

Work-Life Balance: A Literature Mapping with Bibliometric Analysis Using Vosviewer

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ABSTRACT: This article aims to analyze scientific trends in research on work-life balance through bibliometric research on Google Scholar database in 2018-2023. The method used in this study is descriptive bibliographic analysis. Data collection based on Google Scholar database with work-life balance keyword using Publish or Perish (PoP) metadata software with publication search limited to 1,000 journals and collected get 404 magazines. Data analysis was performed using VOSviewer software to support bibliometric analysis. The results show that throughout the year, the number of work-life balance research publications indexed by Google Scholar fluctuated but increased significantly in number. The highest publication growth occurred in 2022, reaching 137 journals (31.6%), while the lowest publication growth occurred in 2014 with 1 journal (0.2%). Mapping development of work-life balance research publications 2018-2023 based on co-authorship showing correlations or relationships among Anindita-centred researchers. Although the development map of research publications on work-life balance based on the keyword co-occurrence shows a relationship between one term and another with 7 dominant groups, the study this study has not been extensively studied, but research in the area of work-life balance may provide opportunities for researchers.

KEYWORDS: *Work-Life Balance, Bibliometric Analysis, Google Scholar, VOSviewer.*

I. INTRODUCTION

In the 1970s, the concept of WLB was initially framed as one concerning work-family balance (Lockwood dalam Oludayo & Omonijo, 2020). This was partly due to concerns surrounding women joining the workforce. The workforce primarily comprised men, whereas women were often employed informally. However, when women could engage in formal employment, the result was that they had to juggle both work and family life responsibilities (Fleetwood dalam Jyothi et al., 2020). Work-life balance is a situation in which a person can organize themselves and divide between their professional responsibilities, family life, and other responsibilities. This situation helps to avoid conflicts between personal and work life. By balancing work and life, a person can be more productive. Indeed, the condition that a person feels is sufficient to support and increase his satisfaction in performing his job. Moreover, he becomes more creative because he has more time, energy, or capital to do what he loves. On the contrary, if someone does not have a good work-life balance [3].

Over the past 11 (eleven) years, the study of work-life balance has been constantly evolving. Research on work-life balance has been done by many authors around the world, such as [4], [5], [6], [7], [8], [3], [9], [10]. In this regard, to be able to map the research development on work-life balance, bibliometric analysis is necessary. The bibliographic analysis aims to know the development of research publications in the period 2018-2023, to know the direction of scientific concepts, and to explore the knowledge network of work-life balance co-authorship and co-occurrence.

II. RESEARCH METHODS

This study followed bibliometric study guidelines [11]. The method for finding data in this study is to use Publish or Perish (PoP), VOSviewer, and Google Scholar software. Researchers search for data through PoP first and then through VOSviewer which is published using data sources from Google Scholar because many researchers use the Google Scholar database to publish their research. Google Scholar also has a feature that makes it easier for researchers to find articles by looking at the year of publication. The researchers searched based on research topics including titles, articles, abstracts, and keywords using the term "work-life balance".

The complete steps are illustrated in Figure 1. The researcher searched online using the phrase “work-life balance” in the title and keywords from 2018 to 2023.



Figure 1. Five steps in conducting a bibliometric analysis [11]

Based on the search step, 404 journals that met the search criteria were retrieved from 446 journals throughout the year (see Figure 2). Data is saved in (.ris) and (.csv) formats. These logs are then processed in various directory measurement and network analysis programs:

Microsoft Excel and VOSviewer. VOSviewer software was used to identify research trends on work-life balance [11]. A survey was conducted to analyze research trends, including publication development outcome characteristics, top authors, top citations, and publication trends from 2018 to 2023. Keyword co-occurrence is done with VOSviewer, using the Visualization Similarity (VoS) algorithm as the engine. alternative to multidimensional scaling [12].

