

Female Labour Force Participation: A Bibliometric Analysis (2000-2024)

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ABSTRACT

Female labour force participation (FLFP) is a vital determinant in enhancing the overall development of countries. Half of the global population is female; their increased participation helps reduce poverty and gender inequality and improves the welfare of society. This article is based on a bibliometric analysis for a structured literature review on FLFP from 2000 to 2024. The study examined 317 document extracts from the Scopus database, employing performance analysis and scientific mapping techniques. A bibliometric analysis was conducted to obtain a clear and broad understanding of the most impactful and progressive authors, documents, journals, organizations and nations. Vos-viewer software has been used for data analysis. The study found that the research intensity in this area has grown continuously. The year 2024 was the most progressive year, with 159 publications. Stephan Klasen is an impactful and productive author, with 685 citations and six documents. The University of British Columbia, Canada, is the most influential institution and the USA is the most influential country. World Development is the most influential journal, with 742 citations, whereas the Indian Journal of Labor Economics is the most productive journal, with 30 publications. 'Gender role attitudes and the labor-market outcomes of women across OECD countries' (Fortin, 2005) is a highly cited article with 465 citations. The study identified five major thematic clusters: (1) FLFP and fertility, (2) female employment and gender role, (3) female employment analysis, (4) female employment and childcare and (5) female employment & economic development. The recognized trending topics in this field are FLFP, fertility, childcare, panel cointegration, panel unit root, cointegration, public policy, labor supply, education, female employment, economic growth and gender inequality.

Keywords : FLFP, Bibliometric analysis, Performance analysis, Bibliographic coupling, Scientific mapping

FEMALE labour force participation (FLFP) exhibited heterogeneous trends across different regions. It strongly rose in Latin America, improved in the Middle East, declined in South Asia and stagnated in some countries. High household income, social norms, and differences in economic structure are the main causes of these puzzling trends (Klasen, 2019). Anti-egalitarian views and perceptions of females' role as homemakers are another obstacle to low FLFP across 24 OECD countries (Fortin, 2005). Jayachandran (2021) found gender norms as an obstacle to FLFP in developing countries. Even though

welfare states help to increase FLFP in industrial countries, they are mostly concentrating on female-type occupations and not managerial positions (Mandel & Semyonov, 2006). However, if the fertility rate declines, FLFP increases and they contribute significantly to economic development (Bloom *et al.*, 2009). In the case of India, various studies found declining trends in FLFP over the last three decades (Himanshu, 2011; Kannan & Raveendran, 2012; Chaudhary & Verick, 2014 and Mehrotra *et al.*, 2014). Singh (2022) also found declining trends in the rural FWPR between 2004-05

and 2011-12, especially in Odisha. Rising income levels, mechanization of agriculture and falling labor demand in the agriculture sector are the demand side and increasing enrolment in education institutions is the supply side factor, which were together responsible for these declining trends (Mehrotra, 2015 and Mehrotra & Sinha, 2017). Various studies in the literature provide suggestions to improve FLFP. Geetha and Murthy (2022) suggest that, to increase women's participation in rural areas, more women should be brought under women's dairy cooperatives. However, in urban areas, FLFP stagnated due to high-income levels, husbands' education and lack of job opportunities between 1987 and 2011 (Klasen and Pieters, 2015). India is currently benefiting from a demographic dividend, characterized by a high proportion of the working-age population and a decreasing dependency rate. If working-age females remain out of the labor market, the country will not receive the benefit from the demographic dividend. It will adversely affect saving, investment and economic growth (Mehrotra and Parida, 2017). Furthermore, FLFP is important in achieving gender equality and economic development. Therefore, understanding the literature on FLFP becomes essential. The paper undertakes a bibliometric analysis of FLFP and examines documents from 2000 to 2024. Performance analysis and scientific mapping techniques (citation, co-citation, co-word, bibliographic coupling and co-authorship analysis) have been used for analysis. Considering the importance of FLFP in the labor market, this study investigates the following research questions:

- RQ-1 : How have publications on FLFP changed over time?
- RQ-2 : Who are the impactful authors, research papers, journals, organizations and nations related to FLFP?
- RQ-3 : Which countries are collaborating for research on this topic?
- RQ-4 : What are the key thematic clusters and frequently cited articles related to FLFP?

To answer these research questions, a bibliometric analysis of publications was performed. Citation analysis has been used to evaluate the impact and influence of research by analyzing how often a study, author or journal is cited. Co-citation analysis is used to determine how two works appear together. It measures similarity based on how often two studies are cited together. Similarly, co-occurrence analysis has been performed to identify the frequently occurring keywords in academic publications. It helps to map research topics, emerging fields and conceptual structures within a discipline (Zupic and Cater, 2015). Further, to know the collaboration between the different countries, the co-authorship analysis has been used. Additionally, bibliographic coupling measures the homogeneity between two research papers according to the number of references they share. When two documents cite the same sources, they are bibliographically coupled (Donthu *et al.*, 2021). Since 2000, there has been a noticeable increase in publications related to FLFP. The publication trends increase more frequently after 2020.

Stephan Klasen is the most influential and productive author in this field. The United States of America (USA) is the dominant country, where as India is the most productive country. The University of British Columbia, Canada, is the most impactful organization, and World Development is the most impactful journal. FLFP, female employment, economic growth, education, fertility and gender inequality are some of the frequently used terms. India is collaborating with Germany, France, Australia and Italy to research this field. The main objectives of the study are to examine the publication trends, the most prominent and progressive author, country and institutions and to explore the countries collaborating for research in this field. The study also investigated the thematic clusters and top highly cited articles related to the topic. The present study has five sections. The first section provides a brief introduction to the topic, followed by an overview of the background in the second section. The third section discusses the methodology, followed by results and findings in the fourth section. The conclusion and future research direction are presented in the fifth section.

