International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
Vol. 14, Issue 11, CONFLUENCE - 2026

From Algorithmic Governance to Worker Well-Being: A bibliometeric and Causal Layered Analysis of the Gig Economy Literature.

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Abstract

The gig economy has become an important part of the changing world of work. People now earn their income through platforms such as food delivery, ride-hailing, online services and other app-based jobs. These platforms offer flexibility, but they also change how workers receive tasks, earn money and interact with the organisation. In many cases, these decisions are influenced by algorithms rather than direct interaction with a manager. This has raised questions about job security, income, work pressure, stress and the overall well-being of gig workers.

This paper looks at how research on the gig economy has developed over time and what researchers have mainly focused on. A total of 1,312 research papers published in Scopus-indexed sources between 2011 and 2026 were examined. Bibliometric analysis is used to identify publication trends, frequently studied topics, influential publications, major contributors and connections between different areas of research. The analysis also helps to understand how attention in this field has changed, particularly from general discussions about the gig economy towards issues such as algorithmic management, platform control, worker vulnerability and well-being.

The study then uses Causal Layered Analysis (CLA) to look beyond the visible research themes. It considers four levels: the problems that are commonly discussed, the systems that create or influence these problems, the beliefs and ideas behind those systems, and the deeper stories or assumptions about gig work.

Bringing these two approaches together provides a broader understanding of the gig economy. It shows not only what has been studied, but also how the way researchers understand platform work has changed. The analysis can help identify areas that need greater attention, especially the relationship between algorithmic governance and the psychological well-being of gig workers.

Keywords: Gig Economy, Gig Workers, Algorithmic Governance, Platform Work, Worker Well-Being, Bibliometric Analysis, Causal Layered Analysis

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1. INTRODUCTION

Platform work has become a familiar part of everyday life. A person may order a meal, book a ride or hire someone for an online task through an app, while the worker receives instructions and feedback through the same system. These arrangements create opportunities to earn money without following a conventional work schedule. Yet the platform may also decide which tasks a worker sees, how performance is measured and whether the worker receives future opportunities. The central question is not simply whether apps make work easier to organise, but how they change the relationship between workers and the organisations that depend on them (Wood et al., 2019).

Algorithms can match customers with workers, rank performance, set incentives and monitor how tasks are completed. This can help platforms coordinate a large workforce, often across different locations. But workers may not know why one task was offered rather than another, how a rating affects future work or how to challenge a decision. Research on algorithmic management describes this overlap between allocating work and controlling it (Möhlmann et al., 2021; Jarrahi et al., 2021).

The effects matter for human capital and the future of work. Workers are not only units of labour that a system can allocate; they have financial responsibilities, health needs and expectations of fair treatment. Research on platform work has described the mixed experience of autonomy and insecurity, including irregular hours and limited control over the rules of work (Gandini, 2019; Wood et al., 2019). The psychological consequences may vary by occupation, platform design, worker circumstances and the support available.

This paper examines the published research rather than collecting new survey responses from gig workers. Bibliometric analysis is used to describe the literature recorded in the supplied Scopus export. Causal Layered Analysis (CLA) is then used to interpret the ideas that sit behind the visible themes. Bibliometrics can show what researchers publish and the terms they use; CLA asks what systems, beliefs and deeper stories may shape how a problem is understood (Aria & Cuccurullo, 2017; Inayatullah, 1998).

1.1 Aim and research questions

The aim is to map the development of gig-economy research and explore how the literature frames algorithmic governance and worker well-being.

- How has publication activity changed across the years represented in the dataset?
- Which keywords, publication sources and authors are prominent in the supplied records?
- How does the literature connect platform work with algorithmic management, control and worker well-being?
- What deeper systems, beliefs and stories about gig work can be explored through CLA?

