# Phonology and *Maharah Kalam* in Scopus Publications: Content Analysis and Development Trends

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| Notes | ABSTRACT |
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| <br><br>**How to cite:** Ardianingtyas, N. T., & Nurrohman, T. (2023). Phonology and Maharah kalam in Scopus Publications: Content Analysis and Development Trends. Khizanah Al-Hikmah : Jurnal Ilmu Perpustakaan, Informasi, Dan Kearsipan, 11(2). https://doi.org/10.24252/kah.v11i2a13<br><br>DOI: 10.24252/kah.v11i2a13<br><br> | This study explores the relationship between phonology and Arabic language learning by analyzing document publications indexed in Scopus from 1980 to 2022. Focusing on *maharah kalam* (speaking skills) phonology, this study investigates its integration into Arabic education, the prominent affiliations, and researchers' search approaches. Using bibliometric analysis, the findings reveal an irregular annual publication pattern, mostly articles (181 document articles). The University of Haifa leads with 19 articles, and Amayreh MM. is the most prolific author (five articles). Sub-content trends vary over the decade. Recommendations include increased publications, exploring the University of Haifa's role, and encouraging Indonesian researchers. The study concludes with future research avenues, emphasizing expanded publications and exploring the University of Haifa's impact. In summary, it provides insights into phonology and *maharah kalam* studies, identifies contributors, and suggests future directions within Scopus publications from 1980 to 2022.<br><br>**Keywords:** Bibliometric; research trends; Arabic language |

## 1. INTRODUCTION

Education is considered a crucial necessity in creating a competent society in the 21st century (Lutta, 2021). The absence of adequate education, as asserted by (Krieken, 2018) renders students ill-equipped to navigate the demands of this era. Within the realm of education, effective communication assumes paramount significance. Communication serves a pivotal role in the learning process by facilitating interaction and conveying educational messages, comprising instructional content from educators to learners, ultimately striving towards the attainment of educational objectives (Mahadi, 2021). One necessary field of study in learning is phonology.

Phonology and *maharah kalam* (speaking skills) are inseparable components in Arabic language learning (Stokes, 2022). Notably, intonation emerges as a critical element influencing speakers in articulating meaning in alignment with their communicative intentions. However,

Solami (2022) contends that students must first acquire a foundational understanding of grammar before delving into the intricacies of intonation. This holds particularly true in situations where speakers employ deliberate pacing or find themselves under pressure. As learners, students often hear Arabic language speakers pronouncing words or sentences without proper intonation or with uniform intonation in all sentences; this is a common mistake for fluent Arabic or Indonesian speakers, making the meaning ambiguous and discordant even if the sentence is correct in principle. Consequently, the imperative of comprehending and acknowledging the urgency within the educational framework becomes paramount.

One of the foremost objectives in learning the Arabic language is to enhance an individual's speaking proficiency. The emphasis on oral skills should not and must not imply the neglect of other facets within the realm of language communication. However, given that one of the instructional goals in teaching Arabic is to cultivate proficiency in spoken Arabic. Arabic language instructors must formulate effective strategies for imparting these skills (Rahmah, 2021) to achieve learning competence. The more someone practices what they have learned while acquiring Arabic speaking skills, the stronger their proficiency becomes. The learning process commences with the student's interest in a particular subject. As students persistently engage in practicing and reinforcing Arabic vocabulary while articulating Arabic sentences (Rahmah, 2021).

In Indonesia, the discussion regarding phonology has already been extensively addressed (Cahill, 2022), spesifically in the context of Arabic language (Alrumhi, 2021). Several studies focus on the analysis of the significance of phonological errors in Arabic language learning (Fuadiyah & Taufiq, 2020; Najah & Agustina, 2020; Wulandari, 2020) including the influencing factors (Sari & Makrufah, 2021). There are also studies that explore the science of phonology in Arabic language learning, particularly concerning intonation, stress, and pitch (Sari & Makrufah, 2021). Nevertheless, there is no research that attempts to discuss and review the information reported in these studies. Using content analysis on several accredited Scopus scientific journals, this research aims to gather diverse information and engage in a comprehensive discussion on the science of phonology and Arabic language learning.

In detail, this study aims to address the science of phonology in Scopus journals in the context of Arabic language learning. Furthermore, this study determines which affiliations contribute to phonology and *maharah kalam* (speaking skills) in Scopus journals. The research also delves into how researchers approach keyword searches in the realm of phonology and Arabic language learning within Scopus journals. Additionally, it investigates the evolution of the development of phonological studies in *maharah kalam* learning over the years.

