BIBLIOMETRIC ANALYSIS OF PUBLICATIONS DISCUSSING THE CONSTRUCTION FEMALES HEROISM WORLDWIDE (1958-2021)

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ABSTRACT

The number of gender studies related to female heroism varies, however to the best of our knowledge, no bibliometric studies have been conducted to examine research trend related to the construction of female heroism in history. Therefore, the aims of this research to investigate the trend of publication related to the female heroism by utilizing bibliometric analysis which become parameter to evaluate and visualize the worldwide publication focus on the development of gender studies. Herein, we identified 753 research articles in English from Scopus database which were published from 1958 – 2021. According to our findings, we highlighted that the most frequently author keywords are gender, feminism, and hero. Besides, the U.S is the ranking first in citation and publication related to the female heroism studies. The U.S is not only become first country with highest number of publication but also the most cited country and the most active country in international collaboration related with the construction of female heroes. The current information on female heroes publication showed that this field is growing rapidly worldwide as well as international research collaboration. In the future research collaboration in this field still needs to improve the construction of gender in society related to the hero construction.

KEYWORDS: Female heroism, bibliometric, gender, hero construction

INTRODUCTION

In historical writings, both in the form of literary and non-literary works, heroism is often become the main theme to discuss. The concept of heroism continues to develop, which is marked by a variety of meanings and interpretations. Some argue that the concept of heroism is permanent and is often attached to figures who are considered ideal, idolized, and used as role models. Meanwhile, another opinion states that this concept is fluid because there is no single defined way to define it. The concept of heroism always depends on the cultural conventions when the hero is presented and is always subjective (Campbell, 2006)

Heroes, whether real or imaginary, can always be reproduced by culture through texts (O’Sullivan, 1994). Characters who are considered heroes, regardless of whether they are real; such as Nelson Mandela and Mother Teresa or are imaginative; such as Hercules, Wonder Woman, and Iron Man, are considered to represent goodness and truth. The perfection of these heroes is constructed by the media that represents them, both in the form of literary and non-literary works.

The terminology of heroes is often associated with gender. In a patriarchal culture, heroes are always identified with men. Men with masculine strength are considered to represent heroic
values that are not shared by women. Joseph Campbell as the father of heroism concept, emphasized that the journey of heroism begins when a man grows up. Men choose to mature with the power they have, in contrast to women who biologically mature by themselves. The discourse presents a conception of the conditions that a hero must possess, namely being strong (macho) and always identical to men. Meanwhile, women's heroism is never through the use of force but with compassion, and is fighting for equality through their thoughts, voices, and actions (Campbell, 2004)

The construction of female heroism in history often causes polemics. This is due to the gender construction of society that has not been free from patriarchal culture so that they consider heroes to be always identical with masculinity. Given the closeness of the concept of heroism to the construction of gender in society, it is necessary to investigate research that specifically discusses female heroes as part of gender studies.

The number of gender studies related to women's heroism varies, but to our knowledge, no bibliometric studies have been conducted to examine research related to the construction of female heroism in history. Therefore, this research will use bibliometric studies to investigate writings related to women's heroism which will later become parameter to see the development of gender studies/feminist studies. Bibliometrics is a leading method of investigating the most influential works, research pathways, and conceptual frameworks of a scientific discipline or research topic. The bibliometric analysis in this study will comprehensively visualize the conceptual literature related to gender issues in heroic narratives by asking the following questions: What is the growth trajectory of previous research and which studies stand out the most in discussing the narrative of women's heroism? Which research areas and concepts in the literature are related to gender issues in heroic narratives?

METHOD

In the current study, we utilized the Scopus database for implementing the bibliometric analysis related to the studies the female heroes in gender study. The study period was leveraged publication from 1958-2021. Herein, we used the Sci-Verse Scopus database as source of our study due to some advantages such as larger indexed and cover many journals with more than 23000 journals around the world (Falagas, M. E., Pitsouni EI, etc., 2015). In addition, the Scopus database has been widely used for bibliometric studies (Sweileh & Waleed, 2018). Bibliometric analysis was provided the information about citations and research collaboration around the world.

The search strategy was based on the use of keywords relevant to female heroes in history worldwide. We used “female heroes” as keyword to retrieve all the related studies. These keywords were used in the title, abstract and keyword search. The quotation marks were used in the search strategy to limit the search. The current study was limited to English language. Besides, only documents published in peer-reviewed as research articles were analysed. Therefore, books and book chapters, review and note were excluded.