Background of FLFP

FLFP improves gender equality and economic development (Luci, 2009). Various studies found a U-shaped relationship between FLFP and economic growth (Goldin, 1994; Mammen & Paxson, 2000 and Luci, 2009). At the low level of economic development, FLFP is high and they are engaged in the family-based farm sector. As the economy shifts from traditional farms to the industrial sector, FLFP initially falls due to a mismatch between demand and supply, social stigma against females working outside and a rise in income. Structural change, improved education level, lower fertility rate and growth in the service sector again increase FLFP in the later stage of development (Boserup, 1970 and Sinha, 1965). However, recent studies highlighted the lack of empirical support for this hypothesis, especially in the context of developing countries (Gaddis & Klasen, 2014 and Lahoti & Swaminathan, 2016). India's economic advancement has not been driven by a labor-reliant manufacturing sector, which has led to low employment intensity, especially for females (Lahoti and Swaminathan, 2016). Further, industries that employ females have seen the slowest growth in recent decades (Klasen and Pieters, 2015).

India's economic advancement is distressed, which has produced limited jobs, especially for females. The stagnated agriculture sector and lower job opportunities in the non-farm sectors are the other reasons for low FLFP in rural areas (Kannan and Raveendran, 2012). Further, high income levels and husband's education lead to a decline in FLFP (Sarkar *et al.*, 2019). Social and cultural norms often hinder FLFP in the labor market (Jayachandran, 2021). Even though FLFP has shown increasing trends in recent years, they are mostly engaged in self-employed and non-farm sectors. There is a view that the recent hikes in rural female employment are mainly distress-driven (Fernandez and Puri, 2023). Presently, India is passing through the stage of demographic dividend females' participation in the job market is crucial (Boruah and Das, 2022). Therefore, it is essential to assess how research in this domain has evolved. In economic literature, a dedicated

bibliometric review on FLFP remains underexplored. Our study fills this gap by mapping the trajectory of FLFP research from 2000 to 2024. The study utilizes bibliometric techniques to analyze the intellectual structure of FLFP literature and outlines a roadmap for future research directions.

METHODOLOGY

To evaluate the existing literature on FLFP, a bibliometric analysis has been used. Bibliometric analysis is a technique that helps us identify and examine the important studies related in the field of FLFP and their contribution to the literature (Amiri *et al.*, 2022). Citation, co-citation, bibliographic coupling, co-occurrence and co-authorship are the methods used for data processing in bibliometric analysis. For bibliometric analysis, the objectives and scope of the study were defined and choose the appropriate technique for analysis, collect data for the study and finally perform the analysis and report the results.

Defining the Appropriate Search Terms and Collection of Data

To perform a bibliometric analysis, the appropriate keywords are first determined. Defining the keyword is an important step that limits the scope and publication included in the research. Female workforce participation rate (FWPR), female employment and Female labor force participation, (FLFP) are important terms in the existing literature. Therefore, these terms are used in search criteria and try to cover all essential sub-topics. The Scopus database has been used to derive data for the bibliometric analysis, which is the most comprehensive source for high-quality and peer-reviewed research. VOS viewer software has been used to evaluate the data. The keywords 'FLFP,' 'Female Labor Force Participation,' 'FWPR,' 'Female Workforce Participation Rate' and 'Female Employment' were used and found 3,274 articles initially and those published only in the English language are included. Only final articles published from 2000 to 2024 in 'Economics, Econometrics, Finance, Social Sciences and Arts

TABLE 1
Process to include and exclude the articles

Filtering criteria	Exclude	Include
Database: Scopus Search date: 15 December 2024 Search words: ('FLFP' OR 'Female Labor Force Participation' OR 'FWPR' OR 'Female Workforce Participation Rate' OR 'Female Employment')	-	3,274
Period of Publication: 2000-2024	753	2,521
Subject area: 'Economics, Econometrics and Finance,' 'Social Sciences' and 'Arts and Humanities'	354	2,167
Paper type: 'Articles'	403	1,764
Language: Articles only in English	104	1,660
Erroneous Record Refinement: Article with incomplete bibliographic information	1	1659
Content screening: Include articles if 'Titles, abstracts and keywords' pertain to FLFP	1342	317

Source: Authors' Calculations

and Humanities' are included. Articles with incomplete information and not relevant to the scope of the study are not included. After applying all the relevant filters, 317 articles related to FLFP were identified (Table 1).

Technique for the Analysis

The bibliometric study is based on two fundamental methods: performance analysis and science mapping. Performance analysis evaluates the research contributions using the number of publications and annual citations. The publications count measures productivity, whereas citations measure the impact and influence. Additionally, perpublication, citation and h-index are the other measures that provide a more comprehensive analysis to evaluate research performance. The second technique used for a

bibliometric study is science mapping, which examines the relationships among research components. Citation, co-citation, bibliographic coupling, co-word and co-authorship analysis are important techniques for science mapping (Donthu *et al.* 2021). In this study, we used both performance analysis and the science mapping technique of bibliometric analysis.

RESULTS AND DISCUSSION

Publications Trends

The publication trends in the field of FLFP from 2000 to 2024, along with the total number of articles per year, are shown in Fig. 1. From 2000 to 2009, the average publication was 20 to 40, indicating the slow phase of publication in this area. Further, from 2010 to 2018, the number of publications was below 100.

