A BIBLIOMETRIC ANALYSIS OF ZAKAT LITERATURE FROM 1964 TO 2021

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ABSTRACT

This research provides a comprehensive historical and present development of zakat literature through bibliometrics analysis extracted from the Scopus database using Publish or Perish (PoP), RStudio, and VOSviewer. This study confirms that the literature on zakat has significantly increased during the last fifty years (1964–2021). This research identified that zakat literature had been comprehensively discussed by researchers across the nation from six aspects of research, namely the governance of zakat institutions; zakat as a poverty eradication tool; zakat compliance in an Islamic perspective; zakat as a social security scheme; the intention to pay zakat; and the distribution of zakat. This study confirms that Malaysian scholars and educational institutions have demonstrated a strong research commitment to the theme of zakat.

Keywords: zakat literature, bibliometrics approach, co-citation analysis.
INTRODUCTION

Zakat is the third pillar of Islam (Abdul Rahman, 2007) and is an obligation for every Muslim whose assets have reached *nishab* (full ownership) and *haul* (one lunar year) to be paid annually. There are eight groups of zakat recipients (*mustahik*) as stated in the Qur’an Surah At-Taubah verse 60, namely the indigent, the poor, converts, slaves, debtors, *fi sabillah*, and *ibn sabil*.

One of the functions of zakat in economic studies is to accommodate the economic and social system among Muslim communities (Hudaefi et al., 2021). In particular, zakat can contribute to realizing greater *maslahah* (public needs) when it is deposited directly to authorized institutions. On the other hand, aggregatedly it can also be a solution to reduce poverty levels. More than that, even during the Covid-19 pandemic, zakat has an important role in several countries, including Indonesia.

It was recorded that during the period 1964 - June 2021, the discussion on zakat indexed by Scopus reached 734 documents. During this period, it was noted that publications on zakat began to show an increasing trend since 2009, meaning that zakat has become an important topic to be studied by current researchers and has begun to follow the existence of other Islamic financial instruments such as Islamic banking, waqf, and Islamic capital markets.

Research on zakat is still relatively less popular when compared to the topic of Islamic banking, so studies in the field of zakat are important for current researchers (Firmansyah et al, 2020). Various bibliometric studies on zakat have been carried out by previous researchers in the journal Islamic Economics in Indonesia that have been indexed by Sinta (Firmansyah et al, 2020), this research continues existing research by extending the time-span of the literature studied, and expanding the scope research on reputable journals that have been indexed by Scopus. Moreover, this study also provide direction on the theme of zakat research that has not been researched yet.
LITERATURE REVIEW

Definition of Zakat

Zakat is an annual deduction of specified fraction from the total amount of an individual surplus wealth declared using a specified threshold (Yusuf et al., 2020). According to Muneer M Alshater et al. (2021) zakat also referred to on how an individual can be cleaned and purified from his wealth dirt by the payment of zakat. There is sense of empathy to the poor and the proactive behavior for public welfare, which clearly reflected by its allocation as mentioned in QS. At-Taubah:60 “Zakah expenditures are only for the poor and for the needy and for those employed to collect [zakah] and for bringing hearts together [for Islam] and for freeing captives [or slaves] and for those in debt and for the cause of Allah and for the [stranded] traveler - an obligation [imposed] by Allah. And Allah is Knowing and Wise” (Romdhoni, 2018).

Economic of Zakat

Among worldwide issues faces by the majority of developing and underdeveloped countries is poverty. Zakat can be functioned as a means of poverty alleviation, particularly by distributing productive zakat which its vision is converting mustahik to muzakki in a certain period (Romdhoni, 2018). At the same time, its distribution enables zakat recipients especially the poor and the needy to have higher purchasing power and uplift their economic status, thus their life could be better and even stronger (Muneer M Alshater et al., 2021).

METHODS

This research adopts bibliometrics analysis to present the development of zakat literature. The bibliometric analysis enables the researcher to investigate the current performance of the previous study based on quantitative and qualitative approaches (Yan et al., 2018). Furthermore, (Zupic & Čater, 2015) declares that bibliometric analysis provides the research result regarding the most impactful institutions, countries, journals, authors and articles and clusters the most discussed topic without subjective bias. The data was collected from the Scopus database that curated
on June 2021. The research strategy of this study is explained by figure 1.

The main objective of this research is to provide a comprehensive historical and present development of zakat literature by addressing several research questions:

1) RQ1: What is the current dynamic research trend on Zakat literature?
2) RQ2: Which are the most influential articles on zakat based on the total citation?
3) RQ3: What is the research collaboration network of Indonesian researchers on Islamic banking?
4) RQ4: What are the prevalent themes of current research on Zakat literature?
5) RQ5: What are research topic recommendations in Zakat that future research should focus on by researchers to fill the gaps from current existing studies?
Thus, to answer the previous mentioned research questions, this current research conducted the analysis based on several dimensions:
1) Annual publication and citation trend;
2) Publication activity by institutions, authors, journals, and countries;
3) Co-authorship analysis to identify the research collaboration network; and
4) Co-occurrence and co-citation analyses to reveal the research main-theme.
The selection of Scopus as the source of data relies on the previous study, including Muneer M. Alshater et al. (2020), who stated that Scopus encompass a more massive number of articles related to Islamic economics and finance with higher quality compared to its parties such as Google Scholar, EBSCO or ProQuest. Moreover, the data collection is conducted by applying certain search queries (*Zakat* OR “Zakah”) in title, abstract, and keywords. The chosen keywords are also based on prior studies on zakat literature, such as (Muneer M Alshater et al., 2021) and (Nor Paizin et al., 2021). This step yielded 734 documents before applying inclusion and exclusion criteria (see Table 1) and resulted in 522 articles and conference papers sourced from journals written in the English language as the final data covering the period from 1964 – to 2021.

