

Exploring Islamic Insurance (Takaful) Efficiency in Scientific Literatures

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This study attempts to map research related to the efficiency of Takaful (Sharia Insurance) published by Dimensions.ai indexed journals from 2010 to 2022. NVivo 12 Plus is used to conduct thematic studies and the frequency is used to evaluate 56 publications in scientific literature. The results of the study found that the number of publications fluctuated from year to year related to Takaful efficiency research which indicated that this topic was an interesting topic and should continue to be developed. In addition, various focus discussions and cluster analysis that describe the research paths in Takaful efficiency research include (1) Cost efficiency in the takaful industry, (2) Comparison of the efficiency levels of takaful and conventional insurance, (3) Islamic insurance from a macro (industry) perspective. This research can be used as a starting point for experts to build graphical visualizations of Takaful efficiency research patterns in published scientific research.

Keywords: Islamic Insurance, Takaful, SLR

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INTRODUCTION

Based on a report issued by The Royal Islamic Strategic Studies Center (RISSC) 2022, it is estimated that the Muslim population in Indonesia reaches 237.56 million people. This amount is equivalent to 86.7% of the total population of the country. This fact indicates that Indonesia is a country with the largest Muslim population in the world.

Simultaneously with the growth in population and economic capacity of Muslims in various parts of the world, the ongoing era of modernization has strengthened the flow of increasing preference for the halal lifestyle and transactions that follow Islamic principles in the economic sphere (Izza, 2022). In this context, sharia insurance is also experiencing growth because more and more individuals and communities want financial protection services that are in line with their beliefs and values (Sulaeman, 2023).

In the period from 2010 to 2014, there was significant growth in the share of the sharia insurance industry, with an average increase of 36.22% annually. This fact illustrates the increasing public interest in sharia insurance products (OJK, 2015). However, with this rapid growth, there is a need to measure the efficiency of the Islamic insurance sector. Efficiency measurement will provide a clearer view of how this industry manages resources and provides services, and the extent of its impact on people's welfare (Herindar & Izza 2022).

In the field of academic studies, sharia insurance has recently received substantial attention and has become the concern of various researchers. Research related to takaful efficiency has been discussed in various studies (Ningsih & Suprayogi, 2017; Ade, Suryani & Azmansyah, 2018; Ghaisani, 2018; Kader, Adams & Hardwick, 2010; Antonio, Ali, & Akbar, 2013; Al-Amri, 2015 ; Saad, 2012; Ismail, Alhabshi, & Bacha, 2011; Benyoussef & Hemrit, 2019; Taib, Ashraf, & Razimi 2018). Tuffahati, Mardian & Suprpto (2016) measures the efficiency of Islamic Insurance Companies in Indonesia using Data Envelopment Analysis (DEA). The sample used in this study is a Sharia Insurance Company that publishes its complete financial statements from 2012-2014. The variables in this study consist of two kinds of variables, namely input variables and output variables. The variable inputs are total assets and commission fees. While the output variables are gross contributions and investment income. This study uses an intermediation approach with input orientation and uses three types of efficiency measurements, namely technical, pure technical and scale efficiency

measurements. The results of this study are that in the group of Sharia General Insurance Companies and Islamic Life Insurance Companies there are no companies that achieve optimal efficiency levels in the three types of measurements. Meanwhile, in the Sharia General Insurance Unit group, there are 2 companies that are optimally efficient in 3 measurements or 28.57% of the total sample companies in this group. And in the Islamic Life Insurance Unit group, there are 4 companies that are optimally efficient in 3 measurements or 25% of the total companies sampled in this group.

