

What is the Global View of Women's Leadership? Sentiment Analysis based on Meta-Analysis

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Abstract

This research aims to analyze literature about leadership women and integrate diverse perspectives with meta-analysis and sentiment analysis. This research uses a design study combined qualitative with analysis statistics descriptive for meta-analysis and analysis sentiment. The search sample uses a purposive sampling technique. This study analyzes articles on Dimension.ai metadata about women's leadership from 2015 to 2022. Keywords used for data collection, namely "Women Leadership". The results of the meta-analysis show the development of women's leadership research that contributes to the limitations of knowledge. Analysis results in sentiment show that expert opinion about women's leadership varies, with positive sentiment by 30%, negative sentiment by 30%, and neutral sentiment by 40%. This research is the first to discuss the view of a global evolution in women's leadership research and produces consequences that contribute to achieving the SDGs.

Keywords— Women; Leadership; Meta-analysis; Sentiment Analysis

Abstrak

Penelitian ini bertujuan untuk menganalisis literatur tentang kepemimpinan perempuan dan mengintegrasikan beragam perspektif dengan meta-analisis dan analisis sentimen. Penelitian ini menggunakan desain penelitian kualitatif yang dipadukan dengan analisis statistik deskriptif untuk analisis meta dan analisis sentimen. Pengambilan sampel menggunakan teknik purposive sampling. Penelitian ini menganalisis artikel metadata Dimension.ai tentang kepemimpinan perempuan pada tahun 2015 hingga 2022. Kata kunci yang digunakan untuk pengumpulan data yaitu "Kepemimpinan Perempuan". Hasil analisis meta menunjukkan perkembangan penelitian kepemimpinan perempuan berkontribusi terhadap keterbatasan pengetahuan. Hasil analisis sentimen menunjukkan bahwa pendapat para ahli mengenai kepemimpinan perempuan berbeda-beda, dengan sentimen positif sebesar 30%, sentimen negatif sebesar 30%, dan sentimen netral sebesar 40%. Penelitian ini merupakan penelitian pertama yang membahas pandangan evolusi global dalam penelitian kepemimpinan perempuan dan menghasilkan konsekuensi yang berkontribusi terhadap pencapaian SDGs.

Kata kunci— Wanita; Kepemimpinan; Meta-analisis; Analisis Sentimen

I. INTRODUCTION

Draft leadership has been discussed in literature since the end of century nine twelve. However, it isn't easy to come up with a single definition that encompasses the true meaning of leadership. Leadership is how one person can persuade a group to work together to achieve a goal (Northouse, 2007). Although lots try to define leadership, leadership theory suggests one of the same elements, i.e., the one who gives influence more considerable in something group than a member group another (Denmark, 1977).

Historically, leadership positions have been dominated by men rather than women. Researchers focusing on women's leadership describe leadership as a gender construct (Yoder, 2001). In addition, most of the leadership literature has not included women or discussed issues regarding gender because women who become leaders are considered not where they should be (Bierema, 2016). Consequently, most studies were conducted with male

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objects and leaders, as in the great man theory. Researchers have left a lot of gaps in the theoretical framework because they have excluded gender as a component in leadership studies. The exception to this gender effect may be because women rarely occupy leadership positions (Ellemers et al., 2012).

Despite women's achievements, broader statistics still show that women underrepresent leadership in both the private and public sectors. The CS Gender 3000 in 2019: The Changing Face of Companies, a research by Credit Suisse Research Institute (CSRI) in 2019, states that approximately 20.6% of women are on corporate boards worldwide. Although they have unique characteristics, few women are still in leadership positions (Weyer, 2007). Only typical low-level professions in the workforce or household responsibilities as wives and mothers are prepared for women (Tabassum & Nayak, 2021). This issue has also been significant because so few women are in leadership positions in organizations (Soklaridis & López, 2014). In many nations, there is a strong gender bias in hiring and promoting leaders, as evidenced by the underrepresentation of women in higher positions (Eagly & Karau, 1991; Player et al., 2019). Within an organization, women often remain part of the secondary workforce (Damaske & Frech, 2016; Felmlee, 1982). Hence, metaphors such as glass ceilings, glass cliffs, glass walls, glass escalators, and mazes often remind women that getting into leadership positions is not as smooth as their male counterparts (McCue & Roman, 2017; Ryan & Haslam, 2005).

