic advantage by conniving with passengers to bypass the app to fulfil a ride request. Besides, country-specific challenges peculiar to the Nigerian environment (and perhaps in other developing countries) are detrimental to the labour processes and operations of gig workers, negatively impacting their performance and reputational ratings, as well as career prospects on the platforms.

5.1. *Theoretical implications*

Our study's qualitative nature and its concentration on an understudied population and context led to conclusions that expand research on algorithmic management to consider contextualised employment relationships developing in an emerging occupation. In addition to providing empirical evidence to uncover the lived experiences of platform workers and providers in Nigeria, our study has several theoretical implications for understanding the LPT in the gig economy within a developing country context in Africa. By adopting the LPT, we offer further validation for Gandini's (2019) contention that the LPT provides a distinctive toolkit for understanding production relations beyond the 'traditional standard' to 'nonstandard' forms of employment in a gig economy mediated by digital platforms or digital forms of work. This is subsumed in the ways that the managerialisation and monitoring of workers through algorithmic management is predicated on the feedback and rating systems employed on the platforms for determining workers' productivity and performance, as well as their continuity or termination on the platforms. Moreover, in the case of digital platforms, specifically ride-hailing apps, 'platform reputation' is found to be the most important resource for mediating the social relations of production on platforms. Thus, a low reputation is tantamount to high job insecurity, low income or eventual termination from the platforms, which affects career progression on these digital platforms (Chen, 2018; Parent-Rocheleau and Parker, 2021).

In addition, this study enables us to contribute to the algorithmic management and information systems literature by improving our understanding of how workers and employers in a developing country context innovate, adapt, define, and use technology (i.e., algorithms), as well as how they are bound by their features. Peculiar to our study and contrary to previous research assertion that the point of production is the 'app' (Gandini, 2019; Veen et al., 2020), we contend that it is not always the case and that the point of production is bound to change, especially where the drivers subvert the labour process for their own economic advantage, owing to the relational exchange developed with the passengers, as our study records. Therefore, issues around the platforms' techno-normative control over their workers (Gandini, 2019) will likely be significantly reduced when the drivers bypass the algorithmic and labour production processes. Our findings also reveal that algorithmic management facilitates a transactional-relational exchange between employers and workers and workers and customers. Essentially, within our context, algorithmic management enables a transactional exchange between platform providers and drivers, while relational exchanges involving trust, bonding, empathy and reciprocity occur between drivers and customers/passengers. This is a novel finding and, to the best of our knowledge, has not been previously discussed in the literature.

Moreover, similar to previous studies (e.g., Duggan et al., 2021), we further confirm that emotional labour and emotion regulation, which are common features in service work, are more pronounced in digital app-based platform work due to the power granted to customers, who indirectly act as managers by assessing the performance of platform workers despite being sometimes subjective. Similar to the statement of Participant 8, many other participants also expressed that "pleasing the passenger meant that the platform providers would be satisfied with the service delivery". Thus, since the platform providers do not necessarily have the full information about how the drivers deliver the service, they exploit the customers by using their observations transformed via the algorithmic ratings to make business decisions. It implies

Fuller and Smith's (1991) notion of 'management by customers', where customer feedback serves as the legitimate basis for rewarding and disciplining workers. In their words, Fuller and Smith (1991, p.11) asserted that customers are "positioned as agents in the management circuit, customers, rather than managers, are set up as the ones who must be pleased, whose orders must be followed, whose ideas, whims and desires appear to dictate how work is performed". Therefore, the labour process within these digital platforms is largely mediated by a 'double-managerial' check on the drivers, whereby the managerial power (of the platform providers) is augmented by customer power (feedback/ratings), which ultimately shapes the behaviour of the drivers to act in ways that please the customers.

Furthermore, LPT provides a framework for understanding the issues of informality and precarity that are prevalent in digital platform work and even more peculiar to countries in the global South. The global South has a large informal workforce, which is frequently challenging to regulate. Therefore, workers in the informal economy are more susceptible to the harmful effects of algorithmic management, such as being engaged in precarious work arrangements, leading to limited job security and benefits (Graham et al., 2017; Anwar and Graham, 2021). For instance, our study highlights the problems of algorithmic management-induced employment insecurity within Nigeria, a deregulated developing economy. Employment insecurity refers to workers' subjective awareness about the threat of losing their jobs (Burchell, 1999). Job insecurity has been exacerbated due to limited bargaining power, the near absence of legal regulations, and the inability to enforce the limited laws that are meant to protect digital platform workers. These atypical contractual arrangements, which offer employers (i.e., platform providers) the ability to control workers in their ability to hire and fire at will, have been utilised by employers as instruments that reinforce their prerogative to control drivers and facilitate the processes of work. For Mankelow (2002), it is often assumed that job insecurity creates a sense of urgency and motivation among workers to exert more effort in their work. Therefore, it is important to note that algorithmic management has psychological implications for workers, including increased stress and anxiety from constant monitoring, evaluation, and perceived job insecurity (Petriglieri et al., 2019). A universal prerequisite for psychological wellbeing is the satisfaction of the requirements for autonomy, competence, and relationships (Kinowska and Sienkiewicz, 2023); therefore, supporting gig workers through promoting positive emotions and satisfaction in their jobs, as well as encouraging them through appropriate work systems to develop a sense of purpose in life and opportunities to develop their potential will improve their psychological wellbeing.

