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From Control to Agency: A Bibliometric Analysis of Worker Responses in Algorithmic Management in the GIG Economy

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Abstract

This study maps and analyses the research landscape of algorithmic management in the gig economy, focusing on workers' interpretations, responses, agency, and coping strategies within platform-based environments. A bibliometric analysis of 72 Scopus-indexed articles published between 2019 and 2025 was conducted to assess publication trends, thematic development, citation impact, and collaboration patterns. The findings reveal a shift in the literature from an early focus on algorithmic control, surveillance, and managerial power to a more nuanced understanding of worker agency, resistance, and adaptive behaviour. The study also identifies the United Kingdom and Australia as leading contributors, supported by strong institutional and international collaboration networks. Overall, this research provides a comprehensive overview of the intellectual structure surrounding worker perspectives in algorithmic human resource management, highlighting issues of power, autonomy, and adaptation. It further underscores important social implications, including concerns about worker autonomy, equity, governance, and the evolving nature of employment relationships in digitally mediated gig work contexts.

Keywords: Algorithmic Management, GIG Economy, Worker Agency, Platform Work, Bibliometric Analysis

Introduction

The gig economy and digital labour platforms have fundamentally changed the nature of work (Gorissen, 2025; Hajiheydari & Delgosha, 2024), posing both new opportunities and challenges for workers and organisations alike. Understanding the dynamics of algorithmic management becomes increasingly essential as algorithmic systems increasingly mediate the different facets of this rapidly changing landscape (McDonnell et al., 2021). While the organisational and technological aspects of algorithmic management have attracted growing scholarly attention, workers' perceptions, responses, and strategic navigation of these systems remain relatively underexplored. This study addresses one important but

understudied aspect of algorithmic human resource management (HRM): the worker perspective, encompassing perceptions of control, emotional reactions, resistance strategies, and proactive career management.

The gig economy, characterised by freelance work and short-term contractual arrangements, has expanded rapidly in recent years and continues to reshape traditional employment structures (Wood et al., 2019). This transformation has been largely enabled by digital platforms that match workers with tasks and facilitate flexible work arrangements (Möhlmann et al., 2021). While such developments offer increased flexibility and efficiency, they simultaneously introduce complex challenges related to labour practices, worker autonomy, and managerial control. Central to these challenges is the rise of algorithmic management, whereby algorithms are used to assign tasks, monitor performance, and evaluate workers (Galière, 2020).

Despite the growing reliance on these systems, the ways in which workers experience, interpret, and respond to algorithmic control remain underexplored. This gap is significant because the actual impact of algorithmic management is not solely determined by technological design, but also by how workers engage with and navigate these systems in practice. Without a clearer understanding of this human dimension, discussions of platform work risk overlooking critical issues related to fairness, agency, and sustainability.

Recent studies suggest that workers are not merely passive recipients of algorithmic directives but actively construct interpretive frameworks and coping strategies in response to these systems (Alačovska et al., 2025; Celentano, 2025). These responses are diverse and dynamic, ranging from "algorithmic paranoia" (Mitson et al., 2025) to anticipatory compliance (Bucher et al., 2021) and active opposition (Vasudevan & Chan, 2022). However, the existing body of literature examining these worker-centric dynamics is fragmented across different theoretical perspectives and disciplinary boundaries. As a result, there is limited synthesis of how scholars conceptualise workers' interpretations, behavioural responses, and expressions of agency within algorithmic management contexts.

Addressing this gap, the present study seeks to provide a structured and comprehensive examination of the research landscape on algorithmic management, with a particular emphasis on worker responses. Specifically, this study employs a bibliometric approach to systematically map the intellectual structure of the field, identifying key research themes, publication patterns, and collaborative networks. By doing so, it aims to clarify the current state of knowledge, highlight emerging trends, and offer a more integrated understanding of the human dimension underpinning algorithmically mediated work.

Literature Review

Algorithmic management refers to the use of data-driven algorithms and digital platforms to coordinate, direct and evaluate work activities traditionally performed by human managers (Möhlmann et al., 2021; Duggan et al., 2023). Within gig and platform-based environments, algorithmic systems perform multiple managerial functions simultaneously, including real-time task allocation, performance tracking and automated feedback mechanisms that collectively structure workers' daily routines (Galière, 2020; Waldkirch et al., 2021). Scholars have drawn on multiple theoretical traditions to conceptualise algorithmic management.

Labour process theory informs analyses of how algorithmic systems extract and control labour power (Veen et al., 2020; Wood et al., 2019). Foucauldian perspectives illuminate how algorithmic governance constitutes worker subjectivities and secures consent through normalising surveillance (Galière, 2020). Control theory and agency theory highlight the distinctive features of technologically mediated governance, including the displacement of human judgement by algorithmic procedures that appear neutral but carry implicit managerial authority (McDonnell et al., 2021; Cameron, 2024).

