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STUDY ON RESEARCH PRODUCTIVITY IN WORLD TOP BUSINESS SCHOOLS

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Abstract:

Institutional Ranking in higher educational institutions became common practice and business schools are highly benefitted by the announced worldwide ranks based on various ranking criterions. The ranking is usually announced based on pedagogy, placement, research output, faculty-student ratio, international linkage, management of technology etc. We have developed a model of calculating research productivity of higher educational institution based on calculating institutional research index and weighted research index. The institutional research productivity is calculated using a metric which consists of three institutional variables and one parameter. The three variables identified as the number of Articles published in peer reviewed journals (A), the number of Books published (B), and number of Case studies and/or Book Chapters (C) published during a given time of observation. The parameter used is the number of full-time Faculty members (F) in that higher education institution which remains constant during a given period of observation. In this paper, we have used ABC model of institutional research productivity to calculate annual research productivity of some of the world top business schools. The annual publication data for the year 2015 is collected from the respective institutional websites. The research productivity of these institutions are determined and compared. Based on research productivity index, and corrected research productivity index, the Business Schools are re-ranked. The parameters used in Financial Times (FT) Ranking system is compared with the features of ABC research productivity ranking model.

Index Terms: Business School Ranking, Faculty Productivity, Institutional Productivity & Institutional Publication Index

1. Introduction:

Employee performance measurement is essential in any organization to know the performance of employees in order to maintain efficiency of the system. It is a process of collecting, analysing and reporting the information regarding the performance of individuals. Groups, departments, or entire organization. Performance measurement is recognized as an important element of all total quality management programs to evaluate the effectiveness of the employees. Different types of productivity measures are used to evaluate the performance or efficiency of an organization. These can be classified as single-factor productivity measures, such as labor productivity (the ratio of output per labor-hour), or multi-factor productivity, which relates output to a bundle of inputs (e.g., labor, capital, and purchased materials). Productivity of an organization can be also evaluated using the concept of gross output or value added. Gross output is equivalent to the concept of total revenue and it does not require the invested inputs resources for calculation. Value added concept subtracts the purchased inputs to find the roles of labor, capital, and technology within the organization. The productivity of higher educational institution depends on two aspects namely (1) the effectiveness of the institution in imparting the knowledge, skills and experience to its studentsand (2) the amount of new knowledge creation through research. The higher education institution can do innovations in the process of providing quality education to its students by means of setting its objects implementing them effectively by means of various best practices [1-24]. The direct measure of effectiveness of the institution on

enhancing student's knowledge, skills and experience is the improvements in their innovative ability through research. By adding substantial amount of research components in higher education curriculum, like project work, term paper, field work practicum, students are made to involve in new knowledge creation. Hence, the total productivity of a higher education institution should be calculated based on its research productivity. As per the arguments in the recently developed qualitative model to measure the higher educational research productivity called ABC model [25-26], the organizational performance and the productivity in higher education should be measured based on their research output and to make an institution active, the annual research productivity is an effective metric to measure the performance of an organization. Thus based on arguments in ABC model [26], the total annual productivity should be the total sum of faculty research output and students research output. The student research output is mainly focus on postgraduate students and research scholars research performance.

In higher educational institutions the faculty performance is measured in terms of their teaching effectiveness and their contribution to the research for generating new knowledge. Performance measurement in higher educational institutions focus on faculty efficiency, effectiveness, ability on new idea generation, ability on simplifying problems, ability of motivating the students and making them as innovators, timeliness, productivity in terms of creating new knowledge through research and publications etc. The organizational effectiveness in higher education system is also counted by means of the faculty competitiveness, organizational ability in innovative curriculum development, implementation, global teaching-learning practices, new and innovative teaching pedagogy, online education components, adoption of choice based and competency based evaluation system, and technology adoption in teaching-learning process.

Using ABC model it is possible to rank the higher educational organizations like universities or business schools. Universities or business school ranking help student aspirants to choose the school and the programme to pursue their education with required competitive edge to be suitable to get absorbed in industries. Based on review of the literature, various parameters used for calculating institutional ranking are pedagogy, placement, research output, faculty-student ratio, international linkage, management of technology [27-32] etc.The validity and relevance of rankings of business schools and programmes are directly related to the choice of criteria against which the ranking takes place. Recently announced B school ranking by The Financial Times [33] which is based on a method consisting of the following seven factors:

- ✓ Aims achieved by the graduates
- ✓ Career progress before and after the course
- ✓ Percentage of graduates employed within three months after graduation
- ✓ Alumni recommendation for students job,
- ✓ Research rank which is calculated by number of publication weighted relative to faculty size,
- ✓ The average three years after graduation salary of alumni, and
- ✓ Value for money which includes the current salary of alumni and his total expenditure to get the degree.

