

## **Growth and Development of Scholarly Literature: An Analysis of SCOPUS**

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### **Introduction**

Scholarly research leads to scholarly publishing. The scholarly literature from all over the world, including both developed and developing nations, continues to explode. Journals, book series, and conference proceedings continue to be major forms of scholarly literature. In the past, the medical sciences dominated the literature, but disciplines like physical sciences, life sciences, and social sciences following in the footsteps of medical sciences.

### **Problem**

This study highlights the growth in the scholarly literature from different points of view.

### **Methodology**

Data was collection from the SCOPUS database, which contained 25,482 publications were observed, as of January 2008. The data was analyzed to trace the growth and development of scholarly literature.

### **Objectives**

- Determine the source type of publications
- Monitor active and inactive publications
- Determine publications with up-to-date coverage
- Determine continental output
- Trace subject development

## Literature Review

Price (1963, 1975) studied the growth in the number of scientists, scientific journals, and papers over the past two centuries, finding that the numbers doubled every 15 years. Since then, literature growth studies have become very common in the field of bibliometrics and infometrics. Studying growth patterns in the NLM's serials collection and in *Index Medicus* journals between 1966 and 1985, Humphreys and McCutcheon (1994) concluded that the data appear to support Price's analysis, which was further developed by Goffman (1966, 1971) describing it as an initial period of exponential growth, followed by saturation and slowdown to a steady rate of increase. A similar conclusion was reached earlier by Orr and Leeds (1964) concerning the biomedical literature. The " Law of Exponential Growth " has been further dealt with by Tague and others (1981), Ravichandra Rao and Meera (1992), Egghe and Ravichandra Rao (1992), and many others. The exponential growth of the literature is described mathematically by the exponential function  $Y_T = a \cdot e^{bt}$  where  $Y_T$  represents the size at time  $t$ ,  $a$  is the initial size, and  $b$  is the continuous growth rate which is related to the annual percentage growth rate  $r$ , as:  $r = 100(e^b - 1)$ . Egghe and Ravichandra Rao (1992) claim, however, that the power model (with exponent  $>1$ ) is the best growth model for sciences and technology fields, while the Gompertz S-shaped distribution fits better databases of the social sciences and the humanities.

