

## **Islamic Economics Literature: A Bibliometric Analysis**

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**Abstract:** *The study tested the hypothesis that Islamic economics literature exhibits the features of the Bradfordian Law of Scattering while identifying core authors, publishers, sources of literature, and countries of origin. A database of 3,026 citations was created with information about the four primary measures. The occurrence counts were tabulated and displayed in bibliographs as essential instruments for hypothesis testing. It was found that the hypothesis could not be supported as the immature state of the discipline did not exhibit the features of established disciplines. Cores for authors, publishers, sources, and countries of origin were also identified.*

Bibliometrics is the study of scholarly communication patterns in a discipline through the application of statistical methods to a given corpus of books, journal articles, conference papers, and other media output. Citation analysis, an essential bibliometric technique, furnishes important indicators of scholarly communication patterns. Three bibliometric laws address three quantitative dimensions and many studies have been conducted in diverse areas of natural and social sciences. Lotka's Law (1926) is used to predict the productivity patterns of various authors; Zipf's Law (1933) describes word frequency rankings, and Bradford's Law of Scattering displays the distribution of documents in a manner to identify core literature and establish transition points between zones of

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higher and lower utility.<sup>1</sup> These quantitative analyses are helpful in designing economic information systems and networks, improving the efficiency of information handling processes, identifying and measuring the deficiencies in bibliographical services, and analyzing publishing and communication trends.<sup>2</sup>

The Bradfordian Law of Scattering is based on the premise that a whole range of journal literature acts as a family of successive generations of diminishing kinship.<sup>3</sup> Bradford explained the Law of Scattering as:

... if specific journals are arranged in order of decreasing productivity of articles on a given subject, they may be divided into a nucleus of periodicals more particularly devoted to the subject and several groups or zones containing the same number of articles as the nucleus, when the number of periodicals in the nucleus and succeeding zones will be as  $1:n:n^2$ .<sup>4</sup>

Bradford discovered that he could divide journals into three groups in such a way that each group contributed about the same number of articles. This distribution in three roughly equal groups displays a high-yield zone of few sources, a moderate-yield zone consisting of a large number of sources that give moderate production, and a still larger zone with constantly diminishing productivity. The law may well describe diverse phenomena such as population among cities, books in a library, the use of subject headings to describe a set of books, and many others as well.<sup>5</sup>

A document is embedded in the literature of the subject which is expressed through reference lists, endnotes, and footnotes. A citation is thus a linkage of a whole or part of a document to a part or whole of the source document. The citations usually indicate the interaction among the authors and those they cite.<sup>6</sup> A systematic study of these relationships is termed as "citation analysis." The Law of Scattering is based on citation analysis. Since the fundamental purpose of research is communication, citation analysis becomes a reliable instrument for investigating communication and influence patterns in any discipline.

## Hypothesis

In the last three decades, Islamic economics has emerged as a fast-developing discipline that draws both on classical and modern sources. The body of literature so far produced, albeit in the stage of infancy, provides a basis for institutionalizing Islamic economics in various areas of application. It was considered worthwhile to subject this body of

literature to citation analysis with the primary hypothesis that the Islamic economics literature exhibits the features of Bradfordian Law of Scattering. A test of the hypothesis was expected to result in the identification of core, moderate, and diminishing zones of productivity or influence by using the measures of authors, publishers, particular sources of literature, and countries of origin. It was also expected that a pattern of diminishing returns in a hyperbolic distribution would emerge from the citation analysis of the literature. An analysis of the zones of distribution by applying the Bradfordian Law of Scattering was also expected to reveal scholarly communication trends and the state of maturity of the discipline.

