HRM Insights on Digital Work Environments and the Gig Economy: Bibliometric, Cluster, and Morphology Analysis

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Abstract

This study examines the gig economy's most popular study areas and their effects on HRM. The COVID-19 pandemic and rising unemployment have boosted gig work. This has transformed HRM procedures, especially hiring, talent management, employee engagement, and workforce planning. The gig economy gives people more flexibility and options, but it also threatens job stability, workers' rights, and corporate health. This study uses the Morphology Technique to reveal new trends, unlike other bibliometric studies. This study examines 951 Scopus-indexed papers from 2016 to 2024 using Vosviewer to identify key citation trends, authors, keywords, and co-occurrence networks. Cluster analysis suggests gig economy HRM tactics discussions shifting. HRM scholars and professionals can utilise the results to understand how digital platforms and gig employment influence collaboration. This study identifies research gaps and future priorities to assist HRM frameworks combine flexibility and employee well-being. This study helps researchers create gig economy-specific HRM policies and processes.

Keywords

Bibliometric Analysis, Cluster Analysis, Gig Economy, Morphology Analysis, Separate Clusters, VOS viewer

1. Introduction

A rapidly expanding sector of the world's job market, the "gig economy" has dramatically reshaped traditional employment models, offering new avenues for work while introducing significant challenges (Duca, 2018). The changing nature of work, driven by technological advancements and the power of globalization, has been a key factor in India's gig economy's rise (Mehta, 2020). The gig economy is defined by independent contractors and short-term jobs and is associated with to the rise of the sharing economy and driven by digital platforms that facilitate flexible work arrangements, providing opportunities for workers seeking autonomy and businesses aiming to scale efficiently (Yu & Bai, 2017; Zhu & Liu, 2021; Meshulam et al., 2023; Pal, 2021; Adekoya et al., 2023; Salmah et al., 2024; Glasner, 2023;

Wright et al., 2019). More than 60% of the world's working people work in the informal sector, according to some reports with a significant portion engaged in gig employment (Harun et al., 2020). Reports, such as Upwork's 2023 Freelance Forward, highlight the increasing shift toward freelancing, with 38% of the U.S. workforce contributing $1.27 trillion to the economy, driven by flexibility and technological advancements like generative AI (UpworkInc.markets.businessinsider.com). However, this evolving employment landscape has also raised critical concerns about the well-being of gig workers, who often face precarious working conditions, low wages, job insecurity, and limited access to social, technological, and regulatory protections (Hsieh et al., 2023; Lowry et al., 1951). The gig economy's impact has been particularly pronounced in India, especially during the COVID-19 pandemic, when traditional industries experienced significant downturns. Millions of Indians have turned to gig work as a source of income, benefiting from the low barriers to entry and flexible work environments enabled by digital platforms (Venkataraman, 2023; Leung et al., 2023; Behl et al., 2022; Ahmad, 2021; Thomas & Baddipudi, 2022).forms (Venkataraman, 2023; Leung et al., 2023; Behl et al., 2022; Ahmad, 2021; Thomas & Baddipudi, 2022). As India continues to navigate its economic recovery post-pandemic, the gig economy will play an increasingly prominent role, raising important questions about balancing flexibility with worker protections and creating a more equitable labor market (Cohen et al., 2023; Dubal, 2019; Liang et al., 2022). However, while this new form of work provides employment opportunities for those facing challenges in the conventional job market, it has also led to widespread unemployment, especially among unorganized workers (Singh, 2023, Shibata, 2019 and Hsieh et al., 2023). Policymakers have praised the gig economy as a response to the entrepreneurial aspirations of a new generation, presenting novel opportunities for employment, production, and income generation (Harun et al., 2020). To stay competitive in a global economy that is changing quickly, companies are adopting new tools and business models. The rise of the gig economy, a type of work that is short-term, flexible, and project-based, is one of the most important changes in this shift. Digital platforms that connect freelancers and independent contractors with clients, instead of standard job models, power the gig economy. This change has big effects on HRM, especially when it comes to hiring, managing talent, getting employees involved, and planning the workforce. According to Harris and Krueger (2015), gig work is growing and is now a big part of the job market. People have more freedom, but it's harder to keep a job and get benefits. Adopting digital work environments is becoming more important in HRM as companies try to use technology to boost productivity, make the work experience better for employees, and handle remote or decentralised teams. In HRM, the idea of "digital work environments" has grown to include using digital tools for hiring, managing people, training, and grades on work. Cascio & Montealegre (2016) say that these technologies help people make better decisions and run businesses more efficiently. They also say that these technologies encourage more employee involvement through new platforms. Artificial intelligence (AI), big data, and cloud computing are some of the technologies that are now used in human resource management. These technologies help companies streamline their processes and handle a more flexible workforce (Baesens, B., De Winne & Sels, 2017). These technologies have quickly become popular, especially after the COVID-19 pandemic. They have changed the standard office setting by allowing for more flexible work

arrangements, especially working from home (Beane, 2019). Digital platforms like Uber, TaskRabbit, and Fiverr have made the gig economy possible. For HR managers, this means both possibilities and challenges. It gives both workers and employers more freedom, but it also makes people worry about job stability, benefits for workers, and the future of full-time jobs. While gig work can be flexible, Sundararajan (2016) says that workers often don't have access to standard benefits like health insurance, retirement plans, or paid leave. This means that new HR solutions are needed to fill these gaps. Using advanced research methods like bibliometric analysis, cluster analysis, and morphology analysis, this study looks at how digital workplaces and the gig economy have changed over time from the point of view of human resource management. By utilising these methodologies, one can gain a comprehensive understanding of how HR practices are being impacted by the gig economy and digital workplaces, as well as how HR workers can navigate these changes. The goal of this study is to give useful information about the future of work and the part that HRM will play in handling this change by looking at previous research and finding important patterns and trends. There are previously many Bibliometric studies done on Gig Economy but Morphology Technique has not been shown in any study yet, as we know that Morphology analysis provides a deeper understanding of the topic which provides a detailed description of a subject by breaking it down into smaller components. It provokes challenging problems without the need for numerical computations. This study intends to fill that void by offering helpful insights that may be used to spot emerging patterns in the field, define possible new research directions, and group related themes. Scholars will be able to evaluate the current status of research and predict its future trajectory with the help of text mining results from keyword and morphological analysis. The present work aims to do a keyword based analysis of previously published articles and provide recommendations for future research directions. The study's research questions include reviewing the primary publications from which articles were primarily published, identifying highly influential authors in the field of gig economy research, identifying the countries that significantly contribute, and identifying the most popular keywords, keyword evolution, and clusters. The study is organized as follows: In Section 3, the software utilized in the study, as well as the data used and the technique used to arrive at the results, are explained. The results and findings are summarized in Section 4 and include information on the top publishing journals, highly referenced contributing authors, most prolific authors, and top nations focused on this topic. The study's findings are presented in the final section. The primary instruments for conducting a systematic review and performing bibliometrics analysis to expand the study's questions are the software and review methodology. Presenting text mining results based on keyword analysis, outlining cluster topics, and identifying current research trends are the goals of this study. The bibliometric, cluster, and morphological analyses will be used for this purpose. Because of this, scholars will have an easier time assessing the state of the field and making predictions about its future direction. To better synthesize previous research on the Gig Economy and to pave the way for future developments, this study looks at the following research concerns.

RQ 1: Who are the most prolific authors, what are the prevailing research trends within this domain, and how do international collaborations manifest in this area of study?

Bibliometric analysis is a structured and methodical way to look at how information has grown and changed over time in a certain area of study (Shishodeia et al. 2021). For the goal of visualization, the Vosviewer software will be used to make two-dimensional bibliographic maps. There will be maps made that show author co-citations, source co-citations, and phrase co-occurrences.

RQ 2: What is the number of theme-based clusters identified within the bibliographic coupling map of the documents, and could you also provide an analysis of the insights derived from these clusters?

This research will elucidate how the advancement or progression of any inquiry can be facilitated by establishing network clusters and examining their efficacy.

Looking at co-citations and bibliographical coupling can give researchers deep insights into the basic structure and the development of important topics in the field (Barbora 2021; Dash et al. 2022; Singh and Sahu 2019).

RQ 3: What are the results derived from the morphology analysis based on keywords across all clusters, and what new avenues for exploration can be identified within the realm of research study?

Morphology analysis breaks down the area of topic and study into smaller parts to describe it deeply.It stimulates complex difficulties without numerical calculations. This third research question presents a method for analyzing Gig Work and digital work studies using keyword-based morphology.

The subsequent sections of this paper are organized as follows - Section 2, the software utilized in the study, as well as the data used and the technique used to arrive at the results, are explained. The results and findings are summarized in Section 3 and include information on the top publishing journals, highly referenced contributing authors, most prolific authors, and top nations focused on this topic. The study's findings are presented in the final section. The primary instruments for conducting a systematic review and performing bibliometrics analysis to expand the study's questions are the software and review methodology.

The study's goals are to do bibliometric, cluster, and morphology analyses. These will help find current research trends, define possible new research areas, and look into cluster themes. The results of text mining using keyword analysis will help researchers figure out where study is now and where it might go in the future.

2. Literature Review

2.1 The Gig Economy and HRM

The gig economy, which is made up of short-term, flexible jobs made possible by digital platforms, has become a big part of the modern job market. The gig economy includes a lot of different types of work, from temporary and project-based jobs to independent and contract work. According to Bhatt & Muduli (2022) the gig economy gives workers freedom, flexibility, and the chance to work on a wide range of projects. However, it also has problems, such as job insecurity, a lack of perks, and few chances to advance in their careers. When it comes to human resource management, the gig economy forces companies to rethink standard job models and change the way they do HR tasks to handle a more flexible and changing workforce. Harris and Krueger (2015) say that gig workers don't always get the same perks as full-time workers, like health insurance, retirement plans, and paid time off.

This makes me think about what HR should do to make sure gig workers are treated fairly and get help when they need it. Sundararajan (2016) also says that companies need to come up with new ways to hire people, handle their performance, and help them grow in the gig economy, because gig workers don't get as much oversight or long-term investment as regular employees do.

2.2 Digital Work Environment and HRM

When digital technologies are used to handle and help with work processes, communication, and teamwork within organisations, we talk about a "digital work environment." In HRM, digital tools are being used more and more for jobs like hiring, training, managing performance, and getting employees involved. Cascio and Montealegre (2016) say that the digital workplace has changed how HR professionals handle talent, making processes more efficient and giving them more freedom. Technologies like artificial intelligence (AI), big data, and cloud computing are now an important part of human resource management (HRM). They help companies simplify their processes, make better decisions, and make the work experience better for their employees (Gupta, Fernandes & Jain 2018). Employees are no longer limited to office areas because of the move towards digital work environments. More and more people are working from home. The COVID-19 pandemic sped up this change, which has made people pay more attention to virtual communication tools, remote performance management, and the health and happiness of their employees (Bankins, 2021). As more people work from home, HRM needs to be able to handle new problems, like keeping the company culture alive and making sure employees are engaged.

2.3 Gig Economy trends

The rise of gig employment has often been more positively welcomed by nations and organizations with lower and moderate income where concerns such as labour regulations and rights for workers are tied to promote financial growth.24 This has got a great scope and importance in the post-pandemic world as the WFH came into picture with at most priority during the pandemic.25 Nations with lower incomes like Malaysia, Nigeria and the Philippines encourage gig economy by providing more flexibility in terms of both employment and remuneration. This pattern reduces the risk of economic fluctuations among workers.14 On the other hand, gig workers receive lower payments and no proper hikes in the income, risk of termination and discontinuity of the work, low professionalism, and no retirement benefits.26 American workers are now occupied in diverse roles as gigs rather than in traditional jobs. The United States had the gig economy’s most rapid expansion, and the transition from traditional, long-term work to it had a significant impact on the labour force and economy of the United States. The United States treats individuals who work independently as employees.14 The common interests, objectives, standards, and flexibility towards this field are clear to gigglers that make them enter the gig environment. Gigs were allotted and handled digitally, using algorithmic-based management techniques.8 Workers are hired promptly, and hiring depends upon the work i.e. assigned, but not on the basis of experience, skill, or the 2 International Journal of Engineering Business Management

requirement of training or technology. Wages are designed based on the task or contract assigned to the worker.14. Latest literature about Gig economy illustrate in the table 1.

