Uncitedness of Articles of University Faculty in Karnataka: A Study

Manjunatha J.
Research Scholar, C/o Department of Studies in Library and Information Science, University of Mysore,
Email: manjumlisc017@gmail.com

Tressie Rodrigues
Assistant Librarian, Teresian College, Mysuru
Email: judytressy@yahoo.com

Abstract

Input Method Editors (IMEs) – keyboard layouts - are the applications essential for converting keystrokes to character in another language. The study examined four different Urdu IMEs (keyboard layouts) to compare them for the creation of bibliographic records in libraries. It was found that there is no significant difference between the keyboards. The implication of the study is that the cataloguers can choose any one of the IMEs of their choice as there is no distinct advantage of any one IME over others.

Keywords

Input Method Editors, IMEs, Keyboards, Indic Keyboards, Urdu Keyboards, Perso-Arabic Scripts, Soft keyboards, Bibliographic Data Entry

Introduction

Publish or perish is the order of the day. Scientists and researchers publish their work in variety of formats. The earlier works of others are referenced. Authors get citations for some of their work. Some work seldom gets citations. There are some reasons for giving citations. It is believed that citations show the relative importance of that work. Danell (2011) remarked that highly cited authors tend to write the highly cited articles, but all authors can write uncited articles. Of late, the researchers are also studying at the uncitedness of articles. There are many factors influenced in uncitedness of articles. The citation pattern differs from one



community to another. A single paper remains uncited for a long time until the rest of the research community discover its value and start citing it. Hsu and Huang (2011) stated that a journal with a high Impact Factor is assumed to have a low percentage of uncited articles. (Rehn & Kronman, 2008). Yeh et al. (2012) identified that some cited references are not relevant to the citing patent and not all the relevant references are cited. He attempts to use the bibliographic coupling (BC) approach to filter the irrelevant patent citations and supplement the relevant uncited patent citations to construct a patent citation network (PCN).

Review of earlier literature

The literature study depicts that there are limited numbers of studies identifying the status of uncitedness in scholarly publications. Lee (2003) conducted a scientometric study in Institute of Molecular and Cell Biology (IMCB) to evaluate the 10-year research performance of the Institute. The study result shows that 95.6% of the articles were published in ISI journals. The total articles received an average of 25 to 35 citations per article, and the percentage of uncited articles is 11.6%, 4 articles received more than 200 citations, and 18 received between 100 to 200 citations. In contrast, the Hamilton's article was quoted by Garfield (1998) shows that the trends in uncited documents in the main 3 discipline. In Arts and Humanities, there were 98.0% of articles were uncited followed by Social Science (74.7%) and Science (47.4%) (Pendlebury, 1991). However, as Maxine Singer was quoted as saying in Hamilton's article, it is necessary to know what is in the numbers before interpreting them. Egghe, Guns, & Rousseau (2011) examined uncited publications of the 75 researchers from the fields of mathematics (Fields medalists), physics, chemistry, and physiology or medicine (Nobel laureates) and identified that Nobel laureates and fields medalists have a rather large fraction (10% or more) of uncited publications. The most remarkable result of the study is that there is a positive correlation between the h-index and the number of uncited articles, and the study also included a Lotkaian model, which partially explains the empirically found regularities.

Dalen & Henkens (2004) stated that the average demography article published between 1990 and 1992 had roughly a 59 percent chance of remaining uncited two years later, a 36 per- cent chance five years later, and a 24 percent chance ten years later. If we exclude short commentaries from among the articles and if we exclude self- citations, the level of uncitedness drops to 21 percent.

Many studies examined the relationship between Impact Factor (IF) of Journal and Uncideness Factor (Egghe, 2010 & Burrell, 2013). A journal with a high Impact Factor is assumed to have a low percentage of uncited articles (Hsu & Huang, 2011). Output volume, the percentage of publications not cited, and the citation frequency distribution within a set timeframe are related aspects of journal impact measurement these aspects of journal impact measurement play a significant role, and are strongly inter-relate the degree of uncitedness, and the share of a journal its contents above or below the impact factor value (van Leeuwen, & Moed, 2005).

Data and Method

Data for the present study was collected from Web of Science (WoS) of Thomson and Reuters. WoS includes the Science Citation Index (SCI), the Social Sciences Citation Index (SSCI), the Conference Proceedings Citation Index - Social Science & Humanities (CPCI-SSH) and the Conference Proceedings Citation Index - Science (CPCI-S).

