# On the Optimality of Academic Rankings of Regions with RePEc Data

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**I. Introduction**: Based on the bibliographical data available with the RePEc (Research Papers in Economics), the Internet Documents in Economics Access Service (IDEAS) publishes every month the up-dated academic rankings of different geographic regions (countries/states in the US). Academic rankings of authors belonging to a particular region make the basic building block of the region's rankings. All authors affiliated to the institutions in a particular region are added to the pool of that region. However, authors with multiple affiliations have their scores split among all regions. For computing the academic rankings of authors, thirty one criteria are used. Among those criteria, six relate to the count of work (such as articles, papers, book chapters, software, etc), fifteen are based on citation counts (excluding self citations), six are based on journal page counts and four are based on the popularity of RePEc services (such as abstract views and downloads). The ranks obtained according to these criteria are then aggregated by computing their harmonic mean, albeit with some modifications. The harmonic mean rewards those who are particularly good in some category, and perhaps too much. For this reason, the harmonic mean is dampened somewhat by adding a constant to each rank, and then subtracting it from the mean. Further, for each author, the aggregate rank is truncated by dropping the best and worst rankings. Once all these attributions are made for the authors affiliated to different regions, a properly weighted aggregate of author ranks is obtained although with a special treatment given to the Hirsch index. Finally, the regions (countries/states of USA) are ranked according to the scores thus computed for the authors affiliated to them (Zimmermann, 2007).

It may be relevant to enquire if the overall rankings of different regions obtained by such aggregation of criterion-wise rankings as obtained by the IDEAS are optimal. The objective of this paper is to discuss a few of the principles of optimality and to test on these principles the overall region-wise rankings obtained by the IDEAS.

**II. The Criteria of Ranking**: The following are the criteria used by the IDEAS/RePEc for ranking of the authors registered in the RePEc.

1. **Measures based on count of work**: There are six measures based on count of work (in the RePEc data base), namely:
   (i) ANB Works: The number of distinct works of an author;
   (ii) DNbWorks: Count divided by number of authors on each work;
   (iii) ScWorks: Count with simple impact factor weights;
   (iv) AScWorks: Count with simple impact factor weights divided by number of authors on each work;
   (v) WScWorks: Count with recursive impact factor weights;
   (vi) AWScWorks: Count with recursive impact factor weights divided by number of authors on each work.
2. **Measures based on citation counts**: There are fifteen measures based on citation counts (excluding self citations) of works in the RePEc data base, namely:
   (i) NbCites: Simple citation count;

(ii) ANbCites: Citation count divided by number of authors on each work;
(iii) ScCites: Citation count with simple impact factor weights;
(iv) AScCites: Citation count with simple impact factor weights divided by number of authors on each work;
(v) WScCites: Citation count with recursive impact factor weights;
(vi) AWScCites: Citation count with recursive impact factor weights divided by number of authors on each work;
(vii) DCites: Citation count discounted by age;
(viii) ADCites: Citation count discounted by age and divided by number of authors on each work;
(ix) DScCites: Citation count with discounted impact factor weights;
(x) ADScCites: Citation count with discounted impact factor weights divided by number of authors on each work;
(xi) WDScCites: Citation count with recursive discounted impact factor weights;
(xii) AWDScCites: Citation count with recursive discounted factor weights divided by number of authors on each work;
(xiii) HIndex: h-index;
(xiv) NCAuthors: Count of citing registered authors;
(xv) RCAuthors: Rank weighted count of citing registered authors.

3. **Measures based on journal page counts**: There are six measures based on journal page counts (in the journals registered in the RePEc data base), namely:
   (i) NbPages: Simple page count;
   (ii) ScPages: Page count divided by number of authors on each work;
   (iii) WSCPages: Page count with simple impact factor weights;
   (iv) ANbPages: Page count with simple impact factor weights divided by number of authors on each work;
   (v) AScPages: Page count with recursive impact factor weights;
   (vi) AWScPages: Page count with recursive impact factor weights divided by number of authors on each work.
4. **Measures based on the popularity of RePEc services**: There are four measures based on viewing the abstracts and download of the full papers, articles, etc (available in the RePEc data base), namely:
   (i) AbsViews:Total abstract views in the past 12 months;
   (ii) AAbsViews: Total abstract views per author in the past 12 months;
   (iii) Downloads: Total downloads in the past 12 months;
   (iv) ADownloads: Total downloads per author in the past 12 months.

In the measures enumerated above, *impact factors* of different types (simple, recursive and discounted) appear, which are computed as described in Zimmermann (2007). The *h-index* (Hirsch, 1995) is defined as: a scientist has index h if h of his/her H papers have at least h citations each, and the other (H−h) papers have no more than h citations each. Here H is the total number of papers authored or co-authored by the scientist that are available in the bibliographical data base. The h-index can take on an integer value only. Thus, an author with *h-index*=h would have at least $h^2$ citations (at least h papers with at least h citations each). This index was developed for physics, where scientists write prolifically and cite their peers generously. Some physicists have h above 100, but in Economics it is very rare to have an h above 20, mainly due to the fact that economists write fewer, but more involved papers (Zimmermann, 2007). Additionally, empirical work (and oftentimes theoretical work as well) in

economics has much less universal relevance and acceptability than the empirical (or theoretical) work in physics enjoys. This fact limits the *h-index* of authors in economics. Tol (2008) improved h-index to take on a real value and called it the *rational* successive *g-index*.

**III. Principles of Representation and the Measures of the Degree of Representation by Overall Rankings**: A perusal of the ranking criteria listed above immediately gives an impression that the criteria of citation counts dominate over other criteria by the sheer number (fifteen) of measures included under them. On the other hand, the criteria based on abstract review and downloads include only four measures. Thus, it appears to be quite likely that the overall rankings of the authors with higher scores on citation criteria would dominate over the overall rankings of the authors having higher scores on productivity or popularity criteria simply due to the number of measures used in those criteria. The biases arising out of the unequal number of measures included under different criteria may not be eliminated even if averaging is done at the criteria level and then such criteria-averages are used to obtain the overall ranking by aggregation. It is also likely that such criteria-level averaging would introduce a new kind of bias into the overall scores and the rankings based on them.

We must, therefore, lay down certain principles of optimal representation of a multitude of criteria by a unique composite criterion. We must devise some measure of the degree of representation of individual rank scores (31 in number in the present context) by the overall rank scores. Although there can be many alternative principles of representation, it is generally accepted that correlation, which is a measure of joint movement of two variables, may be used as a fair principle of representation. Among many possible correlation-based measures of the degree of representation, the following are of an immediate interest to us.

1. The array of overall scores, $[S]$, is a linear combination of weighted individual rank score arrays, $[r_j]$, such that the sum of the squared coefficients of correlation ($\rho$) between $S$ and $r_j$ is maximum. Symbolically, $S = \sum_{j=1}^{m} w_j r_j : \max \sum_{j=1}^{m} \rho^2(S, r_j)$. If $S$ is obtained in this manner, it is the factor score array associated with the first Principal Component (Kendall and Stuart, 1968). From $S$ we obtain an n-element array of rank, $[R]$, $R = R(S)$, which is the sequence of positional values, the non-decreasing and non-interleaving natural numbers, uniquely assigned the elements of $S$, the latter arranged into a pre-assigned scheme of order. We will designate this R by the name of $M_1$.
2. The array of overall scores, $[S]$, is a linear combination of weighted individual rank score arrays, $[r_j]$, such that the sum of the squared coefficients of *rank* correlation ($\tilde{\rho}$) between $R(S)$ and $r_j$ is maximum. Or, $R = R(S);\ S = \sum_{j=1}^{m} w_j r_j : \max \sum_{j=1}^{m} \tilde{\rho}^2(R, r_j)$. Spearman's formula may be used to obtain the rank correlation or, alternatively, the Karl Pearson's formula can be applied on the arrays of rank values. We will designate this R by the name $M_2$.
3. The array of overall scores, $[S]$, is a linear combination of weighted individual rank score arrays, $[r_j]$, such that the *minimal* squared (or equivalently, absolute) coefficient of *rank* correlation ($\tilde{\rho}$) between $R(S)$ and $r_j$ is maximum. Or, alternatively expressed, $R = R(S);\ S = \sum_{j=1}^{m} w_j r_j : \max(\min_j(\tilde{\rho}^2(R, r_j)))$. We will designate this R by the name $M_3$.

There can be two other measures of the degree of representation analogous to $M_1$ and $M_2$. If we use the absolute rather than squared value of the coefficient of correlation, we can obtain $M_4$ analogous to $M_1$ and $M_5$ analogous to $M_2$.

**IV. The Data Base**: We use the data published by the IDEAS for the month of September 2008. The country-wise (state-wise in case of USA) rankings for all 31 criteria are reproduced in Tables 1(A) and 1(B). In Table 1(A) we also present the overall rankings of different countries/states of US as computed by the IDEAS. We will denote the array of IDEAS overall ranking scores my $M_0$. These overall rankings are also reproduced in Table 1(B). These are the rank scores that we purport to test for their optimality. Additionally, Table 1(A) reproduces the rankings on the basis of the simple counts of work (NbWorks) reported by the Ideas. We do not use these rankings in further analysis.

**V. Computational Aspects**: It is rather straightforward to obtain $M_1$. The Principal Component Analysis can be carried out on the individual rankings matrix that has 168 rows (countries/states of US) and 31 columns (criteria-wise ranking scores) to obtain the factor scores array associated with the first Principal Component. This array is $S$. Then, countries/states can be ranked according to the ordered values of $S$. For doing this, several statistical software/programs (such as STATISTICA or SPSS) are available.

However, for obtaining $M_2$ through $M_5$ we do not have any closed form method. They must be obtained by direct nonlinear optimization. The direct optimization method can also be used for obtaining $M_1$, although doing so is not economical.

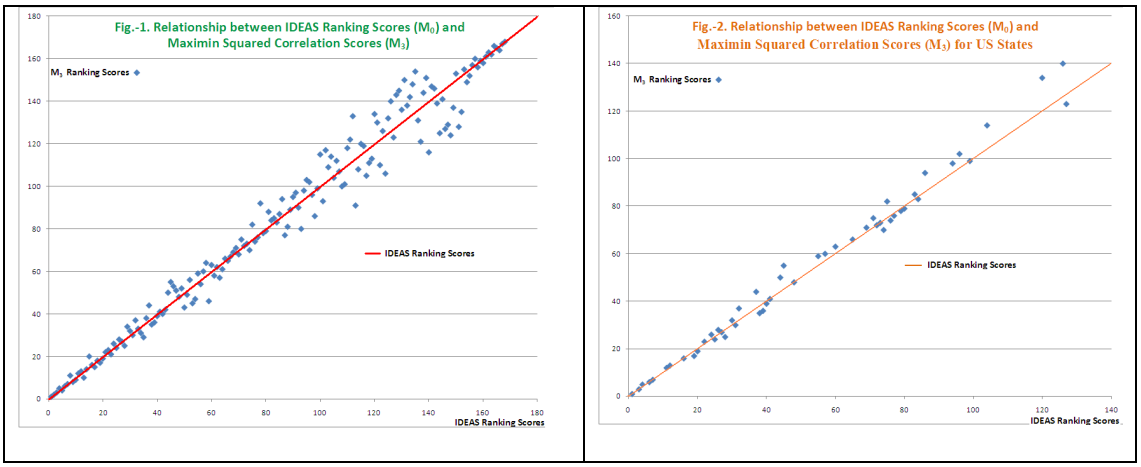
It may be noted that the nonlinear optimization problem to obtain $M_2$ through $M_5$ (as well as $M_1$ if one wants to obtain it directly) is extremely involved. Choice of appropriate values of decision variables (that is weights or $w_j; j = 1,2,...,31$) so as to maximize an involved objective function like $\sum_{j=1}^{m} \tilde{\rho}^2(R(\sum_{j=1}^{m} w_j r_j), r_j)$ or $\min_j(\tilde{\rho}^2(R(\sum_{j=1}^{m} w_j r_j), r_j))$ is extremely difficult and cannot possibly be accomplished by any traditional method of nonlinear optimization. Hence, we proceed by using a relatively new method of global optimization, namely the method of Differential Evolution (Storn and Price, 1995; Mishra, 2006). This method has been successful in optimizing very difficult nonlinear multimodal optimization problems.