(Author's name and Year)	Topic of Research	Industry Focused	Theory used	Research Methodology adopted	Country Focused
(Ackah, G et al. 2024)	Special Economic Zones, Gender and Innovations	ISSER(University of Ghana)	Treatment Estimation Technique	Modelling and Case Study	Ghana, Africa
(Alacovska, A et al. 2024)	Rational Work perspective in Digital workers	Visual Designer and Grpahics	Rational Work Perspective Technique	Interview and Modelling	Frederiksberg, Denmark
(Anwar, M et al. 2020)	Hidden Transcripts of Gig Economy	Africa Exercise Agency	N/A	Interview and Case Study	Africa
(Bénédicte Apouey et al. 2020)	Gig workers, Financial Precarity & Mental Well-Being	Polling Institute, France	N/A	Interview and Case Study	France
(Himani, R et al. 2025)	Transformative dynamics of Gig workers	Non-Traditional Online Platform	Perfromance Analysis and Science Mapping	Secondary Data set	World-Wide
(Webster, N. A. et al. 2025)	Strategic Silence for normative work	Swedish Government Ofiicial Reports(SOU Series)	Multi method Study	Secondary Dataset	Nordic Countries, Sweden
(Stryzhak. O et al. 2024)	Challenges for the Gig Economy	Travel and Tourism Development Index	Technology Governance People Impact	Network Readiness Index(Measure of Countries level of Dogitalization)	112 Countries
(Alacovaska, A. et al. 2025)	Power of Visual Images at Gig Economy	Ilustrators, Animators and Graphic Designers	Redefinition of Identity work	Visual Method Approach	Remote Gig Workers
(Fernández-Ruiz, M. et al. 2025)	Awareness in Algorithmic Control in Gig Economy	Graphic Designers	Six Mechanics of Algorithmic Control	Interview and Case Study	42 Platform workers in different sectors
(Zhang et al. 2023)	Algorithmic management is characterised by the use of algorithms to coordinate, monitor, and direct gig workers within a decentralised working environment and context.	N/A	Perceived Algorithimic Management	Interview and Modelling	

Table 1- Recent Studied on Gig Economy, Sharing Platform and Digital work
Source: SCOPUS Database and Author Analysis

2.4 Bibliometric Analysis in HRM Research

By looking at published literature, bibliometric analysis is a quantitative way to figure out the importance, trends, and patterns in a certain area of study. More and more, bibliometric analysis is being used in HRM to find important study topics, important authors, and new trends. Recent research using bibliometric methods has looked at how digital technologies and human resource management (HRM) interact. These works show how the field is changing in response to technological progress (Anayat, 2023).
For instance, bibliometric analysis has been used to look at the growing amount of research on digital HRM tools, like AI for hiring and managing talent, and how they are changing HR practices (Cappelli, Tambe & Yakubovich, 2019). By showing how different research topics are connected, bibliometric analysis helps us understand the direction of HRM research and the main factors that will shape the future of work.

2.5 Cluster Analysis and HRM Research

Cluster analysis is another statistical method that can be used in HRM study to find groups of literature that are about the same thing. This method helps organise and summarise a lot of study, giving a clear picture of the most important areas of interest. In human resource management (HRM), cluster analysis can help find the different parts of digital workplaces and the gig economy. For example, it can help with performance management, employee involvement, and the use of digital tools for HR tasks. Recent research has used cluster analysis to look at how digital technologies have changed HRM. They found groups linked to working from home, hiring people with AI, and HR decisions based on data (Exarchou et al., 2024). By using this method, HR researchers can find hidden patterns in the study and get a fuller picture of how digital technologies are changing the HR field.

2.6 Morphology Analysis in HRM Research

Morphology analysis breaks things down into their basic parts and looks at how they relate to each other to understand how complicated things are put together and how they change over time. In HRM, morphology analysis can be used to see how HR practices have changed because of the rise of the job economy and digitisation of work. With this method, researchers can look into many aspects of digital workplaces and the gig economy, including organisational culture, leadership styles, and the part HR professionals play in handling a diverse and flexible workforce. Recent studies have used morphology analysis to look at how technology, HRM, and employee experience are connected. These studies have shown how HRM practices can change to adapt to the needs of a changing workforce (Varma, 2023). In this digital age, morphology analysis helps to find new HRM trends and possibilities by looking at how different factors relate to each other.

2.7 Scope of the study

This study focuses on bibliometric analysis based on several techniques which are as follows: (1) Performance analysis examines the total number of publications which have been published annualy to highlight the growth of the research, insights of the authors research contribution towards Gig Economy, the most influential or leading contributors and cited publications spotlight the most significant research areas and topic shaping the field of Gig Economy. (2) According to Shishoda et al. (2021), cluster analysis can be utilised as an enhancing technique in bibliometric analysis, and it specifically looks at clustering with the purpose of forming thematic or sociological groups. Network clustering and analysis of progress can help understand the evolution of a subject field (Donthu et al. 2021). (3) Morphology analysis dissects the subject
matter into components for comprehensive description. It replicates intricate challenges without the use of numerical computations. A comprehensive approach has been employed across various disciplines such as biology, engineering, and management to methodically structure and examine the entire array of connections within multidimensional, non-quantifiable environments (Haaker et al. 2021). A systematic literature review (SLR) summarises primary research using open and reproducible techniques; the MA is a subset of this type of review (Baliga et al. 2021). Using keyword-based morphology, this research attempted to build a way for analysing digital work studies and the adoption of the gig economy.

3. Methodology

The application of bibliometric analysis in academic research involves the examination of enormous amounts of material pertaining to various subjects or domains. It facilitates the collection and arrangement of complex bibliometric data. Therefore, in order to execute a quantitative analysis and gain a deeper understanding of the literature, the current study utilized the bibliometric analysis approach. Therefore, it is crucial to carefully select and consider the documents under scrutiny. The subsequent sections delineate the various stages of the research procedure.

Step 1: Selection of Database - Researcher used Scopus database for this bibliometric analysis. Elsiever selected Scopus over Web of Science due to its superior coverage. The retrieved CSV files contain several possible publications. Therefore, researchers took all necessary steps to reduce the influence of selection biases. Also, researchers did their best to eliminate duplicate results, standardize the studies researchers used and enhance the data quality. Last but not least, researchers strictly adhered to the criteria laid out by Dickersin for selecting research in order to weed out any irrelevant articles. Researchers were unable to evaluate a few publications; therefore, researchers excluded them. Researchers removed all irrelevant and repetitive articles to maintain consistency and minimize prejudice.

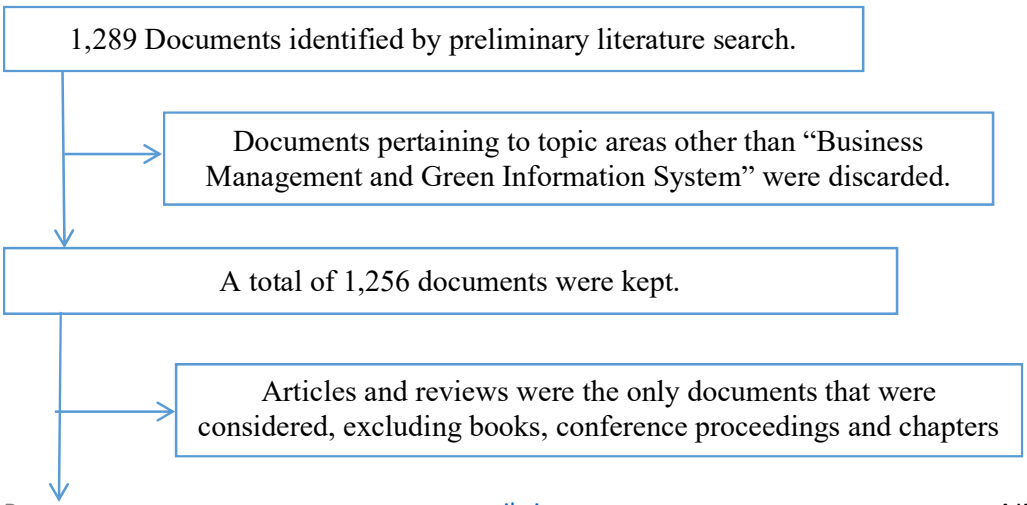
Step 2: Creating the Search Formula - Researchers conducted a thorough analysis of the Green Information System literature to construct the search formula. Researchers employed several other concepts and keywords, in addition to the term "green information system," to search for academic research. The list comprises the following terms: "Sustainable

development," "environmental quality," and "Information System." Researchers used the "title, abstracts and keywords" search fields and identified the keywords using the boolean operators "AND|OR." The selected search algorithm comprised the keywords "Sustainable Development," "Environmental Quality," and "Information System."

Step 3: Gathering of Data and Access - The initial literature review yielded 1,289 documents, as shown in Figure 1, using the search approach outlined earlier. After that, we retained the following types of papers: articles, reviews, and 1 documents, excluding notebooks, conference proceedings, and book chapters. We procured a total of 1,241reviews and articles. The only source taken into account was journals, from which only 993 articles were found. Researchers removed some publications because their language was not English. After extensive discussions, researchers eventually took into account a total of 951 documents for bibliometric analysis.

Step 4: Conducting the Analysis - Researchers were able to improve upon and make the most of traditional reviews' strengths while overcoming their weaknesses with the help of VOS viewer, a program that provides a wide variety of bibliometric capabilities. Several review studies have used VOS-viewer because of its benefits. Researchers conducted cluster analysis on Green Finance-related topics using VOS viewer, identifying the most referenced publications, authors, sources, organizations and nations.

Step 5: Identifying Present Themes and Future Research Directions - To better understand the many patterns and trends found in the literature, the study used VOS-viewer as its analytical tool. The user-friendly VOS-viewer may examine many different types of data linkages. Furthermore, it is a free and open-source program that uses mapping analysis to enhance dataset outcomes. For the purpose of bibliometric analysis, this application creates maps of bibliometric coupling networks, co-citation networks, and keyword co-occurrence networks. Finally, the researchers created several bibliometric maps and tables to achieve their research goals. The researchers appropriately interpreted the study's final results. Researchers conducted a cluster and Morphology analysis using the VOS viewer application to identify the numerous developing themes in the field of green finance. Scholars and researchers in business and environmental finance can use this study to gain a deeper insight into the present landscape of the discipline and its prospective pathways. The next step was to use cluster analysis and this study's findings to propose new, uncharted territory for academic inquiry.



