# A DISTRIBUTION OF PAPERS BASED ON FRACTIONAL COUNTING: AN EMPIRICAL STUDY

**I.K. Ravichandra Rao,** Professor and Head, Documentation Research and Training Centre, Indian Statistical Institute, 8<sup>th</sup> Mile Mysore Road, Bangalore 560059, India e-mail: ikrrao@hotmail.com

**Bibhuti Bhusan Sahoo**, Junior Research Fellow, Documentation Research and Training Centre, Indian Statistical Institute, 8<sup>th</sup> Mile Mysore Road, Bangalore 560059, India e-mail: bibhuti@isibang.ac.in and

**L. Egghe,** Professor, LUC, Universitaire Campus, B-3590 Diepenbeek, Belgium and UIA, Universiteitsplein 1, B – 2610 Wilrijk, Belgium. e-mail:leo.egghe@luc.ac.be

**Abstract.** Distributions of papers based on the fractional counting are very irregular. It can be explained by a model which may be derived under the assumptions that the distribution of papers  $(\varphi(n))$  (method of normal counting) is a negative binomial distribution and the distribution of authors  $(\psi(n))$  (multiple authorship) is a Poisson distribution. This model appears to be a much better model than the one which is derived earlier by Egghe and Rao under the assumption that  $\varphi(n)$  and  $\psi(n)$  confirm to Lotka's law.

#### 1. INTRODUCTION

Distributions of articles over authors are approximated by a number of related models since the first publication on the frequency distribution of scientific productivity by A J Lotka in 1926. The following are some of the important models or distributions, which are discussed since then:

- 1. Law of inverse square [9]
- 2. Generalized bibliometric distributions [1]
- 3. Negative binomial and as a special case, some times, geometric distribution [11]
- 4. Cumulative advantage distribution [10]

These distributions are related to a great extent – the geometric distribution is a special case of negative binomial distribution. The negative binomial distribution and also the cumulative advantage distribution may be derived from an urn model; they explain highly skewed data with a long tail fairly well. Further (1), (3) and (4) are used primarily to analyze size-frequency data. (1) is also a special case of (2) and they are discussed in a number of informetric papers. In most of these studies, the number of publications is considered as a measure of scientific productivity. As pointed out by Egghe [4] and Lindsey [8], there are three methods of counting the number of publications. They are:

I.K. Ravichandra Rao, Bibhuti Bhusan Sahoo and Leo Egghe, *A distribution of papers based on the fractional counting:* an empirical study, In: Guohua Jiang, Ronald Rousseau, Yishan Wu (Eds), Proceedings of the 9th International Conference on Scientometrics and Informetrics – ISSI 2003, Dalian University of Technology, Dalian, China, 2003, 241-250.

- Method of total counting or normal counting assigning every author a weight one for each of his or her publications during a time period, irrespective of whether he or she is a first author or a second author, etc.
- Method of straight counting assigning only the first author a weight one for each of his or her publications during a time period and for other authors a weight zero. In deriving the law of Inverse Square, Lotka adopted this method while collecting the data from Author Index of Chemical Abstracts and Auerbach's Geschichtstafeln der Physik.
- Method of fractional counting assigning every author a weight 1/n in an n-authored paper.

Rousseau [13] in 1992 in his article entitled "Breakdown of the Robustness Property of Lotka's Law: The Case of Adjusted Counts for Multi-authorship Attribution", discussed frequency distribution of "fractional scores" in a bibliography of Informetrics. He observed that fractional counting of authors does not lead to a Lotka distribution. He further argued that Bookstein's robustness property of Lotka's law breaks down in such cases. Bookstein pointed out that "if we would find a  $1/X^{\alpha}$  relation to describe productivity when we give a full publication to every author whose name appears on a paper, this will also be the case if we had assigned factional authorship instead" (2, p.383). This is one of the robustness properties. Ravichandra Rao [12] also studied a distribution of fractional scores in mathematics. His study was based on the bibliographical records in Math Reviews (1990.) For the appropriate groups or classes of fractional scores, he hypothesized that log-normal distribution fits much better than other distributions; however, this hypothesis was rejected when appropriate tests were applied. Recently, Egghe and Ravichandra Rao [5] further analyzed this data and came out with an extremely good model to describe distribution of fractional scores. Their paper entitled "Duality Revisited: Construction of Fractional Frequency Distributions based on two dual Lotka's Laws," is the first attempt of this kind. They have assumed two simple Lotka distributions with exponent 2 – one for the number of authors with n papers (total count) and the other one for the number of papers with n authors. Based on the earlier convolution model of Egghe [4], the authors have reworked for discrete scores and produced a theoretical fractional frequency distribution (f(q)) with only one parameter which is in very close agreement with observed data, produced earlier by Rao. Egghe and Ravichandra Rao thus concluded that "fractional distributions are a consequence of Lotka's law and are not examples of breakdowns of this famous historical law." Further, they have also noticed that a Poisson distribution (for  $\psi(n)$ ) if the parameter  $\lambda$  is chosen in the appropriate way is better capable of describing the distribution of fractional scores (the results have not been published). Thus, as a continuation of Egghe and Ravichandra Rao's work, an attempt has been made here to

- Identify a suitable model for distribution of papers in the field of software studies, as we find in many cases Lotka's law hardly fits
- Identify a suitable model to describe distribution of authors (distribution of multiple authorship!) and then
- Identify an appropriate model to explain the distribution of fractional scores of authors.

## 2. DATA COLLECTION

Data in the area of "software and related topics" were collected from the COMPENDEX database for the year 2000. After eliminating duplicate records, there were a total of 55,784 relevant records. All the three methods – total counting, straight counting and fractional counting – were adopted to collect the data on distribution of papers over authors. Further, data on distribution of authors (multiple authorship) over papers were also collected. The data are given in Table 1. Table 2 gives the distribution of papers, based on fractional counting.

## 3. DATA ANALYSIS

Lotka observed regularities in the productivity of chemists and physicists and on the basis of these observations, he formulated a hypothesis that the relative frequency of authors publishing x articles could be explained as

$$y = \frac{6}{\pi^2} x^{-\alpha}$$

where  $\alpha$  is a constant. The value of  $\alpha$  was found to be 2 for physicists and 1.89 for chemists. Since then, several formal analytical and predictive models have been developed for describing the phenomenon of scientific productivity [11]. Ravichandra Rao [11] in his article on distribution of scientific productivity and social change argued that the negative binomial distribution:

$$p(x) = \frac{(k+x-2)!}{(k-1)!(x-1)!} p^k q^x$$
  $x = 1,2,3, ...$   $0 \le p, q \le 1, k > 0$ 

fits fairly well to the author productivity data. Even in the present study, it has been observed that the negative binomial fits (data on author productivity) much better than most other distributions, such as Lotka's distribution, Poisson, lognormal, logarithmic series, geometric, etc. The negative binomial distribution, on fitting, gives a minimum chi-square value. The results of fitting the negative binomial distribution is shown in Table 1 (Total counting). Further, the authors have also observed in this study that the negative binomial distribution fits better than most of the other well-known distributions, to the data on author productivity, based on straight counting. Table 1 shows the results. An attempt has also been made to identify a suitable distribution to the distribution of multiple authorship. It has been observed that the Poisson distribution (x is modified such that x = 1,2,3,...)

$$p(x) = \frac{e^{-\lambda} \cdot \lambda^{x-1}}{(x-1)!},$$
  $x = 1,2,3,4.....$ 

fits much better than any other well known probability distribution. Table 1 gives the results.

## 4. DISTRIBUTION OF FRACTIONAL PAPERS

Egghe and Ravichandra Rao [5] have derived a theoretical model for the fractional frequency distribution f(q) (discrete case) from two dual Lotka's laws. They have derived the required formula for f(q), q > 0, for different cases:

- 1) case 1: i = 2, allowing an author score of 1/2 or 1 in one paper
- 2) case 2: i = 3, allowing an author score of 1/3, 1/2 or 1 in one paper
- 3) case 3: i = 4, allowing an author score of 1/4, 1/3, 1/2 or 1 in one paper
- 4) case 4: i = 5, allowing an author score of 1/5 1/4, 1/3, 1/2 or 1 in one paper For each case i, fractional scores of 1/j for j larger than or greater than i are set to be 1/i for reasons of simplicity. The case 1 for i = 2 is the most simple one and the relevant formulae are:

$$\begin{split} f(1/2) &= g_1(1/2) \; \varphi \; (1) = (1 \text{-} f_1(1)) \; \varphi \; (1) \\ f(1) &= g_1(1) \; \varphi \; (1) + (\; g_1(1/2))^2 \; \varphi \; (2) = f_1(1) \; \varphi \; (1) + (1 \text{-} f_1(1))^2 \; \varphi \; (2) \\ f(3/2) &= 2g_1(1/2) \; g_1(1) \; \varphi \; (2) + (\; g_1(1/2))^3 \; \varphi \; (3) = 2(1 \text{-} f_1(1)) \; f_1(1) \; \varphi (2) + (1 \text{-} f_1(1))^3 \; \varphi \; (3) \\ f(2) &= (g_1(1))^2 \; \varphi \; (2) + 3(\; g_1(1/2))^2 \; g_1(1) \; \varphi \; (3) + (\; g_1(1/2))^4 \; \varphi \; (4) \\ &= (f_1(1))^2 \; \varphi (2) + 3(1 \text{-} f_1(1))^2 \; f_1(1) \; \varphi \; (3) \; + (1 \text{-} f_1(1))^4 \; \varphi \; (4) \end{split}$$

 $g_1(.)$  is derived using  $f_1(.)$  and  $\phi$  (.) in each of the cases discussed above as in Egghe and Rao[4]. Formulae for cases i=3 & 4 are given by Egghe and Ravichandra Rao [5]. Formulae for case i=5 are too many and run into several pages and therefore they are not published so far. They are however available with the authors, if required. In the formula for f(q),  $\phi$  (n) is the distribution of papers over authors (Lotka's law), and

$$f_1(z) = \frac{\Psi\left(\frac{1}{z}\right)}{\mu z}$$

where  $\psi(z)$  is the distribution of papers with z authors;  $\mu$  denotes the average number of authors per paper; thus  $f_1(z)$  denotes the fraction of authors with fractional score z in one paper. Using the above formula, Egghe and Ravichandra Rao [5] under the assumption that both  $\psi(n)$  and  $\phi(n)$  confirm to a Lotka's law, computed probabilities  $(f_1(q))$  for cases i=2,3,4 and 5. As noted in their article the results were excellent, particularly (for the case i=5.)