The bibliometric that we analysed in this study including the growth of publication related to the construction of female heroes in history worldwide with study period from 1958 to 2021. Herein we provided the information related to the trend of publication, the most productive and cited countries, institutions, journals. Lastly, we also provided the information of author keywords
to see the trend of keyword that commonly used in the publication related to the construction of female heroes in history. The retrieved data were also analysed and presented as visualization maps using the free on-line program. We used VOSViewer version 1.6.16 (Universiteit Leiden, The Netherland) (van Eck, Nees Jan, & Waltman, 2010) and Biblioshiny R package (Aria, M & Cucurullo, 2017) to build data matrices through individual bibliographic and to visualize the bibliometric networks. Visualization maps were used to show most frequent keywords in the retrieved documents. The frequency of occurrence of a particular word was directly proportional to the node size presenting the keyword in the map.

RESULTS

General Findings: Trends Publication

There are 1180 publications published in the period 1958-2021 discussing female heroism in Scopus indexed journals, among those documents, we found 753 articles which were written in English and in the form of research articles. All these articles (n=753) were written by 2161 authors from around the world. It is unique finding that the first publication appeared in 1958 (Figure 1). More than half of these publications are written by scholars with addresses in the U.S (893 publications), followed by Brazil (376 publications), UK (224 publication), and Australia (208 publications). As a research area, 469 publications related to the discipline of Art and Humanities followed by Social Science with 432 publications, medicine with 359 publications, psychology, and agricultural and biological sciences with 99 publications. The journals that published the most articles in this field were as follows: Plos One (16 articles), Neotropical Entomology (9 articles), and Sex Roles Journal (9 articles), among others. Besides, the number of publications has increased from year to year. This finding emphasized that the trend of publication related to the construction of female heroes in history was really concern nowadays especially in the last ten years of study period.

Research Area

The data showed that the publication in discussing about female heroism was conducted in the following research areas: Art and Humanities 469 publications, Social Science with 432 publications, medicine with 359 publications, psychology, and agricultural and biological sciences with 99 publications. This finding shows that Arts and Humanities is the research area that most discusses research about female heroes. However, research interests related to this theme are also interested in the fields of natural sciences, such as the areas of biology and agriculture.

Publication Year

The first scientific study discussing construction of female heroes was published in 1958. The number of publications from 1958 to 1998 did not increase significantly, but increased slightly in 2000. After experiencing a sharp decline in 2002, The number of publications has increased exponentially in 2020 with number of documents about 68 (Figure 1).
Figure 1.
Growth of scientific production related to the journals discussing the construction female’s heroism in history worldwide (1958-2021).

Citation of Journals, Articles and Country

Based on our current finding, the average citation per article is about 1576 in a year. Top ten document with highest number of citations is depicted on the Figure 2 and Table 1. The name of author that most cited is Jänicke, R.U., etc. (1998). Besides, the most cited countries were U.S with 2953 total number of citations. The second rank of most cited countries was Singapore with 1670 citation, and the third was Brazil with total number of cited documents around 1235, as shown more detail in Figure 3.
Figure 2.
Top 10 cited documents related to the journals discussing the construction female’s heroism in history worldwide (1958-2021).

Table 1.
Top 10 cited articles related to the role of women warrior publication from 1979 to 2021.

<table>
<thead>
<tr>
<th>Authors</th>
<th>Years</th>
<th>Name of Journals</th>
<th>Total Citations</th>
<th>Total Citations per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jänicke Ru</td>
<td>1998</td>
<td>J. Biol. Chem.</td>
<td>1670</td>
<td>69,5833</td>
</tr>
<tr>
<td>White H</td>
<td>2001</td>
<td>Lancet</td>
<td>360</td>
<td>17,1429</td>
</tr>
<tr>
<td>White Hd</td>
<td>1997</td>
<td>Circulation</td>
<td>237</td>
<td>9,48</td>
</tr>
<tr>
<td>Essers C</td>
<td>2007</td>
<td>Organ Stud</td>
<td>220</td>
<td>14,6667</td>
</tr>
<tr>
<td>Benschoot Y</td>
<td>2003</td>
<td>Gender Work Organ</td>
<td>202</td>
<td>10,6316</td>
</tr>
<tr>
<td>Rosenow Ec</td>
<td>1984</td>
<td>Arch Intern Med</td>
<td>199</td>
<td>5,2368</td>
</tr>
<tr>
<td>Rule No</td>
<td>2013</td>
<td>J. Pers. Soc. Psychol.</td>
<td>134</td>
<td>14,8889</td>
</tr>
</tbody>
</table>
Author Keywords