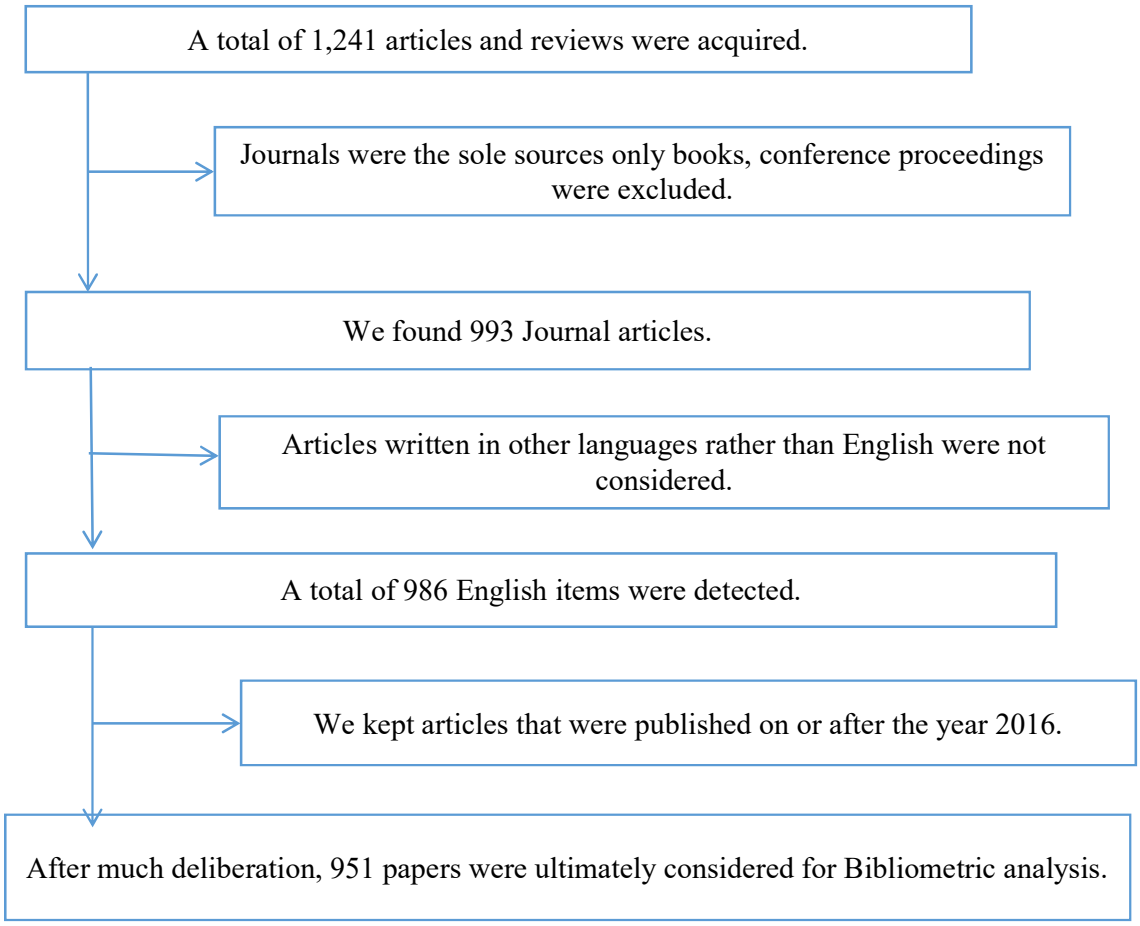


Figure 1: The steps of Literature collection and selection
Source: SCOPUS Database and Author Analysis

4. RESULTS AND INTERPRETATION

4.1 Year Growth Rate

Table 2 illustrates that the number of publications has grown strongly over the past few years, hitting the highest production levels in 2017 and 2018. 350 articles were published during this time, making up 94.78% of total publications. Also, the average yearly total number of citations went up a lot during the same time period, reaching all-time highs in 2019, 2017, 2020, and 2018. Still, this shows that 63.59% of the average number of mentions per year were found during the same time period. Not only that, but 2017 was the most productive year, with 186 articles (19.55%). Figure 2 shows the graphical representation of the year percentage growth rate.

Year of Publication	No. of Publication Articles	% (N=951)	% of Cumulative	Growth rate
2016	154	16.19	16.19	1.702%

2017	186	19.55	35.74	2.055%
2018	164	17.24	52.98	1.821%
2019	145	15.24	68.22	1.602%
2020	124	13.03	81.25	1.370%
2021	94	9.884	91.13	1.039%
2022	50	5.257	96.38	0.552%
2023	29	3.049	99.42	0.320%
2024	5	0.525	99.94	0.055%

Table 2 - Year-wise Growth Rate
Source: SCOPUS Database and Author Analysis

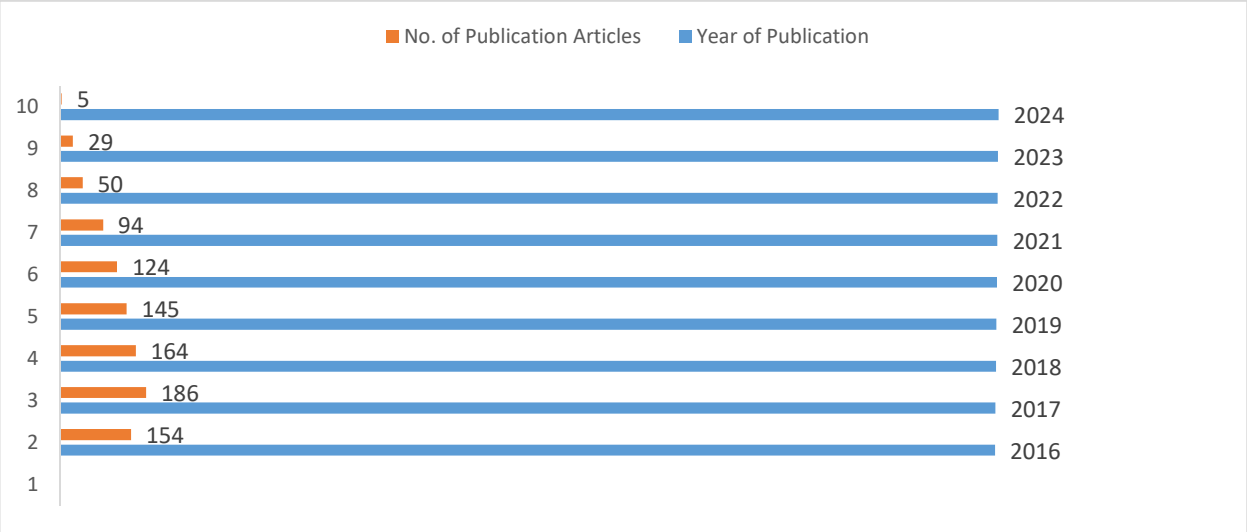


Figure 2- Year Growth Rate
Source: SCOPUS Database and Author Analysis

4.2 Top 10 most influenced articles related to Gig Economy

S. No	Title	Authors	Year	Citation	Journal	Results of the study
1	Algorithmic control and autonomy in the global gig economy: Good gig, bad gig	Wood A.J et al.	2019	1026	Work, Employment and Society	This article evaluates the job quality of work in the remote gig economy. Such work consists of the remote provision of a wide variety of digital services mediated by online labour platforms
2	What roles do platforms have? Understanding the gig economy	Vallas S et al.	2020	626	Annual Review of Sociology	We recognize four significant themes in the literature concerning platform work, along with the metaphors that accompany each one. Platforms are perceived as entrepreneurial incubators, digital confines, accelerators of instability, and adaptable entities that evolve in response to their surroundings.
3	Digital labor and development: effects on worker livelihoods from global digital labor platforms and the gig economy	Graham M et al.	2017	593	Transfer	The article shows that although there are important and tangible benefits for a range of workers, there are also a range of risks and costs that unduly affect the livelihoods of digital workers.
4	An investigation and research system on digital platforms and the sharing	Sutherland W et al.	2018	498	International Journal of Information Management	We show the idea of platform centralization/decentralization as a useful way to organize the different points of

	economy					view on the sharing economy. We also look at how scholars have talked about technology in general.
5	Algorithmic management and app-work in the gig economy: A research agenda for employment relations and HRM	Duggan J et al.	2020	497	Human Resource Management Journal	This piece suggests that we stop putting gig work into problematic groups and instead divide it into three clear types, each based on important technological features: app-work, crowd work, and capital platform work.
6	Agony and Ecstasy in the Gig Economy: Cultivating Holding Environments for Precarious and Personalized Work Identities	Peteriglieri G. et al.	2019	463	Administrative Science Quaterly	this paper develops a theory about the management of precarious and personalized work identities. In the absence of organizational or professional membership, workers encounter significant emotional tensions that include both the anxiety and fulfillment associated with operating under precarious and personal circumstances.
7	Alternative Work Arrangements: Two Images of	Spreitzer G.M et al.	2017	451	Annual Review of Organizational Psychology and	research findings to identify three dimensions of

	the New World of Work				Organizational Behaviour	flexibility that undergird alternative work arrangements: (a) flexibility in the employment relationship, (b) flexibility in the scheduling of work, and (c) flexibility in where work is accomplished.
8	Riders on the Storm: Italian and UK Gig Economy Couriers' Collaborative Workplace Solidarity	Tassinari A et al.	2020	422	Work, employment and society	This article engages with the discussion surrounding the potentials and challenges of solidarity in the evolving landscape of work. It illustrates the mechanisms through which workplace solidarity among gig workers emerged, focusing on two instances of mobilization involving food delivery platform couriers in the UK and Italy.
9	Platform-Capital's 'App-etite' for Control: A Labour Process Analysis of Food-Delivery Work in Australia	Veen A. et al.	2020	389	Work, employment and society	This qualitative case study adopts a labour process analysis to unpack the distinctive features of capital's control regimes in the food-delivery segment of the Australian platform-

						economy and assesses labour agency in response to these.
10	Humans as a service: the benefits and disadvantages of employment in the gig economy	Prassl J.	2018	363	Human as a Service: The promise and Perils of Work in the Gig Economy	A concluding chapter demonstrates the broader benefits of a level playing field for consumers, taxpayers, and innovative entrepreneurs.

8968 citations have been identified throughout this investigation, with an average of 9.903 citations per document and 3.145 citations yearly per document. Of the total number of citations in the entire collection for analysis, the top 20 most highly referred to papers account for 51.15%. Many of them were released between 2016 and 2020. In addition, Table 3 indicates that as of June 31, 2019, Wood A.J. et al.'s paper, which had 899 citations, was the most globally cited publication. The quality of work in the remote gig economy is evaluated in this article. This type of work consists of the remote provision of various digital services mediated by online labour platforms. This algorithmic management technique used in this article tends to present workers with a great deal of autonomy, flexibility, task variety, and complexity.

Table 3 - Most Influential Articles
Source: SCOPUS Database and Author Analysis

As shown in Table 4, a total of 951 documents were published, which consist of different document types like articles consisting of 690 documents, Books Consisting of 10 documents, Book chapters consisting of 81 documents, Conferences consisting of 114 documents, and Reviews consisting of 43 docments. On the other hand figure 3 shows the graphical representation of document types of articles of Gig Economy in the form of a 3D pie chart.

Document Type	Results
Articles	690
Book	10
Book Chapter	81
Conference Paper	114
Document Type	1
Editorial	3
Note	9
Review	43
Total No. of Documents used in study	**951**

