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Analysing the evolution and patterns of the gig economy: a bibliometric examination of growth and trends

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Analysing the evolution and patterns of the gig economy: a bibliometric examination of growth and trends

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ABSTRACT

This article examines global academic research and provides an overview of the gig economy. The article provides a comprehensive framework based on a literature review. offering insights into the evolution of research trends, key themes, and collaborative dynamics within this evolving field. Our study focuses on the gig economy as a broader economic system characterised by short-term contracts, freelance work, and gig employment. This article presents a bibliometric analysis using the VOS Viewer tool; we examined 341 documents from the Scopus database covering January 2016 to March 2024. Our findings reveal a significant increase in the gig economy publication research. We identified three contemporary cluster themes, which include "The Changing Work Environment in the Digital Age," "Navigating the Contemporary Labour Landscape," and "Empowering the Future Workforce." The article offers practical insights into the gig economy, suggests guidelines that will enhance working conditions and the welfare of gig employees and provides valuable implications for researchers, shedding light on the current state and potential future directions of the gig economy.

ARTICLE HISTORY

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KEYWORDS

Gig economy; contract employees; bibliometric analysis; labour market; behavioural changes; work-life balance

SUBJECTS

Economics; Business, Management and Accounting; Cultural Studies

JEL CLASSIFICATION CODE

J3; J5; J8; O1; O5

1. Introduction

The structure of an economy is dynamic with time, from primitive to agrarian, to industrial, and finally, to the service sector; the movement of the core structure of an economy is an indicator of economic development, employment and labour force engagement with its shifts and re-distributions between these sectors (Wolfe, 1955). Changes in the structure of jobs are the net result of changes in demand and productivity (Sorrentino, 1971). There is a radical change in employment structure, and it has emerged as a significant component of the global labour market, characterised by short-term, flexible, and freelance work arrangements simplified by digital platforms (Apouey et al., 2020; Malik et al., 2021).

Modern workforce provides new opportunities for income generation, offers flexibility and enhanced work autonomy, facilitates skill formation, and ensures work-life balance; all these phenomena have created significant changes in the labour market (Banik & Padalkar, 2021; Bansal & Singh, 2020; Holland & Brewster, 2020; Sutherland & Jarrahi, 2018; van Doorn et al., 2022). As attention towards labour unions, wage differentials and long-term employment prospects are getting diluted, it is time for labour economists to focus more on the emerging concept of the "Gig Economy", which is becoming more prominent and emerging as a transformative force in employment (Allon et al., 2023).

The current volatile employment scenario on the one side and individuals' desire to earn from their comfort zone on the other is instrumental in widening the scope of the gig economy (Batmunkh et al., 2022; Silva & Moreira, 2022). The future workforce prefers to engage in creative and entrepreneurial

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endeavours rather than monotonous, lifetime professions in one field (Jha et al., 2021; Netto & Tello-Gamarra, 2020).

This exposure can increase job advancement and versatility as people gain diverse experiences and talents. Gig work's dynamic nature fosters adaptability and innovation, which are highly valued in today's market (Spreitzer et al., 2017).

The gig economy is proliferating due to technological improvements and societal shifts towards independence and flexibility in the workplace. The current generation has become very vocal about their preference for gig work over established job arrangements. 53% of gig employees between the ages of 18 and 34 rely on gig work as their primary source of income (Kolmar, 2023). This development highlights a more significant cultural shift in which people value autonomy and work-life balance. The gig economy is increasing fifteen times faster than the traditional labour market, demonstrating its substantial influence on employment (Li, 2023). As the gig economy continues to grow fast, it is taking shape as a significant part of the labour market (Wood et al., 2019). Gig workers are exposed to various projects and industries, promoting ongoing learning and skill development. According to the study conducted by Silva and Moreira (2022). The gig economy's growth has been influenced by technical advancements that connect workers to gig opportunities.

This exposure can increase job advancement and versatility as people gain diverse experiences and talents. Gig work's dynamic nature fosters adaptability and innovation, which are highly valued in today's market (Spreitzer et al., 2017).

The gig economy has completely changed the nature of work, by providing freedom and flexibility to the employees. Working independently within the gig economy can provide individuals with independence and authority, freedom to select projects, clients, and collaborations, making them more responsible for their work (Flanagan, 2019). This arrangement is advantageous to all parties; employees benefit from the independence of freelance work, and corporations may access elite talent without being limited by geography and access to a skilled and diverse workforce. A significant motivating factor for employers is to engage people to complete specific jobs to save money on administrative and other compliance expenses associated with full-time employment (Ashford et al., 2018; Taylor, 2018). Companies can save on their fixed cost, as gig workers usually bring their own equipment. As most gig employees are already trained, variable expenses on conducting training sessions are minimised. Additionally, firms are not required to offer benefits like paid time off, health insurance, or retirement plans, which saves money (Berg et al., 2018).

Gig workers have independence and autonomy, as they can choose their projects, work hours, and work surroundings. This independence can lead to higher job satisfaction and a healthier work-life balance. Customising their schedules allows gig workers to pursue personal hobbies and family obligations, resulting in a more rewarding lifestyle (Graham et al., 2017). According to a Zippia survey, the gig economy increases workers' job happiness and provides flexibility. 84% of gig workers perceive their work favourably, and 97% say they are happier than their full-time peers (Kolmar, 2023). These elements may increase productivity and a more satisfying work experience. The flexibility of the gig economy has gradually entered all industries, as both employers and employees get mutual benefits. Digital platforms enable gigs to have the necessary knowledge for specialised projects. This has significantly benefited sectors like technology, design, and content production that demand specialised talents (Donovan et al., 2016). The gig economy provides workers with additional earning opportunities, as they can carry out multiple jobs simultaneously, increasing their earnings. This multi-stream income potential enables employees to diversify their incomes (Katz & Krueger, 2019).