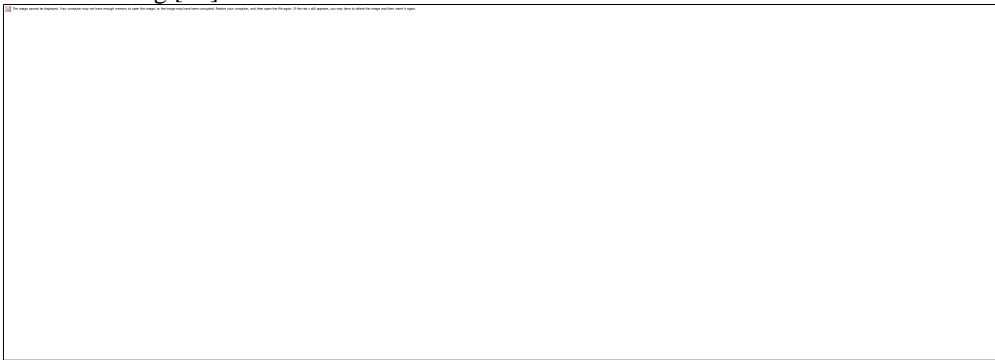


Figure 2. Illustration of initial search and refinement [11]

III. RESULTS AND DISCUSSION

III.1. The Output of Growth of Work-Life Balance Publications

The results of work-life balance research documents in Google Scholar indexed journals through Publish or Perish throughout the year obtained 446 documents. The growth development of work-life balance publications throughout the year, namely from 2013 – 2023 taken from the Google Scholar database through PoP, shows fluctuating developments. Of the total publications indexed by Google Scholar, namely 446 documents, only 433 have year information. While as many as 13 publications do not have information on the year of publication.

The growth development of publications regarding work-life balance is listed in Table 1, the highest occurred in 2022, reaching 137 publications (31.6%). The lowest publication occurred in 2014 with the number of publications being 1 (0.28%).

Table 1. Development of Work-Life Balance Research Publications (Throughout the year)

Year of Publication	Number of Documents	Percentage
2013	2	0,5
2014	1	0,2
2015	5	1,2
2016	10	2,3
2017	13	3,0
2018	23	5,3
2019	32	7,4
2020	55	12,7
2021	58	13,4
2022	137	31,6
2023	97	22,4
Total Publications	433	

Source: Personal Data Processing Results (2023)

In 2014, research on work-life balance experienced a decrease in the number of documents, namely only 1 document (0.2%) compared to the previous year. However, in the following year, it increased continuously, This proves that research on work-life balance is still a topic of interest and continues to grow from year to year. In detail, the growth of publications regarding work-life balance research indexed by Google Scholar can be seen in Figure 3.

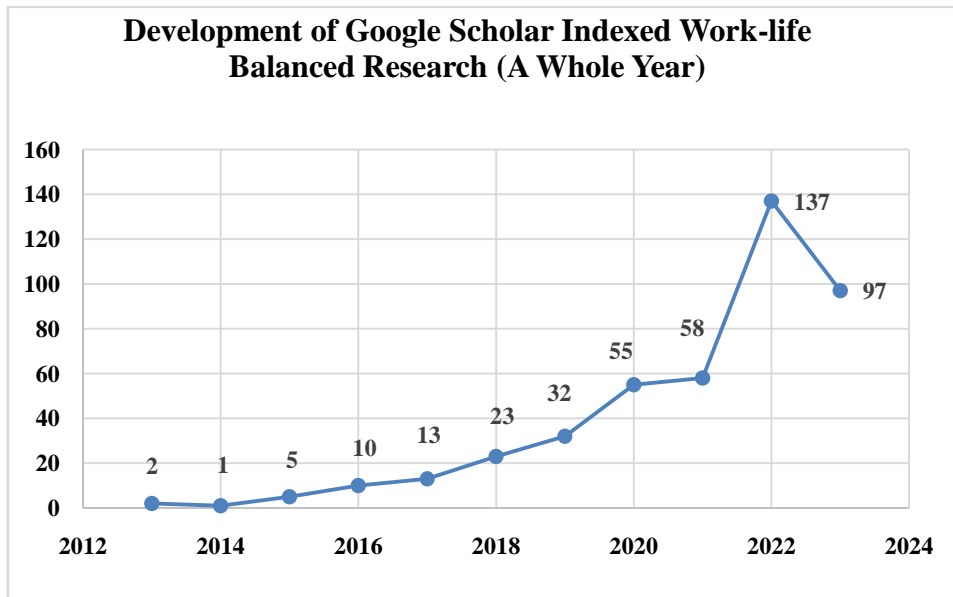


Figure 3. Graph of the development of work-life balance research publications indexed by Google Scholar
Source: Personal Data Processing Results (2023)

