

The relationship green human resources management and productivity: mapping topic area

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Abstract: This study aims to mapping the theme of research on the relationship of GHRM with productivity. The research was conducted through three stages, namely data preparation, basic analysis and advanced analysis. The data source used is the Scopus database downloaded in June 2018. The results show that there are 50 articles about the relationship of GHRM with productivity during 1977-2018 (juni). There are 34 countries where the study is located. Formed two clusters of the author of water footprint assessment and water management as a reference article on research relationships GHRM with productivity.

Keywords: Green Human Resources Management, Productivity, Water Footprint, Water Management.

Introduction

Green Human Resources Management (HRM) is a company's human resource management system with environmental aspects ((Ahmad, 2015). (Opatha & Arulrajah, 2014) defines GRHM as a system of employee development transformation so as to contribute to environmental sustainability based on company policies, practices and systems. The concept of GHRM is directed to facilitate employee involvement in environmental management, embodied in the form of a joint commitment to change actions in order to support the organization in an effort to implement environmental

management (Pinzone et al, 2016). Moreover, the implementation of GHRM is focused on systemic planning related to human resource management practices that are in line with organizational goals in environmental management (Haddock-Millar, Sanyal, & Müller-Camen, 2016).

On the other hand, GHRM is one of the factors driving the company's growth, with indicators of productivity improvement. Increased productivity is important to maintain the sustainability of the company in the future, especially in the face of increasingly fierce competition. Generally, productivity describes production efficiency, and can be defined as the ratio between input and output (Syverson, 2011). According to (Gordon & Gretton, 2015) improvement of company productivity can be implemented through:

- Technical efficiency improvements.
This is done by performing input efficiency through the utilization of technology to increase the output produced.
- Technological advances and organizational change.
Increased productivity is done through changes in the organizational structure or the adoption of new technologies better. Structural changes and technology adoption are expected to increase output.
- Increasing returns to scale
This condition can be done by developing technology to maintain cost and volume stability.

The importance of the aspect of GHRM on improving company productivity is the motivation of writing this paper. There have been many previous studies on GRHM and productivity separately or integrated. Therefore, this study aims to mapping the research topics related to GHRM and Productivity. The results of this paper analysis can be used to determine the direction of research development in the future.

Methodology

This study was conducted in three stages (Li & Hale, 2016):

1. Data preparation

Sources of data used in research is Scopus. Data collection on the Scopus database uses the keyword "green human resources management" and "productivity". Data retrieval

was done on June 11, 2018. The type of data used is article, english. Based on the process, this study obtained 50 articles that match those keywords, and published from 1977 to 2018.

2. Basic analysis

At this stage, the data obtained will be analyzed using descriptive statistics based on the year of publication and the location of the study. This analysis needs to be done to determine the development of the number of research from year to year and countries that are committed to environmental management.

3. Advanced analysis

In the advanced analysis stage, VosViewer software will be used as a tool to classify GHRM research topics and productivity. Vosviewer is a software that can be used to calculate and place each topic in two-dimensional maps, which is closely related to the well-known multidimensional scale statistics method (Oakleaf, 2009).

Result

Time Distribution

Time distribution describes the growing number of publications on the relationship between green human resources management and productivity from year to year (table 1).

| Tabel 1. TIME DISTRIBUTION | | | | | |
|-----------------------------------|---------------|-------------|---------------|-------------|---------------|
| Year | Number | Year | Number | Year | Number |
| 2018 | 1 | 2010 | 1 | 2002 | 0 |
| 2017 | 4 | 2009 | 2 | 2001 | 1 |
| 2016 | 7 | 2008 | 2 | 2000 | 2 |
| 2015 | 6 | 2007 | 3 | 1999 | 0 |
| 2014 | 5 | 2006 | 1 | 1998 | 0 |
| 2013 | 5 | 2005 | 0 | 1997 | 1 |
| 2012 | 0 | 2004 | 2 | 1977 | 1 |
| 2011 | 4 | 2003 | 2 | | |

Table 1 shows that the publication of the relationship between green human resources management and productivity began in 1977 (Rahman, 1977), and there is one publication in 2018 (juni) (Bogoni, J.A., Graipel, M.E., Peroni, 2018). For 20 years (1977-1997) there was no publication of research on the relationship between green human resources management and productivity, but publication was active again in 2006. The highest publication of GHRM and productivity relationships existed in 2016 of 7 articles (Dwivedi, A, Singh, A, Naresh, R.K, Kumar, M, Kumar, V, Bankoti, P, Sharma, D.K, Thaneshwara, Singh, A, Singh, 2016; Koh, S.C.L., Morris, J., Ebrahimi, S.M., Obayi, 2016; Munro, S.A., Fraser, G.C.G., Snowball, J.D., Pahlow, 2016; Papadopoulou, M.P., Charchousi, D., Tsoukala, V.K., Giannakopoulos, C., Petrakis, 2016; Seth, D., Shrivastava, R.L., Shrivastava, 2016; Singh, R.J, Ghosh, B.N., Sharma, N.K., Patra, S., Dadhwal, K.S., Mishra, 2016; Tariq, S., Jan, F.A., Ahmad, 2016).