Table 4- Documents Type
Source: SCOPUS Database and Author Analysis

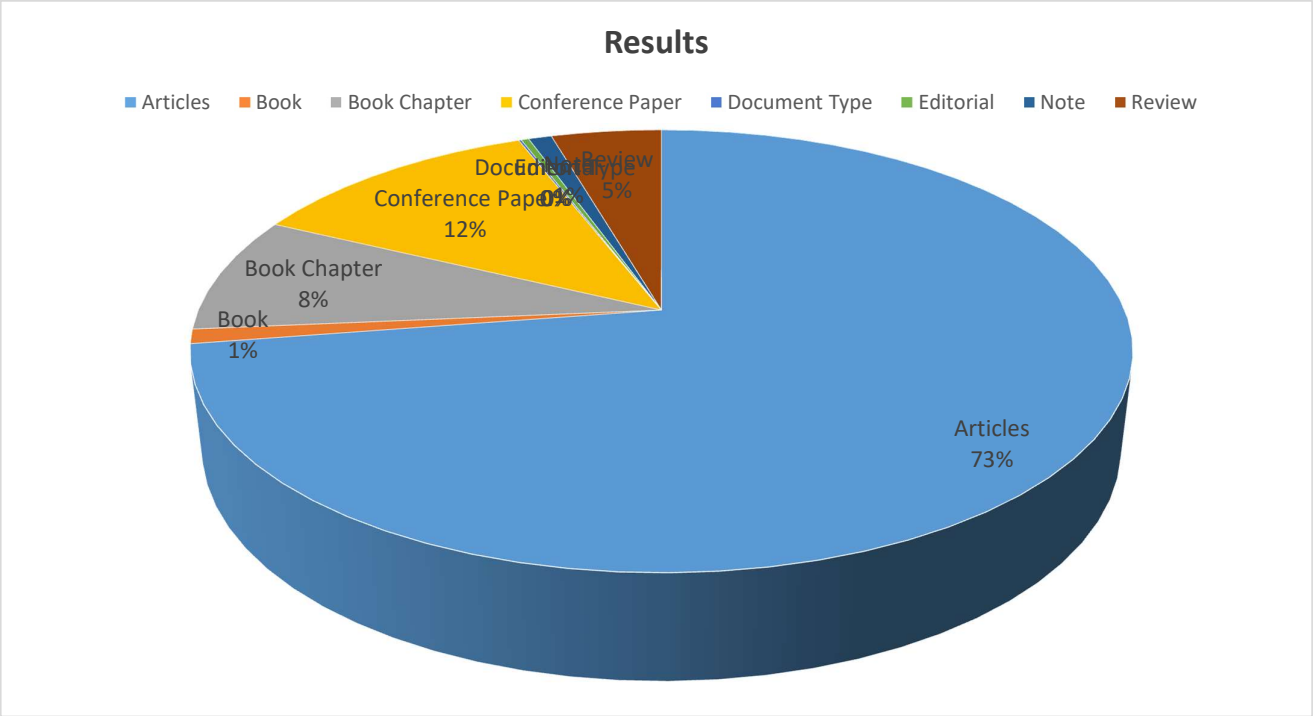


Figure 3- Data Type of Gig Economy
Source: SCOPUS Database and Author Analysis

4.3 Top 10 Cited Author's with their contribution - Table 5 shows the Top 10 most cited author's and author's contribution in which Graham Mark gives 18 documents with 2490 citations. After Graham, Lehdonvirta is the second highest cited author which gives total 10 documents with 2204 citations. In this Table author's count is also mention with the author's contribution. Author Graham Mark gives the most influential paper "Good Gig, Bad Gig-Autonomy and Algorithmic Control in the Global Gig Economy" in which authors count is 4. Figure 4 shows the graphical repersenation of top cited authors of Gig Economy studies.

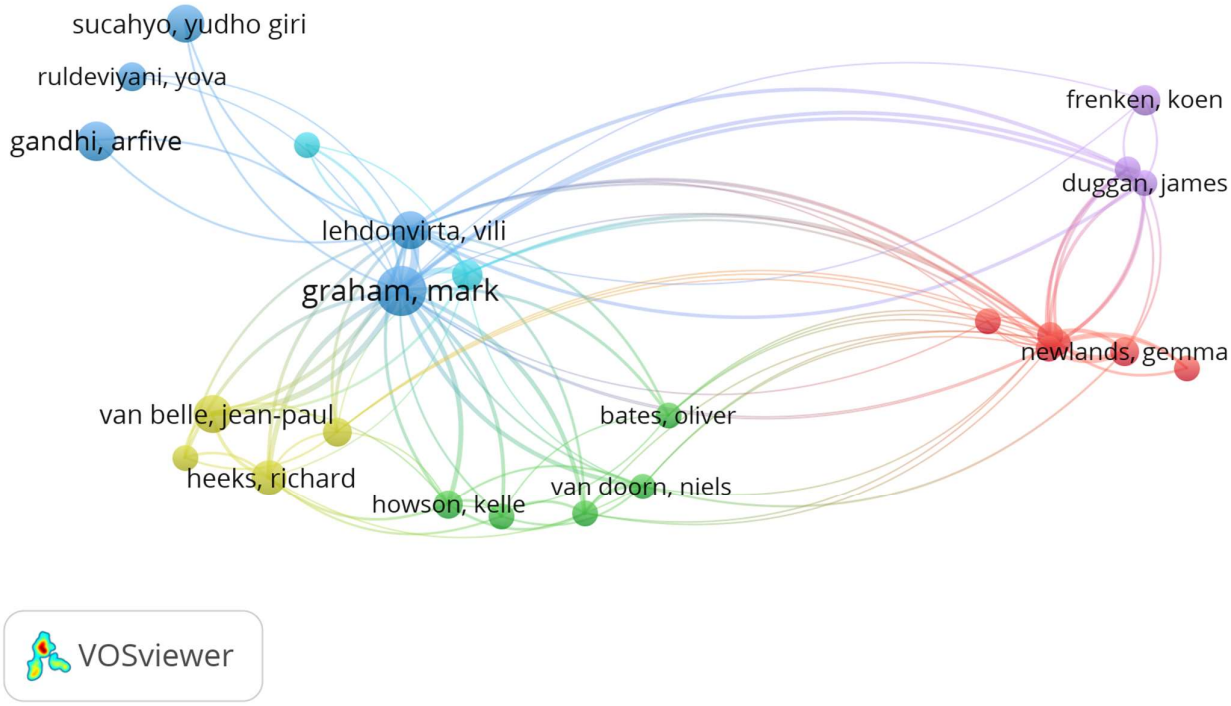


Figure 4- Top Cited Author's
Source: SCOPUS Database and Author Analysis

Author's Name	Document	Citation	Author's Count	Frequency	Total Contribution
graham, mark	18	2490	38	7	266
lehdonvirta, vili	10	2204	18	5	90
barratt, tom	5	682	3	1	3
goods, caleb	5	682	13	4	52
veen, alex	5	682	14	4	56
mcdonnell, anthony	5	495	20	5	100
duggan, james	5	467	17	5	85
anwar, mohammad amir	7	327	16	7	112
frenken, koen	7	250	11	3	33
newlands, gemma	6	239	5	4	20

Table 5- Author's Contribution
Source: SCOPUS Database and Author Analysis

4.4 Top Cited Organization - The classification approach of affiliation was utilized to locate the most relevant institutional affiliations. On the basis of previous co-authorship co-occurence of 3.23 per document author, this reveals the primary institutions that have worked on the theme. Thus, Table 6 presents the results, which show that the top 5 institutions associated with the article production related to the theme are the Oxford University, UK; Institute of Oxford Internet; Oxford university, UK; University College Cork, Cork, Ireland; Bi Norwegian Business School, Norway; and University of Technology Sydney, Australia. In general, the top three countries in terms of output are Europe, Australia, and the United Kingdom. Furthermore, Table 6 illustrates the contribution of all nations as an inter-author country collaboration, or multiple countries on publishing (MCP), with a rate of 7.26%, and an intra-country collaboration, or single country publication (SCP), with a rate of 92.74%. In whole, 83.78% of the citations are linked to the first ten countries. Several realities are demonstrated by the findings in Table 6. Three countries stand out in terms of total citations: Australia (2262), the United States (6391), and the United Kingdom (6574). Considering at productivity from a different angle, the United States (233), Australia (70), and the United Kingdom (174) rank first and third, respectively, in terms of publications. Figure 5 shows the graphical representation of top cited organizations which published documents of Gig Economy.

S. No	Organization	Documents	Citations	Total Link Strength
1	Oxford University, UK	6	1203	23
2	Oxford Internet University UK	10	1147	14
3	Cork University, Ireland	5	494	16
4	Norway Business School	6	351	8
5	University of Technology, Sydney, Australia	5	262	8
6	Oxford Internet University,	5	167	8
7	University of Eat London	6	18	3

Table 6- Top 7 Cited Organization

Source: SCOPUS Database and Author Analysis

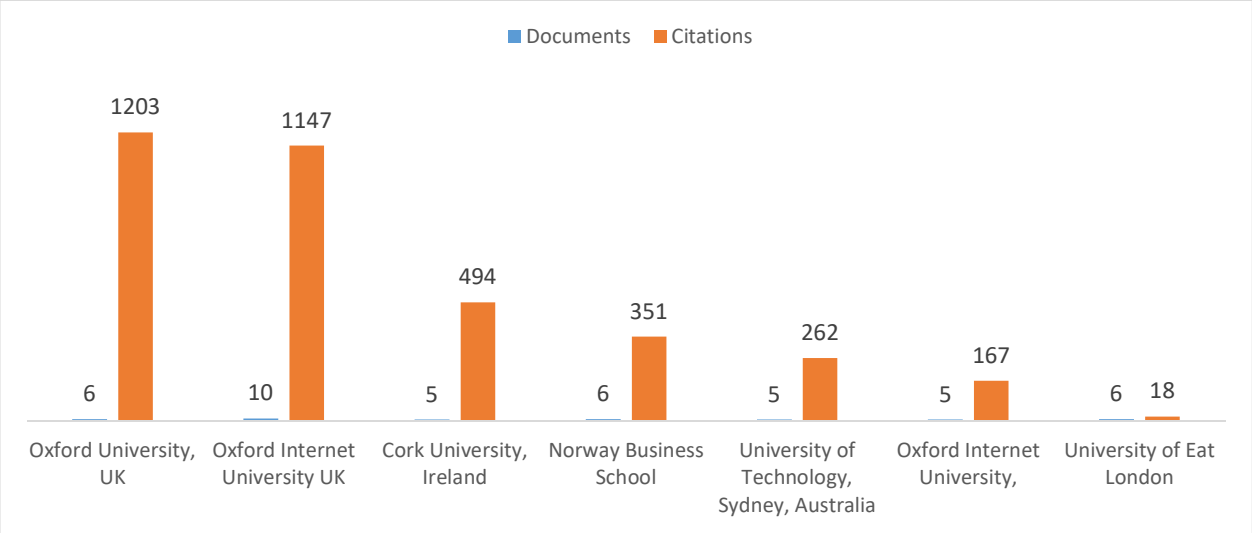


Figure 5- Top Cited organizations
Source: SCOPUS Database and Author Analysis

4.5 Top 10 Sources of Gig Economy

Table 7 and Figure 6 shows the top 10 sources of publication of Gig Economy documents, in these figures it can be concluded that Work, employment and society received the highet number of citation that is 2696, second most cited journal is New technology, work and employment which receives in total 1122 citations, third most cited journal is Journal of industrial relations which receives in total 588 citations with 11 documents. Highest number of documents is published by New technology, work and employment which are 30 in number.

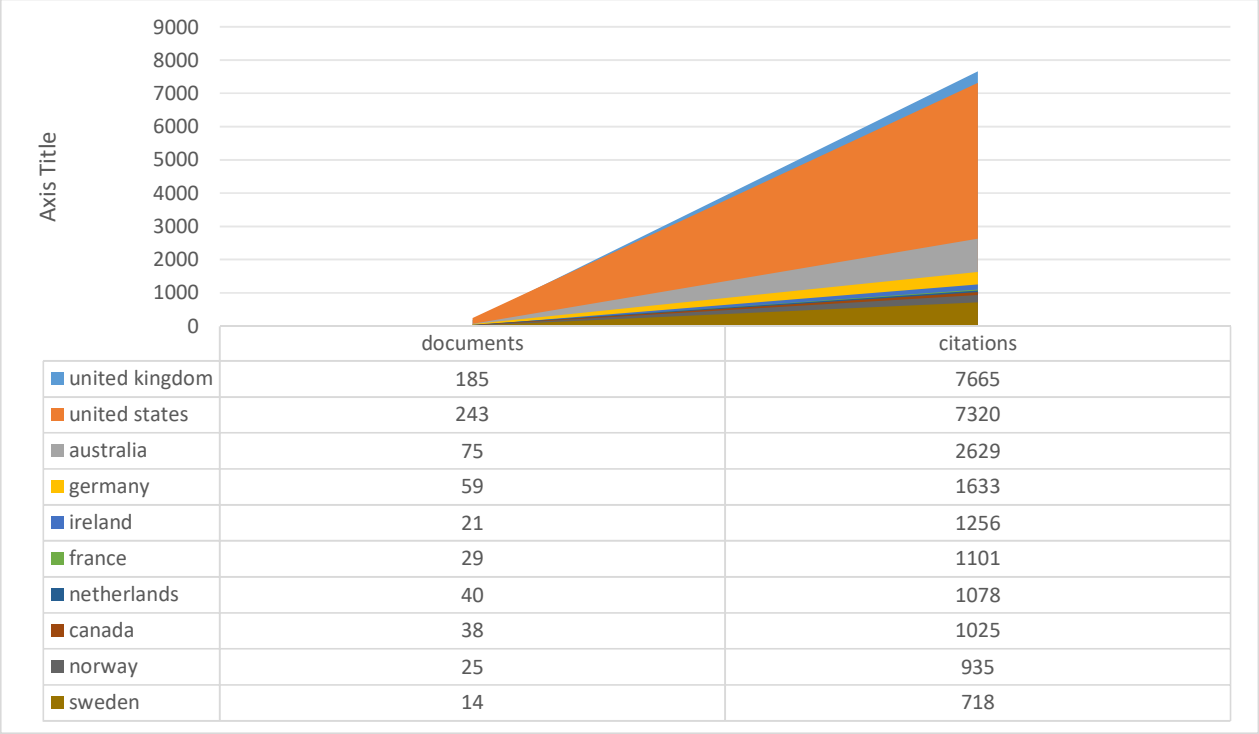
Source	Documents	Citations	Total link strength
Work, employment and society	19	2696	211
New technology, work and employment	30	1122	113
Journal of industrial relations	11	588	76
Management science	7	571	3
Proceedings of the acm on human-computer interaction	20	566	22
Environment and planning a	12	558	59
New media and society	15	529	32
International journal of human resource management	10	408	37
Antipode	6	330	37
Proceedings of the acm conference on computer supported cooperative work, cscw	11	310	4