Additionally, complex organizations require complex leadership (Marion & Uhl-Bien, 2001). Several researchers have suggested that women are generally better able to lead complex organizations (Hannum et al., 2015). According to Ruderman et al. (2002), the involvement of women in various life roles other than leading is associated with positive outcomes such as skill ratings, managerial performance, and higher self-esteem. Living a life other than a leader and flexible work options can help women better manage multiple roles. Flexible work systems provide more choices for where and when women work (Chung & Lippe, 2020). However, research in other fields reveals that it might be challenging to negotiate flexible job possibilities (Leslie et al., 2005). The flexible work system also does not always solve workload problems due to the regularly timed promotion and position systems (Ray & Pana-Cryan, 2021). Therefore, there are weaknesses in the arguments of the researchers. Concentrating on individual traits promotes ineffective leadership paradigms. It detracts from the growing realization that leadership is a process and is frequently most effective when various diverse skills and perspectives are represented and can effectively collaborate. The drawback is that focusing on personal characteristics and identifying gender can feed prejudices that are not useful.

With so many obstacles and problems, there is a complex gender bias and the need for a new perspective. This study integrates multiple perspectives on women's leadership with meta-analysis and sentiment analysis. The goal is to assess the literature on women's leadership critically. This research offers fresh perspectives and remedies for society's most pressing issues, like the Sustainable Development Goals (SDGs). This study ultimately became the first to examine the development of global perspectives in women's leadership research and to have outcomes that help to achieve the SDGs. This research seeks answers to the following questions:

RQ1: How has Women's Leadership developed so far?

RQ2: Does Women's Leadership play a role in public organizations?

II. LITERATURE REVIEW

When people began to grasp the value of working together to accomplish common goals, leadership issues began at the beginning of human history (King et al., 2009). According to Bass (1990), leadership is a complex process in which leaders persuade followers to carry out their vision, mission, and assigned tasks to attain group objectives. Most definitions in the literature agree that leadership is related to someone controlling a group to achieve specific goals. The literature also offers a variety of views about leadership, including the qualities of successful leaders and the functions that leaders should do (Stogdill, 1950). On the side, literature has considered leadership a masculine concept after the rise of the great man and trait theory. The concept of masculinity focuses on the traits, characteristics, and similarities of men compared to women (Kachel et al., 2016; Koenig et al., 2011).

Based on the literature, most leadership theories assume that gender issues are less relevant for leadership (Avolio et al., 2004). Women may have different philosophies and leadership styles according to their cultural, social, and life views and experiences (Eagly & Karau, 1991). Women are aware of their role as a leader and as a woman. Women leaders possess various distinct traits, including determination, hard work, sincerity, commitment to work, and goal-orientedness, in addition to distinctive characteristics like inclusive leadership, a people-oriented approach, empathy, high emotional intelligence, multitasking capacity, a values-oriented approach,

sentiments public to the problem specific (Ghazizadeh et al., 2014). On sentiment analysis, it weighed the words taken from the title and abstract, ranging from -5 to +5. SentiStrength V2.3 software was used to calculate sentiment maps based on the literature on perceptions of women's leadership. SentiStrength is a tool analysis of sentiment that can state emotions like sadness, happiness, or anger to produce studies that can become reference development views about women's leadership (Islam & Zibran, 2018). Microsoft Excel 2019 is used to evaluate data and trends in the number of women's leadership publications.

A non-probability purposive sampling strategy is employed for the search sample. Purposive sampling is a sample taken to understand information certain. This study analyzes articles on Dimension.ai metadata about women's leadership. Keywords used in data collection, namely "Women Leadership". Data search was carried out by limiting the year of publication to get the latest research and progress notes from women's leadership research. The data used in this research were published from 2015 until 2022. 2015 was chosen as the bottom year in the research data because 2015 was the birth of the Sustainable Development Goals (SDGs). References from metadata that meet the criteria are then identified for an in-depth study.