The gig economy offers enormous advantages but requires resolving difficulties connected to worker rights and legal frameworks to enable long-term growth and equal opportunities for all participants. Gig workers face difficulties with numerous elements, such as consistent income, availability of benefits, job security, labour protections, and social support systems, which affect gig employees' long-term viability. Platforms, other stakeholders, and governments must work together to address the issues and support the long-term well-being of gig employees by enacting rules and practices that encourage employee empowerment, financial security, and occupation stability (Bérastégui, 2021; Shirolkar & Patil, 2021; Veluchamy et al., 2021).

The gig economy's regulatory framework is changing worldwide; continual regulatory discourse and adaptation will be critical for addressing growing concerns and possibilities as it expands. Governments and policymakers should collaborate with stakeholders, such as gig workers, platform enterprises, and organisations, to create policies responsive to the changing work landscape (Tayal, 2022). The sector's rapid growth in the gig economy, particularly in developing countries, has revealed severe legal inadequacies in protecting gig workers' fundamental rights. The informal nature of gig employment presents significant issues in ensuring fair labour practices and protecting workers' rights. As a result, there is growing concern about gig workers' entitlement to basic amenities with substantial legal protection (Harpur & Blanck, 2020). The gig economy in the United States has caused significant legal and regulatory concerns. Independent contractors are not entitled to the same benefits and protections as employees, such as health insurance, the minimum wage, and the opportunity to unionise. California Assembly Bill 5 (AB5), passed in 2019, was a historic piece of legislation aiming at reclassifying many gig workers as employees (Dubal, 2019).

The regulatory systems are constantly developing in India's gig economy. The 2020 Social Security Code represents a significant step forward in giving social security benefits to gig workers. The rule requires gig and platform workers to be covered by social security plans, which include health insurance and retirement benefits (Srivastava & Gupta, 2021). The European Union has taken a more proactive approach to regulating the gig economy. In 2019, the European Parliament introduced a directive to improve working conditions for gig workers. This rule, known as the "Transparent and Predictable Working Conditions Directive," requires that gig workers know their working conditions and entitlements (EuropeanParliment, 2019).

Literature on the gig economy studies the trends and patterns, indicating a significant focus on the labour market, working conditions, opportunities, and job security (Almeida & O'Reilly, 2020; Banik & Padalkar, 2021; Sheveleva & Rogov, 2021; Todolí-Signes, 2017).

Literature on the gig economy explored the different areas of gig research, which includes worker exploitation in dark kitchens within the context of the gig economy (Giousmpasoglou et al., 2024), migration and the gig economy (Altenried, 2024), creative employment in the digital gig economy (Alacovska et al., 2024), gig's impact on the hospitality workforce (Jin & Liu-Lastres, 2024), rebuilding the rights and protections (Hickson, 2023), identifying individual work values and career paths in a gig environment (Shevchuk et al., 2024), labour rights, representation, and voice of the gig economy (Martindale et al., 2024), shifts in the world of work (Anwar et al., 2023).

An extensive review of the existing literature on the gig economy can help identify research trends, knowledge gaps, and significant areas for future research, with vital insights into the current state of research and the direction of a prospective study in the gig economy. A bibliometric examination of the gig economy would entail reviewing the academic literature to understand its growth, trends and cluster themes, providing valuable insights into the gig economy's scholarly environment, aiding in the mapping of current knowledge and informing future research agenda (Frerichs & Teichert, 2023; Merigó & Yang, 2017; Netto & Tello-Gamarra, 2020).

1.1. Research gaps

Despite the growing interest in the gig economy, a gap in bibliometric analysis still exists. The bibliometric analysis can provide vital insights into the current state of research and the direction of prospective study in the gig economy area.

The bibliometric paper seeks the answer to the following research questions (RQ):

- RQ1. Which are the most relevant authors, most cited journals, countries, and published documents on the gig economy?
- RQ2. What are the publication trends and co-occurrence of keywords associated with the gig economy?
- RQ3. What are the emerging themes and future research trends in the gig economy?

This article comprehensively reviews the gig economy, offering a research agenda for future studies. By referencing this work, the authors can align their research with ongoing scholarly conversations and identify gaps. By incorporating these recommended papers into the literature review, the authors can better position their study vis-à-vis existing research. This will not only clarify the unique contributions of their work but also provide a stronger theoretical foundation for the analysis of the gig economy (Sutherland & Jarrahi, 2018).

2. Research objectives

RO1: To identify publication trends, a network of authors, country-wise publications and most cited journals, leading organisations and country-wise publications in the gig economy and co-occurrence of keywords.

RO2: To identify and critically review contemporary themes in the gig economy.

RO3: To identify the future research agenda of the gig economy.

By aligning this article with the context of existing gig economy research, we aim to contribute an understanding of how academic attention to the gig economy has developed over time. This examination will provide valuable insights into the path of gig economy research and potential future directions. This systematic literature review covers the gig economy's key factors, decisions, and outcomes. Including this work will allow the authors to identify and address significant antecedents and consequences of the gig economy, enriching their theoretical framework and analysis (Shirolkar & Patil, 2021). The significant contribution of this study is that study identified three themes, which include the changing work environment in the digital age, navigating the contemporary labour landscape and empowering the future workforce.

3. Research methods

The research methodology described here is intended to undertake a bibliometric analysis of the gig economy. Several critical phases are included in the technique to ensure that the study is rigorous and complete (Le Brocq et al., 2023). This study's chosen dataset is subjected to quantitative exploration to identify and scrutinise the literature and visually represent this discipline's knowledge structure. We applied bibliometric analysis to study the growth and trends and cluster emerging themes. We extracted the Scopus database, as it has many peer-reviewed papers and offers accurate bibliographic information, with extensive citations and abstracts for academic literature, facilitating better exploration and understanding of a particular field.