In this paper a similar attempt is made and under the assumption that both  $\psi(n)$  and  $\phi$  (n) confirm to a Lotka's law, to compute f(q) and it is not giving a good result (Table 3, Cols 4 & 8.) As may be observed from Table 1, both  $\psi(n)$  and  $\phi$  (n) do not confirm to a Lotka's Law and this may be a reason for the bad result of f(q). On the other hand, we have observed that Poisson distribution is a close approximation to  $\psi(n)$ . Therefore an attempt was made to compute f(q), under the assumption that  $\psi(n)$  follows a Poisson distribution and  $\phi$  (n) confirms to Lotka's Law; the results are given in Tables 3 (Cols 4 & 9) for case i=4. Figures 1-4 give the graphs for theoretical and empirical values for cases i=2 to 5. However, as may be observed in Figures 1-4, the results are not satisfactory. The moments method is used to estimate the parameters, while fitting the distribution.

Ravichandra Rao [11] argued that the negative binomial distribution describes a pattern of scientific productivity under the success breeds-success condition in a wide variety of social changes. Further even in the present study, authors have observed that the negative binomial distribution fits  $\phi(n)$  fairly well. Therefore, an attempt has been made here to compute f(q) for cases i=2,3,4 and 5 under the assumption that  $\psi(n)$  and  $\phi(n)$  follow Poisson and negative binomial distributions respectively. The values of f(q)

are very close to the experimental values and the results are excellent. This observation is based on Figures 1-4. The theoretical and observed values for case i=4 is given in Table 3 (Cols 5 & 10.) Figures 1-4 give the graphs for theoretical and empirical values for cases i=2 to 5. The  $g_1(.)$  were accordingly derived for cases i=2 to 5 and they are as follows:

#### Case 1: i=2

This is a simple case. In this case, an author receives a score 1, if he / she is an author in a single authored paper. If he/she is an author in an multi-authored paper, the author receives a score 1/2.

$$g_1(1) = f_1(1) = e^{-\lambda} / (\lambda + 1)$$
 and  $g_1(1/2) = 1 - f_1(1)$ 

## Case 2: i=3

In this case, an author receives a score 1, if he / she is an author in a single authored paper. The author receives a score of  $\frac{1}{2}$  if he / she is an author in a two-authored paper. A score of  $\frac{1}{3}$  is assigned if he / she is an author in a j-authored paper for all  $j \ge 3$ .

$$\begin{split} g_1(1) &= f_1(1) = e^{-\lambda} \, / \, (\lambda + 1), \, g_1(1/2) = 2 \, \lambda \, g_1(1) \text{ and } g_1(1/3) \, = 1 \text{-} \, (f_1(1) + f_1(1/2)) \\ &= 1 \text{-} \, e^{-\lambda} \, / \, (\lambda + 1) \{1 + 2\lambda\} = 1 \text{-} \, g_1(1) \, (1 + 2\lambda) \end{split}$$

## Case 3: i=4

In this case, an author receives a score 1, if he / she is an author in a single authored paper. The author receives a score of  $\frac{1}{2}$  if he / she is an author in a two-authored paper. A score of  $\frac{1}{3}$  is assigned if he / she is an author in a 3-authored paper and a score of  $\frac{1}{4}$  is assigned if he / she is a j-authored paper for all  $j \ge 4$ .

$$\begin{split} g_1(1) &= f_1(1) = e^{-\lambda} \, / \, (\lambda + 1), \, g_1(1/2) = 2 \, \lambda \, g_1(1), \, g_1(1/3) = 3 \, (\lambda/2) \, g_1(1/2) \\ &= 1.5 \lambda^2 \, g_1(1) \, \text{and} \, g_1(1/4) = 1 - g_1(1) \, (1 + 2\lambda + 1.5\lambda^2) \end{split}$$

## Case 4: i=5

As in cases 1,2 and 3 the author receives a score 1/j, if he / she is an author in a j-authored paper ( $j \le 5$ ) and the author receives a score of 1/5 if he / she is an author in a j-authored paper ( $j \ge 5$ ).

$$g_1(1) = f_1(1) = e^{-\lambda} / (\lambda + 1), g_1(1/2) = 2 \lambda g_1(1), g_1(1/3) = 1.5\lambda^2 g_1(1), g_1(1/4)$$
  
=  $(\lambda^2/3) g_1(1/2) = (2/3) \lambda^3 g_1(1)$  and  $g_1(1/5) = 1 - g_1(1) (1 + 2\lambda + 1.5\lambda^2 + (2/3) \lambda^3)$ 

In all the above cases (i=2,3,4 and 5), fractional scores of 1/j for j larger than or equal to i, are set to be 1/i for reasons of manageability of the calculations. The larger i, the better the scoring system. Also  $g_1(1)$  is derived using  $f_1(1)$ .  $g_1(1/2)$ ,  $g_1(1/3)$ ,  $g_1(1/4)$  and  $g_1(1/5)$  are functions of  $g_1(1)$ .  $g_1(1)$  refers to the author distribution of fractional scores in one paper.

## 5. CONCLUSION

In a working hypothesis that the population is a mixture of individuals with different degrees of accident proneness, represented by different  $\lambda$  in a Poisson distribution and if suppose that in the population the distribution of  $\lambda$  is of the Gamma form [6,7], then the variable X follows a negative binomial distribution. In the case of author productivity, each individual author has different capabilities to publish an article (represented by different  $\lambda$  -- similar to that of accident proneness.) Further, as has been observed in the literature earlier [5], and as observed in this article (based on total counting), it has been hypothesized that the distribution of papers over authors confirm to a negative binomial distribution. Since  $\psi(n)$  closely confirms to a Poisson distribution and  $\phi(n)$  confirms to a negative binomial distribution (-- a compound Poisson distribution), in this paper it is further conjectured that f(q) belongs to a family of Poisson distribution and it explains the scientific productivity of author, to a great extent. The values of Kolmogorov statistics (D<sub>max</sub>) for Lotka-Lotka, Poisson-Lotka and Neg. Bin.- Poisson cases are 0.330204, 0.26399, and 0.019059 respectively. It undoubtedly leads us to conclude that f(q) can reasonably be predicted under the assumption that  $\varphi(n)$  follows Negative binomial and  $\psi(n)$  follows Poisson distribution.

#### REFERENCES

- 1) Bookstein, A. Patterns of Scientific Productivity and Social Change: A discussion of Lotka's Law and Bibliometric Symmetry. (Journal of the American Society for Information Science, 28(4), 1977, 206-10)
- 2) Bookstein, A. Informetric Distributions, Part II: Resilience to Ambiguity. (Journal of the American Society for Information Science, 41(5), 1990, 376-386)
- Egghe, L. The Duality of Informetric Systems with Applications to the Empirical Laws. (Journal of Information Science, 16(1), 17-27.) (Also <u>see</u> Introduction to Informetrics: Quantitative Methods in Library, Documentation and Information Science by L Egghe and R Rousseau. Elsevier. Amsterdam. 1990.)
- 4) Egghe, L. Consequence of Lotka's law in the case of Fractional counting of authorship and of Author Count. (Math Computing Modeling. 18(9), 1993, 63-77)
- 5) Egghe, L and Rao, I.K. Ravichandra. Duality Revisited: Construction Fractional Frequency Distributions based on two dual Lotka Laws (Journal of the American Society for Information Science and Technology; 53(10), 2002, 789-801)
- 6) Johnson, L Norman and Kotz, Samuel. Distributions in Statistics: Discrete Distributions. Houghton Mifflin Co. Boston. 1969.
- 7) Kendall, Maurice and Stuart, Alan. The Advanced Theory of Statistics. Vol. 1. Distribution Theory. E. 4. 1977. p. 136-7.
- 8) Lindsey, D. Production and Citation Measures in the Society of Science: The Problem of Multiple Authorship (Social Studies of Science, 10, 1980, 145-62)
- 9) Lotka, A J. The Frequency Distribution of Scientific Productivity. (Journal of the Washington Academy of Science. 16(12), 1926, 317-23)
- 10) Price, D de Solla. A General Theory of Bibliometric and other Cumulative Advantage Processes. (Journal of the American Society for Information Science. 27(5), 1976, 292-306)
- 11) Rao, I.K.Ravichandra. The Distribution of Scientific Productivity and Social Change. (J of the American Society for Information Science., 1980, 111-22)

- Rao, I.K.Ravichandra. A stochastic Approach to Analysis of Distribution of Papers in Mathematics: Lotka's Law Revisited.(Proceedings of the Fifth Biennial Conference of the International Society for Scientometrics and Informetrics. Royal College, River Forest, IL; June 7-10, 1995. p. 455-64)
- Rousseau, R. Breakdown of the Robustness of Lotka's Law: The case of Adjusted Counts for Multi-authorship Attribution. (Journal of the American Society for Information Science; 43(10), 1992, 645-47)

Table 1. Author Productivity in the area of Software Studies

No. of Papers	No. of Authors ( Total Counting)	Theoretical Values (neg. binomial)	No. of Authors (Straight Counting)	Theoretical Values (neg. binomial)	No. of Authors	No. of Papers	Theoretical Values (Poisson)
N	$\varphi(n)$		$\varphi(n)$		у	ψ(n)	
1	110503	111787	41071	41451	1	8820	8940
2	14027	11831	4742	4081	2	18555	16369
3	3223	3665	1012	1126	3	14577	14985
4	1085	1385	254	378	4	7536	9146
5	414	570	96	138	5	3320	4186
6	195	246	15	53	6	1429	1533
7	110	110	14	21	7	681	468
8	45	50	7	8	8	356	122
9	26	23	1	3	9	211	28
10	15	11	4	1	10	118	6
11	17	5	2	1	11	68	1
12	9	2	2	0	12	37	
13	8	1	3		13	30	
14	4	1	-		14	25	
15	2		-		15	21	
16	2		-				
17	1		-				
18	1		-				
22	1		-				
24	1		1				
Total	129689		47268			55784	
Mean	1.2177		1.1802			2.8309	
Variance	0.4482		0.3297			2.4288	
St. dev.	0.6695		0.5742			1.5585	
р		0.4862		0.5464			-
q		0.5138		0.4536			-
k		0.2060		0.2170			-
λ		-					1.8309
$D_{max}$		0.0036		0.0082			0.0370
$D_{\alpha}$		0.0038		0.0063			0.0058