### Procedures

The English-language literature of Islamic economics, available in the library of International Islamic University Malaysia, as part of its database project, was targeted for this purpose. Publications of 1983-92 with a minimum of ten citations, excluding self-citations and Ibid./Op. cit notes, fell within the parameters of the study. Additional criteria were also applied to include all the authored contributions except reference from the Qur'ān and Ḥadīth. All the monographic and journal articles were included, as was a random sample of conference articles. Bibliographic information was obtained from footnotes, lists of references, notes, and bibliography. If a citation was derived from the quotation of another document, the original citation was analyzed. Information about chapter and verse number was recorded for Qur'anic references while chapter and title of the compilation were taken for Ḥadīth references. The citations in APA style were noted from insertions and the complete bibliographic information was taken from the bibliography. Other than Qur'anic and Ḥadīth references, only citations of authored documents were included. In order to ascertain place of publication for journals, *Ulrich's Directory of Periodicals* was used. In case of a confusion for monographic entities or conference proceedings, *The National Geographic Atlas of the World* was used for verification. Name authority files were used to authenticate consistent entry of author and publisher names. A database, using INMAGIC software, was created to record all the citation data. The "term index" feature of the database was employed to obtain counts of occurrences for authors, publishers, countries of origin, and individual sources. Altogether 3,026 citations were analyzed for tabulating results and construction of bibliographs (which are the essential instruments for testing the hypothesis).

The first step in data analysis was tabulating results. The number of occurrences for each measure was obtained by using the sorting feature of the citation database. A table for each of the four measures was constructed to tabulate data related to: frequencies for each measure, number of citations, cumulative frequency for the measure, cumulative citations, and the common logarithm for citations (using a scientific calculator). An example of such tabulations is given in Table 1 based on a sub-set for the first measure of authors. The next step was to divide the total number of citations into three equal zones in order to get three zones on the bibliograph. As the citations could not be distributed in equal zones for some measures, another formula was used: authors receiving more than four citations in a year, authors receiving more than one but less than four citations in a year, and the authors receiving one or less publications in a year (for co-authored publications). Then the Scattering Law of  $1:n:n^2$  was applied to get a multiplier. By applying this formula the number of cumulative citations and logarithm is expected to be proportional, which is indicated by intersections on a bibliograph at three points of the logarithm at 1, 1.5, and 2.7, if the Bradfordian Law of Scattering is exactly applicable. Any departures indicate instability of communication patterns and an immature state of the discipline. These technicalities become meaningful when the results are studied together with relevant bibliographs in the following section.

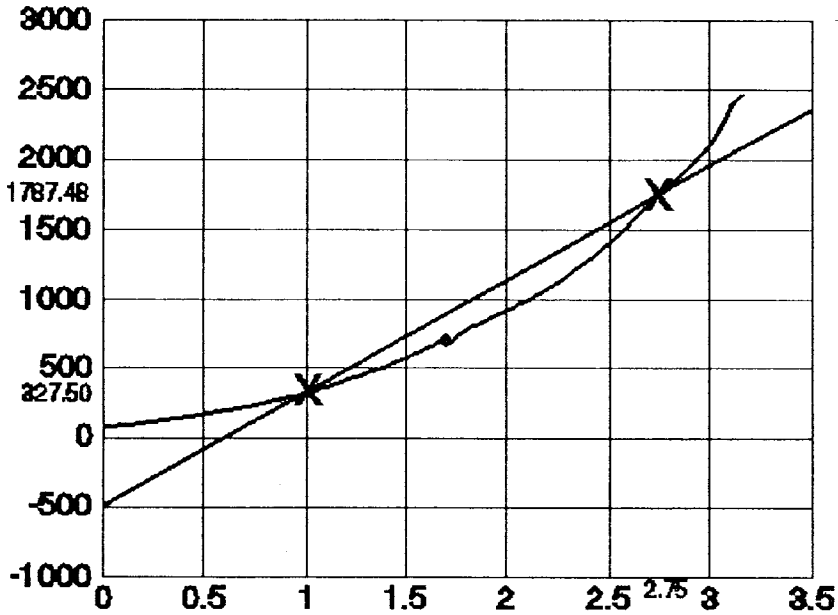
**Table 1. Author tabulation**

<i>Fr. of Authors</i>	<i>Citations</i>	<i>Cum.Fr. Authors</i>	<i>Cum. Citations</i>	<i>Common Log.</i>
1	74	1	74	0
1	54	2	128	0.301
1	38	3	166	0.477
1	29	4	195	0.602
1	28	5	223	0.699
1	24	6	247	0.778
1	22	7	269	0.845
1	20	8	289	0.903
1	19.5	9	308.5	0.954
1	19	10	327.5	1