Unlike traditional management, where human judgement allows for flexibility and contextual negotiation, algorithmic systems impose continuous and standardised oversight, often constraining worker discretion and amplifying information and authority asymmetries (Galière, 2020; Möhlmann et al., 2021). These structural features distinguish algorithmic management not merely as a technological upgrade but as a qualitatively distinct mode of labour governance. Consequently, algorithmic management presents distinct organisational and ethical challenges, necessitating critical examination of how technologically mediated practices influence worker agency, performance expectations and the broader dynamics of control in the gig economy (McDonnell et al., 2021; Duggan et al., 2023). Seminal work by Wood et al. (2019) established that while platforms promote narratives of flexibility and independence, algorithmic systems impose subtle but pervasive forms of oversight through ratings, automated task allocation and performance metrics. Drawing on a global study of online gig workers, Wood et al. (2019) also demonstrated that algorithmic control operates through five mechanisms: recorded worker directions, evaluative feedback, customer ratings, algorithmic task allocation and disciplinary actions. Workers experience a paradoxical form of autonomy that is they retain freedom in scheduling but exercise limited discretion in task execution, creating tensions between empowerment and constraint.

Veen et al. (2020) extended this analysis through a labour process lens, demonstrating how platform capitalism's "app-etite for control" systematically subordinates worker discretion to algorithmic direction. Their analysis of food-delivery work in Australia revealed that algorithmic management constitutes a new form of technical control that intensifies labour extraction while obscuring managerial authority behind technological neutrality. Similarly, Galière (2020) drew on Foucauldian perspectives to examine how food-delivery platform workers consent to algorithmic management, revealing that control operates not merely through constraint but through the constitution of worker subjectivities that internalise platform logics. Building on these critical accounts of algorithmic control, Möhlmann et al. (2021) provided a foundational theoretical contribution by conceptualising algorithmic management as the intersection of matching and control functions on online labour platforms. Their analysis highlighted how algorithms perform both allocative and evaluative roles, creating distinctive forms of work organisation that differ fundamentally from traditional employment relationships.

In this regard, Bucher et al. (2021) introduced the concept of "anticipatory compliance," demonstrating how workers modify their behaviour in anticipation of algorithmic evaluation. Through qualitative research with gig workers, they showed that anticipatory compliance operates through workers' imaginations of how algorithms might evaluate their actions, producing a form of self-discipline that extends platform control into workers' cognitive processes. This internalisation of algorithmic logic marks a significant analytical turn toward

the psychological and subjective dimensions of platform governance. Extending attention to emotional and cognitive dynamics, recent scholarship foregrounds how workers interpret and internalise algorithmic governance, though often within individualised analytical frames. Alačovska et al. (2025) conceptualise "algorithmic paranoia" as anxiety arising from opacity and unpredictability, linking algorithmic systems to suspicion, distrust, and diminished psychological safety. Similarly, Mitson et al. (2025) emphasise workers' interpretive engagement with app-based surveillance, arguing that monitoring is actively processed through workers' understandings of platform logics rather than passively endured.

A significant body of research applies psychological frameworks to explain variations in worker outcomes under algorithmic management. For instance, Peng et al. (2025), drawing on self-determination theory, suggest that algorithmic oversight can simultaneously fulfil and frustrate basic psychological needs, with burnout contingent on individual appraisal. Similarly, Zhou et al. (2025a) adopt an attributional lens, linking differences in engagement and withdrawal behaviours to workers' perceptions of fairness and controllability. Li et al. (2025) extend this perspective by examining transparency, highlighting its "double-edged sword" effects on worker outcomes depending on interpretive appraisal. Moving beyond predominantly cognitive accounts, Popan (2024) re-materialises algorithmic management through the concept of the "embodied precariat," illustrating how digital control structures workers' bodily rhythms, spatial navigation and sensory experiences. This perspective usefully foregrounds the lived and corporeal dimensions of platform work, complicating approaches that confine analysis to interpretation and emotion.

Finally, fairness and resistance emerge as twin evaluative lenses across the subsequent body of work. Jabagi et al. (2025) analyse workers' assessments of algorithmic HR decisions across distributive, procedural and interactional justice dimensions, linking perceived unfairness to diminished engagement. Celentano (2025) conceptualises "algorithmic counter-tactics" as efforts to reclaim autonomy through workarounds and collective information-sharing yet simultaneously acknowledges that such manoeuvres unfold within tightly bounded architectures of control. Similarly, Öborn et al. (2025) describe "opportunistic agency" in the Swedish gig economy, where workers coordinate outside platform infrastructures to exploit systemic gaps. Huang (2025), through ethnography with migrant food-delivery workers in China, frames everyday resistance as "weapons of the riders," embedded in routine practices of timing, data-sharing and collective interpretation.

McDaid and Free (2025) demonstrate how online forums function as sites of collective interpretation where workers decode algorithmic changes and cultivate shared repertoires of resistance to Uber's management systems. Vasudevan and Chan (2022) further complicate binary framings of compliance versus resistance, showing how gamification simultaneously secures consent and generates subtle forms of selective non-compliance and mutual support. Lata (2025) highlights how Uber drivers in Dhaka develop context-specific resistance practices shaped by labour-market precarity and Bangladesh's regulatory environment. Rohit et al. (2025) similarly document "informal IT tactics" among cab drivers in Hyderabad, illustrating how workers cultivate technical competencies despite limited formal training. Collectively, these studies reveal that worker agency under algorithmic management is neither uniform nor static. Instead, it is constantly shaped by local working conditions, platform design, and the informal knowledge networks workers build to handle hidden control systems.