In several aspects, this study differs from previous research that focused on phonology and *maharah kalam*. Firstly, this research is concentrated on all articles published in all Scopus-indexed journals. Secondly, the study is specifically designed to investigate a number of articles related to the science of phonology and *maharah kalam* as its primary focus. Thirdly, it incorporates various parameters and comparisons as part of the data analysis. Such studies are still relatively scarce in Indonesia, making it particularly intriguing for researchers to delve deeper and uncover facts from the discovered data.

Several studies related to the development and utilization of phonological science have been conducted. However, no research has comprehensively attempted to review and analyze the information reported in previous studies. By applying content analysis to several Scopus-indexed scientific journals, this study recommends further research. Firstly, there is a need for increased publications on the themes of phonological science and *maharah kalam*. Secondly, further investigation into the University of Haifa is suggested due to its dominance in this field, considering that the country is not one where Arabic is the first language. Lastly, it is advisable for researchers, particularly those from Indonesia, to examine and delve into the fields of phonological science and *maharah kalam*.

## 2. METHODS

The aspects considered in this paper for analysis encompass both quantitative and qualitative dimensions. Quantitative analysis involves the fields of study, publication years, language of publication, journal distribution, and information related to research constituents (authors, countries, universities/institutions, and publications). Qualitative analysis takes into account thematic areas and keyword/term mapping. Recognizing the significance of bibliometrics and keyword analysis, this work introduces an in-depth analysis of author keywords in the specific domain of self-healing concrete. Subsequently, an analysis is conducted, and the results are reported, as indicated in the following section. This type of research methodology closely resembles that employed by Alzard et al., (2022)

Bibliometric approaches are commonly employed by researchers to examine various facets of research that contribute to the intellectual and social landscape. (Guleria & Kaur, 2021). This bibliometric research aims to discern the productivity of research elements, including authors, countries, journals, universities, or affiliations. Furthermore, it unveils the bibliometric structure encompassing interactions among these elements. The data collection process typically involves three stages: data retrieval, loading and conversion of data, and data cleaning. In the first stage, data retrieval involves extracting bibliographic information from Scopus, one of the largest databases for academic abstracts and citations. This data retrieval yielded 256 documents, including journal articles, conference papers, and books, published worldwide between 1980 and 2022, sourced from the Scopus database (Derviş, 2019).

The second stage of data collection involves loading and converting the bibliometric database obtained into a format compatible with the bibliometric tool in use. The database employed in this analysis is formatted in BibTeX, chosen for its compatibility with the R package "Bibliometrix." In the final stage, quality assurance measures are applied, recognizing that the quality of outcomes is contingent on data integrity (Campra et al., 2022).

To conduct accurate bibliometric analysis, suitable software is essential. Numerous tools and software packages are capable of performing bibliometric analysis, encompassing both visual and quantitative analysis, either individually or in combination. Options include "CiteSpace," "CitNetExplorer," "VOSviewer," and "Bibliometrix." Bibliometrix, developed as open-source software by Aria and Cuccurullo in 2017, distinguishes itself from other solutions by providing swift analysis and establishing data matrices for performance analysis and scientific mapping of bibliographic collections. Furthermore, the latest application, Biblioshiny, is designed for scholars with minimal or no coding background. Biblioshiny is a web-based application accessible through R-studio. In this research, the latest version of the R package Bibliometrix is utilized via the web-based application, Biblioshiny (Abbas,et all., 2022).

## 3. RESULTS AND DISCUSSION

**Table 1.** Main data from 1980-2022, using the keywords "phonology Arabic"

| Description | Results |
|---|---|
| **MAIN DATA INFORMATION** | |
| Timespan | 1980:2022 |
| Sources (Journals, Books, etc) | 173 |
| Documents | 256 |
| Annual Growth Rate (%) | 7.39 |
| Document Average Age | 8.3 |
| Average citations per doc | 9.215 |

| | |
|---|---|
| References | 12187 |
| **DOCUMENT CONTENTS** | |
| Keywords Plus (ID) | 429 |
| Author's Keywords (DE) | 717 |
| **AUTHORS** | |
| Authors | 400 |
| Authors of single-authored docs | 124 |
| **AUTHORS COLLABORATION** | |
| Co-Authors per Doc | 1.82 |
| International co-authorships % | 12.89% |

Source: Accessed from www.scopus.com

Based on Table 1 above, a total of 256 documents were found, comprising journals, articles, documents, and books. There is an annual increase in the number of articles by 7.39%, with an average article age of 8.3%. The average citation count is 9.215, with a total of 12,187 references. Additionally, there are 429 additional keywords in the document content, and 717 keywords from the authors. The number of authors for this theme is 400, with 124 single authors and a collaboration rate of 1.82%. The percentage of international co-authorship is 12.89%.

