

## A SCIENTOMETRIC ANALYSIS OF THE WOMEN EMPOWERMENT (1985-2018)

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## ABSTRACT

*Over recent decades, the researcher's interest in women empowerment (WE) has grown stronger and WE have become a prominent topic of discussion in business and management studies. Despite the large amount of work in this direction, the topic is itself somewhat unclear in terms of the shared understanding of the scholars regarding what makes their field. To fill this gap in literature, the current study applies scientometric (a combination of co-occurrence, co-citation, and overlay visualization) techniques to study the evolution of the field of WE between 1985 and 2018. Our empirical analysis reveals the presence of WE in development aspects in various fields. It also identifies 15 topic clusters, 4 author-based co-citation cluster, 4 journal-based co-citation cluster, 5 clusters covering hot topic, and another 5 clusters for the new topics in the study of WE. Overall, the analyses revealed patterns of convergence and divergence and the diversity of topics, specialization, and interdisciplinary engagement in WE research, thus offering the latest insights on the field of WE research.*

**Keywords:** Women empowerment, Scientometric analysis, Topic mining, Co-citation, Overlay visualization, VOSviewer

## I. INTRODUCTION

Women empowerment (WE) is a multifaceted concept, helps women to have the power, able to make decisions in their life (Alemu, Van, & Ruben, 2018; Varsha et al., 2019; Reddy et al., 2019). WE play a significant role in achieving the three visions of equality, progress, and social justice (Kumar, Raghunathan, Arrieta, Jilani, Chakrabarti, Menon, & Quisumbing, 2019). Presently, the stints of the empowerment concept help for the liberalization of women and provides an opportunity to embrace that assured independence to make their own selection/choices and contribute to society (Sinha et al., 2019). In today's scenario, the rapid growth of globalization, industrialization, and change in social legislation have contributed to the transformation of status or visibility and position of women across the globe (Huis et al. 2019). Also, the diversification of education includes digital education, and its awareness helps the women come out from the cooking work to professional activities. In the majority of the developed countries, women have successfully attained equality with men at the workplace in the organization (Nandy & Kumar, 2014). Women-controlled and women-owned enterprises are now can see it as significant functional foundations of the society and the economy in the place of 25.8 to 28.1 percentage approximately of the overall entrepreneurship in present global scenario (Sinha et al., 2019).

Emerging nations like India is the fastest growing economy in the globe and provides enormous opportunities to women as entrepreneurs, political representatives and professionals. The legislation in India introduced a new law in 2013 and made it compulsory for each company to have at least one woman on the board as a director leads to the rise of women's visibility but not that much effective. The involvement of women in the workplace and business is slightly less in developing countries when compared to developed countries. For example, women participation in India is 31.6%, USA – 45%, UK – 43%, Canada – 42%, France – 32% , Indonesia - 40%, Sri Lanka and Brazil – 35% (Sinha et al., 2019). Hence, women are portrayed as a weaker gender in physical and emotional aspects at a global level. Thus, the prospects of women's development context in business and commerce are still unexplored. The challenges of the business world in the present scenario are treacherous for women compared to men and when they face several obstacles to achieve their business success (Allen and Truman, 1993). Fortuitously due to technology innovation across the world has opened new channels and opportunities for women to explore their potentialities and business opportunities. Similarly, the world has achieved progress towards women's empowerment in the Millennium Development Goals (MDGs set by the United Nations in 2000). Further, the overall impact of empowering women will increase social & financial stability in both rural and urban areas in terms of standard of living and facilitates education to their children (Chakraborty et al., 2019).

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Also, a financial market at the global level has progressed over a period in the view of long-term goals to increase the work efficiency of individuals' results raises in the gig economy at a global level. The financial services in the present era focus on wealth management and create ample opportunities that were traditionally considered as a male domain. However, things are changing fast and the game is old with new rules and systems are evolved. Women are literate and entered all sectors of the economy. The Boston Consultancy Group (BCG) report (2018) depicts that women are achieved in a significant way in terms of a better position, jobs, entrepreneurial opportunities and technology (Aggarwal, 2019).

The enablement concept is moving from the traditional to the contemporary context of the involvement of men and women by considering entrepreneurial efforts in the business domain. In emerging countries, women entrepreneurs are more successful (Digan, Sahi and Mantok, 2012). Gender is a relevant variable that determines the several roles in society and emphasizes professional goals while explaining the different motivation levels by using technology (Sangwan et al., 2009; Barbu et al., 2012, 2018). Nevertheless, various research identified a set of critical factors where women are empowered and become successful 'womenpreneurs' increased economic, social and human capital. The governance at micro, macro, and meso level encourages the women in terms of providing institutional support, participation in societal development work, training and management, increase access to markets and best managerial practices (Qasim, 2018). Women entrepreneurship is a combination of caring for their families as well as the income generation process for their survival and achievements of their visions to increase human capital (Mitchell 2004; Seborá et al. 2009).

According to the United Nations (2015) report, nearly half of the world's human capital and business tycoon are women. However, only relatively one-third of the work done by women in emerging countries is measured. Subsequently, understanding the knowledge of empowerment mentioned in few scholarly works describes the first wave, second wave and third wave of women emancipation or feminist moment (Miriam et al., 2019). The first wave of the 1960s emphasized the division of labor based on both men and women participation and highlighted as gender equality professions (Martin, 1992; Swain, 2017). During the second wave of 1960 to 1970s, the emancipation of women and political involvement in the development aspects (Martin, 1992). In this period, women have participated in grassroots level activities for policymaking in governance known as femocrats (Moreton-Robinson, 2000; Phillips, 2006). It also provides the policies of gendered analysis to minimize domestic violence in their household and bring social and societal development work. According to Philips (2006), the rise of the third wave of feminism in the 1990s concluded with the transformation of the landscape in the economic and social empowerment of women. During this period, several pieces of literature argued that gender equality in all the sectors and importance are given to education, postmodernism, postcolonialism and poststructuralism perspectives (Gringeri, Wahab, & Anderson-Nathe, 2010; Mattsson, 2014; Mehrotra, 2010; Phillips & Cree, 2014). Hence women always inspire and bring the motivation and new ideas in their income-generating work adjusting in the new service society and technology in this period (Mellita and Cholil, 2012). From the third wave of women moment onwards, women entered in all sectors in today's technology-driven world. The technology and science community has been prompted to take the diversified opportunities in improving Science, Technology, Engineering, and Mathematics (STEM). Hence, women working in this field should be supported and encouraged to take new perspective jobs in related domains of data science and artificial intelligence (AI). The industry supports female STEM members to continue their careers in technology. Further, women should leave technological careers and ensured that provided facilities to childcare, work-life balance and providing funds for women's entrepreneurs. AI and algorithm decision making help to reduce poverty and solve the family issues of women, who are suffered from domestic violence.