This study uses Publish or Perish (PoP), RStudio, and Microsoft Excel to portray the quantitative analysis related to publication and citation trends, which is a powerful tool for measuring the impact of journals (Li & Law, 2020). Besides, the qualitative analysis regarding the research collaboration network and main research cluster is conducted by utilising VOSviewer, as it effectively maps the data based on the topic similarity (Ferreira, 2018). VOSviewer software weighted the similar pattern of research topic or collaboration based on the distance between the nodes in each cluster (Van Eck & Waltman, 2014). For instance, the shorter distance between the nodes implies a higher association between the cluster and vice versa (Van Eck & Waltman, 2010).

| Indicator | Inclusion Criterion | Exclusion Criterion |
|-----------|---------------------|---------------------|
| Article language | English. | Arabic, Malaysia, France, German, Japan, Russia dan Slovakia. |
| Document type | Article, Book Chapter, and Conference Paper. | Review, Book, Editorial, Erratum, Note, and Short Survey. |
| Source type | Journal and Conference Proceeding. | Book and Book Series. |
RESULTS AND DISCUSSION

General Information and Publication by Year

To answer RQ1, this study examines the publication trend on Zakat literature, the most contributors’ institutions, sources, and authors in publishing articles on zakat. Table 2 describes the general information from the data collected in this study. Table 2 confirm that this study covers 522 documents of zakat that are associated with 1397 keywords.

This information also presented that zakat research has attracted massive intention of researchers that shown by the huge number of authors that publish zakat literature, 1205 authors.

| Table 2. General Information  |
|-------------------------------|
| **Description**               | **Results** |
| **Main Information about Data** |             |
| Timespan                      | 1964:2021   |
| Sources (Journals and Conference Proceeding) | 245 |
| Documents                     | 522         |
| Average years from publication | 6.3        |
| Average citations per documents | 4.707     |
| Average citations per year per doc | 0.5213 |
| References                    | 17543       |
| **Document Types**            |             |
| Article                       | 463         |
| conference paper              | 59          |
| **Document Contents**         |             |
| Keywords Plus (ID)            | 761         |
| Author’s Keywords (DE)        | 1397        |
| **Authors**                   |             |
| Authors                       | 1205        |
| Author Appearances            | 1460        |
| Authors of single-authored documents | 117 |
| Authors of multi-authored documents | 1088 |
| **Authors Collaboration**     |             |
| Single-authored documents     | 129         |
| Documents per Author          | 0.433       |
Furthermore, the collaboration index between the author is 2.77, which indicates a high number of authors that are building research collaboration. An intense collaboration among the author, specifically across institutions and countries, significantly increases the article’s quality as it presents a comprehensive perspective (Hassan et al., 2021) as represented by English-language articles from the Scopus database. Using a bibliometric approach plus content analysis, we describe the field’s evolution and structure, including co-citation, co-authorship, and bibliographical coupling. We find that Malaysia is the most relevant country, the International Islamic University Malaysia (IIUM).

Figure 2 shows the publication and citation trend from 1964 – to 2021. This figure shows that during the period from 1964 to 2010, the publication of zakat was relatively low, and it significantly increased in 2011, which became double compared to the previous year.

![Figure 2. Annual Distribution of articles on Zakat between 1964 – 2021](image)

| Description                | Results |
|----------------------------|---------|
| Authors Collaboration      |         |
| Authors per Document       | 2.31    |
| Co-Authors per Documents   | 2.8     |
| Collaboration Index        | 2.77    |
This result is also in line with the result from Alshater et al. (2021), who stated that an intensive increment of zakat publication correlated with the financial crisis in 2008, and it is expected to continue higher this year after the COVID-19 pandemic. In the same vein, Ahmid & Ondes’s (2019) declare that the global financial crisis in 2008 became the starting point for the researchers and practitioners regarding Islamic finance as an alternative financial system to conventional ones due to its stability during economic downturn periods.

Figure 2 also reveals that the publication of zakat literature reached its highest number in 2019, which is 90 documents. Whereas, the number of citations shows a high number before 2005 and slightly decrease after the period. This phenomenon implies that there is a possibility that the number of citations will multiply for several next years.

**Publishing Activity by Institutions**

The most prolific institutions published on zakat literature are listed in table 3. 159 institutions contribute to producing the research, and University Utara Malaysia is on the top list with 52 documents and obtained 302 citations. In terms of the h-index, which measured the impact of publication (Eggue, 2006), International Islamic University Malaysia has the highest h-index.

| Institution                                      | TP | NCP | TC  | C/P | C/CP | h  |
|--------------------------------------------------|----|-----|-----|-----|------|----|
| Universiti Utara Malaysia                        | 52 | 35  | 302 | 5.81| 8.63 | 8  |
| Universiti Teknologi MARA                        | 36 | 21  | 95  | 2.64| 4.52 | 6  |
| International Islamic University Malaysia         | 35 | 24  | 270 | 7.71| 11.25| 11 |
| Universiti Kebangsaan Malaysia                   | 25 | 16  | 84  | 3.36| 5.25 | 6  |
| Universiti Sains Islam Malaysia                  | 18 | 11  | 73  | 4.06| 6.64 | 5  |
| Universitas Airlangga                            | 16 | 7   | 25  | 1.56| 3.57 | 3  |
| Universiti Sains Malaysia                        | 15 | 10  | 48  | 3.20| 4.80 | 4  |
| University of Malaya                             | 12 | 9   | 31  | 2.58| 3.44 | 3  |
This finding indicates that the institutions’ publication has a higher impact than others. Moreover, based on the information from table 3, this study confirms that the universities in Malaysia have become the most prolific universities conducting research in zakat, where eight out of 10 are located in Malaysia. This information implies a huge opportunity for future research to collaborate with Malaysian education institutes to obtain a deeper analysis regarding the zakat topic.

**Publishing Activity by Sources**

One hundred fifty-nine journals published the 522 articles, and table 4 listed 13 of the highest contributor’s journals with a minimum of five documents. The leading journals are the IMEFM, followed by JIABR, with the total publication are 19 and 18, respectively. However, JIABR is presented as the most-cited journal, which passed the total citation of IMEFM. Additionally, the Middle East Journal of Scientific Research has the highest H index, which implies that the journal has a significant impact on the development of zakat literature. In general, zakat literature was published in Q3, implying that journals are categorized in the 50%-70% group.

