

Analysis of Human Resources Scorecard Research using Vosviewer: A Bibliometric Study

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Abstract

The rapid development that occurs globally certainly also affects the development of companies or industries. Not just in the business industry, but health service providers nowadays quite rapidly developing so human resources are an important aspect that needs to be considered. Various studies by researchers show that human resource management practices can affect organizational performance. The importance of the quality of resources to be able to achieve goals is the reason for the emergence of a human resource performance measurement system. The popular performance measurement system introduced by Kaplan and Norton in 1992 is the Balanced Scorecard (BSC). In addition to the BSC, the performance measurement system was introduced again by Becker et al in 2001 known as the human resources scorecard (HR Scorecard). This concept shows human resources as a strategic asset and shows their contribution to the financial success of an organization or institution. This article is aimed to find out how the implementation of the evaluation is carried out to see the performance of human resources, one of which is by using the HR Scorecard method, globally in various fields. This research used literature on the Scopus database from 2011 and analyzed it by using Scopus Analyzing Tools. Vos-viewer (version 1.6.17) is used for bibliometric analysis. Based on the visualization results, a total of 277 articles were extracted. The United States publish more articles, 51 studies. Most research was carried out in 2017 and 2018. The fields or areas that have done the most research related to the human resources scorecard are business management and accounting. The latest keywords such as health systems, customer perspectives, and customer satisfaction appeared in 2017. This bibliometric study shows that there is a growing trend in research related to human resources over the past 5 years. And these studies or research are also widely carried out not only in developed countries but also in developing countries. This study must be updated in the future to maintain the sustainability of an industry or company during rapid global changes.

Keywords: Human resources management, Human resources scorecard, Balanced Scorecard

Abstract

Pesatnya perkembangan dunia yang terjadi secara global tentunya juga mempengaruhi perusahaan atau industri. Tidak hanya di industri bisnis, penyedia layanan kesehatan saat ini berkembang cukup pesat sehingga sumber daya manusia menjadi aspek penting yang perlu diperhatikan. Berbagai penelitian oleh peneliti menunjukkan bahwa praktik manajemen sumber daya manusia dapat mempengaruhi kinerja organisasi. Pentingnya kualitas sumber daya untuk dapat mencapai tujuan menjadi alasan munculnya sistem pengukuran kinerja sumber daya manusia. Sistem pengukuran kinerja yang sudah dikenal yaitu Balanced Scorecard (BSC) yang diperkenalkan oleh Kaplan dan Norton pada tahun 1992. Selain BSC, sistem pengukuran kinerja diperkenalkan kembali oleh Becker dkk pada tahun 2001 yang dikenal sebagai Human Resources Scorecard (HR Scorecard). Konsep ini menunjukkan sumber daya manusia sebagai aset strategis dan menunjukkan kontribusi terhadap keberhasilan finansial suatu organisasi atau lembaga. Artikel ini bertujuan untuk mengetahui bagaimana pelaksanaan evaluasi dilakukan untuk melihat kinerja sumber daya manusia, salah satunya dengan menggunakan metode HR Scorecard di berbagai bidang. Penelitian ini menggunakan literatur melalui database Scopus dari tahun 2011 dan dianalisis dengan menggunakan Scopus Analyzing Tools. Vos-viewer (versi 1.6.17) digunakan untuk analisis bibliometrik. Berdasarkan hasil visualisasi, total 277 artikel diekstraksi. Amerika Serikat menerbitkan lebih banyak artikel, yaitu sebanyak 51 artikel. Penelitian terkait tema ini paling banyak dilakukan pada tahun 2017 dan 2018. Bidang yang paling banyak melakukan penelitian terkait dengan sumber daya manusia adalah manajemen bisnis dan akuntansi. Kata kunci terbaru seperti sistem pelayanan kesehatan, perspektif pelanggan, dan kepuasan pelanggan mulai muncul pada tahun 2017. Studi bibliometrik ini menunjukkan bahwa ada tren yang berkembang dalam penelitian terkait sumber daya manusia selama 5 tahun terakhir. Dan studi atau penelitian ini juga banyak dilakukan tidak hanya di negara maju tetapi juga di negara berkembang. Studi ini harus selalu diperbarui di masa depan untuk menjaga keberlanjutan industri atau perusahaan yang diiringi dengan perubahan global yang cukup pesat.