Nevertheless, still, several critical issues are facing the upliftment of women. Through this study, a contribution has been made to reconfirm these and/or identify other issues in WE by applying bibliometric analysis to the field of WE. In the business, commerce, and management - related domain, there is a tradition among scholars to analyze the stock of what has done in the past and reflection for the future (Snehvrat et al., 2018; Kumar et al., 2017). Subsequently, mapping and tracing the progress of WE research or concept would help in understanding the governance to access its significance, legitimacy, history and employment opportunities for the women. The collective success of WE is more significant for the policymakers, increases the national economy and helps in understanding the challenges faced by the women to create value creation, economic growth and overall societal well-being. Many scholars or academicians studied the WE and related concepts for enablement. But the studies show that not much research on the development aspects of women. However, more recently, few scholars attempted to identify the growth perspectives of women in maturing and converging patterns of WE (Yunus, 2017; Kabeer, 2019). Although prior studies contributed to WE based on bibliometric analysis, these studies have

incorporated a specific and single analytical approach, specifically co-citation relation evaluation. Therefore, these analyses failed to provide much information on the recent progress of WE research.

The current study considers the scientometric technique to understand a shared understanding of the scholars of the field of WE. There are several techniques such as co-citation, topic co-occurrence, citation, bibliographic coupling, and overlay visualization used in the scientometric analysis. It helps to understand the in-depth information regarding WE in the business and commerce field. Also, scientometric analysis as a quantitative approach has been widely used to detect promising or emerging research areas of a particular field of research such as evolution of entrepreneurship (Chandra, 2018), microfinance (Begona, Gutierrez-Nieto, Carlos Serrano-Cinca, 2019), promotion management evolution (Kumar et al., 2019). However, the empirical analysis of a large amount of scientific data on WE using scientometric analysis is very rare, till date. Scientometric is a branch of bibliometric study that provides a combination of techniques to study the evolution of any particular field of interest like WE, management education, microfinance a few. A prior attempt has been made by Sharma et al. (2018) to study the field of emerging trends growth aspects of WE literature. However, the overall analysis was not comprehensive. To fill this research gap in the literature, a contribution has been made to study the evolution of the field of WE between 1985 and 2018, by using the scientometric technique.

## II. METHODOLOGY

In order to explore the various clusters of the field of WE in current research, we followed a systematic process to identify relevant academic sources. First, the search query consisted of words in the title or keywords using Web of Science Core Collection. The possible combination of words in search query are ("women empower\*") OR ("empower\* of women") OR ("empower\* women") OR ("womens empower\*") OR ("empower\* of womens\*") OR ("empower\* womens\*") OR ("women's empower\*") OR ("empower\* of women's") OR ("empower\* women's") OR ("female empower\*") OR ("empower\* of female") OR ("empower\* female") OR ("gender empower\*") OR ("empower\* of gender") OR ("empower\* gender"). Second, we chose the medium to be the English language. Third, we filtered academic journals (peer reviewed) by excluding trade publications, magazines, and books. Lastly, we examined publications for the duration in between 1985 to 2018. This search process finally yielded 391 papers published. The entire search process has been summarized in the table 1 below. Four separate sub-period for finer analysis are: 1985-2000, 2001-2006, 2007-2012, and 2013-2018. More recently, a sudden explosion in terms of publication has been noticed, started with Women's study and then spread to another field like business and management studies. So, we included all three fields of studies in our search process.

**Table 1.**  
**Detailed Search Process**

<i>Steps</i>	<i>Descriptions</i>
Title:	("women empower*") OR ("empower* of women") OR ("empower* women") OR ("womens empower*") OR ("empower* of womens*") OR ("empower* womens*") OR ("women's empower*") OR ("empower* of women's") OR ("empower* women's") OR ("female empower*") OR ("empower* of female") OR ("empower* female") OR ("gender empower*") OR ("empower* of gender") OR ("empower* gender")
Database:	Web of Science Core Collection
Refined by Categories:	Business, Management, and Women's Studies
Document Type:	Article (391)
Timespan:	1985-2018, the search was performed on 27 Sep. 2019. Four separate sub-period for finer analysis: 1985-2000, 2001-2006, 2007-2012, and 2013-2018.
Indexes:	SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI, CCR-EXPANDED, IC.

The fundamental preliminary analysis revealed an exponential growth of the field of WE in recent decades (as shown in Figure 1). Other analysis includes most frequently cited journals (Table 2), top ten most cited articles (Table 3), and top countries working on the area of WE research (Table 4) for the duration 1985-2018.