III.2. Top Authors In Researching Work-Life Balance

In terms of the most prolific authors, Figure 4 shows the top ten authors researching work-life balance during the 2018-2023 period. Wenno, Esthi, Nurwahyuni, Saifullah, Rene, Mea, Prayogi, Lukmiati, Oktaviani, and Larastrini are the most prolific writers on this topic. In general, the author's performance is in line with the top citations of articles throughout the year, as shown in Table 2. It can be seen that the article written by Wenno (2018) is the first best article and Table 3 shows that the article written by Ganapathi (2016) is the best article. top quote. Meanwhile, Table 4 describes the top article citations during the 2018-2023 period.

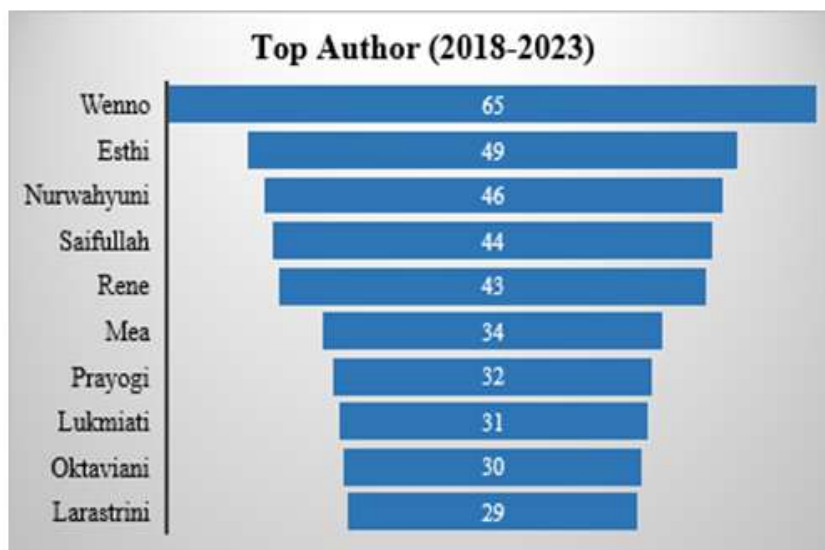


Figure 4. Top authors in work-life balance research during 2018-2023
Source: Processed data from VOSviewer (2023)

Table 2. The Best Articles of The Year (20 Best)