2. REVIEW OF LITERATURE

2.1 Flexibility does not always mean control

The promise of gig work is often expressed in terms of independence. Workers may choose when to log in, decide whether to accept a task or combine platform work with other responsibilities. These options can be valuable, especially when conventional jobs are

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difficult to access. However, the ability to choose working hours does not necessarily mean that workers control the rate of pay, the supply of tasks or the rules used to assess their performance. Wood et al. (2019) describe this tension as a mixture of autonomy and algorithmic control. Gandini (2019) similarly argues that labour process theory remains useful for understanding control in digital work, even when a traditional supervisor is not physically present.

The distinction is important because flexibility can be experienced differently by workers. Someone using a platform for occasional income may value the freedom to log in at selected times. Someone relying on it as the main source of household income may have to remain available during busy periods, even when the actual earnings are uncertain. A single description of gig work therefore risks hiding differences in workers' dependence on the platform.

2.2 Algorithmic governance and management

In this paper, algorithmic governance refers to the rules and data-driven decisions through which platforms organise work and influence workers' opportunities. Algorithmic management is a closely related term for the practical use of automated systems to allocate, monitor and evaluate work. These systems may set performance targets, use customer ratings, calculate incentives or restrict access to tasks. Möhlmann et al. (2021) explain that the algorithm can act both as a matching tool and as a means of control. Jarrahi et al. (2021) also place algorithmic management within the wider social and organisational setting in which people use and respond to technology.

The issue is not that every automated decision is unfair. Algorithms may help handle large volumes of requests and apply rules consistently. The difficulty arises when the rules are unclear, the information used is inaccurate, or workers cannot challenge a decision that affects their livelihood. Transparency and accountability are therefore important parts of the discussion about digital leadership.

2.3 Worker well-being in platform work

Worker well-being covers psychological experiences such as stress, security, dignity, autonomy and the ability to balance work with life outside work. These experiences may be affected when income changes unexpectedly, ratings carry serious consequences or a worker feels unable to question the platform. Studies of gig work have also examined identity, social connection and the emotional demands of insecure work (Petriglieri et al., 2019; Wood et al., 2019).

Well-being should not be treated as a problem that workers alone must solve through resilience. Platform rules, payment systems, working-time expectations and access to support can shape the conditions in which people make decisions. A worker may need digital skills to navigate an app, but skills cannot by themselves correct an opaque rating system or unpredictable access to tasks.

2.4 Why use bibliometrics and CLA together?

Bibliometric analysis uses publication metadata to examine patterns across a large body of research. It can show how publication output changes, which sources and authors are

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active, and which keywords appear together. The Bibliometrix package and its Biblioshiny interface provide tools for this kind of science mapping (Aria & Cuccurullo, 2017). Donthu et al. (2021) note that bibliometric techniques can help researchers organise a growing field, although the results still require interpretation.

CLA adds an interpretive layer. Inayatullah (1998) describes four levels: litany, systemic causes, worldview or discourse, and myth or metaphor. The first is concerned with visible problems; the second with the structures that help produce them; the third with the beliefs that make those structures appear normal; and the fourth with the deeper stories that influence public understanding. CLA is not a statistical method for proving cause and effect. Here, it is used to examine the assumptions that may sit behind recurring themes in the literature.

3. METHODOLOGY

3.1 Dataset and scope

The study uses the supplied Scopus export containing 1,312 records and 33 bibliographic fields, including publication year, title, authors, source title, citations, DOI, affiliations, abstract and author keywords. The file identifies the records as journal articles and includes publications dated from 2011 to 2026. The accompanying Biblioshiny summary reports 626 publication sources, 2,719 authors, an average of 2.71 co-authors per document and an average of 31.76 citations per document.

The accompanying sample paper was used as a guide for the order of the sections and the use of tables and figures. The charts in this document were generated from the supplied CSV so that the visualisations correspond to the export. Since the CSV does not include a cited-references field, reference-based co-citation analysis could not be reconstructed independently from the raw file. The study therefore focuses on annual output, source and author counts, author-keyword frequencies and a keyword co-occurrence network.