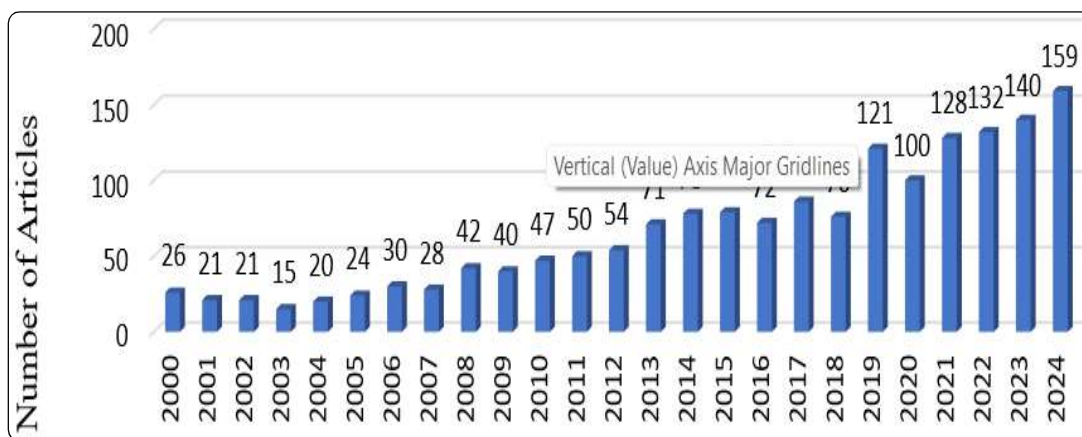


Fig. 1 : Publication Trends of FLFP

However, after 2018, it crossed 100 and now every year, more than 100 papers are published on this topic. The number of publications is higher in 2024 (159) compared to other years. During the last ten years, the average number of publications has been 117. The trends signify that the research intensity in this area is continuously growing. The study on this topic increased rapidly after the COVID-19 pandemic. Fig. 1, Publication Trends of FLFP

Top Contributing Authors, Organizations and Nations in the Field of FLFP

Citation analysis is a method that helps to identify key sources, their longevity and leading authors (Thakur and Kushwaha, 2023). Stephen Klasen and

Nicole M. Fortin are the most impactful authors, having 685 and 465 citations, respectively. If we look at the number of publications, Stephen Klasen, Jenneke Pieters and Stephanie Steinmetz are the most productive authors. Their number of publications is 6, 2 and 2, respectively. Stephen Klasen is the most impactful and prolific author with 685 citations and 6 documents (Table 2). The ‘University of British Columbia, Canada’ and ‘Tel Aviv University, Israel’ are the most influential organizations with 465 and 432 citations, respectively. Further, Tel Aviv University of Israel and Jawaharlal Nehru University of India are the most productive institutions that are working in this field. Country-wise trends highlight that the USA and

TABLE 2
Most Impactful Authors, Universities and Countries in the Field of FLFP Research

TC	Author	TP	TC	Institute	TP	TC	Nation	TP
685	Klasen, S.	6	465	Uni. of British Columbia, Canada	1	2397	The USA	65
465	Fortin, N. M.	1	432	Tel Aviv Uni., Israel	2	1107	Germany	26
416	Mandel, H.	1	416	Tel Aviv Uni., Israel	1	803	India	79
416	Semyonov, M.	1	309	Harvard Uni., USA	1	593	Netherlands	14
309	Bloom, D. E.	1	257	NBER, USA	1	592	Canada	11
309	Canning, D.	1	257	New York Uni., USA	1	515	Israel	4
309	Fink, G.	1	216	Uni. of Gottingen, Germany	1	424	Spain	13
309	Finlay, J. E.	1	216	Wageningen Uni., Netherlands	1	405	The UK	22
270	Pieters, J.	2	196	Georgetown Uni., USA	1	404	Turkey	20
257	Fernandez, R.	1	196	Ins. of Economic Analysis, Spain	1	258	Australia	12
196	Farre, L.	1	174	Uni. of Gottingen, Germany	1	174	Tanzania	1
196	Vella, F.	1	174	IFO Ins. for economic research, Germany	1	167	China	18
174	Gaddis, I.	1	174	Ins. for the study of labor (IZA), Germany	1	127	Austria	2
148	Jayachandran, S.	1	174	The World Bank, Tanzania	1	127	Pakistan	5
146	Mehrotra, S.	1	150	Jawaharlal Nehru Uni., India	2	108	Poland	2
146	Parida, J. K.	1	148	Northwestern Uni., USA	1	100	Chile	1
139	Ilkkaracan, I.	1	146	Central Uni. of Punjab, India	1	91	Italy	8
131	Heath, R.	1	139	Istanbul Technical Uni., Turkey	1	85	Philippines	3
131	Steinmetz, S.	2	131	Uni. of Washington, USA	1	84	Nigeria	7
123	Hank, K.	1	123	Max Planck Ins. for Demographic Research, Germany	1	82	South Africa	6

Note(s) : TC = Total citations. TP = Total publications. Uni. = University. Ins. = institute. USA = The United States of America. UK = The United Kingdom

Germany are the most influential countries, having 2397 and 1107 citations, respectively. Where as India is the highest-performing country with 79 documents, followed by the USA and Germany.

Top Contributing Journals in the Field of FLFP

‘World Development’ journal is the most influential journal with 742 citations, followed by ‘Feminist Economics’ with 467 citations (Table 3). The ‘Indian Journal of Labor Economics’ is the most productive Journal with 30 documents. In this journal, every year the number of publications is increasing. World Development (12 documents), Feminist Economics (7 documents), Labor Economics (6 documents) and Empirical Economics (6 documents) are the other journals that publish documents in this field. The

publication productivity was drawn against different times and find recent increasing trends in this field. The most productive years are from 2021 to 2024. It is interesting to note that around 80 per cent of journals related to this topic are ranked ‘A’ in the ABDC 2022 Journal Quality List. American Economic Review is one of the leading journals with a 359 h-index, which indicates that the journal is consistently publishing influential and highly cited papers.