This is not a scientific way of measuring the higher educational institutions performance due to the fact that these parameters are not measurable and quantifiable systematically. Many of the parameters used in various higher institutional (especially

business schools) ranking depends on environmental/social and economic factors and hence different at different locations and countries.

2. Research Productivity of Higher Educational Institutions:

The research productivity in higher educational institutions depends on institutional objectives and which decides the institutional investment on infrastructural facilities for research and its research efforts including deciding annual research funds for the institutional research centres, research policies, and research collaborations. The faculty membershave responsibility to generate research funds through applying research projects, expanding research collaborations with industries, planning and conducting qualitative and quantitative research to develop new knowledge through patents and publications. The entire efforts of the organization in realizing research objectives is reflected in the form of its research publications during a specific amount of time as its output and is decides the institutional research productivity. Fig.1 depicts the factors affecting institutional research productivity. When the institutional research productivity is calculated by considering the annual research output, it is called annual research productivity.

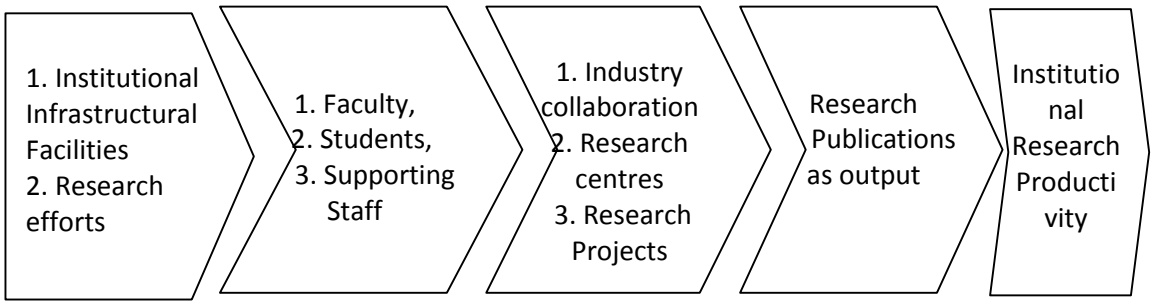

Figure 1: Factors affecting institutional research productivity

3. ABC Model of HE Institutional Productivity:

As per the argument of ABC model of research productivity [26, 34-35], Institutional Ranking in higher educational institutions became common practice and business schools are highly benefitted by announced worldwide ranks based on various ranking criterions. Ranking is usually announced based on pedagogy, placement, research output, faculty-student ratio, international linkage, management of technology etc. Recently we have developed a model of calculating research productivity of higher educational institution based on calculating institutional research index and weighted research index. The institutional research productivity is calculated using a metric which consists of three institutional variables and one parameter. The three variables identified as number of Articles published in peer reviewed journals (A), number of Books published (B), and number of number of Case studies and/or Book Chapters (C) published during a given time of observation. The parameter used is number of full time Faculty members (F) in that higher education institution which remains constant during a given period of observation.

In ABC model of research productivity it is argued that the facilities like infrastructure, student development facilities, library and laboratory facilities, faculty-student ratio etc. are already standardized by national accreditation bodies and the graduation outcome cannot be measured based on such criteria. The institutional research productivity depends on the research output of both faculty and students of higher educational institution. The arguments on ABC model were based on following postulates [26]:

Postulate 1: The Quality in higher education depends on the ability of the institution in new knowledge creation.

Postulate 2: The ability of new knowledge creation of the institution depends on the institutional research and publications by both faculty members and students.

Postulate 3: The institutional publication is measured by calculating its annual average publications.

Postulate 4: The institutional publication ability is measured by its annual publications in terms of number of Articles published in Journals (A), number of Books published in the subjects/Edited volumes (B), and number of Business cases and Book chapters (C) published.

Postulate 5: The Research productivity (P) of the institution can be measured by knowing research index (α) and weighted research index (β), which shall be calculated using average publications in Journals, average publications of books and average number of publications of Business cases. The research index per year (α) is calculated using the formula $\alpha = (2A + 5B + C)/F$, and the weighted research index (β), per year is calculated using the formula $\beta = (2A + 5B + C)/8F$, where A = No. of publications in Journals in that year, B = No. books published in that year, C = No. of Publications of Business Cases published in that year, and F = No. of fulltime Faculty members in that institution during that year. In the above formula the weightage for a research article A is two and that of book B is five and the case study is one, based on an quantified assumption of the relative significance & efforts involved in generating it arrived at through a summated scaling technique.