When it comes to researching trends, keywords are crucial. It is not only a keyword research trend, but it also makes it simple for researchers and readers to identify topics relevant to their fields. The precision with which these words are picked will have an impact on the ease with which searches can be performed as well as the current topics of discussion. The literature search and research will be determined by each keyword, which consists of one word or variations of two words. Figure 4 shows a network visualisation map of author keywords with minimum occurrences of 6. Number of keywords to be selected (25). Author keywords with the highest number of occurrences were ‘gender’ followed by ‘heroes’ and ‘feminism’.
International Collaboration

The author’s writing collaboration is another feature that deserves to be noted. This will denote international collaboration between scientists in a certain field (Figure 5). Furthermore, other researchers, especially beginner researchers, can contact the author in a country where study in the same topic with track record high collaborative.

Figure 6 and Table 2 depicts Single Country Publications (SCP) and Multiple Country Publications (MCP) for journals discussing construction female heroism in history around the world. According to the study, the U.S has the most SCPs, followed by the United Kingdom, Brazil, Australia, and Canada. Meanwhile, according to MCP data, the United States has the most MCP (18 articles), followed by Brazil (18 articles), Australia (11 articles), and the United Kingdom (10 articles).
Figure 5.
Country collaboration related to the journals discussing the construction female’s heroism in history worldwide (1958-2021).

Figure 6.
Top 20 countries represented the Single country publications and multiple country publications related to the journals discussing the construction female’s heroism in history worldwide (1958-2021)
Table 2.
Single country publications and multiple country publications related to the journals discussing the construction female’s heroism in history worldwide.

<table>
<thead>
<tr>
<th>Country</th>
<th>Articles</th>
<th>Freq</th>
<th>SCP</th>
<th>MCP</th>
<th>MCP_Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>193</td>
<td>0,34526</td>
<td>175</td>
<td>18</td>
<td>0,0933</td>
</tr>
<tr>
<td>UNITED KINGDOM</td>
<td>61</td>
<td>0,10912</td>
<td>51</td>
<td>10</td>
<td>0,1639</td>
</tr>
<tr>
<td>BRAZIL</td>
<td>60</td>
<td>0,10733</td>
<td>42</td>
<td>18</td>
<td>0,3</td>
</tr>
<tr>
<td>AUSTRALIA</td>
<td>29</td>
<td>0,05188</td>
<td>18</td>
<td>11</td>
<td>0,3793</td>
</tr>
<tr>
<td>CANADA</td>
<td>29</td>
<td>0,05188</td>
<td>24</td>
<td>5</td>
<td>0,1724</td>
</tr>
<tr>
<td>NEW ZEALAND</td>
<td>18</td>
<td>0,0322</td>
<td>11</td>
<td>7</td>
<td>0,3889</td>
</tr>
<tr>
<td>GERMANY</td>
<td>14</td>
<td>0,02504</td>
<td>12</td>
<td>2</td>
<td>0,1429</td>
</tr>
<tr>
<td>CHINA</td>
<td>10</td>
<td>0,01789</td>
<td>7</td>
<td>3</td>
<td>0,3</td>
</tr>
<tr>
<td>INDIA</td>
<td>9</td>
<td>0,0161</td>
<td>9</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>NETHERLANDS</td>
<td>9</td>
<td>0,0161</td>
<td>8</td>
<td>1</td>
<td>0,1111</td>
</tr>
<tr>
<td>SOUTH AFRICA</td>
<td>9</td>
<td>0,0161</td>
<td>9</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ITALY</td>
<td>8</td>
<td>0,01431</td>
<td>8</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>SPAIN</td>
<td>8</td>
<td>0,01431</td>
<td>4</td>
<td>4</td>
<td>0,5</td>
</tr>
<tr>
<td>IRELAND</td>
<td>6</td>
<td>0,01073</td>
<td>5</td>
<td>1</td>
<td>0,1667</td>
</tr>
<tr>
<td>ISRAEL</td>
<td>6</td>
<td>0,01073</td>
<td>5</td>
<td>1</td>
<td>0,1667</td>
</tr>
<tr>
<td>JAPAN</td>
<td>6</td>
<td>0,01073</td>
<td>5</td>
<td>1</td>
<td>0,1667</td>
</tr>
<tr>
<td>KOREA</td>
<td>6</td>
<td>0,01073</td>
<td>3</td>
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<td>0,5</td>
</tr>
<tr>
<td>NORWAY</td>
<td>6</td>
<td>0,01073</td>
<td>6</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>TURKEY</td>
<td>6</td>
<td>0,01073</td>
<td>6</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>FRANCE</td>
<td>5</td>
<td>0,00894</td>
<td>4</td>
<td>1</td>
<td>0,2</td>
</tr>
</tbody>
</table>