3.1. Search criterion

As shown in Figure 1, the research process begins with identifying keywords using the Scopus database. We followed the screening process of inclusion criteria.

3.2. Inclusion criteria

Language: Articles published in English.

Publication Type: Scopus-indexed journals.

Area of Study: Business, Management and Accounting, Economics, Econometrics and Finance, Social Sciences.

Period: Articles published between January 2016 and March 2024.

Study Types: Original and review articles.

Key Word: "Gig economy", "Gig" AND "Economy".

Limited access articles, conference papers, conference proceedings, reports and other grey literature were excluded. In the preliminary search, we found 1496 papers spanning 2016–2024. In subsequent

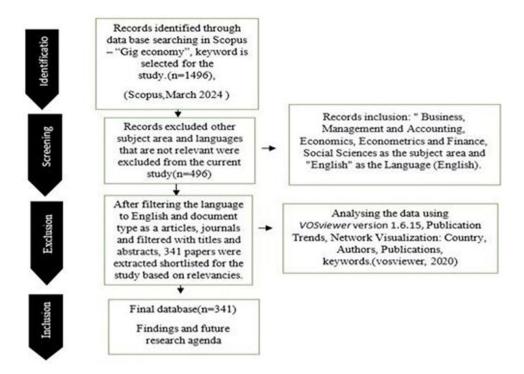


Figure 1. Research process. Source: Author's own elaboration.

The figure depicts the systematic review process used to identify and choose appropriate articles on the gig economy from Scopus. After screening the records, 341 papers were extracted for data analysis using VOS viewer software.

filtration for English language and journal articles, we extracted 496 papers. After filtering titles and abstracts, 341 papers were extracted. Analysis and results are based on the VOS viewer version 1.6.15 tool, as it indicates the relationship between the concepts of Citation and co-occurrence of keywords, sources, authorship and countries (Eck & Waltman, 2010; Yu et al., 2020).

4. Research results

4.1. Descriptive analysis and publication trends

We searched with the keywords and received the results of 1496 documents without the filtration process; we analysed that there has been a significant increase in the number of publications per year, from 14 papers in 2016 to 322 papers in 2023 and March 2024, a total of 91 publications identified. Publication trends are seen in Figure 2 indicates that gig economy has experienced explosive growth during this period and has become an integral part of many economies worldwide, transformed the way people work and created interest in research for future work mode, which has motivated researchers to delve into these topics and publish their findings. This growth has increased interest among researchers and academics in studying the gig economy's growth.

4.2. Leading countries in gig economy research

Three hundred forty-one documents were extracted and shortlisted for the study based on relevance. Out of 61 countries, 20 meet the thresholds with a minimum number of records for country 5 and a minimum number of citations for country 5. As shown in Figure 3 and Table 1, the highest number of publications, 70 papers, constituting 21% of total publications, were from the USA, followed by 63 publications constituting 18% from the United Kingdom. Subsequently, Australia and the Netherlands produced 21 and 20 documents, respectively. Specifically, India published 14 articles, contributing 4% with 68 citations. Hong Kong and Norway published 13 papers, with Norway having the highest citation score of 520. The statistics



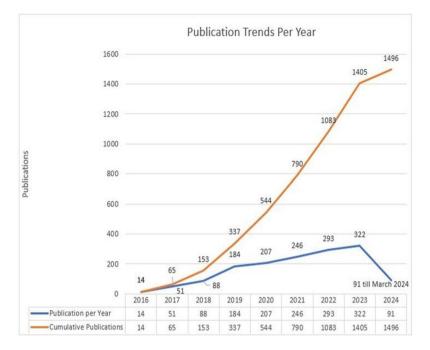


Figure 2. Evolution of research.

Source: Authors own calculation compiled from the Scopus database (without filtration).

The graph depicts the yearly publishing patterns in the gig economy from 2016 to March 2024. The data contains two key metrics: Publication per year in Blue Line and cumulative publication in Orange Line. Trends show a significant increase in the number of publications per year.

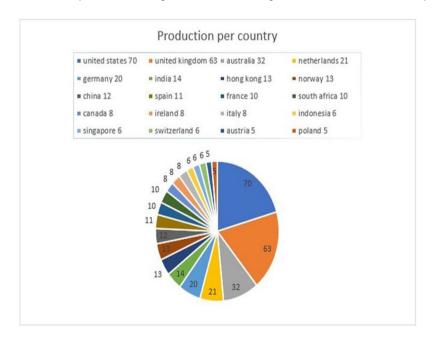


Figure 3. Production per country.

Source: Compiled from the Scopus database.

This pie chart shows the distribution of production between different countries. Each slice indicates the proportion of production attributed to a specific country, with the number of units produced shown.

of the countries have been provided in Table 1. The United Kingdom (UK) has received the highest number of citations, 3127 out of 20 countries, followed by the USA, which received 1978 citations.

4.3. Publication and network of authors

Eleven authors wrote 39 documents; the highest joint publication was by Graham, Mark, Lehdonvirta, Vili and Wood, and Alex.J. Table 2 lists the authors with the document produced and the highest citation

Table 1. Countries' publications, citations and link strength on the gig economy.