Effect of Number of Ph.D. research scholars of the Organization on Research Index:

Institutions which have Ph.D./FPM programme will get benefit in research publications compared to the institutions which offer only under-graduation and Post-graduation programmes [36]. This is due to the fact of the contribution of Ph.D./FPM scholars to the institutional publication along with faculty members. In such cases a correction can be made in organizational research index and weighted research index calculation formula by correcting the total number of faculty from F to F* where F* = (F + S/3). Here, a general assumption is made by considering three research scholars are equivalent to one faculty member and S is number of Research Scholars in that business school.

Thus the corrected research index $\alpha^* = (2A + 5B + 1C) / F^*$ -------- (3)

And the corrected weighted research index $\beta^* = [(2A + 5B + 1C) /8] / F^*$ ------- (4)

4. Study of World Top Business Schools:

The list of 35World Top business schools as announced in The Financial Times survey [33] is given in table 1, with their country and their website address.

Table 1: List of 35 World Top Business Schools in FT 2015 Survey [23]

Rank	Name of Business School	Country	Website Address
1	Harvard Business School Harvard University Boston, Massachusetts	Massachusetts, USA	www.hbs.edu/
2	London Business School, London	London, UK	www.london.edu
3	Wharton Business School University of Pennsylvania	Philadelphia, USA	www.wharton.upenn.edu/
4	Stanford Graduate School of Business, Stanford	California, USA	www.gsb.stanford.edu/

	University,		
5	INSEAD Business School Fontainebleau	France	www.insead.edu/
6	Columbia Business School, Columbia University, New York City	New York, USA	www8.gsb.columbia.edu/
7	IESE Business School, University of Navarra, Barcelona	Spain	www.iese.edu/en/
8	Sloan School of Management, MIT, Cambridge	Massachusetts, USA	www.mitsloan.mit.edu/
9	Booth Business School Chicago University	Chicago, USA	www.chicagobooth.edu/
10	Haas Business School, University of California at Berkeley	California USA	www.haas.berkeley.edu/
11	China Europe International Business School (CEIBS), Shanghai	China	www.en.ceibs.edu/
12	IE Business School, IE University, Madrid	Spain	www.ie.edu/business-school/
13	Judge Business School, University of Cambridge	Cambridge, UK	www.jbs.cam.ac.uk/
14	HKUST Business School, Hong Kong	Hong Kong China	www.bm.ust.hk/
15	Kellogg School of Business, Northwestern University, Illinois	Illinois, USA	www.kellogg.northwestern.edu/
16	HEC, Paris	France	www.hec.edu/
17	Yale School of Management, Yale University, New Haven	Connecticut, USA	www.som.yale.edu/
18	Stem School of Business New York University	New York USA	www.stern.nyu.edu/
19	Esade Business School, University in Barcelona	Spain	www.esade.edu/
20	IMD Business School, Lausanne, Switzerland	Switzerland	www.imd.org/
21	FUKUA School of Business, Duke University, Durham	North Carolina USA	www.fuqua.duke.edu/
22	Oxford Said Business School Oxford University	Oxford, UK	www.sbs.ox.ac.uk/
23	Tuck School of Business at Dartmouth College, Hanover, USA	New Hampshire USA	www.tuck.dartmouth.edu/
24	Ross Business School,	Michigan USA	www.michiganross.umich.ed

	University of Michigan, Ann Arbor,		u/
25	UCLA: Anderson School of Management, University of California, Los Angeles	California, USA	www.anderson.ucla.edu/
26	Indian Institute of Management, Ahmedabad	India	www.iimahd.ernet.in/
27	SDA Boccioni School of Management, Bocconi University	Italy	www.sdabocconi.it/
28	Johnson Graduate School of Management, Cornell University	USA	www.johnson.cornell.edu/
29	School of Business, University of Hong Kong,	Hong Kong, China	www.business.hku.hk/
30	CUHK Business School, The Chinese University of Hong Kong	Hong Kong China	www.bschool.cuhk.edu.hk/
31	School of Business, National University of Singapore	Singapore	https://bschool.nus.edu.sg/
32	Darden School of Business, University of Virginia	Virginia USA	www.darden.virginia.edu/
33	Indian School of Business, Hyderabad	India	http://www.isb.edu/
34	Imperial College Business School, London	United Kingdom	wwwf.imperial.ac.uk/business-school/
35	Alliance-Manchester Business School, Manchester University	United Kingdom	http://www.mbs.ac.uk/