IV. RESULT AND DISCUSSION

A. Meta-Analysis

Studies on women in leadership have increased since January 2015 and continue to do so through December 2022. As a result, women's leadership is becoming more complex due to the rise in publications and the scope of the impact of that research. The following graph depicts the growth in the number of publications on women in leadership throughout the observation period using digital object identifiers, encompassing Indonesian state journals and other nations worldwide:

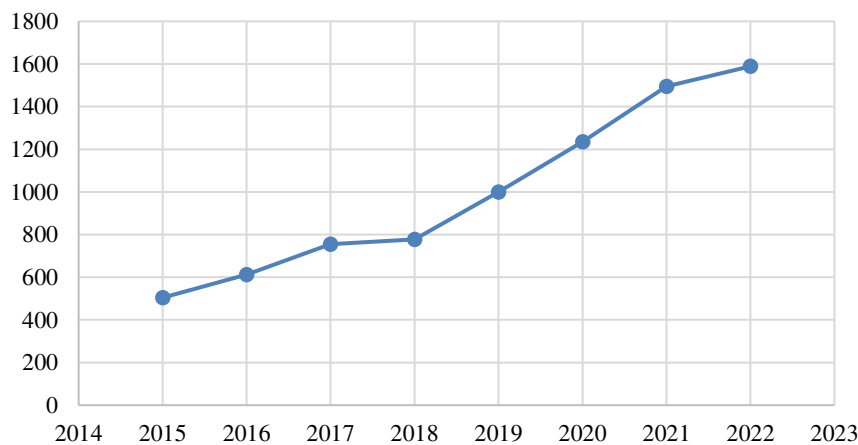


Figure 2. Number of Publications Per Year
Source: Author Processed Data, 2023

Figure 2 depicts the 7,969 published articles published during the observation period. Articles on women's leadership were most widely published in 2022, with 1,589, and the least published in 2015, with 504 publications. The search results are then simplified into 2,500 publication data. Search results are extracted in ".csv" format (Laela & Azhari, 2023; Nobanee et al., 2021). Of the 2,500 publications, the following ten journals contain the most research on women's leadership:

Table 1. Journal References in Research

Journals	Total Publications	Citation
Advancing Women in Leadership	112	68
Gender in Management an International Journal	70	867
Academic Medicine	59	2,401
Journal of Women's Health	48	1,119
Frontiers in Psychology	45	919
PLOS ONE	42	644
Academy of Management Proceedings	37	10
International Journal of Environmental Research and Public Health	36	426

The Lancets	32	1.295
Sustainability	31	173

Source: Author Processed Data, 2023

Table 1 displays the disparity trend in journal contributions for articles on women in leadership. Research on women in leadership is highly interesting in interdisciplinary fields like management, sociology, psychology, economics, and health. As science advances and the trend toward female leadership grows, the number of articles may change and rise. The number of publications in each category of women's leadership research is as follows if publications are categorized according to Sustainable Development Goals (SDGs):