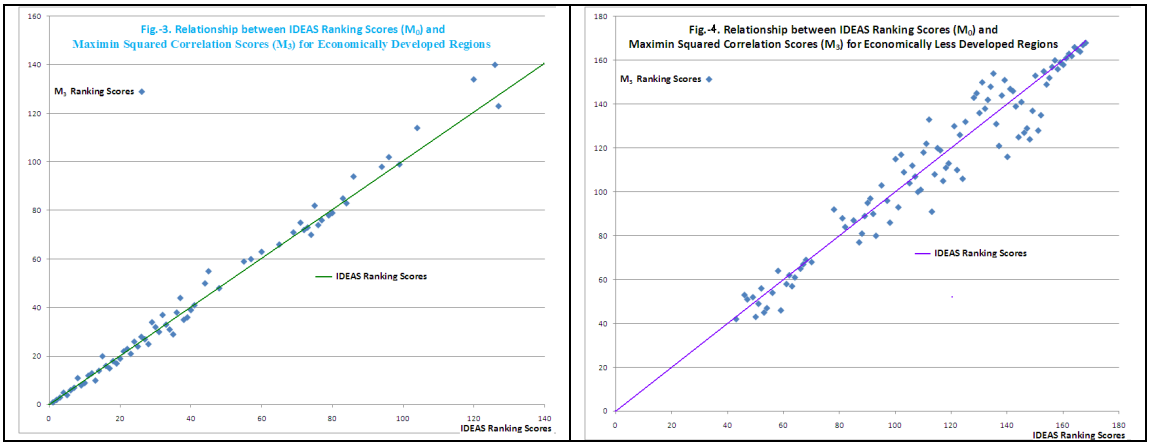
**The Findings**: As indicated in the previous sections, we have computed five different types of overall ranking scores: $M_1$, $M_2$, $M_3$, $M_4$, and $M_5$. The IDEAS ranking scores ($M_0$) are already given. These alternative overall ranking scores are presented in Table-2. The correlation coefficients of these overall ranking scores ($M_1$ through $M_5$) with the individual ranking scores (for 31 different criteria) are presented in Table-3. The inter-correlation matrix of different types of overall ranking scores among themselves is presented in Table-4.

A perusal of Table-4 reveals that the array of overall ranking scores given by the IDEAS is very highly correlated with the arrays of alternative scores. The correlation between $M_0$ and $M_3$ is the least, yet as high as 0.9866. Since $M_3$ is obtained in a very specific manner (by maximization of the minimal squared correlation between $M_3$ and the individual ranking scores, $r_j$) it may be specifically mentioned that $M_3$ assigns largest weight (0.6769) to h-index rankings, followed by downloads rankings (0.4916), AWScCites (0.2611), ADScCites (0.2464), AWScPages (0.1393), RCAuthors (0.1330) and ScPages (0.1266). Weights assigned to other individual ranking scores

($r_j$) are rather much smaller. Vis-à-vis $M_3$, other overall ranking scores ($M_1$, $M_2$, $M_4$ and $M_5$) assign equitable weights (between 0.15 to 0.19) to all individual ranking scores. A perusal of Table-2 also reveals that except for a few stray instances, $M_0$, $M_1$, $M_2$, $M_4$ and $M_5$ rankings for different countries (as well as the states of USA) are identical.

However, the rankings of $M_3$ are noticeably different from those of $M_0$. The differences between the two also have a clearly discernible pattern, best depicted in Fig.-1.




With an increasing value of the IDEAS ranking scores ($M_0$), the $M_3$ ranking scores increase, but its ($M_3$'s) spread or dispersion from $M_0$ also increases until $M_0$ reaches a score of 150 or so. After that, once again, they come closer to $M_0$. Associated with them are such countries as Malta, Uzbekistan, Botswana, Niue, Georgia, Macedonia, Montenegro, Bahrain, Algeria, Senegal, Afghanistan, Cameroun, Oman, Paraguay, Nauru and Sudan.

A perusal of Fig.-2 through Fig.-4 also reveals that $M_3$ ranking scores favour the US states and the economically developed regions while $M_0$ is more favourable to the economically less-developed countries. Elsewhere it has been found that academic and professional participation of economists is significantly higher in developed regions than in the less developed regions (Mishra, 2008).

**Concluding Remarks:** We raised the question whether the method, best described by Zimmermann (2007), used by the IDEAS/RePEc to obtain academic rankings of different regions (countries and US states) in terms of the academic performance of economists associated with them can be considered optimal. We devised five different types of ranking procedure based on the *principles of representation* of numerically large and varied types of ranking criteria by a single index of overall ranking scores. We used the data published by the IDEAS for the month of September 2008.

We found that the overall ranking scores obtained by the IDEAS are almost optimal on the four (of the five) principles of representation. However, it is not so when the principle of representation is maximization of the minimal squared correlation of overall ranking scores with the constituent individual ranking scores. The overall ranking scores based on maximization of minimal squared correlation beget larger impact (weights) of a select few scientometric criteria such as *h-index*, download counts, and certain specific (co-authorship discounted) measures of impact-weighted citation and productivity of authors affiliated to the regions under consideration. As a consequence, it has some bias in favour of economically developed regions, while the overall ranking scores obtained by the IDEAS are slightly biased in favour of the economically less developed regions. The IDEAS rankings, therefore, have a tendency to discount for the disadvantages faced by the economists associated with the less privileged regions.

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**Note:** The Fortran Computer program available at http://www.webng.com/economics/make-indices.html

## Table-1(A): IDEAS (RePEc) Academic Rank of Different Countries (States in the US) According to Different Criteria , September 2008