5. ABC Model Applied to World Top Business Schools:

The number of research papers published in journals (A), number of books published (B) and number of Chapters in books and Case studies published (C) by these 35 top business schools of the world for the year 2015 is determined from the respective websites of the institution and listed in table 2. The total full time faculty members in the business school (F) and full-time research scholars (S) are also calculated and listed in table 2. The annual research productivity α, and the corrected annual research productivity by considering the number of research scholars in the school during that year, and the weighted research index are calculated using ABC model of research productivity and are also listed in table 2.

Table 2: List of World Top Business Schools along with Number of Faculty members and the Research information (ABC values) for the year 2015

Rank	**Name of Business School**	**F & S**	**A**	**B**	**C**	**α**	**α***	**β**
1	Harvard Business School Harvard University Boston, Massachusetts	F=286 S=260	207	11	309	2.72	2.09	0.34
2	London Business School,	F=141	220	6	3	3.35	3.11	0.419

	London	S=33						
3	Wharton Business School University of Pennsylvania	F=266 S=180	253	15	0	2.18	1.78	0.27
4	Stanford Graduate School of Business, Stanford University	F=114 S=101	138	10	60	3.39	2.63	0.423
5	INSEAD Business School Fontainebleau	F=185 S=83	132	11	74	2.12	1.85	0.265
6	Columbia Business School, Columbia University, New York City	F=146 S=132	115	5	2	1.76	1.35	0.22
7	IESE Business School, University of Navarra, Barcelona	F=108 S=39	50	17	40	2.08	1.86	0.26
8	Sloan School of Management, MIT, Cambridge	F=281 S=68	153	6	29	1.30	1.21	0.162
9	Booth Business School Chicago University	F=210 S=126	114	7	-	1.25	1.04	0.156
10	Haas Business School, University of California at Berkeley	F=286 S= 70	137	-	-	0.96	0.89	0.120
11	China Europe International Business School (CEIBS), Shanghai	F=66 S= 25	35	3	0	1.29	-	0.161
12	IE Business School, IE University, Madrid	F=231 S= -	18 (2012)	2 (2012)	10 (2012)	0.24	-	0.03 (2012)
13	Judge Business School, University of Cambridge	F=68 S=31	75	5	0	2.57	2.24	0.322
14	HKUST Business School, Hong Kong	F=222 S= -	15	-	-	0.14	-	0.017
15	Kellogg School of Business, Northwestern University, Illinois	F=149 S= -	160	18	18	2.87	-	0.35
16	HEC, Paris, France	F=115 S= -	100	11	2	2.23	-	0.279
17	Yale School of Management, Yale University, New Haven	F=87 S= -	23	1	0	0.59	-	0.073
18	Stem School of Business New York University	F=336 S=105	-	3	-	-	-	-
19	Esade Business School, University in Barcelona	F=107 S=-	91	12	2	2.28	-	0.285
20	IMD Business School,	F=58	-	5	23	-	-	-

	Lausanne, Switzerland	S = -						
21	FUKUA School of Business, Duke University, Durham	F=126 S= -	46	-	-	0.73	-	0.091
22	Oxford Said Business School Oxford University	F=64 S= 51	144	-	0	4.5	3.56	0.563
23	Tuck School of Business at Dartmouth College, Hanover	F=55 S= -	25	-	-	0.91	-	0.114
24	Ross Business School, University of Michigan, Ann Arbor	F=230 S= -	43	-	-	0.37	-	0.46
25	UCLA: Anderson School of Management, University of California, Los Angeles	F=110 S=62	-	-	-	-	-	-
26	Indian Institute of Management, Ahmedabad	F=143 S= 55	61	4	79	1.55	1.37	0.193
27	SDA Boccioni School of Management, Bocconi University, Italy	F=341 S= -	4	0	5	0.04	-	0.005
28	Johnson Graduate School of Management, Cornell University	F=152 S=39	105	4	23	1.66	1.53	0.21
29	School of Business, University of Hong Kong,	F=114 S = -	64	2	0	1.21	-	0.151
30	CUHK Business School, The Chinese University of Hong Kong	F=140 S=67	-	-	-	-	-	-
31	School of Business, National University of Singapore, Singapore	F=160 S = -	100	7	22	1.61	-	0.201 257
32	Darden School of Business, University of Virginia:, USA	F=74 S= -	40	3	0	1.28	-	95
33	Indian School of Business, Hyderabad, India	F=45 S= 11	30	2	32	2.27	2.13	0.283
34	Imperial College Business School, London, UK	F=66 S= -	106	1	0	3.29	-	0.411
35	Alliance-Manchester Business School, Manchester University, UK	F=245 S = -	74 (2014)	6 (2014)	12 (2014)	0.78	-	0.097