Keywords: Human resources management, Human resources scorecard, Balanced Scorecard

Introduction

The working environment that is currently becoming very competitive requires every aspect to be managed professionally, one of the aspects is human resources. Not just in the business industry, but health service providers nowadays quite rapidly developing so human resources are an important aspect that needs to be considered. For example, in the State of Israel, the health sector and hospitals, are increasingly adopting competitive business behavior. However, strategic managerial behavior is only partially embraced and still, there is lacking collaboration between employees and management in defining strategic goals and strategic actions [1]. Therefore, performance management is one of the important managerial concepts of human resources where it is necessary to have a performance measurement system that becomes a strategic parameter and ensures that these human resources can be useful for all parties [2]. Various studies by researchers have shown that the managerial practice of human resources has the potential to influence organizational performance [3]. The performance of human resources itself is usually measured from three important aspects, namely effectiveness, efficiency, and sustainability [2]. In organizational performance, the manager also has to understand management as a continuous activity of planning, conducting, evaluating, and improving to achieve the common goal and improve the quality of services [4]. The importance of the quality of resources to be able to achieve goals is the reason for the emergence of a human resource performance measurement system. Some opinions say the human resource performance measurement system is a process of developing a common understanding of the goals to be achieved, how to achieve these goals, and how to organize all human resources appropriately in accordance with the strategy to achieve the goals [2].

One of the human resource performance measurement systems introduced by Kaplan and Norton in 1992 is the Balanced Scorecard (BSC), which is a fairly popular measurement system that categorizes the goals of an organization or institution into four measurable perspectives, namely learning and growth perspectives, financial perspectives, customer perspectives, and internal business processes perspectives. BSC has also often been widely implemented in many fields and institutions, such as government units, service-providing units, non-profit companies, and others [5]. In practice, the ability of human resources to produce useful and relevant services also depends on policies, technology, and the management strategy of an organization or institution [2].

For example, the pharmaceutical and medical industries, which directly face the pressures of global, regional, and local circumstances ranging from pricing, access, adjustments to guidelines and regulations, and others, demand the industry be

more effective and efficient in the management [6]. Therefore, measurement and assessment of human resource performance should continue to be developed to support and adapt to the strategies of organizations and institutions.

In addition to the BSC, the performance measurement system was introduced again by Becker et al in 2001 known as the human resources scorecard (HR Scorecard). This concept shows human resources as strategic assets and shows the contribution of human resources to the financial success of an organization or institution. This is based on a balanced scorecard model that shows how the relationship of human resources is measured such as profitability and shareholder value of line managers [7]. Briefly, this scorecard connects the company's strategy with its human resource activities. So far, there has been a lot of research on performance measurement systems but not many have focused on human resources. The purpose of this article is to find out how the implementation of the evaluation is carried out to see the performance of human resources, one of which is by using the HR Scorecard method, globally in various fields.

Method

This research used literature on the Scopus database which is accessed through a private communication network (PVN) from the University of Muhammadiyah Yogyakarta by entering search keywords according to the topic of literature. The keywords of the research literature are (TITLE-ABS-KEY (human resources scorecard) AND PUBYEAR > 2011 AND (LIMIT-TO (OA, "all"))). The results of the literature were subsequently analyzed using the Scopus Analyzing Tools which were analyzed by country, year, subject, author, and source. For visualization and bibliometric analysis used the VOS-viewer application (version 1.6.17). Descriptive analysis is further carried out based on visualization data.

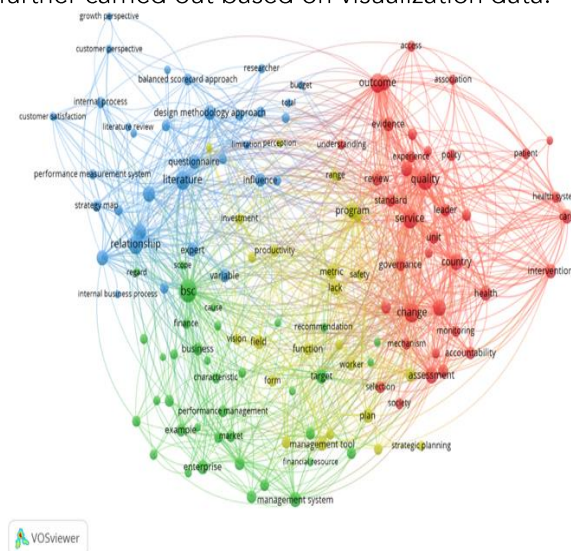


Figure 1. Network Visualization. The size of a point represents the frequency of the keywords. The line between the two points represents that both keywords occurred in one article.

