

Bibliometric Analysis on A Review of Islamic Human Capital

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Abstract: Human capital has a central role in economic development and physical capital, which affects economic development. On the other hand, human capital tends to have an accumulative and long-term effect compared to physical capital. The accumulation of human capital is expected to be one of the initial sources of sustainable development. The interrelationship between economic growth and human capital growth may be an important key to sustainable economic growth. The development contributes to one aspect, namely economic growth, but can contribute to other aspects such as welfare and poverty reduction. Individual economic success and the overall economy depend on how extensively and effectively people invest in themselves. Technology can be the driving force of the modern economy, especially from the high-tech sector, but human capital is the fuel. This study aims to determine the development of Islamic human capital research trends published by leading journals on Islamic financial economics. The data analyzed consisted of 228 indexed research publications. The data is then processed and analyzed using the VoS viewer application to determine the bibliometric map of Islamic human capital research development.

Keywords: Islamic Human Capital, Economic Growth, Bibliometrics, VoS Viewer

INTRODUCTION

Human capital has a central role in economic development and physical capital, which affects economic development. On the other hand, human capital tends to have an accumulative and long-term effect compared to physical capital. The accumulation of human capital is expected to be one of the initial sources of sustainable development.



According to ¹The reciprocal relationship between economic growth and human capital growth may be an important key to sustainable economic growth. The development contributes to one aspect, namely economic growth, but can contribute to other aspects such as welfare and poverty reduction. According to ² the success of the individual economy, as well as the whole economy, depends on how widely and effectively people invest in themselves, and the existence of technology can be a driver of the modern economy, especially from the high-tech sector, but human capital is the fuel.

Conceptually according to some economists³, human capital is defined as the knowledge, information, ideas, expertise, and health of an individual. Meanwhile ⁴ defines human capital as something related to the provision of knowledge or characteristics of workers owned (either innate or acquired) that contributes, namely “productivity.” The development of ideas about the contribution of human capital is explained by⁵ where the idea that human capital can lead to sustainable growth is one of the criticisms raised from the “new growth” literature initiated by Lucas 1988 and ⁶.

Theoretically, the initial approach to analyzing economic growth according to the neoclassical economic growth theory by ⁷ is interpreted as a function of labor, physical capital, and the presence of exogenous factors from technology. According to ⁸ important contributions of Solow and Swan, the key aspects of this model are the neoclassical form of the production function, specifications that assume constant returns to scale,

¹ Jacob Mincer, ‘Economic Development, Growth of Human Capital, and the Dynamics of the Wage Structure’, *Journal of Economic Growth*, 1 (1996), 29–48.

² Katrin Becker and others, ‘Supersymmetry Breaking and A'-Corrections to Flux Induced Potentials’, *Journal of High Energy Physics*, 2002.06 (2002), 60.

³ Becker and others.

⁴ D Acemoglu and D Autor, ‘Lectures in Labor Economics, Chapter 1. Lectures Notes Manuscript’ (MIT, 2005).

⁵ Daniel Cohen and Marcelo Soto, ‘Growth and Human Capital: Good Data, Good Results’, *Journal of Economic Growth*, 12 (2007), 51–76.

⁶ Paul M Romer, ‘Endogenous Technological Change’, *Journal of Political Economy*, 98.5, Part 2 (1990), S71–102.

⁷ Robert M Solow, ‘A Contribution to the Theory of Economic Growth’, *The Quarterly Journal of Economics*, 70.1 (1956), 65–94.

⁸ R Barro and Xavier Sala-i-Martin, ‘Economic Growth Second Edition’ (Cambridge MA.: The MIT Press, 2004).



diminishing returns for each input, and some positive elasticity and substitution between inputs. The role of human capital in understanding a country's economic growth or region is developing modern economic theory, namely the endogenous growth model. One of the theories of endogenous growth that focuses on discussing the role of human capital is Lucas and Romer, in this model, the addition of physical capital and labor (uneducated) and the presence of human capital as an input in the production function.

Early studies of economic growth always refer to research conducted by ⁹ which provides a basic model of economic growth where savings are the main driver of economic growth. The development of economic growth analysis provides a basis for the role of human capital as an important part in increasing economic growth ¹⁰. Several further studies that analyzed the effect of human capital on economic growth were carried out by Mankiw using the augmented Solow growth model with human capital as an additional production factor while the endogenous growth model Lucas, Romer also linked human capital and technology adoption as important factors in increasing growth. In addition, follow-up research from Benhabib & Spiegel for example, has found a weak relationship between growth and improvement in human resources measured in terms of educational attainment. Meanwhile, research from Pritchett, showed the same results using different datasets and testing a wider model.