6. Re-Ranking Based on ABC Model:

Based on calculated values of research productivity index for these top business schools in the world, and corrected research productivity index for the year 2015, the institutions are re-ranked and the result is shown in table 3.

Table 3: Re-ranking of 30 World Top Business Schools based Institutional research productivity using ABC model for the year 2015.

Old Rank	Name of Business School	Research index	New Rank	Corrected New Rank*
1	Harvard Business School, Harvard University, Massachusetts	2.72	6	6
2	London Business School, London	3.35	3	2
3	Wharton Business School, University of Pennsylvania	2.18	11	9
4	Stanford Graduate School of Business, Stanford University,	3.39	2	3
5	INSEAD Business School Fontainebleau	2.12	12	8
6	Columbia Business School, Columbia University, New York City	1.76	14	12
7	IESE Business School, University of Navarra, Barcelona	2.08	13	7
8	Sloan School of Management, MIT, Cambridge	1.30	18	13
9	Booth Business School Chicago University	1.25	21	14
10	Haas Business School, University of California at Berkeley	0.96	23	15
11	China Europe International Business School (CEIBS), Shanghai	1.29	19	-
12	IE Business School, IE University, Madrid	0.24	29	-
13	Judge Business School, University of Cambridge	2.57	7	4
14	HKUST Business School, Hong Kong	0.14	30	-
15	Kellogg School of Business, Northwestern University, Illinois	2.87	5	-
16	HEC, Paris	2.23	10	-
17	Yale School of Management, Yale University, New Haven	0.59	27	-
18	Stem School of Business New York University	-	-	-
19	Esade Business School, University in Barcelona	2.28	8	-
20	IMD Business School, Lausanne, Switzerland	-	-	-
21	FUKUA School of Business, Duke University, Durham	0.73	26	-
22	Oxford Said Business School	4.5	1	1

	Oxford University, U.K.			
23	Tuck School of Business at Dartmouth College, Hanover	0.91	24	-
24	Ross Business School, University of Michigan, Ann Arbor,	0.37	28	-
25	UCLA: Anderson School of Management, University of California, Los Angeles	-	-	-
26	Indian Institute of Management, Ahmedabad, India	1.55	16	11
27	SDA Boccioni School of Management, Bocconi University	0.04		-
28	Johnson Graduate School of Management, Cornell University	1.66	17	10
29	School of Business, University of Hong Kong,	1.21	22	-
30	CUHK Business School, The Chinese University of Hong Kong	-	-	-
31	School of Business, National University of Singapore, Singapore	1.61	15	-
32	Darden School of Business, University of Virginia:, USA	1.28	20	-
33	Indian School of Business, Hyderabad, India	2.27	9	5
34	Imperial College Business School, London, UK	3.29	4	-
35	Alliance-Manchester Business School, Manchester University UK	0.78	25	-

7. Analysis on Annual Research Productivity:

Using ABC model on research productivity, the annual research productivity of 35 top business schools (α) is calculated and the new ranking of these business schools is determined and compared with FT ranking [33] for the year 2015 and is listed in table 4. As per the new ranking using ABC model, the Said business School of Oxford University grabbed first rank which was in 22nd rank in FT ranking 2015. The Harvard business school which was in first position in FT ranking 2015 now became in 6th position. Similarly London business school which was in second position in FT ranking 2015 now became 3rd position in ABC model ranking. Stanford Graduate School of Business, Stanford University was in 4th position in FT ranking 2015 is now grabbed 2nd position and the Imperial College Business School, London which was in 34th position in FT ranking 2015 now reached 4th position in ABC model ranking for the year 2015. Similarly, we have observed lot of variation in ranking positions in ABC model based ranking compared to FT ranking model.