Figure 1  
Total Publications by Year

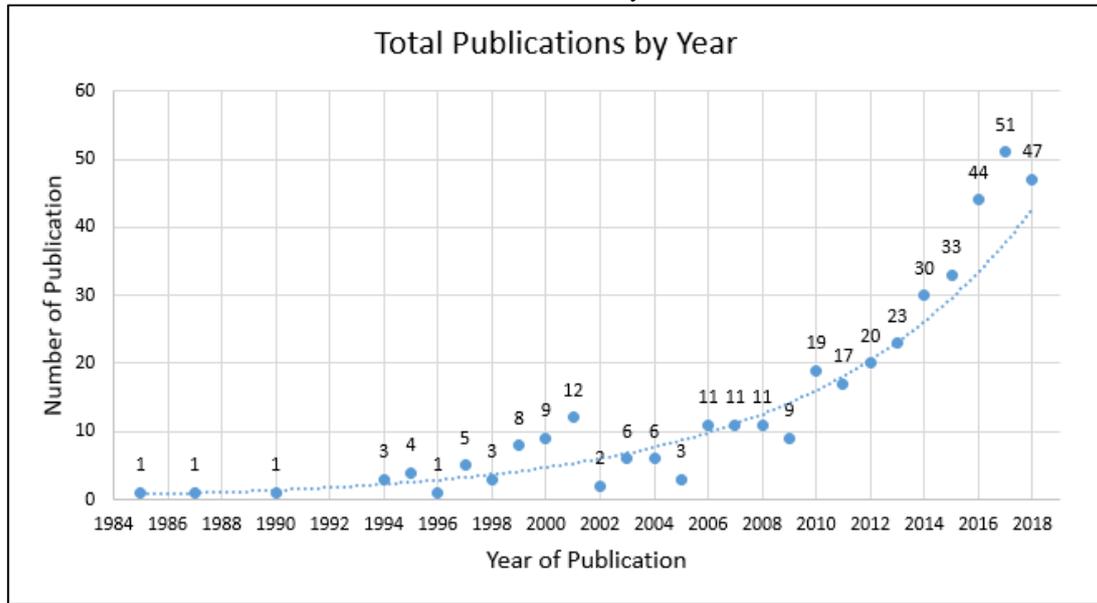


Table 2  
Most Frequently Cited Journals (1985-2018)

No.	Journal Name	No of Articles	Citations
1	womens studies international forum	41	485
2	gender & society	10	224
3	feminist economics	14	210
4	violence against women	10	170
5	sex roles	8	136
6	women & health	8	132
7	Indian journal of gender studies	20	98
8	international feminist journal of politics	10	95
9	womens health issues	12	84
10	politics & gender	6	80
11	european journal of womens studies	9	74
12	women & therapy	9	72
13	asian journal of womens studies	28	69
14	gender work and organization	4	62
15	journal of womens health	4	60
16	feminism & psychology	5	59
17	journal of business ethics	4	57
18	affilia-journal of women and social work	13	57
19	health care for women international	10	51
20	signs	4	42

Table 3  
 Top Ten Most Cited Articles (1985-2018)

No.	Article Name	Author/year	Journal	Total citations	Methodology
1	Empowering women through social entrepreneurship: Case study of a women's cooperative in India	Datta and Gailey (2012)	Entrepreneurship Theory and Practice	92	Case Study Research Design
2	Digital gender divide or technologically empowered women in developing countries? A typical case of lies, damned lies, and statistics	Hilbert (2011)	Women's Studies International Forum	82	Empirical / Quantitative Analysis
3	Sport and women's empowerment	Theberge (1987)	Women's Studies International Forum	71	Empirical/ Qualitative Analysis
4	Adolescent girls' sexual empowerment: Two feminists explore the concept	Lamb and Peterson (2012)	Sex Roles	66	Empirical/ Qualitative Analysis
5	Violence and HIV sexual risk behaviors among female sex partners of male drug users	He et al. (1998)	Women & Health	62	Empirical/ Qualitative Analysis
6	Variation in labor market participation of married women in Turkey	Gunduz-Hosgor and Smiths (2008)	Women's Studies International Forum	59	Empirical/ Quantitative Analysis
7	Women have found respect: Gender quotas, symbolic representation, and female empowerment in Rwanda	Burnet (2011)	Politics & Gender	59	Ethnography/ Qualitative Analysis
8	In their own voices: a qualitative study of women's risk for intimate partner violence and HIV in South Africa	Fox et al. (2007)	Violence against Women	53	Empirical/ Qualitative Analysis
9	Reforming the gender-related development index and the gender empowerment measure: Implementing some specific proposals	Klasen and Schüler (2011)	Feminist Economics	47	Empirical/ Qualitative Analysis
10	Empowerment and Programs Designed to Address Domestic Violence	Kasturirangan (2008)	Violence against Women	46	Empirical/ Qualitative Analysis

Table 4  
Top Countries Working on this Particular Area of Research (1985-2018).

No.	Country Name	No of Articles	Total number of citations
1	USA	155	1747
2	England	31	358
3	India	52	166
4	Canada	17	150
5	Turkey	8	113
6	Netherlands	7	111
7	Spain	12	106
8	Australia	10	87
9	South Africa	12	75
10	Switzerland	8	36

### III.RESULTS

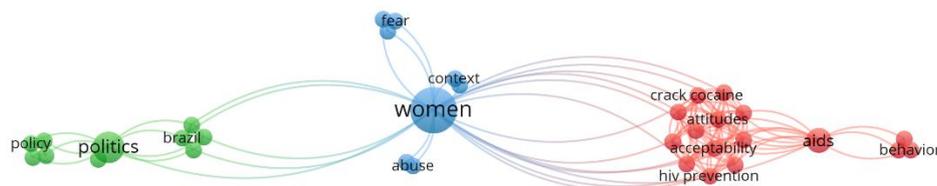
#### 3.1 Topic Mining Analysis

Four separate sub-period is considered for the finer analysis of topic mining i.e. 1985-2000, 2001-2006, 2007-2012, and 2013-2018.