Table 7- Top 10 most Cited Sources
Source: SCOPUS Database and Author Analysis

Figure 6- Top Cited organizations
Source: SCOPUS Database and Author Analysis

4.6 Top 10 most cited countries of Gig Economy

Figure 7 and 8 shows the graphical representation of top cited countries of Gig Economy documents, which shows that United States is the highest Gig Economy publisher country which gaves highest number of documents of Gig Economy which are in total 243.



	documents	citations
united kingdom	185	7665
united states	243	7320
australia	75	2629
germany	59	1633
ireland	21	1256
france	29	1101
netherlands	40	1078
canada	38	1025
norway	25	935
sweden	14	718

Figure 7- Top Cited Countries
Source: SCOPUS Database and Author Analysis

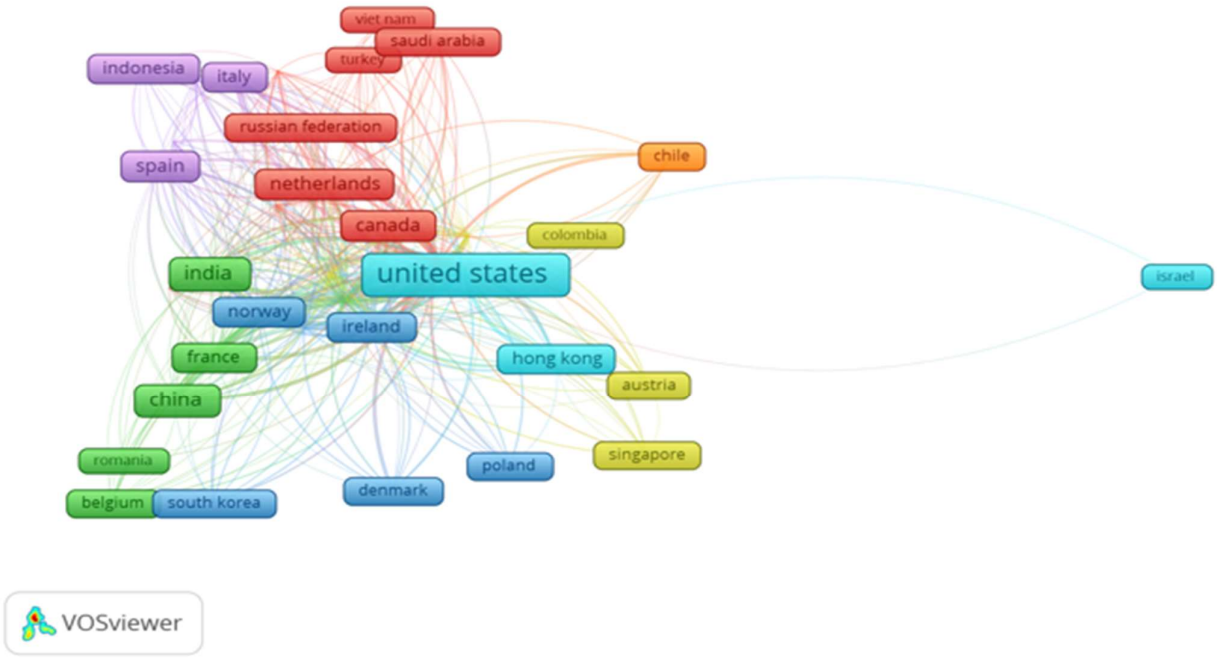


Figure 8- Top Cited Countries
Source: SCOPUS Database and Author Analysis

5. Cluster Analysis

5.1 Top 40 most Representative Keywords

Table 7 presents a comprehensive overview of the 40 most frequently occurring keywords identified in this study. We conducted an evaluation of over 1750 keywords—a metric provided by the biblioshiny package, which is based on terms or phrases that frequently appear in the titles of an article's references—and 1690 author keywords, aiming to discern the most relevant terms within the collection. We aligned the terms that encapsulated analogous ideas to mitigate inaccuracies during the creation of the maps. For instance, we consolidated the terms "gig - economy" and "gig Economies" into "gig Economy," combined "freelance" and "freelancers" into "freelancers," and unified "business model" and "business models" as "business models." Moreover, we omitted phrases that failed to contribute value to the analysis, including “science,” “pathway,” and “research.”

Keyword	Occurrences	Total link strength	Keyword	Occurrence	Total link strength
gig economy	883	2849	economic aspect	29	341
sharing economy	94	368	platform capitalism	29	97
employment	82	558	labour market	28	135
platform economy	78	316	digital labour	26	94
gig work	67	291	adult	25	371
workers'	65	382	commerce	25	121
platform work	64	281	digital economy	25	106
digital platforms	61	277	precarious work	25	123
uber	58	237	future of work	24	133
human	55	646	precarity	24	98
algorithmic management	46	237	economics	23	173
platforms	44	192	gender	23	121
labor market	41	268	crowdsourcing	22	118
covid-19	39	212	self-employment	22	80
food delivery	38	234	worker	22	247
gig workers	38	113	human resource management	21	86
working conditions	36	288	china	20	112
humans	32	409	female	20	317
article	31	383	male	20	306
gig-economy	30	94	algorithm	19	177

Table 8- Highest Occurred Keywords
Source: SCOPUS Database and Author Analysis

To see the group-based intellectual organization, look at Figure 9. It shows the co-citation network. This network shows the same six-cluster the company. To make a network out of the 1750 keywords in the collection as a whole, these groups were looked at based on how often they appeared with other keywords.

Figure 9- Six Cluster structure of Gig Economy study
Source: SCOPUS Database and Author Analysis

The main goal of clustering is to put things into social and thematic groups. This method is used a lot in biblimetric analysis (Shishodia et al. 2021). By making network clusters and looking at their growth, you can see how any study or topic has changed over time (Donthu et al. 2021). Researchers can learn a lot about the structure and history of important topics in a field by looking at co-citations and bibliographical pairing (Barbora 2021; Dash et al. 2022; Singh and Sahu 2019). Through a network of 951 papers and biblimetric analysis, we can find themes that are similar to both the gig economy and digital work. For this study, co-occurrence keywords of papers were used to look at groups. Based on what the study says, an analysis of the Vosviewer software found six cluters. We looked at all the papers in the cluster and talked about and came up with a theme for each cluster based on what was in that cluster. Also, the study questions have been written down for future researchers to use. Figure 10 is a graph that shows how the clusters are organized. Below, we'll talk more about each cluster and its theme, which was found in Table 9 from the content review.

Cluster	Items	Theme of Cluster	Highest Keyword Occurrence	Links	Total Link Strength
1 (Red)	87	Gig economy and platform Work	883	271	2849
2 (Green)	68	Social networking workers and food delivery	65	141	382
3 (Blue)	44	Digital work and sharing economy	94	119	368

4 (Yellow)	40	Human health status and job stress	55	132	646
5 (Purple)	18	Motor transport and road safety	9	52	120
6 (Light Blue)	18	Gig workers and precarious employment	82	171	558

Table 9- Highest Occurred Keywords
Source: SCOPUS Database and Author Analysis

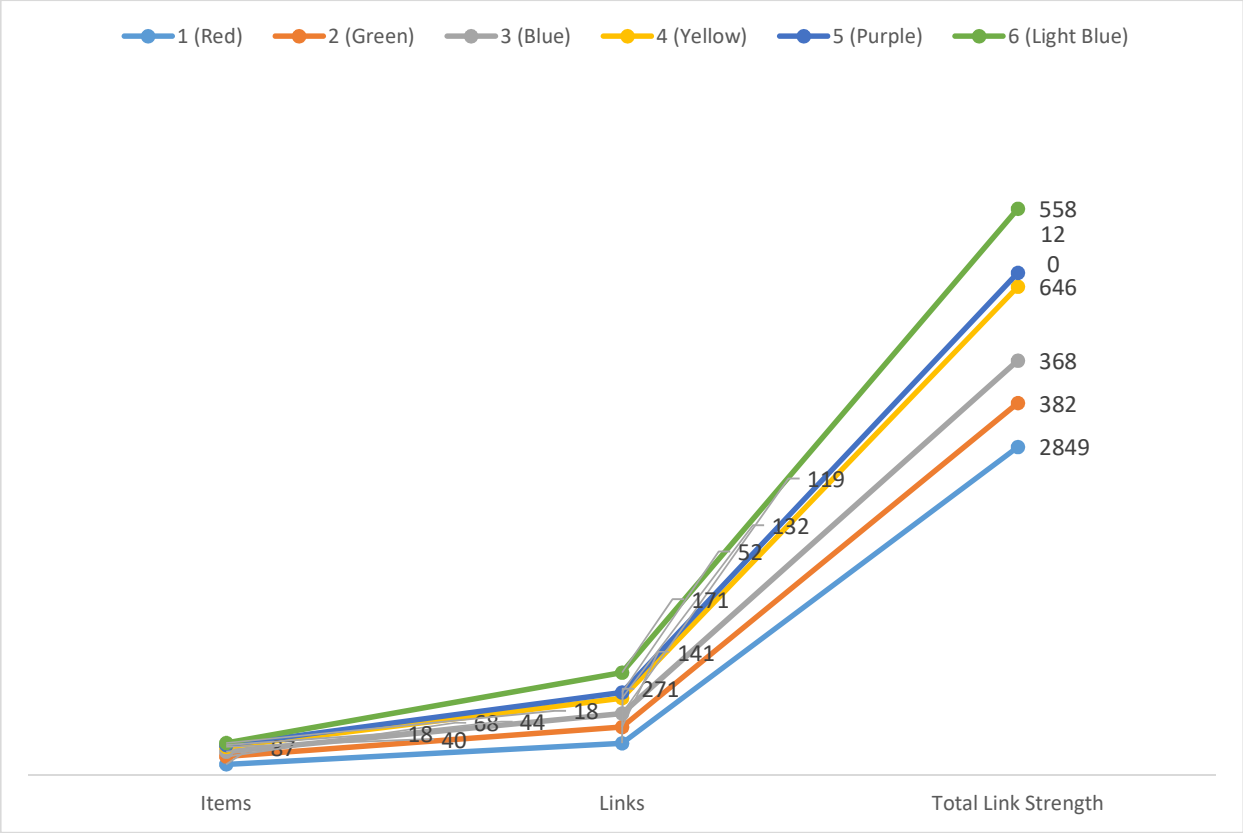


Figure 10- Graphhical Representation of Six Cluster structure of Gig Economy study
Source: SCOPUS Database and Author Analysis

Cluster 1: This Cluster consists of 87 items, and the theme of the cluster is Gig Economy and platform workers, and the most cited document title is "Good Gig, Bad Gig, Autonomy and Algorithm Control in the Global Gig Economy." which is given by Wood A.J et al. in 2019, received 2077 citations and published by Work, Employment and Society Journal. This article evaluates the job quality of work in the remote gig economy.This paper shows that algorithm control is central to the operation of online labor platforms by offering workers a high level of flexibility, autonomy, task variety, and complexity. However, while algorithmic control provides remote gig workers with formal control over where they work, workers may have little real choice but to work from home, and this can lead to a lack of social contact and feelings of social isolation. Separate cluster first is shown is Figure 11, Based on the study of cluster one, the following research ideas have been put forward for future researchers:

1. The expansion of gig-economy through the widespread use of digital platform requires addresing gaps in legislation by revising labour standards and regulating employment conditions.
2. To identify and analyze the importance of job satisfaction in the platform workers.
3. To devise policy recommendations on accounting and protecting the gig-worker's rights must be observed.