The data about the different universities in Karnataka was collected. WoS was searched under search terms “Univ. Mysore” and “Karnatak Univ” to collect data related to these universities. The data so collected was tabulated in Microsoft Excel for further analysis.

In all 9538 articles have been indexed in WoS database so far which relates to the general universities in Karnataka. The top two universities in terms of number of indexed articles in WoS are University of Mysore and Karnatak University. Hence only the top two universities have been considered for the study. These two universities together form about half the number of articles (50.51%) from universities in Karnataka. No initial period was fixed for collecting the data. However the data was collected only up to December 2012. This is to give all the articles to get a fair chance to get cited in 2013. The data for the study was collected from November 14 to November 21, 2013. This date is important as the number of citations might vary from time to time. WoS has an option to list the hits according to the number of citations received by them. It also provides an option to list them in increasing order of citations. This has helped the authors to collect the details of article with no citations received so far.

The data was collected under various groups for analysis and interpretation. The data was collected in nine different headings so as to enable the authors to look

into the data from different angles. The data so collected have been presented in the subsequent sections in the form of tables.

Scope and Limitations

The study covers only University of Mysore and Karnatak Universities. The data was collected from WoS. It is possible that the percentage of uncitedness might vary by changing data source. It is presumed that even if we combine the data sources there may not be much difference in the overall findings. Here, the uncitedness articles are those articles which are seldom cited till 2012 as per the data source WoS. In other words only those articles with zero citations till 2012 are considered for the study. No attempt has been made in this article to study the low-citation articles. Even if an article is cited at least once, it will not come under the data set collected for this study. There is an intrinsic limitation of years available for recently published articles to get their first citation. It is therefore decided to get articles upto December 2012.

Uncitedness of articles

Citedness is a measure for checking the significance of a work in its subject domain. On the other hand, uncitedeness is also a measure which indirectly indicates the consistency of researchers to publish significant articles. Lesser the uncitedness factor higher will be the ability of the researchers to publish significant articles. Table 1 gives the details of the uncitedness factor of the two universities considered in this study.

Sl. No.	University Name	Total Number of Articles	Uncited Articles	Percentage
1	University of Mysore	2748	835	30.39
2	Karnatak University	1649	332	20.13

Table 1 : Uncitedness

Table 1 clearly indicates that the percentage of articles published by KU receives more citations than its counterpart. Researchers of UoM have to their credit higher number of articles that got indexed under prestigious WoS database by virtue of publishing them in significant journals. However, in comparison their overall citation percentage is below KU. To be fair with UoM, as a few earlier studies have shown, one can say that as the number of article increases, the percentage of uncitedness would marginally increase. Thus the difference between UoM and KU need not be taken in absolute terms. The following bar chart depicts the uncitedness factor of both the universities in a pictorial manner in terms of number of uncited articles.

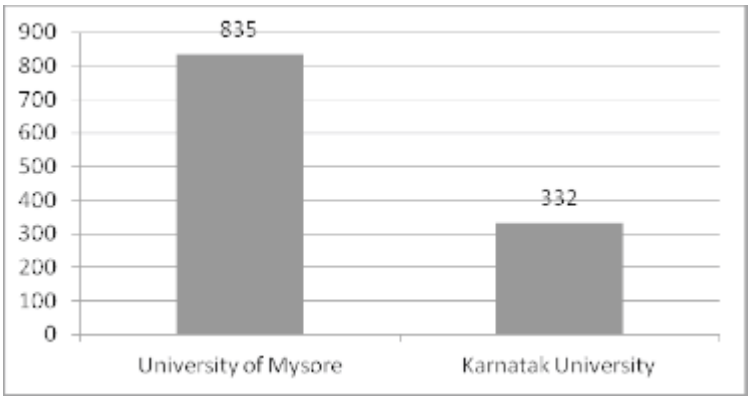


Figure 1: Uncitedness

The percentage of uncitedness percentages of both the universities are higher than those found in other studies. Lee (2003) in his study on Institute of Molecular and Cell Biology (IMCB) records the percentage of uncited articles as 11.6%.

Category wise distribution of uncited articles

The researcher wanted to understand the distribution of uncited articles among various subject categories. It is a horrendous task to distribute the articles manually to suit different categories. Fortunately, WoS provides an automatic clustering of articles based on its own subject categorization scheme. These categories themselves were used for analyzing the data. As the areas of specialization and focus vary between the universities, the data is given as two tables representing each university. Table 2 and Table 3 below provide the details of UoM and KU respectively.