##### *Topic Clusters in Women Empowerment Research (1985-2000)*

Of the 75 keywords on the topic of WE for the period 1985-2000, the largest set of connected keywords consists of 34 keywords (while considering the minimum number of occurrence of a keyword  $\geq 1$ ). VOSviewer further classified 34 keywords into three different topic clusters (as shown in Figure 2). Topic cluster 1 consists of 16 keywords that can be named as ‘*Women Diversity*’ similarly, for Topic cluster 2 and 3 that consists of 10 and 8 keywords can be termed as ‘*Women Political Engagement*,’ and ‘*Traumatic Transition of Women and Social media platform*’ respectively. During this period the study focused more on women's health to minimize HIV and created the awareness of condom usage. Further income generation and adult education play a significant role in women's diversified development aspects. The future direction suggests the importance of women and their empowerment is effectively done through maintain their good health and hygiene, facilitating vocational training in developed nations (Gerritzen, 2016). Feminist moment impact on political empowerment in emerging nations like India, Brazil, Bangladesh, Pakistan, Turkey a few. Women in politics bring power relations, equality in parliament and social justice in society (Sharma, 2000; Langle de Paz, Teresa, 2016). Further, the forthcoming days' implications of political theory and practice from the women equality revolution to bring a new lens ‘Political empowerment of women’ and to meet the challenge of Sustainable Development Goals (SDGs) (Gysman, 2018). Empowering Women always closes the gender gap in Sub-Saharan Africa with the positive development of economic wellbeing, knowledge of agronomics implementation and rational decision-making power at households, group and community levels. Also, reduces the domestic violence, fearless, sexual abuse, HIV infection by achieving gender equality (Lecoutere, 2017) and created massive awareness digital campaign about this at social media and television across the globe.

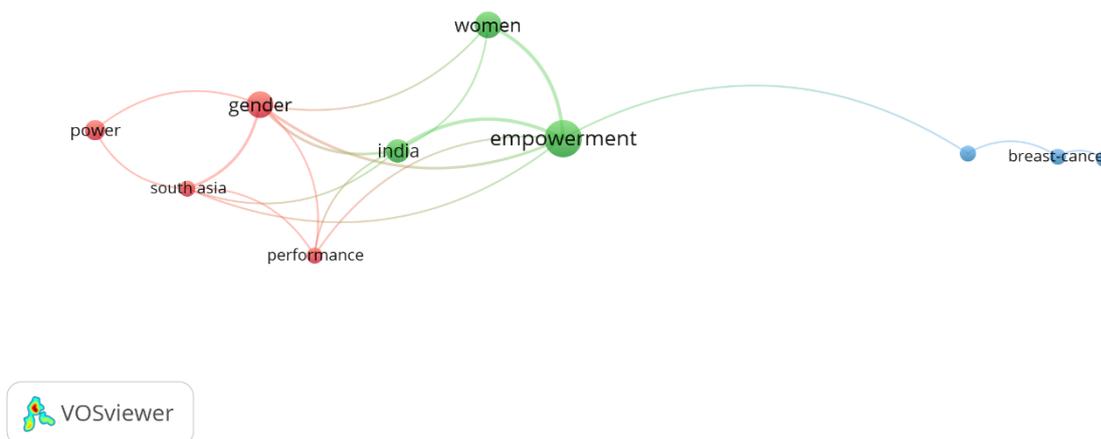
Figure 2  
Topic Clusters in Women Empowerment Research (1985-2000)



*Topic Clusters in Women Empowerment Research (2001-2006)*

Of the 151 keywords on the topic of WE for the period 2001-2006, 10 met the threshold value of 2 and above (i.e. the minimum number of occurrence of a keyword  $\geq 2$ ). VOSviewer further classified 10 keywords into three different topic clusters (as shown in Figure 3). Topic 1 consists of 4 keywords that can be named as ‘*Illuminating Female enablers in South Asia*’. Similarly for Topic 2 and 3 that consists of 3 and 3 keywords can be termed as ‘*Women Development in India*’, and ‘*Eco-feminist Involvement and Breast Cancer Awareness Campaign*’ respectively. Feminist therapy is a powerful model for women to minimize domestic violence and to achieve gender parity in South Asia. With the help of power, women can make decisions in the family to break the stereotypes in the society or sociocultural context. The future research describes higher education helps the women to bring identity in society (Hussain et al., 2017). Microfinance is a popular tool to reduce poverty in the globe. Extant literature suggests that with the help of SHGs through microfinance in India, women are empowered both politically and economically. Hence, women's involvement in SHGs is the grassroots level of enhancement in their families, villages and governance in India to generate global capital in the future. (Nayak, 2018; Radhakrishnan, 2018; Singh, 2018). Further, health literacy for women is essential in both rural and urban areas. Through the breast cancer awareness campaign can raise the consciousness of women's health (Porroche-Escudero, 2014) and leads to an emerging topic during this period.

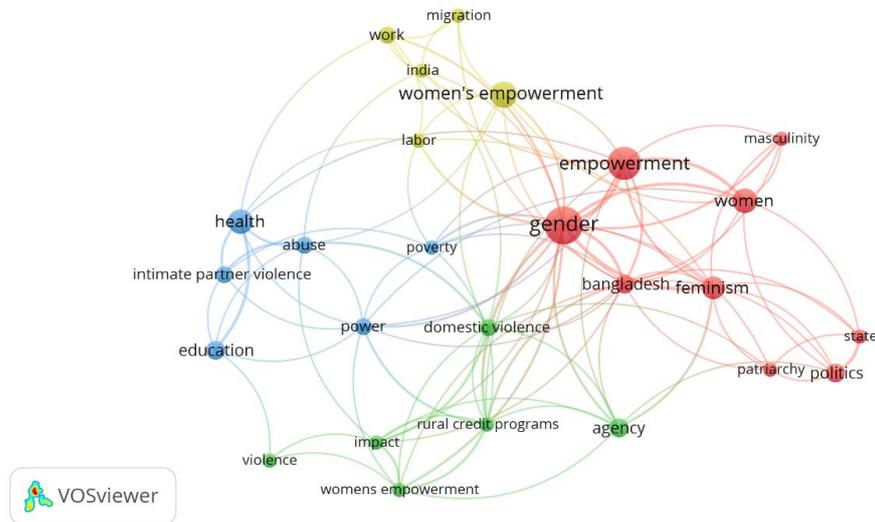
Figure 3  
Topic Clusters in Women Empowerment Research (2001-2006)