3.2 Bibliometric steps

The analysis first reviewed the overall dataset, then counted records by publication year, source title and author. Author keywords were separated at the semicolon delimiter and counted as recorded in the export. A co-occurrence network was built by linking keywords that appeared in the same record; only frequently occurring keywords were retained for the displayed map. Keyword spelling and singular/plural variations can affect these counts, so they should be read as patterns in the supplied metadata rather than exact measures of the importance of a topic.

The annual counts need particular care. The dataset has gaps in its year coverage, and 2026 is not a completed publication year. As a result, the annual chart shows the shape of this export, not a complete census of all gig-economy publications. The dataset's reported growth rate is also affected by the years included.

3.3 CLA procedure

After reviewing the bibliometric outputs, the recurring ideas were interpreted through the four CLA layers. Visible concerns such as ratings, task allocation, irregular income and stress were considered at the litany level. The analysis then looked at platform rules and

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International Journal of Engineering Research & Technology (IJERT)
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Vol. 14, Issue 11, CONFLUENCE - 2026

employment arrangements, the beliefs associated with flexibility and efficiency, and the stories used to describe the worker-platform relationship. This is a theory-informed interpretation of the themes, not a systematic coding of every full-text article and not a claim that the dataset demonstrates causal effects.

4. BIBLIOMETRIC FINDINGS

4.1 Publication activity

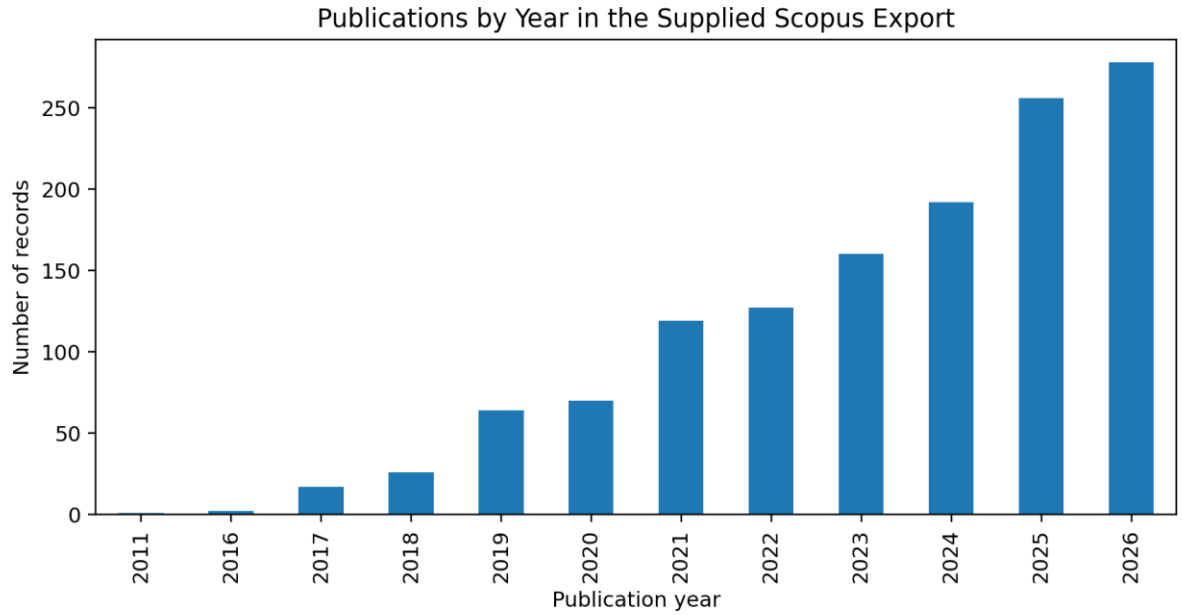


Figure 1. Annual publication counts in the supplied Scopus export.

The annual distribution shows that the dataset contains more records in recent years than in the earliest years represented. The rise is especially visible from 2019 onwards. This is consistent with the increased attention paid to app-based work and the ways platforms organise labour, but the chart must be interpreted in light of missing years and the incomplete 2026 period. It would be inaccurate to conclude from this export alone that no relevant research appeared in years with no records.

