Bibliometric Analysis: Developments in Research on Human Resource Management in Higher Education Based on the Google Scholar Database

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Abstract:
This research aims to analyze the development of research on human resource management in higher education based on the Google Scholar database. It can provide a reference point for further research on related topics. This research method uses bibliometric analysis; data collection is carried out based on international publication data from the Google Scholar database from 2015-2022 using the Publish or Perish tool, and the data analysis process is carried out using the VOSviewer tool. The research results show that the distribution of journal articles on human resource management related to higher education in the Google Scholar database from 2015-2022 is 999 journals, and the development of journal publications in the Google Scholar database has decreased. This occurred in 2015 as the highest number of journal publications, namely 222 (22%), while the fewest journal publications occurred in 2022, namely 19 publications (2%). Through density visualization, the terms "Human Resource Management" and "University" are the most frequently used research topics. With the overlay visualization, "Human Resource Management" was mainly used as a research topic around 2017, while the term University was used as a research topic around 2018. Based on this, further research on human resource management can be developed by referring to others that still need to be done.

Keywords: Bibliometrics, Human Resource Management, Higher Education

Abstrak:

Kata Kunci: Bibliometrik, Pengelolaan Sumber Daya Manusia, Perguruan Tinggi

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INTRODUCTION

Humans are a vital resource for organizations, whether in political, educational, economic, or social organizations (Garnham, 2020; Jones et al., 2020; Teräs et al., 2020). Human resources (HR) are productive individuals; they work as drivers in an organization, whether in an institution or a company whose function is as an asset, so their skills must be trained and developed (Susan, 2019; Owenvbiugie et al., 2020; Dixit et al., 2020; Sinambela et al., 2022). Human resources are employees, workers, employees, or people who have jobs or are employed (Ulfatin & Triwiyanto, 2016). Human resources are essential in achieving organizational goals (Amjad et al., 2021; Mohiuddin et al., 2022; Danilwan et al., 2022). Therefore, it is necessary to manage human resources effectively, efficiently, and in line with the needs to achieve success and the organization's goals.

According to Barthos (2012), human resource management includes the development, use and protection of human resources, both those in work relationships and those who are self-employed. Human resource management must be implemented in every organization, especially educational institutions and universities (Pusvitasari, 2021; Alfawaire et al., 2021; Hamouche, 2023). One way to improve the quality of higher education education is by managing human resources. Good human resource management can ensure that universities have competent and trained staff who can provide quality education to students.

Apart from that, HR management can also help improve staff performance, develop their careers, and make higher education institutions more efficient and productive (Aboramadan et al., 2020). This is in line with Dabic (2011) and Halisa (2020), who state that implementing good human resource management can encourage employee contributions to an organization. Increasing the potential and competence of human resources in an organization such as an educational institution is also an important indicator in improving the internal quality assurance system of education to achieve superior quality educational institutions (Lathifah et al., 2022).

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**RESEARCH METHODS**

This research was carried out using a bibliometric approach; in Susanti, Ikaputra, & Swasto (2021), bibliometrics measures the quantity of publications. Bibliometric analysis can reveal the development of literature (Mubarok & Rahmawati, 2020). Data collection in this research was carried out through international publication data based on the Google Scholar database, a search engine that makes it easier for users to access academic materials in the form of text in various publication formats (Albatani, 2016). The data search process uses the Publish or Perish (PoP) tool by entering the keywords "Human Resources, College, Digital Era". Publish or Perish is a tool that helps authors find previous research comparable to their current work (Bellour, 2021). Article data is taken from scientific journal publications from 2015-2022. The data analysis used the VOSviewer tool to view Network Visualization, Overlay Visualization, and Density Visualization. VOSviewer is software for visualising and building bibliometric networks (Effendy et al., 2021).