SI No	Countries	Quantity/ Document	Citation	Percentage	Avg citation Per Doc	Nominal Gdp Rank	Total link strength
1	UNITED STATES	70	1978	21	28.26	1	25
2	UNITED KINGDOM	63	3127	18	49.63	6	37
3	AUSTRALIA	32	846	9	26.44	13	7
4	NETHERLANDS	21	486	6	23.14	17	11
5	GERMANY	20	440	6	22.00	3	18
6	INDIA	14	68	4	4.86	5	6
7	HONG KONG	13	67	4	5.15	38	10
8	NORWAY	13	520	4	40.00	30	7
9	CHINA	12	112	4	9.33	2	9
10	SPAIN	11	136	3	12.36	15	7
11	FRANCE	10	592	3	59.20	7	5
12	SOUTH AFRICA	10	325	3	32.50	40	12
13	CANADA	8	126	2	15.75	10	6
14	IRELAND	8	729	2	91.13	25	4
15	ITALY	8	131	2	16.38	9	7
16	INDONESIA	6	10	2	1.67	16	1
17	SINGAPORE	6	43	2	7.17	31	8
18	SWITZERLAND	6	12	2	2.00	20	6
19	AUSTRIA	5	16	1	3.20	27	5
20	POLAND	5 341	43	1	8.60	21	1

Source: Authors' calculation compiled from the Scopus database.

Table 2. Distribution of authors and citation.

Rank	Author	Documents	Citations
1	GRAHAM, MARK	10	1969
2	LEHDONVIRTA, VILI	6	1671
3	HJORTH, ISIS	3	1437
4	WOOD, ALEX J	3	947
5	ANWAR, MOHAMMAD AMIR	4	249
6	WOOD, ALEX J.	2	219
7	VAN DOORN, NIELS	2	147
8	FERRARI, FABIAN	2	62
9	HEEKS, RICHARD	3	30
10	MUNGAI, PAUL	2	30
11	VAN BELLE, JEAN-PAUL	2	30

Source: Vosviewer result (VOSviewer, 2021).

scores. Eleven authors meet the criteria by considering the minimum of two citations. The highest citation score is Graham, Mark (Wood et al., 2019), with 1969 citations followed by 1671 by author Lehdonvirta, Vili (Nica, 2018), and the third highest citation score is 1437 by Hjorth, Isis.

Table 3 shows an analysis of the top 3 high networks of authors with their joint publications, with citation scores for each publication.

Figure 4 shows the network visualisation of significant authors and groups in the field of gig economy. Mark Graham (Red Cluster): A central node with many connections, indicating a high level of collaboration among the writers. Authors include Mark Graham, Niels Van Doorn, Mohammad Amir Anwar, and Fabian Ferrari, indicating that these persons frequently collaborate. Alex J. Wood (Green Cluster): Connected to several authors in the green cluster, indicating regular collaboration within this group, including Vili Lehdonvirta, Alex J. Wood, and Isis Paul. Mungai (Blue Cluster): A member of a smaller cluster showing targeted collaborations. Hjorth, indicating a distinct group of frequent collaborators.

This form of visualisation aids in understanding the structure of academic collaboration and the relative influence of various authors within the research community.

4.4. Leading journals

Table 4 shows the citations of the literature on the gig economy. Out of 290 journals, 14 journals meet the threshold. We have considered all 14 sources for the study; first, the journal "Work, Employment and Society" records 17 documents and 1992 citations, with a total link strength of 120. The British Sociological Association's Work, Employment and Society (WES), a reputed international peer-reviewed publication, promote innovative research on the sociology of work and provides a theoretical and practical

Table 3. Top 3 authors with a high network of authors and joint publication.

No	Title	Authors	Year	Sources	Citation
1	Good Gig, Bad Gig: Autonomy and Algorithmic Control in the Global Gig Economy	Wood, Alex.J., Graham, Mark., Lehdonvirta, Vili., Hjorth, Isis.	2019	Work, Employment and Society	1583
2	Employees of the Internet unite? Online freelancer organisation among remote gig economy employees in six Asian and African countries	Wood, Alex.J., Lehdonvirta, Vili., Graham, Mark.	2018	New Technology, Work and Employment	414
3	Networked but Commodified: The (Dis) Embeddedness of Digital Labour in the Gig Economy	Wood, Alex.J., Graham, Mark., Lehdonvirta, Vili., Hjorth, Isis.	2019	Sociology	363

Source: Compiled from the Google Scholar.

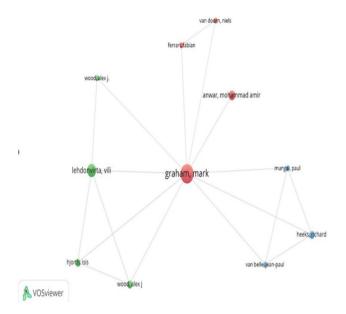


Figure 4. Network visualisation of authors.

Source: Vosviewer result (VOSviewer, 2021).

It shows the authors' network visualisation and depicts the collaboration relationships of writers in a gig economy field of study. Nodes (circles) represent individual writers, whereas edges (lines) show co-authorship.

framework for analysing the gig economy, with a H-index of 85 and encompasses multiple aspects of work, employment, and unemployment, social processes and societal institutions, with high document record of 17, which indicates the significant number of publications and the citation per document is 117.18. Secondly, the journal "New Technology, Work, and Employment" came next in order, with a total link strength of 52 and 710 citations with 20 documents. Thirdly, the Proceedings of the ACM on Human-Computer Interaction had 18 publications, 412 citations, and 15 overall link strengths.

Bibliographic coupling is an established method for evaluating sources. The findings from a bibliographic coupling analysis indicate that two documents are connected when referring to the third document. In Figure 5, a visualisation overlay displays the bibliographic coupling of the journals. The minimum requirement for the number of publications for a journal was five, and out of the 290 sources, 14 of them met the criteria. The total strength was computed to determine the strength of the bibliographic coupling links between 14 journals. All 14 sources are chosen, with a minimum of 5 publications.