In addition to presenting information about the authors, this research also indicates document types, which include articles, books, book chapters, scientific conferences, review conferences, prints, and reviews.
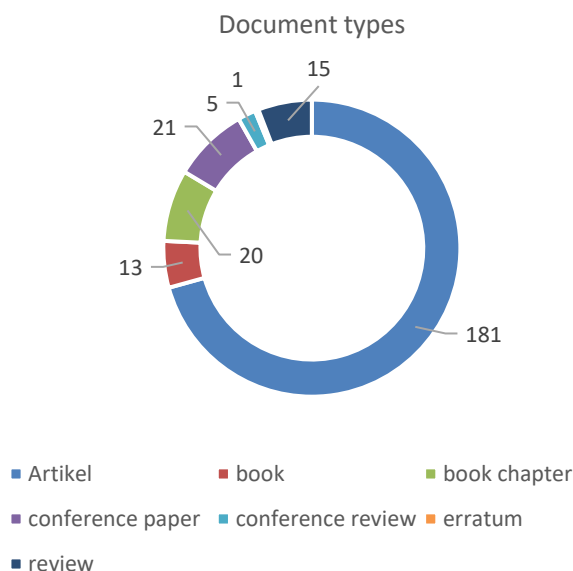


**Figure 1.** Document types

With a total of 256 documents, the dataset comprises 181 journal articles, 13 books, 20 book chapters, 21 conference papers, 5 review conference papers, 1 print, and 15 reviews.
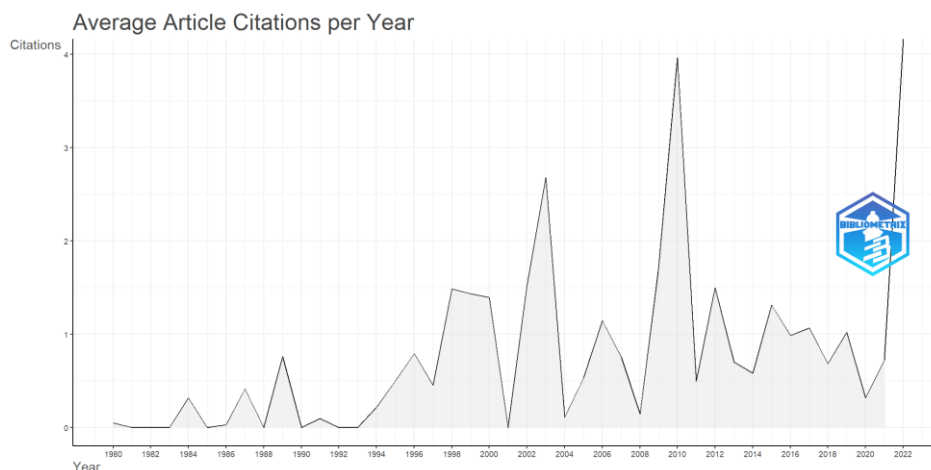
**Figure 2.** Article citations each year

Based on Figure 2, it can be observed that the average cited articles from 1980 to 2022 underwent irregular changes. This is evident in the significant increase from 2008 to 2010, contrasting with the decrease observed in 1990-1992.