Figure 11- Seperate First Cluster from Six Clusters
Source: SCOPUS Database and Author Analysis

Cluster 2: Cluster 2 consists of 68 items; the link is 141, the total link strength is 382, and it occurred 65 times. The theme of the cluster is Social networking workers and food delivery. The most influential article in this cluster is "Analysis of Job Quality in the Australian Platform food delivery sector." Goods C et al. gave in 2019 and published by the Journal of Industrial Relations. This in-depth case study looks at the quality of work in the Australian platform-based food delivery sector. This is a part of the growing "gig economy," in which workers are independent contractors who do digitally enabled and limited work and are paid by the piece. The results of this study show that the gig economy is a new junction in the creation of capital. Regulators, researchers, workers, and other important parties need to take these effects seriously. Separate cluster second is shown in figure 12, based on the study of cluster two, the following research ideas have been put forward for future researchers:

1. To identify the barriers in the path of adopting the digital work and online freelancing.
2. To identify the casual interations and coordination among the gig workers and their organizations.

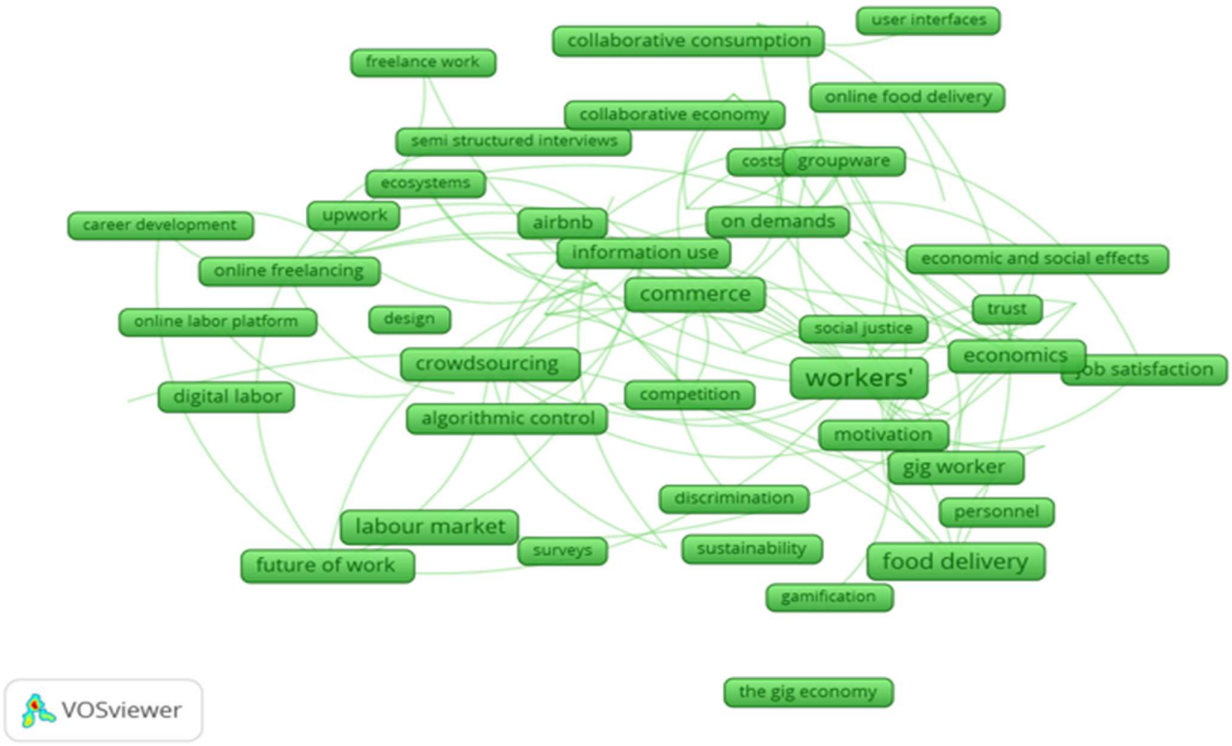


Figure 12- Second Cluster
Source: SCOPUS Database and Author Analysis

Cluster 3: Cluster 3 consists of a total of 44 items, the link is 119, and it occurred 94 times in different articles. Theme of this cluster is digital work and sharing economy. The most influential article is "The ambivalence of logistical connectivity- Co- Co-research with Foodora Riders." by Leonardi D et al. In 2019, the journal was Work Organization, Labour, and Globalization, where it received a total of 22 citations.
The idea of logistical connectivity is looked at in this piece through a two-sided and conflicting lens. The study is based on real data that was collected in 2016 in Turin, Italy, when Foodora workers went on strike. Findings show that logistical connection is a new type of widespread control that workers can shake off and reverse, and it becomes a way for them to organize and mobilize themselves. Separate cluster third is shown in figure 13, here are some study ideas for future researchers based on the analysis of cluster three:

1. To investigate the general theme of the forms of subjectivation that matured within the mobilisation.
2. To investigate the the specific aspects that are linked to the subversion of logistical logics and need to focus on relational dimension.

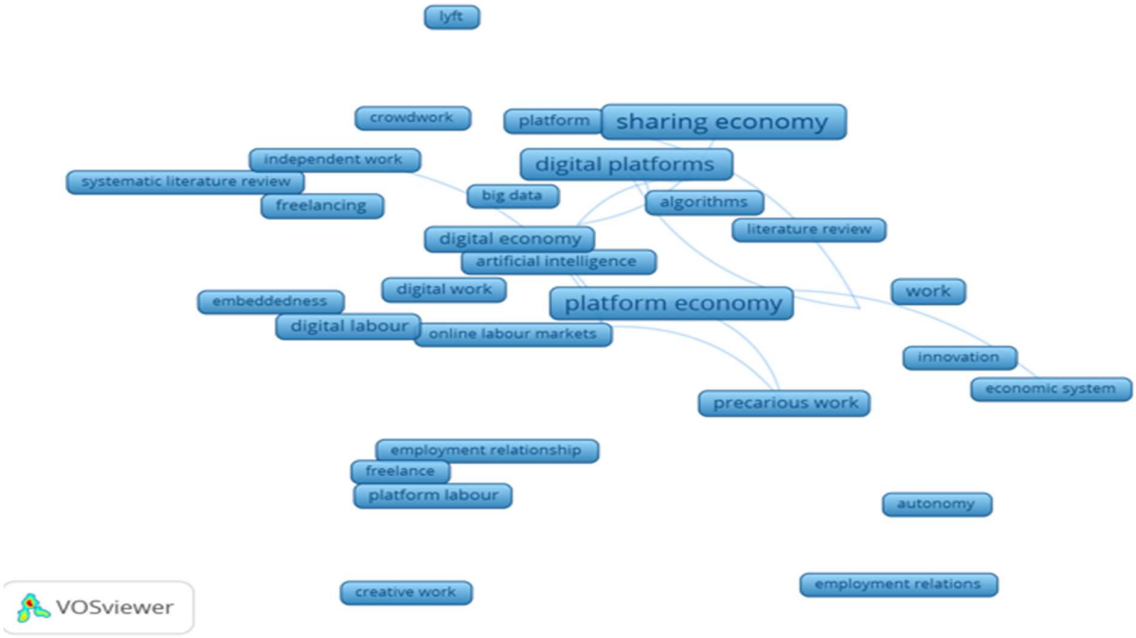


Figure 13- Third Cluster
Source: SCOPUS Database and Author Analysis

Cluster 4: This cluster theme is Human health status and job stress, in this study most occurred keyword occurs 55 times with links 132 and with link strength 646. Separate cluster fourth is shown in figure 14. In this cluster total items are 40 which consist of Economic Aspect, Adult, Male, Yong Adult, Psychology, Mental Health, Work Environment, Safety, Pandemic, Occupation, Social Protection, Decent Work, Neoliberation, Precarious Work and Flexible Work. Precarious Work occurred the highest number of times that is 24 in the study of Gig Economy.

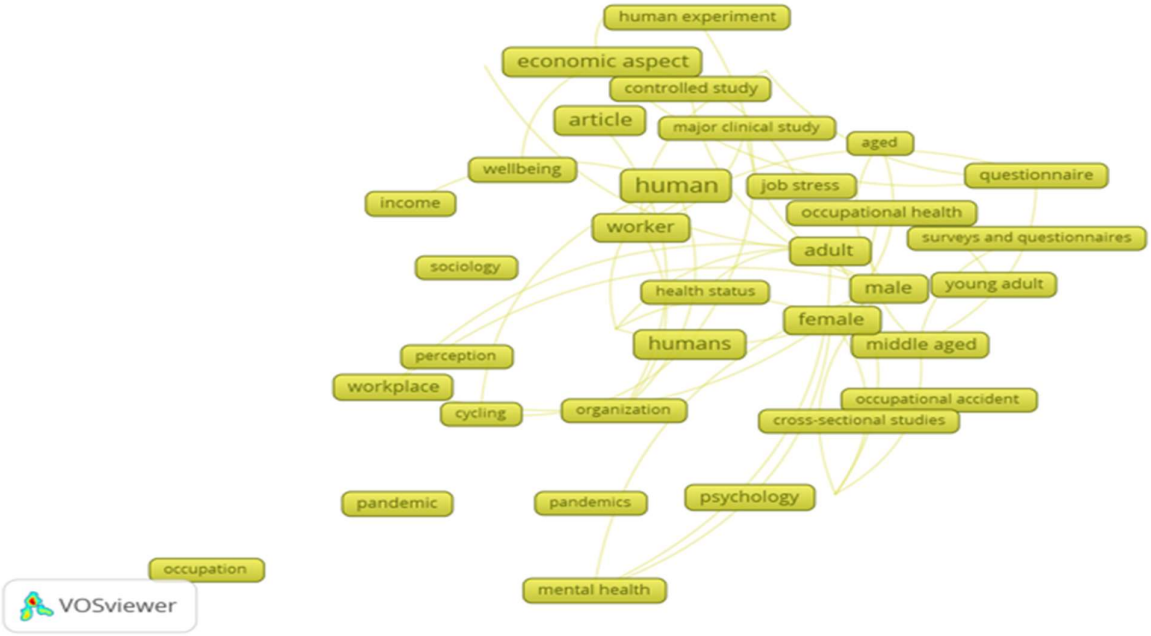


Figure 14- Fourth Cluster
Source: SCOPUS Database and Author Analysis

Cluster 5: This cluster consists of 18 items and the theme of this cluster is Motor transport and road safety. Highest occurene of keyword is 9 with 52 links and total link strength is 120. Separate cluster is shown in figure 15, the most influential paper is “What do platforms do? Understanding the Gig Economy.” " published by the Annual Review of Sociology in 2020 and received 626 citations. the author of this paper is Valla S. et al. This paper delineates four principal themes within the literature concerning platform work, with the corresponding metaphors for each platform conceptualized as entrepreneurial incubators, digital cages, accelerators of precarity, and chameleons that adapt to their surroundings. Platforms embody a unique form of governance, setting themselves apart from traditional markets, hierarchies, or networks. This distinction presents a specific array of challenges for regulators, workers, and competitors within the conventional economic landscape.