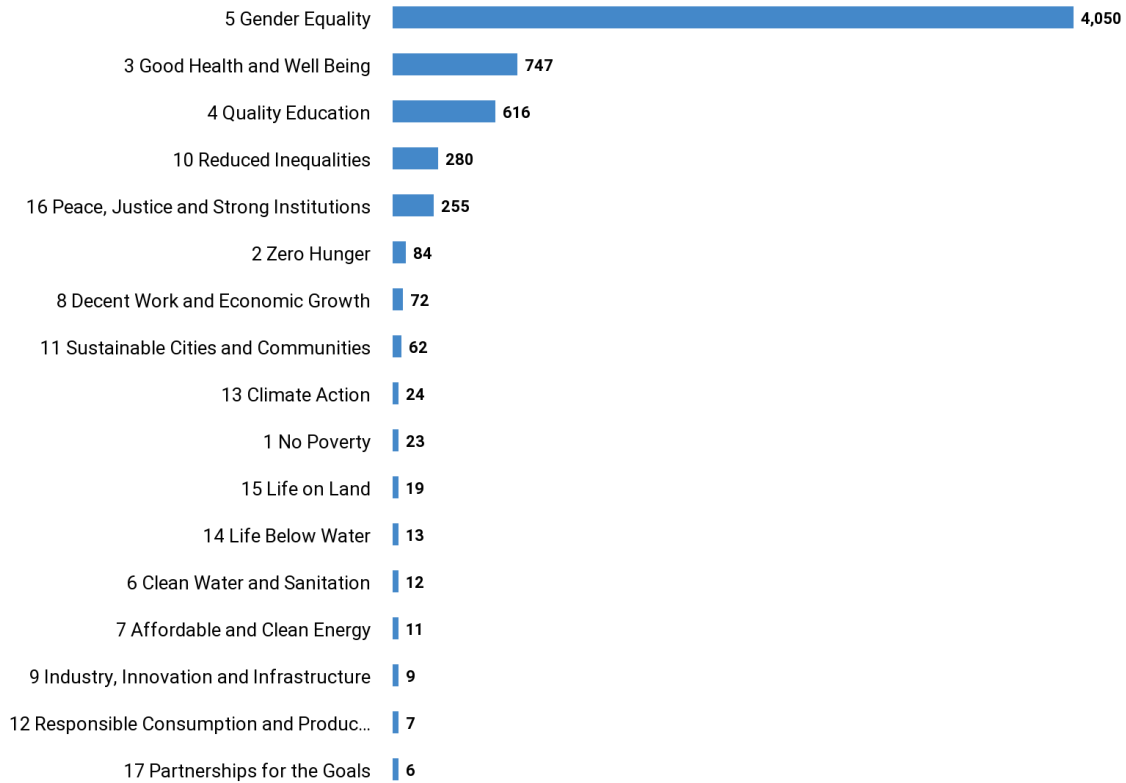


Figure 3. Number of Publications in Each Research Category

Source: Author Processed Data, 2023

For the SDGs to be implemented successfully, Figure 3 emphasizes the significance of empowering women to hold more positions and empowering women generally. Symbolically, women's empowerment will depend on improving SDGs. In addition to journal distribution and research categories, here are the ten most productive researchers with the most publications in women's leadership research:

Table 2. Researchers in Women Leadership

Name	Organization	Total Publications	Citation
Faisal Khosa	Vancouver General Hospital	46	932
Reshma Jagi	University of Michigan–Ann Arbor	25	596
Sabeena Jalal	Vancouver General Hospital	25	651
Julie K Silver	Harvard University	19	665
Narjust Duma	Dana-Farber Cancer Institute	10	35
Nancy Dollase Spector	Drexel University	10	332
Mary Kathryn Mulcahey	Tulane University	10	131
Alison Cook	UtahState University	10	843
Yonjoo Cho	The University of Texas at Tyler	10	160
Christy M Glass	UtahState University	10	843

Source: Author Processed Data, 2023

Table 2 lists the ten authors who have written the most frequently about women in leadership over the past eight years. Faisal Khosa became the most prolific writer, producing 46 publications, including Reshma Jagsi 25, Sabeena Jalal 25, and other authors. Most prolific writers in this part originate from organizations in the country forward. Besides that, every writer has different tendencies. Some are indexed as writer single, and some are doing writing together, so several tagged clusters with density differences as in Figure 4 below:

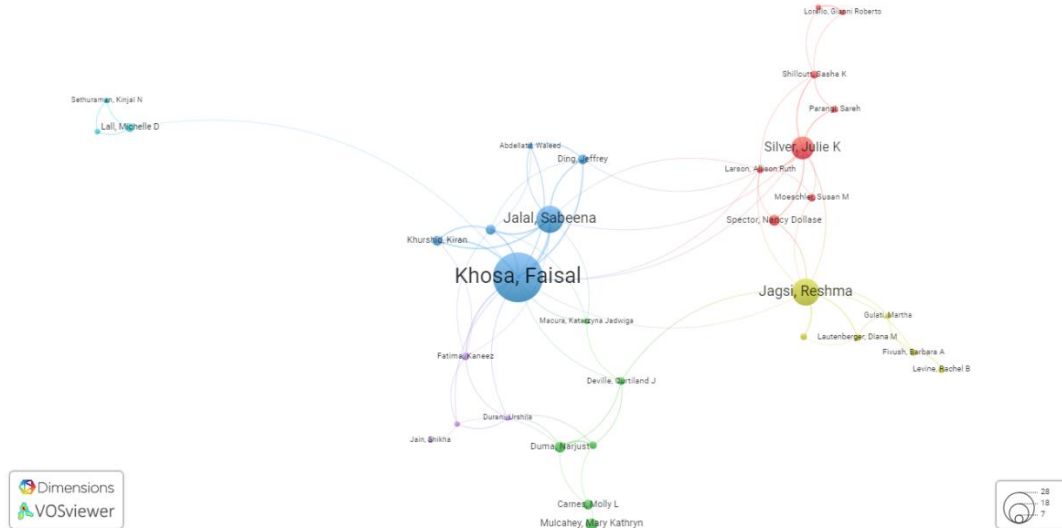


Figure 4. Co-Authorship Analysis
Source: Author Processed Data, 2023

B. Sentiment Analysis

According to the selective perception theory, humans take help from a mental map to absorb or reject certain information (Walsh, 1988). Public opinion on women in leadership is evaluated using sentiment analysis. Results of sentiment analysis in women's leadership research are shown in the following figure:

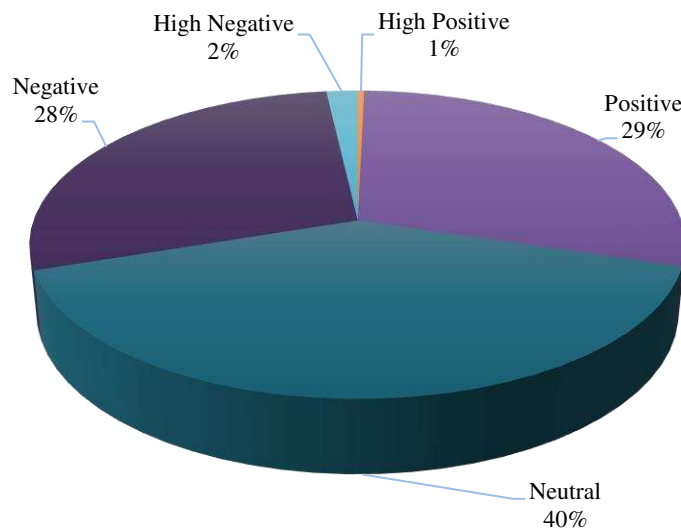


Figure 5. Sentiment Analysis
Source: Author Processed Data, 2023

Figure 5 presents a development study of women's leadership with proportion, i.e., high positive, positive, neutral, negative, and high negative. The positive sentiment comes from related literature that is upbeat about the

global advancement of women in leadership, agrees on the significance of gender equality, and supports the growth of women's leadership. Negative sentiment is derived from related literature that negatively responds to women's leadership, creates hostility, and indicates that leadership is an inherent notion of men. Regardless of gender, most articles conclude that female leadership cannot be fully equated with male leadership for several reasons (Antonakis et al., 2003). In addition, neutral sentiment originates from the literature on not viewing women's leadership negatively or positively. This proportion of neutral sentiment dominates research on women's leadership compared to other ratios, with a neutral sentiment of 40%. To find out the pattern of public sentiment every year, the following is an analysis of the sentiments of women's leadership over time:

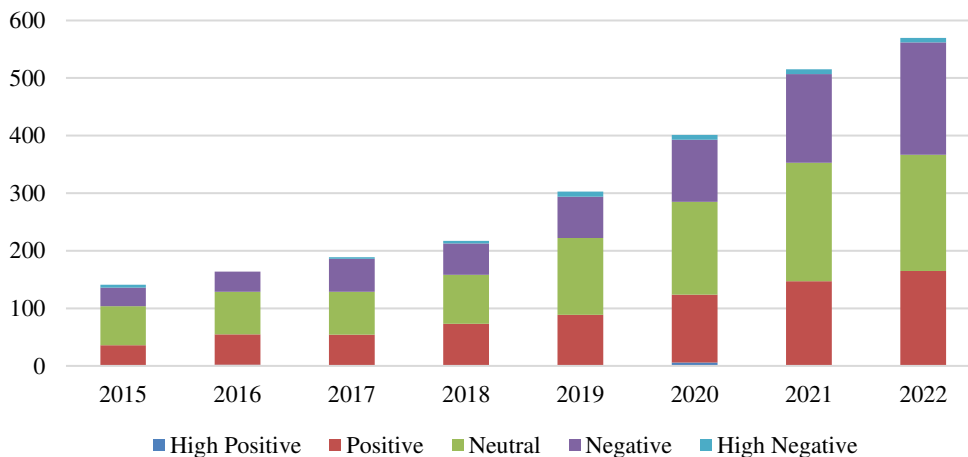


Figure 6. Intertemporal Sentiment Analysis
Source: Author Processed Data, 2023

Figure 6 shows that women's leadership research has experienced rapid development from year to year, one of which is because of the SDGs. With the emergence of the urgency of the SDGs, which are expected to be realized in 2030 (Anderson et al., 2022), particularly about gender equality, responses to women's leadership have varied from year to year. "Women in Thoracic Surgery: Lessons Learned from Medical Industry Partners" by Pompili et al. (2021) was one of the publications with a positive sentiment. This study looks at how vital women in play leadership roles in the medical field who have proven to excel at promoting and advancing female thoracic surgeons through networking, mentorship, and scholarships. This positive sentiment has grown every year. 2022 will be a year with positive sentiment the most, i.e., 165 publications. Besides that top amount of negative sentiment, the highest also occurred in 2022, with as many as 203 publications, which previously only 162 publications. "Gender Issues from the Perspective of Healthcare Professionals in Neuro-oncology: An EANO and EORTC Brain Tumor Group Survey" by Le Rhun et al. (2020) was one of the publications with a negative sentiment. Research results from Le Rhun et al. (2020) consider that women experience many difficulties obtaining leadership positions. The underrepresentation of women in leadership roles is also attributed to personal preference. The main reasons for underrepresenting women in leadership positions range from limited career time and work-life imbalance to a lack of self-confidence. Therefore, 2022 is the year with the highest women's leadership research controversy.

Before the peak of the controversy over women's leadership research in 2022, 2021 has become the peak of women's leadership research with neutral sentiments. "Is the Distribution of Awards Gender-balanced in Orthopedic Surgery Societies?" by Gerull et al. (2021) was one of the publications with a neutral sentiment. This paper discusses women who aren't represented in a manner proportional all over category awards. More women tend to accept award diversity than award leadership, and more possibly accept award education. From 1973 to 2018, 17 of the 22 societal leadership awards were never awarded to women. Therefore, women rarely receive rewards that are given through an unblinded process and tend to receive rewards that are given through a blinded process. Women received 11% of the prizes in the blinded award process, whereas, in the unblinded award process, they received 6%. Finally, the study by Gerull et al. (2021) pushes the public to inspect inclusion in the selection process reward and track demographics recipient awards from time to time to measure progress toward gender equality.

C. Findings

Various studies have revealed disparities between the leadership styles of men and women. Literature on leadership and gender also often pivots to emphasizing one dimension of leadership. Based on the meta-analysis results, the SDGs have benefited from the growth of research on women in leadership. Sustainable development that requires many contributions will increase when women are valued and empowered to reach their full potential in all life aspects, including leadership roles (Langer et al., 2015). Consequently, it is essential to continuously enhance women's leadership capacities through various leadership development initiatives and interventions (Madsen & Andrade, 2018). Current theory-based ideas and frameworks can be used for strategic change in developing women's leadership.