Sl. No.	WOS Category - 2748	Total Number of Articles	Uncited Articles	Percentage of Uncitedness
1	CRYSTALLOGRAPHY	598	225	21.76
2	CHEMISTRY MULTIDISCIPLINARY	269	112	10.83
3	CHEMISTRY ORGANIC	179	27	2.61
4	POLYMER SCIENCE	156	32	3.09
5	CHEMISTRY MEDICINAL	140	25	2.41
6	BIOCHEMISTRY MOLECULAR BIOLOGY	133	21	2.03
7	PHARMACOLOGY PHARMACY	120	16	1.54
8	CHEMISTRY ANALYTICAL	111	12	1.16
9	MATERIALS SCIENCE MULTIDISCIPLINARY	110	19	1.83
10	PLANT SCIENCES	106	25	2.41
11	Others	1847	520	50.29
	Total	3769	1034	100

Table 2 : Uncitedness Categlories in University of Mysore

As one can observe from the above Table 2, the top ten categories attracts almost half of the overall publication count (50.50%). Surprisingly, these top ten

categories have also contributed almost half of the uncited articles (49.70) in UoM. This again proves the untested hypothesis that there exists a positive correlation between number of articles and uncitedness factor. One can observe that most of the categories belong to Chemistry discipline. At University of Mysore Chemistry contributes more to the publication count as well as seldom-citation count. Analytical Chemistry, Pharmacology and Material Science are the disciplines have uncitedness percentage less than 2% signifying the fact that these areas produce relatively more significant papers as they attract citations from their peers.

Table 3 : Uncitedness Categories in Karnatak University

Sl. No.	WOS Category - 1649	Total Number of Articles	Uncited Articles	Percentage of Uncitedness
1	CHEMISTRY MULTIDISCIPLINARY	250	63	14.96
2	POLYMER SCIENCE	173	8	1.90
3	CHEMISTRY PHYSICAL	136	20	4.75
4	CHEMISTRY INORGANIC NUCLEAR	122	14	3.33
5	ENGINEERING CHEMICAL	118	7	1.66
6	CHEMISTRY ORGANIC	106	24	5.70
7	PHARMACOLOGY PHARMACY	86	11	2.61
8	CHEMISTRY MEDICINAL	77	13	3.09
9	CRYSTALLOGRAPHY	65	24	5.70
10	CHEMISTRY ANALYTICAL	62	8	1.90
11	Others	1086	226	54.39
	Total	2281	421	100.00

Table 3 above shows the uncitedness in KU from subject categories angle. In case of KU, the top ten categories amount to 54% of the overall publication count. On the other hand only 46% of the overall uncitedness comes from these top ten categories. This result is marginally different than that of UoM. However, like UoM, chemistry is the major area of research in KU also. It may be seen that Chemical Engineering, Analytical Chemistry and Physical Chemistry have less than 2% of uncitedeness factor. The lower uncitedeness factor clearly shows that KU has been publishing articles of significance in these areas.

Item type and uncitedness

Authors of this work were interested to understand the distribution of uncitedness in various document types.

	University of Mysore				Karnatak University		
Sl. No.	**Document Type - 2748**	**Total Number of works**	**Uncited works**	**Percentage**	**Total Number of works - 1649**	**Uncited works**	**Percentage**
1	ARTICLE	2593	739 (28.49%)	94.94	1595	294 (18.43%)	88.55
2	PROCEEDINGS PAPER	75	26 (34.66%)	1.79	30	5 (16.67%)	1.51
3	MEETING ABSTRACT	53	52 (98.11%)	0.54	9	9 (100%)	2.71
4	REVIEW	48	3 (6.25%)	1.01	17	1 (5.88%)	0.30
5	EDITORIAL MATERIAL	19	16 (84.21 %)	0.18	3	2 (66.67%)	0.60
6	BOOK REVIEW	13	13 (100%)	0.48	8	8 (100%)	2.41
7	LETTER	11	3 (27.27%)	0.42	7	5 (72.42%)	1.51
8	CORRECTION	6	6 (100%)	0.42	7	5 (71.42 %)	1.51
9	BIOGRAPHICAL ITEM	2	2 (100%)	0.18	3	3 (100)	0.90
10	NEWS ITEM	2	1 (50%)	0.00	0	0 (0.00%)	0.00
11	REPRINT	1	0 (0.00%)	0.00	0	0 (0.00%)	0.00
12	BOOK CHAPTER	0	0 (0.00%)	0.06	1	0 (0.00%)	0.00
	Total	**2823**	**861 (30.49%)**	**100.00**	**1680**	**332 (20.13%)**	**100.00**

Table 4 : Item Type and Uncitedness

Most of the works in WoS are of article type. It is not a surprise result anyway as WoS covers predominantly the journal articles. As can be seen from Table 4, UoM has more journal articles which remain uncited than its counterpart KU. The similar trend is observable in all major document types also. As the number of work is highly skewed in favour of journal articles, it is difficult to come to any concrete conclusion regarding the distribution of uncitedness among document type. From the available data, it can possibly be hypothesized that the uncitedness among document types other than journal article would be much higher. Further research on this issue should explore this aspect.