Finally, a related stream of research reframes worker strategy in terms of competency, engagement, and proactivity rather than overt resistance. Liu and Yin (2024) examine how algorithmic management shapes job crafting, showing that platform structures both enable and constrain proactive task reshaping depending on workers' interpretations and individual traits. Building on this perspective, Zhou et al. (2025b) operationalise "algorithmic competency" as a measurable skill set predicting engagement and performance, positioning workers as learners capable of mastering platform logics. For instance, Li et al. (2025) found that while transparency can enhance perceived fairness and trust, it may simultaneously increase awareness of algorithmic constraints, leading to reduced engagement. Extending this insight, Hu et al. (2024) introduced the concept of the "transparency-resistance paradox," showing that making algorithmic processes more visible can provoke resistance rather than compliance, as greater visibility renders control more contestable. These findings suggest that neither transparency nor algorithmic literacy operates as a straightforward managerial solution. Instead, both are "constant battlegrounds" where workers and platforms must continuously negotiate.

Other scholars have explored how algorithmic systems shape consent and constrain autonomy. Cameron (2024) argued that algorithmic management manufactures compliance through "constant and confined choices," structuring decision-making in ways that limit perceived alternatives without overt coercion. Similarly, Muldoon and Raekstad (2023) conceptualised algorithmic management as a novel form of domination, drawing on republican political theory to show that algorithms can exercise arbitrary power over workers' lives, even in the absence of direct force. Complementing these analyses, Duggan et al. (2023) adopted a worker-centred perspective, examining how app-based workers experience algorithmic governance across multiple dimensions, including transparency, fairness, and accountability, providing a practical foundation for normative evaluation. Finally, Adekoya et al. (2025) highlighted the career and employment implications of algorithmic management in the Nigerian gig economy, demonstrating that algorithmic governance can shape workers' career trajectories and employment security, an area that remains underexplored in the broader literature on worker-centric approaches.

Research Methodology

This study employs a systematic bibliometric review to map the intellectual structure of research concerning worker experiences, interpretations, and responses to algorithmic management within the gig and platform work context. Bibliometric analysis offers a quantitative approach to assess the evolution, impact and thematic composition of a research field (Aria & Cuccurullo, 2017; Öztürk et al., 2024).

The data for this study were retrieved from the Scopus database, a comprehensive source of peer-reviewed literature. The search was conducted on January 30, 2026, to capture relevant publications up to that date. The following search string in Figure 1 was used to identify articles focusing on algorithmic management in the gig and platform economy:

```
TITLE-ABS-KEY( (“Gig Workers” OR “Platform Workers” OR “Gig Economy” OR “Platform Economy”) AND “Algorithmic Management” )
AND PUBYEAR > 2015 AND PUBYEAR < 2026
AND (SUBJAREA(“SOCI”) OR SUBJAREA(“BUSI”) OR SUBJAREA(“ECON”) OR SUBJAREA(“PSYC”))
AND DOCTYPE(“ar” OR “rev” OR “ch”) AND LANGUAGE(“English”)
```

Figure 1: The Search Strings

This search string was designed to identify publications that specifically mention “Gig Workers”, “Platform Workers”, “Gig Economy” or “Platform Economy” in conjunction with “Algorithmic Management.” The search was limited to publications from 2016 to 2025 to focus on the contemporary literature. Additionally, the search was refined to include articles in the subject areas of sociology (“SOCI”), business (“BUSI”), economics (“ECON”) and psychology (“PSYC”) and to include document types such as articles (“ar”), reviews (“rev”) and book chapters (“ch”) written in English.

From an initial pool of 159 records, a rigorous two-stage screening was conducted. Inclusion criteria comprised peer-reviewed English publications (2019–2025) addressing algorithmic systems and labour in digital platforms within sociology, business, economics, or psychology. Studies lacking relevance, non-English works, and non-qualifying document types were systematically excluded after full-text assessment procedures.

The bibliometric analysis was conducted using the Biblioshiny package in R (Aria & Cuccurullo, 2017; Öztürk et al., 2024). Techniques included co-occurrence clustering, thematic mapping, and temporal evolution analysis, enabling identification of keyword patterns, structures and trends, offering insight into thematic development, authorship dynamics, and research trajectories in algorithmic management.

Results

This section presents the findings of the bibliometric analysis, with interpretation focused on themes relevant to worker experiences, interpretations, and strategies pertaining to algorithmic management in the gig and platform economy. The analysis encompasses descriptive statistics, temporal trends, citation patterns, author and institutional productivity, country-level analysis, and keyword analysis.

The structural attributes of the analysed article collection are summarised in Table 1. The final corpus for this study comprised 72 peer-reviewed articles published between 2019 and 2025, originating from 48 sources. The compound annual growth rate of 74.26% indicates rapidly expanding scholarly attention to algorithmic management, with a notable acceleration in worker-centric research in recent years. The average age of the documents was 2.47 years, and on average, each article received an average of 57.47 citations per article.

In terms of content, the dataset included 172 “Keywords Plus” (ID) and 276 author-assigned keywords (DE). The authorship pool comprised 168 individuals, of whom 18 had published independently. Collaboration was common, with an average of 2.71 co-authors per document and 31.94% of articles involving international co-authorship.