Publication year	Records in export
2011	1
2016	2
2017	17
2018	26
2019	64
2020	70
2021	119
2022	127
2023	160
2024	192
2025	256

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International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
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2026	278

4.2 Publication sources and contributors

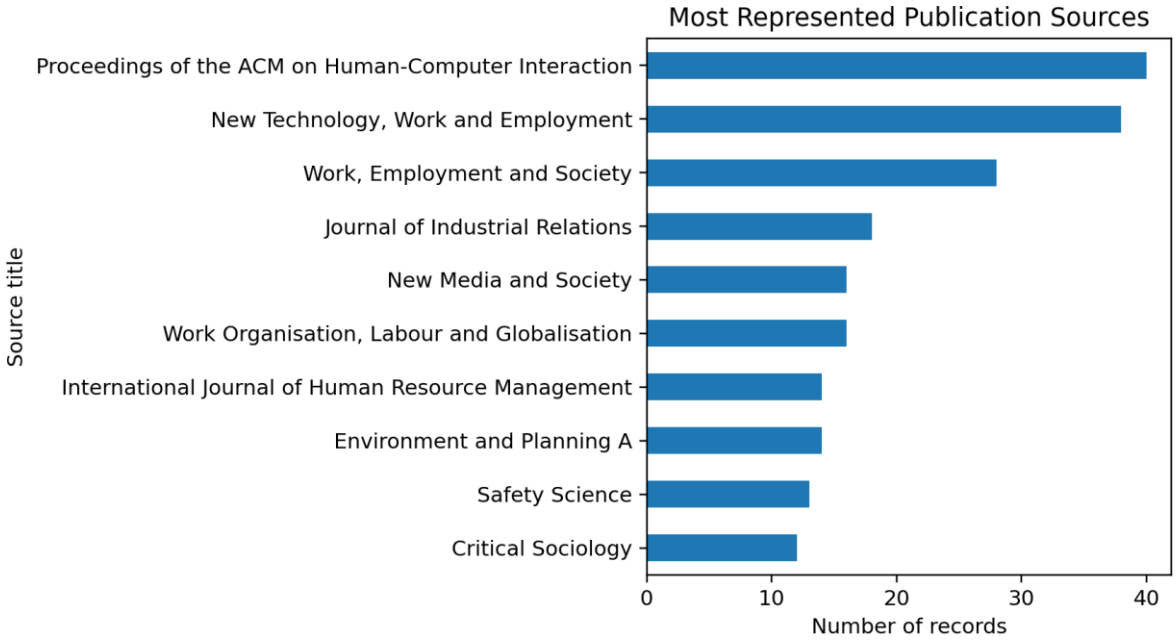


Figure 2. Ten publication sources with the most records in the export.

The source distribution indicates that the topic is spread across several disciplines rather than contained within one management journal. The supplied export includes journals focused on employment relations, sociology, human-computer interaction, information systems and work organisation. This range makes sense because algorithmic governance is at once a technological issue and a question about work, power and employment conditions.