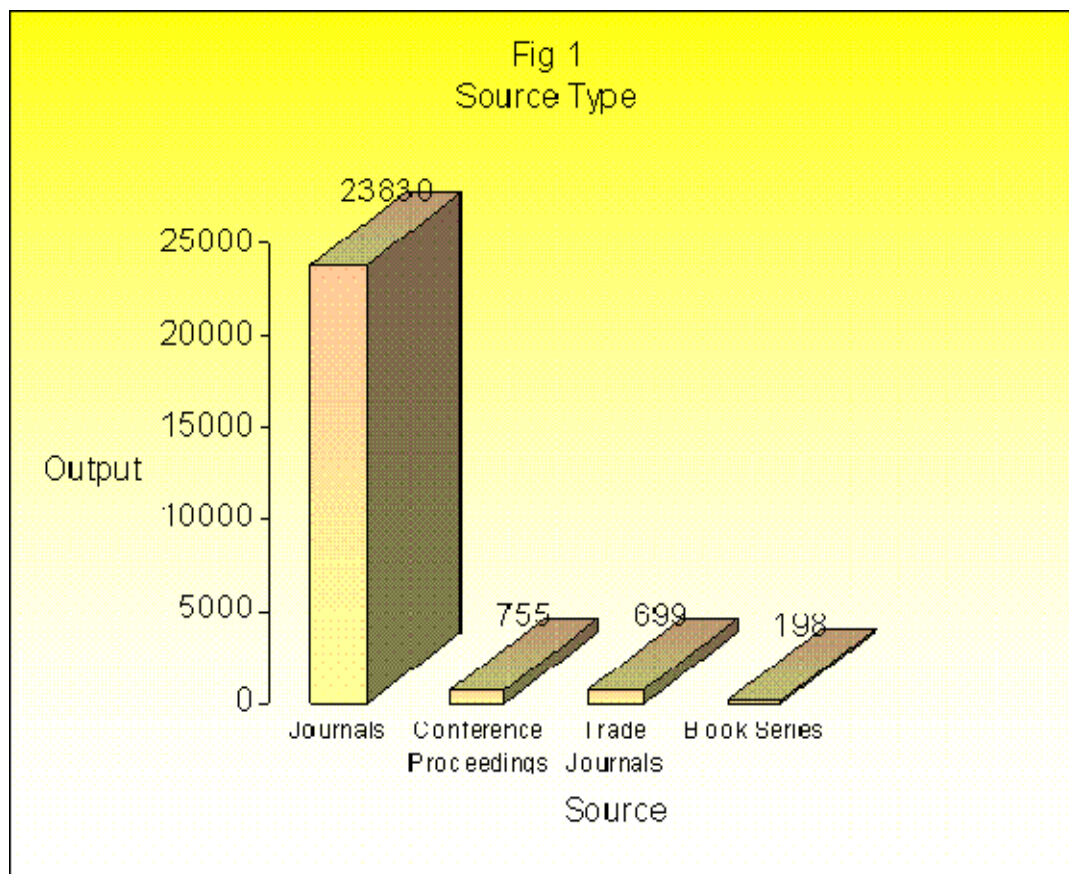
## Findings

A total of 25,482 publications represent the literary output in different formats, in different subjects, and from various nations. However, for more granular results, the findings have been divided into broader headings.

## Source Type

The total database of 25,482 publications represents different formats. A majority of the publications are journals and journal articles, with a total of 23,830 (93.51%), followed by conference proceedings and trade journals at 755 (2.96%) and 699 (2.74%), and book series, with a total of 198

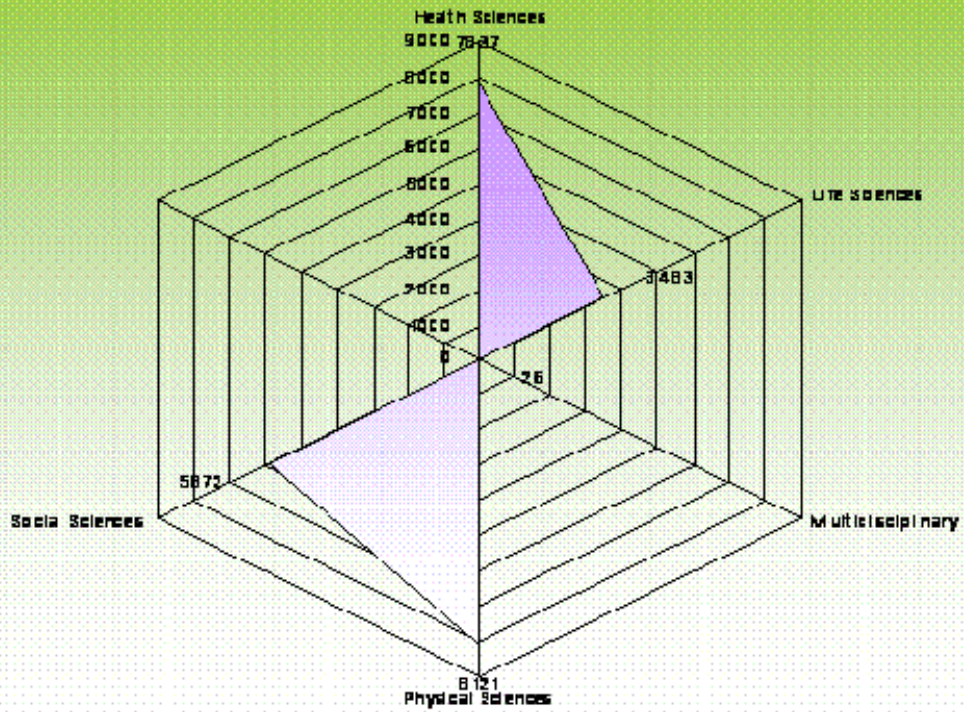
(0.77%). Figure 1 shows the publications from various sources.