| Country / State | Rank* | Nb Works | DNb Works | Sc Works | WSc Works | ANb Works | Asc Works | AWSc Works | Nb Cites | D Cites | Sc Cites | DSc Cites | WSc Cites | WDSc Cites | Anb Cites | AD Cites | Asc Cites |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UK | 2 | 1 | 1 | 2 | 3 | 1 | 2 | 3 | 2 | 2 | 3 | 2 | 3 | 3 | 3 | 2 | 3 |
| Germany | 5 | 2 | 2 | 5 | 5 | 2 | 5 | 5 | 6 | 5 | 7 | 7 | 7 | 7 | 7 | 5 | 7 |
| Canada | 8 | 6 | 6 | 7 | 8 | 5 | 7 | 8 | 9 | 9 | 10 | 10 | 10 | 11 | 8 | 8 | 10 |
| Italy | 9 | 5 | 5 | 9 | 10 | 6 | 9 | 10 | 8 | 8 | 11 | 9 | 11 | 10 | 10 | 9 | 11 |
| France | 10 | 7 | 7 | 10 | 11 | 7 | 10 | 12 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Spain | 13 | 11 | 11 | 13 | 13 | 12 | 14 | 14 | 14 | 14 | 13 | 13 | 13 | 13 | 14 | 14 | 13 |
| Netherlands | 14 | 8 | 9 | 12 | 15 | 10 | 13 | 15 | 13 | 12 | 14 | 14 | 16 | 14 | 13 | 13 | 16 |
| Australia | 15 | 12 | 12 | 15 | 21 | 11 | 16 | 21 | 16 | 16 | 23 | 24 | 24 | 24 | 16 | 15 | 24 |
| Switzerland | 17 | 16 | 16 | 18 | 20 | 15 | 18 | 20 | 15 | 15 | 20 | 16 | 21 | 16 | 18 | 16 | 20 |
| Sweden | 18 | 17 | 17 | 17 | 16 | 17 | 17 | 17 | 19 | 17 | 21 | 17 | 22 | 20 | 19 | 17 | 21 |
| Belgium | 21 | 15 | 15 | 20 | 24 | 18 | 22 | 26 | 21 | 18 | 25 | 22 | 26 | 23 | 23 | 22 | 26 |
| Israel | 23 | 25 | 26 | 22 | 19 | 25 | 21 | 19 | 24 | 24 | 22 | 23 | 20 | 22 | 22 | 23 | 22 |
| Japan | 29 | 24 | 22 | 31 | 29 | 20 | 30 | 28 | 39 | 39 | 38 | 40 | 38 | 40 | 35 | 36 | 38 |
| Denmark | 33 | 29 | 32 | 36 | 42 | 32 | 37 | 43 | 28 | 29 | 36 | 35 | 39 | 38 | 28 | 28 | 35 |
| Ireland | 34 | 30 | 33 | 34 | 34 | 33 | 34 | 35 | 33 | 33 | 34 | 33 | 34 | 34 | 33 | 31 | 32 |
| Norway | 35 | 26 | 27 | 33 | 40 | 26 | 33 | 40 | 38 | 34 | 41 | 38 | 42 | 39 | 36 | 35 | 40 |
| Austria | 36 | 22 | 21 | 40 | 44 | 21 | 40 | 44 | 43 | 42 | 46 | 43 | 48 | 45 | 43 | 42 | 46 |
| Portugal | 42 | 31 | 30 | 44 | 45 | 31 | 44 | 46 | 44 | 43 | 44 | 42 | 46 | 42 | 46 | 45 | 49 |
| N Zealand | 43 | 40 | 39 | 42 | 43 | 43 | 42 | 42 | 42 | 44 | 43 | 45 | 43 | 46 | 41 | 43 | 43 |
| S Korea | 46 | 53 | 52 | 49 | 46 | 52 | 48 | 45 | 49 | 48 | 45 | 46 | 44 | 44 | 48 | 47 | 45 |
| Chile | 47 | 46 | 46 | 46 | 47 | 45 | 47 | 49 | 47 | 47 | 50 | 49 | 49 | 49 | 49 | 48 | 51 |
| Hong Kong | 49 | 54 | 53 | 48 | 48 | 55 | 46 | 48 | 50 | 49 | 48 | 48 | 47 | 48 | 52 | 51 | 50 |
| India | 50 | 43 | 38 | 55 | 53 | 34 | 51 | 50 | 58 | 59 | 62 | 61 | 61 | 62 | 59 | 59 | 63 |
| Turkey | 51 | 48 | 45 | 53 | 52 | 47 | 54 | 53 | 54 | 55 | 53 | 55 | 54 | 55 | 56 | 57 | 55 |
| Singapore | 52 | 50 | 50 | 47 | 49 | 51 | 45 | 47 | 52 | 52 | 52 | 51 | 52 | 51 | 53 | 52 | 52 |
| Greece | 53 | 39 | 37 | 51 | 56 | 40 | 50 | 56 | 56 | 54 | 61 | 58 | 62 | 59 | 57 | 55 | 62 |
| Finland | 54 | 47 | 47 | 52 | 57 | 46 | 52 | 57 | 45 | 45 | 55 | 54 | 58 | 54 | 44 | 44 | 56 |
| Brazil | 56 | 35 | 34 | 61 | 62 | 37 | 62 | 64 | 59 | 57 | 68 | 64 | 64 | 64 | 61 | 58 | 68 |
| Cyprus | 58 | 65 | 74 | 59 | 59 | 75 | 60 | 61 | 51 | 50 | 49 | 47 | 51 | 47 | 50 | 49 | 47 |
| Argentina | 59 | 56 | 51 | 63 | 64 | 50 | 61 | 58 | 61 | 61 | 58 | 60 | 57 | 60 | 60 | 61 | 57 |
| Russia | 61 | 61 | 61 | 58 | 58 | 60 | 59 | 59 | 62 | 63 | 57 | 57 | 56 | 57 | 64 | 63 | 58 |
| Hungary | 62 | 60 | 60 | 60 | 63 | 58 | 58 | 62 | 60 | 60 | 63 | 62 | 66 | 63 | 58 | 60 | 61 |
| Colombia | 63 | 42 | 48 | 68 | 68 | 48 | 71 | 71 | 66 | 66 | 76 | 72 | 77 | 74 | 67 | 67 | 77 |
| Czech Rep | 64 | 55 | 54 | 62 | 67 | 56 | 63 | 67 | 64 | 62 | 64 | 65 | 71 | 65 | 65 | 62 | 66 |
| China | 66 | 66 | 66 | 65 | 65 | 71 | 67 | 66 | 65 | 64 | 60 | 59 | 60 | 58 | 66 | 64 | 60 |
| Mexico | 67 | 63 | 62 | 67 | 60 | 61 | 66 | 60 | 68 | 67 | 69 | 66 | 69 | 66 | 72 | 70 | 71 |
| Taiwan | 68 | 79 | 78 | 70 | 70 | 78 | 70 | 70 | 67 | 71 | 65 | 69 | 68 | 69 | 69 | 69 | 69 |
| S Africa | 70 | 59 | 59 | 76 | 80 | 59 | 77 | 83 | 74 | 68 | 77 | 76 | 80 | 78 | 75 | 71 | 78 |
| Philippines | 78 | 91 | 90 | 93 | 86 | 87 | 90 | 84 | 69 | 72 | 67 | 67 | 63 | 67 | 70 | 73 | 67 |
| Poland | 81 | 74 | 67 | 82 | 81 | 65 | 80 | 78 | 88 | 86 | 89 | 88 | 90 | 88 | 86 | 85 | 89 |
| Pakistan | 82 | 69 | 70 | 88 | 76 | 66 | 86 | 76 | 89 | 91 | 90 | 94 | 94 | 94 | 88 | 91 | 92 |
| Malaysia | 85 | 70 | 65 | 85 | 83 | 73 | 88 | 85 | 90 | 89 | 98 | 95 | 98 | 97 | 90 | 92 | 98 |
| Romania | 87 | 57 | 57 | 99 | 89 | 57 | 98 | 87 | 108 | 106 | 109 | 109 | 104 | 109 | 107 | 106 | 108 |
| Slovenia | 88 | 84 | 84 | 86 | 90 | 85 | 89 | 92 | 84 | 83 | 87 | 87 | 92 | 87 | 87 | 87 | 90 |
| Luxembourg | 89 | 89 | 91 | 90 | 92 | 90 | 92 | 93 | 83 | 81 | 82 | 78 | 83 | 77 | 85 | 83 | 86 |
| Ukraine | 90 | 85 | 88 | 81 | 77 | 88 | 82 | 81 | 93 | 92 | 95 | 92 | 95 | 93 | 94 | 93 | 93 |
| Bulgaria | 91 | 99 | 96 | 96 | 98 | 95 | 94 | 95 | 79 | 88 | 72 | 81 | 72 | 80 | 80 | 86 | 74 |
| Thailand | 92 | 95 | 99 | 94 | 95 | 97 | 95 | 97 | 87 | 87 | 85 | 84 | 81 | 82 | 91 | 89 | 85 |
| Peru | 93 | 88 | 87 | 91 | 94 | 91 | 93 | 94 | 92 | 90 | 91 | 91 | 91 | 91 | 92 | 88 | 91 |
| Iceland | 95 | 101 | 102 | 89 | 91 | 101 | 85 | 88 | 91 | 94 | 88 | 90 | 89 | 90 | 89 | 94 | 87 |
| Uruguay | 97 | 83 | 83 | 92 | 85 | 83 | 91 | 86 | 95 | 97 | 97 | 101 | 99 | 102 | 96 | 99 | 99 |
| Indonesia | 98 | 86 | 86 | 95 | 96 | 84 | 97 | 96 | 105 | 96 | 110 | 104 | 109 | 106 | 105 | 98 | 111 |
| Iraq | 100 | 106 | 108 | 100 | 99 | 108 | 99 | 99 | 100 | 99 | 102 | 102 | 101 | 103 | 100 | 97 | 101 |
| Egypt | 101 | 104 | 104 | 103 | 106 | 102 | 104 | 105 | 103 | 105 | 105 | 108 | 103 | 108 | 101 | 103 | 103 |
| Kuwait | 102 | 111 | 115 | 106 | 100 | 107 | 102 | 98 | 99 | 102 | 101 | 100 | 102 | 101 | 95 | 95 | 97 |
| Côte d'Iv | 103 | 101 | 103 | 101 | 103 | 110 | 106 | 106 | 101 | 100 | 100 | 97 | 100 | 95 | 103 | 101 | 102 |
| U Arab Em | 105 | 106 | 106 | 107 | 110 | 105 | 107 | 109 | 109 | 107 | 107 | 106 | 107 | 105 | 106 | 104 | 104 |
| Tunisia | 106 | 103 | 101 | 104 | 104 | 104 | 105 | 104 | 112 | 110 | 108 | 99 | 108 | 99 | 111 | 108 | 107 |
| Estonia | 107 | 96 | 95 | 102 | 105 | 99 | 108 | 110 | 106 | 103 | 111 | 107 | 112 | 107 | 108 | 105 | 110 |
| Ethiopia | 108 | 113 | 114 | 111 | 108 | 112 | 112 | 107 | 102 | 109 | 103 | 111 | 105 | 110 | 102 | 107 | 105 |
| Venezuela | 109 | 122 | 127 | 116 | 113 | 133 | 117 | 114 | 110 | 114 | 99 | 103 | 97 | 100 | 109 | 114 | 100 |
| Croatia | 110 | 93 | 92 | 112 | 102 | 94 | 116 | 103 | 129 | 128 | 118 | 118 | 120 | 117 | 130 | 132 | 117 |
| Bangladesh | 111 | 109 | 107 | 110 | 120 | 109 | 110 | 116 | 107 | 104 | 106 | 110 | 118 | 116 | 110 | 109 | 109 |
| S Arabia | 112 | 120 | 118 | 113 | 112 | 120 | 118 | 117 | 104 | 112 | 104 | 114 | 106 | 113 | 104 | 113 | 106 |
| Jamaica | 113 | 115 | 113 | 108 | 115 | 106 | 103 | 108 | 133 | 133 | 132 | 127 | 131 | 129 | 137 | 134 | 134 |
| Kazakhstan | 114 | 119 | 117 | 115 | 118 | 111 | 109 | 111 | 123 | 118 | 117 | 112 | 122 | 112 | 117 | 112 | 113 |
| Iran | 115 | 116 | 116 | 117 | 119 | 117 | 114 | 119 | 118 | 117 | 116 | 115 | 113 | 114 | 122 | 120 | 118 |
| Bolivia | 116 | 100 | 100 | 114 | 116 | 103 | 115 | 118 | 114 | 113 | 120 | 121 | 119 | 122 | 115 | 115 | 121 |
| Qatar | 117 | 117 | 120 | 120 | 114 | 118 | 121 | 121 | 119 | 121 | 114 | 113 | 111 | 111 | 123 | 122 | 115 |
| Tanzania | 118 | 128 | 126 | 125 | 131 | 132 | 132 | 137 | 115 | 108 | 112 | 105 | 110 | 104 | 113 | 110 | 112 |
| Nigeria | 119 | 105 | 105 | 105 | 107 | 100 | 100 | 102 | 136 | 138 | 146 | 142 | 144 | 140 | 134 | 135 | 145 |
| Fiji | 121 | 112 | 111 | 119 | 117 | 113 | 120 | 124 | 116 | 116 | 119 | 123 | 121 | 121 | 118 | 116 | 123 |
| Sri Lanka | 122 | 126 | 127 | 129 | 123 | 129 | 131 | 127 | 117 | 122 | 113 | 122 | 115 | 120 | 120 | 124 | 114 |
| Viet Nam | 123 | 108 | 109 | 121 | 109 | 114 | 123 | 113 | 122 | 152 | 125 | 151 | 126 | 152 | 126 | 146 | 125 |
| Latvia | 124 | 123 | 125 | 118 | 121 | 121 | 113 | 115 | 126 | 127 | 144 | 135 | 147 | 142 | 124 | 121 | 138 |
| Morocco | 125 | 124 | 122 | 127 | 129 | 123 | 124 | 125 | 119 | 123 | 127 | 130 | 127 | 130 | 116 | 118 | 122 |
| Macao | 128 | 139 | 147 | 126 | 132 | 137 | 129 | 138 | 133 | 128 | 128 | 125 | 129 | 125 | 129 | 127 | 119 |
| Martinique | 129 | 147 | 150 | 128 | 122 | 152 | 133 | 128 | 125 | 124 | 129 | 124 | 128 | 124 | 128 | 129 | 133 |
| Malawi | 130 | 127 | 124 | 124 | 126 | 122 | 119 | 120 | 128 | 132 | 134 | 136 | 135 | 134 | 125 | 130 | 137 |
| Burkina F | 131 | 132 | 139 | 133 | 141 | 148 | 147 | 151 | 113 | 119 | 123 | 128 | 114 | 127 | 114 | 125 | 126 |
| Barbados | 132 | 124 | 122 | 139 | 145 | 128 | 146 | 152 | 129 | 131 | 133 | 134 | 132 | 132 | 132 | 133 | 139 |
| Réunion | 133 | 129 | 134 | 122 | 128 | 135 | 127 | 132 | 124 | 126 | 138 | 131 | 139 | 133 | 121 | 119 | 130 |
| Guadeloupe | 134 | 151 | 154 | 143 | 143 | 160 | 150 | 147 | 132 | 125 | 126 | 120 | 124 | 118 | 138 | 131 | 128 |
| Kyrgyzstan | 135 | 161 | 158 | 138 | 136 | 156 | 128 | 129 | 143 | 141 | 135 | 139 | 136 | 138 | 135 | 138 | 127 |
| Lithuania | 136 | 144 | 142 | 134 | 133 | 140 | 130 | 134 | 133 | 133 | 142 | 133 | 146 | 137 | 127 | 126 | 131 |
| Kenya | 137 | 136 | 132 | 148 | 139 | 125 | 149 | 136 | 152 | 150 | 153 | 152 | 148 | 151 | 153 | 152 | 153 |
| Monaco | 138 | 147 | 146 | 132 | 142 | 151 | 135 | 144 | 137 | 128 | 151 | 143 | 153 | 147 | 136 | 128 | 150 |
| Palestin A | 139 | 149 | 147 | 150 | 150 | 161 | 157 | 160 | 129 | 137 | 124 | 132 | 123 | 131 | 139 | 144 | 135 |
| Slovakia | 140 | 131 | 130 | 141 | 140 | 130 | 136 | 139 | 153 | 148 | 152 | 147 | 152 | 148 | 152 | 148 | 151 |
| Armenia | 141 | 146 | 145 | 144 | 148 | 145 | 141 | 150 | 137 | 135 | 130 | 126 | 134 | 126 | 143 | 136 | 136 |
| Costa Rica | 142 | 130 | 127 | 140 | 124 | 124 | 137 | 123 | 137 | 144 | 137 | 144 | 137 | 143 | 139 | 143 | 141 |
| Serbia | 143 | 133 | 134 | 131 | 130 | 126 | 126 | 126 | 145 | 146 | 145 | 146 | 145 | 146 | 150 | 149 | 148 |
| Ghana | 144 | 137 | 133 | 136 | 127 | 136 | 140 | 130 | 145 | 143 | 148 | 141 | 151 | 144 | 139 | 137 | 143 |
| Guatemala | 145 | 142 | 140 | 130 | 125 | 131 | 125 | 122 | 137 | 153 | 150 | 153 | 150 | 153 | 133 | 147 | 147 |
| Lebanon | 146 | 145 | 143 | 153 | 154 | 142 | 154 | 157 | 144 | 139 | 139 | 137 | 140 | 135 | 145 | 139 | 132 |
| Ecuador | 147 | 135 | 131 | 142 | 135 | 134 | 145 | 135 | 137 | 135 | 131 | 129 | 130 | 128 | 148 | 141 | 144 |
| Namibia | 148 | 138 | 137 | 157 | 151 | 138 | 155 | 154 | 145 | 142 | 141 | 138 | 142 | 136 | 146 | 142 | 142 |