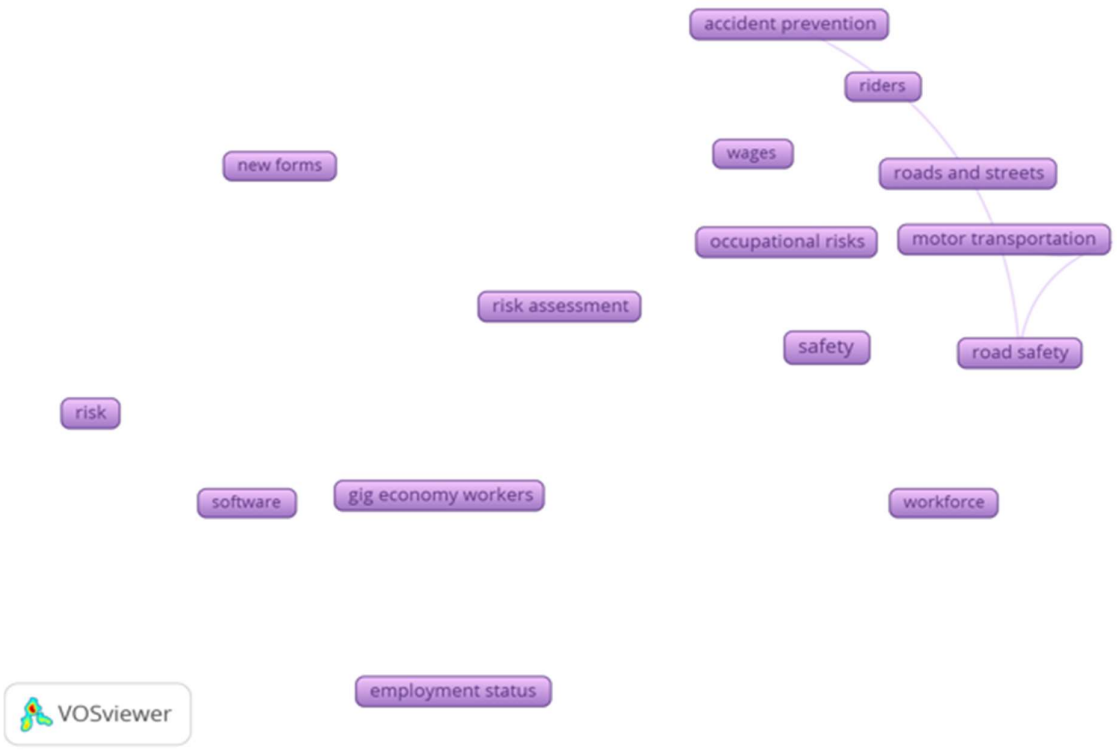


Figure 15- Fifth Cluster
Source: SCOPUS Database and Author Analysis

Cluster 6: The theme of this cluster is Gig workers and precarious employment. This cluter consists of 18 articles and the most influential article is "A Labour Process Analysis of Food Delivery Work in Australia." Veen A. et al. gave in 2020, received 389 citations, and was published by Work, Employment and Society Journal. In order to evaluate the actions taken by labor agencies in reaction to the unique capital control regimes in Australia's food-delivery sector of the platforms economy, this study uses a labor process analysis. Based on interviews with former and current employees of UberEATS and Deliveroo, we can see that these companies' controls over the labor process go beyond simple algorithmic management. Three things stand out: the surveillance nature of their IT infrastructure, their use of information asymmetries to limit employee choice, and the opaqueness of their performance evaluation processes. Figure 16 shows the sixth cluster, the following are study proposals for future researchers derived from the analysis of cluster three:

1. There is a need for more comparative research ehich encompasses other jurisdictions and forms of platform-work.
2. Future researchers need to work on management's role in the labour process of different forms of platform-capital.

Figure 16- Sixth Cluster
Source: SCOPUS Database and Author Analysis

5. Morphological Analysis

Morphological analysis (MA) clearly describes the studied region by breaking it down. Complex problems are simulated without numerical calculations. Biology, engineering, business, and other fields use a generic version of MA to organize and study multidimensional, non-quantifiable relationships (Haaker et al. 2021). The MA represents a specific form of the systematic literature review (SLR), which summarizes primary research through transparent and reproducible methodologies (Baliga et al. 2021). This research employed keyword-based morphology to analyze studies on electric vehicle adoption and sustainability. This research will utilize the authors' keyword data for text interpretation. This project focused on keyword-based text mining will assist researchers in evaluating existing studies and predicting future developments. This approach enables the prediction of electric vehicle adoption and sustainability while identifying new research opportunities. In both horizontal and vertical orientations. Input the author's name into the matrix cell corresponding to their preferred keyword combinations. The results of the morphological analysis of all clusters are presented below. Table 10 displays the findings of a morphology study concerning the cluster 1 keywords. With these ten keywords, the study will find the keyword combinations that show up most often in the papers as well as the keyword combos that show up least often.

	Gig economy	Platform work	Labour market	Working condition	Covid-19	Self-employment	Ethnography	Trade union	Contingent worker	Labour migration

Gig Economy										
Platform work	Graham M. et al. (2020); Lehdonvirta A. et al. (2021)									
Labour market	Zhang L.et al. (2023); Ahmad N. et al. (2021)	Graham M. et al. (2020); Lehdonvirta A. et al. (2021)					Solal, I., & Stabile, M. (2020)			
Working condition	Hong Y. et al. (2022); Anwar M. et al.(2020)									
Covid-19	Solal, I., & Stabile, M. (2020)	Anwar M. et al.(2020); Lehdonvirta A. et al. (2021)	Graham M. et al. (2020); Lehdonvirta A. et al. (2021)							
Self-employment	Webster, N. A., & Zhang, Q. (2025)			Osei, R. D., & Kusi, B. A. (2024)						
Ethnography	Goli, G., & Gobinath, R. (2025)	Thomas, S. M., & Baddipudi, V. (2022)				Webster, N. A., & Zhang, Q. (2025)	Graham M. et al. (2020); Gobinath, R. (2025)			
Trade union	Osei, R. D., & Kusi, B. A. (2024)									
Contingent worker	Astuti, E., & Harsono, I. (2024)	Graham M. et al. (2020); Anwar M. et al.(2020)		Thomas, S. M., & Baddipudi, V. (2022)						
Labour migration	Smith, K., & Johnson, L. (2023)									

Table 10- Keyword based morphology analysis of cluster 1 (Gig economy and platform Work)

Source: SCOPUS Database and Author Analysis

The fact that this combination of keywords appears three times indicates that Graham M. et al. (2020) and Lehdonvirta A. et al. (2021) have conducted research on the gig economy, platform work, and labor market. They expalined that the future of employment is shaped by the gig economy's ongoing growth which presents enormous opportunities and difficulties that stakeholders must jointly handle. 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. Thomas, S. M., & Baddipudi, V. (2022) together have done work on the Contingent worker, Working condition and Platform work keyword. They explained the challenges and opportunities of gig economy. The gig economy would be able to provide gainful employment to the youths. It can also create new opportunities for women as it enables women to have flexibility in

terms of work place and working hours leading to a surge in their enrolment in such jobs. Gig workers facing so many challenges on a regular basis like there are lack of laws in addressing gender discrepancies while getting gig work on online gig platforms, however,the biggest challenge to most of the freelancers is to find consistent work on digital platform. Additionally, they face issues of payment protection after the successful delivery of work.

	Workers	**Food delivery**	**Labour market**	**Commerce**	**Economic**	**Social networking**	**Freelance work**	**Ecosystem**	**Online labour platform**	**Computer programming**
Workers	Hsieh, C., Lee, J., & Su, Y. (2023).			Graham, M. (2020)						
Food delivery	Shibata, H. (2019).				Goli, G., & Gobinath, R. (2025)					
Labour market	Dubal, V. (2019)									
Commerce	Anwar, M. A., & Graham, M. (2020).	Hsieh, C., Lee, J., & Su, Y. (2023).			Thomas, S. M., & Baddipudi, V. (2022)					
Economic					Astuti, E., & Harsono, I. (2024)					
Social networking	Astuti, E., & Harsono, I. (2024).									
Freelance work	Shimao, H., & Touboul, J. (2023)		Shimao, H., & Touboul, J. (2023)							
Ecosystem	Carbery, R., & McDonnell, A. (2019b)				Shimao, H., & Touboul, J. (2023)	Astuti, E., & Harsono, I. (2024)	Graham M. et al. (2020); Lehdonvirta A. et al. (2021)			Carbery, R., & McDonnell, A. (2019b)
Online labour platform	Munim ZH (2021)									
Computer programming	Bucher, E., & Fieseler, C. (2025)								Shimao, H., & Touboul, J. (2023)	

Table 11- Keyword based morphology analysis of cluster 2 (Social networking workers and food delivery)

Source: SCOPUS Database and Author Analysis

Table 11 displays the findings of a morphological analysis of the cluster 2 keywords. Shimao, H., & Touboul, J. (2023) collaborate on three essential concepts: freelance employment, labor market, and computer programming. This study determined that, over recent decades, technology has simultaneously intensified and mitigated loneliness across many demographics. For some individuals, digital media and social networks offer enjoyment, convenience, and opportunities to discover new offline hobbies. For some, technology has supplanted a core human necessity: connectivity. It is imperative to adopt a more nuanced approach, one that fosters significant digital interactions while simultaneously allocating resources towards tangible opportunities for engagement and connection. Illustrations encompass remote employers providing memberships to coworking spaces or facilitating

occasional in-person meetings, educational institutions implementing a no-phone policy, and social platforms collaborating with specialists to set screen time limits that users can readily choose to engage with. Concurrently, it is imperative that we diligently advocate for and enhance local avenues for individuals to convene and exchange ideas, thereby fostering societal and policy transformations that confront the pervasive issue of loneliness.

	Sharing economy	**Digital platform**	**Gig work**	**Algorithmic management**	**Uber**	**Embeddedness**	**Systematic literature review**	**Crowd word**	**Big data**	**4th Industrial revolution**
Sharing economy	Waldkirch, M. (2020)					Carbery, R., & McDonnell, A. (2019b)				
Digital platform	Munim ZH (2021)			Shimao, H., & Touboul, J. (2023)						
Gig work	Carbery, R., & McDonnell, A. (2019b)	Shimao, H., & Touboul, J. (2023)			Graham M. et al. (2020); Lehdonvirta A. et al. (2021)					
Algorithmic management	Bucher, E., & Fieseler, C. (2025)		Wang, Y. (2020)						Bucher, E., & Fieseler, C. (2025)	
Uber	Carbery, R., & McDonnell, A. (2019b)									
Embeddedness					Graham M. et al. (2020); Lehdonvirta A. et al. (2021)					
Systematic literature review										
Crowd word		Graham M. et al. (2020); Lehdonvirta A. et al. (2021)								
Big data				Bucher, E., & Fieseler, C. (2025)			Bucher, E., & Fieseler, C. (2025)			
4th Industrial revolution										

Table 12- Keyword based morphology analysis of cluster 3 (Digital Work and Sharing Economy)

Source: SCOPUS Database and Author Analysis

Cluster 3 in Table 12 shows that one of the main ideas behind the Sharing Economy is that technology is a big part of making transactions cheaper. Companies like Uber and Airbnb haven't come up with a completely new way to get customers. Instead, they just make it

easier for people to find what they're looking for or do what they want to do anywhere in the world, which means they lower the costs of doing business. About 80 years ago, a young economics professor named Ronald Coase wrote a paper called "The Nature of the Firm" in which he explained why firms exist. This paper was the first to talk about transaction costs.