Benarda, Sumarwan & Hosen (2016) measured the efficiency of Islamic life insurance in Indonesia during the 2011-2014 period, analyzed the factors that affect the solvency level of the 'Tabarru' funding ratio and the solvency level of the funding ratio of Islamic life insurance companies in Indonesia on efficiency in formulating policy implications sharia life insurance to be more efficient. This study uses the DEA analysis tool (Data Envelopment Analysis). Samples were taken purposively, namely 14 sharia life insurance companies in Indonesia from 2011-2014, followed by Tobit analysis at the second level. The results of the study show that the average DEA analysis results for all DMUs (Decision Making Units) are not efficient, both economic efficiency (overall technical) and CRS with a score of 0.693116, technical efficiency (pure technical) or VRS with a score of 0.776011, and the efficiency score on the efficiency scale is 0.884275, outside of the average efficiency score. While the second level of analysis (Tobit analysis) shows that the solvency level of the tabarru funding ratio has a positive and significant effect on technical efficiency and scale. The level of the solvency ratio of the company's funding has a positive and significant effect on economic efficiency and scale.

Sabiti, Effendi & Novianti (2017) estimates the level of efficiency of Islamic insurance companies in Indonesia. The data used is taken from the respective financial reports of 14 sharia life insurance companies and 12 sharia general insurance companies for the period 2013-2015. Efficiency score estimation is carried out using the Data Envelopment Analysis (DEA) method. There are three input variables, namely assets, expenses, payment of claims and two output variables, namely income and tabarru funds obtained. The results of the study show that sharia life insurance companies and sharia general insurance companies in Indonesia have not operated efficiently.

The review studies on takaful are still limited to bibliometric studies (Khan et al., 2020; Nasir, Farooq, & Khan, 2021), literature reviews (Maysami & Kwon, 1999; Fauzi et al., 2016). Based on previous research and researchers' observations, there have been no scientometric analysis studies related to this topic using NVivo. Scientometrics is the study of the quantitative aspects of science as a discipline, as well as statistical analysis to examine research developments in a particular field of science. Thus, the renewal of this study includes the latest methods and data sources.

The purpose of this research is to identify and map research developments related to Takaful Efficiency in the world of research. This research also tries to combine new results and collect research studies related to these keywords from various literature that has been published in various indexed journals in Dimensions, by taking data from 56 journals published between 2010-2022. The data was then processed and analyzed using the NVivo 12 Plus software for automatic coding with a qualitative approach.

Furthermore, this paper will be structured as follows: First, the background and research objectives will be presented. Then the next chapter will explain the methodology used, including the data and approach used. The next section will present and report the results of the research. Finally, the fifth section will contain a closing which summarizes the main discussion and provides recommendations.

METHODOLOGY

Data

This study used Dimensions.ai indexed metadata to analyze data from research publications with the keywords "takaful", "insurance", and "efficiency" based on titles and abstracts published within the 2010-2022 timeframe. The results obtained were 56 selected articles.

Method

As for the analysis of the 56 papers, this combines qualitative methods with descriptive statistics. According to Yusuf (2017: 328), qualitative in-depth research is a research technique that focuses on exploring the meaning, characteristics, symptoms, understanding, concepts, symbols, and descriptions of a phenomenon using multiple methodologies and

narrative styles. Qualitative methods are seeking, collecting, evaluating, and interpreting extensive visual and narrative data to gain deeper knowledge about an event or topic of interest. Descriptive research is qualitative in nature; learn the techniques of collecting, collating, and summarizing research data in the discipline of statistics. Data must be frequent and sufficiently summarized for evaluation in tables, graphs, and other graphical displays. In addition, other advantages of qualitative methods are richness in data collection, valid coding, and reliable interpretation (Moretti et al., 2011).

Furthermore, the research process is described in terms of the study framework as shown in Figure 1, which describes the methodology used to carry out the qualitative study using the NVivo 12 Plus software. NVivo, one of today's most popular qualitative data management programs, has its roots in NUD*IST. Software developers have described it as an improved and extended version of NUD*IST3. NVivo has features such as character-based encoding, rich text analysis capabilities and multimedia functions which are essential for qualitative data management. One of NVivo's strengths lies in its high compatibility with research designs. The software is not methodologically specific and works well with a variety of qualitative research designs and data analysis methods such as discourse analysis, grounded theory, conversation analysis, ethnography, literature review, phenomenology, and mixed methods (Zamawe, 2015). In addition, another advantage of using NVivo 12 Plus is that it can collect, organize, analyze, and visualize unstructured or semi-structured data by importing data in various file formats, organizing demographic data, source code, capturing ideas, running queries, and visualizing project items (Izza & Rusydiana, 2022).