Table 1
Descriptive Statistics of the Bibliometric Dataset

Category	Metric	Results
Main information	Timespan	2019 – 2025
	Sources (journals, books, etc)	48
	Total documents	72
	Annual growth rate (%)	74.26
	Mean document age (years)	2.47
	Mean citations per document	57.47
Document Content	Keywords Plus (ID)	172
	Author-assigned keywords (DE)	276
Authorship	Unique authors	168
	Single-authored documents	18
	Average co-authors per document	2.71
	International co-authorships (%)	31.94
Document Type	Articles	72

As illustrated in Figure 2, publication output increased steadily from 1 article in 2019 to 28 in 2025, with a notable surge post-2023. This acceleration corresponds to the interpretive turn in algorithmic management scholarship, as researchers increasingly moved from describing algorithmic systems to examining how workers experience and respond to them. The 2024-2025 publications (43 of 72 total articles, or 60%) disproportionately focus on worker perspectives, emotional responses, and coping strategies, reflecting the field's maturation toward worker-centric and human-centric concerns.

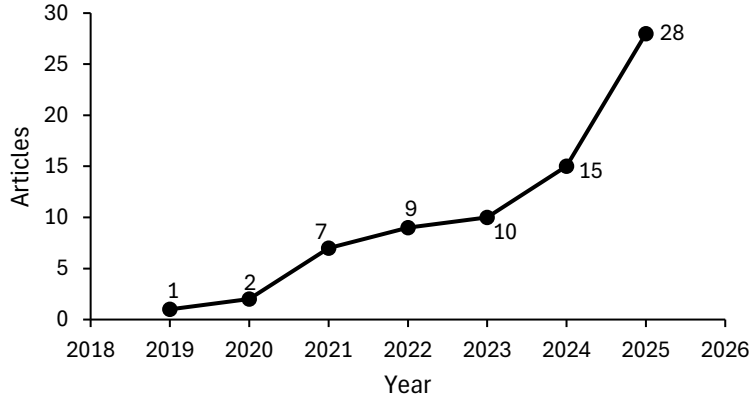

Figure 2: Annual Publication Output

Annual citation metrics (Table 2) indicate that publications from 2019 to 2021 have accumulated the highest citation counts, underscoring their role in establishing the algorithmic control paradigm. The single article published in 2019 (Wood et al., 2019) received 1,436 total citations, confirming its status as a seminal contribution that shaped the field's early focus on algorithmic control and worker autonomy. For this article, the MeanTCperArt, calculated as total citations divided by the number of documents, was 1,436.00. The MeanTCperYear, calculated as total citations divided by the number of citable years, was 179.50 across eight citable years. Citable years are computed as 2025 minus the

publication year plus one, representing the number of years from publication through 2025 (CitableYears = 2025 − publication year + 1).

Following this foundational phase, the field entered a period of rapid expansion. While the number of publications increased steadily (from 2 in 2020 to 28 in 2025), the MeanTCperArt declined to 3.14 in 2025. This downward trend primarily reflects the recency of newer publications, which have had less time to accumulate citations. Nevertheless, total annual citation counts remained substantial (e.g., MeanTCperYear *of* 334.50 in 2020 and 119.71 in 2021), indicating sustained scholarly engagement with the field's foundational contributions. The lower MeanTCperArt and MeanTCperYear values observed in 2024–2025 are therefore more likely attributable to a limited citation window than to diminished research impact, a pattern consistent with standard bibliometric expectations for recently published work.

Table 2
Annual Citation Metrics

Year	N	MeanTCperArt	MeanTCperYear	CitableYears
2019	1	1,436.00	179.50	8
2020	2	334.50	47.79	7
2021	7	119.71	19.95	6
2022	9	36.89	7.38	5
2023	10	47.50	11.88	4
2024	15	20.00	6.67	3
2025	28	3.14	1.57	2

In addition to examining overall citation trends, it is also important to identify the most influential individual publications within the corpus.

Wood et al. (2019) and Veen et al. (2020), identified as seminal works on algorithmic control and worker autonomy, established the foundational understanding of how algorithmic systems constrain worker discretion and agency. These studies remain highly cited, with 1,436 and 508 total citations, respectively, as they articulated the control paradigm upon which subsequent worker-centric research has built, extended, and critically engaged. Their normalised TC scores (1.00 and 1.52) further indicate sustained influence consistent with field expectations.

Building on the evolving understanding of worker experiences under algorithmic management, Möhlmann et al. (2021) achieved a normalised TC of 3.02, reflecting exceptional influence for their conceptualisation of algorithmic management as the intersection of matching and control functions on online labour platforms. Complementing this contribution, Bucher et al. (2021) (normalised TC 1.77) introduced the concept of "anticipatory compliance," highlighting how algorithmic control operates through workers' internalised expectations of algorithmic evaluation, effectively extending platform governance into workers' cognitive and behavioural routines. More recently, Popan (2024) attained the highest normalised TC score (3.30) among top-cited papers, drawing rapidly growing attention to the embodied worker experience in food delivery, and showing how

algorithmic management shapes both economic outcomes and the physical realities of urban labour.