The contribution of human capital can be analyzed from two perspectives, namely micro and macro. The micro point of view views that human capital is part of the production function of the individual, which is further related to the quality of human resources. Knowledge can have an impact on mastery of technology and innovations made in terms of the production process. The result of this knowledge is the efficiency in the production process, which can increase productivity. On the other hand, expertise will make individuals more competent in the production process to encourage productivity.

At the macro level, the contribution of human capital can be analyzed from the micro contribution, which is aggregated as part of the national

⁹ Solow.

¹⁰ D Coffman and others, 'Study of the Doubly Radiative Decay $J/\Psi \rightarrow \gamma \gamma \rho^0$ ', *Physical Review D*, 41.5 (1990), 1410.



economic development. This development has the impact of an increase in welfare which is indicated by an increase in the level of GRDP per capita. According to Lucas, human capital has an internal productivity effect and an external productivity effect. The increase in human capital in individuals comes from their productivity and is part of the productivity of other workers at a certain skill level. Increased welfare has implications, namely, further reducing the level of poverty and unemployment that may occur from human capital that continues to grow. A further important contribution from good quality human capital is the intergenerational contribution that arises from the increasing quality of human resources in the following periods.

In developing countries such as Indonesia, the government's role is needed in developing the quality of human resources. This will have implications for an increase in community welfare which is then followed by an increase in economic growth at the macro level. Indonesia has heterogeneous conditions in which each region has a different style. This study on the contribution of human capital provides a preliminary and further analysis of the economic conditions in Indonesia. Empirical research on the contribution of human capital in Indonesia has been carried out by several researchers, including ¹¹ at the provincial level in Indonesia. Meanwhile, other research was conducted by¹² for district and city levels throughout Indonesia. When human capital becomes one of the factors that have a central role, the government can then issue policies that can increase and accelerate human capital accumulation.

At this time, the pattern of development has changed. One of the visible changes is where the old development has a point of view that focuses on physical development and economic growth when the paradigm shifts, making humans the main key in development. Human development is the focus of development that is no less interesting than development in physical form. Because if there are better human qualities, it will increase creativity and productivity to have a better standard of living.

¹¹ Aminuddin Anwar, *Peran Modal Manusia Terhadap Pertumbuhan Ekonomi Regional Di Jawa* (Yogyakarta State University, 2017).

¹² Indunil De Silva and Sudarno Sumarto, 'How Do Educational Transfers Affect Child Labour Supply and Expenditures? Evidence from Indonesia of Impact and Flypaper Effects', *Oxford Development Studies*, 43.4 (2015), 483–507.



So far, many countries globally, including policymakers in Muslim-majority countries, have made material indicators the only indicator of economic success. Even though progress in terms of material does not guarantee true welfare. Aspects of morality and character are often neglected, even though aspects of morality and good character will determine the quality of economic development itself. As a result, the facts show that today, many humans have lost the value and nature of their humanity during the progress of material civilization. Humans become individualistic and selfish and forget the values of caring and social society. Investment in human capital (education, skills, health) can increase productivity, making the population's economy also experience an increase. If there is a high economic increase in a country, it will be able to help the country develop faster. Therefore, this paper aims to discuss how much influence investment has on human capital in the process of economic development in a country.

THEORETICAL BASIS

Bibliometric analysis is an approach that uses a set of quantitative methods to measure, track, and analyze scholarly literature ¹³ It identifies the publications by authors, the most prominent journals, as well as the methodologies used and the conclusions obtained ¹⁴.

Metadata gives an overview of any field of research ¹⁵Bibliometric methods involve a large volume of bibliographic material and have been

¹³ Robin Chin Roemer and Rachel Borchardt, *Meaningful Metrics: A 21st Century Librarian's Guide to Bibliometrics, Altmetrics, and Research Impact* (Amer Library Assn, 2015).

¹⁴ Amador Durán Sánchez and others, 'Active Tourism Research: A Literature Review (1975-2013)', 2014.

¹⁵ Eduardo Z Milian, Mauro de M Spinola, and Marly M de Carvalho, 'Fintechs: A Literature Review and Research Agenda', *Electronic Commerce Research and Applications*, 34 (2019), 100833.



used for the analysis of different topics¹⁶ , Journals ¹⁷ Countries ¹⁸ and others.