*Topic Clusters in Women Empowerment Research (2007-2012)*

Of the 409 keywords on the topic of WE for the period 2007-2012, the largest set of connected keywords consists of 26 keywords (while considering the minimum number of occurrence of a keyword  $\geq 3$ ). VOSviewer further classified 26 keywords into four different topic clusters while maintaining minimum cluster size  $\geq 5$  (as shown in Figure 4). Topic 1 consists of 9 keywords that can be named as ‘*Rethinking and Repowering in Bangladesh*’. Similarly for Topic 2, 3 and 4 that consists of 6, 6 and 5 keywords can be termed as ‘*Microcredit And Equality*’, ‘*Balancing Optimism And Pessimism*,’ and ‘*Emerging Migration Indian Families*’ respectively. The liberation of women's moment in Bangladesh made a significant impact on achieving gender parity (Chowdhury, 2010). Further feminist advocacy represents the upliftment of women and gained individual visibility in politics (White, 2010) through microfinance and SHGs (Murshid and Zippay, 2017; Nazneen and Sultan, 2014). Hence, SHGs members able to balance family, minimize domestic violence, reduce poverty by providing education and well-being. This era saw the more women representation in politics, microfinance, adult education and health literacy gained widespread momentum in Bangladesh for women's development aspects. Future research direction is for social entrepreneurship and social business to help the women in Bangladesh. The rapid social and economic changes affect the family system due to the migration concept in India. Due to migration new phenomenon will exist and referred to as women empowerment. Empowering women happens only when the husband was migrated to a different place woman must take care of the entire family, decision making on day to day basis (Sinha et al., 2012; Nagla, 2008). Hence, during this period women are more confident to take responsibilities in the family and migration has considered an emerging topic in this duration for the upliftment of women.

Figure 4  
Topic Clusters in Women Empowerment Research (2007-2012)



*Topic Clusters in Women Empowerment Research (2013-2018)*

Finally, out the 1115 keywords on the topic of WE for the period 2013-2018, 53 met the threshold value of 5 and above (i.e. a minimum number of occurrence of a keyword  $\geq 5$ ). VOSviewer further classified 53 keywords into **five different topic clusters** while maintaining minimum cluster size  $\geq 5$  (as shown in Figure 5). Topic 1 consists of 13 keywords can be named as *‘Neoliberal Global Economy’*. Similarly for Topic 2, 3, 4 and 5 that consist of 11, 11, 9 and 9 keywords can be termed as *‘Diversified Women Aspects and Sustainability,’ ‘Millennial Post-Feminism,’ ‘Benchmarking and Global Women Entrepreneurship,’* and *‘Electrification Empowerment’* respectively. The Neoliberalism concept helps women development aspects to economic and social policies, which emphasizes the importance of entrepreneurship in the global market. This concept provides gender equality from financial institutions (Prugl, 2017). In addition to this, women agency helps in multifaceted approaches like women can participate in politics, leadership roles, community work involvement and achieving gender equality. Education impacts poverty alleviation and results in the economic growth of the country by encouraging micro-business (Langle De Paz, 2016; Hanmer and Klugman, 2016). Women entered a new start-up at a micro-level brings the social change in India. With the help of women entrepreneurship filled the gender gap and resulted in the community and individual gain or profits (Bakas, 2017). During this period women involved in a new start-up or business which gained women's sustainability and stability in society and family also. The future direction suggests that technology with the help of AI can empower the women in India effectively.

The topic mining analysis also suggests the top five authors for each sub period (as depicted in Table 5, 6, 7, and 8).

Figure 5  
Topic Clusters in Women Empowerment Research (2013-2018)

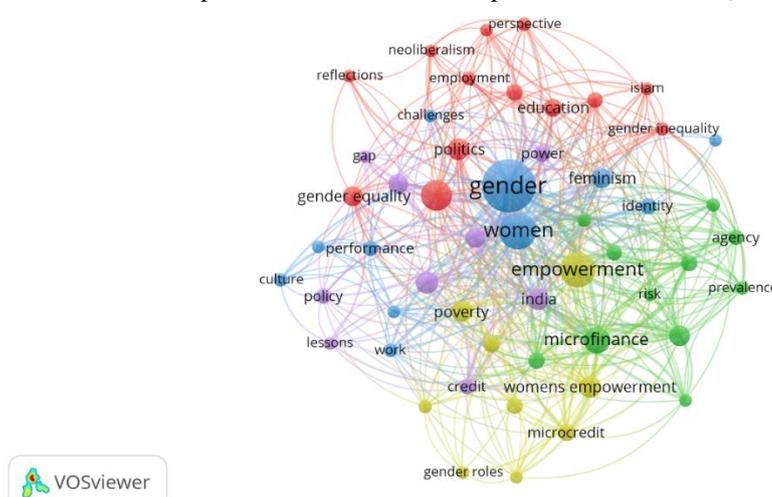


Table 5  
 Top Five Authors for the Sub-Period 1985-2000.

Author(s)	Objective	Keyword(s)
Cervone, d	Developing competencies in physical self-defence may empower women.	coping-skills training, self-defence, women's efficacy beliefs, assertiveness, and aggression
He, h	Violence and HIV are emerging as interconnected public health hazards among drug users and their families	Violence, sexual transmission, physical abuse, HIV prevention
Mccoy, hv	Violence and HIV are emerging as interconnected public health hazards among drug users and their families	Violence, sexual transmission, physical abuse, HIV prevention
Smith, re	Developing competencies in physical self-defence may empower women to engage in daily activities	coping-skills training, self-defence, women's efficacy beliefs, assertiveness, and aggression
Stark, mj	The success of women social workers and offers strategies for empowering women in the profession	administration, feminist ethic of care, organization, resilience, social work professionals

Table 6  
 Top Five Authors for the Sub-Period (2001-2006)