### Subject Wise Development

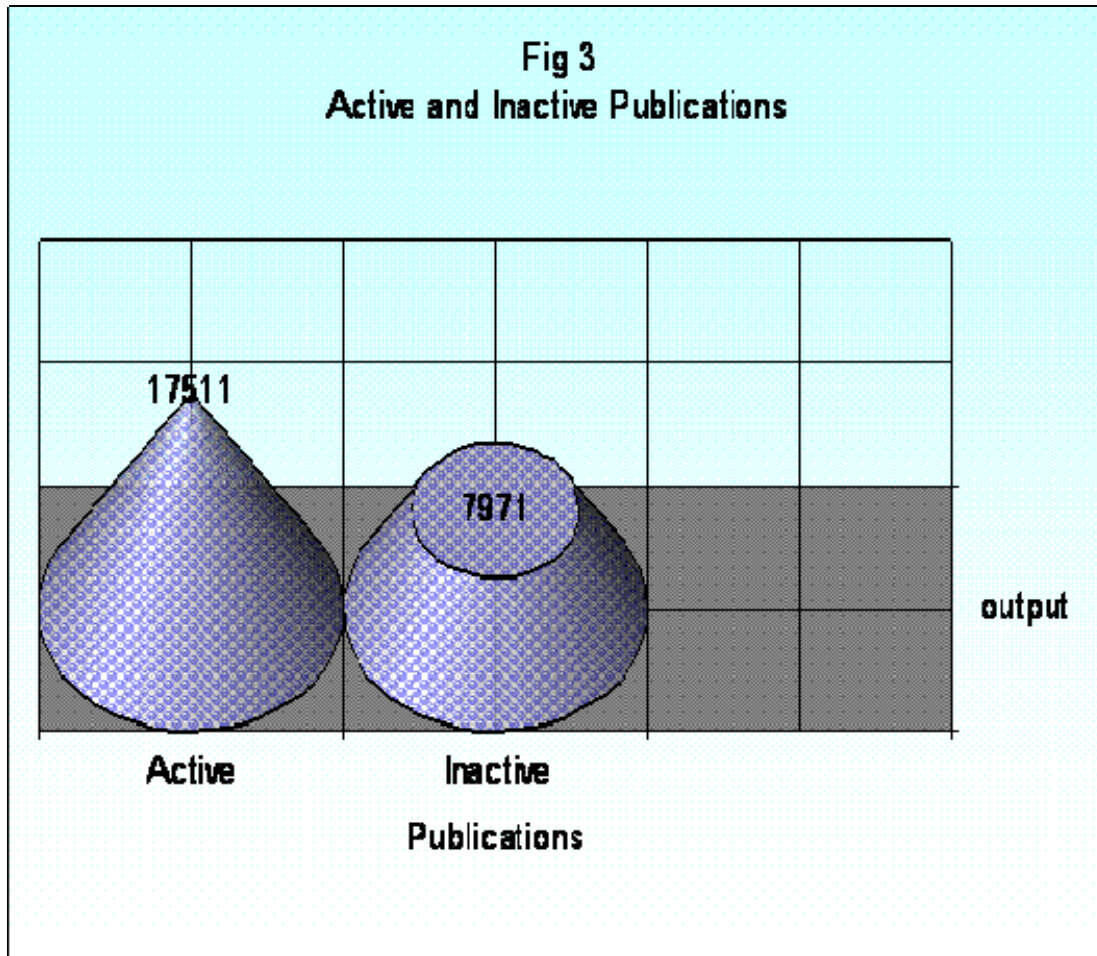
Of the five general subjects, physical sciences led the list with a total of 8,121 (31.86%). Following that were health sciences, social sciences, life sciences, and multidisciplinary subjects with 7,837 (30.75%), 5,872 (23.04%), 3,483 (13.66%) and 26 (0.10%) respectively. The subject of 143 publications could not be determined. Figure 2 illustrates the data.

Fig 2  
Subject Wise Development



### Active and Non Active Publication

A total of 17,511 (68.71) publications were active and 7,971 (31.28%) inactive, shown in Figure 3. The scholarly literature shows a lively nature, since nearly 70 percent is being currently published.