Furthermore, the scope of journals covers business and management, accounting, economics, and multidisciplinary. Most of the listed journals are not specifically published researchers on Islamic economics studies. This result reflects a need for more journals that focus on Islamic economic studies indexed by Scopus; thus, the publication will be multiplied significantly.
Table 4. Top Publishing Sources on Islamic Bank with Minimum of Five Publications

| Name of Journal | TP | TC | HI | Quartile |
|-----------------|----|----|----|---------|
| International Journal of Islamic and Middle Eastern Finance and Management (IMEFM) | 19 | 127 | 29 | Q2 |
| Journal of Islamic Accounting and Business Research (JIABR) | 18 | 151 | 20 | Q3 |
| International Journal of Innovation Creativity and Change | 13 | 4 | 14 | NR |
| Advanced Science Letters | 10 | 4 | 27 | NR |
| IOP Conference Series Earth and Environmental Science | 10 | 4 | 26 | NR |
| Al Shajarah | 9 | 4 | 3 | Q3 |
| Global Journal Al Thaqafah | 9 | 45 | 6 | Q4 |
| Journal Of King Abdulaziz University Islamic Economics | 9 | 7 | 9 | Q3 |
| Humanomics | 8 | 80 | 0 | Ds |
| International Journal of Supply Chain Management | 8 | 7 | 17 | NR |
| Middle East Journal of Scientific Research | 8 | 25 | 46 | Q3 |
| Opcion | 8 | 4 | 18 | Q3 |

Note: TP=Total Publication; TC=Total Citation; HI=H-Index; NR=Journal not rated; NA=The information is not available; and Ds=Discontinued.

Publishing Activity by Authors

One hundred fifty-nine researchers published their articles on zakat literature. Table 5 portrays the top productive researchers. As presented in table 5, Saad, R.A.J., from University Utara Malaysia, published the most documents (15) on zakat literature. 13 of the documents were cited 61 times. Saad, R.A.J. also became the most prolific author, as shown by his h-index is 5, the highest number compared to other authors. Besides, an interesting fact is also pictured by the highest citation of articles from Wahab, N.A. that have five documents cited 85 times, leading the author to have the highest C/P. Wahab, N.A. published an article in 2011 that discussed zakat’s efficiency and governance and was already cited by 54 documents.
Table 5. Top Publishing Authors on Islamic Bank with Minimum of Five Publications

| Author                | Affiliation                  | TP | NCP | TC  | C/P  | C/CP | H  |
|-----------------------|------------------------------|----|-----|-----|------|------|----|
| Saad, R.A.J.          | Universiti Utara Malaysia    | 15 | 13  | 61  | 4.07 | 4.69 | 5  |
| Johari, F.            | Universiti Sains Islam Malaysia | 6  | 6   | 31  | 5.17 | 5.17 | 4  |
| Sawandi, N.           | Universiti Utara Malaysia    | 6  | 5   | 17  | 2.83 | 3.4  | 3  |
| Abdul-Jabbar, H.      | Universiti Utara Malaysia    | 5  | 4   | 21  | 4.2  | 5.25 | 4  |
| Aziz, S.A.            | Universiti Utara Malaysia    | 5  | 4   | 21  | 4.2  | 5.25 | 4  |
| Bin-Nashwan, S.A.     | Seiyun University            | 5  | 4   | 21  | 4.2  | 5.25 | 4  |
| Doktoralina, C.M.     | Universitas Mercu Buana      | 5  | 3   | 9   | 1.8  | 3.0  | 2  |
| Ismail, A.G.          | Universiti Sains Islam Malaysia | 5  | 3   | 18  | 3.6  | 6.0  | 3  |
| Shaikh, S.A.          | SZABIST Dubai                | 5  | 3   | 6   | 1.2  | 2.0  | 1  |
| Wahab, N.A.           | Universiti Utara Malaysia    | 5  | 5   | 85  | 17.0 | 17.0 | 4  |

Note: TP=Total Publication; NCP=number of cited publications; TC=total citations; C/P=average citations per publication; C/CP=average citations per cited publication; h=h-index, and ZABIST Dubai=Shaheed Zulfikar Ali Bhutto Institute of Science and Technology, Karachi, Department of Management Sciences, Karachi, Pakistan.

Influential Articles based on Total Citations

RQ2 is addressed by providing the most cited articles on zakat literature based on the local citation. The number of local citations indicates how many times the document has been cited inside the field’s network of papers, in this case, within the Scopus database. Highly cited articles are presented the most discusses topic in a certain area of study, which also becomes the indicator to describe the structure intelligence of current research development and predict the future research pattern (Hassan et al., 2021) as represented by English-language articles from the Scopus database. Using a bibliometric approach plus content
analysis, we describe the field’s evolution and structure, including co-citation, co-authorship, and bibliographical coupling. We find that Malaysia is the most relevant country, the International Islamic University Malaysia (IIUM).

Table 6 informs that the article was written by Hassan & Syafri Harahap (2010) as the most cited article which presents the accounting and auditing of Corporate Social Responsibility (CSR) report for Islamic Financial Institution (IFIs), particularly for Islamic banking, to enhance their reputation globally. Scott (1987) provides an examination of Malay peasant opposition to the Islamic zakat today and French peasant resistance to the Christian tithe earlier in history.

Moreover, Kochuyt (2009) assesses the ideal zakat type as a gift for the needed society. Aribi & Gao (2011) examine the impact of Islam on CSR and corporate social responsibility disclosure in IFIs. Metwally (1997) investigates the impact of applying Islamic economics principles to a country’s economic system. In sum, this study found that Islamic societies tend to experience numerous difficulties if they prohibit the interest rate, utilize zakat as the state’s tax, and avoid all kinds of uncertainties. Based on the above result analysis, it can be concluded that the most discussed topic is the accounting standard for zakat and its impact on economic stability.

| Author and Year         | Article Title                                                                 | TC  |
|------------------------|------------------------------------------------------------------------------|-----|
| (Haniffa & Hudaib, 2007) | Exploring corporate social responsibility disclosure: the case of Islamic banks | 218 |
| (Scott, 1987)           | Resistance without Protest and without Organization: Peasant Opposition to the Islamic Zakat and the Christian Tithe | 106 |
| (Kochuyt, 2009)         | God, gifts and poor people: On charity in Islam                              | 50  |
| (Aribi & Gao, 2011)     | Narrative disclosure of corporate social responsibility in Islamic financial institutions | 44  |
| (Metwally, 1997)        | Economic consequences of applying Islamic principles in Muslim societies     | 41  |
| Author and Year               | Article Title                                                                 | TC |
|------------------------------|------------------------------------------------------------------------------|----|
| (Vinnicombe, 2010)          | AAOIFI reporting standards: Measuring compliance                             | 30 |
| (Amalina Wan Abdullah et al., 2013) | Shari’ah disclosures in Malaysian and Indonesian Islamic banks: The Shari’ah governance system | 29 |
| (Ahmad Basharat et al., 2002)  | Frequency of known risk factors for stroke in poor patients admitted to Lahore General Hospital in 2000 | 26 |
| (Krafess, 2005)              | The influence of the Muslim religion in humanitarian aid                      | 25 |
| (Weiss, 2002)                | Reorganising social welfare among Muslims: Islamic voluntarism and other forms of communal support in Northern Ghana | 24 |