The scientific literature contains important bibliometric analyses such as that by ¹⁹, who performed a retrospective bibliometric analysis of articles about rehabilitation medicine using VR technology. The conclusion was that VR technology was one of the most popular technological advances. The results found a rapid growth in the production of articles in recent years.

RESEARCH METHODS

This study uses data on publications of papers sourced from various journals from 1984-2021 with research on Islamic human capital. Data collection was carried out by searching for articles indexed by the Google Scholar database. The search was carried out by typing the keyword 'Islamic human capital,' then selected papers relevant to the research theme of Islamic human capital for journal criteria filtered and processed in software indexed by Google Scholar only journals equipped with DOI. From the search results, there are 228 articles published from 1984-2021. The data in the form of topics used in the publication of Islamic human capital-themed papers were analyzed using Microsoft Excel 2010. The trend of publication development on the Islamic human capital theme was analyzed using VOSViewer software.

The computer program that was introduced was called VOSviewer. VOSviewer is a program developed for creating and viewing bibliometric maps. This program is available free of charge to the bibliometric research community (see www.vosviewer.com). VOSviewer can create author maps or journals based on co-citation data or create keyword maps based on shared incident data. The program offers a viewer that allows bibliometric maps to be examined in detail.

¹⁶ Fabio Blanco-Mesa, José M Merigó, and Anna M Gil-Lafuente, 'Fuzzy Decision Making: A Bibliometric-Based Review', *Journal of Intelligent & Fuzzy Systems*, 32.3 (2017), 2033-50.

¹⁷ Francisco J Martínez-López and others, 'Fifty Years of the European Journal of Marketing: A Bibliometric Analysis', *European Journal of Marketing*, 52.1/2 (2018), 439-68.

¹⁸ Alicia Mas-Tur and others, 'Half a Century of Quality & Quantity: A Bibliometric Review', *Quality & Quantity*, 53 (2019), 981-1020.

¹⁹ M Angela Nieto and others, 'EMT: 2016', *Cell*, 166.1 (2016), 21-45.



To build the map, VOSviewer uses the VOS mapping technique, where VOS stands for visualization similarity. For previous studies where the VOS mapping technique was used. VOSviewer can display maps constructed using appropriate mapping techniques. Therefore, this program can display maps built using the VOS mapping technique and display maps built using multidimensional scaling techniques. VOSviewer runs on many hardware and operating system platforms and can be started directly from the internet.

RESULTS AND DISCUSSION

The following is a table that shows the collection of documents used in research with the theme of Islamic human capital in Islamic economic research. Of the total 228 documents used, they are divided into 3 types of documents, including journal articles (193 documents), anthology/book chapters (24 documents), and Conference Papers (11 documents).

Table 1. Document Types

No	Document Types	Number of Articles
1	Journal article	193
2	Book chapter	24
3	Conference Paper	11
TOTAL		28

Based on the results of grouping the types of documents above, the most widely used document type as research subjects with Islamic human capital is documents in the form of book chapters with a percentage of 84.64% or as many as 193 documents. Meanwhile, the least used documents were Conference Papers at 4.82% or as many as 11 documents. This shows that the references used are quite valid because most of them come from documents in scientific journals.

Bibliometric Graph Analysis

Bibliometrics is based on the calculation and statistical analysis of scientific outputs in articles, publications, citations, patents, and other more complex indicators. It is an important tool in evaluating research, laboratory and scientist activities and scientific specialization, and country performance. After establishing the background for bibliometric development, the report presents the database from which the bibliometric was created and the main indicators used.



To explore the meta-analysis results, this section will present a visual mapping chart of 228 journals published by Islamic human capital. The results of the keyword mapping analysis become the basis for mapping together important or unique terms contained in certain articles. Mapping is a process that enables one to recognize elements of knowledge and their configuration, dynamics, interdependencies, and interactions.

Related to bibliometrics, science mapping is a method of visualizing the field of science. This visualization is done by making a landscape map that can display topics from science Royani, The results of network visualization from 228-word map journals with the theme of Islamic human capital can be seen:

Co-Authorship Analysis

Furthermore, the bibliometric results will be displayed based on the sub-themes, namely authors, organizations, and countries.