Further improvement in institutional research index calculation is made by considering number of research scholars in the institution (S) and their weightage is also added to number of effective full time faculty members involved in institutional research. Accordingly the value of α is corrected as α* and based on this corrected annual research index, corrected new ranks are determined in few business schools

where the value of S is available in their institutional website and the corrected ranking is compared with FT ranking 2015 as in table 5. After calculation of corrected ranking according to ABC model, Said business School of Oxford University stayed in first position, London Business School of U.K. continued in second rank, Stanford Graduate School of Business, Stanford University elevated to third rank and Judge Business School, University of Cambridge, U.K. is elevated to fourth rank.

Table 4: New Business school ranking based on ABC model of annual research productivity index (α)

S. No	Name of Business School	Research index	FT Rank 2015	New Rank 2015
1	Oxford Said Business School Oxford University, U.K.	4.5	22	1
2	Stanford Graduate School of Business, Stanford University, USA	3.39	4	2
3	London Business School, London, U.K.	3.35	2	3
4	Imperial College Business School, London, UK	3.29	34	4
5	Kellogg School of Business, Northwestern University, Illinois, USA	2.87	15	5
6	Harvard Business School, Harvard University, Massachusetts, USA	2.72	1	6
7	Judge Business School, University of Cambridge, U.K.	2.57	13	7
8	Esade Business School, University in Barcelona,	2.28	19	8
9	Indian School of Business, Hyderabad, India	2.27	33	9
10	HEC, Paris, France	2.23	16	10
11	Wharton Business School, University of Pennsylvania, USA	2.18	3	11
12	INSEAD Business School Fontainebleau,	2.12	5	12
13	IESE Business School, University of Navarra, Barcelona,	2.08	7	13
14	Columbia Business School, Columbia University, New York City, USA	1.76	6	14
15	School of Business, National University of Singapore, Singapore	1.61	31	15
16	Indian Institute of Management, Ahmedabad, India	1.55	26	16
17	Johnson Graduate School of Management, Cornell University, USA	1.66	28	17
18	Sloan School of Management, MIT, Cambridge, USA	1.30	8	18
19	China Europe International Business	1.29	11	19

	School (CEIBS), Shanghai, China			
20	Darden School of Business, University of Virginia:, USA	1.28	32	20
21	Booth Business School, Chicago University, USA	1.25	9	21
22	School of Business, University of Hong Kong, Chaina	1.21	29	22
23	Haas Business School, University of California at Berkeley, USA	0.96	10	23
24	Tuck School of Business at Dartmouth College, Hanover, USA	0.91	23	24
25	Alliance-Manchester Business School, Manchester University UK	0.78	35	25

Table 5: New Business school ranking based on Corrected annual research productivity index (α*) for the year 2015

FT Rank 2015	**Name of Business School**	**Corrected Research index (α*)**	**Corrected New Rank 2015**
22	Oxford Said Business School Oxford University, U.K.	3.56	1
2	London Business School, London	3.11	2
4	Stanford Graduate School of Business, Stanford University,	2.63	3
13	Judge Business School, University of Cambridge	2.24	4
33	Indian School of Business, Hyderabad, India	2.13	5
1	Harvard Business School, Harvard University, Massachusetts	2.09	6
7	IESE Business School, University of Navarra, Barcelona	1.86	7
5	INSEAD Business School Fontainebleau	1.85	8
3	Wharton Business School, University of Pennsylvania	1.78	9
28	Johnson Graduate School of Management, Cornell University	1.53	10
26	Indian Institute of Management, Ahmedabad, India	1.37	11
6	Columbia Business School, Columbia University, New York City	1.35	12
8	Sloan School of Management, MIT, Cambridge	1.21	13
9	Booth Business School Chicago University	1.04	14
10	Haas Business School, University of California at Berkeley	0.89	15

Comparison of FT ranking model and ABC research Productivity ranking models:

The parameters used in Financial Times (FT) ranking system is compared with the features of ABC research productivity ranking model as in table 6.

Table 6: Comparison of FT ranking model and ABC ranking model

S. No	FT Ranking parameters & Features	ABC model Ranking parameters & Features
1	Ranking for 2015 is calculated according to number of articles published in selected 45 journals by the full time faculty members of business schools during the period of January 2011 to October 2013.	Ranking for 2015 is calculated using weighted average of number of Articles published in peer reviewed journals, number of scholarly books published and number of book chapters/case studies published by full time faculty members of the business school during that year.
2	Only publications in selected 45 journals is considered for research ranking	Publications in all peer reviewed journals, published books, and published book chapters and business case studies are considered.
3	The ranking calculated for the year 2015 is based on published work during the period of January 2011 to October 2013.	The ranking calculated for the year 2015 is based on published work (A,B,C) during the period of that year.
4	The number of full time faculty members is taken as one parameter.	The number of full time faculty members is taken as one parameter and the number of research scholars is also considered for correcting the value of research input.