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**Continuation of Table-1(A)**

| Country / State | Rank* | Nb Works | DNb Works | Sc Works | WSc Works | ANb Works | Asc Works | AWSc Works | Nb Cites | D Cites | Sc Cites | DSc Cites | WSc Cites | WDSc Cites | Anb Cites | AD Cites | Asc Cites |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Jordan | 149 | 139 | 138 | 154 | 158 | 141 | 152 | 156 | 137 | 140 | 149 | 150 | 149 | 150 | 144 | 145 | 149 |
| Belarus | 150 | 155 | 160 | 152 | 156 | 149 | 144 | 148 | 145 | 145 | 140 | 140 | 141 | 139 | 139 | 139 | 129 |
| Uganda | 151 | 142 | 140 | 135 | 134 | 144 | 134 | 133 | 145 | 147 | 147 | 148 | 143 | 145 | 151 | 153 | 152 |
| Nepal | 152 | 149 | 147 | 149 | 152 | 147 | 148 | 145 | 145 | 151 | 136 | 145 | 125 | 141 | 146 | 151 | 140 |
| Malta | 153 | 139 | 144 | 146 | 147 | 138 | 142 | 141 | 155 | 155 | 154 | 154 | 153 | 153 | 155 | 155 | 154 |
| Uzbekistan | 154 | 155 | 155 | 147 | 146 | 153 | 139 | 140 | 155 | 155 | 154 | 154 | 153 | 153 | 155 | 155 | 154 |
| Botswana | 155 | 151 | 150 | 155 | 160 | 146 | 153 | 158 | 155 | 155 | 154 | 154 | 153 | 153 | 155 | 155 | 154 |
| Niue | 156 | 155 | 158 | 159 | 162 | 157 | 159 | 163 | 155 | 155 | 154 | 154 | 153 | 153 | 155 | 155 | 154 |
| Georgia | 157 | 164 | 164 | 165 | 164 | 168 | 165 | 165 | 145 | 153 | 143 | 149 | 138 | 149 | 149 | 154 | 146 |
| Macedonia | 158 | 164 | 164 | 164 | 165 | 162 | 164 | 164 | 155 | 155 | 154 | 154 | 153 | 153 | 155 | 155 | 154 |
| Montenegro | 159 | 162 | 160 | 151 | 153 | 157 | 143 | 143 | 155 | 155 | 154 | 154 | 153 | 153 | 155 | 155 | 154 |
| Bahrain | 160 | 160 | 160 | 158 | 157 | 165 | 163 | 159 | 154 | 149 | 154 | 154 | 153 | 153 | 154 | 150 | 154 |
| Algeria | 161 | 154 | 153 | 156 | 155 | 155 | 158 | 153 | 155 | 155 | 154 | 154 | 153 | 153 | 155 | 155 | 154 |
| Senegal | 162 | 151 | 150 | 161 | 159 | 154 | 162 | 155 | 155 | 155 | 154 | 154 | 153 | 153 | 155 | 155 | 154 |
| Afghanistan | 163 | 164 | 167 | 163 | 163 | 164 | 161 | 162 | 155 | 155 | 154 | 154 | 153 | 153 | 155 | 155 | 154 |
| Cameroun | 164 | 155 | 155 | 162 | 149 | 157 | 160 | 146 | 155 | 155 | 154 | 154 | 153 | 153 | 155 | 155 | 154 |
| Oman | 165 | 162 | 160 | 166 | 166 | 166 | 166 | 166 | 155 | 155 | 154 | 154 | 153 | 153 | 155 | 155 | 154 |
| Paraguay | 166 | 155 | 155 | 168 | 167 | 149 | 168 | 167 | 155 | 155 | 154 | 154 | 153 | 153 | 155 | 155 | 154 |
| Nauru | 167 | 168 | 168 | 160 | 161 | 167 | 156 | 161 | 155 | 155 | 154 | 154 | 153 | 153 | 155 | 155 | 154 |
| Sudan | 168 | 164 | 164 | 167 | 168 | 162 | 167 | 168 | 155 | 155 | 154 | 154 | 153 | 153 | 155 | 155 | 154 |
| **States (USA)** | | | | | | | | | | | | | | | | | |
| Massach | 1 | 3 | 3 | 1 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| California | 3 | 4 | 4 | 3 | 2 | 4 | 3 | 2 | 3 | 3 | 2 | 3 | 2 | 2 | 2 | 3 | 2 |
| New York | 4 | 10 | 10 | 4 | 4 | 9 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 |
| D Columb | 6 | 9 | 8 | 6 | 6 | 8 | 6 | 7 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| Illinois | 7 | 13 | 13 | 8 | 7 | 13 | 8 | 6 | 7 | 7 | 5 | 5 | 5 | 5 | 5 | 7 | 4 |
| Pennsyl | 11 | 14 | 14 | 11 | 9 | 14 | 11 | 9 | 12 | 11 | 8 | 8 | 9 | 8 | 11 | 11 | 9 |
| N Jersey | 12 | 23 | 23 | 14 | 12 | 23 | 12 | 11 | 11 | 13 | 9 | 11 | 8 | 9 | 9 | 10 | 8 |
| Connec | 16 | 19 | 19 | 16 | 14 | 19 | 15 | 13 | 18 | 21 | 16 | 19 | 15 | 17 | 15 | 19 | 14 |
| Michigan | 19 | 21 | 20 | 21 | 17 | 22 | 20 | 18 | 17 | 19 | 17 | 18 | 17 | 18 | 17 | 18 | 15 |
| Missouri | 20 | 18 | 18 | 19 | 18 | 16 | 19 | 16 | 22 | 22 | 19 | 21 | 19 | 21 | 20 | 20 | 19 |
| N Carol | 22 | 27 | 28 | 23 | 23 | 28 | 23 | 22 | 20 | 20 | 18 | 20 | 18 | 19 | 21 | 21 | 17 |
| Minnesota | 24 | 38 | 44 | 24 | 22 | 39 | 24 | 23 | 23 | 23 | 15 | 15 | 14 | 15 | 25 | 24 | 18 |
| Maryland | 25 | 36 | 36 | 25 | 25 | 35 | 25 | 24 | 25 | 25 | 24 | 25 | 23 | 25 | 24 | 25 | 23 |
| Texas | 26 | 28 | 24 | 26 | 27 | 24 | 26 | 27 | 29 | 28 | 31 | 29 | 31 | 30 | 29 | 29 | 30 |
| Wisconsin | 27 | 37 | 40 | 27 | 26 | 38 | 27 | 25 | 27 | 27 | 27 | 27 | 27 | 27 | 26 | 26 | 25 |
| Indiana | 28 | 32 | 29 | 28 | 30 | 27 | 28 | 30 | 30 | 30 | 32 | 34 | 32 | 33 | 30 | 30 | 31 |
| Virginia | 30 | 33 | 31 | 30 | 31 | 29 | 29 | 32 | 31 | 31 | 33 | 31 | 33 | 31 | 32 | 32 | 33 |
| Ohio | 31 | 41 | 41 | 29 | 28 | 42 | 31 | 29 | 32 | 32 | 30 | 28 | 30 | 29 | 31 | 33 | 29 |
| Rhode Isl | 32 | 52 | 56 | 38 | 33 | 54 | 36 | 33 | 26 | 26 | 26 | 26 | 25 | 26 | 27 | 27 | 27 |
| Arizona | 37 | 49 | 49 | 41 | 38 | 49 | 41 | 37 | 35 | 36 | 28 | 30 | 29 | 28 | 34 | 34 | 28 |
| Florida | 38 | 45 | 42 | 37 | 35 | 44 | 35 | 34 | 37 | 38 | 35 | 37 | 35 | 36 | 37 | 38 | 36 |
| Georgia | 39 | 34 | 35 | 35 | 36 | 36 | 38 | 36 | 36 | 37 | 37 | 36 | 37 | 35 | 38 | 37 | 39 |
| Tennessee | 40 | 44 | 43 | 32 | 32 | 41 | 32 | 31 | 40 | 41 | 39 | 39 | 36 | 37 | 39 | 39 | 37 |
| Iowa | 41 | 20 | 25 | 39 | 37 | 30 | 39 | 38 | 41 | 40 | 40 | 41 | 40 | 41 | 42 | 40 | 41 |
| N Hampsh | 44 | 72 | 77 | 45 | 39 | 77 | 49 | 41 | 34 | 35 | 29 | 32 | 28 | 32 | 40 | 41 | 34 |
| S Carolina | 45 | 58 | 58 | 50 | 50 | 62 | 53 | 51 | 46 | 46 | 42 | 44 | 41 | 43 | 45 | 46 | 42 |
| Washington | 48 | 51 | 55 | 43 | 41 | 53 | 43 | 39 | 48 | 51 | 47 | 50 | 45 | 50 | 47 | 50 | 44 |
| Kentucky | 55 | 67 | 72 | 57 | 55 | 69 | 57 | 54 | 53 | 56 | 51 | 52 | 50 | 52 | 51 | 53 | 48 |
| Oregon | 57 | 62 | 63 | 54 | 54 | 64 | 55 | 55 | 55 | 53 | 54 | 53 | 53 | 53 | 55 | 54 | 54 |
| Colorado | 60 | 64 | 64 | 56 | 51 | 63 | 56 | 52 | 57 | 58 | 56 | 56 | 55 | 56 | 54 | 56 | 53 |
| Utah | 65 | 75 | 71 | 64 | 66 | 72 | 64 | 65 | 63 | 65 | 59 | 63 | 59 | 61 | 63 | 65 | 59 |
| Louisiana | 69 | 76 | 76 | 66 | 61 | 74 | 65 | 63 | 73 | 69 | 70 | 70 | 67 | 70 | 73 | 68 | 73 |
| Wyoming | 71 | 68 | 68 | 71 | 71 | 67 | 68 | 68 | 72 | 73 | 73 | 71 | 74 | 73 | 68 | 74 | 72 |
| Alabama | 72 | 77 | 75 | 73 | 74 | 76 | 72 | 72 | 76 | 78 | 74 | 73 | 73 | 71 | 74 | 75 | 70 |
| Kansas | 73 | 78 | 79 | 69 | 69 | 80 | 69 | 69 | 75 | 75 | 75 | 75 | 78 | 76 | 76 | 76 | 75 |
| Nevada | 74 | 73 | 69 | 72 | 73 | 70 | 73 | 73 | 77 | 76 | 79 | 80 | 79 | 81 | 77 | 78 | 76 |
| N Mexico | 75 | 92 | 93 | 77 | 78 | 96 | 78 | 80 | 70 | 70 | 66 | 68 | 65 | 68 | 71 | 72 | 65 |
| Hawaii | 76 | 71 | 73 | 74 | 72 | 68 | 76 | 75 | 78 | 80 | 80 | 79 | 76 | 79 | 78 | 80 | 80 |
| Maine | 77 | 97 | 97 | 79 | 82 | 92 | 75 | 77 | 71 | 74 | 71 | 74 | 70 | 72 | 62 | 66 | 64 |
| Vermont | 79 | 80 | 80 | 75 | 75 | 79 | 74 | 74 | 81 | 77 | 81 | 83 | 84 | 85 | 79 | 77 | 82 |
| Oklahoma | 80 | 81 | 81 | 78 | 79 | 81 | 79 | 79 | 80 | 79 | 84 | 82 | 86 | 83 | 81 | 79 | 83 |
| Delaware | 83 | 94 | 94 | 84 | 84 | 93 | 84 | 82 | 85 | 84 | 78 | 77 | 75 | 75 | 84 | 84 | 79 |
| Nebraska | 84 | 82 | 82 | 80 | 87 | 82 | 81 | 90 | 82 | 82 | 86 | 86 | 85 | 86 | 82 | 81 | 84 |
| W Virginia | 86 | 90 | 89 | 83 | 88 | 86 | 83 | 89 | 86 | 85 | 83 | 85 | 82 | 84 | 83 | 82 | 81 |
| Mississippi | 94 | 87 | 85 | 87 | 93 | 89 | 87 | 91 | 96 | 95 | 93 | 93 | 87 | 92 | 97 | 96 | 94 |
| Arkansas | 96 | 98 | 98 | 97 | 101 | 98 | 96 | 101 | 94 | 93 | 92 | 89 | 93 | 89 | 93 | 90 | 88 |
| Montana | 99 | 114 | 111 | 98 | 97 | 116 | 101 | 100 | 97 | 98 | 94 | 96 | 88 | 96 | 99 | 100 | 96 |
| Alaska | 104 | 110 | 110 | 109 | 111 | 115 | 111 | 112 | 98 | 101 | 96 | 98 | 96 | 98 | 98 | 102 | 95 |
| N Dakota | 120 | 121 | 118 | 123 | 137 | 119 | 122 | 131 | 121 | 115 | 121 | 119 | 133 | 123 | 119 | 111 | 116 |
| Idaho | 126 | 118 | 121 | 137 | 144 | 127 | 138 | 149 | 111 | 111 | 115 | 117 | 117 | 119 | 112 | 117 | 120 |
| S Dakota | 127 | 133 | 134 | 145 | 138 | 143 | 151 | 142 | 126 | 120 | 122 | 116 | 116 | 115 | 130 | 123 | 124 |

Ranks* = Rank of the country/State of US as obtained by the IDEAS/RePEc. We will also denote it by $M_0$ in other tables and the text.