Finally, data in excel and csv formats are processed and then analyzed using the NVivo 12 Plus software to automatically utilize and separate data in files with sentences, paragraphs or unique text strings using the autocode wizard. From the analyzed sources then use the Auto Code Wizard to provide results.

Several similar studies on the topic of Islamic economics and finance, for example, are studies conducted by Niswah (2020), Ruhana (2021), Riani & Fatoni (2022), Izza et al., (2021), Putri (2022), Uula & Maziyyah (2022) and Sari (2022).

RESULT AND DISCUSSION



Figure 1: Number of Publications per Year

No.	Document type	Amount	Percentage
1.	Artikel	48	86%
2.	Preprint	4	7%
3.	Chapter	2	4%
4.	Monograph	1	2%
5.	Proceeding	1	2%
Total		56	100%

Based on the results of the initial search analysis in conducting an analysis of the metadata collected and obtained after running the search query, information and general descriptions regarding research articles with the keyword "takaful efficiency" are obtained. From these results there are 56 documents with an observation period of 12 years, namely 2010-2022 with the number of publications ranging from 1 to 10 with the most published publication being in 2019, namely with 10 articles. Meanwhile, the publication for 2023 does not

cover everything considering that the data was taken in August 2023.

The research articles were categorized into five groups with the most being articles (48), preprints (4), and chapters (2). From the results of the analysis of these types of documents, articles that are widely used are articles which account for 86% of the total research subjects. This means that the references used in the research can be trusted because most of them come from journal articles.

Word Frequency Query Wordcloud



Figure 2: Wordcloud of Takaful Efficiency

Analysis through the word frequency tool aims to find research problems with the highest repetition seen from the material sought. Frequently used words and terms in the text are shown in Figure 1 based on automatic coding. The word size in the word frequency results shows a higher frequency of occurrence than the others.

Based on word frequency results from 207 Dimensions indexed publications with the theme Takaful efficiency obtained from mapping and

percentages calculated automatically by the Nvivo 12 Plus Wizard. The words with the highest frequency in the research published after the word Islamic insurance were "financial" with a percentage of 0.90%, followed by "investment" at 0.55%, and followed by the third highest word, namely "takaful" at 0.35 %. In addition, the automatic coding results also show several other interesting terms such as economic, bank, risk, law, capital, funds, industry, management, efficiency, health, BPJS, products, tabarru, and fatwa.

Hierarchy Chart

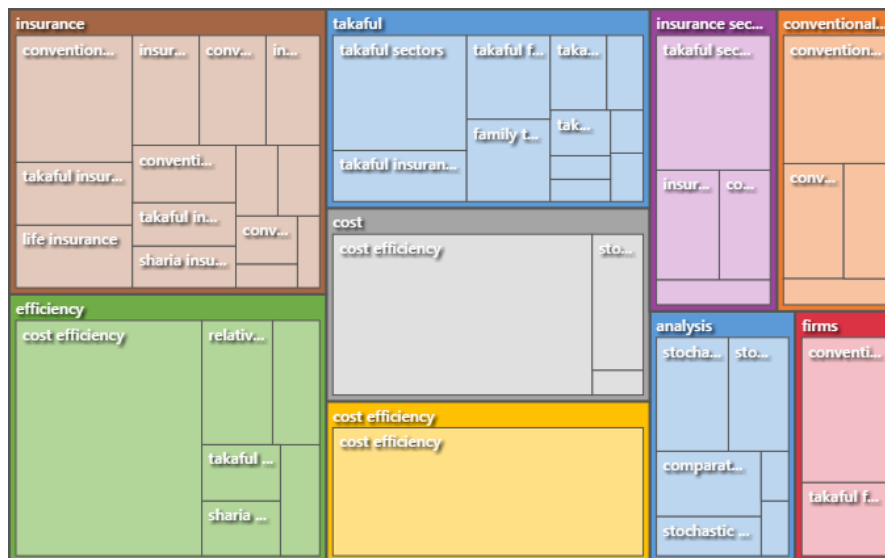


Figure 3: Hierarchy Chart "Title"

Based on the coding, it automatically generates a hierarchical chart on the title which raises several relevant themes that often appear, including insurance,

efficiency, takaful cost efficiency, firms. Among these charts the word "insurance" has a larger square footage than the others.