Platform drivers in Nigeria are viewed and treated as production costs to be minimised. Platform providers have a detailed, rigid in-house financial control system that aims at firmly controlling labour costs. This is one of the reasons why employers cut the payment made to employees, as gig economy drivers act as buffers to absorb business costs or shocks during the production process and dispose of them if they are uncollaborative, uncooperative and need to save costs. It is important to note that pay determination is unilaterally determined by platform providers. As the drivers are not unionised, there is no collective bargaining. Broadly speaking, within the Nigerian labour market, the fixing of wages by employers is a strategy for securing hegemony over the labour process, thereby keeping workers under the control of employers. Note that the use of precarious work contracts by the platform providers triggers feelings of employment insecurity due to the loss of valued job features such as losing their customary pay raise. The issue of job insecurity is exacerbated by the fact that there are no national palliative welfare benefit schemes to help workers who are made redundant or sacked.

Using algorithmic management is fraught with intricate and wide-ranging legal and ethical implications in Nigeria's gig economy. As highlighted by our findings, the Nigerian

gig economy suffers from the lack of transparency, fairness, accountability and negligence of employers regarding workers' rights. While it is yet unclear how best to solve these issues in a country where the gig economy is unregulated, developing laws and policies that safeguard employees' rights in the gig economy is crucial, as is the dialogue itself. Moreover, it would benefit Nigeria (and other African countries) to create new or strengthen existing unions for gig workers, ensuring that high union density and strong collective agreements could be fostered to enable unions to bargain for greater protection for gig workers, as is currently the case in other countries like Italy, the US, UK, Sweden and Germany (ILO, 2019).

5.2. *Practical implications*

In addition, our study presents some practical implications. First, platforms need to review how much dependence is accrued on customers' feedback on service delivery to improve the quality of work for platform drivers and gig workers in general. This is because it could lead to algorithmic bias and unfair ratings when customers' feedback is not always objective, given that negative feedback from unsatisfied customers may override that from customers who decline to provide feedback after a good service delivery based on the expectation that such should be a norm. The issue of 'double-managerial' power experienced by platform workers in an unregulated informal economy requires greater attention. This is because the transactional relationship between drivers and platform providers promotes power dynamics experienced by informal workers in the platform economy that can also make the labour process complex and exploitative (Chinguno, 2019), considering that platform providers may use their power to coerce drivers to work in dangerous and exploitative conditions for greater financial gains, especially in a country like Nigeria where the unemployment rate is high, and drivers see platform work as a means of survival. Moreover, as our findings demonstrate, the resistance of drivers to the pervasive power dynamics through sabotaging the labour process in exchange for a relational relationship with customers has significant implications for ethical work practices in the digital platform economy. As a result, it underlines the necessity of regulatory reforms for protecting informal workers from being exploited by employers, algorithmic management systems, and other informal actors, as well as their right to negotiate and organise collectively. These regulatory reforms might also stop or mitigate the unethical practices perpetrated by workers.

Moreover, platforms must take into account country-specific challenges that may affect efficiency in service delivery to protect workers from being terminated from the platform due to conditions beyond their control. Furthermore, to promote a balanced relationship (transactional and relational exchanges) between the platform providers and workers, platform providers must be willing to offer more support to existing workers rather than excessive focus on onboarding new workers; this would ensure that workers' career growth is prioritised and inadvertently lead to better work engagement and job satisfaction. Similar to Graham et al.'s (2017) suggestion, there is a need for various schemes and strategies to enhance the gig economy's employment relationship, such as democratic control of online activity platforms, introducing a standard certification scheme, and forming organisations (or unions) for gig workers. Moreover, similarly, there should be a special labour regulation formed separately, particularly for the gig economy (Todoli-Signes, 2017). Freedom to choose one's work schedule in the gig economy does not make one self-employed. Thus, labour laws should be in place to protect workers from abuse of power by their employers.

Finally, this study has some limitations. While the study helps us understand the workings and labour processes of the digital platform, specifically the ride-hailing apps and in a specific country, it is confronted by the lack of generalisability for the wider gig and platform economy. Consequently, there is a need for more comparative studies to further broaden our

horizons regarding labour processes and algorithmic management in other countries, particularly in emerging and developing economies, as well as to investigate the phenomenon across other platform types. We envisage that this may further provide nuanced conclusions as to how workers deal with being objectified, as well as the possible health consequences of such treatment.

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