Author(s)	Objective	Keyword(s)
Apparala, ml	The attitudes toward the division of fathers' and mothers' participation in childcare/household tasks	Household labor, childcare, attitude, cross nationals, multilevel modelling
Baruah, b	The situation of women in the informal economy in South Asia	Informal economy, women workers, South Asia, organization, mobilization
Chong, kelly h.	The impact of women's involvement in South Korean evangelicalism	Religious traditionalism, patriarchy, South Korea, evangelicalism, consent, resistance
Datta, n	Gender and property rights on agricultural land in rural areas to housing in urban areas	Joint Titles, property rights, informal settlements, gender, housing, India
Kantor, p	The determinants of a two-dimensional concept of microenterprise success for women	Microenterprise development, gender, empowerment, South Asia, India

Table 7  
 Top Five Authors for the Period (2007-2012)

Author(s)	Objective	Keyword(s)
Datta, punita bhatt	Women's entrepreneurship in the venture's business model and individual perceptions of empowerment	Entrepreneurship, empowerment, social venture, business model, individual perception
Gailey, robert	Women's entrepreneurship in the venture's business model and individual perceptions of empowerment	Entrepreneurship, empowerment, social venture, business model, individual perception
Hilbert, martin	Women's access to and use of digital Information and Communication Technology (ICT) in developing countries	Digital technology, women access, digital gender, digital divide, ICT
Lamb, sharon	Feminist views on girls' and women's sexuality	Feminism, Empowerment, Adolescent girls, Sexuality
Peterson, zoe d.	Feminist views on girls' and women's sexuality	Feminism, Empowerment, Adolescent girls, Sexuality

Table 8  
Top Five Authors for the Period (2013-2018)

Author(s)	Objective	Keyword(s)
Alston, margaret	Gender mainstreaming of climate policy on women's empowerment	Gender, Gender mainstreaming, Climate change, empowerment
Gutierrez-nieto, begona	MFIs is to alleviate poverty, contributing to women empowerment, especially in rural communities	Bankruptcy, Financial ratios, Long tail Microfinance, Mission drift, Outreach Social performance
Hudon, marek	The microfinance sector addresses ethical issues, impact on poverty alleviation	microfinance, development ethics, poverty, exploitation, corporate social responsibility
Sandberg, joakim	The microfinance balance financial and social goals in commercial organizations	Microfinance, poverty, organizations
Serrano-cinca, carlos	MFIs is to alleviate poverty, contributing to women empowerment, increase e-business in rural areas	Microfinance, financial ratios, outreach, social performance, mission drift, long tail, bankruptcy

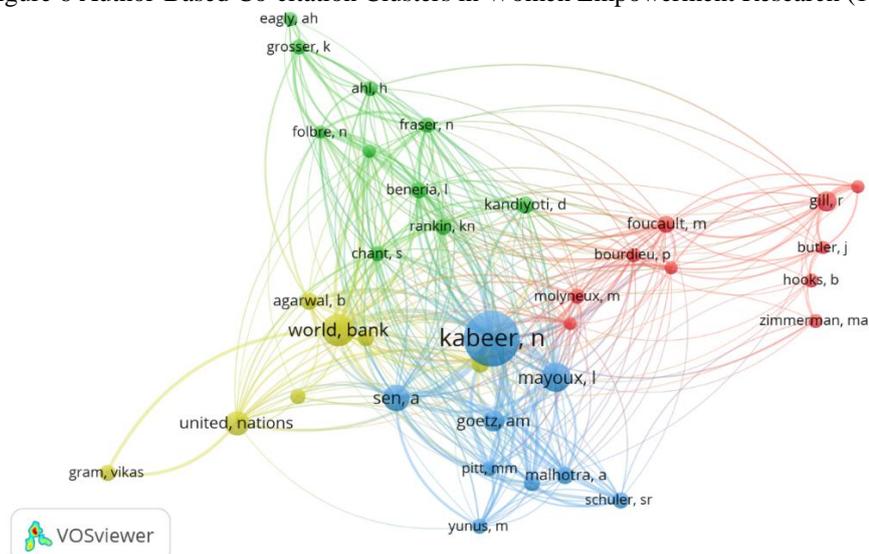
*Co-citation Analysis*

Our co-citation analysis includes both the author-based and journal-based co-citation for the entire period of 1985-2018.

*Author-based Co-citation Analysis*

Of the 12,000 authors, 36 met the threshold value of 15 (i.e. the minimum number of citations of an author is  $\geq 15$ ). These are further classified into four different clusters. The network visualization of author-based co-citation clusters is presented in Figure 6. Cluster 1 has 10, cluster 2 has 10, cluster 3 has 9 and cluster 4 has 7 authors. Cluster 1 can be named as 'Feminist Reflection Empowerment' (Bourdieu, Foucault, Giddens, Butler, Gill, Hooks, McRobbie, Molyneux, Moser, Zimmerman: red circles). Similarly, clusters 2, 3, 4 can be termed as 'Gender and Leadership Development' (Ahl, Beneria, Chant, Eagly, Folbre, Fraser, Grosser, Kandiyoti, Rankin, World Economic Forum: green circles), 'Sustainable Women Enhancement and Social Business' (Goetz, Hashemi, Kabeer, Malhotra, Mayoux, Pitt, Schuler, Sen, Yunus: blue circles) and 'Gender Equality and Economic Growth' (Agarwal, Gram, Kabeer, UNDP, United Nations, World Health, World Bank: yellow circles) respectively. During this period, feminism has a new lens to help women based on choices made in their life and achieve value chains in the business context (Kabeer, 2019; Sen, 2017; Mayoux, 2012). This concept endeavours to emancipate and empower women to attain gender equality and diversified identity with a unique angle like encouraging entrepreneurship and support community too (Holmes, 2018; Ngaihte, 2018). Further, women in politics help to enhance leadership skills for development perspective in the village and community. Women's upliftment brings gender equality leads to the informal economy or economic growth and social capital. In this period emerging topic was more into feminist empowerment, womenpreneurs with the help of microfinance and increase in the national economy of emerging nations like Bangladesh and India. Future direction can attempt for social businesses to empower women and reduce poverty (Yunus, 2017).