	Human	Adult	Humans	Article	Economic aspect	Job stress	Review	Transportation	Pandemic	Aged
Human			Carbery, R., & McDonnell, A. (2019b)							
Adult							Shimao, H., & Touboul, J. (2023)	Astuti, E., & Harsono, I. (2024)	Graham M. et al. (2020); Lehdonvirta A. et al. (2021)	
Humans					Webster, N. A., & Zhang, Q. (2025)					
Article						Webster, N. A., & Zhang, Q. (2025)				
Economic aspect	Goli, G., & Gobinath, R. (2025)					Goli, G., & Gobinath, R. (2025)	Thomas, S. M., & Baddipudi, V. (2022)			
Job stress						Osei, R. D., & Kusi, B. A. (2024)				
Review			Graham M. et al. (2020); Lehdonvirta A. et al. (2021)							
Pandemic										
Aged		Wang, Y. (2020)								

Table 13- Keyword based morphology analysis of cluster 4 (Human health status and job stress)

Source: SCOPUS Database and Author Analysis

Table 13 presents the details of cluster 4, which indicates that prolonged exposure to work-related stress and recent experiences of job stress are both linked to an increased risk of mental health issues. There are consistent associations between prolonged work-related stress and the emergence of mental health issues, as indicated by five distinct mental health indicators. Employees experiencing persistent job stress over a one-year observation period, as well as those facing newly emerging job stress, exhibited an increased risk of developing poor mental health. In this large cohort, one in four employees is part of one of the two groups experiencing significant job stress.

	Motor transport	Safety	Road safety	Occupational risk	Risk assesment	Workforce	Motorcycles	Riders	Wages	Risk management
Motor transport	Shimao, H., & Touboul, J. (2023)									
Safety	Carbery, R., & McDonnell, A. (2019b)									
Road safety						Wang, Y. (2020)				
Occupational risk			Webster, N. A., & Zhang, Q. (2025)							Carbery, R., & McDonnell, A. (2019b)
Risk assesment			Goli, G., & Gobinath, R. (2025)	Thomas, S. M., & Baddipudi, V. (2022)				Shimao, H., & Touboul, J. (2023)		
Workforce	Munim ZH (2021)		Osei, R. D., & Kusi, B. A. (2024)						Graham M. et al. (2020); Lehdonvirta A. et al. (2021)	
Motorcycles	Bucher, E., & Fieseler, C. (2025)		Astuti, E., & Harsono, I. (2024)	Graham M. et al. (2020); Anwar M. et al.(2020)			Wang, Y. (2020)			
Riders				Thomas, S. M., & Baddipudi, V. (2022)						
Wages						Solal, I., & Stabile, M. (2020)				
Risk management				Shimao, H., & Touboul, J. (2023)						

Table 14- Keyword based morphology analysis of cluster 5 (Motor transport and road safety)

Source: SCOPUS Database and Author Analysis

Table 14 shows the Shimao, H., & Touboul, J. (2023) works together on different keywords like Motor transport, Risk management and Riders. In the same cluster Graham M. et al. (2020); Anwar M. et al.(2020) works on different keywords like Motorcycle, Workforce and occupational risk. This cluster determined that a risky riding attitude amplifies the positive effect of job stress on risky driving behavior and distraction. Risky driving attitude refers to a rider's inclination to assess risky riding behaviors—such as using mobile phones while riding, improper lane usage, speeding, and running red lights—with varying degrees of approval or disapproval. Riders exhibiting a greater propensity for risky driving attitudes are more inclined to view risky driving behaviors as acceptable and preferable.

	Employment	Entrepreneurship	Regulation	Independent contract	Technology	Stress	Flexible work	Contingent work	Employment law	Well-being
Employment	Wang, Y. (2020)	Solal, I., & Stabile, M. (2020)								
Entrepreneurship										
Regulation	Solal, I., & Stabile, M. (2020)			Solal, I., & Stabile, M. (2020)						
Independent contract			Wang, Y. (2020)							
Technology	Shimao, H., & Touboul, J. (2023)				Shimao, H., & Touboul, J. (2023)					
Stress							Carbery, R., & McDonnell, A. (2019b)			
Flexible work	Carbery, R., & McDonnell, A. (2019b)								Touboul, J. (2023)	
Contingent work		Dubal, V. (2019).			Fieseler, C. (2025)					
				Graham M. et al. (2020); Lehdonvirta A. et al. (2021)				Osei, R. D., & Kusi, B. A. (2024)		
Employment law	Touboul, J. (2023)				Touboul, J. (2023)					
Well-being	Fieseler, C. (2025)						Graham M. et al. (2020); Lehdonvirta A. et al. (2021)			

Table 15- Keyword based morphology analysis of cluster 6 (Gig workers and precarious employment)
Source: SCOPUS Database and Author Analysis

According to Table 15, workers in precarious employment situations face a lot of hardships due to the lack of social safeguards and benefits, as well as the fact that their jobs aren't always steady. While low-income workers and migrants may find some much-needed income opportunities in the gig economy, they also face a great deal of physical, financial, and psychological risk, as well as labor degradation and economic instability. Workers from low-income backgrounds are disproportionately affected by the precarious nature of gig employment, which substantially impacts their financial stability and overall well-being. A new class of people may emerge as a result of gig employment: those who are constantly on the go and have no ties to either their employers or their coworkers, which poses problems for both their financial security and the cohesiveness of their communities.

6. Summary of the study with Data Metrics

Metrics	Data
Publication Year	2016-2024
Highest Citation No.	1,026
Highest Citation Year	2019
Total Citations from 2011-2024	2377
Average Citation	23.28%
Highest Cited Author	Wood A.J.; Graham M.; Lehdonvirta V.; Hjorth I.
Highest Cited Document	Good Gig, Bad Gig: Autonomy and Algorithmic Control in the Global Gig Economy
Total Clusters	6
Total Morphology tables	6
Total Documents	951
Total Keywords	1,750
Total Countries published Gig Economy documents	37

Table 16- Summary of the study
Source: SCOPUS Database and Author Analysis

7. Discussions of the study

The surge in annual publication output indicates the gig economy's field's dynamic progression and expansion. Citation analysis reveals heightened scholarly attention on employment patterns and the reconfiguration of today's modern labor market in the context of the gig economy. It also reflects the growing attention to topics such as digital platforms, inequalities, working conditions and policy adaptations. The journal "New Technology, Work and Employment", which has emerged as a leading outlet focused on the topics such as worker motivation and job quality. The author analysis identifies Graham M as a highly influential author, emphasizing the socio-political impact of the gig economy, particularly from the regions Africa and South East Asia. The performance analysis reflects its academic significance and its global implications research works on gig economy and its own outcomes.The bibliographic analysis shows that UK and USA are the leading contributors to gig economy research, indicating a strong collaboration in this field. An analysis on keyword clusters reveals that various dimensions and multiple facets of the gig economy such as employment, gig workers, working conditions and digital platforms emphasizing the diverse clusters and trends that characterize this area of research, shedding light on its complexities and the transforming landscape of gig work. The thematic analysis underscores that socioeconomic impacts, digital platform's role in reshaping work structures and employment policies have to be indeed focused for further research on gig workers and gig economy trends. The science mapping analysis identifies emerging research areas those have been pave the way for targeted research initiatives that can further explore the evolving dynamics in the gig sector and its broader societal implications at large.

8. Practical and Theoretical Implications of the study

The study's results underscore the necessity for organisations to modify their HRM policies in order to properly manage gig and digital workers. Companies need to come up with rules that combine job security and flexibility, making sure that people who work from home or on gigs get the help they need and the chance to grow. Putting money into digital skill development is important because workers need to keep learning new skills to keep up with changes in technology. To make a fair and long-lasting digital workplace, regulatory bodies must also deal with new labour rights problems, social security concerns, and moral issues. Long-term studies should be done on how digitalisation affects work relationships, employee motivation, and the general effectiveness of HRM. This will help organisations and policymakers make better decisions. The study offers significant practical consequences related to independent work and digitization. The findings might be helpful to beginner investigators and scholars looking to improve their increasingly vital contributions to the gig economy trends. The results of this research can assist scientists in appreciating the gig economy's significance in building a positive atmosphere at work. The results of this investigation will motivate additional study in the field. Academics and researchers can benefit from examining the most recently published articles, advancing scientific understanding. Theoretically, we demonstrated the importance of investigating the gig economy and its effects on other areas, and we identified fresh possibilities for research into this hotly debated subject. Businesses and individuals alike should pay attention to the Gig Economy because of the adaptive circumstances brought about by digitization. These circumstances are crucial for comprehending the current state of the art.

9. Future Scope and Limitation of the study

The paper provides an in-depth analysis of gig sector, digital labor, gig employment platforms, and the safety and working conditions of gig workers. It underlines the significance of these aspects, the appeal of gig work, and the challenges faced by gig workers. There’s a potential to expand the research by focusing on sector-specific gig employment, the distinct needs and risks in various fields, and the effectiveness of existing laws and policies in safeguarding gig workers. This approach will offer a nuanced understanding of the gig economy and contribute to the development of robust protections for gig workers. Another constraint of the study is the exclusive use of data from the Scopus database, which may have led to the omission of relevant documents. Therefore, by extracting data from other databases, such as Web of Science, Research Gate, and J Store, researchers can obtain more papers and find other research gaps. This study used VOS Viewer, R Studio and Origin Pro as bibliometric tools to conduct various analyses. Future research could broaden the scope by incorporating other advanced bibliometric tools such as Bib Excel, Gephi and Litmaps which offer improved visualization and comprehensive review of the literature. To capture the unique experiences and challenges of various gig economy sectors better, future research should adopt a sector-specific approach. This involves in-depth studies across different industries, such as corporations, transportation, businesses, and services. A comparative analysis can reveal commonalities and differences in working conditions, job security, and income distribution among various sectors. Qualitative studies should be conducted to uncover other potentially influencing elements, such as family circumstances, word-of-mouth,

and the impact of health emergencies. Exploring the differences in demographic and geographic factors would be an added advantage to this research. Collecting a large sample across generations enables generalizable findings. More research is needed to investigate algorithmic control in the gig economy, focusing on its impact on worker control, exploitation, and skill development.

10. Conclusion

Research shows that digital workplaces and the gig economy are transforming HRM. According to bibliometric, cluster, and morphological research, digitalization and gig-based labor have changed how people work, therefore HRM must adapt to new problems and opportunities. Companies increasingly face tech-driven, flexible labor agreements that supplement or replace traditional employment. HRM digitizes remote worker management, talent recruitment, and performance monitoring, according to this report. Self-employment and short-term contracts offer flexibility but raise concerns about job stability, income, and benefits. This paper suggests HRM solutions that balance these trade-offs to motivate, produce, and reward workers in the digital age. AI-driven platforms, cloud-based HR technologies, and data analytics are transforming employer-employee relationships, the poll found. Digitalization improves efficiency but also causes digital weariness, work-life balance concerns, and training needs. For a sustainable and fair digital employment ecosystem, businesses and governments must address these challenges. According to studies, HRM's future depends on adjusting to increasing technologies and workforce needs. Future companies will gain from employee well-being, digital HR, and staff development. This systematic review and bibliometric analysis examines the gig economy, which provides flexible labor and entrepreneurship worldwide through digital platforms. Income uncertainty, changing employment preferences, and workers' rights are covered. This study examined gig economy utilizing 951 Scopus social science, business, and economics articles. Credible English-language literature was chosen to provide substantial and accessible insights on past investigations and methodologies for the review. This study increased greatly from 2016 to 2024, demonstrating ongoing evaluation of its pros and downsides. Citation analysis shows employment and labor market trends. Keywords and thematic mapping show research places. These tools enhance study planning and fieldwork. International cooperation requires publication and networking. E-labor platforms' employment paradigm shifts, pay, gig workers' conditions, government welfare intervention, and regulation are examined. IT examines job impacts of technology and worker choices. This article addresses the gig economy's merits and cons and how fair labor protects gig workers' rights and well-being. Gig workers must work together to build a resilient and inclusive future despite economic uncertainties. The study recommends greater research to ensure gig workers' fair and sustainable global future.

Author contributions

Dr. Suraiya Rajput and Dr. Baby Iffat conceptualized the study with evaluation of final draft; Dr. Mohammad Naquibur Rahman, Dr. Riyaz Ahmad provided software conducted the surveys and performed the Analysis.

Competing interests
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Data availability
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