## Findings

The results of the study are presented around the four primary measures of authors, publishers, sources of literature, and countries of origin. A

bibliographic explains the distribution of citations in zones. Four tables of core authors, core publishers, core sources of literature, and core countries of origin have also been provided.



*Figure 1. Zones for Authors*

## Authors

Altogether 2,460 citations were recorded for which personal authorship could be ascertained. Figure 1 has been constructed to apply the Law of Scattering on distribution of citations by authors.

Since the cumulative frequencies and algorithm were not proportional, intersections of the curve and the linear lines were used to get three zones of core, moderate, and diminishing productivity. The core zone of authors was found at the first intersection of the x-axis and y-axis of the bibliograph, which is at algorithm 1.0 of the x-axis, quite consistent with the Bradfordian Law. It means that ten authors fell in the core by receiving 327.5 citations (13.3% of the total). Names of authors in this core and the respective frequencies of citations and percentages are given in Table 2.

**Table 2. Core authors**

<i># Of Frequencies</i>	<i>Authors</i>	<i>% of Contribution</i>
74	M. Nejatullah Siddiqi	3.01
54	Ibn Taymīyyah	2.19
38	M. Umar Chapra	1.54
29	Monzer Kahf	1.18
28	Abul Ala al-Maududi	1.14
24	M. Anas Zarqa	0.98
22	Ibn Khaldūn	0.89
20	M. Abdul Manan	0.81
19.5	Masudul Alam Choudhury	0.79
19	N.H. Naqvi	0.77

The second intersection was found at 2.75 algorithm instead of the expected 1.5, referring to the moderate log linear zone of 686 authors receiving 1,460 citations, 59% of the total. The remaining 673 citations (37.7%) were for those documents which had been authored by 733 authors, meaning that a large segment of them was produced through joint authorship. The pushing of the log linear zone to the farther end, where the diminishing zone was expected to occur, indicates that at this point the field of Islamic economics has only two zones. It can be interpreted that there is a small core which is followed by a large number of authors who have not established themselves in the field. It is certainly a departure from the Law of Scattering.

Another major finding is that the shape of the curve around the linear line is different from the *S* shape which is expected in the Bradfordian distribution. The rising tail at the end of the curve, instead of a "groos drop," meant that many authors were entering the field in a zone of diminishing productivity. Their contributions are little cited with virtually no impact on scholarly contributions. This is but expected in a budding discipline like Islamic economics, though somewhat removed from the norm of stable disciplines.

It was found that a large majority of authors (76%) in Islamic economics had authored only one document. The overall contribution of the core authors was, however, substantial. Some corporate authors, including international agencies and government publishers, received a large number of citations. It means that researchers and authors in Islamic economics have to rely on these resources heavily. A large number of

citations for authors with a single contribution or collaboration also explains this departure from the rule. Another interesting interpretation of the data is that a larger pool of authors has emerged during the recent past who are interested in publishing in the field. If some of these authors sustain their interest in this discipline, it would accelerate the maturation process of this discipline, which is still in its embryonic stage otherwise. The sources cited by authors are diverse in nature; a small set of classical writings are at the centre, with a very large number of contemporary writings ranged around it and on the periphery. The overwhelming amount of referencing to Qur'an and Hadith was followed by references to the classical writings of Ibn Taymīyah and al-Ghazālī. There is a need to apply context analysis, another technique of bibliometrics, in order better to understand the linkages between classical and modern writings.