**RESULTS AND DISCUSSIONS**

**Publication Development**

To see the development of publications on the Google Scholar database related to human resource management in higher education based on searches carried out via the Publish or Perish tool, see Table 1 and Figure 1 below.
Table 1. Publication Development

<table>
<thead>
<tr>
<th>Year of Publication</th>
<th>Number of Publications</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>222</td>
<td>22%</td>
</tr>
<tr>
<td>2016</td>
<td>202</td>
<td>20%</td>
</tr>
<tr>
<td>2017</td>
<td>163</td>
<td>16%</td>
</tr>
<tr>
<td>2018</td>
<td>121</td>
<td>12%</td>
</tr>
<tr>
<td>2019</td>
<td>96</td>
<td>10%</td>
</tr>
<tr>
<td>2020</td>
<td>151</td>
<td>15%</td>
</tr>
<tr>
<td>2021</td>
<td>25</td>
<td>3%</td>
</tr>
<tr>
<td>2022</td>
<td>19</td>
<td>2%</td>
</tr>
<tr>
<td>Total</td>
<td>999</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 1 and Figure 1 shows that the distribution of journal articles released by Google Scholar identified as PoP with the keyword "Human Resources, College, Digital Era" from 2015-2022 totalled 999 articles. Research development from 2015-2022 has decreased. In 2015, the highest number of publications was 222, with a percentage (22%), followed by 2016, namely 202 publications (20%). Meanwhile, the fewest publications occurred in 2021 and 2022, with 25 (3%) in 2021 and 19 (2%) in 2022. Compared with the previous year, namely in 2020, the development of scholarly article publications was higher than in 2021-2022, which has decreased drastically in 2020; this coincides with the Covid-19 pandemic, which has been going on since 2019. During the Covid-19 pandemic, every individual, group or institution in higher education is very proactive in utilizing technology; the development of journal publications related to human resource management this year has developed significantly in the era of digitalization.

Top Journal Classification Based on Number of Publications

Google Scholar indexes scientific articles on human resource management, most of which are published in international journals. Several journals with the most significant number of articles on human resource management are presented in Table 2.
Table 2. Classification of Top Journals Based on Number of Publications

<table>
<thead>
<tr>
<th>Journal Name</th>
<th>Number of Articles</th>
</tr>
</thead>
<tbody>
<tr>
<td>The International Journal of Human Resource Management</td>
<td>41</td>
</tr>
<tr>
<td>Journal of Human Resources</td>
<td>30</td>
</tr>
<tr>
<td>Strategic Management Journal</td>
<td>28</td>
</tr>
<tr>
<td>Journal of Business Research</td>
<td>27</td>
</tr>
<tr>
<td>Journal of Medical Internet Research</td>
<td>22</td>
</tr>
<tr>
<td>Journal of Organizational Behavior</td>
<td>21</td>
</tr>
<tr>
<td>International Journal of Information Management</td>
<td>20</td>
</tr>
<tr>
<td>Journal of Nursing Management</td>
<td>17</td>
</tr>
</tbody>
</table>

In Table 2, you can see several journals that have contributed the most to the publication of scientific articles on human resource management. With this data, researchers can see which journals are the most productive. It can guide academics in exploring related literature and identifying ongoing research trends. In addition, this information can also help researchers identify journals that may be the primary reference sources in this field, assisting researchers in building a solid knowledge base for their research. The International Journal of Human Resource Management has the highest number of publications, namely 41. Based on this, the distribution of publications from each year in the journals above is shown in Figure 2.

![Figure 2. Distribution of Publications for the 2015-2022 Period Based on Top Journals](image)

Top 5 Publisher Categories Based on Number of Publications

The top publishers based on number of publications can be seen in Figure 3 below.
In Figure 3, the data shows significant differences in the number of scientific publications from various publishers. This shows that scientific research is available in various resources from different publishers. There are five classifications of publishers based on the number of publications on human resource management in the Google Scholar database based on PoP searches. Ranking highest is Wiley Online Library with 265 publications, Elsevier with 140 publications, Taylor & Francis with 90 publications, Sage Journals with 54 publications, Emerald Publishing with 53, and Springer with 42 publications. With many publications from various publishers, researchers have broad access to the latest information about human resource management in higher education.