Distribution of Uncitedness over Years

Authors of this paper were interested to understand the pattern of uncitedness of faculty publication over years. Normally it is expected that the collective experience of the university departments would possibly reduce the uncitedness factor of their publications over the years. With this assumption in mind, the authors tried to analyze the data from this perspective. Table 5 below provides the details of the data collected for the purpose.

University of Mysore			
Sl. No.	**Year - 2748**	**Total Number of Articles**	**Uncited Articles**
1	1999	109	14
2	2000	78	14
3	2001	111	16
4	2002	150	23
5	2003	111	29
6	2004	158	31
7	2005	198	44
8	2006	262	51
9	2007	304	72
10	2008	203	51
11	2009	264	88
12	2010	289	111
13	2011	308	146
14	2012	203	145
	Total	**2748**	**835**

Table 5 : Year wise distribution of uncitedness - UoM

Table 5 shows the distribution of number of articles and their uncitedness over years. The data of UoM for past 14 years are shown in the table starting from 1999 to 2012. The following line chart clearly shows that both the number of articles and uncitedness factors are increasing over years. It is not surprising result that number of articles are raising. However the rate of growth of articles as seen from the Figure 2 is neither consistent nor increasing drastically. Contrary to the expectations made in the introduction of this section, it appears that the experience and wisdom gained by the senior faculty members are not properly percolated down to the juniors. Hence it is possible to conveniently state that the uncitedness factor is also on the rise along with the number articles.

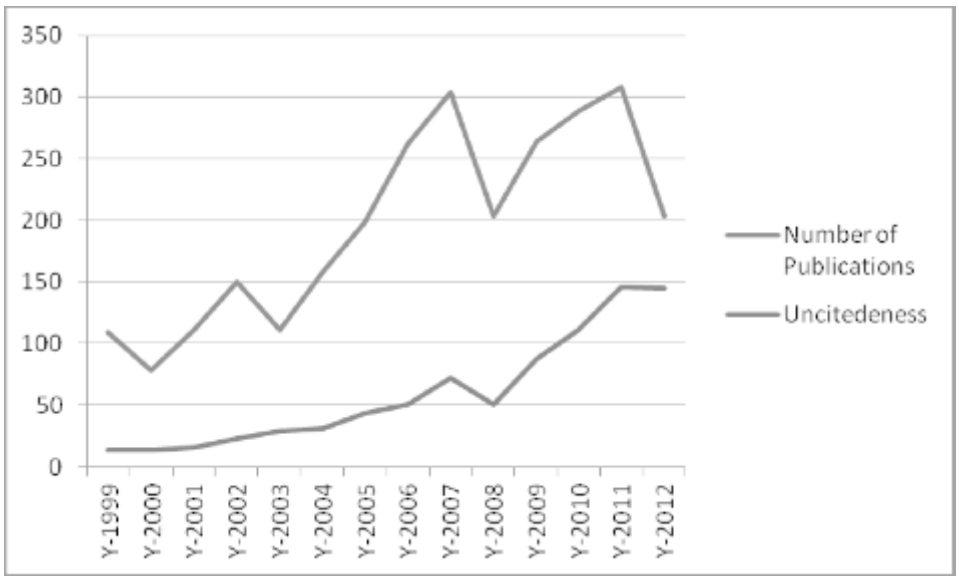


Figure 2 : Year wise distribution of publications and uncitedness.

Authors with Uncitedness Factor in their Publications

It is an interesting aspect to study the authors whose papers remain uncited. As already stated it is expected that authors with more publications will likely to have more uncitedness ratio. Table 6 and Table 7 give the details of UoM and KU respectively.