4.5. Organization and country-wise publications

From Table 5, we can observe the total link strength and network visualisation. The cumulative strength of the citation relationships between the four organisations will be determined. We will be choosing the organisations having the most robust overall linkage. The University of Oxford generated

Table 4. Sources-Journal of publications and average citation per document.

SI No	Journals	Documents	Citations	Avg Citation per doc	Total link strength
1	Work, Employment and Society	17	1992	117.18	120
2	New Technology, Work and Employment	20	710	35.50	52
3	Proceedings Of The Acm on Human-Computer Interaction	18	412	22.89	15
4	Journal of Industrial Relations	8	374	46.75	35
5	Antipode	6	249	41.50	23
6	Environment and Planning	10	249	24.90	33
7	International Journal of Human Resource Management	8	223	27.88	22
8	Work Organisation, Labour and Globalisation	9	154	17.11	10
9	New Media and Society	11	77	7.00	8
10	Critical Sociology	8	69	8.63	25
11	International Labour Review	5	31	6.20	10
12	Safety Science	5	28	5.60	8
13	Economic and Labour Relations Review	5	19	3.80	7
14	Economic and Industrial Democracy	6	17	2.83	19

Source: Compiled from the Scopus database using VOS viewer software.

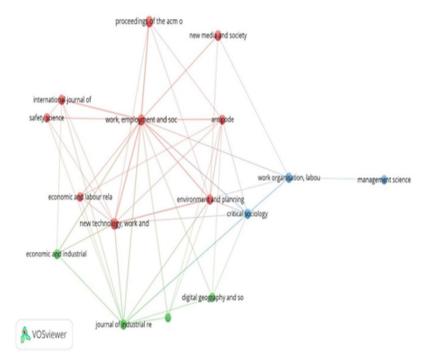


Figure 5. Network visualisation of bibliographic coupling – publication source. Source: Vosviewer result (VOSviewer, 2021).

A visualisation overlay displays the bibliographic coupling of the journals and evaluates the source of publications.

Table 5. Organisation and countrywide publications.

SI No	Organisation	Country	Documents	Citations	Avg Citation Per Doc
1	University of Oxford.	United Kingdom	4	973	243.25
2	Oxford Internet Institute, University of Oxford.	United Kingdom	5	952	190.4
3	Alan Turing Institute.	United Kingdom	3	486	162
4	Cork University Business School, University College Cork, Cork, Ireland	Ireland	4	368	92

Source: Compiled from the Scopus database using VOS viewer software.

four documents with 973 as the highest citation, the Oxford Internet Institute generated five papers with 952 citations, and the Alan Turing Institute from the United Kingdom supplied three papers with 486 citations. Cork University Business School, University College Cork, Ireland, produced four documents.



Table 6. Co-occurrence of keywords.

SI.No	Keywords	Clusters	Co-occurrence	Total link strength
1	Gig Economy	1	305	562
2	Labour	2	44	159
3	Employment	2	30	115
4	Digital Platforms	1	34	97
5	Workers'	2	51	82
6	Gig Workers	1	33	82
7	Platform Economy	1	25	71
8	Sharing Economy	1	27	71
9	Working Conditions	2	16	63
10	Precarity	3	10	33
11	Workplace	2	5	27
12	Job Quality	3	7	25
13	Future Of Work	3	9	24
14	Online Platforms	2	6	22
15	Flexibility	3	5	20
16	Social media	1	6	19
17	Safety	1	5	18
18	Self-Employment	3	7	17
19	Freedom	3	5	16
20	Human Resource Management	1	5	15
21	Entrepreneurship	3	6	14
22	Remote Work	3	6	14
23	Freelance	1	5	12

Source: Compiled from the Scopus database using VOS viewer software.

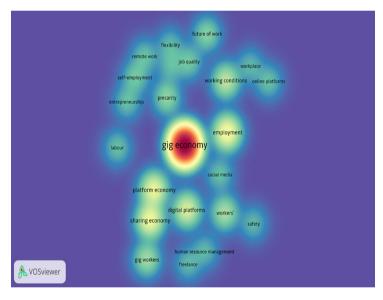


Figure 6. Density of keyword. Source: Vosviewer result (VOSviewer, 2021).

The density visualisation of keywords are shown in three colours based on the highest strength of the keyword.

4.6. Density and co-occurrence of keywords

Table 6 shows the overall strength of the co-occurrence links, which will be determined for each of the 23 keywords. Of 1356 keywords, 62 meet the threshold and have five or more occurrences. We filtered relevant keywords and classified items with 3 clusters, with the minimum quantity required for analysis. Figures 6 and 7 indicate the author's keywords occurrences of the gig economy. The keyword "gig economy "is used by more authors, and its strength is high. The gig economy keyword has the most increased occurrence of 305, with a total highest link strength of 562.

Figure 6 displays a density visualisation in three colours and an item's weight. Yellow circles indicate items with the most outstanding scores or more numbers. Green circles indicate items with moderate scores, and blue circles indicate the lowest scores. Figure 7 shows the co-occurrence of keywords; the

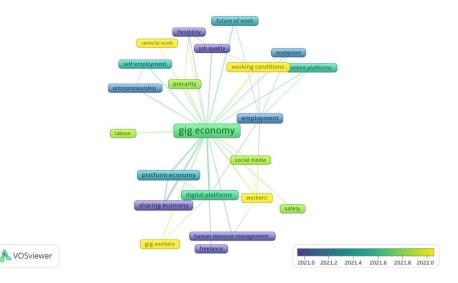


Figure 7. Co-occurrence of keyword. Source: Vosviewer result (VOSviewer, 2021). The figure shows the co-occurrence of keywords; the gig economy keyword shows the highest co-occurrence with different keywords.

"gig economy" keyword is the highest-strength keyword. The gig economy received the highest score since it has a high density.