**Table-1(B): IDEAS (RePEc) Academic Rank of Different Countries (States in the US) According to Different Criteria , September 2008**

| Country / State | Rank* | ADSc Cites | AWSc Cites | AWDSc Cites | H Index | NCAu thors | RCAu thors | Nb Pages | Sc Pages | WSc Pages | ANb Pages | ASc Pages | AWSc Pages | Abs Views | Down loads | AAbs Views | ADown loads |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UK | 2 | 3 | 3 | 3 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 1 |
| Germany | 5 | 7 | 7 | 7 | 6 | 6 | 6 | 4 | 6 | 8 | 4 | 7 | 8 | 3 | 3 | 3 | 3 |
| Canada | 8 | 10 | 10 | 10 | 18 | 9 | 8 | 5 | 5 | 6 | 5 | 5 | 6 | 7 | 11 | 7 | 10 |
| Italy | 9 | 11 | 11 | 11 | 10 | 8 | 9 | 6 | 10 | 11 | 7 | 10 | 11 | 6 | 6 | 6 | 6 |
| France | 10 | 12 | 12 | 12 | 12 | 10 | 10 | 9 | 9 | 9 | 10 | 9 | 10 | 9 | 9 | 10 | 8 |
| Spain | 13 | 13 | 15 | 13 | 11 | 12 | 13 | 12 | 14 | 13 | 12 | 15 | 13 | 10 | 10 | 9 | 11 |
| Netherlands | 14 | 14 | 20 | 15 | 15 | 13 | 14 | 11 | 12 | 14 | 11 | 13 | 16 | 11 | 8 | 11 | 9 |
| Australia | 15 | 23 | 24 | 23 | 29 | 15 | 15 | 10 | 15 | 16 | 9 | 14 | 18 | 12 | 13 | 12 | 13 |
| Switzerland | 17 | 16 | 21 | 19 | 14 | 17 | 18 | 17 | 23 | 23 | 16 | 22 | 23 | 16 | 15 | 14 | 14 |
| Sweden | 18 | 19 | 23 | 21 | 21 | 16 | 16 | 18 | 22 | 21 | 18 | 21 | 21 | 14 | 17 | 15 | 17 |
| Belgium | 21 | 24 | 28 | 24 | 28 | 19 | 21 | 15 | 20 | 22 | 17 | 23 | 25 | 17 | 14 | 17 | 16 |
| Israel | 23 | 22 | 19 | 22 | 17 | 23 | 23 | 27 | 18 | 18 | 26 | 18 | 17 | 30 | 29 | 32 | 30 |
| Japan | 29 | 39 | 37 | 39 | 51 | 37 | 36 | 21 | 30 | 33 | 19 | 30 | 30 | 27 | 26 | 22 | 23 |
| Denmark | 33 | 34 | 39 | 35 | 39 | 31 | 31 | 37 | 38 | 42 | 37 | 39 | 43 | 26 | 25 | 27 | 24 |
| Ireland | 34 | 29 | 32 | 30 | 26 | 33 | 34 | 40 | 41 | 40 | 39 | 40 | 40 | 33 | 30 | 38 | 35 |
| Norway | 35 | 40 | 42 | 40 | 30 | 36 | 37 | 30 | 36 | 38 | 30 | 37 | 39 | 29 | 28 | 31 | 29 |
| Austria | 36 | 44 | 49 | 47 | 49 | 39 | 41 | 24 | 42 | 46 | 23 | 43 | 45 | 23 | 23 | 25 | 25 |
| Portugal | 42 | 46 | 51 | 46 | 52 | 42 | 42 | 43 | 49 | 50 | 42 | 50 | 50 | 25 | 22 | 24 | 22 |
| N Zealand | 43 | 43 | 43 | 45 | 50 | 44 | 44 | 38 | 37 | 39 | 38 | 38 | 38 | 42 | 38 | 41 | 41 |
| S Korea | 46 | 45 | 45 | 43 | 46 | 46 | 46 | 48 | 47 | 48 | 46 | 47 | 47 | 57 | 53 | 58 | 55 |
| Chile | 47 | 50 | 50 | 50 | 56 | 47 | 47 | 41 | 55 | 55 | 41 | 56 | 56 | 43 | 42 | 39 | 39 |
| Hong Kong | 49 | 49 | 47 | 49 | 43 | 49 | 49 | 46 | 46 | 45 | 51 | 46 | 46 | 58 | 56 | 59 | 60 |
| India | 50 | 62 | 62 | 63 | 53 | 58 | 58 | 53 | 56 | 57 | 50 | 52 | 55 | 31 | 33 | 26 | 27 |
| Turkey | 51 | 56 | 55 | 55 | 56 | 50 | 51 | 44 | 52 | 53 | 48 | 53 | 54 | 41 | 35 | 36 | 33 |
| Singapore | 52 | 52 | 53 | 52 | 56 | 51 | 50 | 47 | 45 | 47 | 45 | 45 | 44 | 56 | 54 | 56 | 56 |
| Greece | 53 | 59 | 64 | 60 | 45 | 53 | 54 | 36 | 50 | 52 | 36 | 48 | 53 | 45 | 44 | 44 | 46 |
| Finland | 54 | 55 | 58 | 56 | 40 | 52 | 53 | 50 | 54 | 58 | 47 | 54 | 59 | 50 | 51 | 50 | 51 |
| Brazil | 56 | 64 | 67 | 64 | 56 | 60 | 63 | 54 | 68 | 68 | 54 | 67 | 68 | 35 | 39 | 35 | 40 |
| Cyprus | 58 | 47 | 48 | 44 | 56 | 54 | 52 | 64 | 59 | 56 | 70 | 60 | 58 | 70 | 70 | 73 | 71 |
| Argentina | 59 | 58 | 56 | 58 | 53 | 62 | 61 | 70 | 64 | 63 | 63 | 62 | 61 | 40 | 47 | 29 | 36 |
| Russia | 61 | 57 | 57 | 57 | 56 | 63 | 60 | 77 | 62 | 61 | 73 | 63 | 63 | 55 | 62 | 54 | 58 |
| Hungary | 62 | 61 | 63 | 62 | 56 | 61 | 59 | 59 | 60 | 60 | 56 | 59 | 60 | 63 | 64 | 61 | 64 |
| Colombia | 63 | 74 | 79 | 75 | 68 | 66 | 68 | 75 | 81 | 81 | 74 | 83 | 83 | 22 | 41 | 23 | 44 |
| Czech Rep | 64 | 65 | 72 | 65 | 53 | 59 | 62 | 62 | 74 | 75 | 64 | 74 | 75 | 53 | 55 | 55 | 57 |
| China | 66 | 60 | 60 | 59 | 68 | 65 | 65 | 66 | 61 | 62 | 72 | 65 | 65 | 68 | 65 | 68 | 68 |
| Mexico | 67 | 68 | 73 | 69 | 83 | 67 | 66 | 67 | 67 | 65 | 66 | 68 | 67 | 54 | 58 | 53 | 53 |
| Taiwan | 68 | 66 | 69 | 66 | 64 | 68 | 67 | 71 | 63 | 66 | 67 | 61 | 62 | 77 | 77 | 78 | 74 |
| S Africa | 70 | 76 | 80 | 77 | 68 | 72 | 74 | 60 | 80 | 85 | 59 | 81 | 84 | 60 | 57 | 60 | 59 |
| Philippines | 78 | 69 | 66 | 67 | 108 | 70 | 71 | 90 | 90 | 87 | 91 | 88 | 87 | 81 | 80 | 81 | 80 |
| Poland | 81 | 88 | 90 | 86 | 108 | 84 | 87 | 81 | 86 | 91 | 82 | 86 | 92 | 69 | 68 | 65 | 63 |
| Pakistan | 82 | 93 | 94 | 93 | 108 | 91 | 91 | 76 | 91 | 89 | 75 | 87 | 91 | 61 | 59 | 57 | 54 |
| Malaysia | 85 | 96 | 98 | 97 | 108 | 89 | 90 | 73 | 89 | 95 | 77 | 90 | 95 | 59 | 60 | 62 | 61 |
| Romania | 87 | 110 | 105 | 108 | 87 | 106 | 111 | 55 | 108 | 112 | 57 | 110 | 113 | 52 | 49 | 52 | 49 |
| Slovenia | 88 | 89 | 95 | 89 | 79 | 78 | 79 | 85 | 95 | 98 | 85 | 96 | 101 | 79 | 78 | 85 | 83 |
| Luxembourg | 89 | 84 | 88 | 84 | 84 | 86 | 86 | 92 | 94 | 94 | 93 | 94 | 94 | 92 | 86 | 95 | 89 |
| Ukraine | 90 | 92 | 93 | 92 | 108 | 92 | 92 | 88 | 82 | 82 | 90 | 82 | 81 | 88 | 84 | 92 | 86 |
| Bulgaria | 91 | 81 | 71 | 80 | 108 | 83 | 82 | 105 | 99 | 97 | 103 | 99 | 96 | 103 | 103 | 94 | 91 |
| Thailand | 92 | 87 | 85 | 87 | 81 | 87 | 85 | 94 | 85 | 84 | 94 | 91 | 89 | 100 | 100 | 105 | 101 |
| Peru | 93 | 91 | 91 | 90 | 75 | 90 | 89 | 96 | 96 | 96 | 98 | 97 | 99 | 82 | 82 | 83 | 85 |
| Iceland | 95 | 90 | 86 | 91 | 108 | 94 | 93 | 97 | 93 | 92 | 92 | 89 | 90 | 110 | 105 | 108 | 106 |
| Uruguay | 97 | 103 | 99 | 102 | 108 | 96 | 96 | 93 | 97 | 88 | 96 | 95 | 86 | 84 | 94 | 87 | 103 |
| Indonesia | 98 | 108 | 110 | 110 | 87 | 100 | 102 | 100 | 106 | 109 | 100 | 107 | 111 | 75 | 74 | 74 | 76 |
| Iraq | 100 | 98 | 101 | 99 | 123 | 103 | 101 | 101 | 100 | 104 | 102 | 100 | 102 | 107 | 109 | 107 | 108 |
| Egypt | 101 | 105 | 103 | 106 | 87 | 107 | 106 | 103 | 92 | 93 | 101 | 93 | 93 | 106 | 107 | 98 | 100 |
| Kuwait | 102 | 95 | 100 | 95 | 123 | 102 | 100 | 107 | 109 | 102 | 105 | 104 | 98 | 115 | 115 | 109 | 107 |
| Côte d'Iv | 103 | 100 | 102 | 100 | 108 | 99 | 99 | 104 | 101 | 101 | 106 | 102 | 104 | 108 | 112 | 114 | 115 |
| U Arab Em | 105 | 102 | 104 | 104 | 108 | 104 | 104 | 95 | 98 | 99 | 97 | 98 | 100 | 111 | 111 | 106 | 110 |
| Tunisia | 106 | 101 | 108 | 101 | 123 | 112 | 112 | 102 | 103 | 107 | 104 | 105 | 107 | 102 | 104 | 101 | 105 |
| Estonia | 107 | 109 | 112 | 109 | 108 | 105 | 105 | 109 | 116 | 123 | 107 | 115 | 120 | 94 | 90 | 99 | 97 |
| Ethiopia | 108 | 111 | 106 | 111 | 87 | 101 | 103 | 106 | 105 | 106 | 108 | 106 | 106 | 113 | 113 | 112 | 112 |
| Venezuela | 109 | 104 | 97 | 103 | 76 | 110 | 107 | 117 | 104 | 100 | 113 | 101 | 97 | 133 | 131 | 135 | 133 |
| Croatia | 110 | 117 | 118 | 117 | 123 | 125 | 128 | 98 | 129 | 135 | 95 | 127 | 134 | 93 | 91 | 93 | 92 |
| Bangladesh | 111 | 114 | 120 | 121 | 123 | 111 | 109 | 115 | 126 | 130 | 118 | 129 | 133 | 104 | 106 | 103 | 102 |
| S Arabia | 112 | 115 | 107 | 113 | 123 | 109 | 108 | 128 | 134 | 132 | 122 | 130 | 127 | 116 | 118 | 119 | 122 |
| Jamaica | 113 | 129 | 136 | 130 | 87 | 131 | 135 | 124 | 118 | 116 | 124 | 118 | 115 | 86 | 87 | 77 | 81 |
| Kazakhstan | 114 | 106 | 114 | 105 | 87 | 115 | 114 | 127 | 119 | 110 | 121 | 111 | 108 | 130 | 139 | 127 | 132 |
| Iran | 115 | 118 | 115 | 116 | 123 | 121 | 118 | 121 | 120 | 121 | 122 | 114 | 114 | 105 | 99 | 104 | 94 |
| Bolivia | 116 | 122 | 121 | 123 | 123 | 108 | 110 | 134 | 138 | 139 | 129 | 138 | 138 | 91 | 98 | 90 | 99 |
| Qatar | 117 | 113 | 111 | 112 | 87 | 115 | 116 | 119 | 125 | 127 | 120 | 126 | 131 | 114 | 114 | 117 | 117 |
| Tanzania | 118 | 107 | 109 | 107 | 87 | 118 | 119 | 126 | 117 | 122 | 131 | 121 | 121 | 128 | 127 | 133 | 129 |
| Nigeria | 119 | 140 | 143 | 135 | 123 | 127 | 126 | 120 | 140 | 141 | 114 | 135 | 140 | 89 | 85 | 80 | 79 |
| Fiji | 121 | 124 | 123 | 124 | 123 | 122 | 121 | 114 | 135 | 134 | 119 | 136 | 137 | 112 | 110 | 113 | 113 |
| Sri Lanka | 122 | 120 | 113 | 122 | 87 | 118 | 115 | 125 | 113 | 119 | 125 | 116 | 118 | 121 | 125 | 128 | 128 |
| Viet Nam | 123 | 151 | 128 | 152 | 123 | 124 | 125 | 113 | 110 | 113 | 117 | 112 | 116 | 101 | 96 | 110 | 109 |
| Latvia | 124 | 131 | 145 | 139 | 87 | 125 | 124 | 111 | 107 | 108 | 111 | 108 | 112 | 124 | 135 | 120 | 126 |
| Morocco | 125 | 125 | 122 | 126 | 123 | 115 | 117 | 132 | 132 | 133 | 130 | 133 | 132 | 117 | 117 | 116 | 118 |
| Macao | 128 | 121 | 124 | 118 | 143 | 131 | 132 | 139 | 123 | 118 | 140 | 124 | 119 | 139 | 133 | 139 | 138 |
| Martinique | 129 | 126 | 137 | 125 | 143 | 128 | 129 | 137 | 112 | 105 | 145 | 117 | 105 | 148 | 157 | 149 | 160 |
| Malawi | 130 | 135 | 135 | 138 | 123 | 128 | 130 | 148 | 146 | 149 | 145 | 146 | 146 | 122 | 123 | 118 | 120 |
| Burkina F | 131 | 130 | 117 | 127 | 143 | 114 | 123 | 131 | 130 | 129 | 141 | 141 | 139 | 145 | 136 | 154 | 150 |
| Barbados | 132 | 137 | 134 | 136 | 123 | 130 | 127 | 111 | 128 | 125 | 116 | 128 | 128 | 127 | 128 | 137 | 135 |
| Réunion | 133 | 127 | 131 | 128 | 123 | 122 | 122 | 149 | 139 | 137 | 144 | 134 | 129 | 146 | 152 | 152 | 154 |
| Guadeloupe | 134 | 123 | 129 | 120 | 143 | 135 | 136 | 140 | 115 | 117 | 147 | 119 | 117 | 156 | 153 | 157 | 156 |
| Kyrgyzstan | 135 | 134 | 127 | 133 | 143 | 148 | 142 | 143 | 122 | 114 | 133 | 113 | 109 | 165 | 166 | 162 | 165 |
| Lithuania | 136 | 128 | 144 | 132 | 87 | 142 | 146 | 136 | 136 | 136 | 148 | 144 | 141 | 152 | 150 | 151 | 147 |
| Kenya | 137 | 153 | 150 | 151 | 87 | 136 | 145 | 118 | 124 | 126 | 112 | 120 | 125 | 138 | 130 | 136 | 127 |
| Monaco | 138 | 143 | 153 | 146 | 143 | 131 | 131 | 129 | 114 | 120 | 137 | 122 | 124 | 144 | 145 | 140 | 144 |
| Palestin A | 139 | 142 | 130 | 141 | 143 | 136 | 138 | 123 | 121 | 115 | 136 | 132 | 122 | 147 | 149 | 159 | 159 |
| Slovakia | 140 | 146 | 152 | 145 | 87 | 139 | 141 | 122 | 141 | 146 | 128 | 145 | 147 | 123 | 121 | 122 | 121 |
| Armenia | 141 | 132 | 139 | 129 | 143 | 141 | 140 | 146 | 137 | 128 | 149 | 140 | 130 | 143 | 154 | 148 | 155 |
| Costa Rica | 142 | 144 | 138 | 144 | 143 | 142 | 139 | 149 | 149 | 151 | 153 | 151 | 150 | 136 | 137 | 129 | 134 |
| Serbia | 143 | 147 | 149 | 148 | 123 | 136 | 134 | 154 | 157 | 156 | 154 | 157 | 156 | 126 | 119 | 124 | 116 |
| Ghana | 144 | 138 | 146 | 142 | 87 | 149 | 149 | 138 | 153 | 152 | 142 | 153 | 153 | 129 | 126 | 132 | 124 |
| Guatemala | 145 | 152 | 148 | 153 | 123 | 152 | 152 | 147 | 133 | 124 | 138 | 131 | 123 | 150 | 151 | 141 | 146 |
| Lebanon | 146 | 133 | 133 | 131 | 87 | 140 | 137 | 133 | 144 | 144 | 127 | 142 | 144 | 149 | 144 | 145 | 143 |
| Ecuador | 147 | 139 | 142 | 137 | 87 | 152 | 152 | 158 | 148 | 145 | 158 | 150 | 149 | 142 | 142 | 143 | 145 |
| Namibia | 148 | 141 | 140 | 140 | 87 | 152 | 152 | 141 | 143 | 140 | 132 | 139 | 135 | 137 | 129 | 138 | 136 |