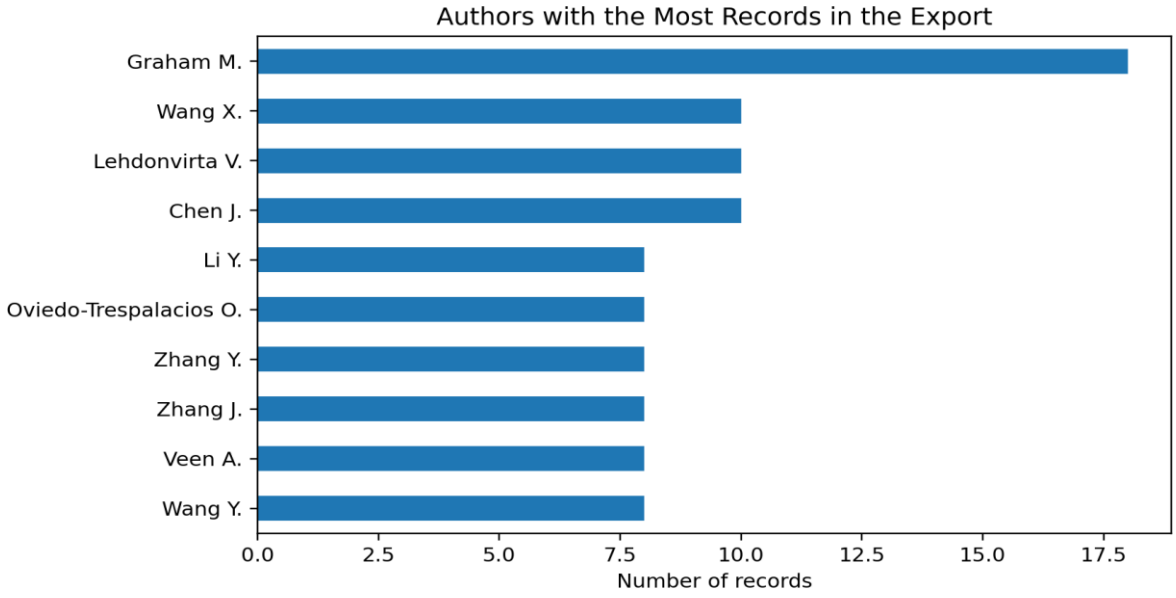


Figure 3. Authors appearing most frequently in the supplied export.

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Author counts identify who appears most often in this particular dataset, but they should not be read as a complete ranking of expertise or influence. Authors may publish under different name formats, and citation counts change over time. The Biblioshiny summary reports 2,719 authors and an average of 2.71 co-authors per document, suggesting that the field includes substantial team-based research.

4.3 Keyword patterns

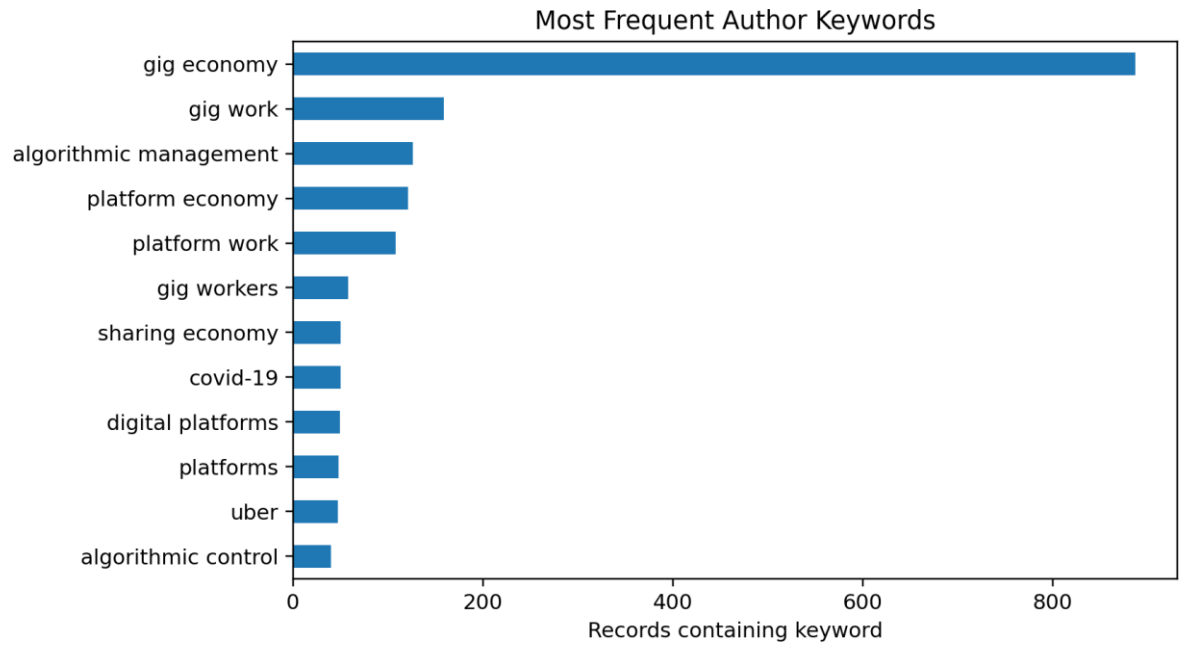


Figure 4. Most frequent author keywords in the supplied export.