University of Mysore					
Sl. No.	**Author - 2748**	**Total Number of Articles**	Percentage	**Uncited Articles**	Percentage
1	YATHIRAJAN HS	482	12.97	163	15.86
2	RANGAPPA KS	205	5.52	54	5.25
3	BASAVAIAH K	156	4.20	52	5.06
4	PRASAD JS	143	3.85	50	4.86
5	SRIDHAR MA	119	3.20	39	3.79
6	GOWDA DC	94	2.53	16	1.56
7	NAGARAJA P	92	2.48	21	2.04
8	SOMASHEKAR R	85	2.29	29	2.82
9	RAI KML	81	2.18	19	1.85
10	SHETTY HS	81	2.18	11	1.07
11	RANGANATHAIAH C	72	1.94	12	1.17
12	BYRAPPA K	65	1.75	17	1.65
13	REVANASIDDAPPA HD	59	1.59	17	1.65
14	VINAY KB	55	1.48	29	2.82
15	MAYEKAR AN	50	1.35	22	2.14
	Others	1878	50.52	477	46.40
	Total	3717	100.00	1028	100.00

Table 6 : Authors and Uncitedness from UoM

Table 6 indicates the authors who have published some uncited articles in UoM. It may be noted here that top 15 most productive authors have contributed to almost half of the total publications from UoM (49.48). They in all contribute for 53.60% of uncited articles. This phenomenon shows that even the most productive authors have uncited articles as that of less productive authors. This may lead to a null hypothesis for future research that there exists no relationship between productivity and uncitedness factor. The above table shows that Yathirajan HS leads the table both in terms of productivity and uncitedness followed by Rangappa KS and Basavaiah K. Five authors have less than 2% of uncitedness. They are Shetty HS, Gowda DC, Byrappa K, Revanasiddappa HD, and Rai KML.

Karnatak University					
Sl. No.	Author - 1649	Total Number of Articles	Percentage	Uncited Articles	Percentage
1	AMINABHAVI TM	248	10.14	9	2.65
2	NANDIBEWOOR ST	234	9.57	48	14.12
3	MURTHY HN	81	3.31	9	2.65
4	PATIL SA	77	3.15	6	1.76
5	SEETHARAMAPPA J	77	3.15	6	1.76
6	KULKARNI MV	65	2.66	20	5.88
7	CHIMATADAR SA	63	2.58	15	4.41
8	GUDASI KB	54	2.21	5	1.47
9	SAIDAPUR SK	49	2.00	9	2.65
10	HOSAMANI KM	48	1.96	6	1.76
11	KARIDURAGANAVAR MY	46	1.88	3	0.88
12	GADAGINAMATH GS	44	1.80	14	4.12
13	REVANKAR VK	44	1.80	7	2.06
14	SAIRAM M	44	1.80	1	0.29
15	SHANBHAG BA	44	1.80	8	2.35
	Others	1227	50.18	174	51.18
	Total	2445	100	340	100

Table 7 : Authors and Uncitedness in KU

Table 7 shows KU authors exhibits somewhat similar phenomenon as observed in UoM. The top 15 most productive authors in KU have published articles amounting to half of the overall productivity of all authors (49.82%). 48.82 % of articles from these authors remain seldom cited. Like in UoM, the top most productive author remains top most in terms of uncitedness also. Sairam M (0.29%) and Karidurаganavar MY (0.88%) record the least uncitedness percentages. Four authors with less than 2% of uncitedness are Gudasi KB, Patil SA, Seetharamappa J, and Hosamani KM.

Collaboration and Uncitedness

Does collaboration with other authors or institutions have an impact on uncitedness factor? This is the question of interest to the authors of the present paper. The data was collected for the purpose and tabulated for further analysis in Table 8 and Table 9.

University of Mysore					
Sl. No.	**Country - 2748**	**Total Number of Articles**	Percentage	**Uncited Articles**	**Percentage**
1	INDIA	2748	75.70	835 (30.39%)	75.98
2	USA	326	8.98	114 (34.97%)	10.37
3	GERMANY	138	3.80	25(18.12%)	2.27
4	JAPAN	53	1.46	7 (13.21%)	0.64
5	SCOTLAND	43	1.18	13 (30.23%)	1.18
6	POLAND	36	0.99	22 (61.11%)	2.00
7	IRAN	35	0.96	18 (51.43%)	1.64
8	DENMARK	23	0.63	4 (17.39%)	0.36
9	TURKEY	20	0.55	6 (30.00%)	0.55
10	SINGAPORE	19	0.52	6 (31.58%)	0.55
11	Others	189	5.21	49 (25.93%)	4.46
		3630	100	1099 (30.27%)	100

Table 8 : Collaboration and uncitedness in UoM

It is not surprising that 75.70% of the author-collaboration is among authors from India as for as UoM is concerned. UoM authors have collaborated more with authors from USA when compared to other countries. The uncitedness of Indian collaboration articles is to the tune of 75.98%. Further analysis is required to see the pattern in intra-institution and inter-institution collaborations.