Note: TC=Total Citation

**Co-authorship analysis**

This study answered the RQ3 (What is the research collaboration network of Indonesian researchers on Islamic banking?) by conducting the co-authorship analysis. The intensive research collaboration will improve the efficiency and effectiveness of research. In another line, Paltrinieri et al. (2020) emphasize that uncovering the research collaboration pattern will help the researcher conduct multi-countries, institutions, and authors. In interpreting the co-authorship analysis (visualized by VOSviewer), Van Eck & Waltman (2014) stated that the relevance of a collaboration between the node is explained by its density and size, while the distance between the nodes indicates the connection strength between the parties.

**Co-authorship analysis: Country**

Figure 3 and Table 7 present the collaboration pattern amongst the countries with a minimum of five documents that Scopus-indexed journals have published.
Table 7. Co-authorship: Country

| Cluster 1 – Red   | Cluster 2 – Green          | Cluster 3 – Dark Blue            |
|------------------|-----------------------------|----------------------------------|
| Malaysia         | Pakistan                    | United States                    |
| Bahrain          | India                       | Bangladesh                        |
| Nigeria          | Russian Federation          | Australia                         |
| Yemen            | United Arab Emirates        |                                   |

| Cluster 4 – Yellow | Cluster 5 – Violet            | Cluster 6 – Light Blue            |
|--------------------|-------------------------------|----------------------------------|
| Indonesia          | Saudi Arabia                  | Brunei Darussalam                |
| Oman               | Tunisia                       | United Kingdom                   |

Figure 3 illustrates that Malaysia (red) has become the hub center of the research collaboration network, which is proven by the biggest node and has a strong association with Indonesian researchers (yellow). Moreover, table 7 depicts six clusters in this collaboration, which means that each country in the same cluster tends to have a strong association within the cluster.

Figure 3. Co-authorship network map between the countries
Co-authorship analysis: Authors

Figure 4 and Table 8 describe the research collaboration pattern among the author in zakat literature.

Co-occurrence on author keyword

Figure 5. Co-occurrence: Author keywords

Bahoo (2020) declares that keyword analysis often used in research can be an indicator in measuring the sub-themes that dominate a research field. Figure 5 and Table 8 demonstrate the most used keywords by the authors in zakat literature with
According to the author keywords presented in figure 5 and table 8, this study identified that the green cluster is discussed the governance of zakat institutions, the red cluster is associated with the distribution of zakat topics, the sub-theme of the dark blue cluster widely concerns about zakat compliance in Islamic perspective, the violet cluster examined the role of zakat as a poverty eradication tool, and finally, the yellow cluster assessed zakat as a social security scheme.

Table 8. Top five most influential author keywords (co-occurrence analysis)

| Cluster | Keyword                        | Occurrence | Sub-theme                      |
|---------|--------------------------------|------------|--------------------------------|
| 1 – Green | Zakat                           | 128        | The governance of zakat institutions |
|         | Malaysia                        | 37         |                                |
|         | Zakat institution               | 13         |                                |
|         | Education                       | 8          |                                |
|         | Service quality                 | 8          |                                |
|         | Social welfare                  | 7          |                                |
|         | Trust                           | 6          |                                |
|         | Welfare                         | 6          |                                |
|         | Zakat institutions              | 6          |                                |
| 2 – Red | Zakah                           | 17         | The distribution of zakat       |
|         | Zakat distribution              | 9          |                                |
|         | Sharia                          | 8          |                                |
|         | Zakat management                | 8          |                                |
|         | Asnaf                           | 7          |                                |
|         | Islamic banking                 | 7          |                                |
|         | Mustahiq                        | 6          |                                |
|         | Corporate governance            | 5          |                                |
|         | Management                      | 4          |                                |
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| Cluster     | Keyword                        | Occurrence | Sub-theme                                      |
|-------------|--------------------------------|------------|-----------------------------------------------|
| 3 – Dark blue| Islam                          | 46         | Zakat compliance in Islamic perspective       |
|             | Religion                       | 14         |                                               |
|             | Governance                     | 12         |                                               |
|             | Accountability                 | 10         |                                               |
|             | Saudi Arabia                   | 8          |                                               |
|             | Compliance                     | 6          |                                               |
|             | Religiosity                    | 6          |                                               |
|             | Islamic bank                   | 4          |                                               |
| 4 – Violet  | Poverty                        | 30         | Zakat as a poverty eradication tool           |
|             | Waqf                           | 25         |                                               |
|             | Indonesia                      | 20         |                                               |
|             | Poverty alleviation            | 19         |                                               |
|             | Bangladesh                     | 13         |                                               |
|             | Zakāh                          | 6          |                                               |
|             | Islamic philanthropy           | 4          |                                               |
| 5 – Yellow  | Islamic social finance         | 12         | Zakat as a social security scheme             |
|             | Corporate social responsibility| 10         |                                               |
|             | Financial performance          | 10         |                                               |
|             | Islamic banks                  | 8          |                                               |
|             | Charity                        | 6          |                                               |
|             | Pakistan                       | 6          |                                               |
|             | Zakāt                          | 4          |                                               |

**Co-citation analysis**

A scenario in which another document cites two documents simultaneously is known as co-citation (Fabregat-Aibar et al., 2019). Co-citation, according to Small (1973) and Liu et al. (2015), is a tool for analyzing areas, concepts, methodologies, and important themes that are rapidly evolving in a study field. Thus, this study identified the most discussed topic by providing the information in figure 6, table 9.
Figure 6. Co-citation Network Based on References