Cites	Authors	Title	GS Rank	Cites Per Year	Cites Per Author
65	Wenno (2018)	Hubungan antara <i>work-life balance</i> dan kepuasan kerja pada karyawan di PT PLN Persero area Ambon	1	13	65
15	Butarbutar (2022)	<i>Examining Teacher Job Satisfaction Levels During a Pandemic: The Role of Transformational Leadership, Work-Life Balance and Interpersonal Communication</i>	2	15	4
84	Pangemanan (2017)	Pengaruh <i>work-life balance</i> dan burnout terhadap kepuasan kerja	3	14	28
45	Rizky (2018)	Pengaruh beban kerja terhadap stres kerja dengan <i>work-life balance</i> sebagai variabel <i>intervening</i> (Studi Pada Dinas Sosial Provinsi Jawa Timur Surabaya)	4	9	23
33	Ardiansyah (2020)	Pengaruh <i>work-life balance</i> terhadap kinerja karyawan melalui komitmen organisasi pada karyawan PT. Bhinneka Life Indonesia Cabang Surabaya	5	11	17
71	Rondonuwu (2018)	Pengaruh <i>work-life balance</i> terhadap kepuasan kerja karyawan pada Hotel Sintesa Peninsula Manado	6	14.2	24
31	Lukmiati (2020)	Pengaruh <i>work-life balance</i> terhadap Kinerja Karyawan	7	10.33	31
96	Prayogi (2019)	Kepuasan kerja sebagai variabel <i>intervening</i> pada pengaruh <i>work-life balance</i> dan stres kerja terhadap <i>turnover intention</i>	8	24	32
110	Maslichah (2017)	Pengaruh <i>work-life balance</i> dan lingkungan kerja terhadap kepuasan kerja karyawan (Studi pada perawat RS Lavalette Malang tahun 2016)	9	18.33	55
41	A Rahmawati (2016)	Pengaruh keseimbangan kehidupan kerja (<i>work-life balance</i>) dan kepuasan kerja terhadap loyalitas guru SMK swasta di Kecamatan Cakung Jakarta Timur	10	5.86	41
42	Muliawati (2020)	Peran <i>work-life balance</i> dan kepuasan kerja terhadap kinerja karyawan milenial: studi literatur	11	14	21
67	Mea (2020)	Pengaruh <i>Work From Home</i> terhadap <i>work-life balance</i> pekerja perempuan di Kota Ende	12	22.33	34
86	Rene (2018)	Pengaruh <i>work-life balance</i> terhadap komitmen organisasi, kepuasan kerja, dan motivasi kerja terhadap kinerja individu pada karyawan perusahaan asuransi di ...	13	17.2	43
46	Nurwahyuni (2019)	Pengaruh beban kerja terhadap kinerja karyawan melalui <i>work-life balance</i> (studi kasus pt. telkom indonesia regional v)	14	11.5	46
38	Bintang (2016)	<i>Work-life balance</i> dan intensi turnover pada pekerja wanita bali di desa adat sading, mangupura, badung	15	5.43	19
120	Ganapathi (2016)	Pengaruh <i>work-life balance</i> terhadap kepuasan kerja karyawan (studi pada PT. Bio Farma Persero)	16	17.14	120
57	Lumunon (2019)	Pengaruh <i>Work-life balance</i> , Kesehatan Kerja Dan Beban Kerja Terhadap Kepuasan Kerja Karyawan PT. Tirta Investama (Danone) AQUA Airmadidi	17	14.25	19
83	Asepta (2017)	Analisis pengaruh <i>work-life balance</i> dan pengembangan karir terhadap kepuasan kerja karyawan PT. Telkomsel, TBK Branch Malang	18	13.83	42
13	Atthohiri (2021)	Pengaruh <i>Employee Engagement</i> terhadap Kepuasan Kerja dengan <i>Work-life balance</i> sebagai Variabel <i>Intervening</i>	19	6.5	7
24	Wardani (2019)	<i>The work-life balance of blue-collar workers: The role of employee engagement and burnout</i>	20	6	12

Source: Processed data from PoP (2023)

Table 3. Top Citations of Articles Throughout The Year (Top 10)

Author	Journal	Quote
Ganapathi (2016)	Effect of work-life balance on employee job satisfaction (study at PT. Bio Farma Persero)	120
Maslichah (2017)	Effect of work-life balance and Work Environment on employee job Satisfaction (Study on nurses at Lavalette Hospital Malang in 2016)	110
Esthi (2023)	The Effect of Work-Life Balance on Turnover Intention Mediated by Burnout	98
Prayogi (2019)	Job satisfaction as an intervening variable on the effect of work-life balance and work stress on turnover intention	96
Rene (2018)	The effect of work-life balance on organizational commitment, job satisfaction, and work motivation on individual performance in insurance company employees in ...	86
Princeship (2017)	Effect of work-life Balance and burnout on Job Satisfaction	84
Aseptia (2017)	Analysis of the effect of work-life balance and career development on job satisfaction of PT. Telkomsel, TBK Malang Branch	83
Rondonuwu (2018)	The effect of work-life balance on employee job satisfaction at the Sintesa Peninsula Hotel Manado	71
Mea (2020)	The effect of Work From Home on the work-life balance of women workers in Ende City	67
Wenno (2018)	The relationship between work-life balance and job satisfaction of employees at PT PLN Persero Ambon area	65

Source: Processed data from PoP (2023)

Table 4. Top Citations of 2018-2023 Articles (Top 10)