5. Evolution of contemporary trends in gig economy

This section uses bibliometric analysis to examine the research direction, focusing on recent developments, trends, current areas of interest and contemporary themes.

Figure 8 shows contemporary themes. Three contemporary cluster themes emerged: The Changing Work Environment in the Digital Age, Navigating the Contemporary Labour Landscape, and Empowering the Future Workforce. Cluster thematic research in the "gig economy" network shows strong connections. The "Gig economy" keyword occurrence shows the most vital connection between the different keywords, indicating its strong presence and shifting the focus on the new work culture (Schwellnus et al., 2019).

5.1. Contemporary theme 1

5.1.1. The changing work environment in the digital age

Technology breakthroughs and digital platforms have eased business functions. The gig economy is significantly influenced by digital platforms, which offer a technology-driven infrastructure that makes it easier for gig employees to connect with clients quickly (Churchill et al., 2019; Malik et al., 2021). Gig employees can work across borders, which ensures flexibility with the utilisation of the interconnections of the digital economy as the preference for gig employment has intensified (Sutherland et al., 2020; Zaman et al., 2020). The rapid growth of online job platforms enables employees to increase their workforce participation rate, which is instrumental in increasing remote gig employment (Forum, 2020). Employee flexibility and digitisation of work enable gig employees to self-explore and establish connections with worldwide clients quickly. This phenomenon does not align with conventional employment, but it has improved and modified work culture and brought new possibilities for freedom and flexibility (Graham et al., 2017; Kaur & Jayat, 2021; Todolí-Signes, 2017). This theme investigates the evolution of labour and employment in the era of digital platforms and the gig economy. Research shows the increase in freelancing and the challenges gig employees face in this new paradigm. This theme investigates the impact of an online working model in the new economy on the modern work process and the critical physical and digital safety of platform-based work.

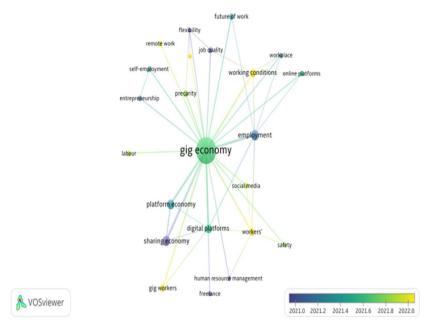


Figure 8. Contemporary themes of gig economy: Keyword analysis (2016-Mar2024). Source: Vosviewer result (VOSviewer, 2021). Based on the keywords, clusters emerged with three themes. The network shows a strong connection between the different keywords.

Figure 8 shows that precarity word has a strong interlinkage between future work, digital platforms and remote gig work (Vallas & Schor, 2020). Rising automation, globalisation, and the expansion of the information economy are some future job trends strongly associated with the gig economy. Our study aligns with Doshi and Tikyani (2020) and Jabagi et al. (2019), ensuring the digital platform's dependence on gig employment. A significant component of the gig economy is remote work, which has been made possible by technological improvements and digital platforms. Numerous gig employees can work from anywhere, including their homes, coworking spaces, or on the go (Doshi & Tikyani, 2020; Jabagi et al., 2019). The trend of working remotely has grown, particularly after the COVID-19 epidemic brought attention to the viability and advantages of remote work arrangements (Anwar & Graham, 2020).

5.2. Contemporary theme 2

5.2.1. Navigating the contemporary labour landscape

This cluster theme examines the dynamics of employment and the labour market in the digital age. It investigates the relationship between labour supply and demand, particularly in online platform settings, the dynamic nature of working conditions, and the modern workplace. It emphasises the complexities and obstacles companies and employees encounter when adjusting to changing employment conditions. Figure 8 contains keyword analysis and links between Gig work, the platform economy and the sharing economy. Most employers offer freelance or project-based work to reduce operational expenses, helping gig employment grow significantly, up-skilling and re-skilling themselves to remain competitive, leading to the redefining expectations of employees, employers and governments (Scully-Russ & Torraco, 2020; Sofia et al., 2023). The future of employment is shaped by the gig economy's ongoing growth, which presents enormous opportunities and difficulties that stakeholders must jointly handle (Healy et al., 2017). The gig economy is becoming a significant aspect of the contemporary labour market, changing how individuals work and make a living. With its short-term contracts, freelance work, and independent employment, this flexible and dynamic work paradigm has brought new problems and dynamics to the labour market (Li, 2023).

A new type of employee/employment has emerged with the rise of the gig economy, an economic system that connects employees, or "individual service providers," with consumers digitally through online platforms. Because algorithms regulate labour supply and target various employees with different incentives, they enable asymmetric information in the working relationship (Duggan et al., 2020; Ungureanu, 2019). Gig platforms offer employees and clients the ability to track hours worked, rate service quality, process payments, file taxes, and present the formalisation of previously unorganised labour as a critical benefit to clients and policymakers; they frequently deliberately avoid enforcing the rules and regulations of formal employment (Berg et al., 2018).

A vital component of the gig economy is flexibility. The flexible aspect of gig work, which permits employers and employees to modify workloads, timetables, and projects in response to evolving demands and conditions, should be embraced by both parties. Individuals and businesses can navigate the modern labour landscape in the gig economy more skillfully by embracing flexibility, diversifying skills, developing a solid online presence, strategically networking, comprehending the legal and financial ramifications, prioritising work-life balance, remaining flexible and adaptable, and fighting for rights and protections (Hunt & Samman, 2020; Parry & Battista, 2023).

5.3. Contemporary theme 3

5.3.1. Empowering the future workforce

This cluster theme is about empowering individuals in the future workforce, encompassing the entrepreneurial spirit, prospects of self-employment, flexibility and freedom that gig employment provides. This theme also acknowledges the precariousness that individuals encounter when navigating gig employment. The subject emphasises entrepreneurship and flexibility and helps build the future workforce, presenting opportunities and problems.