Recent scholarship has increasingly focused on how algorithmic management shapes worker agency and consent. For example, Cameron (2024) (normalised TC 3.20) investigates how algorithmic systems manufacture consent through "constant and confined choices," highlighting the erosion of agency within seemingly flexible work arrangements. Complementing this perspective, Vasudevan and Chan (2022) (normalised TC 1.71) provide an explicit analysis of consent and resistance among Uber drivers, showing how gamification, both secures compliance and simultaneously creates opportunities for worker contestation. Despite their recent publication, these studies demonstrate high normalised citation scores, reflecting strong scholarly engagement with questions of worker agency and strategic response. When considered alongside foundational and highly cited studies, the pattern of normalised TC scores suggests a clear intellectual trajectory: early work established the control paradigm, while more recent research emphasises worker interpretations (Möhlmann et al., 2021), embodied experiences (Popan, 2024), and agency dynamics (Cameron, 2024). Together, these contributions indicate that the current frontier of algorithmic management research is increasingly concerned with understanding the human dimension of algorithmic governance.

Galière (2020) and McDonnell et al. (2021), with lower normalised TC scores of 0.48 and 0.53 respectively, suggest that their citation counts are largely attributable to field- or time-related factors rather than exceptional relative influence. This pattern showcases the importance of using normalised metrics to distinguish between cumulative visibility and true scholarly impact (Aria & Cuccurullo, 2017).

Among the most productive authors (Table 3), several have made particularly significant contributions to worker-centric scholarship. Bucher EL (3 articles, fractionalised 0.92) has advanced understanding of anticipatory compliance and worker reactions. Carbery R and McDonnell A (3 articles each) have contributed extensively to understanding technologically mediated HRM and worker experiences. Notably, authors such as Cameron LD (fractionalised 1.33), Chan N (1.50), and Galière S (1.50) show high fractionalised output, reflecting substantial engagement with worker-focused qualitative research that often requires intensive, single-authored or small-team investigation of worker experiences.

Table 3
Most Productive Authors by Whole-Count and Fractionalised Publication Output

Authors	Articles	Fractionalised Output
Bucher EL	3	0.92
Carbery R	3	0.75
Lu Y	3	0.70
McDonnell A	3	0.75
Sherman UP	3	0.75
Cameron LD	2	1.33
Chan N	2	1.50
Duggan J	2	0.50
Free C	2	0.83
Galière S	2	1.50
Hu P	2	0.50
Huang H	2	2.00
Huang X	2	0.40
Lei X	2	0.40
Li Y	2	0.45
McDaid E	2	0.83
Mittal A	2	0.67
Schou PK	2	0.58
Waldkirch M	2	0.58
Wang Y	2	0.45
Yang MM	2	0.45
Zhou L	2	0.40

Note: Fractionalised output = $\Sigma(1/k)$ per document, where k = number of authors. Only authors with at least 2 publications are listed.

At the institutional level (Table 4), Cork University Business School (CUBS), Macquarie Business School, and Université Laval lead in publication output. These institutions host research groups with demonstrated expertise in labour process theory, critical management studies, and worker experience research, positioning them as hubs for worker-centric scholarship on algorithmic management. Twelve additional institutions contributed two documents each, including Anhui Agricultural University, China Medical University and The University of Sydney Business School. The remaining 64 affiliations each contributed a single document, reflecting a research landscape characterised by a small core of highly active institutions supported by a broad network of occasional contributors.

Table 4
Most Productive Affiliations

Affiliation	Documents
Cork University Business School (CUBS)	3
Macquarie Business School	3
Université Laval	3
Anhui Agricultural University	2
China Medical University	2
Chinese University of Hong Kong	2
Chitkara University	2
EBS Universität für Wirtschaft und Recht	2
ECUST School of Business	2
Guangdong University of Technology	2
Huazhong University of Science and Technology	2
National Taiwan University	2
NHH Norwegian School of Economics	2
The University of Sydney Business School	2

Note: The corpus includes 78 unique affiliations. The 14 listed above contributed at least 2 documents; the remaining 64 institutions each contributed one document.

Country-level citation analysis (Table 5) reveals that the United Kingdom (1,690 total citations; 241.40 average per article), Australia (511; 170.30), and Norway (212; 212.00) lead in per-article impact. These Anglophone and Nordic nations host research traditions particularly attentive to worker perspectives, labour process theory, and critical analysis of platform work. The high average citations per article suggest that scholarship emerging from these contexts has been particularly influential in shaping the field's understanding of how workers experience algorithmic management.

In contrast, China and the United States contribute the largest publication volumes (199 and 183 total citations, respectively) but exhibit lower per-article averages (13.30 and 22.90). This pattern may reflect these countries' higher absolute output of diverse scholarship, including both worker-centric and technically oriented studies, rather than a lack of influential worker-focused research.

Table 5
Most Cited Countries by Total Citations and Average Citations Per Article

Country	Total Citations	Average Citations per Article
United Kingdom	1,690	241.40
Australia	511	170.30
Norway	212	212.00
Ireland	207	69.00
China	199	13.30
USA	183	22.90
France	165	82.50
Italy	90	22.50
Brazil	56	28.00
Netherlands	38	38.00
Hong Kong	32	32.00
Canada	11	5.50
India	11	3.70
Denmark	10	10.00
Germany	4	1.30
Iceland	4	4.00
Sweden	2	2.00
Korea	1	1.00

Note: Total citations reflect all cited-by counts in the corpus (72 articles).