If one considers the individual collaborating countries and percentage of uncitedness, it is found that the works collaborated with Poland got highest uncitedness factor (61.11%) whereas the least was with Japanese authors (13.21%). In other words, when the UoM authors collaborated with Japanese authors, they attracted the citations more than with any other countries. Denmark and Germany also stands next as far as attracting the minimum citations are considered. Surprisingly, the collaborative work with USA shown a highest uncitedness factor of 34.97% which is more than even the collaboration with Indian authors. Only further depth analysis could provide insight into such result.

Karnatak University					
Sl. No.	Country - 1649	Total Number of Articles	Percentage	Uncited Articles	Percentage
1	INDIA	1649	83.07	327 (19.83%)	87.43
2	SOUTH KOREA	76	3.83	10 (13.16%)	2.67
3	USA	46	2.32	7 (15.22%)	1.87
4	ENGLAND	42	2.12	7 (16.67%)	1.87
5	AUSTRALIA	15	0.76	2 (13.33%)	0.53
6	GERMANY	13	0.65	4 (30.77%)	1.07
7	FINLAND	11	0.55	1(9.09%)	0.27
8	SWITZERLAND	11	0.55	1(9.09%)	0.27
9	TAIWAN	10	0.50	0 (0.00%)	0.00
10	ISRAEL	8	0.40	4(50.00%)	1.07
11	Others	104	5.24	11(10.58%)	2.94
	Total	1985	100.00	374 (18.84%)	100

Table 9 : Collaboration and Uncitedness in KU

Table 8 shows the collaboration pattern of authors of KU with authors from other countries. In comparison the collaboration of KU authors with other countries is slightly less than that of UoM. 83.07% of their articles are intra-nation collaboration. The share of uncitedness is as high as 87.43% with Indian authors.

Collaboration works, expect with Isreal, have witnessed lower uncitedness factor. It may be found that all ten papers with Taiwan have attracted citations. In case of KU, the collaboration with Isreal and German authors has produced more uncitedness than any other countries. In general terms, one can possibly say that collaboration with foreign countries have no impact on receipt of citations are concerned. This may have to be statistically tested with larger data set.

Conclusion

A study of uncitedness is equally important as that of citedness. The authors in particular and universities in general should try to understand the reasons for uncitedness and improve the situation. The overall uncitedness among faculty members in Indian universities is more when compared to international standards. This trend needs to be changed. There is a need for more studies and deeper studies to understand the phenomenon of uncitedness among Indian researchers.

References:

Burrell, Q. L. (2013). A stochastic approach to the relation between the impact factor and the uncitedness factor. Journal of Informetrics, 7(3), 676-682.

Dalen, H. P., & Henkens, K. (2004). Demographers and their journals: Who remains uncited after ten years?. Population and Development review, 30(3), 489-506.

Danell, R. (2011). Can the quality of scientific work be predicted using information on the author's track record? Journal of the American Society for Information Science and Technology, 62(1), 50–60.

Egghe, L. (2010). The distribution of the uncitedness factor and its functional relation with the impact factor. Scientometrics, 83(3), 689-695.

Egghe, L., Guns, R., & Rousseau, R. (2011). Thoughts on uncitedness: Nobel laureates and Fields medalists as case studies. Journal of the American Society for Information Science and Technology, 62(8), 1637-1644.

Garfield, E. (1998). I had a dream... about uncitedness. The Scientist, 12(14).

Hsu, J. W., & Huang, D. W. (2012). A scaling between Impact Factor and uncitedness. Physica A: Statistical Mechanics and its Applications, 391(5), 2129-2134.

Lee, C. K. (2003). A scientometric study of the research performance of the Institute of Molecular and Cell Biology in Singapore. Scientometrics, 56(1), 95-110.

Rehn, C., & Kronman, U. (2008). Bibliometric handbook for Karolinska Institutet. Huddinge: Karolinska Institutet.

van Leeuwen, T. N., & Moed, H. F. (2005). Characteristics of journal impact factors: the effects of uncitedness and citation distribution on the understanding of journal impact factors. Scientometrics, 63(2), 357-371.

Yeh, H. Y. et al. (2013). The bibliographic coupling approach to filter the cited and uncited patent citations: A case of electric vehicle technology. Scientometrics, 94(1), 75-93.