Our results indicate flexibility has a strong interconnection between four items: freedom, precarity, future of work, and gig employment. Flexibility is the most vital factor that motivates employees to continue with gig work (Anwar & Graham, 2021) and employees can decide the nature of the work (Churchill et al., 2019). Gig employment opportunities are associated with professional mobility, flexibility and personal choice (Sheveleva & Rogov, 2021). Precarious work and the gig economy are two terms that have gained widespread attention in recent years due to the changing nature of work and the rise of non-traditional employment (Zeytinoglu & Muteshi, 2005).

Future employees in the gig economy must be empowered by being provided with the knowledge, skills, and assistance necessary for them to succeed in a fast-evolving working environment. Encouraging people to start their businesses in the gig economy can lead to innovative ideas and economic expansion. Aspiring entrepreneurs can start and maintain profitable gig enterprises with assistance from organisations that offer mentorship, capital, and business incubators (Goyal et al., 2021; Rhee et al., 2017). Creating a collaborative and networking environment can assist gig employees in meeting others, exchanging information, and finding new possibilities. Coworking spaces, professional associations designed with gig employees in mind, online groups, and networking events can all help achieve this (Kost et al., 2020). Self-employment in the gig economy refers to individuals working independently, offering clients services through various digital platforms. Figure 8 shows a critical interlink between digital platforms, entrepreneurship, self-employment, the labour market and the sharing economy (Pu et al., 2021). We understand that very little research has looked at the extent to which gig work can be a financially advantageous choice for individuals with impairments (Gailits et al., 2019).

6. Findings, discussions and agenda for future research

The bibliometric analysis offers a different way of systematically reviewing literature than narrative and meta-analysis (Nwachukwu et al., 2021). Analysing citation patterns and publication data can reveal the direction of research, developments, focus areas and topics. The current research study provides a quantitative analysis of the gig economy. It maps the recent research paths by identifying the most commonly used research fields employing a bibliometric strategy using the VOS Viewer programme (Bühren et al., 2023). This study includes in-depth data on the gig economy, including information on countries, authors, sources (journals), and keyword co-occurrence. It offers a comprehensive look into gig research, highlighting new, unique findings.

The "Gig Economy" has experienced significant growth in research output over the years. In 2016, cumulative research reached 14 publications on the topic and increased to 322 documents in 2023, marking the highest productivity year. From March 2024, 91 publications have been identified from the Scopus index, indicating sustained interest and scholarly activity. The top 10 countries contributing significant work to the gig economy include the United States, United Kingdom, Australia, Netherlands, Germany, India, Hong Kong, Norway, China, and Spain. The top 10 Key organisations working on research on the gig economy include the University of Oxford, Oxford Internet Institute, Alan Turing Institute (all in the United Kingdom), and Cork University Business School (Ireland). Graham Mrk, Lehdonvirta Vili, and Wood Alexa are the most relevant authors in the field of the gig economy. J, and Hjorth Isis. The top five journals that published relevant research areas are Work, Employment and Society, New Technology, Work and Employment, Proceedings of The ACM on Human-Computer Interaction, Journal of Industrial Relations and Antipode.

Our analysis revealed that peer-reviewed research publications on the gig economy started appearing in academic literature from 2016 onwards. The publication phase started to gain momentum in 2022 and continued in 2023 and 2024. The highest number of publications was found in 2023. Of the 1496 cumulative publications, 341 documents were published from 20 countries. Maximum publications came from the USA (70), the U.K. (63), and 14 from India. The research community frequently studied gig trends and global growth aspects of the gig economy.

As per Scopus data, we observed that Professor Mark Graham, Professor of Internet Geography at Oxford University, United Kingdom, is the first and the highest contributor in the field of the gig economy with 1969 citations. His work is focused on digital labour, development and its impact on gig employees, and he discusses strategies to improve platform work in a global context. Following him, the second highest contributor is Professor Lehdonvirta Vili, Professor of Economic, Sociology and Digital Social Research, Oxford, United Kingdom, with 1679 citations. He focuses on the remote gig economy, digital labour, flexibility, work duration, remote gig employment market, and global earnings in gig employment platforms. The third highest contribution comes from Professor Wood A.J, an economic sociologist at the University of Bristol, United Kingdom. Nine of his 14 articles are about the gig economy, with 606 citations. His contributions to the gig economy indicate the role of algorithmic control in managing work that translates into low pay, dynamics of contention in the gig economy, isolation, overwork, and sleep deprivation of remote employees, highlighting three areas of transformation as recognition, power relations and transparency in the gig economy.

This study indicates several significant implications, like understanding the research trends regarding publications, identifying the knowledge gaps, and understanding the global perspectives in this field. The discussion on the gig economy is primarily scattered, and a more precise research agenda is needed to streamline the discussion. This research can be a foundation for future studies and for discovering research trends and areas with potential perspectives in this field. We identified that a few topics like digitisation, gig employment, and flexibility are frequently studied. However, issues like gig work outcomes, prospects of entering gig work, and opportunities for career advancement need to be studied elaborately. The future of work will involve emerging business models where technological advancements will enable the rise of self-employment (Healy et al., 2017). Our study identified a few research questions that can lay the ground for future research in the gig economy.

More studies need to be done on the critical issues of gig employees, the nature of gig employment, working conditions, the definition of gig work, payment protection, and human capital management (Graham et al., 2017). Liu et al. (2020) Insist upon adopting trust and enforcement of contracts to ensure fairness and inclusivity while hiring, as these factors are instrumental in securing gigs' future employment prospects. As there is free entry and exit in gig employment, long-term financial stability, career development and enhancement, and skill formation need to be evaluated in the gig landscape to understand the sustainability of gig employment better. Gig employees must upscale their skills and be competent to remain competitive and ensure stable income (Sultana et al., 2019). This issue becomes significant in developing countries, as the unemployed have poor social safety net (Jarrahi et al., 2020; Sutherland et al., 2020).