Beyond country-level citations, international co-authorship patterns reveal collaboration structures in algorithmic management research. Table 6 shows networks linking countries, with notable ties such as Australia–Ireland and Germany–Norway, indicating transnational focus on worker experiences. China's collaborations with Australia and the USA reflect growing integration of Asian scholarship, while partnerships involving the USA, UK, Brazil, Canada, and India demonstrate transcontinental engagement. Dense European linkages and emerging Asia-Pacific connections are evident. However, collaboration remains concentrated among high-productivity nations, with limited participation from lower-output countries, indicating a globally distributed yet structurally anchored research network. This pattern underscores unequal access to collaborative resources and visibility.

Table 6
Global Collaboration Network Among Countries

From	To	Frequency
Australia	Ireland	3
China	Australia	2
China	USA	2
China	India	1
Germany	Norway	2
Germany	Netherlands	1
Germany	Romania	1
Germany	Sweden	1
Italy	Belgium	1
Norway	Denmark	1
Norway	Sweden	1
UK	Brazil	1
UK	Iran	1
UK	Netherlands	1
USA	Canada	1
USA	Germany	1
USA	Hong Kong	1
USA	India	1
USA	Israel	1
USA	Italy	1

The tripartite network (Figure 3) visualises linkages among authors, keywords, and countries, highlighting structural and thematic relationships. Three clusters emerge: algorithmic governance, platform labour, and institutional dynamics. The United Kingdom, China, and the United States act as central hubs. Authors such as Huang H, Duggan J, and Carbery R demonstrate high betweenness centrality, bridging themes and regions. Overall, the field appears both thematically integrated and globally distributed, with key scholars facilitating cross-regional and interdisciplinary knowledge exchange.

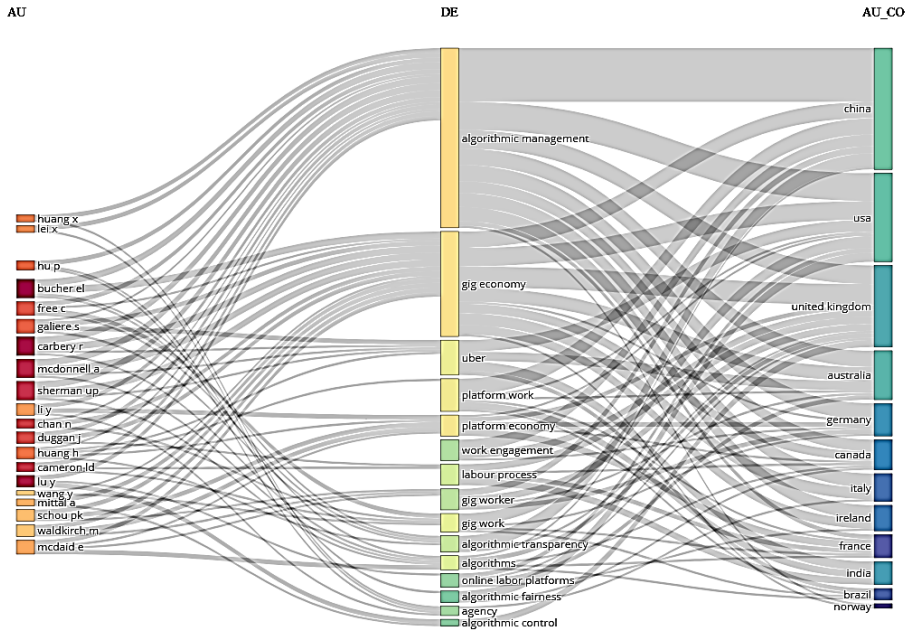

Figure 3: Tripartite Author–Keyword–Country Network

Author-assigned keywords (Table 7) reveal the field's evolving conceptual structure. Dominant terms such as "algorithmic management" and "gig economy" continue to anchor the literature, yet secondary keywords indicate a shift toward human and experiential dimensions. Terms like "gig worker" and "work engagement" emphasise worker subjectivity and psychological outcomes. The inclusion of "agency" highlights ongoing interest in autonomy, resistance, and adaptation, while "algorithmic transparency" reflects governance concerns around fairness and accountability. Additionally, "labour process" signals the continued relevance of critical perspectives. Collectively, these patterns demonstrate a transition toward analysing worker agency and structural power relations.

Table 7

Author-Assigned Keywords with Frequency At Least 3 (N = 13), Ranked by Occurrence

Keyword	**Frequency**	**% of Total Keywords**
algorithmic management	47	17.03%
gig economy	32	11.59%
platform economy	10	3.62%
platform work	9	3.26%
uber	8	2.90%
gig work	6	2.17%
labour process	5	1.81%
algorithms	5	1.81%
algorithmic transparency	4	1.45%
gig worker	4	1.45%
work engagement	4	1.45%
agency	3	1.09%
online labour platforms	3	1.09%

Note: Keyword occurrences = 276

The thematic map (Figure 4) elucidates the intellectual structure of the field from a worker-centric perspective. The dominant cluster—"algorithms, algorithmic management, and workers"—occupies the high-relevance quadrant, underscoring the centrality of the worker–algorithm relationship in shaping scholarly inquiry. Another cluster, "working conditions, logistics, and service sector," appears as a well-developed yet specialised niche, highlighting sector-specific analyses of material labour contexts. The positioning of "digitization" within the basic themes quadrant indicates its foundational but secondary role, suggesting a shift beyond technological determinism toward examining worker experiences. Importantly, terms such as "job stress" and "reward," located within the emerging or declining quadrant, signal the growing importance of psychological and motivational dimensions. This pattern suggests that worker well-being, engagement, and career-related outcomes represent evolving frontiers in the literature.