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**Continuation of Table-1(B)**

| Country / State | Rank* | ADSc Cites | AWSc Cites | AWDSc Cites | H Index | NCAu thors | RCAu thors | Nb Pages | Sc Pages | WSc Pages | ANb Pages | ASc Pages | AWSc Pages | Abs Views | Down loads | AAbs Views | ADown loads |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Jordan | 149 | 149 | 151 | 150 | 123 | 152 | 152 | 135 | 147 | 148 | 135 | 147 | 148 | 119 | 116 | 115 | 114 |
| Belarus | 150 | 136 | 132 | 134 | 143 | 152 | 152 | 145 | 142 | 147 | 134 | 137 | 143 | 157 | 155 | 150 | 148 |
| Uganda | 151 | 150 | 147 | 147 | 87 | 142 | 150 | 160 | 159 | 159 | 160 | 159 | 159 | 135 | 132 | 134 | 131 |
| Nepal | 152 | 145 | 126 | 143 | 87 | 150 | 147 | 144 | 145 | 142 | 143 | 143 | 142 | 159 | 160 | 160 | 158 |
| Malta | 153 | 153 | 153 | 153 | 155 | 142 | 148 | 160 | 159 | 159 | 160 | 159 | 159 | 134 | 133 | 131 | 130 |
| Uzbekistan | 154 | 153 | 153 | 153 | 155 | 152 | 152 | 160 | 159 | 159 | 160 | 159 | 159 | 131 | 122 | 123 | 119 |
| Botswana | 155 | 153 | 153 | 153 | 155 | 152 | 152 | 152 | 158 | 158 | 152 | 158 | 158 | 132 | 145 | 125 | 137 |
| Niue | 156 | 153 | 153 | 153 | 155 | 142 | 144 | 156 | 151 | 143 | 156 | 149 | 145 | 153 | 138 | 155 | 140 |
| Georgia | 157 | 148 | 141 | 149 | 143 | 142 | 143 | 152 | 154 | 153 | 155 | 155 | 155 | 168 | 163 | 168 | 164 |
| Macedonia | 158 | 153 | 153 | 153 | 155 | 152 | 152 | 151 | 152 | 154 | 139 | 148 | 152 | 151 | 147 | 144 | 139 |
| Montenegro | 159 | 153 | 153 | 153 | 155 | 152 | 152 | 160 | 159 | 159 | 160 | 159 | 159 | 155 | 156 | 147 | 151 |
| Bahrain | 160 | 153 | 153 | 153 | 143 | 151 | 151 | 157 | 150 | 150 | 159 | 152 | 151 | 161 | 161 | 163 | 162 |
| Algeria | 161 | 153 | 153 | 153 | 155 | 152 | 152 | 160 | 159 | 159 | 160 | 159 | 159 | 154 | 162 | 153 | 157 |
| Senegal | 162 | 153 | 153 | 153 | 155 | 152 | 152 | 160 | 159 | 159 | 160 | 159 | 159 | 158 | 148 | 158 | 152 |
| Afghanistan | 163 | 153 | 153 | 153 | 155 | 152 | 152 | 154 | 156 | 155 | 150 | 154 | 154 | 160 | 159 | 156 | 153 |
| Cameroun | 164 | 153 | 153 | 153 | 155 | 152 | 152 | 160 | 159 | 159 | 160 | 159 | 159 | 163 | 158 | 164 | 161 |
| Oman | 165 | 153 | 153 | 153 | 155 | 152 | 152 | 142 | 155 | 157 | 151 | 156 | 157 | 162 | 164 | 165 | 166 |
| Paraguay | 166 | 153 | 153 | 153 | 155 | 152 | 152 | 159 | 159 | 159 | 157 | 159 | 159 | 164 | 165 | 161 | 163 |
| Nauru | 167 | 153 | 153 | 153 | 155 | 152 | 152 | 160 | 159 | 159 | 160 | 159 | 159 | 166 | 167 | 166 | 167 |
| Sudan | 168 | 153 | 153 | 153 | 155 | 152 | 152 | 160 | 159 | 159 | 160 | 159 | 159 | 167 | 168 | 167 | 168 |
| **States (USA)** | | | | | | | | | | | | | | | | | |
| Massach | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 2 | 2 | 2 |
| California | 3 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 |
| New York | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 7 | 4 | 4 | 6 | 4 | 4 | 8 | 7 | 8 | 7 |
| D Columb | 6 | 6 | 6 | 6 | 8 | 5 | 5 | 8 | 8 | 7 | 8 | 8 | 7 | 5 | 5 | 5 | 5 |
| Illinois | 7 | 5 | 4 | 5 | 5 | 7 | 7 | 13 | 7 | 5 | 13 | 6 | 5 | 13 | 12 | 13 | 12 |
| Pennsyl | 11 | 9 | 9 | 8 | 9 | 11 | 11 | 14 | 11 | 10 | 14 | 11 | 9 | 15 | 16 | 16 | 15 |
| N Jersey | 12 | 8 | 8 | 9 | 7 | 14 | 12 | 19 | 13 | 12 | 21 | 12 | 12 | 19 | 18 | 20 | 18 |
| Connec | 16 | 15 | 13 | 16 | 16 | 21 | 20 | 20 | 16 | 17 | 20 | 16 | 15 | 18 | 19 | 18 | 19 |
| Michigan | 19 | 17 | 16 | 17 | 13 | 18 | 17 | 22 | 19 | 19 | 24 | 19 | 19 | 21 | 21 | 21 | 21 |
| Missouri | 20 | 21 | 18 | 18 | 20 | 20 | 19 | 16 | 17 | 15 | 15 | 17 | 14 | 20 | 20 | 19 | 20 |
| N Carol | 22 | 20 | 17 | 20 | 27 | 22 | 22 | 26 | 21 | 20 | 28 | 20 | 20 | 24 | 24 | 28 | 26 |
| Minnesota | 24 | 18 | 14 | 14 | 22 | 24 | 24 | 39 | 29 | 25 | 40 | 29 | 28 | 38 | 34 | 42 | 37 |
| Maryland | 25 | 25 | 22 | 25 | 22 | 25 | 25 | 29 | 24 | 24 | 29 | 24 | 22 | 36 | 31 | 37 | 32 |
| Texas | 26 | 30 | 30 | 29 | 34 | 27 | 27 | 23 | 25 | 26 | 22 | 25 | 24 | 28 | 27 | 30 | 28 |
| Wisconsin | 27 | 26 | 25 | 26 | 19 | 26 | 26 | 35 | 32 | 34 | 34 | 32 | 34 | 44 | 43 | 43 | 38 |
| Indiana | 28 | 32 | 31 | 33 | 25 | 29 | 29 | 28 | 26 | 28 | 27 | 26 | 26 | 32 | 32 | 33 | 31 |
| Virginia | 30 | 33 | 33 | 32 | 33 | 30 | 30 | 25 | 27 | 29 | 25 | 27 | 27 | 37 | 36 | 34 | 34 |
| Ohio | 31 | 31 | 29 | 31 | 22 | 32 | 32 | 33 | 28 | 27 | 35 | 28 | 29 | 46 | 46 | 46 | 45 |
| Rhode Isl | 32 | 27 | 26 | 27 | 32 | 28 | 28 | 52 | 34 | 31 | 52 | 34 | 32 | 47 | 40 | 49 | 43 |
| Arizona | 37 | 28 | 27 | 28 | 47 | 34 | 33 | 45 | 39 | 36 | 43 | 36 | 35 | 51 | 52 | 51 | 48 |
| Florida | 38 | 36 | 35 | 36 | 31 | 38 | 38 | 31 | 31 | 30 | 31 | 33 | 33 | 48 | 48 | 47 | 47 |
| Georgia | 39 | 38 | 38 | 38 | 38 | 35 | 35 | 32 | 35 | 35 | 33 | 35 | 36 | 39 | 37 | 40 | 42 |
| Tennessee | 40 | 37 | 36 | 37 | 37 | 41 | 40 | 34 | 33 | 32 | 32 | 31 | 31 | 49 | 50 | 48 | 50 |
| Iowa | 41 | 41 | 41 | 41 | 41 | 40 | 39 | 42 | 40 | 37 | 44 | 41 | 37 | 34 | 45 | 45 | 52 |
| N Hampsh | 44 | 35 | 34 | 34 | 35 | 43 | 43 | 68 | 48 | 44 | 71 | 49 | 48 | 64 | 61 | 67 | 65 |
| S Carolina | 45 | 42 | 40 | 42 | 44 | 45 | 45 | 49 | 43 | 41 | 53 | 44 | 42 | 66 | 67 | 66 | 67 |
| Washington | 48 | 48 | 44 | 48 | 36 | 48 | 48 | 51 | 44 | 43 | 49 | 42 | 41 | 62 | 66 | 63 | 66 |
| Kentucky | 55 | 51 | 46 | 51 | 42 | 55 | 55 | 58 | 51 | 49 | 58 | 51 | 49 | 73 | 73 | 76 | 75 |
| Oregon | 57 | 54 | 54 | 54 | 48 | 56 | 56 | 57 | 53 | 51 | 60 | 55 | 52 | 67 | 69 | 70 | 70 |
| Colorado | 60 | 53 | 52 | 53 | 56 | 57 | 57 | 56 | 58 | 59 | 55 | 58 | 57 | 65 | 63 | 64 | 62 |
| Utah | 65 | 63 | 59 | 61 | 68 | 64 | 64 | 63 | 57 | 54 | 65 | 57 | 51 | 76 | 79 | 75 | 77 |
| Louisiana | 69 | 71 | 68 | 71 | 68 | 69 | 69 | 72 | 69 | 70 | 69 | 71 | 73 | 72 | 72 | 71 | 73 |
| Wyoming | 71 | 73 | 74 | 73 | 74 | 74 | 75 | 65 | 72 | 74 | 61 | 69 | 74 | 83 | 83 | 82 | 82 |
| Alabama | 72 | 72 | 70 | 72 | 64 | 75 | 73 | 61 | 66 | 67 | 62 | 66 | 66 | 85 | 89 | 84 | 90 |
| Kansas | 73 | 75 | 75 | 74 | 64 | 77 | 77 | 78 | 65 | 64 | 79 | 64 | 64 | 80 | 81 | 86 | 84 |
| Nevada | 74 | 77 | 77 | 79 | 64 | 76 | 76 | 69 | 70 | 73 | 68 | 70 | 72 | 74 | 76 | 72 | 78 |
| N Mexico | 75 | 70 | 65 | 70 | 78 | 71 | 70 | 86 | 73 | 71 | 86 | 73 | 71 | 98 | 93 | 102 | 95 |
| Hawaii | 76 | 80 | 78 | 81 | 77 | 79 | 78 | 80 | 76 | 77 | 78 | 75 | 79 | 71 | 71 | 69 | 69 |
| Maine | 77 | 67 | 61 | 68 | 73 | 73 | 72 | 91 | 83 | 79 | 89 | 79 | 76 | 97 | 97 | 89 | 87 |
| Vermont | 79 | 82 | 82 | 83 | 82 | 80 | 80 | 82 | 79 | 78 | 81 | 76 | 77 | 78 | 75 | 79 | 72 |
| Oklahoma | 80 | 83 | 83 | 82 | 80 | 82 | 83 | 74 | 71 | 69 | 76 | 72 | 69 | 87 | 88 | 88 | 88 |
| Delaware | 83 | 78 | 76 | 76 | 86 | 85 | 84 | 87 | 75 | 72 | 87 | 77 | 70 | 99 | 102 | 96 | 98 |
| Nebraska | 84 | 85 | 84 | 85 | 85 | 81 | 81 | 79 | 78 | 80 | 80 | 80 | 80 | 90 | 92 | 91 | 93 |
| W Virginia | 86 | 79 | 81 | 78 | 108 | 88 | 88 | 83 | 77 | 76 | 83 | 78 | 78 | 96 | 95 | 97 | 96 |
| Mississippi | 94 | 94 | 89 | 94 | 108 | 95 | 95 | 84 | 84 | 83 | 84 | 84 | 82 | 95 | 101 | 100 | 104 |
| Arkansas | 96 | 86 | 87 | 88 | 108 | 93 | 94 | 89 | 88 | 90 | 88 | 85 | 85 | 109 | 108 | 111 | 111 |
| Montana | 99 | 99 | 92 | 98 | 87 | 97 | 97 | 99 | 87 | 86 | 99 | 92 | 88 | 120 | 124 | 121 | 125 |
| Alaska | 104 | 97 | 96 | 96 | 108 | 98 | 98 | 108 | 102 | 103 | 110 | 103 | 103 | 118 | 120 | 126 | 123 |
| N Dakota | 120 | 112 | 125 | 114 | 123 | 120 | 120 | 110 | 111 | 111 | 109 | 109 | 110 | 125 | 140 | 130 | 142 |
| Idaho | 126 | 119 | 119 | 119 | 123 | 113 | 113 | 116 | 127 | 138 | 115 | 123 | 136 | 141 | 141 | 142 | 141 |
| S Dakota | 127 | 116 | 116 | 115 | 87 | 131 | 133 | 130 | 131 | 131 | 126 | 125 | 126 | 140 | 143 | 146 | 149 |