**Table 2.** Affiliations contribution

| Affiliation | Articles |
|---|---|
| University of Haifa | 19 |
| University of Jordan | 11 |
| University of Florida | 6 |
| Columbia University | 5 |
| New York University | 5 |
| Simon Fraser University | 5 |
| Beijing Normal University | 4 |
| University of Southern California | 4 |
| Hebrew University | 3 |
| King Saud University | 3 |

The predominant contribution in research on this theme is led by academic institutions. According to the data, the highest campus affiliation in the articles on this theme is the University of Haifa with a total of 19 articles. The second-highest affiliation is the University of Jordan with 11 articles. This is followed by the University of Florida, Columbia University, and King Saud University with varied numbers of published articles.
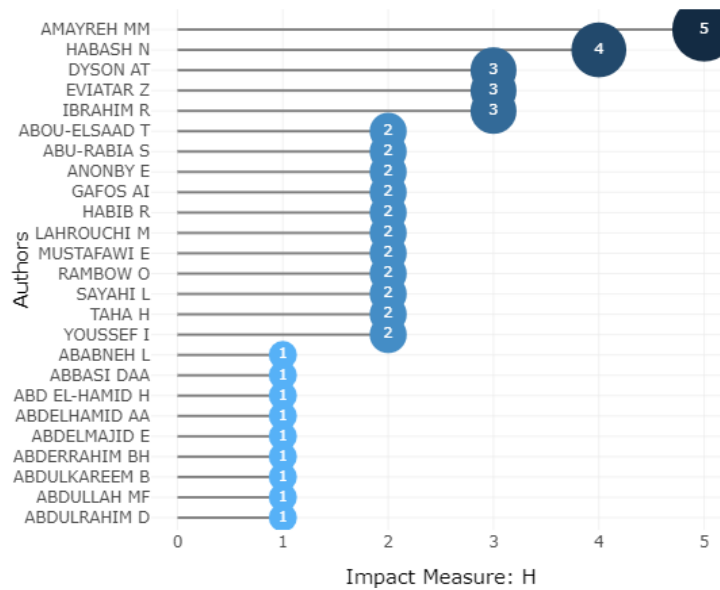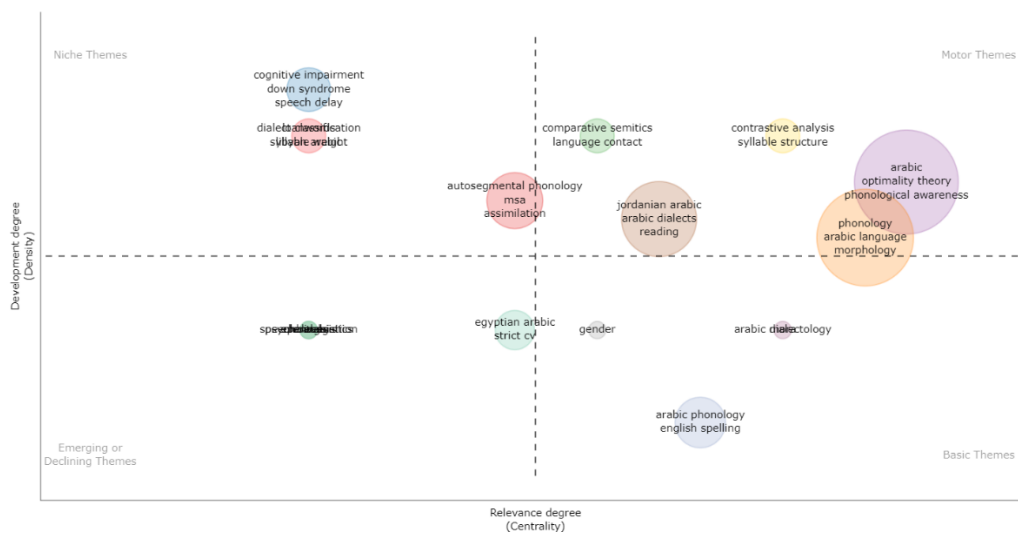
**Figure 3.** Authors contribution



**Figure 4.** Sub-content development trends in the last 10 years

**Discussion**

It seems from the Figure 5 that it is divided into 4 sections: the upper left quadrant (Niche Themes), the lower left quadrant (Emerging or Declining Themes), the upper right quadrant (Motor Themes), and the lower right quadrant (Basic Themes). Thus, it can be inferred that variable Y represents (Density), while variable X represents (Centrality). Moving to the right, a keyword or sub-topic in the discussion has a greater influence and implications on the field under investigation. Conversely, if density increases or moves upward (vertically), it indicates that more studies have been conducted by previous researchers (Perpustakaan FT UGM, 2021). It is importat to know that the sub-topic positioned as both emerging and declining is "Speech Recognition." This area holds potential for novel research and could emerge as a future trend, simultaneously representing a subject with decreasing research interest over the past ten years. Moving on to the sub-content categorized as "Basic Themes" in the lower right section, it

encompasses topics with substantial influence on other research domains. These include "Arabic Phonology," "English Spelling," and "Arabic Dialectology," all displaying enduring trends in sub-content potential over the last decade.