### Publishers

A total of 618 organizations had published the 1,771 citations whose publishers could be ascertained. Again the absence of proportion between cumulative frequencies and logarithm prompted the use of intersections of the curve and its linear line on the bibliograph (Figure 2) derived from the publisher tabulations.

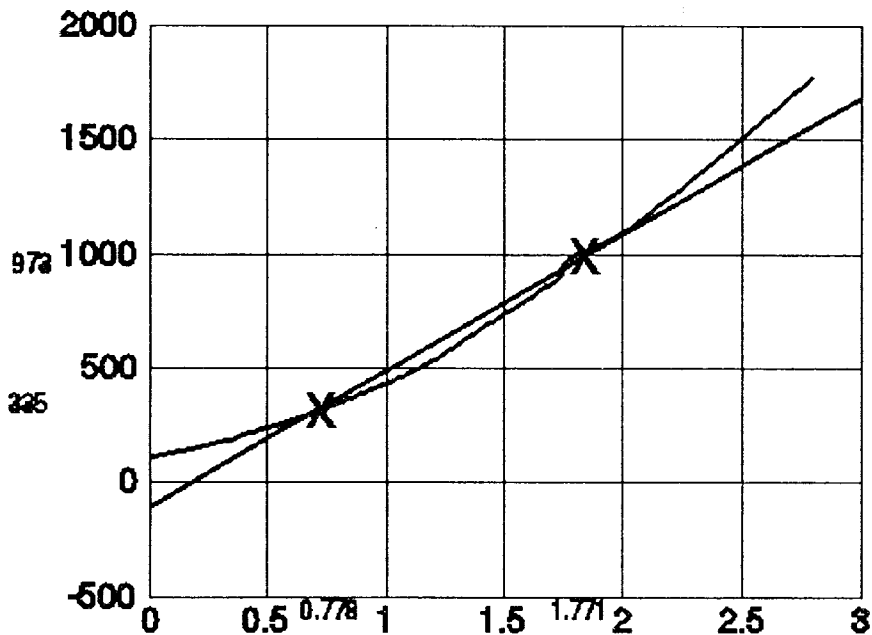


Figure 2. Zone for Publishers

These intersections indicated the three zones of core, moderate, and diminishing productivity of publishers. It was found that six publishers were in the core zone with 335 citations (18.92%). Table 3 contains a list of core publishers with respective frequencies and percentages. Sixty-three publishers with a total of 638 citations (36.02%) were in the log linear zone, leaving 798 citations (45.06%) in the diminishing zone published by 549 publishers (88.8%).

**Table 3. Core publishers**

<i># of Frequencies</i>	<i>Publishers</i>	<i>% of Citation</i>
112	Islamic Foundation	6.32
67	Macmillan	3.78
3	Islamic Publications	2.99
37	Int. Centre for Research in Islamic Economics	2.09
37	Dār al Fikr	2.09
29	Sh. Muhammad Ashraf	1.64

Both the core and log linear zones for publishers were inconsistent with Bradfordian distribution as the intersections were found at .77 and 1.77 instead of 1.0 and 1.5 logarithm on the x-axis, respectively. The curve around the linear line in the bibliograph was also raising at the tail end, indicating that the distribution is not hyperbolic. As this end does not depress, it means that too many publishers are entering the field without creating any substantial impact. The expanding fragmentation in the publishing trend is an expression of the absence of a clear-cut focus. The distances in zone distributions from the norms were, however, not as wide as were found in the case of author distributions. Among the six high-yield publishers (Table 3), the Islamic Foundation was the heaviest cited with a big lead over the second in the rank. The gaps among the other five are marginal.