Ranks* = Rank of the country/State of US as obtained by the IDEAS/RePEc. We will also denote it by $M_0$ in other tables and the text.

**Table-2. Overall Academic Rankings of Countries/States of US According to Different Measures of the Degree of Representation**

| Country / State | $M_0$ | $M_1$ | M2 | M3 | M4 | M5 | Country / State | $M_0$ | $M_1$ | M2 | M3 | M4 | M5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UK | 2 | 2 | 2 | 2 | 2 | 2 | Kenya | 137 | 136 | 136 | 121 | 136 | 136 |
| Germany | 5 | 5 | 5 | 4 | 5 | 5 | Monaco | 138 | 137 | 137 | 144 | 137 | 137 |
| Canada | 8 | 8 | 8 | 11 | 8 | 8 | Palestin A | 139 | 140 | 140 | 151 | 141 | 141 |
| Italy | 9 | 9 | 9 | 8 | 9 | 9 | Slovakia | 140 | 139 | 139 | 116 | 138 | 138 |
| France | 10 | 10 | 10 | 9 | 10 | 10 | Armenia | 141 | 143 | 142 | 147 | 143 | 143 |
| Spain | 13 | 12 | 12 | 10 | 12 | 12 | Costa Rica | 142 | 144 | 144 | 146 | 144 | 145 |
| Netherlands | 14 | 14 | 14 | 14 | 14 | 14 | Serbia | 143 | 147 | 147 | 139 | 147 | 147 |
| Australia | 15 | 16 | 16 | 20 | 16 | 16 | Ghana | 144 | 141 | 141 | 125 | 140 | 140 |
| Switzerland | 17 | 17 | 17 | 15 | 17 | 17 | Guatemala | 145 | 148 | 148 | 141 | 148 | 148 |
| Sweden | 18 | 18 | 18 | 18 | 18 | 18 | Lebanon | 146 | 142 | 143 | 127 | 142 | 142 |
| Belgium | 21 | 21 | 21 | 22 | 21 | 21 | Ecuador | 147 | 145 | 145 | 129 | 145 | 144 |
| Israel | 23 | 23 | 23 | 21 | 23 | 23 | Namibia | 148 | 146 | 146 | 124 | 146 | 146 |
| Japan | 29 | 30 | 30 | 34 | 30 | 30 | Jordan | 149 | 149 | 149 | 137 | 149 | 149 |
| Denmark | 33 | 34 | 34 | 33 | 33 | 33 | Belarus | 150 | 152 | 152 | 153 | 152 | 152 |
| Ireland | 34 | 32 | 32 | 31 | 32 | 32 | Uganda | 151 | 151 | 151 | 128 | 151 | 151 |
| Norway | 35 | 35 | 35 | 29 | 35 | 35 | Nepal | 152 | 150 | 150 | 135 | 150 | 150 |
| Austria | 36 | 40 | 40 | 38 | 40 | 40 | Malta | 153 | 153 | 153 | 155 | 153 | 153 |
| Portugal | 42 | 42 | 42 | 40 | 42 | 42 | Uzbekistan | 154 | 154 | 154 | 149 | 154 | 154 |
| N Zealand | 43 | 43 | 43 | 42 | 43 | 43 | Botswana | 155 | 155 | 155 | 152 | 155 | 155 |
| S Korea | 46 | 45 | 45 | 53 | 45 | 45 | Niue | 156 | 156 | 156 | 157 | 156 | 156 |
| Chile | 47 | 46 | 46 | 51 | 46 | 46 | Georgia | 157 | 157 | 157 | 160 | 158 | 158 |
| Hong Kong | 49 | 49 | 49 | 52 | 49 | 49 | Macedonia | 158 | 158 | 158 | 156 | 157 | 157 |
| India | 50 | 54 | 54 | 43 | 54 | 54 | Montenegro | 159 | 159 | 159 | 159 | 159 | 159 |
| Turkey | 51 | 51 | 51 | 49 | 51 | 51 | Bahrain | 160 | 160 | 160 | 158 | 160 | 160 |
| Singapore | 52 | 50 | 50 | 56 | 50 | 50 | Algeria | 161 | 161 | 161 | 161 | 161 | 162 |
| Greece | 53 | 53 | 53 | 45 | 53 | 53 | Senegal | 162 | 162 | 162 | 163 | 162 | 161 |
| Finland | 54 | 52 | 52 | 47 | 52 | 52 | Afghanistan | 163 | 164 | 163 | 162 | 163 | 163 |
| Brazil | 56 | 60 | 60 | 54 | 60 | 60 | Cameroun | 164 | 163 | 164 | 166 | 164 | 164 |
| Cyprus | 58 | 59 | 59 | 64 | 59 | 59 | Oman | 165 | 165 | 165 | 165 | 165 | 165 |
| Argentina | 59 | 58 | 57 | 46 | 57 | 57 | Paraguay | 166 | 166 | 166 | 164 | 166 | 166 |
| Russia | 61 | 61 | 61 | 58 | 61 | 61 | Nauru | 167 | 167 | 167 | 167 | 167 | 167 |
| Hungary | 62 | 62 | 62 | 62 | 62 | 62 | Sudan | 168 | 168 | 168 | 168 | 168 | 168 |
| Colombia | 63 | 67 | 67 | 57 | 67 | 67 | | | | | | | |
| Czech Rep | 64 | 63 | 63 | 61 | 63 | 63 | **States (USA)** | **$M_0$** | **$M_1$** | **M2** | **M3** | **M4** | **M5** |
| China | 66 | 65 | 65 | 65 | 65 | 65 | Massach | 1 | 1 | 1 | 1 | 1 | 1 |
| Mexico | 67 | 66 | 66 | 67 | 66 | 66 | California | 3 | 3 | 3 | 3 | 3 | 3 |
| Taiwan | 68 | 68 | 68 | 69 | 68 | 68 | New York | 4 | 4 | 4 | 5 | 4 | 4 |
| S Africa | 70 | 70 | 70 | 68 | 70 | 70 | D Columb | 6 | 6 | 6 | 6 | 6 | 6 |
| Philippines | 78 | 78 | 78 | 92 | 78 | 78 | Illinois | 7 | 7 | 7 | 7 | 7 | 7 |
| Poland | 81 | 81 | 81 | 88 | 81 | 81 | Pennsyl | 11 | 11 | 11 | 12 | 11 | 11 |
| Pakistan | 82 | 84 | 83 | 84 | 83 | 83 | N Jersey | 12 | 13 | 13 | 13 | 13 | 13 |
| Malaysia | 85 | 86 | 86 | 87 | 86 | 86 | Connec | 16 | 15 | 15 | 16 | 15 | 15 |
| Romania | 87 | 93 | 93 | 77 | 93 | 93 | Michigan | 19 | 19 | 19 | 17 | 19 | 19 |
| Slovenia | 88 | 87 | 87 | 81 | 87 | 87 | Missouri | 20 | 20 | 20 | 19 | 20 | 20 |
| Luxembourg | 89 | 88 | 88 | 89 | 88 | 88 | N Carol | 22 | 22 | 22 | 23 | 22 | 22 |
| Ukraine | 90 | 89 | 89 | 95 | 89 | 89 | Minnesota | 24 | 24 | 24 | 26 | 24 | 24 |
| Bulgaria | 91 | 90 | 90 | 97 | 90 | 90 | Maryland | 25 | 25 | 25 | 24 | 25 | 25 |
| Thailand | 92 | 91 | 91 | 90 | 91 | 91 | Texas | 26 | 26 | 26 | 28 | 26 | 26 |