**Table 2. Distribution of Papers** (Fractional Method)

Fraction	No. of	0.1	875	0.15	2	0.1678	7	0.1944	11
of	Authors	0.1111	1377	Fraction	No. of	0.1714	9	0.1964	3
Papers		0.125	2121	of	Authors	0.1742	2	Fraction	No. of
Z	f(z)		12	Papers		0.1769	9	of	Authors
0.0667	219	0.1381	14	Z	f(z)	0.1778	8	Papers	
0.0714	250	0.1428	1	0.1538	7	0.1818	3	Z	f(z)
0.0769	284	0.1429	3396	0.1547	8	0.1825	8	0.2	11555
0.0833	333	0.1436	7	0.1623	1	0.1909	12	0.2019	7
0.0909	586	0.1483	2	0.1667	6144	0.1917	2	0.202	5

0.2096   3   0.3512   1   0.5001   25   0.633   1   0.8096   3   0.2111   8   0.3572   5   0.5011   1   0.6338   1   0.8192   1   0.2143   9   0.3576   1   0.5075   1   0.6338   1   0.8192   1   0.2159   4   0.3651   1   0.5111   3   0.6346   1   0.8194   1   0.2159   2   0.3667   363   0.5167   1   0.6429   14   0.825   2   0.2222   41   0.3678   1   0.5222   1   0.6444   7   0.8333   64   0.2258   1   0.3676   2   0.5242   1   0.6444   7   0.8333   64   0.2259   1   0.379   3   0.525   15   0.6445   1   0.8339   1   0.2334   3   0.3917   2   0.5255   1   0.6449   1   0.8346   3   0.2338   9   0.3929   8   0.5277   2   0.65   1   0.8353   1   0.2334   3   0.3917   2   0.5255   1   0.6449   1   0.8346   3   0.2338   9   0.3929   8   0.5277   2   0.65   1   0.8353   1   0.2334   3   0.3999   2   0.5333   896   0.6525   2   0.8429   5   Fraction No. of   0.3969   2   0.5333   896   0.6525   2   0.8429   5   Fraction No. of   0.3969   2   0.5334   41   0.6631   1   0.8434   3   0.6667   0.4005   1   0.5429   21   0.6683   10   0.8444   3   0.6666   0.6525   2   0.4002   5   0.5444   1   0.6668   3057   0.8583   5   0.2429   9   0.4047   4   0.5525   3   0.6667   25   0.8666   183   0.2436   6   0.4083   1   0.5531   1   0.6668   2   0.8666   183   0.254   44   0.4166   17   0.5536   1   0.6676   2   0.8666   183   0.254   44   0.4166   17   0.5536   1   0.6676   2   0.8825   1   0.2667   2   0.4102   6   0.5537   2   0.6679   4   0.8762   3   0.2524   44   0.4166   17   0.5536   1   0.6778   4   0.8877   3   0.2769   1   0.4222   1   0.5636   1   0.6778   4   0.8877   3   0.2778   4   0.4222   1   0.5636   1   0.6778   4   0.8877   3   0.2778   4   0.4222   1   0.5667   4   0.6922   1   0.8936   1   0.2778   4   0.4222   1   0.5667   4   0.6922   1   0.9936   1   0.2833   4   0.2856   1   0.4444   6   0.5762   1   0.7005   1   0.9186   2   0.2909   1   0.4242   24   0.5762   1   0.7005   1   0.9186   2   0.2909   1   0.4242   24   0.5676   1   0.7762   1   0.9166   3   0.3006   1   0.4576   2   0.6673   1   0.77	0.0000	0	0.05	0	0.5	07050	0.0000	4	0.0005	40
O.2111	0.2083	8	0.35		0.5	27259	0.6262	1	0.8095	
0.2143 9 0.3576 1 0.5075 1 0.6338 1 0.8192 1 0.2159 4 0.3651 1 0.5111 3 0.6346 1 0.8194 1 0.2159 4 0.3651 1 0.5111 3 0.6346 1 0.8194 1 0.2159 2 0.2269 1 0.3667 363 0.5167 1 0.6429 14 0.825 2 0.2222 41 0.3667 1 0.5222 1 0.643 5 0.83 1 0.2269 1 0.3767 2 0.5242 1 0.6444 7 0.8333 64 0.2269 1 0.3767 2 0.5255 15 0.6444 7 1 0.8339 1 0.2334 3 0.3917 2 0.5255 1 0.6445 1 0.8339 1 0.2338 9 0.3929 8 0.5277 2 0.65 1 0.8449 1 0.8346 3 0.2338 9 0.3929 8 0.5277 2 0.65 1 0.8449 1 0.8346 3 0.2338 9 0.3929 8 0.5277 2 0.65 1 0.6449 1 0.8346 3 0.2338 9 0.3936 2 0.5333 896 0.6525 2 0.8429 5 Fraction No. of 0.4005 1 0.5429 21 0.6531 1 0.8444 3 0.8525 1 0 0.4005 1 0.5429 21 0.66531 1 0.8444 3 0.8525 1 0 0.4005 1 0.5429 21 0.66581 1 0.8444 3 0.8525 1 0.2436 6 0.4002 5 0.5444 1 0.6666 3057 0.8553 5 0.2436 6 0.4083 1 0.5531 1 0.6666 3057 0.8553 5 0.2436 6 0.4083 1 0.5531 1 0.6666 3057 0.8566 183 0.2436 6 0.4083 1 0.5531 1 0.6666 3057 0.8566 183 0.2436 6 0.4083 1 0.5531 1 0.6668 2 0.86667 7 0.2456 2 0.4102 6 0.5537 2 0.6679 4 0.8762 3 0.2567 2 0.4108 8 0.5555 3 0.6676 2 2 0.8865 7 0.2456 2 0.4102 6 0.5537 2 0.6679 4 0.8762 3 0.2679 5 8 0.4207 1 0.5596 1 0.6763 6 0.8858 1 0.2679 5 8 0.4207 1 0.5596 1 0.6763 6 0.8858 1 0.2679 5 8 0.4207 1 0.5667 44 0.6922 1 0.8936 1 0.2778 49 0.425 1 0.5667 44 0.6922 1 0.8936 1 0.2778 49 0.425 1 0.5667 44 0.6922 1 0.8936 1 0.2778 49 0.425 1 0.5667 4 0.6917 3 0.8928 2 0.2769 10 0.4242 24 0.5671 1 0.6944 1 0.9 13 0.2967 3 0.4334 4 0.5762 1 0.7096 1 0.9198 1 0.2917 65 0.4334 4 0.5762 1 0.7096 1 0.9198 1 0.2917 65 0.4334 4 0.5762 1 0.7096 1 0.9198 1 0.2917 65 0.4334 4 0.5762 1 0.7096 1 0.9198 1 0.2917 65 0.4338 2 0.57775 3 0.7111 1 0.9952 1 0.3038 1 0.4444 5 0.5838 2 0.5775 3 0.7111 1 0.9952 1 0.3038 1 0.4444 5 0.5838 2 0.7333 10 0.7557 2 0.9667 1 0.4445 5 0.5837 4 0.7401 1 0.9935 1 0.3038 1 0.4444 5 0.5858 2 0.7333 1 0.7557 2 0.9666 3 0.3038 1 0.4444 5 0.6663 1 0.7667 4 0.9916 1 0.4422 1 0.6619 1 0.7666 4 0.9916 1 0.4445 5 0.5833 1 0.7766 1 0.7798 1 0.9916 1 0.4445 5 0.6838 1 0.6602 1 0.7666 2 0.9906 1 0.4445										
0.2158										
0.2198										
0.2222 41 0.3678 1 0.5222 1 0.643 5 0.83 1 0.225 8 0.3767 2 0.5242 1 0.6444 7 0.8333 64 0.2269 1 0.379 3 0.525 15 0.6445 1 0.8339 1 0.333 3 0.3917 2 0.5255 1 0.6445 1 0.8339 1 0.2334 3 0.3917 2 0.5255 1 0.6445 1 0.8339 1 0.2338 9 0.3929 8 0.5277 2 0.65 1 0.6449 1 0.8346 3 0.2338 9 0.3929 8 0.5277 2 0.65 1 0.6649 1 0.8353 1 0.3338 9 0.3936 2 0.5333 896 0.6525 2 0.8429 5 Fraction No. of of Authors 1 0.3969 2 0.5333 896 0.6525 2 0.8429 5 0.5277 0.4005 1 0.5429 21 0.6653 1 0.8444 3 0.6663 0.4005 1 0.5429 21 0.6653 1 0.8444 3 0.6663 0.577 0.8583 5 0.4429 9 0.4027 5 0.5444 1 0.6668 1 0.8525 1 0.2429 9 0.4047 4 0.5525 3 0.6667 25 0.8666 183 0.2436 6 0.4083 1 0.5531 1 0.6668 2 0.8667 7 0.2456 2 0.4102 6 0.5537 1 0.6667 25 0.8666 183 0.2436 6 0.4083 1 0.5531 1 0.6668 2 0.8667 7 0.2524 44 0.4166 17 0.5596 1 0.6763 6 0.8858 1 0.2657 2 1 0.4167 3 0.5603 1 0.6762 22 0.8825 1 0.2657 2 1 0.4167 3 0.5603 1 0.6762 22 0.8825 1 0.2679 58 0.4207 1 0.5636 1 0.6778 4 0.887 3 0.2679 58 0.4207 1 0.5636 1 0.6917 3 0.8928 2 0.2763 1 0.4222 1 0.5667 44 0.6922 1 0.8936 1 0.2769 10 0.4242 24 0.5671 1 0.6944 1 0.9 13 0.2833 8 0.4287 3 0.5716 1 0.7001 2 0.9095 1 0.2833 8 0.4287 3 0.5716 1 0.7001 2 0.9095 1 0.2833 8 0.4287 3 0.5716 1 0.7001 2 0.9095 1 0.2833 8 0.4287 3 0.5716 1 0.7001 2 0.9095 1 0.2909 17 0.4334 4 0.5762 1 0.7006 1 0.9198 1 0.2907 6 0.4446 5 0.5873 6 0.7353 2 0.9361 1 0.9985 1 0.2909 17 0.4334 4 0.5762 1 0.7006 1 0.9198 1 0.4445 5 0.5873 6 0.7353 2 0.9366 1 0.9996 1 0.4446 5 0.5873 6 0.7353 2 0.9366 1 0.9996 1 0.4446 5 0.5873 6 0.7353 2 0.9366 1 0.9996 1 0.4446 5 0.5873 6 0.7353 2 0.9366 1 0.9996 1 0.4446 5 0.5873 6 0.7353 2 0.9366 1 0.9996 1 0.4445 5 0.5874 1 0.7001 2 0.9995 1 0.9986 1 0.4446 5 0.5873 6 0.7353 2 0.9366 1 0.9996 1 0.4446 5 0.5873 6 0.7353 2 0.9366 1 0.9996 1 0.4445 5 0.5874 1 0.7001 2 0.9995 5 1 0.9996 1 0.3333 10 0.4444 65 0.5873 6 0.7353 1 0.7749 1 0.9999 5 81 0.3300 2 0.4584 8 0.602 1 0.7666 4 0.9777 2 0.9455 1 0.9996 1 0.7774 1 0.9999 5 81 0.3333 29695 0.4762 158 0.6199 1 0.7762 1 0.9999 5 81 0.3333 29695										
0.225         8         0.3767         2         0.5242         1         0.6444         7         0.8333         64           0.2269         1         0.379         3         0.5255         15         0.6445         1         0.8336         3           0.2334         3         0.3917         2         0.5255         1         0.6449         1         0.8353         1           0.2361         30         0.3969         2         0.5334         41         0.6525         2         0.8429         5           Fraction No. of of Authors         0.4005         1         0.5429         21         0.6583         10         0.8444         1           2         f(z)         0.402         5         0.5444         1         0.6668         3057         0.8583         5           2         f(z)         0.4028         1         0.5429         21         0.6668         3057         0.8583         5           2         f(z)         0.4028         1         0.5531         1         0.6668         3057         0.8583         5           2         0.4026         0.4027         1         0.5537         2         0.6679										
0.2266										
0.2334 3 0.3917 2 0.5255 1 0.6449 1 0.8346 3 0.2338 9 0.3929 8 0.5277 2 0.65 1 0.8329 5 Fraction No. of of Authors										