Figure 6 Author-Based Co-citation Clusters in Women Empowerment Research (1985-2018)







*Overlay Visualization Analysis of New Topics*

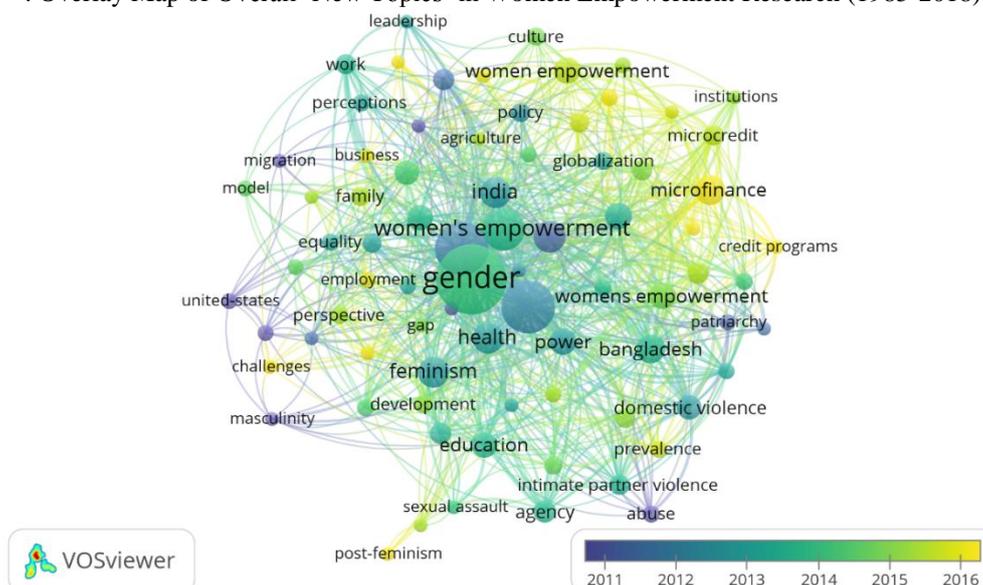
The foremost was to produce new topics with the help of the overlay visualization technique. Researchers developed the plot on topic mapping terms or words and for the duration from 1985-2018. Subsequently, researchers overlay the base map with numerical information to depict new topics or emerging topics and later hot topics in the field of women empowerment. Further, researchers have chosen the year between 2016-2018 as the average midpoint at 1.0 of the scale (green). To visualize the new topics, the terms that existed in the topic clusters were matched with the corresponding year of the article in which the terms appeared. For the new or emerging topic were able to visualize by using color range from yellow (relatively new) to red (the newest) while older topics were visualized from green (relatively old) to blue (the oldest) based on a normalized scale of 0-2. Thus, the terms that were used and it will produce color-based visualization of new terms or topics.

There is a frequent increase in research in the women empowerment related to new topics in 2016-2018 were observed: *'Empowerment and Equality,' 'Household welfare and Microcredit,' 'Gendered Fields,' 'Feministic Leadership and Innovation,' Artificial Intelligence and Women empowerment.* By cutting the edge of millennials, academicians are more emphasized on empowering women and bring equality in various sectors and society also. In earlier days, there was not much importance was given to women and they were neglected. After the voices and slogans of empowerment started from the two major world conferences of Millenium Development goal in mid-1990: Population and Development (ICPD) in Cairo in 1994 and Fourth World Conference on Women in Beijing in 1995. These two conferences highlighted the welfare of women on family planning, reproductive and sexual health care, education, and brings gender equality in all the perspectives (Goldman & Little, 2015; Quisumbing, Meinzen,& Malapit, 2019). Hence, 'Women Empowerment' is one of the principal subjects of discussion and prime importance both at a national and global level in the 21<sup>st</sup> century.

The emerging topic of women empowerment is directly linked with the national liberation of moments across the world and to make significant contributions in the feminist movement in both Latin America and Asia, particularly on gender equality and empowerment (Taraki et al., 2004). Further the feminist moment is formulating gender equality agenda of the Sustainable Development Goals (5), signified that to achieve gender equality and empower all women and girls across the globe (Sen, 2019). Thus to achieve this goal microfinance is the tool for women empowerment and helps women's wellbeing too (Patilkale, Haque & Sathya, 2019). Apparently microfinance concept was experimented in Bangladesh in first time to help the women (Wirtz, Volkmann& Yunus, 2018).

Thus, the microfinance helped the women to reduce poverty domestic violence and entered into social business and social entrepreneurship in emerging economies. Women have entered politics and leadership roles for community and societal development. Also, the impact of technology in the present world, women gained popularity in various sectors in different leadership levels filled the gender gap (Nesbitt, 2019). With the advancement of digital technologies, artificial intelligence brings gender equality in various sectors (Russell, 2019; Huyer, 2018; Sorgner,& Krieger,2017) and it will be most emerging topic in the upliftment of women.

Figure 9  
. Overlay Map of Overall 'New Topics' in Women Empowerment Research (1985-2018)



#### IV. CONCLUSION AND DIRECTION FOR FUTURE RESEARCH

The scientometric analysis comes up with an interesting and revealing window to understand the evolution and visual history of scholarly work of WE. Based on the sufficient information provided by the research signifies the emergence, decline, and shifts or changes in topics that are essential in the field of WE. These changes in the groups of scholars co-cited as a group, as well as overlooked opportunities and possibilities to publish WE articles. Provided the conflicting findings among previous studies of bibliometric analysis of WE research (i.e. WE is maturing, diverging and lacking maturity and the lack of analysis of new bibliometric data), this research provides recent insights of the empowerment of women study that extends and enriches the bibliometric studies of the field by including several units of analysis (i.e micro = word/term, meso =articles/author, and macro = journal sources) by utilizing a more extensive, more abundant and new dataset (n=391; for the entire duration of 1985-2018), and focusing on journal articles (i.e. only certified knowledge).