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| Continuation of Table-2 | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Country / State** | **$M_0$** | **$M_1$** | **M2** | **M3** | **M4** | **M5** | **Country / State** | **$M_0$** | **$M_1$** | **M2** | **M3** | **M4** | **M5** |
| Peru | 93 | 92 | 92 | 80 | 92 | 92 | Wisconsin | 27 | 28 | 28 | 27 | 28 | 28 |
| Iceland | 95 | 95 | 95 | 103 | 95 | 95 | Indiana | 28 | 27 | 27 | 25 | 27 | 27 |
| Uruguay | 97 | 97 | 97 | 96 | 97 | 97 | Virginia | 30 | 29 | 29 | 32 | 29 | 29 |
| Indonesia | 98 | 98 | 98 | 86 | 98 | 98 | Ohio | 31 | 31 | 31 | 30 | 31 | 31 |
| Iraq | 100 | 101 | 101 | 115 | 101 | 101 | Rhode Isl | 32 | 33 | 33 | 37 | 34 | 34 |
| Egypt | 101 | 100 | 100 | 93 | 100 | 100 | Arizona | 37 | 38 | 38 | 44 | 38 | 38 |
| Kuwait | 102 | 103 | 102 | 117 | 103 | 103 | Florida | 38 | 37 | 37 | 35 | 37 | 37 |
| Côte d'Iv | 103 | 102 | 103 | 109 | 102 | 102 | Georgia | 39 | 36 | 36 | 36 | 36 | 36 |
| U Arab Em | 105 | 104 | 104 | 104 | 104 | 104 | Tennessee | 40 | 39 | 39 | 39 | 39 | 39 |
| Tunisia | 106 | 106 | 106 | 112 | 106 | 106 | Iowa | 41 | 41 | 41 | 41 | 41 | 41 |
| Estonia | 107 | 107 | 107 | 107 | 107 | 107 | N Hampsh | 44 | 44 | 44 | 50 | 44 | 44 |
| Ethiopia | 108 | 108 | 108 | 100 | 108 | 108 | S Carolina | 45 | 48 | 48 | 55 | 48 | 48 |
| Venezuela | 109 | 109 | 109 | 101 | 109 | 109 | Washington | 48 | 47 | 47 | 48 | 47 | 47 |
| Croatia | 110 | 111 | 111 | 118 | 111 | 111 | Kentucky | 55 | 55 | 55 | 59 | 55 | 55 |
| Bangladesh | 111 | 110 | 110 | 122 | 110 | 110 | Oregon | 57 | 56 | 56 | 60 | 56 | 56 |
| S Arabia | 112 | 114 | 114 | 133 | 114 | 114 | Colorado | 60 | 57 | 58 | 63 | 58 | 58 |
| Jamaica | 113 | 117 | 117 | 91 | 117 | 117 | Utah | 65 | 64 | 64 | 66 | 64 | 64 |
| Kazakhstan | 114 | 113 | 113 | 108 | 113 | 113 | Louisiana | 69 | 69 | 69 | 71 | 69 | 69 |
| Iran | 115 | 112 | 112 | 120 | 112 | 112 | Wyoming | 71 | 71 | 71 | 75 | 71 | 71 |
| Bolivia | 116 | 116 | 116 | 119 | 116 | 116 | Alabama | 72 | 72 | 72 | 72 | 72 | 72 |
| Qatar | 117 | 115 | 115 | 105 | 115 | 115 | Kansas | 73 | 73 | 73 | 73 | 73 | 73 |
| Tanzania | 118 | 118 | 118 | 111 | 118 | 118 | Nevada | 74 | 74 | 74 | 70 | 74 | 74 |
| Nigeria | 119 | 122 | 122 | 113 | 122 | 122 | N Mexico | 75 | 76 | 76 | 82 | 76 | 76 |
| Fiji | 121 | 121 | 121 | 130 | 120 | 120 | Hawaii | 76 | 75 | 75 | 74 | 75 | 75 |
| Sri Lanka | 122 | 119 | 119 | 110 | 119 | 119 | Maine | 77 | 77 | 77 | 76 | 77 | 77 |
| Viet Nam | 123 | 123 | 123 | 126 | 123 | 123 | Vermont | 79 | 79 | 79 | 78 | 79 | 79 |
| Latvia | 124 | 124 | 124 | 106 | 124 | 124 | Oklahoma | 80 | 80 | 80 | 79 | 80 | 80 |
| Morocco | 125 | 125 | 125 | 132 | 125 | 125 | Delaware | 83 | 82 | 82 | 85 | 82 | 82 |
| Macao | 128 | 128 | 128 | 143 | 128 | 128 | Nebraska | 84 | 83 | 84 | 83 | 84 | 84 |
| Martinique | 129 | 129 | 129 | 145 | 131 | 131 | W Virginia | 86 | 85 | 85 | 94 | 85 | 85 |
| Malawi | 130 | 131 | 131 | 136 | 130 | 130 | Mississippi | 94 | 94 | 94 | 98 | 94 | 94 |
| Burkina F | 131 | 132 | 132 | 150 | 132 | 132 | Arkansas | 96 | 96 | 96 | 102 | 96 | 96 |
| Barbados | 132 | 130 | 130 | 138 | 129 | 129 | Montana | 99 | 99 | 99 | 99 | 99 | 99 |
| Réunion | 133 | 133 | 133 | 142 | 133 | 133 | Alaska | 104 | 105 | 105 | 114 | 105 | 105 |
| Guadeloupe | 134 | 134 | 134 | 148 | 134 | 134 | N Dakota | 120 | 120 | 120 | 134 | 121 | 121 |
| Kyrgyzstan | 135 | 138 | 138 | 154 | 139 | 139 | Idaho | 126 | 126 | 126 | 140 | 126 | 126 |
| Lithuania | 136 | 135 | 135 | 131 | 135 | 135 | S Dakota | 127 | 127 | 127 | 123 | 127 | 127 |

| Table-3. Correlation between the Different Types of Overall Academic Rankings (M) of Countries/States of US And Individual Ranking Scores ($r_j$) | | | | | | |
|---|---|---|---|---|---|---|
| **Sl No.** | **Ranking Criteria ($r_j$)** | **$M_1$** | **M2** | **M3** | **M4** | **M5** |
| 1 | DNbWorks | 0.98024140 | 0.97855130 | 0.97878522 | 0.98041463 | 0.97890726 |
| 2 | ScWorks | 0.99486657 | 0.99464722 | 0.98355445 | 0.99487714 | 0.99464722 |
| 3 | AScWorks | 0.99224418 | 0.99169877 | 0.98232698 | 0.99226883 | 0.99164309 |
| 4 | ANbWorks | 0.97913187 | 0.97714070 | 0.97920807 | 0.97931781 | 0.97747006 |
| 5 | WScWorks | 0.99199715 | 0.99105340 | 0.98197772 | 0.99201808 | 0.99101037 |
| 6 | AWScWorks | 0.98940233 | 0.98813025 | 0.98111216 | 0.98943793 | 0.98806191 |
| 7 | NbCites | 0.99446474 | 0.99325425 | 0.97408596 | 0.99438033 | 0.99312718 |
| 8 | ANbCites | 0.99397668 | 0.99315414 | 0.97525267 | 0.99389989 | 0.99308454 |
| 9 | ScCites | 0.99104519 | 0.98983130 | 0.96918074 | 0.99092385 | 0.98964794 |
| 10 | AScCites | 0.99217075 | 0.99120267 | 0.97301850 | 0.99206416 | 0.99107354 |
| 11 | WScCites | 0.98869078 | 0.98709271 | 0.96755042 | 0.98856725 | 0.98691401 |
| 12 | AWScCites | 0.99080088 | 0.98953225 | 0.97135218 | 0.99068828 | 0.98942089 |
| 13 | DCites | 0.99399332 | 0.99297320 | 0.97297099 | 0.99390031 | 0.99286230 |
| 14 | ADCites | 0.99438252 | 0.99351705 | 0.97577415 | 0.99430127 | 0.99346037 |
| 15 | DScCites | 0.99128257 | 0.99026518 | 0.96932794 | 0.99115667 | 0.99008698 |
| 16 | ADScCites | 0.99215427 | 0.99123890 | 0.97255123 | 0.99204155 | 0.99110164 |
| 17 | WDScCites | 0.98863971 | 0.98716004 | 0.96698326 | 0.98850511 | 0.98700724 |
| 18 | AWDScCites | 0.99104841 | 0.99006056 | 0.97082646 | 0.99092871 | 0.98990777 |
| 19 | HIndex | 0.93803227 | 0.93586584 | 0.96696920 | 0.93821363 | 0.93656923 |
| 20 | NCAuthors | 0.99501553 | 0.99406763 | 0.97679107 | 0.99495518 | 0.99399720 |
| 21 | RCAuthors | 0.99490884 | 0.99386367 | 0.97549010 | 0.99483262 | 0.99378315 |
| 22 | NbPages | 0.98549453 | 0.98486097 | 0.97694117 | 0.98555000 | 0.98496300 |
| 23 | ScPages | 0.98802319 | 0.98793218 | 0.97234506 | 0.98793753 | 0.98761298 |
| 24 | WSCPages | 0.98472664 | 0.98439290 | 0.96772561 | 0.98461499 | 0.98394091 |
| 25 | ANbPages | 0.98529542 | 0.98421979 | 0.97837055 | 0.98536375 | 0.98438552 |
| 26 | AScPages | 0.98855953 | 0.98832543 | 0.97316476 | 0.98847467 | 0.98802666 |
| 27 | AWScPages | 0.98439462 | 0.98406604 | 0.96698251 | 0.98427926 | 0.98358852 |
| 28 | AbsViews | 0.96661155 | 0.96500321 | 0.97135568 | 0.96686987 | 0.96538031 |
| 29 | AAbsViews | 0.96430780 | 0.96241640 | 0.96924657 | 0.96457676 | 0.96295815 |
| 30 | Downloads | 0.95962064 | 0.95750680 | 0.96693679 | 0.95990300 | 0.95789149 |
| 31 | ADownloads | 0.96063736 | 0.95850649 | 0.96796432 | 0.96092055 | 0.95905062 |

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| Table-4. Inter-Correlation Matrix of Different Types of Overall Academic Rankings (M) of Countries/States of US | | | | | | |
|---|---|---|---|---|---|---|
| **Overall Rankings** | **$M_0$** | **$M_1$** | **$M_2$** | **$M_3$** | **$M_4$** | **$M_5$** |
| **$M_0$** | 1.00000000 | 0.99957735 | 0.99960265 | 0.98660667 | 0.99954444 | 0.99952926 |
| **$M_1$** | 0.99957735 | 1.00000000 | 0.99998735 | 0.98714574 | 0.99997216 | 0.99996710 |
| **$M_2$** | 0.99960265 | 0.99998735 | 1.00000000 | 0.98712550 | 0.99997469 | 0.99996963 |
| **$M_3$** | 0.98660667 | 0.98714574 | 0.98712550 | 1.00000000 | 0.98742920 | 0.98746716 |
| **$M_4$** | 0.99954444 | 0.99997216 | 0.99997469 | 0.98742920 | 1.00000000 | 0.99999494 |
| **$M_5$** | 0.99952926 | 0.99996710 | 0.99996963 | 0.98746716 | 0.99999494 | 1.00000000 |