0.2338 9 0.3929 8 0.5277 2 0.665 1 0.8353 1 0.2361 30 0.3936 2 0.5333 896 0.6525 2 0.8429 5 Fraction No. of Authors 0.4005 1 0.5429 21 0.6563 1 0.8444 3 1 0.67 Authors 0.4005 1 0.5429 21 0.6533 10 0.8444 3 1 0.67 Authors 0.4005 1 0.5429 21 0.6583 10 0.8444 3 1 0.67 Authors 0.4005 1 0.5429 21 0.6583 10 0.8444 3 1 0.27 Fig. 0.4028 1 0.5444 1 0.6666 3057 0.8583 5 0.2429 9 0.4047 4 0.5525 3 0.6667 25 0.8666 183 0.2436 6 0.4083 1 0.5531 1 0.6668 20 0.8667 7 0.2456 2 0.4102 6 0.5537 2 0.6667 25 0.8666 183 0.25466 2 0.4102 6 0.5537 2 0.6669 4 0.8762 3 0.254 44 0.4166 17 0.5596 1 0.6763 6 0.8858 1 0.2679 58 0.4207 1 0.5636 1 0.6778 4 0.887 3 0.2679 58 0.4207 1 0.5636 1 0.6917 3 0.8928 2 0.2763 1 0.4222 1 0.5667 44 0.6922 1 0.8936 1 0.2778 4 0.4222 1 0.5667 44 0.6922 1 0.8936 1 0.2776 49 0.4242 24 0.5671 1 0.6944 1 0.9 13 0.2833 8 0.4287 3 0.5714 1 0.7001 2 0.9995 1 0.2833 8 0.4287 3 0.5714 1 0.7001 2 0.9995 1 0.2833 8 0.4287 3 0.5714 1 0.70025 1 0.9166 2 0.2909 17 0.4334 4 0.5762 1 0.7096 1 0.9166 2 0.2909 17 0.4334 4 0.5762 1 0.7096 1 0.9166 2 0.2909 17 0.4334 4 0.5762 1 0.7096 1 0.9198 1 0.2907 3 0.4346 5 0.5833 2 0.7333 108 0.9333 1 0.5716 1 0.7096 1 0.9198 1 0.2907 3 0.4346 5 0.5833 2 0.7333 108 0.9333 1 0.5716 1 0.7096 1 0.9198 1 0.2907 3 0.4346 5 0.5833 2 0.7333 108 0.9333 1 0.5716 1 0.7096 1 0.9198 1 0.2907 3 0.4346 5 0.5833 2 0.7333 108 0.9333 1 0.5716 1 0.7096 1 0.9198 1 0.2907 3 0.4346 5 0.5833 2 0.7333 108 0.9333 1 0.5716 1 0.7096 1 0.9198 1 0.2907 3 0.4346 5 0.5833 2 0.7333 108 0.9333 1 0.5716 1 0.7096 1 0.9198 1 0.2907 3 0.4445 5 0.5873 6 0.7353 2 0.9361 1 0.9455 1 0.3966 3 0.3096 152 0.4583 105 0.6012 1 0.7525 3 0.9966 3 0.3096 152 0.4584 8 0.602 1 0.7749 4 0.9524 2 0.6677 1 0.7525 1 0.9966 3 0.3096 152 0.4584 8 0.602 1 0.7755 2 0.9667 1 0.3194 3 0.4667 7 0.6108 1 0.7778 1 0.7762 1 1 1 9.918 1 0.3333 2 0.4762 1 0.6944 1 0.0766 4 0.9916 1 0.7714 1 0.9999 581 0.3334 213 0.4768 6 0.6222 1 0.07714 1 0.9999 581 0.3334 213 0.4763 16 0.6198 1 0.77778 1 1.00111 1 1.00325 2 0.4584 8 0.6242 4 0.7833 1 1.0263 1 1.03		=								
0.2361   30   0.3936   2   0.5333   896   0.6525   2   0.8429   5										
Fraction No. of Authors of Author										
of Authors         Authors         0.4005         1         0.5429         21         0.6583         10         0.8444         3           Papers         0.402         5         0.5444         1         0.6668         3057         0.8583         5           0.2429         9         0.4047         4         0.5525         3         0.6667         25         0.8666         183           0.2436         6         0.4083         1         0.5537         2         0.6668         2         0.8667         7           0.2456         2         0.4102         6         0.5537         2         0.6679         4         0.8762         3           0.25         22197         0.4108         8         0.5555         3         0.6762         22         0.8825         1           0.254         44         0.4166         17         0.5596         1         0.6763         6         0.8858         1           0.2679         58         0.4207         1         0.5663         1         0.6917         3         0.8928         2           0.2769         10         0.4242         24         0.5671         1         0.6944										
Papers								•		
Table   Tabl		Autnors								
0.2429         9         0.4047         4         0.5525         3         0.6667         25         0.8666         183           0.2436         6         0.4083         1         0.5531         1         0.66679         4         0.8762         3           0.25         22197         0.4108         8         0.5555         3         0.6762         22         0.8825         1           0.254         44         0.4166         17         0.5596         1         0.6763         6         0.8858         1           0.2667         21         0.4167         3         0.5603         1         0.6778         4         0.887         3           0.2679         58         0.4207         1         0.5636         1         0.6917         3         0.8928         2           0.2769         10         0.4242         24         0.5667         44         0.6922         1         0.8936         1           0.2778         49         0.425         1         0.5667         44         0.6922         1         0.8936         1           0.2803         8         0.4287         3         0.5714         1         0.7001 <td></td> <td>f/¬\</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>		f/¬\								
0.2436 6 0.4083 1 0.5531 1 0.6668 2 0.8667 7 0.2456 2 0.4102 6 0.5537 2 0.6679 4 0.8762 3 0.25 22197 0.4108 8 0.5555 3 0.6762 22 0.8825 1 0.254 44 0.4166 17 0.5596 1 0.6763 6 0.8858 1 0.2667 21 0.4167 3 0.5603 1 0.6778 4 0.887 3 0.2679 58 0.4207 1 0.5636 1 0.6917 3 0.8928 2 0.2763 1 0.4222 1 0.5667 44 0.6922 1 0.8936 1 0.2769 10 0.4242 24 0.5671 1 0.6944 1 0.9 13 0.2778 49 0.425 1 0.5694 3 0.7 62 0.9001 1 0.2833 8 0.4287 3 0.5714 1 0.7001 2 0.9095 1 0.2858 116 0.4333 40 0.5716 1 0.7025 1 0.9166 2 0.2909 17 0.4334 4 0.5762 1 0.7096 1 0.9198 1 0.2917 65 0.4338 2 0.5775 3 0.7111 1 0.9262 1 0.2967 3 0.4346 5 0.5833 2 0.7333 108 0.9333 10 Fraction No. of of Authors Papers 2 f(z) 0.4444 65 0.5873 6 0.7353 2 0.9361 1 0.2976 4 0.4525 11 0.5898 1 0.7401 1 0.9435 1 0.4444 65 0.5873 6 0.7353 2 0.9361 1 0.2976 4 0.4526 11 0.5969 1 0.7429 5 0.9445 1 0.3028 1 0.4576 2 0.6012 1 0.7625 3 0.9666 3 0.3096 152 0.4584 8 0.602 1 0.7625 3 0.9666 3 0.3107 2 0.4584 8 0.602 1 0.762 2 0.9916 1 0.3111 40 0.4679 7 0.6108 1 0.7625 1 0.9999 581 0.3333 29695 0.4762 158 0.6102 1 0.7666 4 0.99777 2 0.3111 40 0.4679 7 0.6108 1 0.7625 3 0.9916 1 0.3338 5 0.4858 8 0.6242 4 0.7833 1 1.0263 1 0.3333 29695 0.4762 158 0.6102 1 0.7666 4 0.99777 2 0.3334 213 0.4762 158 0.6102 1 0.7666 4 0.99777 2 0.3338 5 0.4858 8 0.6222 1 0.7762 1 1 9.9999 581 0.3304 213 0.4762 158 0.6102 1 0.7666 4 0.99777 2 0.3111 40 0.4679 7 0.6108 1 0.7762 1 0.9999 581 0.3333 29695 0.4762 158 0.6102 1 0.7666 4 0.99777 1 0.3394 213 0.4768 16 0.6192 1 0.7762 1 1 9318 0.3308 5 0.4858 8 0.6242 4 0.7833 1 1.0263 1 0.3429 122 0.4901 1 0.6243 1 0.7658 3 1.0333 14  Fraction No. of of Authors Papers Paper	<del>-</del>									
0.2456										
0.25 22197 0.4108 8 0.5555 3 0.6762 22 0.8825 1 0.254 44 0.4166 17 0.5596 1 0.6763 6 0.8858 1 0.2667 21 0.4167 3 0.5603 1 0.6778 4 0.887 3 0.2679 58 0.4207 1 0.5636 1 0.6917 3 0.8928 2 0.2763 1 0.4222 1 0.5667 44 0.6922 1 0.8936 1 0.2769 10 0.4242 24 0.5671 1 0.6944 1 0.9 13 0.2778 49 0.425 1 0.5694 3 0.7 62 0.9001 1 0.2833 8 0.4287 3 0.5714 1 0.7001 2 0.9095 1 0.2858 116 0.4333 40 0.5716 1 0.7001 2 0.9095 1 0.2909 17 0.4334 4 0.5762 1 0.7096 1 0.9166 2 0.2909 17 0.4334 4 0.5762 1 0.7096 1 0.9198 1 0.2967 3 0.4336 2 0.5775 3 0.7111 1 0.9262 1 0.2967 3 0.4346 5 0.5833 2 0.7333 108 0.9333 10 Fraction No. of of Authors 0.4444 65 0.5873 6 0.7353 2 0.9361 1 0.4444 65 0.5873 6 0.7353 2 0.9361 1 0.4444 65 0.5873 6 0.7353 2 0.9361 1 0.2976 4 0.4525 11 0.5969 1 0.7429 5 0.9445 1 0.33028 1 0.4576 2 0.6012 1 0.7429 5 0.9445 1 0.30308 152 0.4583 105 0.6013 1 0.75575 2 0.9666 3 0.3008 152 0.4583 105 0.6013 1 0.75575 2 0.9666 3 0.3008 152 0.4584 8 0.602 1 0.75575 2 0.9666 1 0.3103 2 0.4584 8 0.602 1 0.7525 3 0.9666 3 0.30103 2 0.4584 8 0.602 1 0.7525 3 0.9666 3 0.3103 2 0.4584 8 0.602 1 0.7525 3 0.9666 3 0.3103 2 0.4584 8 0.602 1 0.762 2 0.9762 3 0.3111 40 0.4667 3 0.6102 1 0.75575 2 0.9667 1 0.325 80 0.4714 2 0.6111 6 0.7667 4 0.9916 1 0.3269 1 0.4762 158 0.6192 1 0.7762 1 1 9318 0.3333 29695 0.4763 16 0.6192 1 0.7767 1 1 0.9999 581 0.3303 2 0.4568 8 0.622 1 0.7777 1 0 1.0095 2 0.3334 213 0.4778 6 0.6222 1 0.7778 1 1.0111 1 0.3429 122 0.4691 1 0.6243 1 0.7658 3 1.0333 14 1.0263 1 0.3409 1 0.44015 0 4.440										
0.254										
0.2667 21 0.4167 3 0.5603 1 0.6778 4 0.887 3 0.2679 58 0.4207 1 0.5636 1 0.6917 3 0.8928 2 0.2763 1 0.4222 1 0.5667 44 0.6922 1 0.8936 1 0.2769 10 0.4242 24 0.5671 1 0.6944 1 0.9 13 0.2778 49 0.425 1 0.56694 3 0.7 62 0.9001 1 0.2833 8 0.4287 3 0.5714 1 0.7001 2 0.9095 1 0.2858 116 0.4333 40 0.5716 1 0.7025 1 0.9166 2 0.2909 17 0.4334 4 0.5762 1 0.7096 1 0.9198 1 0.2917 65 0.4338 2 0.5775 3 0.7111 1 0.9262 1 0.2967 3 0.4346 5 0.5833 2 0.7333 108 0.9333 10 0.4346 5 0.5833 2 0.7333 108 0.9333 10 0.4346 5 0.5873 6 0.7353 2 0.9361 1 0.4444 65 0.5873 6 0.7353 2 0.9361 1 0.4444 65 0.5873 6 0.7353 2 0.9361 1 0.2967 4 0.4444 65 0.5873 6 0.7353 2 0.9361 1 0.2967 4 0.4444 65 0.5873 6 0.7353 2 0.9361 1 0.2967 4 0.4525 11 0.5969 1 0.7409 4 0.9524 2 0.3028 1 0.4562 11 0.5969 1 0.7429 5 0.9445 1 0.3028 1 0.4576 2 0.6012 1 0.7525 3 0.9666 3 0.3028 1 0.4576 2 0.6012 1 0.7525 3 0.9666 3 0.3028 1 0.4576 2 0.6012 1 0.7525 3 0.9666 3 0.3028 1 0.4576 2 0.6012 1 0.7525 3 0.9666 3 0.3028 1 0.4576 2 0.6012 1 0.7525 3 0.9666 3 0.3028 1 0.4576 2 0.6012 1 0.7525 3 0.9666 3 0.3028 1 0.4576 2 0.6012 1 0.7525 3 0.9666 3 0.3028 1 0.4576 2 0.6012 1 0.7525 3 0.9666 3 0.3028 1 0.4576 2 0.6012 1 0.7525 3 0.9666 3 0.3028 1 0.4576 2 0.6012 1 0.7525 3 0.9666 3 0.3028 1 0.4576 2 0.6012 1 0.7666 4 0.9777 2 0.3111 40 0.4679 7 0.6108 1 0.7667 4 0.9916 1 0.325 80 0.4722 1 0.6191 12 0.7714 1 0.9999 581 0.325 80 0.4714 2 0.6111 6 0.7667 3 0.9916 1 0.3258 80 0.4714 2 0.6111 6 0.7667 4 0.9916 1 0.3258 80 0.4714 2 0.6111 6 0.7667 4 0.9916 1 0.3258 80 0.4714 2 0.6111 6 0.7667 4 0.9916 1 0.3333 2 9695 0.4763 16 0.6198 1 0.7777 10 1.0095 2 0.3333 2 9695 0.4763 16 0.6198 1 0.77778 1 1.0111 1 0.3429 122 0.44909 1 0.625 13 0.7778 1 1.0111 1 0.3429 122 0.44909 1 0.625 13 0.7762 1 0.7778 1 1.0111 1 0.3429 122 0.44909 1 0.625 13 0.77916 11 0.0334 1 0.7867 8 0.64909 1 0.74909 1 0.7778 1 1.0333 14 0.7786 6 0.6222 1 0.7778 1 1.0333 14 0.7786 6 0.6222 1 0.7778 1 1.0333 14 0.7798 1 0.77916 1 1 0.0334 1 0.77998 1 0.77916 1 1 0.0334 1 0.77998 1 0.77998 1 0.77998 1 0.77998 1										