1. Co-authorship Authors

Using the VOSViewer software, we found the author's bibliometric mapping, as shown in the following figure. The bigger the shape and the brighter the color, the author is publishing more and more writings related to Islamic human capital.

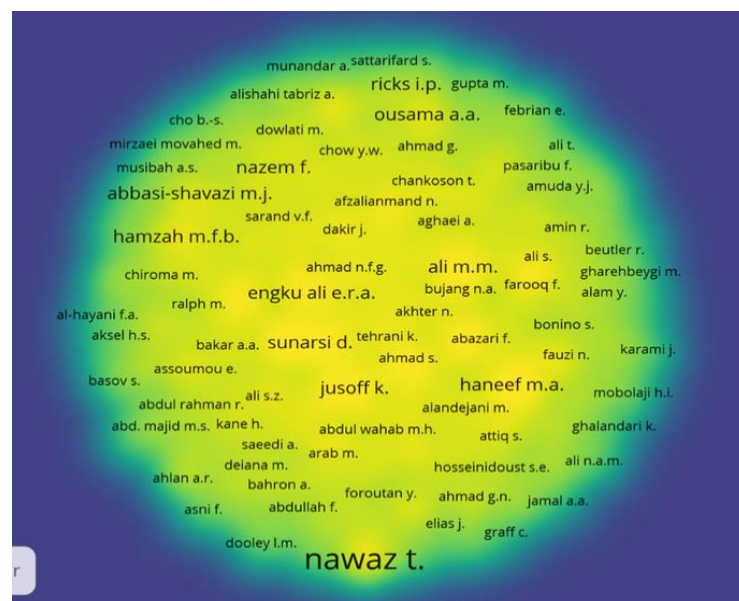


Figure 1. Co-authorship Authors



The appearance of cluster density depends on the level of yellow light brightness. This identifies that the yellow color on the map depends on the number of items associated with other items. This section is useful for getting an idea of the general structure of a bibliometric map by paying attention to which parts of the light are considered important to analyze. From the map, it is possible to interpret the authors who have published the most.

In general, each researcher has different tendencies. Some writers are indexed as a single author, others co-author with other researchers so that multiple clusters appear, which are indicated with different densities. However, authors with a fairly large density indicate that they publish more research on Islamic human capital themes than those with a lower density, so this result can be used to reference future researchers.

Based on these results, the bigger and brighter the author's name, the more papers he published. The author of the most published publications related to the theme of Islamic human capital based on bibliometric mapping, namely Nawaz T.

2. Co-authorship Institution (Co-citation)

In bibliometric analysis, the author's institution can be seen from which institution they come from. Through these results, we were able to interpret the institutions that wrote the most publications.

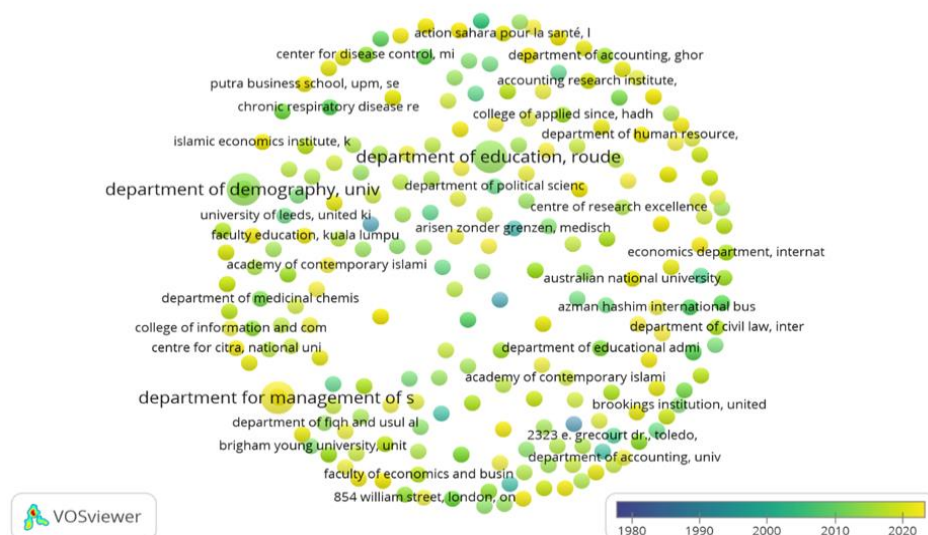


Figure 2. Co-authorship Institution (Co-citation)



Based on the following figure, the cluster of visible institutions with glowing circles shows how productive these institutions are in contributing to publishing papers with the theme of Islamic human capital. The largest number of institutions is calculated from the number of publications and links to other institutions, where an author can write many papers in different journals.