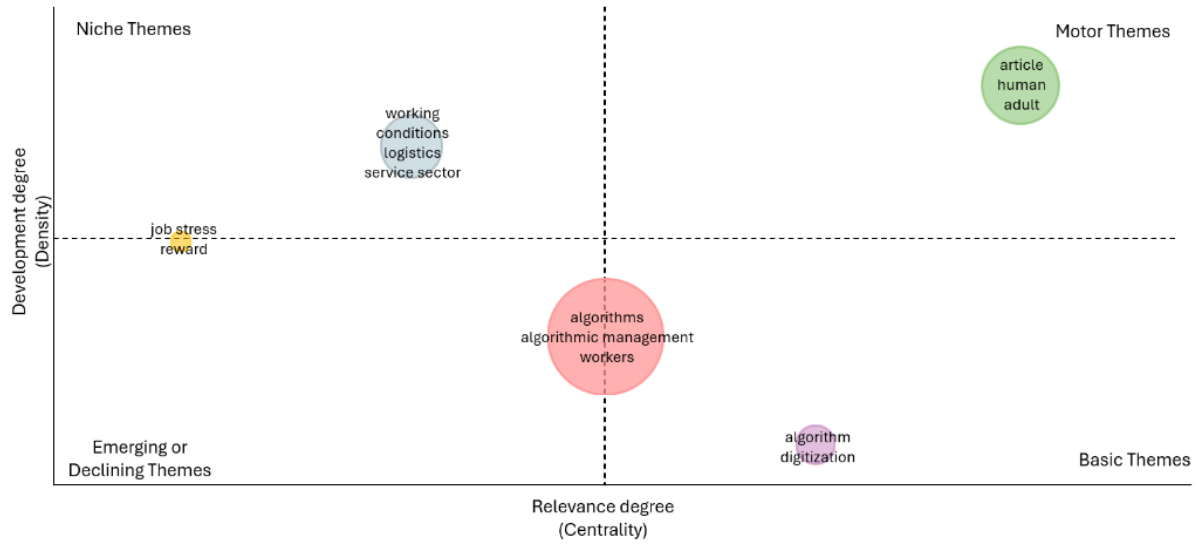

Figure 4: Thematic Map of Author-Assigned Keywords

Discussion

The analysis reveals that algorithmic management scholarship has evolved through distinct but overlapping phases in its attention to worker experiences. The control paradigm, established by foundational works (Wood et al., 2019; Veen et al., 2020), articulated how algorithmic systems constrain worker autonomy and intensify labour extraction. This paradigm remains influential, providing the theoretical foundation for subsequent worker-centric research.

The interpretive turn represents a crucial theoretical advance, moving beyond describing control mechanisms to examining how workers make sense of and emotionally respond to algorithmic governance. Keywords such as "work engagement" and the prominence of works examining anticipatory compliance (Bucher et al., 2021), algorithmic paranoia (Alačovska et al., 2025), and embodied experience (Popan, 2024) signal the field's growing attention to cognitive, emotional, and bodily dimensions of worker experience. This interpretive turn recognises that algorithmic management operates not merely through external constraints but through workers' internalised understandings, expectations, and affective responses.

The agency and strategy cluster represents the most dynamic frontier of worker-centric scholarship. Research examining how workers resist, strategically navigate, and proactively shape their engagement with algorithmic systems (Celentano, 2025; Vasudevan & Chan, 2022; Öborn et al., 2025) reveals that workers are not passive subjects but active interpreters and agents. However, as Celentano (2025) cautions, these individual coping strategies often operate within tightly constrained parameters, highlighting the structural asymmetries that limit worker agency even as workers exercise it.

The keyword analysis reveals important gaps that point toward future research frontiers. While "work engagement" appears with moderate frequency (4 occurrences), terms related to career development, human capital, and sustainable livelihoods are notably absent from high-frequency keywords. This gap suggests that existing worker-centric scholarship has focused primarily on immediate experiences and short-term outcomes rather than long-term career trajectories. Adekoya et al. (2025) represent a notable exception in their examination of algorithmic governance and career trajectories in the Nigerian gig economy. Future research should examine how algorithmic management impacts workers' ability to build sustainable careers, accumulate portable skills, and transition between platforms or into traditional employment.

The absence of organisational alignment as a keyword indicates an underexplored conceptual space. Alignment can be understood bidirectionally: how workers align their behaviours, identities, and aspirations with platform requirements, and how platforms might align their practices with worker well-being and dignity. Indeed, Cameron's (2024) notion of "constant and confined choices" implies a form of enforced alignment that falls short of genuine mutual accommodation. Research examining alignment as a negotiated, dynamic process could open new avenues for designing algorithmic systems that support rather than undermine worker agency.

The presence of "algorithmic transparency" among the most frequent keywords (4 occurrences) signals growing attention to workers' demands for explainable, accountable algorithmic systems. This theme connects directly to normative and policy-oriented research agendas, suggesting that future scholarship should examine not only how workers interpret existing algorithms but also how algorithmic transparency can be operationalised, what forms of transparency workers find meaningful, and how transparency relates to broader questions of algorithmic fairness and worker dignity. Critically, Hu et al.’s (2024) transparency-resistance paradox cautions that increasing algorithmic visibility does not guarantee worker acceptance, but can instead intensify contestation, a dynamic that any normative agenda for transparency must reconcile.