0.2679 58 0.4207 1 0.5636 1 0.6917 3 0.8928 2 0.2763 1 0.4222 1 0.5667 44 0.6922 1 0.8936 1 0.2769 10 0.4242 24 0.5671 1 0.6944 1 0.9 13 0.2778 49 0.425 1 0.5694 3 0.7 62 0.9001 1 0.2833 8 0.4287 3 0.5714 1 0.7001 2 0.9095 1 0.2858 116 0.4333 40 0.5716 1 0.7025 1 0.9166 2 0.2909 17 0.4334 4 0.5762 1 0.7096 1 0.9198 1 0.2917 65 0.4338 2 0.5775 3 0.7111 1 0.9262 1 0.2967 3 0.4346 5 0.5833 2 0.7333 108 0.9333 10 0.2967 3 0.4346 5 0.5833 2 0.7333 108 0.9333 10 0.2967 3 0.4346 5 0.5873 6 0.7333 108 0.9333 10 0.4444 65 0.5873 6 0.7353 2 0.9361 1 0.2976 4 0.4444 65 0.5873 6 0.7353 2 0.9361 1 0.2976 4 0.4525 11 0.5969 1 0.7429 5 0.9445 1 0.2976 4 0.4525 11 0.5969 1 0.7429 5 0.9445 1 0.332 6 0.454 2 0.6 73 0.75 1713 0.9583 3 0.3008 152 0.4583 105 0.6013 1 0.7525 3 0.9666 3 0.3008 1 0.4576 2 0.6012 1 0.7525 3 0.9666 3 0.3008 1 0.4576 2 0.6012 1 0.7525 3 0.9666 3 0.3008 152 0.4583 105 0.6013 1 0.7575 2 0.9667 1 0.3111 40 0.4679 7 0.6108 1 0.7666 4 0.9916 1 0.325 80 0.4714 2 0.6111 6 0.7667 4 0.9916 1 0.325 80 0.4722 1 0.6191 12 0.7714 1 0.9999 581 0.325 80 0.4722 1 0.6191 12 0.7714 1 0.9999 581 0.3333 2.9695 0.4762 158 0.6192 1 0.7762 1 1 0.9999 581 0.3303 5 0.4858 8 0.6242 4 0.7833 1 1.0263 1 0.3303 1 0.778 6 0.6222 1 0.77778 1 1.0111 1 0.3429 12 0.4900 1 0.6245 13 0.7958 3 1.0333 1 1.0263 1 0.3409 1 0.4762 158 0.6192 1 0.7762 1 0.7999 581 0.3303 2 0.45858 8 0.6242 4 0.7833 1 1.0263 1 0.3303 2 0.45858 8 0.6242 4 0.7833 1 1.0263 1 0.3409 1 0.4762 158 0.6192 1 0.77762 1 1 0.9344 1 0.3499 122 0.44909 1 0.6245 13 0.7765 13 0.7765 1 1 0.3344 1 0.3409 1 0.4901 1 0.6243 1 0.7777 10 1.0095 2 0.44909 1 0.4901 1 0.6243 1 0.7765 1 1 0.7785 1 1.0334 1 0.3409 122 0.44909 1 0.625 13 0.7716 1 1.0334 1 0.7778 6 0.6222 1 0.7778 1 1.0111 1 0.3429 122 0.44909 1 0.625 13 0.7916 11 1 0.0344 1 0.3490 122 0.44909 1 0.625 13 0.7916 11 1 0.0344 1 0.3409 122 0.44909 1 0.625 13 0.7916 11 1 0.0344 1 0.0344 1 0.34409 1 0.44907 1 0.6243 1 0.7765 1 0.7798 1 1.0034 1 0.74909 1 0.6245 1 0.77916 11 1 0.0344 1 0.79005 1 0.74000 1 0.6243 1 0.7765 1 0.77916										
0.2763										
0.2769 10 0.4242 24 0.5671 1 0.6944 1 0.9 13 0.2778 49 0.425 1 0.5694 3 0.7 62 0.9001 1 0.2833 8 0.4287 3 0.5714 1 0.7001 2 0.9095 1 0.2858 116 0.4333 40 0.5716 1 0.7025 1 0.9166 2 0.2909 17 0.4334 4 0.5762 1 0.7096 1 0.9198 1 0.2917 65 0.4338 2 0.5775 3 0.7111 1 0.9262 1 0.2967 3 0.4346 5 0.5833 2 0.7333 108 0.9333 10 0.2967 3 0.4346 5 0.5833 2 0.7333 108 0.9333 10 0.4444 65 0.5873 6 0.7353 2 0.9361 1 0.4444 65 0.5873 6 0.7353 2 0.9361 1 0.2976 4 0.4444 65 0.5873 6 0.7353 2 0.9361 1 0.2976 4 0.4525 11 0.5969 1 0.7429 5 0.9445 1 0.2976 4 0.4525 11 0.5969 1 0.7429 5 0.9445 1 0.3028 1 0.4576 2 0.6012 1 0.7525 3 0.9666 3 0.3096 152 0.4583 105 0.6013 1 0.7555 2 0.9667 1 0.3103 2 0.4584 8 0.602 1 0.7525 3 0.9666 3 0.3103 2 0.4584 8 0.602 1 0.7622 2 0.9762 3 0.3111 40 0.4667 3 0.6102 1 0.7625 2 0.9762 3 0.3111 40 0.4667 3 0.6102 1 0.7666 4 0.9777 2 0.3194 3 0.4714 2 0.6111 6 0.7679 3 0.9917 1 0.3194 3 0.4714 2 0.6111 6 0.7679 3 0.9917 1 0.3325 80 0.4722 1 0.6191 12 0.7714 1 0.9999 581 0.3333 29695 0.4763 16 0.6198 1 0.7777 10 1.0095 2 0.3338 5 0.4858 8 0.6222 1 0.7778 1 1.0111 1 1 0.334 1 0.3429 122 0.4909 1 0.625 13 0.7777 10 1.0095 2 0.3338 5 0.4858 8 0.6242 4 0.7833 1 1.0263 1 0.3333 14 0.4778 6 0.6222 1 0.7778 1 1.0111 1 1 0.334 1 0.3429 122 0.4909 1 0.625 13 0.7916 11 1.0334 1 0.7865 3 1.0333 14 0.7778 6 0.6222 1 0.7778 1 1.0333 14 0.3338 5 0.4858 8 0.6242 4 0.7833 1 1.0263 1 0.3338 5 0.4858 8 0.6242 4 0.7833 1 1.0263 1 0.3333 14 0.4778 6 0.6222 1 0.7778 1 1.0111 1 1 0.334 1 0.7865										
0.2778										
0.2833 8 0.4287 3 0.5714 1 0.7001 2 0.9095 1 0.2858 116 0.4333 40 0.5716 1 0.7005 1 0.9166 2 0.2909 17 0.4334 4 0.5762 1 0.7096 1 0.9198 1 0.2917 65 0.4338 2 0.5775 3 0.7111 1 0.9262 1 0.2967 3 0.4346 5 0.5833 2 0.7333 108 0.9333 10 0.2967 3 0.4346 5 0.5858 2 0.7334 4 0.9345 1 0.4444 65 0.5868 2 0.7334 4 0.9345 1 0.4444 65 0.5873 6 0.7353 2 0.9361 1 0.2976 4 0.4445 5 0.5873 6 0.7353 2 0.9361 1 0.2976 4 0.4525 11 0.5969 1 0.7429 5 0.9445 1 0.3028 1 0.4545 2 0.6 73 0.7525 3 0.9666 3 0.3028 1 0.4576 2 0.6012 1 0.7525 3 0.9666 3 0.3103 2 0.4584 8 0.602 1 0.7525 3 0.9666 3 0.3103 2 0.4584 8 0.602 1 0.762 2 0.9762 3 0.3111 40 0.4667 3 0.6102 1 0.7662 2 0.9762 3 0.3111 40 0.4667 3 0.6102 1 0.7666 4 0.9777 2 0.3111 40 0.4667 3 0.6102 1 0.7666 4 0.9777 2 0.3111 40 0.4667 3 0.6102 1 0.7666 4 0.9777 2 0.3111 40 0.4667 3 0.6102 1 0.7666 4 0.9777 2 0.3114 3 0.4744 2 0.6111 6 0.7679 3 0.9916 1 0.325 80 0.4722 1 0.6191 12 0.7714 1 0.9999 581 0.3333 29695 0.4763 16 0.6192 1 0.7762 1 1 9318 0.3334 213 0.4774 2 0.6111 6 0.6243 1 0.7777 10 1.0095 2 0.3334 213 0.4778 6 0.6222 1 0.7777 1 1 0.0095 2 0.3334 213 0.4778 6 0.6222 1 0.77778 1 1.01111 1 0.3429 122 0.4909 1 0.6243 1 0.7858 3 1.0333 14 0.3429 122 0.4901 1 0.6243 1 0.7858 3 1.0333 14 0.441ors Papers								-		
0.2858 116										
0.2909 17 0.4334 4 0.5762 1 0.7096 1 0.9198 1 0.2917 65 0.4338 2 0.5775 3 0.7111 1 0.9262 1 0.2967 3 0.4346 5 0.5833 2 0.7333 108 0.9333 10   Fraction No. of of Authors										
0.2917 65 0.4338 2 0.5775 3 0.7111 1 0.9262 1 0.2967 3 0.4346 5 0.5833 2 0.7333 108 0.9333 10 0.2967 0.4361 1 0.5858 2 0.7334 4 0.9345 1 0.4444 65 0.5873 6 0.7353 2 0.9361 1 0.2976 4 0.4445 5 0.5874 1 0.7401 1 0.9435 1 0.2976 4 0.4525 11 0.5969 1 0.7429 5 0.9445 1 0.3 26 0.454 2 0.6 73 0.75 1713 0.9583 3 0.3028 1 0.4576 2 0.6012 1 0.7525 3 0.9666 3 0.3096 152 0.4583 105 0.6012 1 0.7525 3 0.9666 3 0.3103 2 0.4584 8 0.602 1 0.7525 3 0.9666 3 0.3107 2 0.4584 8 0.602 1 0.762 2 0.9762 3 0.3107 2 0.4667 3 0.6102 1 0.7666 4 0.9777 2 0.3114 40 0.4679 7 0.6108 1 0.7666 4 0.9777 2 0.3114 40 0.4679 7 0.6108 1 0.7666 4 0.9916 1 0.325 80 0.4714 2 0.6111 6 0.7679 3 0.9917 1 0.325 80 0.4722 1 0.6191 12 0.7714 1 0.9999 581 0.3333 29695 0.4762 158 0.6192 1 0.7762 1 1 9318 0.3333 29695 0.4763 16 0.6198 1 0.7777 10 1.0095 2 0.3334 213 0.4778 6 0.6222 1 0.7778 1 1.0111 1 0.3349 1 0.3429 122 0.4909 1 0.625 13 0.7916 1 1.0334 1 0.7858 3 1.0333 14 0.3429 122 0.4909 1 0.625 13 0.7916 1 1.0334 1 0.7858 3 1.0333 14 0.3429 122 0.4909 1 0.625 13 0.7916 1 1.0334 1 0.7858 3 1.0333 14 0.3445 3 2 5 6(2) 2 5								1		
0.2967 3 0.4346 5 0.5833 2 0.7333 108 0.9333 10  Fraction No. of of Authors Papers								1		
Fraction No. of O.4361 1 0.5858 2 0.7334 4 0.9345 1 O.5858 2 0.7353 2 0.9361 1 O.5858 2 0.9361 1 O.5945 1 O.5969 1 O.7401 1 O.9435 1 O.5945 1 O.5969 1 O.7429 5 O.9445 1 O.5969 1 O.7429 5 O.9445 1 O.5968 1 O.5958 3 O.5858 3 O.5858 2 O.4558 2 O.6612 1 O.7525 3 O.9583 3 O.5958 3 O.5858 2 O.4588 1 O.5858 2 O.6612 1 O.7525 3 O.9666 3 O.5958 3 O.5858 3 O.5858 2 O.5858 3 O.6602 1 O.7525 2 O.9667 1 O.5858 3 O.5858 3 O.5858 2 O.5858 3 O.6102 1 O.7662 2 O.9762 3 O.5858 3 O.5858 3 O.5858 2 O.5858 3 O.6102 1 O.7666 4 O.9777 2 O.5858 3 O.585					0.5775		0.7111	1	0.9262	
of Papers Papers         Authors Papers         0.44444         65         0.5873         6         0.7353         2         0.9361         1           Z         f(z)         0.44445         5         0.5874         1         0.7401         1         0.9435         1           0.2976         4         0.4525         11         0.5969         1         0.7429         5         0.9445         1           0.3028         1         0.4576         2         0.6012         1         0.7525         3         0.9666         3           0.3096         152         0.4583         105         0.6013         1         0.7575         2         0.9667         1           0.3107         2         0.4584         8         0.602         1         0.762         2         0.9762         3           0.3111         40         0.4667         3         0.6102         1         0.7666         4         0.9777         2           0.3194         3         0.4714         2         0.6111         6         0.7667         4         0.9916         1           0.325         80         0.4714         2         0.6111         6				5	0.5833		0.7333	108	0.9333	10
Papers Z f(z) 0.4445 5 0.5874 1 0.7401 1 0.9435 1 0.2976 4 0.455 6 0.5909 1 0.7429 5 0.9445 1 0.3 26 0.455 11 0.5969 1 0.7499 4 0.9524 2 0.3 0.3028 1 0.4576 2 0.6012 1 0.7525 3 0.9666 3 0.3096 152 0.4583 105 0.6013 1 0.7525 3 0.9666 3 0.3103 2 0.4584 8 0.602 1 0.762 2 0.9762 3 0.3107 2 0.4584 8 0.602 1 0.762 2 0.9762 3 0.3111 40 0.4667 3 0.6102 1 0.7666 4 0.9777 2 0.3111 40 0.4679 7 0.6108 1 0.7666 4 0.9777 2 0.3194 3 0.4714 2 0.6111 6 0.7667 4 0.9916 1 0.325 80 0.4722 1 0.6191 12 0.7714 1 0.9999 581 0.3259 1 0.4762 158 0.6192 1 0.7762 1 1 9318 0.3333 29695 0.4763 16 0.6198 1 0.7777 10 1.0095 2 0.3334 213 0.4778 6 0.6222 1 0.7778 1 1.0111 1 0.3429 122 0.4909 1 0.625 13 0.7858 3 1.0333 14 0.4901 1 0.6243 1 0.7858 3 1.0333 14 0.4901 1 0.625 1 0.7901 1 0.625 1 0.7901 1 0.625 1 0.7			0.4361	1	0.5858			4	0.9345	1