The most popular institutions are calculated based on the number of publications and links to other institutions, where a paper writer can write many papers in different journals. The most well-known ranking of institutions shown by the results of bibliometric mapping is the Department of Demography, Faculty of Social Sciences, University of Tehran, Tehran, Iran.

3. Co-authorship Country

Furthermore, the visualization of the journal publisher mapping is illustrated in the bibliometric image of the journal source below. Based on the picture, it can be seen that several clusters of countries appear to publish the most articles with the theme of Islamic human capital.



Figure 3. Co-authorship Country

Based on the picture above, the larger the circle of the publishing country, the more papers that country publishes seen that the country of



Malaysia has the brightest light. This means that Malaysia publishes the most Islamic human capital-themed papers compared to other countries.

4. Co-occurrence Analysis

Furthermore, the bibliometric results will be displayed based on the sub-themes, namely all keywords, author keywords, and index keywords.

Co-occurrence All Key Word

VOSViewer can also find the bibliometric mapping of the most widely used keywords in Islamic human capital themes related to Islamic economics. The bibliometric mapping of the keywords used can be seen in the image below. Keywords with a larger form indicate that the word is used more in journals related to Islamic human capital.

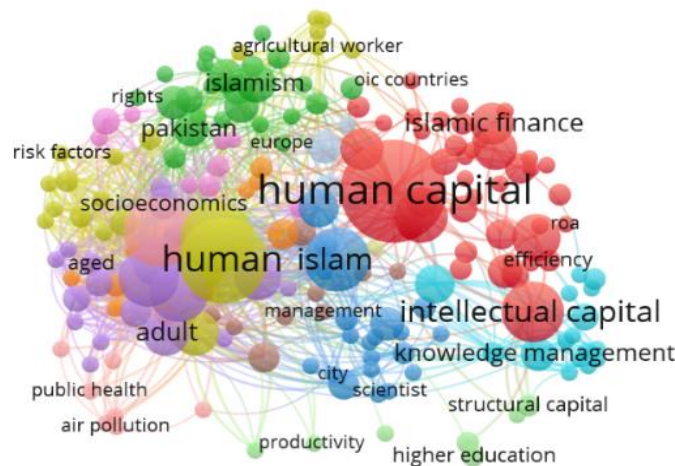


Figure 4. Co-occurrence All Key Word

This data can be used to find out the trend of keywords in recent times. The bibliometric analysis shows several widely used keywords in the paper that are the object of research. The more keywords that appear, the wider the circle indication will be. While the line relationship between keywords shows how much they are related to other keywords.

Based on the analysis results using VOSviewer on keywords with the theme of Islamic human capital, there are many clusters and are interrelated with other keywords. Keywords that have the same color indicate a very close relationship. The most widely used keyword in Islamic human capital-themed journals is human capital.



VOSViewer can also find a bibliometric mapping of keywords that authors most widely used in the theme of Islamic human capital related to Islamic economics. The bibliometric mapping of the keywords used can be seen in the image below. Keywords with a larger form indicate that authors more widely use the word in journals related to Islamic human capital.

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human capital related to Islamic economics, as shown in the image below. An index that has the same color indicates a very close relationship.