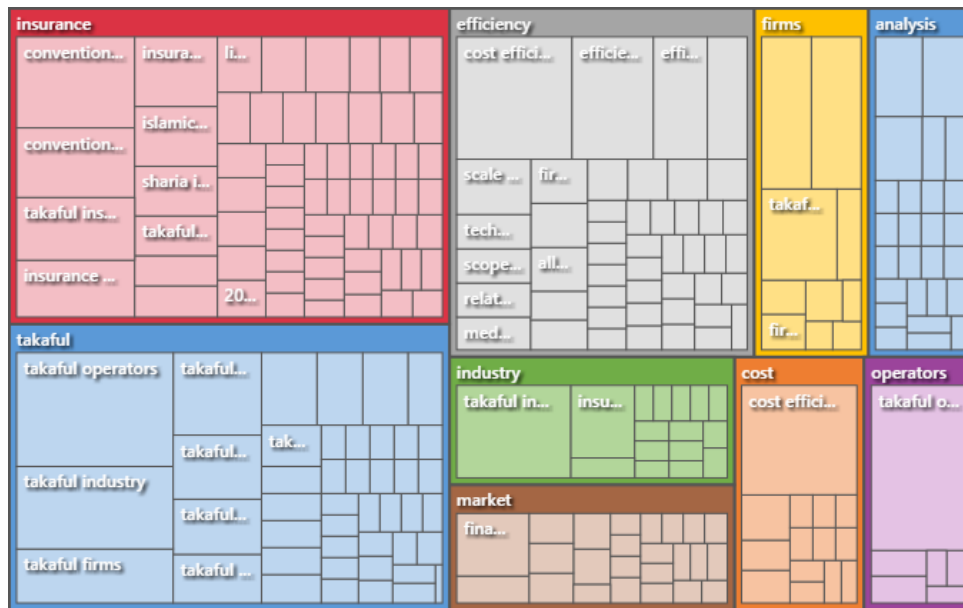


Figure 4: Hierarchy Chart "Abstract"

Based on coding, automatically generates a hierarchical chart based on author keywords. Figure 3 presents relevant themes that often arise including

insurance, takaful, efficiency, industry, market, firms. The word "insurance" has a larger square size than the others.

Treemap

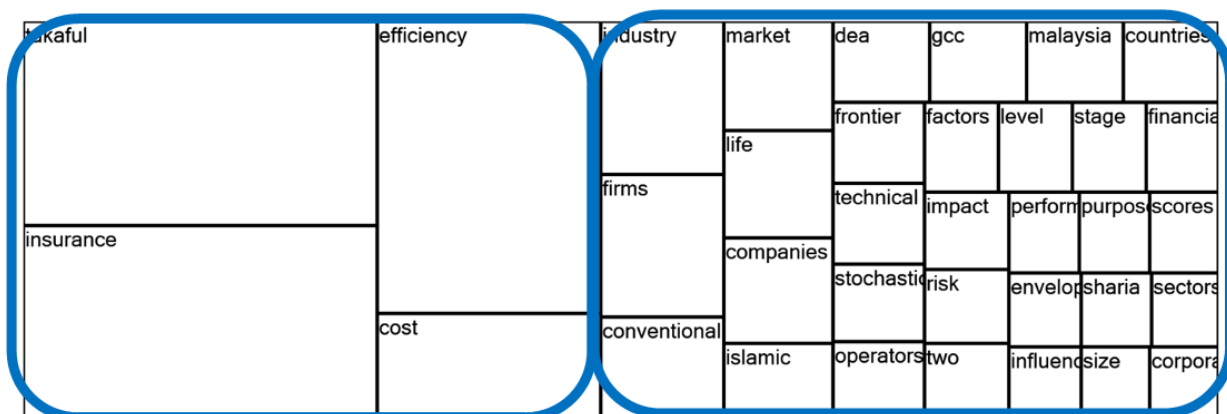


Figure 5: Treemap of Essential Concerns and Focus of Takaful Efficiency Theme

The next tool presented from Word Frequency analysis is a treemap. A treemap is a chart that shows data in hierarchical order, as a collection of nested rectangles with different dimensions, sizes, and shapes. Size shows amount based on frequency and percentage.