Most Influential Articles on FLFP

The top-cited and impactful publications related to FLFP are presented in Table 4. With 465 citations, the article ‘Gender Role Attitudes and the Labor-market Outcomes of Women across OECD

TABLE 3
Top impactful journals’ contribution to the field of FLFP

Journals	TC	TP	ABDC	H-Index	2000-2005	2006-2010	2011-2015	2016-2020	2021-2024
World Development	742	12	A	219	3		3	3	3
Feminist Economics	467	7	A	71		1	3	3	
Oxford Review of Economic Policy	465	1	A	101	1				
American Journal of Sociology	416	1	A*	206		1			
Journal of Economic Growth	309	1	A*	100		1			
Journal of Population Economics	290	4	A	87	1		1	1	1
American Economic Review	257	1	A*	359			1		
World Bank Economic Review	218	2	A	102			1		1
Labour Economics	208	6	A	91	1	1	2	1	1
Economica	196	1	A	75			1		
Indian Journal of Labour Economics	176	30	C	21	4	2	3	7	14
European Journal of Population	163	2	B	61	2				
Population Research and Policy Review	152	5	A	59	2				3
IMF Economic Review	148	1	A	82					1
Economic and Political Weekly	123	5	B	70		1	1	2	1
European Sociological Review	110	2		108		1	1		
World Bank Research Observer	109	2	B	76				1	1
Small Business Economics	108	1	A	167				1	
International Journal of Social Economics	103	5	B	48		1	1	3	
Empirical Economics	88	6	A	68		1	1	1	3

Note (s): ABDC = “Australian Business Deans Council 2022 Journal Ranking List”. TC = Total citations. TP = Total publications

TABLE 4
Top contributing articles on FLFP

Authors	Title	TC
Fortin (2005)	'Gender role attitudes and the labor-market outcomes of women across OECD countries'	465
Mandel & Semyonov (2006)	'A welfare state paradox: State interventions and women's employment opportunities in 22 countries'	416
Bloom <i>et al.</i> , (2009)	'Fertility, female labor force participation and the demographic dividend'	309
Fernández (2013)	'Cultural change as learning: The evolution of female labor force participation over a century'	257
Klasen & Pieters (2015)	'What explains the stagnation of female labor force participation in Urban India?'	216
Farre & Vella (2013)	'The Intergenerational Transmission of Gender Role Attitudes and its Implications for Female Labour Force Participation'	196
Gaddis & Klasen (2014)	'Economic development, structural change and women's labor force participation: A re-examination of the feminization U hypothesis'	174
Jayachandran (2021)	'Social Norms as a Barrier to Women's Employment in Developing Countries'	148
Mehrotra & Parida (2017)	'Why is the Labour Force Participation of Women Declining in India?'	146
Ilkcaracan (2012)	'Why so Few Women in the Labor Market in Turkey?'	139
Heath (2014)	'Women's Access to Labor Market Opportunities, Control of Household Resources and Domestic Violence: Evidence from Bangladesh'	131
Kreyenfeld & Hank (2000)	'Does the availability of childcare influence the employment of mothers? Findings from Western Germany'	123
Engelhardt & Prskawetz (2004)	'On the changing correlation between fertility and female employment over space and time'	121
Klasen (2019)	'What Explains Uneven Female Labor Force Participation Levels and Trends in Developing Countries?'	109
Patrick <i>et al.</i> , (2016)	'Where are all the self-employed women? Push and pull factors influencing female labor market decisions'	108
Haan & Wrohlich (2011)	'Can childcare policy encourage employment and fertility? Evidence from a structural model'	101
Contreras & Plaza (2010)	'Cultural factors in women's labor force participation in Chile'	100
Hirway & Jose (2011)	'Understanding Women's Work Using Time-Use Statistics: The Case of India'	94
Afridi <i>et al.</i> (2018)	'Why are fewer married women joining the workforce in rural India? A decomposition analysis over two decades'	88
Dildar (2015)	'Patriarchal Norms, Religion and Female Labor Supply: Evidence from Turkey'	79

Note(s): TC = Total citations

Countries' (Fortin, 2005) is the most influential. This paper analyses how gender ideology and work values influence women's labor market outcomes in 25 OECD countries. It finds that anti-egalitarian views, the perception of women as homemakers and feelings of guilt among mothers are significant factors

contributing to low female employment rates and a wide gender wage gap. 'A welfare state paradox: State interventions and women's employment opportunities in 22 countries' by Mandel and Semyonov (2006) is the second highly cited paper with 416 citations. This study examines how the public welfare state

TABLE 5
Clustering of FLFP literature using bibliographic coupling

Theme	Authors	Title	TC
FLFP and fertility	Mandel & Semyonov (2006)	"A welfare state paradox: State interventions and women's employment opportunities in 22 countries"	416
	Kreynefeld & Hank (2000)	"Does the availability of childcare influence the employment of mothers? Findings from Western Germany"	123
	Engelhardt & Prskawetz (2004)	"On the changing correlation between fertility and female employment over space and time"	121
Women emp. and gender roles	Fortin (2005)	"Gender role attitudes and the labor-market outcomes of Women across OECD Countries"	465
	Farre & Vella (2013)	"The Intergenerational Transmission of Gender Role Attitudes and its Implications for Female Labour Force Participation"	196
	Jayachandran (2021)	"Social Norms as a Barrier to Women's Employment in Developing Countries"	148
Women's emp. Analysis	Klasen & Pieters (2015)	"What explains the stagnation of female labor force participation in Urban India?"	216
	Mehrotra & Parida (2017)	"Why is the Labour Force Participation of Women Declining in India?"	146
	Heath (2014)	"Women's Access to Labor Market Opportunities, Control of Household Resources, and Domestic Violence: Evidence from Bangladesh"	131
Female emp and childcare	Bloom <i>et al.</i> (2009)	"Fertility, female labor force participation, and the demographic dividend"	309
	Posadas & Vidal-Fernandez (2013)	"Grandparents' Childcare and Female Labor Force Participation"	71
	Tsani <i>et al.</i> (2013)	"Female labor force participation and economic growth in the South Mediterranean countries"	68
	Gaddis & Klasen (2014)	"Economic development, structural change, and women's labor force participation: A re-examination of the feminization U hypothesis"	174

Continued...

TABLE 5 Continued....

Theme	Authors	Title	TC
Female emp & and economic development	Ilkcaracan (2012)	"Why are so Few Women in the Labor Market in Turkey?"	139
	Dildar (2015)	"Patriarchal Norms, Religion, and Female Labor Supply: Evidence from Turkey"	79

affects FLFP and occupational achievement across 22 industrialized countries. It finds that even though welfare states increase FLFP, they also limit their access to desirable and high-status positions. Countries with progressive welfare policies and large public sectors show high female employment, but they are mainly working in low-position jobs and their participation in managerial occupations is low.