From these results it can be interpreted that the publication activity in Islamic economics has not reached the level of normal intensity. Normally, every academic discipline has research organizations, academic bodies, universities, or trade publishers that are specialized in publishing literature pertaining to that discipline, but in this regard, Islamic economics lags far behind. An examination of the names of core publishers also reveals an inherent deficiency. It was found that, of the



six core publishers, only one - number five on the list - the International Centre for Research in Islamic Economics, could be readily identified with the discipline of Islamic economics, while the same could not be said of the other five. The inclusion of Macmillan in this list indicates that the writers rely quite heavily on the contemporary sources of modern economics. It also signifies interdisciplinary treatment by the respective authors.

These findings have confirmed that, as a discipline, Islamic economics is still in its infancy. No academic institutions have yet produced a credible body of works in the field. As research activities in the field become more focused at certain institutions, some publishers may eventually specialize in the area. This process of maturation will probably take a few decades if the current interest persists.

### Specific Sources

The citations were tabulated to identify whether specific sources of literature of Islamic economics exhibited a pattern of diminishing distribution. The intersections of the curve and linear lines were used to identify the core, linear, and diminishing zones in the absence of the needed proportions between cumulative frequencies of citations and the common algorithm.

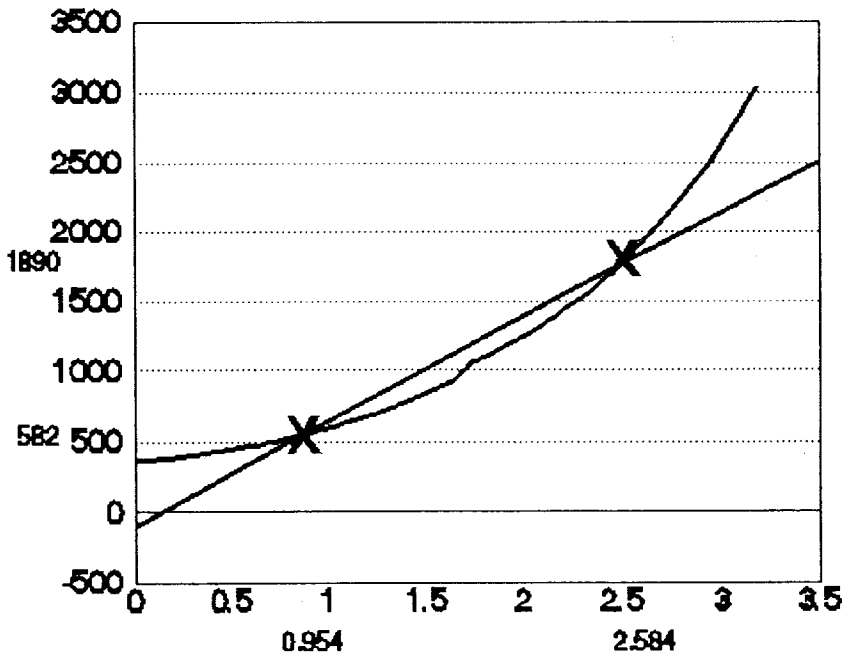


Figure 3. Zones for Specific Sources for Literature

It was found that 8 of the total 1,519 sources (.527%) in the core received 582 citations(19.23%). Table 4 lists core sources together with the respective frequencies and percentages. The Qur'ān and Hadith are, quite expectedly, the two most cited sources receiving 12 and 2.48% of the citations, respectively.

**Table 4. Core Literature**

<i># Of Frequencies</i>	<i>Title of Documents</i>	<i>% of Total Citations</i>
360	al-Qur'ān	11.90
75	Hadith	2.48
31	Studies in Islamic Economics	1.02
27	Journal of Research in Islamic Economics	0.89
27	American Economic Reviews	0.89
23	Journal of Political Economy	0.76
21	Review of Economic Studies	0.69
18	Towards a Just Monetary System	0.59