The current article brings significant methodological contribution to the study on WE by introducing three new scientometric analysis that includes topic mapping of co-occurrence, co-citation, and overlay visualization as a way of advancing the field, and thus enriching the validity of the research (Wen, Horlings, Zouwen, Besselaar, 2017; Boyack, 2017). This is the first article and research that offers co-occurrence and overlay visualization analysis to map the WE research as a single study. Several key valuable insights emerged from this research that has not been reported or found in past studies, constitute the contributions in this paper (see Table 9 for a summary of the findings and the observations).

Table 9  
 Summary of Scientometric Patterns in WE Research (1985–2018)

Classification Of Scientometric Analysis	Summary of Findings	Observation
Topic Mining i.e. Co-occurrence Clustering	1985-2001 (i.e., 3 topic cluster, refer Fig 2), 2001-2006 ( i.e., 3 topic cluster , refer Fig 3), 2007-2012 (i.e., 4 topic cluster , refer Fig 4), 2013-2018 (i.e., 5 topic cluster, refer Fig 5) In total, 15 topics clusters exist for the entire 1985-2018	Pluralistic topics; some topics weakened, or deviated or merged to a part of other topics, some topics were emerging optimization
Author-based Co-citation Clustering	An explosion in the author-based co-citation clusters occurred in 1985–2018, with 4 total clusters: "feminist reflection empowerment", "economics-innovation-networks", " gender and leadership development ", " sustainable women enhancement and social business ", " gender equality and economic growth " (Refer Fig 6)	Topic diversification of author's co-citation clusters indicating diverse advance research themes
Journal-based Co-citation Clustering	A diverse and complex journal co-citation clustering in 4 topics " gender lens development ", women enabled entrepreneurship ", "female psychological aspects ", " new perspective empowerments " (Refer Fig 7)	Mixed journal co-citation clusters indicating pluralistic research themes
Hot-topics (highly cited)-Overlay-visualization	5 new hot topics for the entire period 1985-2018: "microfinance and women empowerment", "microenterprise and economic development", " women progress and transforming economies", "ICT education and empowerment practice", "dimensions of empowering women" (Refer Fig 8)	Divergence of hot topics
New-topics Overlay-visualization	5 new topics suggested: "empowerment and equality", " household welfare and microcredit", "gendered fields", "feministic leadership and innovation", "artificial intelligence and women empowerment" ( Refer Fig 9)	Divergence of new topics

More specifically, the following paragraphs explain contributions, implications, limitations and directions for future research.

In terms of contribution, *first*, the current study contributes to the 16 pluralistic topics. These topics appeared in WE research between 1985 and 2018. Further topic clustering analysis discusses the problems and challenges faced by women, feminist involvement in breast cancer awareness, emerging migration, global women entrepreneurship a few (Refer Fig 1- 5). But the most massive explosion of study occurred between 2013 and 2018, and most promising topic clusters are identified as a neoliberal global economy, women diversified sustainability, millennial postfeminism, global women entrepreneurship, and electrification empowerment to reach the optimization level. *Second*, the author-based co-citation clustering analysis from the period of 1985-2018 (Refer Fig 6) provides more in-depth insights on the diversification of various topics to advance research themes. However, from 2015- 2018, the author-based co-citation provides most of the authors are studied the women empowerment topic (Refer Table 8). In addition to this, journal-based co-citation clustering analysis describes the various journals have co-cited and each cluster provides information on women empowerment. The co-citation is more or less studied and published (Refer Fig 7). Hence the growth of women empowerment as a scientific social science is not linear but highly dynamic and emerged as a pluralistic topic in business and management journals. *Third*, the present work discovered that the divergence of hot topics by analysing overlay visualization that consists of 5 clusters which are highly cited work on WE in both developed and emerging nations (Refer Fig 8, Table 2&3). Further, the new topics of overlay visualization helps the welfare of the women in various aspects.

The current research emulates a growing specialization and interdisciplinary as the field matures. It provides the signs of maturity of a field by demonstrating that women empowerment studies must develop a substantial range of topics which is identified by a group of academicians/ scholars also increase specialization in the field to help the women in the society. Hence the feminism moment or upliftment of women subject is both convergent and divergent which brings the awareness to academicians to study this field for the betterment of women. Further, the efforts made to get citation for each article, scholars compete for recognition for their peers in the robust journal review process (Terwiesch & Ulrich, 2009). Sometimes, particular articles are highly cited depends upon the authors on which topic they choose. However, this continuous process has increased the number of topics that were highly cited referred as a hot topic - *microfinance and women empowerment, microenterprise and economic development, women progress and transforming economies, ICT education and empowerment practice, dimensions of empowering women*. This hot topic helps to gain momentum in the field of women empowerment by a significant attempt made by the scholars in the reputed journals. Further the emergence of various diversification of new topics in women empowerment helps the scholars to study cross-disciplinary research in the field of women empowerment.

Nevertheless, the study continues on this topic, day to day basis signifies the scarcity of literature. In such circumstances, researching WE field may bring new topics with diversified methodology. Subsequently, future research may conduct cross-disciplinary research on WE in agriculture, enablement of women in management professional and technology-driven empowerment of women.

Lastly, the researchers studied the different aspects to help women. This study researchers have excluded few publications like engineering, agriculture and social sciences. Thus, future research can examine the bibliometrics of women empowerment, particularly on journal-based analysis on world development, Gender and Society, Economic and Political Weekly, Journal of Community and Applied Social Psychology and Economic affairs. Also, academicians can study women empowerment on comparative journal analysis on emerging nations, which includes social science, arts and media. Researchers can further explore and examine interrelationships among various clusters that are important (Kumar and Dutta, 2017; Kumar et al., 2017; Puri and Kumar, 2015; Kumar and Kumar, 2017; Chauhan et al., 2015; Chauhan and Kumar, 2013) for the understanding of WE. Finally, future studies can attempt alternative techniques from the topic modeling to text analysis to explore the various patterns in the publications in women empowerment.

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