Other key research areas in FLFP, as per the leading journals, are fertility and FLFP (Bloom *et al.*, 2009; Engelhardt & Prskawetz, 2004 and Kreynefeld & Hank, 2000), social norms and FLFP (Dildar, 2015; Farre & Vella, 2013; Fernandez, 2013 and Jayachandran, 2021), structural change and FLFP (Gaddis and Klasen, 2014), stagnated FLFP (Klasen and Pieters, 2015) and females' access to the job market (Heath, 2014).

Knowledge Foundations of FLFP

The three colors (Red, Green and Blue) represent the three clusters. Each cluster has the same theme as the paper. Where the node lines are connected to the nodes, it indicates that these works appear together. Now the frequency of appearance of that paper together will depend upon the thickness of the line. The thickness of the line means the frequency is high, and vice versa. A co-citation network displaying references cited at least eight times is shown in Fig. 2. This visualization highlights the frequently cited key scholarly works, indicating their conceptual or the matic connections within the field. Goldin, Eckstein, Lifshitz and Boserup (Red nodes) have highly cited work on the U-shaped relationship between FLFP and development. Similarly, Mehrotra, Parida, Klasen and Pieters have highly cited work on

causes of low FLFP in India (Green nodes). The third cluster shows the highly cited work of Goldin, Mammen and Klasen on economic development and FLFP (Blue nodes).

Cooperation Between Countries through Co-Authorship Analysis

Co-authorship includes publications of multiple authors, institutions and countries. Country-wise co-authorship analysis was done to understand the collaboration among nations and its impact on the development of the research itself. The minimum number of documents in a country is five. Fig. 3 depicts that India, the USA and Germany are the most influential countries working on this topic. India is collaborating with Germany, France, Australia and Italy (red nodes). Similarly, the USA is collaborating with the UK, Spain, Canada and the Netherlands (blue nodes). China, South Korea, Japan and Malaysia are the other countries working together in the field of FLFP.

Thematic Clusters of FLFP

Based on the bibliographic coupling as discussed in the above section, the following section discusses the theme cluster of FLFP. Cluster 1 is FLFP and fertility, which contains 18 articles with 1452 citations. The top three cited papers of this cluster are Mandel & Semyonov (2006), Kreynefeld & Hank (2000) and Engelhardt & Prskawetz (2004) with 416, 123 and 121 citations, respectively. Mandel and Semyonov (2006) examined how the public welfare nations affect FLFP and occupational achievement in 22 industrial countries. They find that advanced welfare policies and a wide public sector boost FLFP,