Author	Journal	Quote
Esthi (2023)	The Effect of Work-Life Balance on Turnover Intention Mediated by Burnout	98
Prayogi (2019)	Job satisfaction as an intervening variable on the effect of work-life balance and work stress on turnover intention	96
Rene (2018)	The effect of work-life balance on organizational commitment, job satisfaction, and work motivation on individual performance in insurance company employees in ...	86
Rondonuwu (2018)	The effect of work-life balance on employee job satisfaction at the Sintesa Peninsula Hotel Manado	71
Mea (2020)	The effect of Work From Home on the work-life balance of women workers in Ende City	67
Wenno (2018)	The relationship between work-life balance and job satisfaction of employees at PT PLN Persero Ambon area	65
Larastrini (2019)	The Effect of Job Satisfaction Work Environment and Work-Life Balance on Employee Loyalty	57
Lumunnon (2019)	Effect of Work-life Balance, Occupational Health, and Workload on Job Satisfaction of PT. Tirta Investama (Danone) AQUA Airmadidi	57
Nurwahyuni (2019)	Effect of workload on employee performance through work-life balance (a case study of PT. Telkom Indonesia Regional V)	46
Rizki (2018)	Effect of workload on work stress with work-life balance as an intervening variable (Study at the East Java Province Social Service, Surabaya)	45

Source: Processed data from PoP (2023)

III.3. Visualization VOSviewer Software-Based Work-Life Balance Research Trends (2018-2023)

The next step for the researcher is to visualize work-life balance research trends from data sets stored in a Research Information System (RIS) type using metadata Publish or Perish, then the data sets are analyzed using the VOSviewer application. From the test results of the selected word terms, the 10 highest word sequences are obtained as shown in Table 5.

Table 5. Most Words in Articles in 2018-2023

<i>term</i>	<i>occurrences</i>	<i>relevance score</i>
<i>work-life balance</i>	371	1.7762
<i>job satisfaction</i>	72	0.4222
<i>employees</i>	55	0.3025
<i>employee performance</i>	48	0.8311
<i>performance</i>	29	0.552
<i>turnover intention</i>	21	0.6624
<i>employee engagement</i>	16	1.1329
<i>job satisfaction</i>	16	0.645
<i>organization</i>	15	1,481
<i>compensation</i>	13	0.4268

Source: Processed data from VOSviewer (2023)

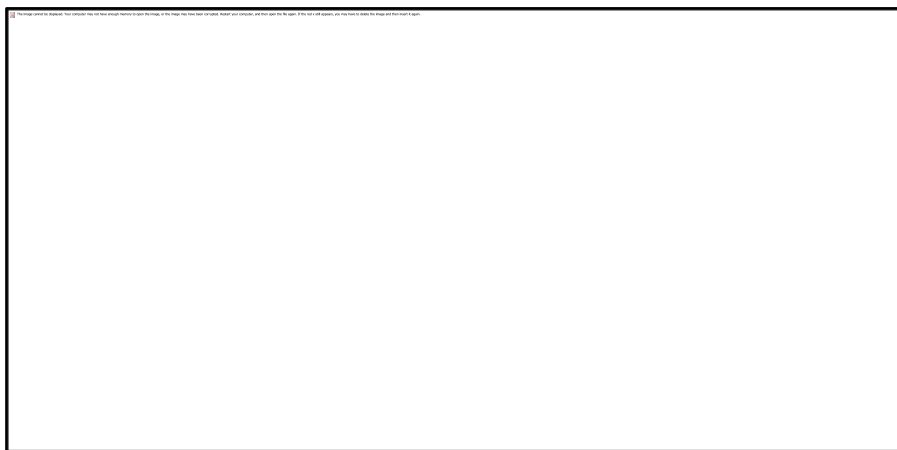


Figure 5. Network visualization on co-authorship
Source: VOSviewer (2023)

Figure 5. visualization of a network of coauthors characterized by the presence of nodes (circles) representing authors or researchers and edges (networks) representing relationships between authors or researchers. A set of nodes equipped with edges explains that there is a correlation or relationship among researchers in the study of work-life balance. Bibliometric analysis based on researchers or authors centered on Anindita. The network shows the existence of a relationship or collaboration of writers, such as a network (edge) that connects the writer Anindita with seven other writers including Apriyanti, Indrawati, Synthia, Juliarti, Reza, Apriyanti, and Purwandari.