Country Analysis

Country analysis aims to determine the location of the research carried out. The analysis of the Scopus data shows that there are 34 countries for 50 articles published in 1977- 2018 (June).

| Tabel 2. COUNTRY ANALYSIS | | | |
|----------------------------------|---------------|----------------|---------------|
| Country | Number | Country | Number |
| United States (US) | 9 | Australia | 3 |
| Cina | 8 | France | 3 |
| India | 8 | Brazil | 2 |
| Canada | 6 | Nedherlands | 2 |
| Germany | 4 | South Africa | 2 |
| United Kingdom | 4 | Spain | 2 |

The location of research is mostly done on US for 9 articles (table 2). The issues discussed differ according to the background of each country's problems, eg water, climate in the US; green technology, low carbon in China; green manufacturing, energy budgeting in India.

Author Mapping

The purpose of the author analysis is to know the articles used as references for the development of articles on GHRM relationships and productivity (figure 1).

Figure 1

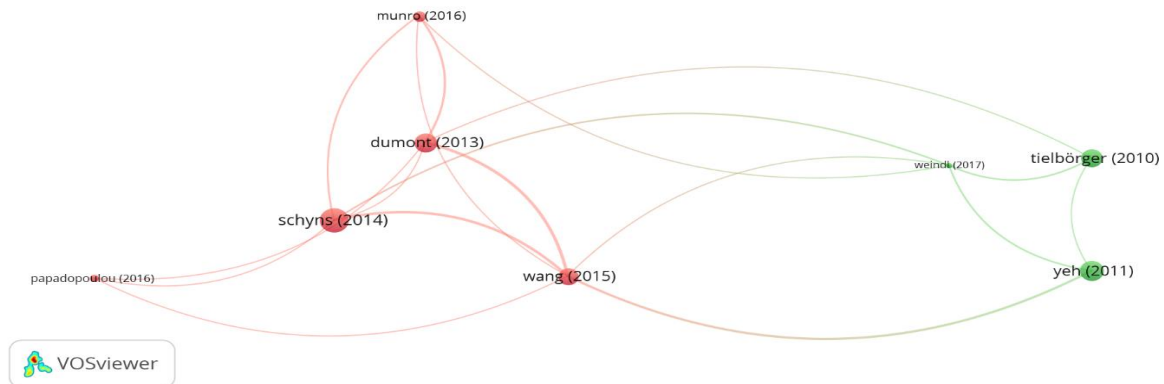


Table 3. CLASSIFICATION OF ARTICLES BY AUTHOR MAPPING

| Authors, year | Studi area |
|--|-----------------------|
| Cluster 1: Water footprint assesment | |
| (Dumont, Salmoral, & Llamas, 2013) | South of Spain |
| (Munro, S.A., Fraser, G.C.G., Snowball, J.D., Pahlow, 2016) | South Africa |
| (Papadopolou, M.P., Charchousi, D., Tsoukala, V.K., Giannakopoulos, C., Petrakis, 2016) | Mediterranian region |
| (Schyns & Hoekstra, 2014) | Morocco |
| (Wang, Wu, Engel, & Sun, 2015) | China |
| Cluster 2: Water management | |
| (Tielbörger, Fleischer, Menzel, Metz, & Sternberg, 2010) | Eastern Mediterranean |
| Weindl (2017) | |
| (Yeh S, Berndes G, Mishra G.S., Wani P.S., Neto A.E., Suh S, Karlberg L, Heinke J, 2012) | Brazil |

Conclusion

GRHM has an important role to play in improving productivity. The result of mapping the research topic based on the scopus database shows that there are 50 articles that discuss about the relationship of GHRM with Productivity in 1977-2018 (juni). The study was conducted in 34

countries, and the US was the most widely used country for discussion of the topic. Vosviewer results based on author mapping formed 2 clusters ie water footprint assessment and water management. This suggests that articles on both clusters are often used as referring to other authors on discussions of GHRM relationships and productivity.

This study is limited to mapping the relationship of GHRM to productivity. Therefore, future research can be directed by using more specific keywords, by adding SMEs, supply chains etc.

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