Figure 6 captured co-citation of articles in zakat literature and found seven clusters in the analysis, however, this study excluded the light blue cluster and orange cluster due to the scant amount of the total of articles. Hence, table 9 provide the title of each article that have been co-cited. By conducting brief review based on the article’s title and abstract, this study identified several sub-themes. the governance of zakat institutions (red), zakat as a poverty eradication tool (green), zakat compliance in Islamic perspective (dark blue), zakat as a social security scheme (yellow), and the intention to pay zakat (violet).
Table 9. Top cited references based on co-citation

| Cluster | Author | Title | Sub-theme |
|---------|--------|-------|-----------|
| 1 – Red | (Bidin et al., 2009) | Predicting compliance intention on zakah on employment income in Malaysia: An application of reasoned action theory | The governance of zakat institutions |
|         | (Krejcie & Morgan, 1970) | Determining Sample Size for Research Activities | |
|         | (Powelt, 2009) | Zakat: Drawing Insights for Legal Theory and Economic Policy from Islamic Jurisprudence | |
|         | (Andam & Osman, 2019) | Determinants of intention to give zakat on employment income: Experience from Marawi City, Philippines | |
|         | (Azman & Bidin, 2015) | Zakat Compliance Intention Behavior on Saving | |
|         | (Cohen, 1998) | Statistical Power Analysis for the Behavioral Sciences | |
|         | (Henseler et al., 2009) | The use of partial least squares path modeling in international marketing | The Performance of the Institution of Zakah in Theory and Practice |
|         | (Kahf, 1999) | | |
|         | (Al-qardawi Y., 1999) | Fiqh Al Zakah: A Comparative Study of Zakah, Regulations and Philosophy in the Light of Quran and Sunnah | |
|         | (Ammani et al., 2014) | Zakah on Employment Income in Muslims Majority States of Nigeria: Any Cause for Alarm? | |
| Cluster       | Author                                         | Title                                                                 | Sub-theme                                                                 |
|--------------|-----------------------------------------------|----------------------------------------------------------------------|--------------------------------------------------------------------------|
| 2 – Green    | (Ahmed, 2004)                                 | Role of Zakat and Awqaf in Poverty Alleviation                      | Zakat as a poverty eradication tool                                      |
|              | (Kabir Hassan & Masrur Khan, 2007)            | Zakat, External Debt and Poverty Reduction Strategy in Bangladesh   |                                                                           |
|              | (Kahf, 2013)                                  | Zakat: Unresolved Issue in the Contemporary Fiqh                     |                                                                           |
|              | (Raimi et al., 2014)                          | Corporate social responsibility, Waqf system and Zakat system as faith-based model for poverty reduction |                                                                           |
|              | (MMNs                                          | Corporate social responsibility, Waqf system and Zakat system as faith-based model for poverty reduction |                                                                           |
|              | (Al-qardawi Y., 1999)                         | A Comparative Study of Zakah, Regulations and Philosophy in the Light of Qur’an and Sunnah |                                                                           |
|              | (Kahf, 2004)                                  | Islamic Economics: What Went Wrong?                                 |                                                                           |
|              | (Kahf, 2004)                                  | Role of Microfinance in Poverty Alleviation: Lessons from Experiences in Selected IDB Member Countries |                                                                           |
| Cluster     | Author                          | Title                                                                 | Sub-theme                                                                 |
|------------|---------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------------|
| 3 – Dark blue | (Sulaiman, 2003)               | The influence of riba and zakat on Islamic accounting                | Zakat compliance in Islamic perspective                                  |
|            | (Abu-Tapanjeh, 2009)           | Corporate governance from the Islamic perspective: A comparative analysis with OECD principles |                                                                            |
|            | (Ali & Hatta, 2014)            | Zakat as a poverty reduction mechanism among the Muslim community: Case study of Bangladesh, Malaysia, and Indonesia |                                                                            |
|            | (Lessy et al., 2020)           | Philanthropic zakat for the disadvantaged: Recipient perspectives from Indonesia |                                                                            |
|            | (Chong & Liu, 2009)            | Islamic banking: Interest-free or interest-based?                    |                                                                            |
|            | (Abdul Rahman, 2007)           | Pre-requisites for effective integration of zakah into mainstream Islamic financial system in Malaysia |                                                                            |
|            | (Maali et al., 2006)           | the Islamic law of human conduct. The Islamic principles upon which the banks claim to operate give an important role to social issues. Applying these principles, we develop a benchmark set of social disclosures appropriate to Islamic banks. These are then compared, using a disclosure index approach, the actual social disclosures contained in the annual reports of twenty-nine Islamic banks (located in sixteen countries) | Social reporting by Islamic banks |
| Cluster  | Author                                      | Title                                                                 | Sub-theme                                               |
|---------|---------------------------------------------|----------------------------------------------------------------------|---------------------------------------------------------|
| 4 – Yellow | (Ibrahim, D., & Ruziah Ghazali, 2014)        | this paper attempts to analyse the potential of zakah fund as a source of Islamic micro financing to productive zakah recipients. The analysis is divided into several parts. Firstly, this paper discusses on the rationale of zakah fund as a source of micro financing to small Muslim entrepreneurs. It is then followed by the feasibility study of zakah as a micro financing mechanism. Thirdly, this paper shares the practicality analysis of the mechanism by sharing the experience of Selangor Zakah Board (Lembaga Zakat Selangor - LZS) | Zakat as a social security scheme |
|         | (Salim, 2008)                               | Challenging the secular state: The Islamization of law in modern Indonesia |                                                        |
|         | (M.U. Chapra, 1992)                         | Islam and the Economic Challenge                                      |                                                        |
|         | (Auda, 2008)                                | Maqasid Al-Shariah A Beginner’s Guide                                 |                                                        |
|         | (Chapra, M.U., Khan, S. and Shaikh-Ali, 2008)| The Islamic Vision of Development in the Light of Maqasid Al-Shariah |                                                        |
|         | (M. Umer Chapra, 2000)                      | Is it necessary to have Islamic economics?                           |                                                        |
Based on the co-occurrence of author keywords and co-citation analysis of the document, this study discovers a robust result concerning the research’s main themes from zakat literature. However, there are small differences in the result: zakat as a social security scheme theme found in co-occurrence author keywords and the intention to pay zakat theme found in co-citation analysis. This study’s result corroborates the previous study conducted by Muneer M Alshater et al. (2021) who found four main themes that are mostly discussed in zakat literature, including the role of zakat in reducing poverty, zakat institution and zakat within a religious context. Hence based on the previous analyses, this study identified six themes that dominated zakat publication as follows:

1. The governance of zakat institutions
2. Zakat as a poverty eradication tool
3. Zakat compliance in Islamic perspective
4. Zakat as a social security scheme
5. Intention to pay zakat
6. The distribution of zakat
Future research direction

RQ5: What are research topic recommendations in Zakat that future research should focus on by researchers to fill the gaps from current existing studies?