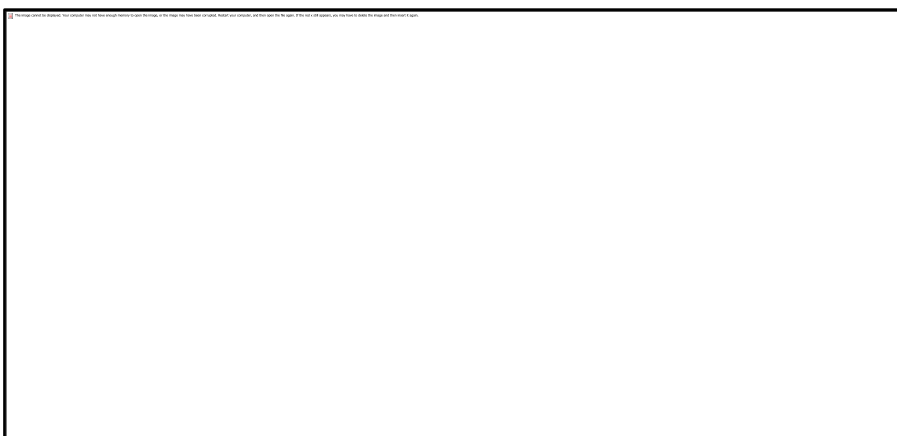


Figure 6. Overlay visualization on co-authorship
Source: VOSviewer (2023)

Figure 6. The Overlay Visualization of co-authorship, mapping the author's historical footprint in work-life balance research. This map is characterized by the presence of nodes of different colors and edges that connect one researcher to another. Dark colors on buttons represent searches previously performed within a specific period. For example, in the figure, the darkest button color (purple) represents the year 2021 and the lightest color (yellow) represents the year 2022. In this analysis, the following explanation can be drawn:

1) Research done by Purwandari and Aryanti cited by Anindita in their study, p. This is because Purwandari and Apriyati's research visualization colors are darker than Anindita's research visualization colors. 2) Anindita's research is cited by Indrawati and Synthia's research because the color of Anindita's research visualization is much darker than that of Indrawati and Synthia. 3) The study conducted by Apriyanti and Reza is cited by the study conducted by Anindita, as the colors visualized in Aryanti and Reza's research are darker than those of Anindita. 4) Anindita's research is cited by Juliarti's research because the color of Anindita's research visualization is much darker than Juliarti's. 3) The study conducted by Apriyanti and Reza is cited by the study conducted by Anindita, as the colors visualized in Aryanti and Reza's research are darker than those of Anindita. 4) Anindita's research is cited by Juliarti's research because the color of Anindita's research visualization is much darker than Juliarti's. 3) The study conducted by Apriyanti and Reza is cited by the study conducted by Anindita, as the colors visualized in Aryanti and Reza's research are darker than those of Anindita. 4) Anindita's research is cited by Juliarti's research because the color of Anindita's research visualization is much darker than Juliarti's.

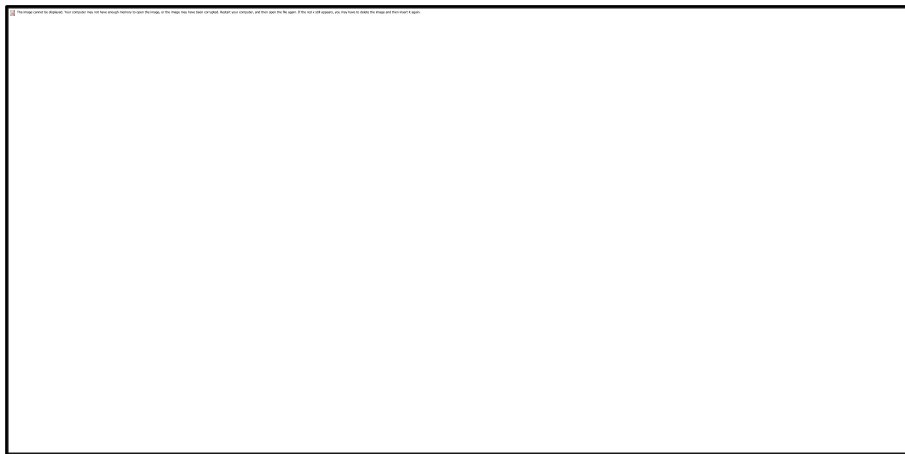


Figure 7. Visualization of Density in co-authorship
Source: VOSviewer (2023)