The moderate zone of productivity, log linear zone, had 375 of the 1,519 sources (24.69%) with 1,308 citations (43.22%); the diminishing zone had 1,136 citations (37.54%) in 1,136 specific sources (74.79%). The intersections on the bibliograph were found at .954 and 2.584 algorithm on the x-axis. It means that the core zone is quite close to the expected 1.0 whereas the log linear zone, expected at 1.5, is pushed much farther inside the domain of the diminishing zone. This situation is quite close to the author distribution, meaning that a core is available, but there is a fragmented distribution in other zones as a large number of sources are being cited, but these have not attained any level of substance in terms of influence on the discipline. The sharply rising tail of the curve is contrary to the prediction of a "groos drop" in the Law of Scattering. This implies that the field is in its early stages. An apparent surge of interest in Islamic economics corroborates the finding. Leaving the Qur'ān and Hadith aside, Islamic economics, unlike other academic disciplines, does not have a hard core. This means that the number of sources cited is large, even though most of them (74.8%) received only one citation. The absence of a core is indicative of a state of fragmentation in the discipline that is peculiar to disciplines in early or formative stages. But the patterns of citing the Qur'ān and Hadith support the

assertion that the hard core of Islamic economics consists of principles and injunctions contained in the revealed sources.

A microanalysis of the Qur'anic references indicated that 117 of the 359 citations (33%) were from *Sūrat al-Baqarah*. The areas of Islamic economics which are relatively developed are related to transactions, barter, interest-free banking; and the divine principles regulating these are to be found in this *sūrah*. Altogether 32 verses were cited from this chapter; Verse 275, which pertains to the prohibition of interest, had 13 citations.

The core sources of literature include Qur'ān, Ḥadith, four journal titles, and two monographs. Three of the four journals are related to general economics, leaving only one title which could belong to the core zone. Assuming that journals are an established means of scholarly communication in any field, the use of a single title related to the discipline indicates a weakness. A journal citation study may help in identifying additional titles, but the cumulative volume of the literature may not warrant such an investigation at this stage. Another observation is that the writers in the field rely heavily on the literature of the general economics, indicating that Islamic economics has two bases: revealed and classical sources for referring to the Islamic base, and contemporary sources for referring to general economics.

### **Countries of Origin**

The fourth measure, country of origin, was analyzed by determining the countries of publication of the cited literature. The total number of citations with relevant information is 2,414. It was found that cited literature had originated in 31 countries, three of which (9.68%) were in the core zone of distribution receiving 1,672 of the 2,414 (69.26%) citations, with the following breakdown: United States, 711; United Kingdom, 625; and Pakistan, 336. Thirteen other countries (41.93%) were in the moderate productivity or log linear zone with 697 citations, 28.87% of the total. The remaining fifteen countries (48.39%) were in the diminishing zone with 45 citations or 1.87% of the total. The data were used to construct a bibliograph (Figure 4) which indicates that the zone distribution is inconsistent with the Bradfordian Law of Scattering. The three zones were derived by getting intersections on the curve and line of linearity. The core and log linear zone intersections were found at .477 and 1.204 instead of the predicted logarithm values of 1.0 and 1.5, on the x-axis of the bibliograph. It means that a few countries had created a much heavier core than the norm, which had also affected the point of

second intersection. This was the only measure in the study which exhibited a hyperbolic pattern as the rising curve ran into a straight curve and finally deviated to its right, meaning it had the characteristic of a "groos drop," an indicator of diminishing return.