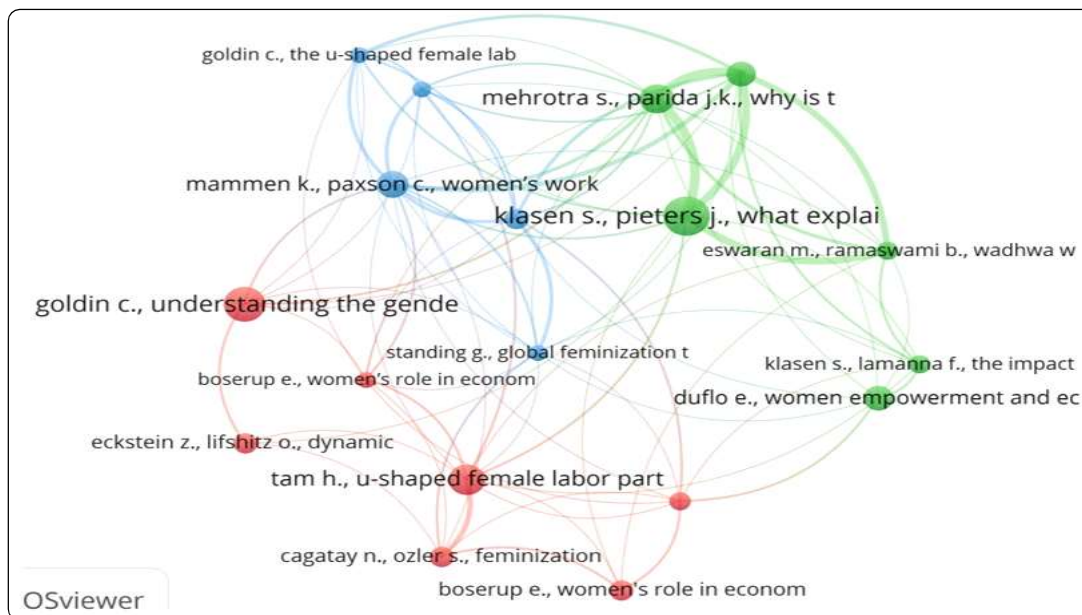


Fig. 2 : Network Visualisation of co-cited references

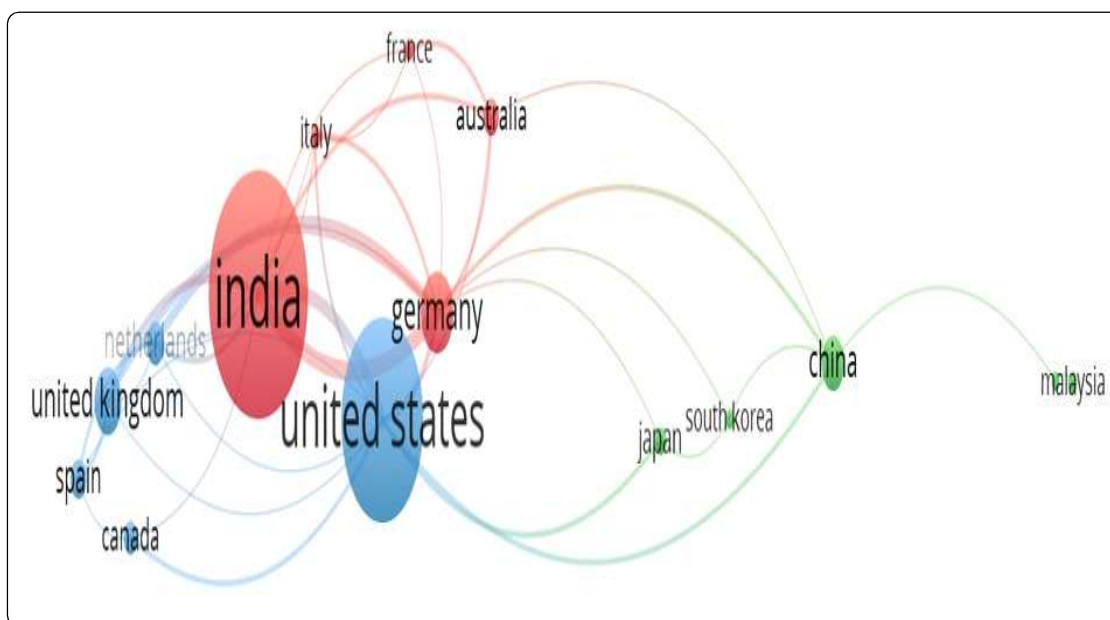


Fig. 3 : Country-wise co-authorship on FLFP research

but they tend to concentrate women in low management, female-dominated jobs and limit their career advancement. Kreynfeld and Hank (2000) argued that to find out the effect of childcare on FLFP in Germany, the emphasis should focus on the availability of childcare rather than affordability. In OECD countries, the correlation between fertility and

FLFP shifted from negative before the 1980s to positive afterward. Kögel (2004) explains this shift through country-specific factors and differences in trends. Whereas Engelhardt & Prskawetz (2004) explored factors explaining this heterogeneity, using data on fertility, employment, education, labor markets and social policies.

Cluster 2 includes 15 articles on female labor supply and factors that have been cited 1505 times. Fortin (2005), Farre & Vella (2013) and Jayachandran (2021) are the top three highly cited papers of this cluster with 465, 196 and 148 citations, respectively. Fortin (2005) is the most impactful author in this cluster. He investigated how attitudes toward gender roles and work values affect female labor market outcomes in 25 OECD countries. The study found that anti-egalitarian views strongly correlate with lower female employment and a wider gender wage gap, but are declining among younger cohorts. However, traditional views on women's homemaking roles, internal conflict within the family and mothers' guilt pose a barrier to gender equality.

Farre and Vella (2013) examined the cultural transmission of gender roles and found that mothers' attitudes significantly influence their children's views. Sons' early attitudes strongly correlate with their wives' labor supply, while daughters' attitudes affect work outcomes mainly through education. Jayachandran (2021) explained the effect of cultural norms on FLFP in developing countries and found that cultural norms play a critical role in the large difference between the countries' FLFP at the same level of development. It found that culturally aware policy helps to reduce gender gaps in employment and earnings.

Cluster 3, Women's employment analysis, comprises articles revolving around stagnated FLFP, declining FLFP and females' access to the labor market. This cluster includes 13 articles with 996 citations. The three highly cited documents of this cluster are Klasen & Pieters (2015), Mehrotra & Parida (2017) and Heath (2014) with 216, 146 and 131 citations, respectively. Klasen and Pieters (2015) examined the demand and supply side factors of low and stagnated FLFP. They found that high levels of income, husband's education level, falling selectivity of highly educated women and limited expansion in female-dominated sectors, suppressed their participation in urban India between 1987 and 2011.

Mehrotra and Parida (2017) investigated both micro and macro factors, U-shaped FLFP trends and

potential job-creating sub-sectors for females displaced from agriculture. The study found that structural transformation, agricultural mechanization, rising rural wages and capital-intensive manufacturing have limited female employment due to low education, skills, and cultural constraints. Heath (2014) identified a positive relationship between work and domestic violence, especially among low-educated women and those who married at a young age. Women with less bargaining power face a higher risk of experiencing domestic violence when they enter the labor market. Implementing policies that enhance women's bargaining capacity could help reduce this risk.

Cluster 4 is concerned with female employment, fertility and religion, having 13 articles and 875 citations. Bloom *et al.* (2009), Posadas & Vidal-Fernandez (2013) and Tsani *et al.* (2013) are the top three highly cited papers of this cluster with 309, 71 and 68 citations, respectively. Bloom *et al.* (2009) investigated the influence of fertility on FLFP across countries. The study revealed that relaxing constraints on abortion helps to reduce female fertility, while each child birth decreases a female's labor supply by nearly two years. Posadas and Vidal-Fernandez (2013) analyzed the impact of childcare on maternal labor participation. The study finds that ordinary least squares over estimate the effect. In contrast, fixed effects show that the support of grand parents in childcare raises mothers' labor market involvement by 9 percentage points, especially for minority and single mothers. Tsani *et al.* (2013) investigated the relationship between FLFP and economic progress in South Mediterranean countries. The study found a U-shape relationship and region-specific barriers. Simulations show that while income-driven participation changes may slightly lower growth, reducing these barriers significantly boosts economic growth.

Cluster 5 includes research on female employment and economic development with 10 articles and 762 citations. Gaddis & Klasen (2014), Ilkharacan (2012) and Dildar (2015) are the top three highly cited articles of this cluster. Various studies claim that FLFP follows a U-shape trend with economic development. However, Gaddis and Klasen (2014)

found weak empirical support for this trend in developing countries. Sector-specific growth analysis shows minimal U-shaped effects. Ilkcaracan (2012) investigated the causes of the larger gender gap between males and FLFP in Turkey. He found that the lack of demand for female labor, informal employment and the lack of work-family policies limited FLFP, while autonomy encouraged females to enter the labor market. Dildar (2015) identified that patriarchal traditions and religious beliefs are the major determinants of low and declining FLFP in Turkey.