Through this study, Malaysian researcher are known being dominated in zakat as the topic of study, which then followed by Indonesian. This finding also supported by Alshater et al. (2021), who suggest for future researcher worldwide to extend this topic in the non-majority Muslim countries. From the suggestion of several studies, there are several topics need further inquiry such as the factors affecting individuals to pay zakat formally (Hudaefi et al., 2021), an appropriate mechanism and administration of zakat (Abdul Rahman, 2007; Rahman, et al., 2021), and performance measurement analysis from the view of zakat recipient (Ibrahim & Ruziah, 2014). In addition to that, the use of socio-economic theories can be considered by further studies as suggested by (Hudaefi et al., 2021).

Table 10. Future Research Direction

| Authors                    | Suggested Future Studies                                                                 |
|----------------------------|----------------------------------------------------------------------------------------|
| Hudaefi et al (2021)       | 1. to understand the trend of zakat collection during the pandemic. (mechanism)         |
|                            | 2. critical to further develop the theory of socio-economic zakat by presenting more evidence from zakat practices worldwide. (allocation) |
| Firmansyah et al (2020)    | 1. the possibility of studying the zakat performed by Islamic banking (performance)    |
| Yusuf & Yerima (2020)      | 1. improving by focusing on other and more databases. This will enable the exploration of details not captured in the scope of this study (data source) |
| Rahman et al (2021)        | 1. issues that need to be tackled to ensure that the administration of zakat is moving on the right track, (to eradicate poverty and to upgrade people’s standard) |
Supriani et al.

| Authors                  | Suggested Future Studies                                                                 |
|--------------------------|------------------------------------------------------------------------------------------|
| Abdul Rahman (2007)      | 1. more research is needed to address all the above pre-requisites.                      |
|                          | 2. the federal government, state governments and other related agencies and authorities need to come together to seriously discuss the above issues despite the existing differences and historical backgrounds. |
|                          | 3. there is a need for a political will by the government to push the initiative to reform the institution of zakat in Malaysia |
| Ibrahim & Ruziah (2014)  | 1. proper mechanism (institution & recipient)                                             |
|                          | 2. monitoring procedure by zakat institution                                              |
|                          | 3. impact assessment for successful of recipient                                           |

CONCLUSION

This study utilizes the bibliometrics approach to portray the current status and trend development of zakat literature published by a journal-indexed in Scopus, covering the period of publication from 1964–2021. The analysis of 522 articles demonstrated that Universiti Utara Malaysia, IMEFM, and Saad, R. A. J have become the most institution, journal, and authors published in zakat literature, respectively. Moreover, the article by Haniffa & Hudaib (2007) is the most cited worldwide. Interestingly, this study confirmed that Malaysian authors mainly dominate Zakat research. Thus, Malaysia has become the hub of the research collaboration network, with a strong collaboration with Indonesian researchers.

Importantly, this study reveals six themes that have been widely discussed by the researchers in zakat literature, namely, the governance of zakat institutions; zakat as a poverty eradication tool; zakat compliance in an Islamic perspective; zakat as a social security scheme; the intention to pay zakat; and the distribution of zakat. Hence, further research is suggested to investigate the other aspect of zakat, which requires a deeper analysis.

This study has several limitations, in addition to its theoretical and practical implications. First, this only considers articles written in English sourced from the Scopus database. Hence, other significant studies published by non-indexed Scopus journals might be excluded. Thus, further research is suggested to accommodate various databases, including Google Scholar and ISI Web of Science (WOS).
REFERENCES
Abdul Rahman, A. R. (2007). Pre-requisites for effective integration of zakah into mainstream Islamic financial system in Malaysia. *Islamic Economic Studies, 4*(2), 91–107.

Abu-Tapanjeh, A. M. (2009). Corporate governance from the Islamic perspective: A comparative analysis with OECD principles. *Critical Perspectives on Accounting, 20*(5), 556–567. https://doi.org/https://doi.org/10.1016/j.cpa.2007.12.004

Ahmad Basharat, R., Yousuf, M., Iqbal, J., & Khan, M. M. (2002). Frequency of known risk factors for stroke in poor patients admitted to Lahore General Hospital in 2000. *Pakistan Journal of Medical Sciences, 18*(4), 280–283. https://www.scopus.com/inward/record.uri?eid=2-s2.0-0036820437&partnerID=40&md5=62971a7ca3ac0db57e0ca78d78ba565b

Ahmed, H. (2004). *Role of Zakat and Awqaf in Poverty Alleviation*. IRTI-IDB.

Ahmid, A., & Ondes, T. (2019). Bibliometric Analysis of PHD Dissertations Written in Islamic Bank and Finance in the United Kingdom. *Journal of Islamic Economics and Finance, 5*(1), 63–91.

Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Prentice Hall, Inc.

Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes, 50*(2), 179–211. https://doi.org/10.1016/0749-5978(91)90020-T

Al-qardawi Y. (1999). *Fiqh Al Zakah: A Comparative Study of Zakah, Regulations and Philosophy in the Light of Quran and Sunnah*. King Abdulaziz University Scientific Publishing Center.