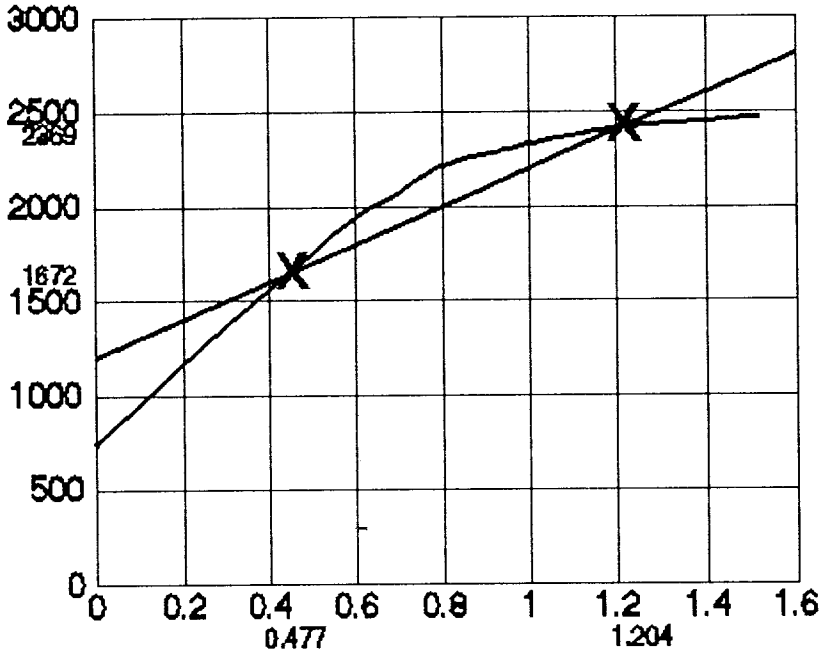


Figure 4. Zones for Countries of Origin

These results have indicated that the publication activity is concentrated in certain countries. Publishing activity in the moderate zone in some countries is likely to gain momentum, bringing them into the high productivity zone. A crucial factor affecting the place of origin of publications is the publishing options exercised by authors. Earlier bibliometric studies have shown that many authors of developing countries prefer to publish their works in the developed world, since that carries greater prestige. Two countries, Malaysia and Saudi Arabia, have become recently active in publishing in this field and their frequencies indicate that they may be on their way to joining the group of core countries.

## Conclusions

The results of this study have not provided unqualified support for the hypothesis that the Islamic economics literature exhibits the features of Bradfordian Law of Scattering. The citation analysis has been conclusive in projecting core authors, publishers, sources of literature, and countries of origin. The citation distribution in three zones of core, moderate, and diminishing productivity has been inconsistent with the Bradfordian Law. The feature of diminishing returns was observed for only one measure of countries of origin and the other three measures revealed different patterns. The failure in meeting the norms of bibliometric law is attributable to the fact that the discipline is still in its formative stage.

The results of this study may be used in developing core collections of Islamic economics literature. The identification of core authors, institutions/publishers, sources of literature, and countries of origin should be helpful in exploiting resources and providing services in library and information organizations. This study will prove suggestive to institutions, research agencies, learned bodies, and academic departments dealing with Islamic economics literature. These organizations need to analyze present and future patterns of scholarly communication and would do well to identify areas of collaboration in theory formation, development of models, design of infrastructures, and dissemination of results. The study was confined to the English language literature available in the library of the International Islamic University Malaysia. A study on a larger scale and with a wider coverage would certainly provide a more accurate analysis of the situation. The bibliometric technique of context analysis is considered useful for the purposes of identifying what is known as the influence pattern. The growth and progress of Islamic economics, a discipline still in its infancy, needs to be periodically monitored and examined, using bibliometric methods of investigation.

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## Notes

1. Emilie C. White, "Bibliometrics: From Curiosity to Conventions." *Special Libraries* 76 (Winter 1985): 36.
2. B. C. Brookes, "Numerical Methods of Bibliographic Analysis," *Library Trends* 22 no. 1 (July 1973): 18
3. S. C. Bradford, "Sources of Information on Specific Subjects," *Collection*

*Management* 1, no, 3-4 (Fall-Winter 1976-77): 96.

4. *Ibid.*, 99.

5. Abraham Bookstein, "Bibliometric Distributions," *Library Quarterly* 46, no. 4 (October 1976):418.

6. Leah A. Lievrouw, "Reconciling Structure and Process in the Study of Scholarly Communication," in *Scholarly Communication and Bibliometrics*, ed. Christine L. Borgman. (London: Sage Publications, 1990), 61.