Author keyword	Count
gig economy	887
gig work	159
algorithmic management	126
platform economy	121
platform work	108
gig workers	58
covid-19	50
sharing economy	50
digital platforms	49
platforms	48
uber	47
algorithmic control	40
food delivery	38
gender	32
precarity	29

The keyword list is led by “gig economy,” followed by terms such as “gig work,” “algorithmic management,” “platform economy” and “platform work.” The central subject is

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International Journal of Engineering Research & Technology (IJERT)
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therefore not simply digital technology. Researchers are also concerned with the way platforms organise labour and shape workers' options. Terms linked to control, precarity, flexibility, food delivery, gender and digital labour indicate that the field includes both the design of platform systems and the conditions under which people work.

4.4 Keyword co-occurrence map

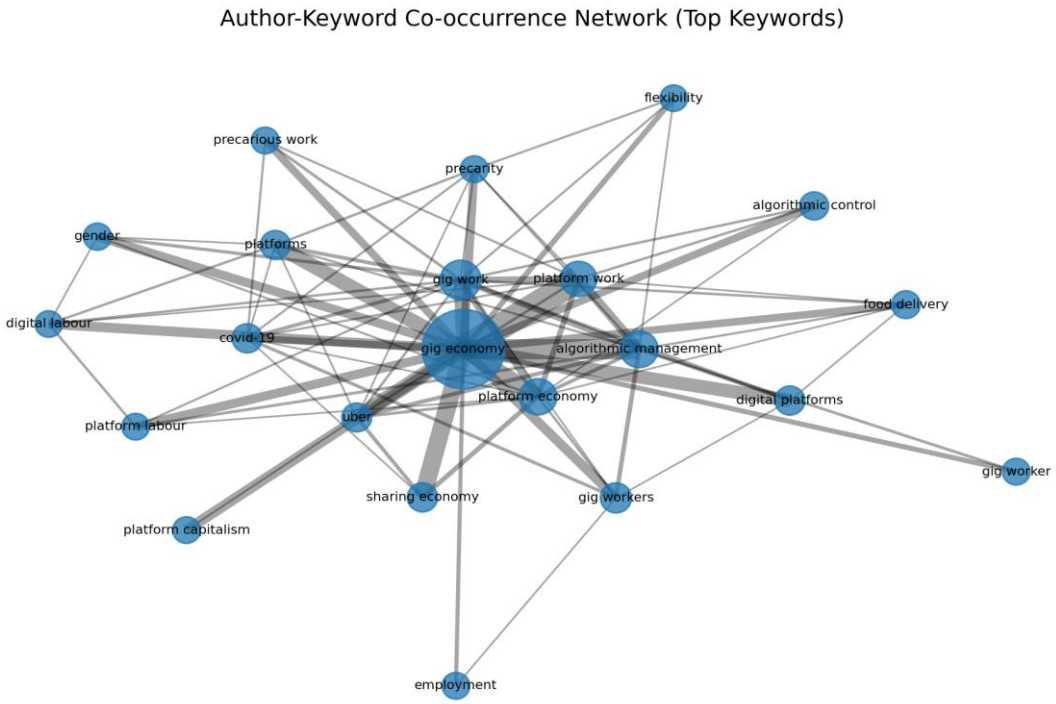


Figure 5. Co-occurrence network for frequently used author keywords. Links represent keywords appearing in the same record.

In the network, keywords that appear together are connected. The map offers a view of which concepts are discussed alongside one another in the same publications. The prominent gig-economy and platform-work terms sit near related concepts about algorithmic management and control. This supports the interpretation that platform work is studied as a relationship between technology, work organisation and worker experience. A co-occurrence link does not prove that one concept causes another; it only indicates that the terms appear together in the records.