Key the Mesin FLFP based on Co-occurrence Analysis

The theme-wise trends of FLFP was explored through co-occurrence analysis. Authors' keywords was used

for this analysis. These keywords are analyzed over time to trace the thematic progression of FLFP in at least two reviewed articles. The thematic trends are reported in Fig. 4 to 8. Nodes indicate topics represented by keywords, the colors of nodes indicate the clusters, and the size of nodes indicates the citations of a topic.

The study conducted on FLFP between 2000 and 2005 was mainly focused on female employment, fertility, and cointegration (red nodes) (Fig. 4). Research in the same period also highlights FLFP, public policy, and childcare (green nodes). After 2005, the main focus of the study was fertility and labor supply (green nodes), panel cointegration, panel unit root and FLFP (red nodes) (Fig. 5). The studies, which were conducted between 2011

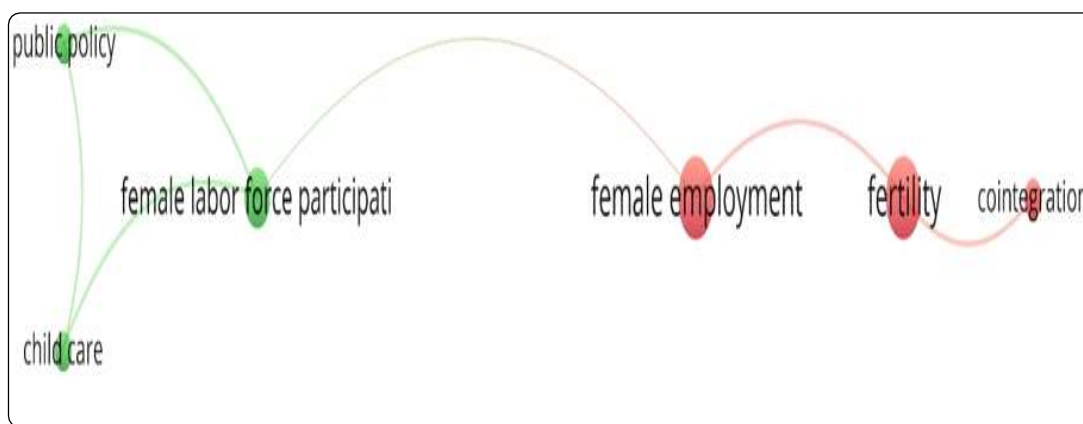


Fig. 4 : Influential topics between 2000-2005

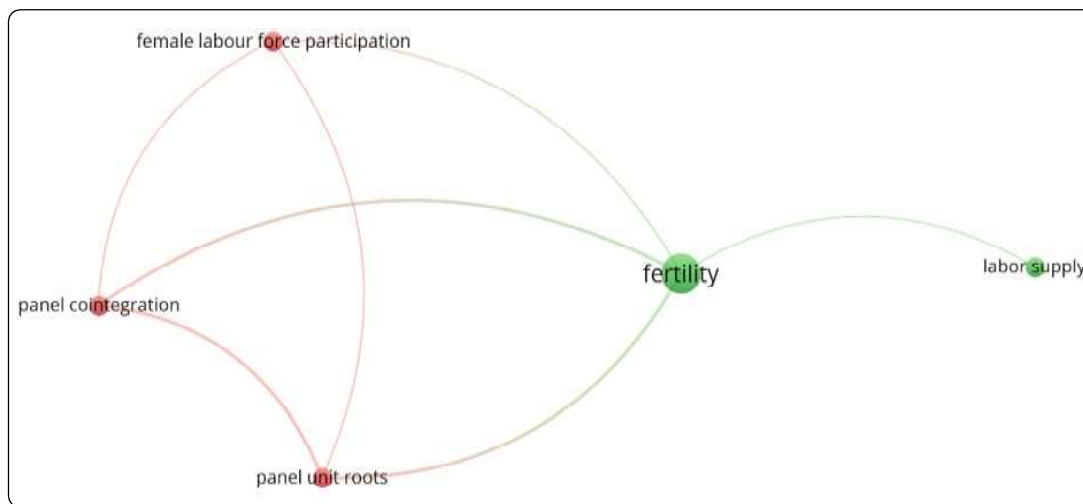


Fig. 5 : Influential topics between 2006-2010

and 2015, concentrated on FLFP, female employment and fertility (Fig. 6). Women, work and education (yellow nodes) were other emerging topics in the field. From 2000 to 2015, various studies tried to find out the relationship between FLFP and fertility rate. The study carried out between 2016 to 2020 is focused on gender and FLFP in India (red nodes), education, employment and economic growth (blue nodes) and female, labor and inequality (yellow nodes) (Fig. 7). During this period, the studies focus on the role of economic development and education on female employment. Lastly, during 2021-2024, most of the work was published on gender, education and female employment (red nodes) (Fig. 8).

Summary and Future Research Scopes

This paper, examined the literature on FLFP by using a bibliometric approach and found that over the years, the total count of published work in this field has significantly increased. World Development is the most significant journal, whereas the Indian Journal of Labor Economics is the most prolific. According to the number of citations, Klasen, Fortin and Mandel are the most influential authors. The University of British Columbia, Canada and Tel Aviv University, Israel, are the most impactful institutions. The USA, Germany, and India are the most impactful countries. A minimal change has been observed in the authors'