SCP: Single country publications. MCP: multiple country publications

DISCUSSION

The construction of female heroism in history often causes polemics. This is due to the gender construction of society that has not been free from patriarchal culture so that they consider heroes to be always identical with masculinity. The trend of publication related to the female heroism was conducted in current study. We noted several important points in our findings such as there are three dominant keywords used in research on female heroes, namely ‘gender’, ‘hero’, and ‘feminism’. It is indicating that the research theme on female heroism is very close to the terminology of gender and feminism. Thus, it can be seen that research on female heroism can contribute to the development of gender studies and feminism studies.

As stated in many studies, a hero can be defined as someone who is idolized because of his morality, excellence and courage. Anyone can be a hero, male or female. They are different from humans in general, because of their ability to struggle through his personal limitations. The vision, ideas, and inspiration of a hero come from his heart and mind as a human being. The hero is
embodied as a universally perfect human being. Besides being related to perfection, the concept of heroes also emphasizes martyrdom and the willingness to sacrifice oneself to uphold the truth (Campbell, 2004). However, in construction in society, the concept of hero is only attached to men. From the results of our investigation of publications related to heroes, it shows that the issue of heroism often clashes with the construction of gender in society that the concept of hero is often attached to men (Estrada, J. D., García-Ael, & Martorell J.L., 2015).

This understanding of heroism through a patriarchal perspective creates a bias in the writing of heroism, both in literary and non-literary works. This can be seen in one of the studies that we found in our observation entitled Who Creates Warrior Women? An Investigation of The Warrior Characteristics of Fiction Female Heroes Based on The Sex of The Author, which focuses on how the characteristics of the heroine are based on the author's gender (Ingalls, 2005). This theme has previously been discussed in research conducted by Odornes (1986) that reveals about the convention on the nature of female heroism has long been obtained through a male-oriented perspective that often obscures our perception of what female heroism is. She added that in the realm of other literary conventions, bourgeois realism for example, women's heroism is often limited by women's traditional roles, such as "caring for". This has led to the creation of a "feminine heroic myth" which tends to place women in a weaker position than men.

There are several studies on female heroes that have been conducted in several journals and books. As Carol Pearson and Katherine Pope (1981) that explore gender bias in European mythology regarding the meaning of heroes. It is also stated by Clave, Clave (2014) stated that in archetypes, especially in European mythology, the central assumption of a hero is that he is male, and almost always white and comes from an upper social class that has social, political, and economic power. In our results, there are some research which discuss about how gender bias reflected on European mythology and archetype. One of the is Pixar's New Fairy Tale Brave: A Feminist Redefinition of The Hero Monomyth (Morante, 2015) that discussed about the male hero's monomyth to a new literary paradigm in which women's experiences are constructive and fundamental: Heroes' quest offers insight into heterosexual alliances and the protagonist's experiences of motherhood.