From the coauthor density visualization results shown in Figure 7, it can be identified that there is density or emphasis on nodes which means that the research group that examines work-life balance has a relationship with one another. In addition, the degree of node saturation in the density visualization is indicated by the number of studies related to other studies citing the author. As shown by Anindita's research which shows the brightest color node density, in other words, the author conducted research by quoting several studies alongside her as a form of collaboration in work-life balance research.

III.4. Work-Life Balance Research Publication Development MapBy Keyword Co-Occurrence (2018-2023)

Bibliometric analysis is performed by performing network, overlay, and density visualization to determine the bibliographic network between articles or online publications from the uploaded metadata. A directory network consists of nodes in the form of a circle or circles representing keywords, while the edges or nodes of the network represent relationships between pairs of nodes. Mapping and clustering in bibliometric analysis via VOSviewer software are additional features. This mapping can be used to get a detailed picture of the structure of the bibliometric network (Waltman et al. in Suprpto et al., 2021). In addition, clustering is used to preview or preview bibliometric clustering.



Figure 8. Network Visualization on co-occurrence
Source: VOSviewer (2023)

The results of VOSviewer mapping using keywords can be shown in Figure 8. The visualization shows a network visualization of the occurrence and interpretation of the network or the relationship of one term to another in the network. Search for work-life balance for the period 2018-2023, 7 clusters of different colors were found: red, dark blue, dark blue, light blue, purple, light blue, and orange. The keywords that appear in each cluster can be seen in Table 8 below.

Table 6. Keywords Representing Each Cluster (2018-2023)

No.	Group	Element
1	First Cluster (Red)	work-life balance that has been studied, namely burnout, employee engagement, environment, organizational culture, pandemic, performance, and work-life balance
2	Second Cluster (Dark green)	job stress, significant influence, study show, work stress, and workload.
3	Third Cluster (Dark Blue)	compensation, employee loyalty, work engagement, and work environment
4	Fourth Cluster (Light Green)	employee, employee performance, organization, and organizational commitment.
5	Fifth Cluster (Purple)	such as job satisfaction, job satisfaction, organization, and quality
6	Sixth Cluster (Light blue)	concept, emotional intelligence, and stress.
7	Seventh Cluster (Orange)	career development and turnover intention

Source: Processed data from VOSviewer (2023)

Each cluster has a main keyword related to a particular topic. In the first cluster, the word "work-life balance" is the most common keyword. In the second group, the word "*work stress*" and "workloads" is the most common keyword, and in the third cluster, the most common keyword is "*compensation*" and "work engagement". The fourth most common keyword cluster is in the word "employee", the fifth most common keyword cluster is in the word "*job satisfaction*", the sixth most common keyword cluster is in the word "stress", and the seventh most common keyword cluster is the word "*turnover intention*".

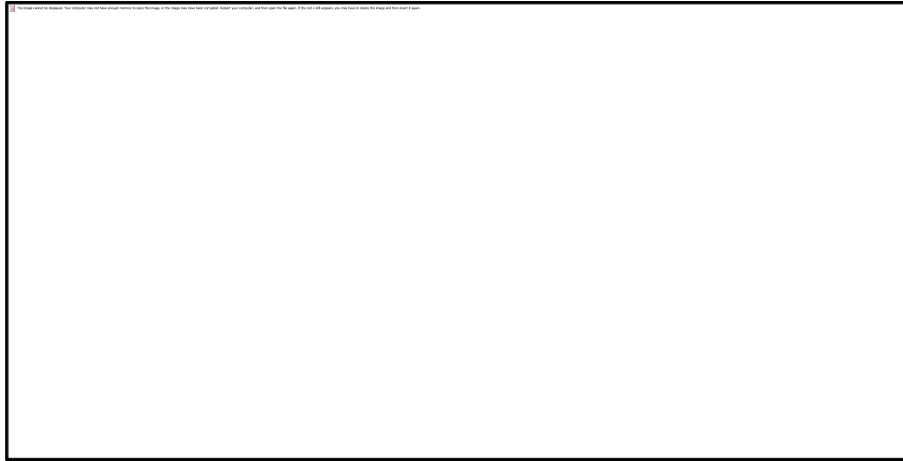


Figure 9. Overlay visualization on co-occurrence
Source: VOSviewer (2023)