In contrast, the sub-content situated in the upper left as "Niche Themes" demonstrates an inverse relationship. In this category, sub-content remains somewhat isolated from other discussions, despite the continued popularity of the existing studies or contents. (Perpustakaan FT UGM, 2021). Hence, it lacks distinctive characteristics in research. For these sub-contents, including Cognitive Impairment, Down Syndrome, Speech Delay, and Dialect Education, as well as Loan Word, they differ from the sub-contents in the upper right (Motor Themes). The latter has significant impact and implications but has been extensively researched, limiting the scope for new studies to enter this content area. This content includes Arabic Phonology, Morphology, Arabic Optimality Theory, and others.

For the purpose of the study, the researchers specifically examine sub-contents within the last 10 years, focusing on the content in the lower left as "Emerging or Declining Themes" and the lower right as "Basic Themes." The basis for this observation includes: (1) a low Density level indicating that the writing might still be potential and new, (2) a high level of Centrality and low Density, demonstrating that these sub-contents have been researched by a limited number of researchers and have significant implications for other studies. Therefore, research in this direction needs to be continued as no detailed studies on the development of Arabic phonology in the form of literature reviews have been conducted in Indonesia.

Based on data collected from 1980 to 2022 in Scopus database, a total of 256 documents were identified. This indicates that research on the theme of phonology and *Maharah kalam* is relatively limited over the 42-year period. Thus, there is a significant opportunity for further research on this theme. The publications include articles, books, book chapters, scientific conferences, review conferences, and prints. The data highlights a substantial difference in the types of publication documents.

Furthermore, the data also indicates that the field of phonology and *Maharah kalam* experienced highly unstable fluctuations from 1980 to 2022. In the articles publication on these fields, universities played a significant role. From the table, it is evident that the University of Haifa published 19 articles, making it the most prolific affiliation in publishing on this theme. The University of Haifa, established in 1963 in Israel, a non-Muslim country, poses a challenge for further research in exploring and delving into this area. In contrast, the University King Saud, established in 1957 in Riyadh, Saudi Arabia, has the fewest publications among the top 10 affiliations in Scopus-indexed journals.

Regarding the productivity of authors publishing articles on the theme of phonology in Maharah kalam, the foremost contributors are Amayreh with 5 articles, Habash N. with 4 articles, and Dyson AT. with 3 articles. This creates an avenue for additional scholars to conduct further and in-depth examinations within this thematic area. The study also specifically scrutinizes sub-contents over the past decade, concentrating on the lower left quadrant as "Emerging or Declining Themes" and the lower right quadrant as "Basic Themes." This scrutiny is grounded in two key aspects: (1) a low density level, signifying the potential novelty of the literature, and (2) a high level of centrality coupled with low density, indicating limited research attention and substantial implications for broader research contexts.

## 4. CONCLUSION

In this investigation, an examination was conducted on a total of 256 documents, comprising articles centered around the subject of phonology and Maharah kalam. These articles were published in internationally indexed Scopus journals spanning the years 1980 to 2022. The yearly progression of publications may be deemed moderate, yet a discernible upward trajectory is evident in citation counts. The irregularity in annual publication figures is

conspicuous, notably in the considerably divergent types of documentation, as exemplified by a notable increase in the publication of articles. Among the 400 documents present in the Scopus database, 181 were discerned to take the form of journal articles. The University of Haifa emerged as the predominant institutional affiliation associated with the publication of articles within this thematic realm. Regarding authorship, Amayreh MM. asserted dominance with 9 articles. In the scrutiny of sub-contents over the preceding decade, with a specific focus on the lower left quadrant as "Emerging or Declining Themes" and the lower right quadrant as "Basic Themes," the observation was grounded in two pivotal facets: (1) a low density level indicating potential novelty and (2) a heightened level of centrality coupled with low density, signifying limited research attention and substantial implications for broader research contexts.

This study further recommends, firstly, an increase in publications on the themes of phonology and Maharah kalam. Secondly, there is a need for further research on the University of Haifa due to its dominance in this field, considering that the country is not one where Arabic is the first language. Finally, it is advisable for researchers, especially those from Indonesia, to delve into and deepen their understanding of the fields of phonology and *Maharah kalam*.

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