Al Jaffri Saad, R., & Haniffa, R. (2014). Determinants of zakah (Islamic tax) compliance behavior. *Journal of Islamic
Supriani et al. (2014). Zakat as a poverty reduction mechanism among the muslim community: Case study of Bangladesh, Malaysia, and Indonesia. *Asian Social Work and Policy Review, 8*(1), 59–70. https://doi.org/10.1111/aswp.12025

Ali, I., & Hatta, Z. A. (2014). Zakat as a poverty reduction mechanism among the muslim community: Case study of Bangladesh, Malaysia, and Indonesia. *Asian Social Work and Policy Review, 8*(1), 59–70. https://doi.org/10.1111/aswp.12025

Alshater, M M, Saad, R. A. J., Abd. Wahab, N., & Saba, I. (2021). What do we know about zakat literature? A bibliometric review. *Journal of Islamic Accounting and Business Research, 12*(4), 544–563. https://doi.org/10.1108/JIABR-07-2020-0208

Alshater, Muneer M., Hassan, M. K., Khan, A., & Saba, I. (2020). Influential and intellectual structure of Islamic finance: a bibliometric review. *International Journal of Islamic and Middle Eastern Finance and Management, 14*(2), 339–365. https://doi.org/10.1108/IMEFM-08-2020-0419

Alshater, Muneer M, Saad, R. A. J., Abd. Wahab, N., & Saba, I. (2021). What do we know about zakat literature? A bibliometric review. *Journal of Islamic Accounting and Business Research, 12*(4), 544–563. https://doi.org/10.1108/JIABR-07-2020-0208

Amalina Wan Abdullah, W., Percy, M., & Stewart, J. (2013). Shari’ah disclosures in Malaysian and Indonesian Islamic banks: The Shari’ah governance system. *Journal of Islamic Accounting and Business Research, 4*(2), 100–131. https://doi.org/10.1108/JIABR-10-2012-0063

Ammani, S. A., Abba, S. A., & Dandago, K. I. (2014). Zakah on Employment Income in Muslims Majority States of Nigeria: Any Cause for Alarm? *Procedia - Social and Behavioral Sciences, 164*, 305–314. https://doi.org/https://doi.org/10.1016/j.sbspro.2014.11.081

Andam, A. C., & Osman, A. Z. (2019). Determinants of intention to give zakat on employment income: Experience from Marawi City, Philippines. *Journal of Islamic Accounting*
Aribi, Z. A., & Gao, S. S. (2011). Narrative disclosure of corporate social responsibility in Islamic financial institutions. *Managerial Auditing Journal, 27*(2), 199–222. https://doi.org/10.1108/02686901211189862

Auda, J. (2008). *Maqasid Al-Shariah A Beginner’s Guide*. IIIT.

Azman, F. M. N., & Bidin, Z. (2015). Zakat Compliance Intention Behavior on Saving. *International Journal of Business and Social Research, 5*(1), 118–128.

Bahoo, S. (2020). Corruption in banks: A bibliometric review and agenda. *Finance Research Letters, 35*(March). https://doi.org/10.1016/j.frl.2020.101499

Bidin, Z., Idris, K. M., & Shamsudin, F. M. (2009). Predicting compliance intention on zakah on employment income in Malaysia: An application of reasoned action theory. *Jurnal Pengurusan, 28*, 85–102. https://doi.org/10.17576/pengurusan-2009-28-05

Chapra, M. U., Khan, S. and Shaikh-Ali, A. A. (2008). *The Islamic Vision of Development in the Light of Maqasid Al-Shariah*. IIIT.

Chapra, M. Umer. (2000). Is it necessary to have Islamic economics? *Journal of Socio-Economics*. https://doi.org/10.1016/S1053-5357(00)00051-2

Chapra, M. U. (1992). *Islam and the Economic Challenge*. The Islamic Foundation.

Chong, B. S., & Liu, M.-H. (2009). Islamic banking: Interest-free or interest-based? *Pacific-Basin Finance Journal, 17*(1), 125–144. https://doi.org/https://doi.org/10.1016/j.pacfin.2007.12.003

Cohen, J. (1998). Statistical Power Analysis for the Behavioral Sciences. In *The SAGE Encyclopedia of Research Design* (2nd edition). Lawrence Erlbaum Associates. https://doi.org/10.4135/9781071812082.n600
Eggue, L. (2006). Theory and practise of the g-index. *Scientometrics, 69*(1), 131–152.

Fabregat-Aibar, L., Barberà-Mariné, M. G., Terceño, A., & Pié, L. (2019). A bibliometric and visualization analysis of socially responsible funds. *Sustainability (Switzerland), 11*(9). https://doi.org/10.3390/su11092526

Ferreira, F. A. F. (2018). Mapping the field of arts-based management: Bibliographic coupling and co-citation analyses. *Journal of Business Research, 85* (September 2015), 348–357. https://doi.org/10.1016/j.jbusres.2017.03.026

Firmansyah, E. A., Alamanda, A. R., & Santoso, T. (2020). An Evaluation of Scholarly Works in Zakat: A Bibliometric Analysis of Islamic Economic Journals in Indonesia. *Amwaluna: Jurnal Ekonomi Dan Keuangan Syariah, 4*(3), 311–323.

Fishbein, M., & Ajzen, I. (1975). Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research. In *Reading, MA: Addison-Wesley*. https://doi.org/10.1017/CBO9781107415324.004

Haniffa, R., & Hudaib, M. (2007). Exploring the ethical identity of Islamic Banks via communication in annual reports. *Journal of Business Ethics, 76*(1), 97–116. https://doi.org/10.1007/s10551-006-9272-5

Hassan, A., & Syafri Harahap, S. (2010). Exploring corporate social responsibility disclosure: the case of Islamic banks. *International Journal of Islamic and Middle Eastern Finance and Management, 3*(3), 203–227. https://doi.org/10.1108/17538391011072417

Hassan, M. K., Alshater, M. M., Hasan, R., & Bhuiyan, A. B. (2021). Islamic microfinance: A bibliometric review. *Global Finance Journal, 49*. https://doi.org/10.1016/j.gfj.2021.100651

Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international
marketing. In R. R. Sinkovics & P. N. Ghauri (Eds.), *New Challenges to International Marketing* (Vol. 20, pp. 277–319). Emerald Group Publishing Limited. https://doi.org/10.1108/S1474-7979(2009)0000020014

Hudaefi, F. A., Caraka, R. E., & Wahid, H. (2021). Zakat administration in times of COVID-19 pandemic in Indonesia: a knowledge discovery via text mining. *International Journal of Islamic and Middle Eastern Finance and Management*, ahead-of-p(ahead-of-print). https://doi.org/10.1108/imefm-05-2020-0250

Ibrahim, D., & Ruziah Ghazali, D. (2014). Zakah as an Islamic Micro-Financing Mechanism to Productive Zakah Recipients. *Asian Economic and Financial Review, 4*(1), 117-125. http://www.pakinsight.com/pdf-files/aefr 4(1), 117-125.pdf

Kabir Hassan, M., & Masrur Khan, J. (2007). Zakat, External Debt and Poverty Reduction Strategy in Bangladesh. *Journal of Economic Cooperation, 28*(4), 1–38.