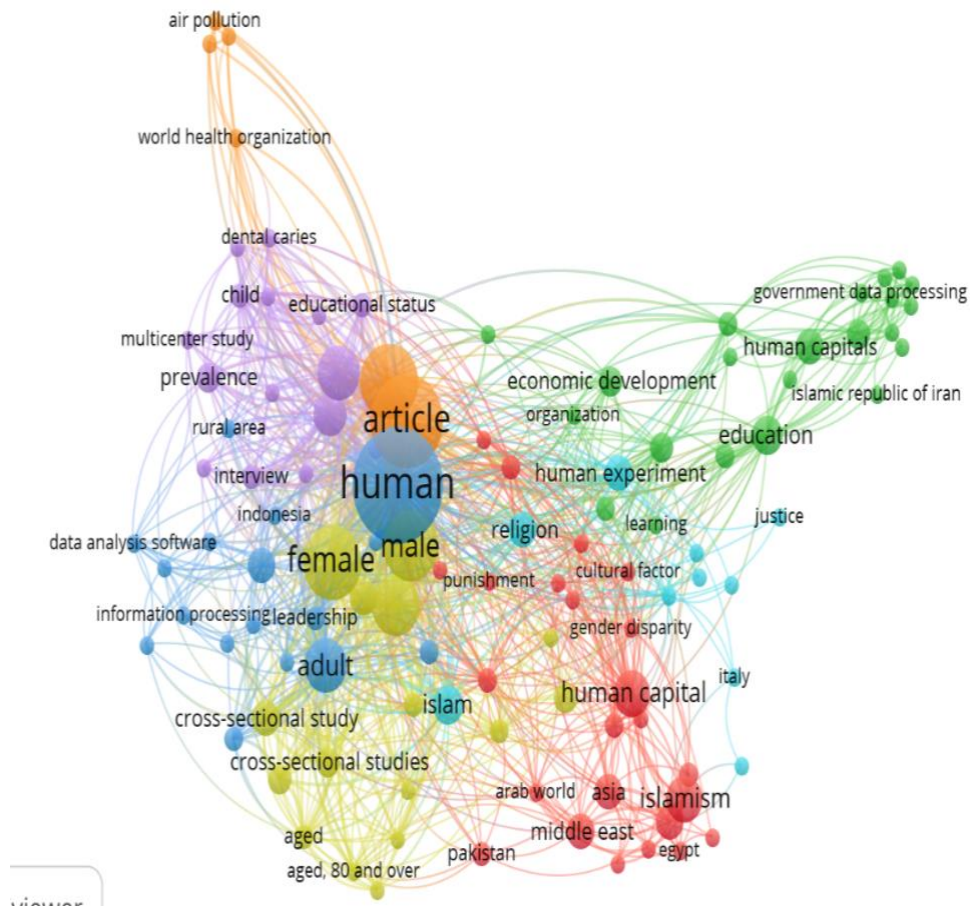


Figure 6. Co-occurrence Index

Based on the results obtained, the lighter the color, the more recent the index is used. In the word index of the paper with the theme of Islamic human capital related to Islamic economics, there are some of the most widely used words, namely Human. From the results, this is the summary of all outputs.



Tabel 1 the summary of all outputs

Rank	Keyword by Occurrence	Authors with The Highest Publication	An institution with The Highest Publication
1.	Human Capital	Nawaz T.	Department of Demography, Faculty of Social Sciences, University of Tehran, Tehran, Iran
2.	Human	Abbasi Shavazi M.J	Department for Management of Science and Technology Development, Ton Duc Thang University, Ho Chi Minh City, Viet Nam
3.	Article	Haneef M.A	Department of Education, Roudehen Branch, Islamic Azad University, Roudehen, Iran
4.	Islam	Mohammed M.O	Department of Political Science, Davidson College, Charlotte, NC, United States
5.	Intellectual Capital	Muhammad A.D	Centre for Applied Mathematics, MINES ParisTech, France
6.	Female	Pramanik A.H	Australian Demographic and Social Research Institute (ADSRI), Canberra, Australia
7.	Male	Ousama A.A	Division of Strategy, Innovation and Enterprise, Caledonian Business School, Glasgow Caledonian University, Glasgow, United Kingdom
8.	Malaysia	Sunarsi D.	Inst. of Demography (VID), Austrian Academy of Sciences, Austria
9.	Humans	Jusoff K.	International Inst. for Applied Systems Analysis (IIASA), Laxenburg, Austria
10.	Islamic Banks	Engku Ali E.R.A	London Metropolitan Business School, London Metropolitan University, United Kingdom

CONCLUSION



This study focuses on finding out how far the development of Islamic finance is to find out how many journals are written with the theme of Islamic human capital. The results show that there has been an increase in the number of published articles on the theme of Islamic human capital since 1984. Research on Islamic human capital has been carried out in many countries. An increase in the score of Islamic human capital in a country will be positively related to economic growth in that country, making economists do a lot of research related to Islamic human capital. Based on research using the bibliometric method, it was found that Nawaz T. wrote the most about Islamic human capital. The institution that publishes the most papers related to Islamic human capital is the Department of Demography, Faculty of Social Sciences, University of Tehran, Tehran, Iran. And the country that publishes the most papers related to Islamic human capital in Malaysia. All the keywords and keywords that authors most widely use in Islamic human capital-themed journals are Human Capital. And the word Human is the word most used in index papers with Islamic human capital.

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