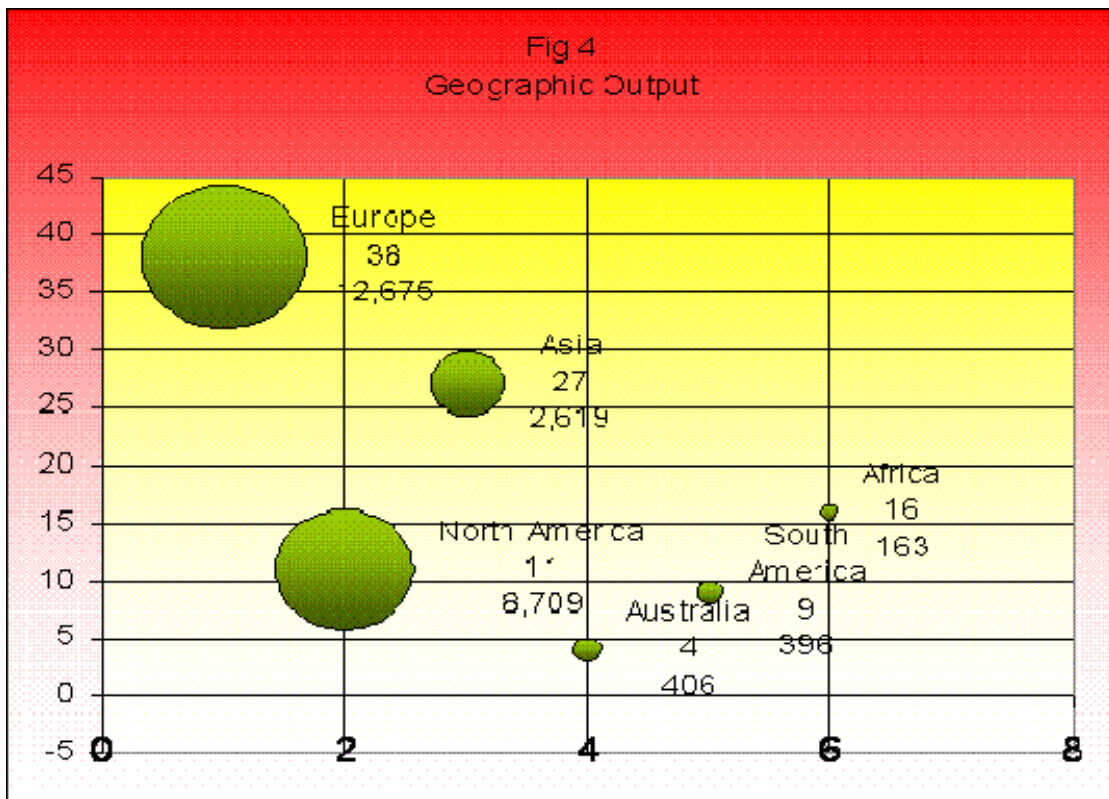
### Geographic Output

A total of 105 countries are involved in the publication of different types of literature. Countries like the US and UK are leaders in the area of scholarly publications. The nations represented were classified into continents and the results are shown in Table 1 and Figure 4. Europe exceeds all the other regions in research production, scoring 49.74%, with a total of 12,675. Following Europe are North America, Asia, and Australia with 37.14% (8,709), 10.27% (2,619), and 1.59% (406). In South America and Africa the production relatively low, but growing steadily and represent 1.55% (396) and 0.63% (163). Geographic region could not be determined for 514 publications.