Z         f(z)         0.45         6         0.5909         1         0.7429         5         0.9445         1           0.2976         4         0.4525         11         0.5969         1         0.7429         5         0.9445         1           0.3         26         0.4544         2         0.6         73         0.75         1713         0.9524         2           0.3028         1         0.4576         2         0.6012         1         0.7525         3         0.9666         3           0.3103         2         0.4583         105         0.6013         1         0.7575         2         0.9667         1           0.3107         2         0.4584         8         0.602         1         0.762         2         0.9762         3           0.3111         40         0.4667         3         0.6102         1         0.7666         4         0.9777         2           0.3194         3         0.4714         2         0.6111         6         0.7679         3         0.9917         1           0.325         80         0.4722         1         0.6191         12         0.7714         1<		Autnors	0.4444	65	0.5873	6	0.7353	2	0.9361	1
0.2976		f(¬)	0.4445	5	0.5874	1	0.7401	1	0.9435	1
0.3 26 0.4525 11 0.5969 1 0.7499 4 0.9524 2 0.3028 1 0.454 2 0.6 73 0.75 1713 0.9583 3 0.3096 152 0.4583 105 0.6012 1 0.7525 3 0.9666 3 0.3103 2 0.4584 8 0.602 1 0.7525 2 0.9667 1 0.3107 2 0.4584 8 0.602 1 0.7662 2 0.9762 3 0.3111 40 0.4667 3 0.6102 1 0.7666 4 0.9777 2 0.3111 40 0.4679 7 0.6108 1 0.7667 4 0.9916 1 0.3194 3 0.4714 2 0.6111 6 0.7679 3 0.9917 1 0.325 80 0.4714 2 0.6111 6 0.7679 3 0.9917 1 0.3269 1 0.4722 1 0.6191 12 0.7714 1 0.9999 581 0.3333 29695 0.4762 158 0.6192 1 0.7762 1 1 9318 0.3333 29695 0.4763 16 0.6198 1 0.7777 10 1.0095 2 0.3334 213 0.4778 6 0.6222 1 0.7778 1 1.0111 1 0.3429 122 0.4901 1 0.6243 1 0.7858 3 1.0333 14 0.3429 122 0.4909 1 0.625 13 0.7916 11 1.0334 1  Fraction No. of of Authors Papers Paper			0.45	6	0.5909	1	0.7429	5	0.9445	1
0.3028		=	0.4525	11	0.5969	1	0.7499	4	0.9524	2
0.3096 152			0.454		0.6	73	0.75	1713	0.9583	3
0.3103 2 0.4583 105 0.6013 1 0.7575 2 0.9667 1 0.3107 2 0.4584 8 0.602 1 0.762 2 0.9762 3 0.3111 40 0.4667 3 0.6102 1 0.7666 4 0.9777 2 0.3194 3 0.4714 2 0.6111 6 0.7679 3 0.9917 1 0.325 80 0.4722 1 0.6191 12 0.7714 1 0.9999 581 0.3269 1 0.4762 158 0.6192 1 0.7762 1 1 9318 0.3333 29695 0.4763 16 0.6198 1 0.7777 10 1.0095 2 0.3334 213 0.4778 6 0.6222 1 0.7778 1 1.0111 1 0.3409 1 0.4901 1 0.6243 1 0.7858 3 1.0333 14 0.3429 122 0.4909 1 0.6243 1 0.7858 3 1.0333 14 0.3429 122 0.4909 1 0.6243 1 0.7858 3 1.0333 14 0.5625 13 0.7916 11 1.0334 1 0.5625 13 0.7916 11 1.0334 1 0.5636 Authors			0.4576	2	0.6012	1	0.7525	3	0.9666	3
0.3107       2       0.4584       8       0.602       1       0.762       2       0.9762       3         0.3111       40       0.4667       3       0.6102       1       0.7666       4       0.9777       2         0.3194       3       0.4679       7       0.6108       1       0.7667       4       0.9916       1         0.325       80       0.4714       2       0.6111       6       0.7679       3       0.9917       1         0.3269       1       0.4762       158       0.6192       1       0.7762       1       1       9318         0.3333       29695       0.4763       16       0.6198       1       0.7777       10       1.0095       2         0.3338       5       0.4858       8       0.6222       1       0.7778       1       1.0111       1         0.3409       1       0.4901       1       0.6243       1       0.7858       3       1.0333       14         Fraction No. of of Authors       1       0.4909       1       0.625       13       0.7916       11       1.0334       1         Fraction No. of of Authors       1       0.4			0.4583	105	0.6013	1	0.7575	2	0.9667	1
0.3111       40       0.4667       3       0.6102       1       0.7666       4       0.9777       2         0.3194       3       0.4679       7       0.6108       1       0.7667       4       0.9916       1         0.325       80       0.4714       2       0.6111       6       0.7679       3       0.9917       1         0.3269       1       0.4762       158       0.6192       1       0.7762       1       1       9318         0.3333       29695       0.4763       16       0.6198       1       0.7777       10       1.0095       2         0.3338       5       0.4778       6       0.6222       1       0.7778       1       1.0111       1         0.3409       1       0.4901       1       0.6243       1       0.7858       3       1.0333       14         0.3429       122       0.4909       1       0.625       13       0.7916       11       1.0334       1         Fraction No. of of Authors       Fraction No. of of Authors       Fraction No. of Authors       Fraction No. of Authors       Fapers       Papers       Papers       Papers       Papers       Papers <t< td=""><td></td><td></td><td>0.4584</td><td>8</td><td>0.602</td><td>1</td><td>0.762</td><td>2</td><td>0.9762</td><td>3</td></t<>			0.4584	8	0.602	1	0.762	2	0.9762	3
0.3194       3       0.4679       7       0.6108       1       0.7667       4       0.9916       1         0.325       80       0.4714       2       0.6111       6       0.7679       3       0.9917       1         0.3269       1       0.4762       158       0.6192       1       0.7762       1       1       9318         0.3333       29695       0.4763       16       0.6198       1       0.7777       10       1.0095       2         0.3338       5       0.4778       6       0.6222       1       0.7778       1       1.0111       1         0.3409       1       0.4901       1       0.6243       1       0.7858       3       1.0333       14         0.3429       122       0.4909       1       0.625       13       0.7916       1       1.0334       1         Fraction No. of of Authors       Papers       Papers <td></td> <td></td> <td>0.4667</td> <td>3</td> <td>0.6102</td> <td>1</td> <td>0.7666</td> <td>4</td> <td>0.9777</td> <td></td>			0.4667	3	0.6102	1	0.7666	4	0.9777	
0.325       80       0.4714       2       0.6111       6       0.7679       3       0.9917       1         0.3269       1       0.4722       1       0.6191       12       0.7714       1       0.9999       581         0.3333       29695       0.4763       16       0.6192       1       0.77762       1       1       9318         0.3334       213       0.4778       6       0.6222       1       0.77778       1       1.0095       2         0.3409       1       0.4858       8       0.6242       4       0.7833       1       1.0263       1         0.3429       122       0.4901       1       0.6243       1       0.7916       1       1.0334       1         Fraction No. of of Authors       Papers       Pap			0.4679	7	0.6108	1	0.7667	4	0.9916	1
0.3269       1       0.4722       1       0.6191       12       0.7714       1       0.9999       581         0.3333       29695       0.4763       16       0.6192       1       0.77762       1       1       9318         0.3334       213       0.4763       16       0.6198       1       0.7777       10       1.0095       2         0.3338       5       0.4778       6       0.6222       1       0.7778       1       1.0111       1         0.3409       1       0.4858       8       0.6242       4       0.7833       1       1.0263       1         0.3429       122       0.4909       1       0.6243       1       0.7916       11       1.0334       1         Fraction No. of of Authors       Fraction No. of of Authors       Fraction No. of Authors       Fraction No. of Authors       Fraction No. of Authors       Papers       Z			0.4714	2	0.6111	6	0.7679	3	0.9917	1
0.3333       29695       0.4762       158       0.6192       1       0.7762       1       1       9318         0.3334       213       0.4763       16       0.6198       1       0.7777       10       1.0095       2         0.3338       5       0.4778       6       0.6222       1       0.7778       1       1.0111       1         0.3409       1       0.4858       8       0.6242       4       0.7833       1       1.0263       1         0.3429       122       0.4901       1       0.6243       1       0.7858       3       1.0333       14         Fraction No. of of Authors       Papers			0.4722	1	0.6191	12	0.7714	1	0.9999	581
0.3334       213       0.4763       16       0.6198       1       0.7777       10       1.0095       2         0.3338       5       0.4778       6       0.6222       1       0.7778       1       1.0111       1         0.3409       1       0.4901       1       0.6243       1       0.7858       3       1.0333       14         0.3429       122       0.4909       1       0.625       13       0.7916       1       1.0334       1         Fraction No. of of Authors       Papers			0.4762	158	0.6192	1	0.7762	1	1	9318
0.3338			0.4763	16	0.6198	1	0.7777	10	1.0095	2
0.3338										
0.3409 1 0.4901 1 0.6243 1 0.7858 3 1.0333 14    Fraction No. of								1		1
Fraction No. of of Authors   Papers		•						3		
Fraction No. of of Authors Papers  Z f(z) Papers  Z f(z) Z f(z) Z f(z)				1						
Papers of Authors of A										
Z f(z) Papers Papers Papers Papers F(z) Z f(z) Z f(z)		Autnors								
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		f/7\	Papers -		Papers		Papers -		Papers Papers	+
			Z		Z	f(z)	Z		Z	
	0.5445	J	0.4917	17	0.6251	1	0.8	17	1.0429	