Cluster	Theme	Total (N=132 (100%))
Cluster 1	Assessment, change, mechanism, quality, health, standard	N = 38 (29%)
Cluster 2	Behavior, human resources management, financial resources, management system, performance evaluation	N = 37 (28%)
Cluster 3	Balance scorecard, performance measurement, questionnaire, customer perspective	N = 33 (25%)
Cluster 4	Vision, skill, benefit, investment, strategic planning, safety, productivity	N = 24 (18%)

Based on the visualization results, a total of 132 articles were obtained which were divided into 4 clusters. In cluster one there are 38 articles consisting of several themes such as assessment, mechanism, monitoring, standard, and outcome. Then, for cluster two there are 37 articles consisting of several themes, namely behavior, human resources management, financial resources, management systems, performance evaluation. Cluster three has 33 articles consisting of several themes, such as balance scorecard, performance measurement, questionnaire, customer perspective. Finally, cluster four has 24 articles consisting of several themes, such as vision, skills, benefits, investment, strategic planning, safety, and productivity.

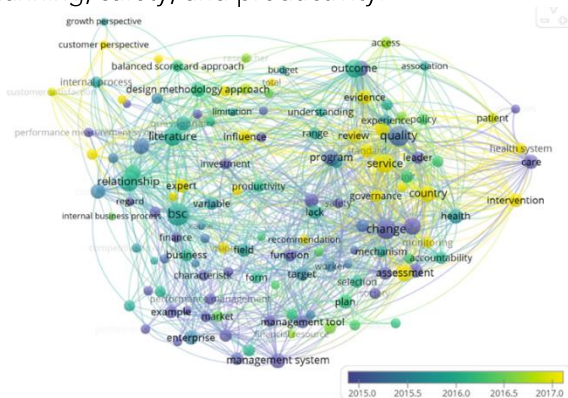


Figure 2. Overlay Visualization. Visualization of time when a keyword appeared. Keywords in blue appeared earlier than that in yellow.

Based on the data above, it is found that keywords such as management systems, management tools, assessment, and internal business processes are most often discussed around 2015, then themes such as the balanced scorecard approach, design methodology approach, accountability, and productivity are most often discussed in 2016, and finally, the latest keywords such as health systems, customer perspectives, monitoring, and customer satisfaction are often discussed in 2017.

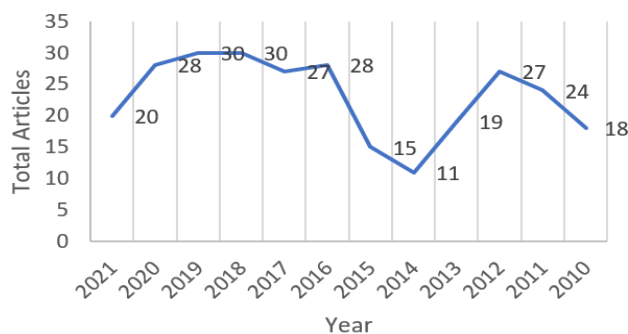


Figure 3. Number of articles published each year.

Based on the chart above, it is found that the research trend dropped significantly in a row in 2013 and 2014 after that it has increased again starting in 2015. Based on data, there were 277 studies conducted from 2010 to 2021, of which there were 18 studies in 2010, 24 studies in 2011, 27 studies in 2012, 19 studies in 2013, 11 studies in 2014, 15 studies in 2015, 28 studies in 2016, 27 studies in 2017, 30 studies in 2018, 30 studies in 2019, 28 studies in 2020, and the last 20 studies in 2021. It can be concluded that most research was carried out in 2017 and 2018, while the least number of studies was in 2014.

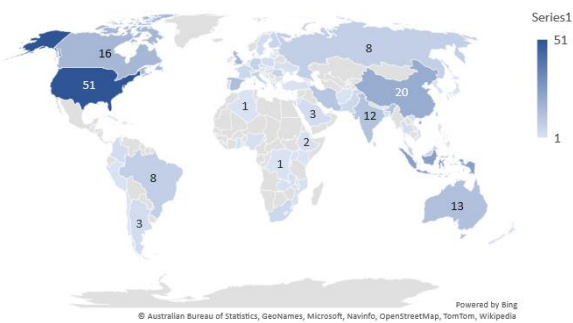


Figure 4. Distribution of research by countries/regions.

The results of the article search showed there are 277 articles indexed by Scopus with an article search strategy. Based on the number of articles, the most research carried out is in the United State, with a total of 51 studies. Then, the country with the second highest number of studies in Indonesia, where there are 25 studies. And for the least number of studies, only one study is found in several countries, such as Qatar, Peru, Japan, Slovakia, Turkey, Denmark, Austria, Afghanistan, Chile, Congo, and others. Based on the countries or region distribution above, we can conclude that this research topic is an option for research around the world both in developed and developing countries.