This bibliometric analysis yields several important implications for understanding how gig workers experience algorithmic HRM. First, the findings confirm that worker interpretations are central to algorithmic governance. The prominence of the "algorithms-algorithmic management-workers" triad in the thematic map indicates that scholarly understanding of algorithmic systems is fundamentally mediated through analysis of worker experiences. This recognition carries significant theoretical implications: algorithmic management cannot be understood solely through analysis of technological architectures or platform business

models but requires sustained attention to how workers interpret, experience, and respond to these systems.

Second, the analysis reveals that worker reactions are diverse and context dependent. From anticipatory compliance to algorithmic paranoia, from individual workarounds to collective information sharing, workers' responses span cognitive, emotional, and behavioural dimensions. This diversity suggests that future research should avoid monolithic conceptions of "worker response" and instead examine how specific platform designs, labour market conditions, and worker characteristics shape varied response patterns.

Third, the identification of agency and resistance as emerging themes underscores that workers are not merely passive subjects of algorithmic control but active agents who develop strategies to navigate and sometimes contest algorithmic governance. However, as Celentano (2025) and Öborn et al. (2025) emphasise, worker agency is exercised within structural constraints that limit its transformative potential. Future research should examine the conditions under which individual coping strategies might aggregate into collective action or translate into demands for platform accountability.

The findings carry practical implications for platform operators, policymakers, and worker advocates. The growing scholarly attention to algorithmic transparency suggests that platforms should consider how to make their algorithmic systems more explainable and accountable to workers. As Li et al. (2025) and Hu et al. (2024) jointly indicate, however, transparency alone may not resolve power asymmetries. Nonetheless, it represents a necessary condition for workers to understand, potentially influence, and, when necessary, contest algorithmic decisions.

The gap in research on career development and human capital points to an urgent need for platforms, policymakers, and educators to consider how gig work can be structured to support workers' long-term employability and well-being. If platform work is to be sustainable rather than precarious, attention must shift from immediate task completion to workers' cumulative skill development and career trajectories.

The emphasis on worker agency and resistance in recent scholarship suggests that platforms should anticipate and seek to constructively accommodate worker strategies rather than attempting to suppress them. Designing algorithmic systems with built-in flexibility for worker discretion, opportunities for worker input, and mechanisms for appeal could begin to transform adversarial relationships into more collaborative forms of engagement.

Conclusion

This study offers a bibliometric synthesis of algorithmic management research, highlighting a clear intellectual progression. Early scholarship (2019–2021) established the foundational debates around algorithmic control and its implications for worker autonomy, followed by an interpretive phase (2021–2023) focusing on workers lived experiences and the psychological dimensions of platform governance. More recent work (2023–2025) increasingly emphasises worker agency, strategic responses, and workers’ engagement with algorithmic systems. Three core thematic clusters emerge: foundational studies on algorithmic control mechanisms, research on worker emotions and interpretations, and emerging analyses of

resistance and coping strategies. Geographically, the United Kingdom, Australia, and Nordic countries lead in high-impact contributions, supported by strong international collaboration networks. Keyword and thematic analyses confirm that while “algorithmic management” remains central, the field has shifted toward worker-centric constructs such as agency, work engagement, gig workers, and algorithmic transparency.

Despite these advances, several significant gaps remain. Existing research predominantly captures short-term perceptions, limiting our understanding of long-term outcomes such as career development, skill accumulation, and labour mobility, as Adekoya et al. (2025) have begun to address in the Nigerian context. Future studies should conceptualise worker-platform relations as negotiated and dynamic processes rather than assuming passive adaptation, with frameworks that integrate both structural constraints and workers' agentic capacities being particularly valuable. There is also a pressing need for comparative research across different institutional and cultural contexts, particularly in the Global South, where regulatory environments, labour-market precarity, and platform architectures may configure algorithmic governance in materially distinct ways. While individual resistance strategies are increasingly documented, limited attention has been given to how such strategies evolve into collective action or are shaped by broader labour relations and institutional conditions. Furthermore, research on algorithmic transparency should move beyond documenting worker perceptions and assess whether it genuinely enhances worker participation and influence.

From an HRM perspective, algorithmic management functions as a governance regime with real consequences for worker wellbeing, fairness, and employment security. Achieving more equitable platform work requires operators to embed procedural and interactional justice into system design, ensuring workers have meaningful recourse, clear feedback, and genuine input into performance criteria. Policymakers, meanwhile, must address the structural asymmetries inherent in algorithmic governance as these systems continue to expand across sectors and labour markets.

Several limitations should be noted. The analysis is restricted to Scopus-indexed, English-language publications, potentially omitting conceptually relevant studies published in other languages or indexed in alternative databases such as Web of Science or Google Scholar. Reliance on author-assigned keywords may constrain conceptual depth, and bibliometric methods prioritise quantitative patterns over qualitative insight, which may obscure nuanced theoretical contributions that resist keyword capture. Future research should combine bibliometric approaches with qualitative and systematic synthesis to deepen understanding and inform more equitable, worker-centred algorithmic management practices.

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