Female heroism as a form of the struggle for gender equality, as stated by Wolf (1991). Her idea of female heroism departs from various forms of resistance to stereotypes that view women as beautiful and weak creatures. In male culture, women are just beautiful creatures and are always attached to the "ideal" image. In this culture, women are always faced with choices; beauty-without-intelligence or intelligence-without-beauty. Women are allowed to have mind or body but not both. There are several research in our result that supported about how female heroism can be categorized as a form of the struggle for gender equality. Gender Morality and Development Narratives: The Case of Female Labor Migration of Indonesia is one the research that discusses about that (Chan, 2014). This article discusses two dominant and contradictory representations of Indonesian female migrant workers: as national heroes who contribute to Indonesia's economic development, or as victims of labor exploitation. The research entitled Ms. Marvel, Qahera, and Superheroism in The Muslim Diaspora (Landis, 2019) also explores how Marvel Comics' Ms Marvel, in her latest iteration as a young Pakistani Muslim woman, is challenging American conventions of race and citizenship in the post-9/11 United States.
The number of publications has increased exponentially in 2020 with number of documents about 68. The theme raised is dominated by the medical area, such as those related to the pandemic, and Covid-19. One of which is *Military Metaphors and Pandemic Propaganda: Unmasking the Betrayal of a Health Care Hero* which discusses narrative medicine, related to the inter subjective narrative of patients and service providers as a concept of Heroes in serving Health raises military metaphors, anti-science discourse, and xenophobia in the U.S (Khan, Iwai, and DasGupta, 2021). Based on the results above, it can be identified that the construction of the female hero concept in society in 2020 is dominated by tasks related to the aspects of 'serving', kindness, benefiting others and the community, and being in the domestic space.

As stated by Lee R. Edwards (1984), in his research entitled, *Psyche as Hero: Female Heroism and Fiction Form*, heroic action can be defined as including doing and understanding, not only as an external action. The struggle of heroes is not only limited to physical strength, military strength, and political power and is not limited to men, thus excluding women as heroes. Edward in the concept of 'community' sees how women who are marginalized in a patriarchical culture contribute to society, as an equal part of society. From this statement it can be seen that the conception of heroine transcends polarization and dualism as rejected by Pearson and Pope, exists in the domestic and public circles, bridging the gap between the two. In 2020, the publication trend is very high.

Thus, it is not surprising that the context of female heroes in research in 2020 is always associated with medical aspects, for example, women are very suitable to be heroes in dealing with Covid-19 patients. In addition, women are also tasked with serving household needs in the midst of a pandemic and taking care of other family members who are dominant in carrying out activities from home due to the pandemic. In the construction of gender in society, the domestic area is a special area for women, where women become regulators and leaders in their domestic space. Women are responsible for activities that take place in the domestic space. Men, who become rulers and are free in public spaces, during the pandemic are required to work at home (domestic). This then constructs women's heroism which is identified with their service and contribution to the family, in a smaller scope and society in a broader scope. Thus, the construction of female heroism in the pandemic era is related to the increased workload that women experience during the pandemic.

The results of the research show that the U.S is ranked first in the number of publications, which are 893 publications, and its journals are the most cited, namely 2953 citations, as well as the countries with the most collaborations in research related to female heroes. That's not surprising because even though the United States (US) is not included in the world's gender equality index, if we talk about history, the US is actually one of the countries that has pioneered the issue of gender equality. Beginning in the late 19th century, the right to vote in 1920 was voiced. From the early 1990s until now the US has focused on eliminating sexual violence. This then spearheaded the MeToo movement, which then pushed Congress to pass new rules because it revealed a lot of sexual harassment that took place in Congress. This is in line with what Modrek and Chakalov (2019) stated in *The #MeToo Movement in The United States: Text Analysis of Early Twitter Coversation*[1]. The purpose of this study is to document, characterize, and measure the early public discourse and conversations of the #MeToo movement from Twitter data in the United States.
CONCLUSION

Bibliometric analysis of female heroes contributes to gender studies as a parameter to evaluate how gender is constructed in society related to the context of heroism. The increase in scientific publications related to publications discussing the construction of female heroism worldwide experienced an increase from 1958 to 2021. However, a large increase occurred in 2020, which coincided with the development of the Covid-19 pandemic throughout the world. This affects the themes raised in studies that are dominated by the medical field. In 2020, the concept of the female hero is carried by those who are engaged in health services as well as housewives. The U.S is the country that has contributed the most to studies on female heroes related to gender studies. It shows that the more developed a country is, the more their concern for gender studies will increase. This should be followed by developing countries to be able to continue to prioritize gender studies in various research fields. Recent information on the publication of heroines shows that this field is growing rapidly worldwide as well as international research collaboration. In the future, research collaboration in this field still needs to improve gender construction in society related to hero construction.

REFERENCES