1.043	1	1.2917	1	1.5666	2	2.0334	1	2.7333	1
1.0493	1	1.3	1	1.5715	1	2.0665	4	2.75	25
1.0583	1	1.3095	1	1.5789	1	2.0666	2	2.7667	2
1.0584	1	1.3096	2	1.5999	4	2.0667	1	2.8332	1
1.0666	36	1.3194	1	1.6	3	2.125	1	2.8664	2
1.0667	1	1.3249	2	1.6095	1	2.1333	1	2.8666	1
1.0714	1	1.325	1	1.611	1	2.1428	1	2.9094	1
1.0769	1	1.3332	164	1.6111	1	2.1429	1	2.9666	1
1.0873	1	1.3333	428	1.6167	1	2.1582	1	2.9667	2
1.0909	6	1.3334	2	1.625	1	2.1665	4	2.976	1
1.0953	1	1.3372	1	1.6333	2	2.1666	2	2.9998	1
1.0999	1	1.3428	2	1.6665	62	2.1667	3	2.9999	2
1.1	8	1.3429	4	1.6666	75	2.1679	1	3	105
1.1012	1	1.3666	2	1.6667	1	2.1777	1	3.0343	1
1.1028	1	1.3667	6	1.6762	1	2.1916	1	3.0666	1
1.111	1	1.3858	1	1.6999	3	2.1998	7	3.0833	1
1.1111	10	1.3916	1	1.7	1	2.1999	3	3.0909	1
1.1191	1	1.3999	12	1.7332	7	2.2	5	3.1012	1
1.1192	1	1.4	9	1.7333	5	2.25	49	3.1429	1
1.1242	1	1.4012	1	1.738	1	2.2679	1	3.1997	4
1.1249	2	1.4019	1	1.75	113	2.2917	1	3.1998	1
1.125	9	1.4077	1	1.7666	1	2.311	1	3.2	2
1.1333	4	1.4095	1	1.7776	1	2.3111	1	3.25	9
1.1361	1	1.4123	1	1.7777	1	2.3331	10	3.2664	1
1.1428	7	1.4241	1	1.7789	1	2.3332	9	3.333	1
1.1429	22	1.4242	1	1.8094	1	2.3333	42	3.3331	1
1.1525	1	1.4334	2	1.8095	3	2.3998	3	3.3332	1
1.1666	16	1.4443	1	1.8249	1	2.3999	2	3.3333	7
1.1667	36	1.4444	1	1.8333	2	2.4	2	3.4583	1
1.1762	1	1.4582	1	1.8428	1	2.4242	1	3.5	21
1.1777	2	1.4583	4	1.8582	1	2.4581	1	3.533	1
1.188	1	1.4666	3	1.8665	16	2.4678	1	3.5331	1
1.1916	3	1.4667	1	1.8666	10	2.4762	1	3.5333	1
1.1999	53	1.4761	5	1.9	1	2.4999	1	3.5998	1
1.2	82	1.4762	3	1.9332	2	2.5	85	3.6663	1
1.2096	1	1.4778	1	1.9691	1	2.5331	1	3.6666	3
1.2221	1	1.4857	2	1.9762	1	2.5332	2	3.733	1
1.225	1	1.4999	8	1.9776	1	2.6	1	3.75	7
1.2251	1	1.5	677	1.9998	20	2.6664	4	3.8663	1
1.2333	5	1.5095	1	1.9999	27	2.6665	2	3.8759	1
1.2382	1	1.5249	1	2	604	2.6666	10	3.9999	3
1.2435	1	1.5332	17	2.0095	1	2.676	1	4	30
1.2499	1								
1.25	344								
1.2539	1								
1.2611	1								
1.2666	4								
1.2667	3								
1.2713	1								
1.2762	1								
Fraction N	o. of	Fraction N	lo. of	Fraction	No. of	Fraction N	No. of	Fraction	No. of