8. Conclusion:

In this paper, we have used ABC model of institutional research productivity to calculate annual research productivity of some of the world top business schools. The annual publication data for the year 2015 is collected from the respective institutional websites. The research productivity of these institutions are determined and compared. Based on research productivity index, and corrected research productivity index, the Business Schools are re-ranked. The parameters used in Financial Times (FT) Ranking system is compared with the features of ABC research productivity ranking model.

9. References:

1. SrinivasRao A., Suresh Kumar P. M., &Aithal P. S., Strategic Planning in Higher Education Institutions : A Case Study of SIMS - VISION 2025, International Journal of Educational Science and Research; Vol.5 Issue 2, pp. 29-42, April 30, 2015.
2. Aithal P. S., SrinivasRao A., & Suresh Kumar P. M., How Innovations and Best Practices can Transform Higher Education Institutions: A case study of SIMS, International Journal of Management (IJM), Vol. 6, Issue 2, pp.83 - 98, 2015.
3. Aithal P.S., Internal Quality Assurance Cell and its Contribution to Quality Improvement in Higher Education Institutions: A Case of SIMS, GE International Journal of Management Research (IJMR), Vol. 3, Issue 5, pp. 70-83, May 2015.

4. Aithal P. S., & Suresh Kumar P. M., Enhancement of Graduate attributes in Higher Education Institutions through Stage Models, IMPACT: International Journal of Research in Business Management, Vol. 3, Issue 3, pp. 121 - 130, March 2015.
5. Aithal P. S., SrinivasRao A., & Suresh Kumar P. M., Quality Enhancement in Higher Education Institutions : A case study of SIMS, International Journal of Multidisciplinary Research and Development, Vol. 2, Issue 5, pp. 18-31, May 2015.
6. Aithal P. S., How an Effective Leadership and Governance Supports to Achieve Institutional Vision, Mission, and Objectives, International Journal of Multidisciplinary Research and Development, Vol. 2, Issue 5, pp. 154-161, May 2015.
7. Aithal P. S., Strategy Development and Deployment in Higher Education Institutions, Elixir International Journal, 84, pp. 33594 – 33597, 2015.
8. Aithal P. S., Faculty Empowerment Strategies in Higher Education Institutions. International Journal of Management, IT and Engineering (IJMIE), Vol. 5, Issue 7, pp. 108-115, July 2015.
9. Aithal P. S., MBA++ as a Unique & Successful Model in Integrated Development of Business Executives. International Journal of Management, IT and Engineering (IJMIE), Vol. 5, Issue 7, pp. 124-133, July 2015.
10. Aithal P. S. and Suresh Kumar P. M., Applying SWOC Analysis to an Institution of Higher Education. International Journal of Management, IT and Engineering (IJMIE), Vol. 5, Issue 7, pp. 231-247, July 2015,
11. Aithal P. S. and Sridhar Acharya P., Techniques for Electric Energy Auditing in Education System. International Journal of Management, IT and Engineering (IJMIE), Vol. 5, Issue 7, pp. 318-325, July 2015.
12. Aithal P. S., Suresh Kumar P. M. and Deekshitha, International Journal of Management, IT and Engineering (IJMIE), Vol. 5, Issue 7, pp. 361-373, July 2015.
13. Aithal P. S., Suresh Kumar P. M. and PavithraKumari, Methods and Approaches for Employability Skill Generation in Higher Educational Institutions. International Journal of Management, IT and Engineering (IJMIE), Vol. 5, Issue 7, pp. 390-410, July 2015.
14. Aithal P. S. and Harischandra P., Quality Enhancement in Higher Education Institutions through Best Practices in Library: A Case of SIMS. International Journal of Management, IT and Engineering (IJMIE), Vol. 5, Issue 7, pp. 489-505, July 2015.
15. Reshma, Shailashree V. T, Sridhar Acharya P., and Aithal P. S., Analysis of Academic Administrative System Implemented at SIMS. International Journal of Management, IT and Engineering (IJMIE), Vol. 5, Issue 7, pp. 771-787, July 2015.
16. Pradeep M.D, and Aithal P. S., Learning through Team Centric Exercise & Key Point Pedagogy - An effective Learning Model for Slow Learners in Higher Education Training, International Journal of Multidisciplinary Research & Development, Vol. 2, Issue 9, pp. 265-270, September, 2015.
17. Aithal P. S. & Suresh Kumar P. M., Opportunities and Challenges for Private Universities in India, International Journal of Management, IT and Engineering (IJMIE), Vol. 6, Issue 1, pp. 88-113, January 2016.
18. Aithal P. S., & Suresh Kumar P.M., Innovations in Private Universities: A Case of Srinivas University, International Journal of Management, IT and Engineering (IJMIE), Vol. 6, Issue 1, pp. 250-264, January 2016.