In addition, this study reveals the level of sentiment analysis of various articles published in various journals that analyze perceptions of women's leadership. The sentiment analysis revealed that favourable positive sentiment was present in 30% of publications. Referring to the resource dependence theory (Pfeffer, 1985), with women's abilities and knowledge, women in leadership can offer a unique viewpoint on developing strategies. Women leaders can support broad interpretations of sustainable development (Barrios et al., 2020). Therefore, it can be said that the values, background, and expertise in women's leadership, as stated by the literature with positive sentiments, support that women are the solution to solving various problems, including the SDGs (Loarne-Lemaire et al., 2017; Rosca et al., 2020).

Although numerous studies have demonstrated the benefits of having more women in leadership positions, there is evidence that women face many obstacles and constraints. In addition, women in their leadership tend to be vulnerable to gender stereotypes and prejudice (Birkner, 2019; Monteiro et al., 2021). Given that women in leadership confront particular difficulties, it is frequently overlooked that better leadership development techniques are required to address the unique requirements of women. According to the tokenism theory, minority people in top positions in organizations require special success and achievement strategies because they must meet various expectations and have distinct resources (Stichman et al., 2010). The non-representation of women as leaders can be identified from the negative and high negative sentiment, which is unfavourable globally, where the proportion is 30%. This negative view is reinforced by role congruity theory, which states that prejudice against women leaders results from a mismatch between stereotypes. Eagly & Karau (2002) observe prejudice against women, which is considered not preferred over men as candidate leaders. Women's gender quality is often depicted as emotional and sensitive (Osland et al., 1998).

On the side, with percentage results of 40%, neutral sentiment dominates the topic of women's leadership. This neutral sentiment shows disagreement among experts in the scientific literature about women's leadership. The majority of studies on women's leadership are apolitical. This largest percentage also indicates a knowledge gap (McDonagh et al., 2014). Stereotypes regarding women as leaders, the difficulties women have in progressing their careers, and corporate cultures that discourage women from becoming leaders are some ongoing problems (Eagly & Karau, 1991; Eldowney et al., 2009).

As an implication of the research results, several strategies are recommended to support the achievement of the SDGs and overcome the problem of views on women's leadership, namely: establishing priorities to advance gender diversity in leadership; effective planning; implementation of programs for leadership development that emphasize gender diversity; implementation of an unbiased process for performance evaluation; and development of initiatives like mentoring programs and networking opportunities for women. Therefore, it is difficult for various stakeholders in the field to explain and provide a more robust understanding of women's leadership. Finally, this research is expected to overcome the existing obstacles. Policymakers and governments will play an important role in supporting and strengthening women's leadership.

V. CONCLUSION AND RECOMMENDATION

This research identifies the development of scientific literature in studying women's leadership. The research reveals that over the past eight years, numerous publications have been on women in leadership, with 2,500 papers having Digital Object Identifiers (DOI) indexed Dimensions, ai. This review also contains a sentiment analysis of an exhaustive assessment of multidisciplinary research. In terms of sentiment analysis, the global assessment of the emergence of women in leadership has a positive sentiment of 30%, a negative sentiment of 30%, and a neutral sentiment of 40%. The analysis's findings demonstrate ongoing disputes among specialists in the scientific

literature about women in leadership, with neutral attitudes predominating. Besides that, this research is not without limitations. The 2,500 data used in this analysis are from papers published within the last eight years. Additionally, meta-analysis and sentiment analysis give a comprehensive image of women's leadership that is dynamic. Thus, the analysis results may alter when new patterns or variables arise. Future research could analyze the results of implementing a leadership development program focusing on women based on current theory, determine the percentage of women in leadership roles in organizations with strong succession planning, and evaluate organizational performance by gender.

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