| Fraction No. of |
|-----------------|-----------------|-----------------|-----------------|-----------------|
| of Authors      |
Papers	Papers	Papers	Papers	Papers
Z $f(z)$	Z f(z)	Z f(z)	Z f(z)	Z f(z)
1.2909 1	1.5333 18	2.0332 5	2.7331 1	4.0094 1

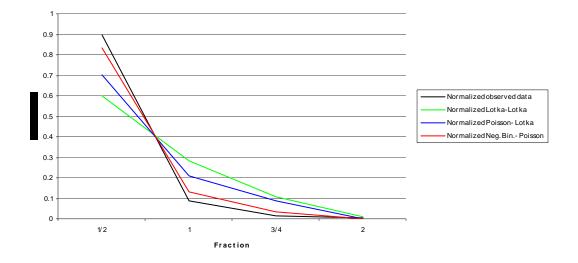
4.25	6	5.75	2	13	2
4.3333	2	6	5		
4.3667	1	6.5	1		
4.5	9	6.5327	1		
4.5331	1	7	6		
4.5332	1	8	4		
4.6666	1	8.3333	1		
5	15	9	4		
5.25	3	10	2		
5.2759	1	11	1		
5.5	4	12	2		

Table 3. Values of f(q) for case i = 4

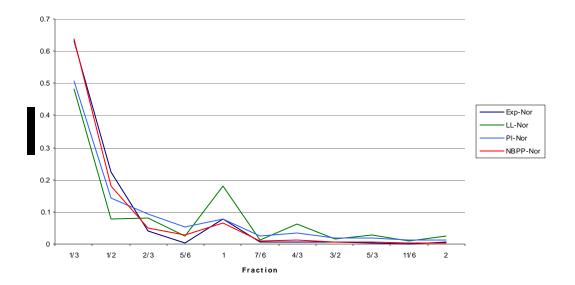
q	Obs.	Lotka-	Poisson-	Neg. Bin	q	Obs.	Lotka-	Poisson-	Neg. Bin
	Data f(q)	Lotka	Lotka	Poisson_		Data f(q)	Lotka	Lotka	Poisson
1	2	3	4	5	_ 6	7	8	9	10
1/4	0.385931	0.368761	0.274408	0.389119	5/4	0.002853	0.046649	0.016635	0.007646
1/3	0.236928	0.04348	0.173053	0.245394	4/3	0.004758	0.008132	0.02121	0.007721
1/2	0.227992	0.121144	0.156991	0.197279	17/12	0.00027	0.000429	0.00527	0.001301
7/12	0.001689	0.013188	0.039058	0.023426	3/2	0.005714	0.023194	0.009779	0.003478
2/3	0.025014	0.000777	0.012316	0.007387	19/12	0.000131	0.005431	0.009007	0.002546
3/4	0.014535	0.034859	0.034657	0.019659	5/3	0.001118	0.000559	0.005119	0.001169
5/6	0.002637	0.007666	0.029692	0.015676	7/4	0.001002	0.014984	0.006718	0.001785
11/12	0.000378	0.000629	0.007413	0.003101	11/6	0.00027	0.001834	0.006214	0.001424
1	0.076568	0.145334	0.051085	0.056745	23/12	2.31E-05	0.000563	0.004138	0.000687
13/12	0.000679	0.004313	0.014776	0.005636	2	0.005097	0.014803	0.005747	0.001373
7/6	0.001766	0.00054	0.007169	0.002483	Total	0.99535	0.85727	0.890454	0.995034

Note: In Table 3, Lotka-Lotka means, both  $\psi(n)$  and  $\phi(n)$  follow Lotka's law. Poisson-Lotka means,  $\psi(n)$  and  $\phi(n)$  follows Poisson and Lotka's distributions respectively. Neg. bin– Poisson means  $\phi(n)$  and  $\psi(n)$  follow Negative binomial and Poisson distributions respectively.

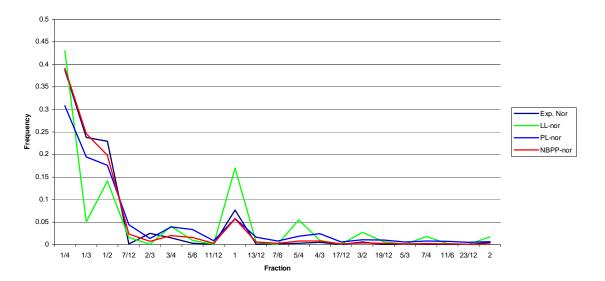
case 2



Case 3



Case 4



## Case 5