4.5 Main patterns at a glance

Indicator	What the supplied data show	How to interpret it
Records	1,312 Scopus records	The scope of the provided export, not necessarily every relevant publication.
Publication sources	626 distinct source titles	Research is distributed across a range of journals and outlets.
Authors	2,724 distinct author names in the author field	Name variations and indexing can affect the count.
Average citations	31.76 per document (Biblioshiny summary)	A database-dependent measure of attention, not research quality.

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International Journal of Engineering Research & Technology (IJERT)
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Co-authors per document	2.71 (Biblioshiny summary)	Suggests collaboration is common in the dataset.
International co-authorship	24.7% (Biblioshiny summary)	Indicates cross-country collaboration, with room for broader partnerships.

5. Causal Layered Analysis

The bibliometric maps show which terms recur in the dataset. CLA helps ask what sits behind those terms. The following interpretation is based on the patterns in the export and on research about platform control, work identity and labour conditions (Gandini, 2019; Inayatullah, 1998; Wood et al., 2019).

CLA layer	Interpretation for gig work	Questions for leadership and policy
Litany: visible concerns	Unpredictable earnings, task allocation, customer ratings, work pressure, safety and uncertainty about platform decisions.	What problems do workers report, and which are measured by the platform?
Systemic causes	Automated allocation, rating systems, incentive rules, performance metrics, contractor status and limited routes for appeal.	Who sets the rules? Can workers understand, correct or challenge decisions?
Worldview / discourse	Flexibility is presented as freedom; automated decisions are assumed to be neutral; workers are expected to manage their own risks.	Do these beliefs match workers' experience? Who is responsible when the system produces harm?
Myth / metaphor	"Be your own boss" and "work on demand" sit alongside the image of the always-visible worker managed by an unseen system.	What stories shape public expectations? Can efficiency and dignity be treated as equally important?

5.1 Litany: the problems people can see

At the most visible level, platform work is discussed through everyday experiences: how many tasks a worker receives, how much they earn, what ratings they receive, how long they must remain available and whether they can obtain help when something goes wrong. Flexibility belongs here too, because choosing working hours can be a genuine advantage. The important question is whether that choice comes with enough predictability and a fair way to question decisions.

5.2 Systemic causes: how the platform is organised

The next layer looks at the arrangements that may produce these experiences. Task allocation, performance scores, customer feedback, incentives and account restrictions can influence a worker's access to future income. When the rules are unclear, workers may find it difficult to plan or challenge a decision. The legal and organisational relationship also matters: a worker treated as an independent contractor may not have the same support systems as an employee. Research on algorithmic management describes how matching and control can become part of the same system (Möhlmann et al., 2021).

5.3 Worldview: the ideas behind the system

Platforms are often described through the language of independence, choice and efficiency. Those ideas can reflect real benefits, but they can also make structural risks look

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like individual responsibilities. The idea that automated decisions are neutral deserves similar scrutiny. Software follows rules and data chosen by people and organisations; it does not remove the values built into those choices. A more balanced view would ask whether platform decisions are understandable, contestable and fair, not only whether they are fast.

5.4 Myth and metaphor: the stories people tell

The phrase “be your own boss” suggests a worker who controls their own time and opportunities. A contrasting image is the worker who is constantly visible to the platform but has little visibility into how the platform makes decisions. These stories influence how people interpret uncertainty. If independence is the dominant story, unstable income may be seen as the worker’s own problem. If invisible management is the dominant story, attention shifts to the rules and power held by the platform. CLA makes these competing stories visible so that researchers and decision-makers can question them.

5.5 What CLA adds to the bibliometric findings

The four layers connect visible worker concerns with the systems and beliefs that may keep them in place. They suggest that well-being should not be addressed only through advice to individual workers. Clearer explanations, accessible appeals, fair rating procedures, safer targets and reliable human support may also be needed. This is where the paper’s combination of bibliometric analysis and CLA is useful: the maps show recurring research concerns, while CLA provides a structured way to examine the assumptions behind them.