19. Aithal P. S., Creating Innovators through setting up organizational Vision, Mission and Core Values : a Strategic Model in Higher Education, International Journal of Management, IT and Engineering (IJMIE), Vol. 6, Issue 1, pp. 310-324, January 2016.
20. Aithal P. S. & Shubhrajyotsna Aithal, Impact of On-line Education on Higher Education System, International Journal of Engineering Research and Modern Education (IJERME) (www.rdmodernresearch.com) Vol. I, Issue I, pp. 225-235, 2016.
21. Sridhar Acharya P. and Aithal P. S., Environmental Consciousness in Higher Educational Institutions : A case of SIMS, International Journal of Current Research and Modern Education (IJCRME), Vol. I, Issue I, pp. 273-284, 2016.
22. Aithal P. S., and Suresh Kumar P.M., Analysis of Choice Based Credit System in Higher Education, International Journal of Engineering Research and Modern Education (IJERME), Vol. I, Issue I, pp. 278-284, 2016.
23. Aithal P. S., and Suresh Kumar P. M., Teaching - Learning Process in Higher Education Institutions, International Journal of Multidisciplinary Research and Modern Education (IJMRME), Vol. II, Issue I, pp. 662-676, June, 2016.
24. Aithal P. S., and Suresh Kumar P. M., Student performance and Learning Outcomes in Higher Education Institutions, International Journal of Scientific Research and Modern Education (IJSRME), Vol. I, Issue I, pp. 674 – 684, June 2016.
25. Aithal P. S. & Suresh Kumar P. M., ABC Model of Research Productivity and Higher Educational Institutional Ranking, Proceedings of National conference on Curriculum Design and Development for Student centric Learning, March, 2016, pages 11-22, ISBN 978-81-929306-9-5.
26. Aithal P.S. & Suresh Kumar P.M., ABC Model of Research Productivity and Higher Educational Institutional Ranking, Submitted to International Journal of Education and Management Engineering (IJEME), 10th June 2016. (Under Publication).
27. Datar, S. M., Garvin, D. A., & Cullen, P. G. Rethinking the MBA, Business education at a crossroads. Journal of Management Development, Vol. 30, No. 5, pp. 451-462, 2011.
28. Gioia, D. A., & Corley, K. G. Being good versus looking good: Business school rankings and the Circean transformation from substance to the image. Academy of Management Learning & Education, Vol. 1, No.1, pp. 107-120, 2002.
29. Baden-Fuller, C., Ravazzolo, F., &Schweizer, T. Making and measuring reputations: the research ranking of European business schools. Long Range Planning, Vol. 33, No. 5, pp. 621-650, 2000.
30. Ray, S. C., &Jeon, Y., Reputation and efficiency: A non-parametric assessment of America's top-rated MBA programs. European Journal of Operational Research, Vol. 189 No. 1, pp. 245-268, 2008.
31. Clarke, M., The impact of higher education rankings on student access, choice, and opportunity. Higher Education in Europe, Vol. 32, No. 1, pp.59-70, 2007.
32. Linton, J. D, Perspective: Ranking business schools on the management of technology. Journal of Product Innovation Management, Vol. 21 No.6, pp.416-430, 2004. http://rankings.ft.com/businessschoolrankings/global-mba-ranking-2015.
33. Aithal P.S., Study of Annual Research Productivity in Indian Top Business Schools, International Journal of Scientific Research and Modern Education

(IJSRME) ISSN (Online): 2455 – 5630 (www.rdmodernresearch.com) Vol. I, Issue I, 2016, pp.402-414.

34. Aithal P.S., How to Increase Research Productivity in Higher Educational Institutions –SIMS Model, International Journal of Scientific Research and Modern Education (IJSRME) Vol. I, Issue I, 2016, pp.447-458.
35. Aithal P.S., Innovations in Experimental Learning – A Study of World Top Business Schools, International Journal of Scientific Research and Modern Education (IJSRME), Vol. I, Issue I, 2016, pp.360-375.