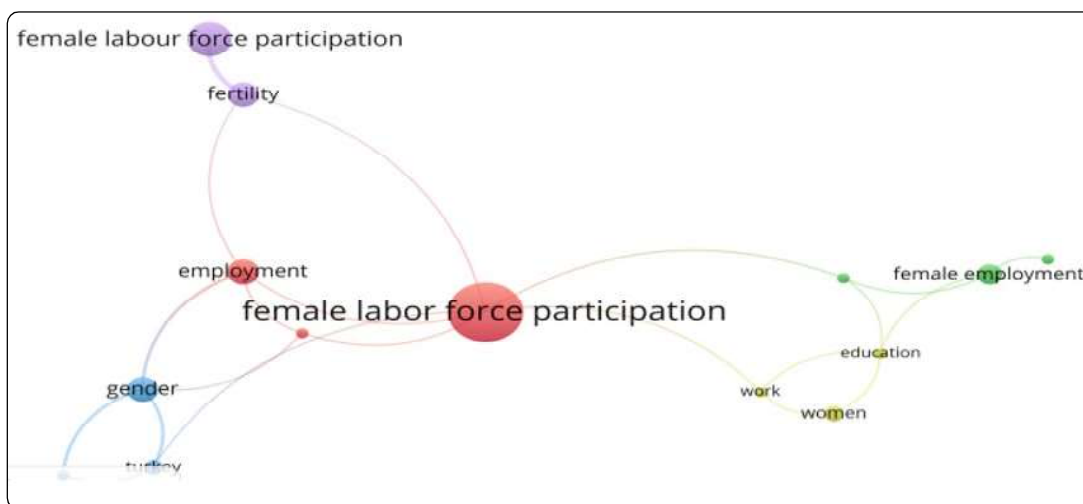


Fig. 6 : Influential topics between 2011 and 2015

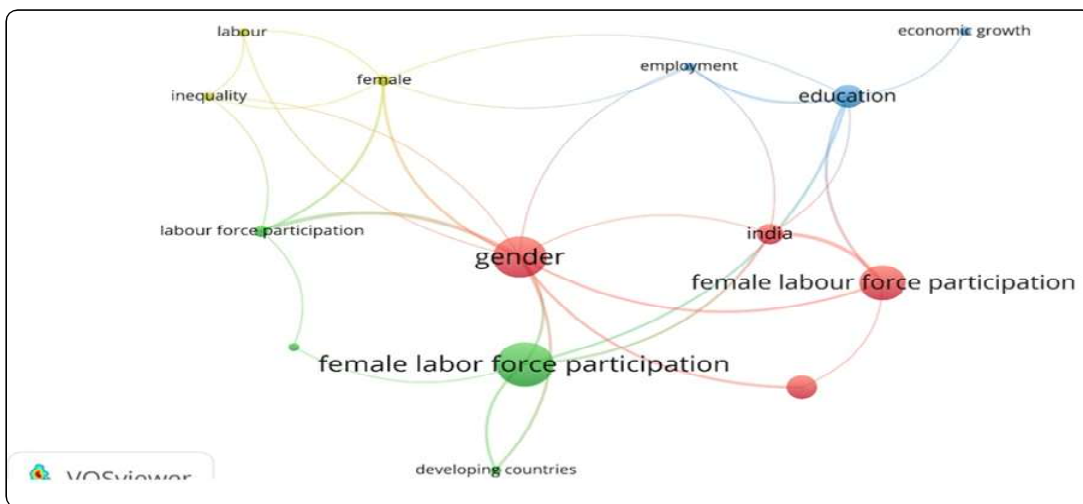


Fig. 7 : Influential topics between 2016 and 2020

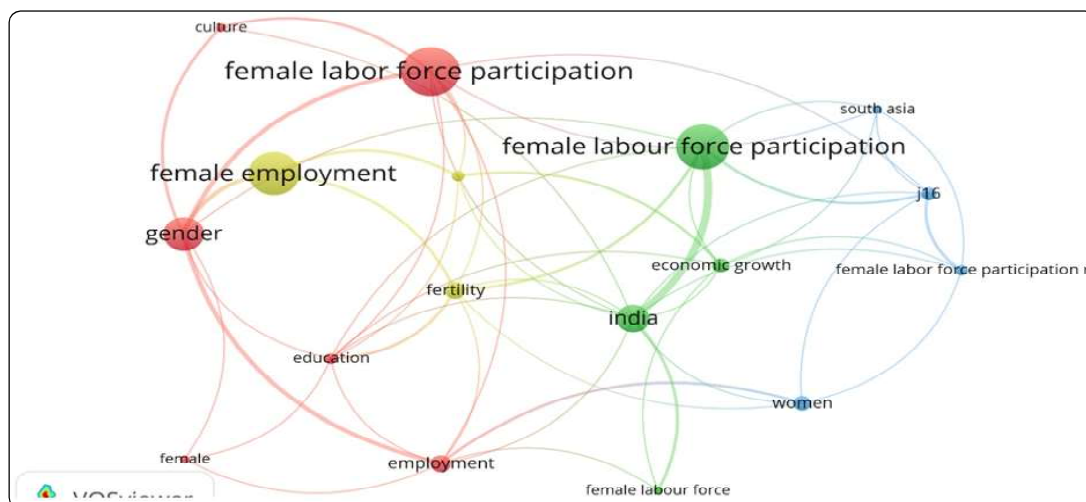


Fig. 8 : Influential topics between 2021 and 2024

keywords during the given period. It is seen that FLFP, female employment, fertility, education and economic development are the most frequently used keywords.

By looking at country-wise collaboration, it was found that India is collaborating with Germany, France, Australia and Italy for academic research in this field. By using co-citation and bibliographic coupling analysis, we identify the knowledge framework and thematic structure of FLFP from 2000 to 2024. Based on co-citation analysis, three clusters are identified with the same themes. The first cluster is FLFP and the U-hypothesis, the second cluster analyzes the causes of low FLFP and the last one is related to FLFP and economic development. Based on citing publications, five thematic clusters, namely FLFP and fertility; female employment and gender role; female employment analysis; female employment and childcare and female employment & economic development, were identified and critically evaluated. This study also maps the research trends and the current state of FLFP, which helps future researchers to shape their studies. By recognizing the most prolific authors, articles and journals, this study enhanced research quality and recognized key contributors in the field of FLFP.

Limitations of the Study

The first and foremost limitation of the study is that it is based only on the Scopus database. Pub Med, Web of Science, Dimensions and Lens are other databases from which we can extract and evaluate data. In this study, we did not include these sources. This may exclude relevant research from other sources. Secondly, we choose articles published in the English language only, which may again omit significant studies.

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