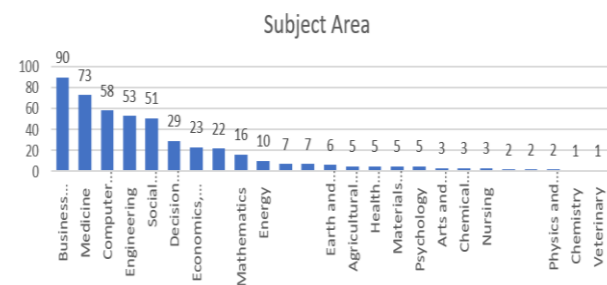


Figure 5. Subject Area

Based on the table above, from all the 277 articles obtained, the fields or areas that have done the most research related to the human resources scorecard

are business management and accounting, with a total number of 90 articles, followed by the next, medicine, as many as 73 articles, and finally in the field of computer science as many as 58 articles. The field of chemistry and veterinary is the field that discusses the least related to human resources and only one article was found.

Discussion

The rapid development that occurs globally certainly also affects the development of companies or industries. In ensuring the continuity of a company, nowadays it is no longer appropriate if the company focuses on only one indicator, like finance, but the strength of human resources or employees, the power to innovate, and customer satisfaction that is currently also the main determining factor for the success and sustainability of a company [8].

This has caused many industries from all fields to evaluate the performance of their human resources. Performance evaluation is a contemporary concept that has many variations in several aspects or methods. This performance evaluation aims to achieve and improve satisfaction, performance, and effectiveness in the organizational processes [3].

In human resource management, evaluating and monitoring the performance of employees or organizations can be obtained using several methods, one that has often been used to assess organizational performance is the Balance Scorecard (BSC), where in Cluster 3 BSC is a research theme that often arises from several articles. The keyword Balance Scorecard method has also begun to appear frequently starting in 2016. Some research results show that the BSC methodology is already widely used in various industrial fields [8]. In addition, the industry has also paid attention to human resources or its workers by maintaining the effectiveness of performance. The human resource scorecard (HRSC) is an appropriate measurement method for identifying and measuring the relationship between workers, strategies, and performance to produce a good company [9].

For example, a study conducted by Fadhil, Djatna and Syamsul Maarif (2017) named Analysis and Design of a Human Resources Performance Measurement System for the Nutmeg Oil Agro-industry in Aceh which used the HRSC method with system formulation using the Relief method to determine the main performance influence of an attribute being assessed and determine association rules to facilitate performance measurement by paying attention to the relationship between attributes based on supporting values and certainty values using the Association Rules Mining (ARM) method. Where the attributes are Human Resource Competency (HRC), High-Performance Work System (HPWS), Human Resource Efficiency (HRE), and Human Resource Deliverable (HRD). The Relief method for system design could produce a rank system of key attributes in HR performance measurement or the most influential factors, namely

high-performance work system (HPWS) and human resource system alignment (HRSA).

Another example is the healthcare industry, which is the second most common field based on the discovery of articles conducting performance analysis. One of the research articles is in China, where district-level general hospitals are the core providers of medical and health services in each region and form the top level of care in the healthcare network and become a key component of healthcare facilities so that the development and service in those Hospitals is a priority for the government. Evaluation of organizational performance and human resources is the key to the success of the development and sustainability of the hospital.

In Cluster 1, a study conducted by Gao et al. named Balanced Scorecard-based Performance Evaluation of Chinese County Hospitals in Underdeveloped Areas published in 2018 showed that the performance evaluation indicators established using BSC are practical, scientific, and can identify several factors that affect hospital performance, such as resource utilization efficiency, services, and the relationship of the doctors with their patients.

In cluster 2, an article named Impact of Accreditation on Human Resource Development and Management of a Hospital through HR Balanced Scorecard by Hyder, Mishra, and Bhagat in 2010 and is one of the published journals in the field of business management, showed that there is a remarkable improvement in all processes registered and confirmed through satisfaction surveys conducted to employees as well as managers. The Balanced Scorecard objectively guides the improvement and highlights the things that need improvement.

Conclusion

Thus, the human resources performance measurement system is a strategic parameter in ensuring that human resources are beneficial for all parties, and performance management is one of the important managerial concepts in the human resources performance [2]. This bibliometric study shows that there is a growing trend in research related to human resources over the past 5 years. And these studies or research are also widely carried out not only in developed countries such as America but also in developing countries, like Indonesia, which become the second most common country after America. The quality of studies related to this topic in some countries such as Denmark, Austria, and Chile need to be improved. Research or articles that have been published also come from various fields, where business management is the most common field that discusses articles related to this topic.

Health systems, customer perspectives, and customer satisfaction are the latest highlights and are starting to be discussed frequently in this field or topic. This is shown by the research in Medicine which is currently the second most common field that

conducts research that focuses on assessing the performance of human resources. And this study must be updated in the future to maintain the sustainability of an industry or company during rapid global changes.

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