The treemap is scaled to fit the space offered. The sizes of the rectangles should be considered in a grid relationship with each other which results in a larger display area on the top left of the chart, compared to, a smaller rectangle on the bottom right (Help NVivo,

2020). From the analysis of Word frequency in the form of a treemap resulting from this analysis it has shown two different aspects, namely:

a) Concerns are the main concerns in grouping related general topics. Among those related to this topic is Takaful efficiency.

b) Focus, this section discusses the focus of the discussion related to measuring the performance of Islamic insurance/takaful using a company efficiency approach. The words related to this aspect include industry, firms, conventional, gcc, DEA, frontier, stochastic, size, performance.

Cluster Analysis

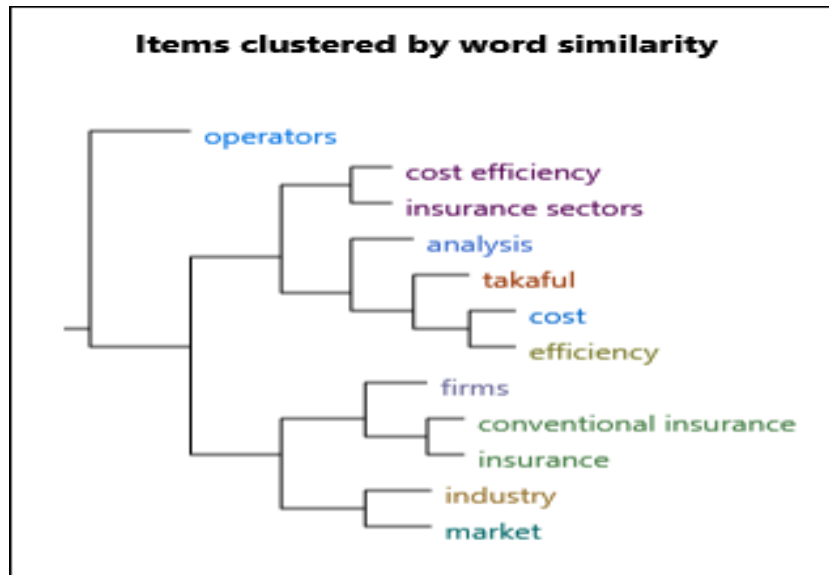


Figure 6: Items Clustered Analysis of Takaful Efficiency based on Title and Abstract

Furthermore, Figure 6 shows cluster analysis, which is a technique used in exploring and visualizing patterns in the Takaful efficiency theme in general in scientific research by grouping sources or words that are similar or related using code automatically from the NVivo 12 software based on titles and abstracts. This is used to obtain detailed and comprehensive results so that it can determine the research path related to Takaful efficiency research. There are 3 main clusters in general that group words and their relationships.

- Cluster 1 discusses cost efficiency in the takaful industry

- Cluster 2 discusses the comparison of the level of efficiency of the takaful industry and conventional insurance
- Cluster 3 discusses takaful at a macro level (industry approach)

Text Search Query

Next is an analysis of the use of words in word frequency from various research data sources, which can be seen through the Text Search Query feature. The search results are presented in the Word Tree as follows:

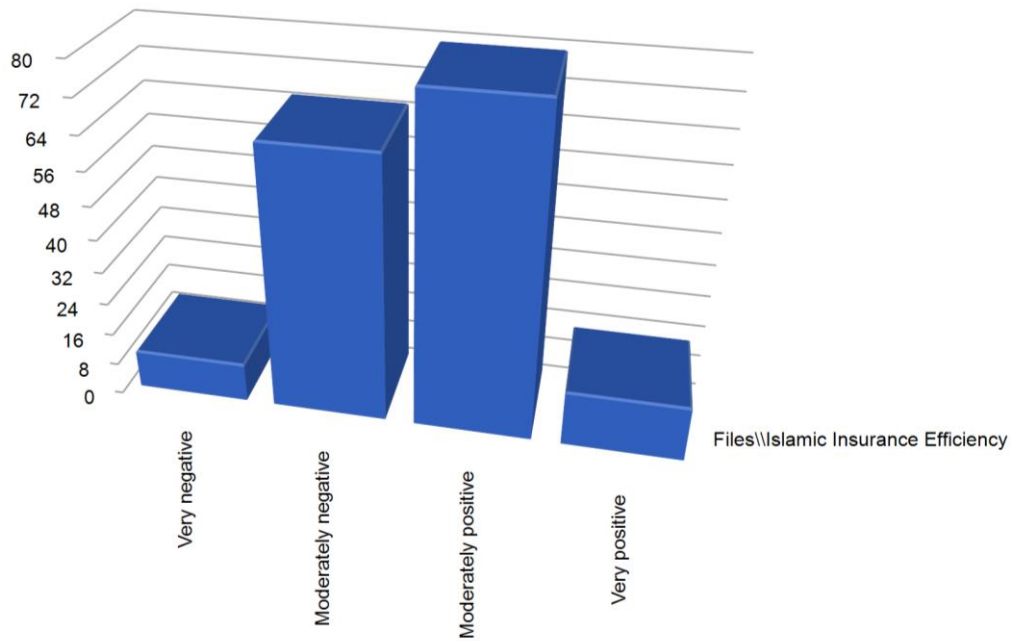


Figure 9: Bar Chart of Sentiments of Takaful efficiency using Abstract

Next, we conducted a sentiment analysis on the Takaful efficiency theme using automatic sentiment coding from NVivo 12 Plus so that the results presented are objective. In general, sentiment is shown in Figure 6 in the form of a bar chart and Figure 8 displays more comprehensive sentiment results using abstracts in articles related to Takaful efficiency research.

Sentiment analysis will later provide an expression of sentiment so that from these results we can find out whether the sentiment is positive, negative or neutral (positive and negative intersection) (Rusydziana & Izza 2022). In addition, this process uses a scoring system. Each word that contains feelings has a predetermined score. Its content is encoded in a set of sentiments, ranging from very positive to very negative (Pazmiño et al., 2020). Then from these results it was carried out to find out the perceptions of experts on the theme of Takaful efficiency.

The results of the study revealed that the majority had a moderately negative attitude towards Takaful efficiency research. This figure explains that 47% references coded with moderately positive sentiment, followed by 39% references coded moderately negative, then references coded very negative sentiment by 6%, finally references coded with very positive sentiment of 8%. From these results it is hoped that sentiment analysis can become a special study in evaluating the development of Takaful efficiency in the world of research.

CONCLUSION

This study aims to identify and map research related to the extent to which Islamic insurance/takaful efficiency research has developed in the scientific literature. The results show that there have been a number of paper publications with the theme of takaful efficiency in the last 12 years from 2010 to 2022 with 56 studies equipped with Digital-Object-Identifier (DOI) indexed Dimensions.

In addition, this review includes metadata information, co-occurrence, and sentiment analysis. This study also found that the number of publications fluctuated from year to year related to research on Islamic insurance/takaful efficiency (Graph 1), which indicates that this topic is an interesting topic and should continue to be developed. In addition, various discussion focuses and cluster analysis that describe the research paths in Islamic insurance/takaful efficiency research include (1) Cost efficiency in the takaful industry, (2) Comparison of the efficiency levels of takaful and conventional insurance, (3) Islamic insurance from a macro perspective (industry).

Thus, it is hoped that the results of this study can be used as a basic reference to see how the graphical visualization of the development of Islamic insurance/takaful efficiency research trends in published scientific research can be further developed by experts. Recommendations for further research can refer to the most popular keywords that can be discussed further. In

addition, it is possible to perform more complete bibliometric analyzes with other types of software. Finally, it should be noted that this research has limitations, namely the limited time frame and the results offered are still dynamic besides the database used is Dimensions. Suggestions for further research can use better databases such as Scopus, WoS, and other sources for more comprehensive results.

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