6. Discussion: relevance to human capital and the future of work

The supplied records show that gig-economy research has developed into a broad field, with recurring attention to platform work, algorithmic management, control and precarious conditions. These topics reflect a central tension: digital platforms can make work easier to find and organise, but they can also create new ways to monitor and direct workers. The evidence does not justify treating gig work as entirely liberating or entirely harmful. Outcomes depend on the type of platform, the rules it uses and the circumstances of the worker.

The relatively lower visibility of well-being terms compared with broad terms such as “gig economy” suggests a useful opening for further research. This should not be taken as proof that well-being is neglected, because researchers may use related labels such as stress, job quality, safety or precarity. Still, studies that directly connect particular algorithmic practices with psychological outcomes would make the human consequences of platform design easier to assess.

For human resource management and digital leadership, the findings point to a need to consider the quality of work alongside operational performance. A platform may be able to allocate tasks quickly, but efficiency alone does not tell us whether the rules are fair or whether workers can understand the decisions that affect their income. Responsible digital leadership includes explaining performance measures, reviewing unintended effects, offering a route to human assistance and giving workers a meaningful way to raise concerns.

The issue also connects with future skills. Workers may benefit from digital literacy, financial planning and an understanding of platform metrics. Yet training cannot replace fair

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rules or meaningful accountability. Organisations and policymakers must also consider how data are used, how disputes are handled and whether workers have enough information to make informed decisions.

7. IMPLICATIONS AND FUTURE RESEARCH

Area	Practical direction	Possible research question
Digital leadership	Provide understandable explanations for task, rating, pay and account decisions; allow meaningful review.	Does access to explanations and appeals relate to perceived fairness and stress?
Human capital and skills	Offer clear guidance on platform systems, earnings, safety and available support.	Which forms of digital and financial literacy help workers navigate platform work?
Worker well-being	Review performance targets, availability expectations and incentive structures for unintended pressure.	How do monitoring intensity and income predictability relate to psychological well-being?
Human resource analytics	Measure worker outcomes alongside productivity, customer ratings and service speed.	Can platforms identify risks to well-being without increasing surveillance?
Policy and worker voice	Set clear standards for information, dispute resolution and safety, with worker input.	How do protection and appeal mechanisms differ across platforms and countries?

Future empirical studies can test whether algorithmic governance is related to psychological well-being through financial stress, technostress or decision fatigue. They can also examine whether perceived organisational support, worker voice or access to a human representative changes these relationships. Such questions require worker-level data and appropriate research designs; they cannot be answered by publication counts alone.

8. LIMITATIONS

The findings are limited by the supplied Scopus export. The file contains gaps in year coverage and an incomplete 2026 period, so the annual pattern should not be treated as a complete history of the field. Keyword counts depend on how authors label their work, and differences in spelling or singular/plural forms can divide related concepts. Citation counts are also dependent on the database and the date of export.

The CSV does not include cited references, so a full co-citation analysis could not be reproduced from the raw data. The keyword network was generated from author keywords in the supplied file and should be read as a descriptive map. CLA is an interpretive synthesis informed by the literature, not a formal coding of every article and not proof of causal relationships. A future version should document the original Scopus query, export date, inclusion criteria and cleaning decisions in full.

9. CONCLUSION

This paper examined a supplied dataset of 1,312 Scopus records on the gig economy and interpreted its main themes through Causal Layered Analysis. The records cover a wide range of publication sources, and the more recent years represented contain a larger share of the export. The most common keywords focus on the gig economy, gig work, algorithmic management and platform work. The maps and counts suggest that researchers are interested not only in digital platforms themselves, but also in how work is organised and controlled.

The CLA interpretation draws attention to the beliefs and stories behind platform work. Flexibility and independence can be meaningful benefits, but they do not automatically provide control over pay, task allocation or the rules used to assess performance. A worker-centred future of work would consider transparency, fair treatment, psychological well-being and routes for appeal alongside efficiency. The next step is to test these questions with direct evidence from workers and platforms, especially in labour markets that receive less attention in the published literature.

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