**Top Citations Per Paper (Publications 2015-2022)**

<table>
<thead>
<tr>
<th>Cites</th>
<th>Author &amp; Year</th>
<th>Title</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>738</td>
<td>Caligiuri, P., De</td>
<td>International HRM insights for Journal of</td>
<td></td>
</tr>
</tbody>
</table>


**Network Visualization Using VOSviewer**

Based on Figure 4 in the Network Visualization, which consists of 82 items, it can be seen that there are relationships between the topic studied, namely human resource management in higher education (Human Resource Management, University), which has a network with other terms that appear. It is divided into 5 clusters.
In Cluster 1, it is shown in red, according to the topic studied that focuses on this cluster, namely "Human Resource Management." it can be seen that this term is the most significant item, meaning that it is the most frequently used. The item "Human Resource Management" has 57 relationships with other items and, of course, has a relationship with the item "College"; the term "Human Resource Management" has a relationship strength of 136 and occurrences of 78.

Cluster 2 is visualized in green; the item used in cluster 2 is "Digital World". "Digital World" is the most widely used in cluster 2. "Digital World" has 51 relationships with other items, the strength of the relationship is 122, and the occurrences are 59.

Cluster 3 is shown in blue, consisting of several items: "University, Covid, Education, College, Student, Pandemic, Learning, Digital Technology, Access, Online Learning, Teaching, Crisis, School, Higher Education, Way, and Digital Resources". The item "College" is in cluster 3. However, the other most significant term in the cluster is "Univerity", followed by "Covid". University is the most frequently used item in cluster 3. This item has 61 relationships with other items, with a relationship strength of 258 and occurrences of 111.

Cluster 4 is visible in yellow. The most frequently used item in this cluster is "Systematic Review". This item has a relationship with other items of around 39, with a relationship strength of 76 and occurrences of 47. Based on this, quite a lot of research on human resource management has been carried out using a systematic review approach.

In cluster 5, shown in purple, the items that appear in this cluster are the fewest compared to the other clusters. The most frequently used item in this cluster is "Youll". This item has 19 relationships with other items, with a relationship strength of 43 and occurrences of 13.

**Overlay Visualization Using VOSviewer**
Based on Figure 7, the overlay visualization shows research updates from year to year related to research topic areas or keywords. The colour of the keyword indicates the research period. It can be seen that "Human Resource Management" is around 2017, meaning that research conducted on "Human Resource Management" mainly occurs around 2017. Meanwhile, "College/University" appears to be around 2018, meaning that research on "College" mainly occurs around 2018.

Desnity Visualization Using VOSviewer

![Density Visualization Using VOSviewer](image)

Figure 6. Density Visualization

The depth of research on the emerging topics based on Figure 6 can be seen in the density visualization; this image will show which topics are the centre of attention. The brighter and darker the yellow colour, the more researchers are researching that topic. A faint or faded colour, such as green, means that there are still few or few researchers studying this topic. Based on this, the terms "Human Resource Management" and "University" are topics that have been widely researched and published based on the Google Scholar database.

CONCLUSION

The distribution of journal articles in the Google Scholar database from 2015-2022 resulted in 999 journals about human resource management associated with higher education. The development of journal publications in the Google Scholar database has decreased. Through network visualization, it consists of 82 items, which are divided into 5 clusters. Cluster 1 term used is Human Resource Management; this item has 57 relationships with other topics. Cluster 2 of the terms used in Digital World; this item has 51 relationships with other topics. Cluster 3 of the terms used is University; this item has 61 relationships with other topics. The four-term cluster used is a Systematic Review; this item has 39 relationships with other topics. Next, the Cluster 5 term used is Youll; this item has 19 relationships with other topics. With density visualization, the terms
Human Resource Management and University are the most frequently used research topics. Through overlay visualization, the Human Resource Management topic was mainly used as a research topic around 2017, while the University topic was mainly used as a research topic around 2018.

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REFERENCES