Satisfaction, motivation, and feedback mechanisms significantly influence commitment and value in gig employment. From Yang and Panyagometh (2024), understand that the self-determination of gig employers is instrumental in enhancing their intrinsic motivation perceptions, and social capital is positively associated with intrinsic, extrinsic motivation influences satisfaction. Apouey et al. (2020) indicates that gig employees depend more on precarious and informal arrangements to meet ends, especially during crisis periods, as they do not have stable earnings. With algorithmic control, work autonomy and freedom are ensured in gig employment, increasing job quality.

Research on the unorganised nature of the gig economy, its legislative structure and support system, employee protection, and work-related monetary and non-monetary benefits (Dunn, 2020). As Loganathan (2022) indicated, clear labour legislations are available for full-time employees and formal work, and more research is needed to understand the nuances of informal employment by collecting data from authentic government sources and through many Information and Communication Technology (ICT) disclosure mechanisms. Data regarding the nature of non-standard work, work hours, earnings, safety, health, and membership in unions and alliances will help understand the current conditions, prospects and sustainability of gig work and facilitate framing or modifying legislative framework for gig employment. Studies are needed on income consistency and creditworthiness (Doshi & Tikvani, 2020). Difficulties that women experience in pursuing gig work have received little attention (Ackah et al., 2024; Churchill & Craig, 2019). Further studies are required to evaluate the usefulness of gigs in various circumstances for protecting employees on non-standard contracts (Wood et al., 2019), Although working from home is appealing, it hides the lengthy working hours, working alone with no co-employees and unpredictable working hours (Anwar & Graham, 2020; De Ruyter & Rachmawati, 2020; van Doorn et al., 2022).

The current study shows a quantitative-bibliometric and contemporary overview of studies connected to the gig economy, mapping the path of previous research studies by identifying growth in the same direction. By demonstrating new study opportunities through citation and source analysis, we can position new researchers in the gig economy sector and facilitate the progress of knowledge production, which can result in the emergence of new research areas and understandings. Satisfaction, motivation, and feedback mechanisms significantly influence commitment and value in gig employment (Pham et al., 2024).

From Yang and Panyagometh (2024), we understand that the self-determination of gig employers is instrumental in enhancing their intrinsic motivation perceptions, and social capital is positively associated with intrinsic, extrinsic motivation influences satisfaction. Apouey et al. (2020) indicates that gig employees depend more on precarious and informal arrangements to meet ends, especially during crisis periods, as they do not have stable earnings. With algorithmic control, work autonomy and freedom are ensured in gig employment, increasing job quality (Apouey et al., 2020).

Questions that emerged from our research that could become part of the future research agenda are given below.

- a. How do work autonomy and flexibility help to raise the gig economy and ensure long-term sustainability (Jarrahi et al., 2020; Kost et al., 2020).
- b. What are the unfavourable conditions of the gig economy? (Cook et al., 2021).
- c. What critical technological factors drive changes in the gig economy? (Bérastégui, 2021; Healy et al., 2017).
- d. How would businesses benefit from entering the gig economy workforce? (Power, 2020).
- e. How did the gig economy transition happen from tradition to modernity of digitised work? (Graham et al., 2017).
- How does the gig economy address the financial and time dimensions to ensure a steady income for gig employees? (Doshi & Tikyani, 2020).

7. Conclusion

This study adds to the niche area of gig research through bibliometric analysis. Our analysis indicates that various new dimensions of the gig economy must be streamlined, such as defining gig work, its nature of work, its unorganised nature, income, and stability. This research analysed the bibliometric techniques for the international scholarly literature on the gig economy. We have analysed recent research trends and future trends in the gig economy by looking closely at essential features such as article content, publication trends, key authors, keyword usage, and most-cited papers.



Our analysis emphasises the international collaboration that demonstrates the active participation of nations such as the USA, UK, Australia, Netherlands, and Germany in gig economy research. An increasing interest in comprehending the dynamics of short-term contracts, freelance work, and gig employment within the larger economic environment is reflected in recent publications, which mainly focus on digital platforms and gig employment.

One noteworthy observation is the significant focus on the employer-employee dynamic in gig employment, suggesting a crucial domain for further investigation in the literature on the gig economy. These results lay the groundwork for future study directions while advancing our knowledge of the gig economy as an economic system.

Gig employees must constantly enhance their skills to remain competitive and ensure financial stability. The cost of social isolation versus the comfort of working from home needs a thorough analysis to evaluate the prospects of the gig economy in future, as most gig work is controlled by regulations regarding platform control, formalisation of informal work, and its quality need to be redefined. With gig employees, organisations can conserve their costs; at the same time, the long-term implications, like career commitments, organisational loyalty, and organisational development of gig employees versus regular full-time employees, can help frame the landscape of the gig economy better. The plight of women gigs must become the focus area of future research to know their participation, which can facilitate equal opportunities and workplace safety.

In the end, by synthesising the body of existing material and encouraging further scientific investigation into the gig economy, this study is a significant resource for academics and researchers. It is intended that this analysis will stimulate more research to increase our understanding of gig employment and its effects on modern labour markets and educate policy and practice in this area.

Authors' contributions

Soumya Vadavi: Manuscript preparation, data analysis and interpretation. Sharmiladevi: Manuscript idea generation, contextualisation, review and finalization.

Disclosure statement

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Data availability statement

The datasets used and analysed during the current study are available from the author, Ms.Soumya Vadavi, upon reasonable request.



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