The bibliographic analysis results in Figure 9 via Publish or Perish metadata imported into the VOSviewer software create a visualization that overlays the simultaneous appearance. In this visualization, the colors on the buttons represent keywords that indicate the year of publication. For example, the keyword "research" has yellow buttons, which means that articles containing these keywords will be published in 2022. Another example is the term "employee" which in the visualization The overlay is shown as having dark blue buttons, which means that the term "employee" in the work-life balance study will only be mentioned by the researchers in 2021.

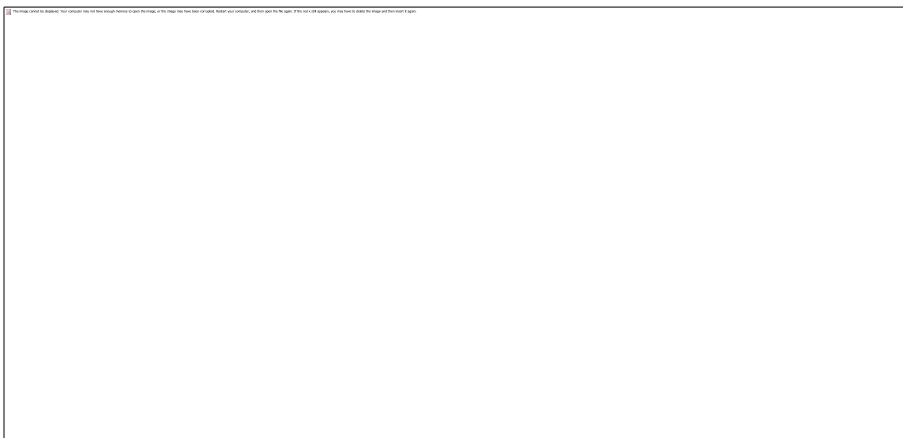


Figure 10. Visualization of Density on co-occurrence
Source: VOSviewer (2023)

From the co-occurrence density visualization results shown in Figure 10, it can be determined that there is a difference in color, bright yellow, and uppercase keywords, i.e. those are the keywords. of the last search. The word work-life balance is large and bright yellow, it is the main keyword. The words employee, stress, intention to quit, and employee engagement are yellow although they tend to be blue, which means the word has become a concern in the text recently. Meanwhile, words that are green and tend to turn blue mean those keywords rarely appear in the article. For example, the words associated with work, quality, job stress, and work environment are all lowercase, which means that these words haven't been included in many searches in the last 5 years.

IV. CONCLUSION

To be able to know the evolution of work-life balance research based on co-authors (authors) and appearances (keywords), a bibliometric analysis was performed using the software. VOSviewer. Previously, the dataset was collected through the Publish or Perish metadata indexed by Google Scholar, while online publication searches were limited to 1,000 documents. Based on the results of directory mapping using VOSviewer using Network, Overlay, and Density Visualizations, it can be concluded that over the past year, work-life balance has fluctuated in line with development. development of research publications. Of the total number of publications indexed by Google Scholar, namely 446 documents, only 433 have year information. Although 13 publications do not have publication year information, this may have affected the growth of Google Scholar indexed search. The highest publication growth is in 2022, reaching 137 publications (131.6%), while the lowest publication is in 2014 with a

total of 1 journal publication (0.28%). All in all, the study of work-life balance remains a topic of interest and continues to evolve year after year.

Bibliographic mapping identifies authors who fit the research topic of work-life balance and who maintain a collaborative relationship between them. In this study, the author focuses on Anindita. The final map is developing work-life balance research based on co-occurrence (keyword). This mapping defines the relationship between scientific concepts and the 7 dominant clusters. Each cluster has main keywords related to certain topics such as work-life balance, work stress, workload, compensation, work engagement, employee, job satisfaction, stress, and turnover intention.

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