**TABLE 1**

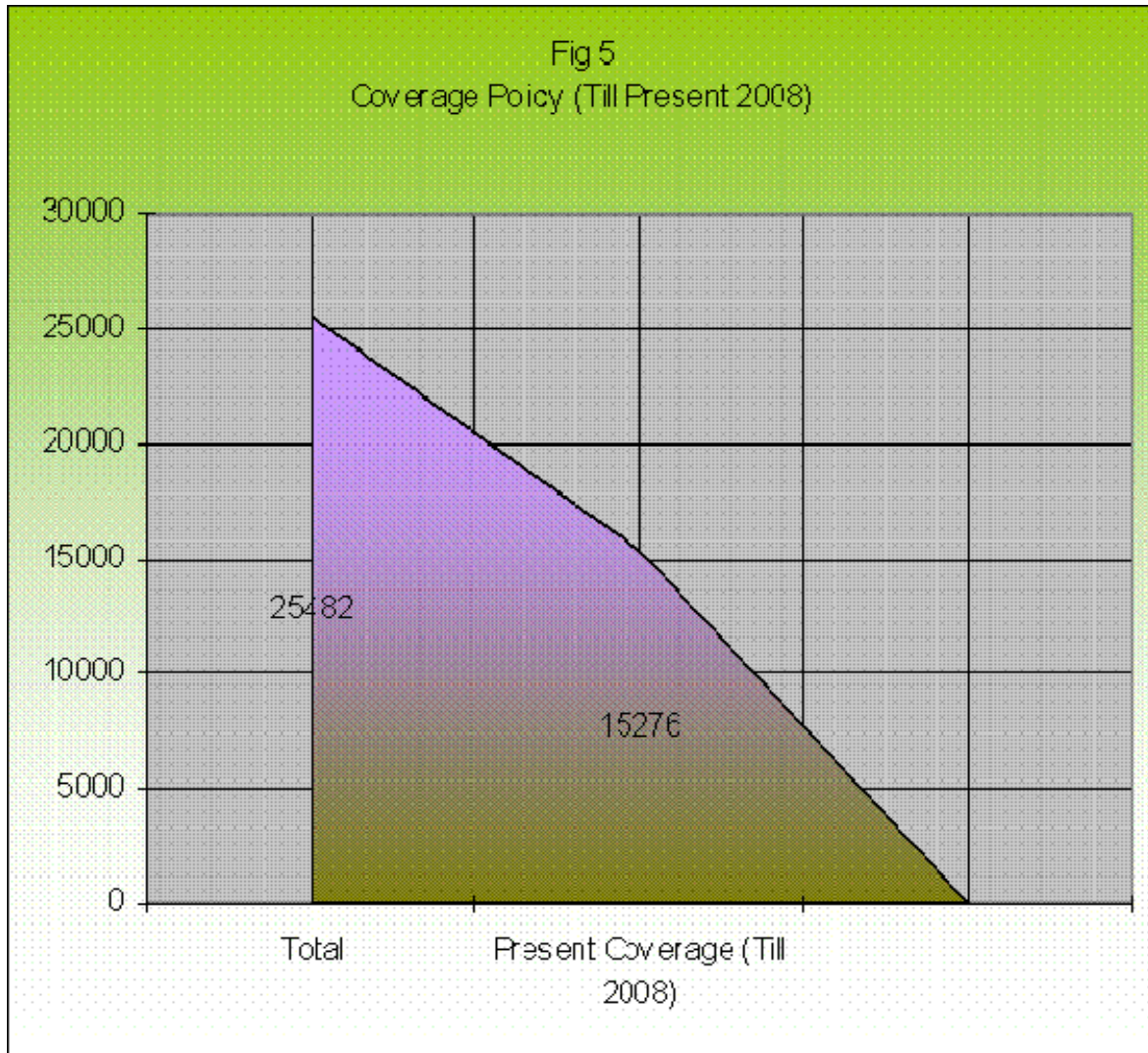
**Continental Output of the Scholarly Literature**

Rank	Continent	No. of Countries	Output	%Age
1	Europe	38	12,675	49.74
2	North America	11	8,709	37.14
3	Asia	27	2,619	10.27
4	Australia	4	406	1.59
5	South America	9	396	1.55
6	Africa	16	163	0.63
	Total	105	24968	



**Coverage Policy**

Out of 25,482 publications, 15,276 are current as of 2008, which represents 59.94% of the total, shown in Figure 5. It is significant that more than half of the literature is available without interruption.



### Conclusion

The analysis provides estimates of the research productivity of different regions of the world. Europe leads the world in the scientific production, and journals are the largest part of the published literature, and the physical sciences are the dominant disciplines. It is reassuring that developing areas of the world such as Latin America and the Caribbean and, to a lesser extent, Asia also produce a considerable proportion of worldwide research. The economies of these regions are gradually improving. Moreover, nearly 70 percent of titles are being actively published and nearly 60 percent of the content output is up-to-date.

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