Kahf, M. (2004). Islamic Economics: What Went Wrong? *Islamic Development Bank Roundtable on Islamic Economics*, 26–27.

Kahf, M. (2013). Zakat: Unresolved Issue in the Contemporary Fiqh. *International Journal of Economics, Management and Accounting, 2*(1 SE-Articles). https://journals.iium.edu.my/enmjjournal/index.php/enmj/article/view/9

Kamil, M. I. (2002). *Gelagat Kepatuhan Zakat Pendapatan Gaji Di Kalangan Kakitangan Awam Persekutuan Negeri Kedah* [Universiti Utara Malaysia]. http://etd.uum.edu.my/548/

Kochuyt, T. (2009). God, gifts and poor people: On charity in Islam. *Social Compass, 56*(1), 98–116. https://doi.org/10.1177/0037768608100345

Krafess, J. (2005). The influence of the Muslim religion in humanitarian aid. *International Review of the Red Cross, 87*(858), 327–342. https://doi.org/10.1017/
S1816383100181378

Krejcie, R. V., & Morgan, D. W. (1970). Determining Sample Size for Research Activities. *Educational and Psychological Measurement, 30*(3), 607–610. https://doi.org/10.1177/001316447003000308

Lessy, Z., Adamek, M., & Khaja, K. (2020). Philanthropic zakat for the disadvantaged: Recipient perspectives from Indonesia. *Asian Social Work and Policy Review, 14*(3), 138–147. https://doi.org/10.1111/aswp.12204

Li, X., & Law, R. (2020). Network analysis of big data research in tourism. *Tourism Management Perspectives, 33*(August 2018), 100608. https://doi.org/10.1016/j.tmp.2019.100608

Liu, Z., Yin, Y., Liu, W., & Dunford, M. (2015). Visualizing the intellectual structure and evolution of innovation systems research: a bibliometric analysis. *Scientometrics, 103*(1), 135–158. https://doi.org/10.1007/s11192-014-1517-y

Maali, B., Casson, P., & Napier, C. (2006). Social reporting by islamic banks. *Abacus, 42*(2), 266–289. https://doi.org/10.1111/j.1468-4497.2006.00200.x

Metwally, M. M. (1997). Economic consequences of applying Islamic principles in Muslim societies. *International Journal of Social Economics, 24*(7–9), 941–957. https://doi.org/10.1108/03068299710178955

Nor Paizin, M., Ab Rahman, S. M., Wahid, K. A., Nafi, M. N. A., Awang, S., & Setapa, M. (2021). Bibliometric Analysis of Zakat Research in Scopus Database. *International Journal of Zakat, 6*(1), 13–24. https://doi.org/10.37706/ijaz.v6i1.253

Paltrinieri, A., Hassan, M. K., Bahoo, S., & Khan, A. (2020). A bibliometric review of sukuk literature. *International Review of Economics and Finance, September 2018*. https://doi.org/10.1016/j.iref.2019.04.004

Powelt, R. (2009). Zakat: Drawing Insights for Legal Theory and Economic Policy from Islamic Jurisprudence. *Pitt. Tax*
Raimi, L., Patel, A., & Adelopo, I. (2014). Corporate social responsibility, Waqf system and Zakat system as faith-based model for poverty reduction. *World Journal of Entrepreneurship, Management and Sustainable Development, 10*(3), 228–242. https://doi.org/10.1108/WJEMSD-09-2013-0052

Romdhoni, A. H. (2018). Effect of productive zakat program on the improvement of welfare in Sragen regency. *Jurnal Ekonomi & Keuangan Islam, 4*(1), 41–50. https://doi.org/10.20885/jeki.vol4.iss1.art5

Salim, A. (2008). *Challenging the secular state: The Islamization of law in modern Indonesia.* University of Hawaii Press.

Scott, J. C. (1987). Resistance without Protest and without Organization: Peasant Opposition to the Islamic Zakat and the Christian Tithe. *Comparative Studies in Society and History, 29*(3), 417–452. https://doi.org/10.1017/S0010417500014663

Sekaran, U. (2003). *Research Methods for Business: A Skill-Building Approach* (4th Edition). John Wiley & Sons, Ltd.

Small, H. (1973). Co-citation in the Scientific Literature: A New Measure of the Relationship Between Two Documents. *Journal of the American Society for Information Science, 24*(4), 265–269. http://onlinelibrary.wiley.com/doi/10.1002/asi.4630240406/abstract

Sulaiman, M. (2003). The influence of riba and zakat on islamic accounting. *Indonesian Management and Accounting Review, 2*(2), 149–167.

van Eck, N. J., & Waltman, L. (2010). Software survey: VOSviewer, a computer program for bibliometric mapping. *Scientometrics, 84*(2), 523–538. https://doi.org/10.1007/
Van Eck, N. J., & Waltman, L. (2014). Visualizing Bibliometric Networks. In Measuring Scholarly Impact. https://doi.org/10.1007/978-3-319-10377-8_13

Vinnicombe, T. (2010). AAOIFI reporting standards: Measuring compliance. Advances in Accounting, 26(1), 55–65. https://doi.org/10.1016/j.adiac.2010.02.009

Weiss, H. (2002). Reorganising social welfare among muslims: Islamic voluntarism and other forms of communal support in Northern Ghana. Journal of Religion in Africa, 32(1), 83–109. https://doi.org/10.1163/15700660260048483

Yan, Y., Liao, Z., & Chen, X. (2018). Fixed-income securities: bibliometric review with network analysis. Scientometrics, 116(3), 1615–1640. https://doi.org/10.1007/s11192-018-2800-0

Yusuf, A. O., Yerima, B., & Ape, G. (2020). Evaluation of Development in Zakat Literature. International Journal of Zakat, 5(1), 29–43. https://doi.org/10.37706/ijaz.v5i1.196

Zupic, I., & Ćater, T. (2015). Bibliometric Methods in Management and Organization. Organizational Research Methods, 18(3), 429–472. https://doi.org/10.1177/1094428114562629