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# **Indian Higher Education in World University Rankings – The Importance of Reputation and Branding**

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Abstract: Branding in higher education gives institutions an identity that locates them in the social world. Although the promotion of branding assists in innovative ways to promote the development of a product or service, the contribution is equally as important as recognizing that branding goes beyond the promotion. Branding essentially holds corporations and institutions, such as higher education institutions, accountable for the worth of the product or service they offer. Branding is the intangible feature an organisation or institution upholds and delivers. The implications of branding initiatives in higher education are shown to be beneficial in the overall success of an institution's identity, enrolment, marketing strategies, and recognition. Branding is an important aspect to consider fostering the reputation of Higher Education Institutions (HEI's). However, the process to include aspects related with branding is not an easy task. This paper describes a study of the inclusion of Branding Methodology in some Indian HEI's.

**Keywords:** Higher Education Institutions, World-Class Universities, Universities Rankings lists, Academic Reputation, Universities Branding

## **1** Introduction

Academics have shunned rankings as being a distraction in the past [1]. However, with the massive globalisation and with internationalization at a never-before-seen pace, Higher Education Institutions (HEI's) are becoming even more visible as powerhouses of knowledge and sharing [2]. There is growing evidence that more public universities have reputed academics who are not media-shy and are situated in major cities known to have greater recall value, or perhaps have a name that has a legacy, will do better in the rankings [3]. This increased in the proportion of privateuniversities in the list of the 2019 QS World University Rankings, which has prompted QS to do a specific ranking of the top 100 universities in India alone [4]. Research is at a minuscule level, and hence reputation which accounts for 50% in QS rankings and 30% in Times Higher Education Rankings plays a vital role in giving institutions a much-needed boost in the global ranking space[5].

In recent years, we have also seen younger institutions in Asia reaching highs in rankings, and thishas been built over a short period of 10 to 20 years. Institutions in Singapore or Hong Kong havesuccessfully established themselves to get into the top 20 of the QS World University Rankings, and this study will explore how these institutions use the brand as one of the tools to create a better perception [6]. It is no doubt clear that branding and reputation are linked to the research activities of the university. Better the research, the more the reputation. Younger institutions, which are notresearch-driven, have seen a good representation in the World University Rankings too. However, include reputation aspects is not an easy task; it implies to define some strategies to create a better image. This paper will depict a study about how some Indian HEI's have included some practicesto improve their reputation through a better brand image.

This paper is structured as follows. Next Section will present a theoretical background about Rankings. Next the model is presented. In section 4 some discussion about the different strategies implemented with some Indian HEI's. Section 5 will present a survey was performed with some academics in different Indian HEI's to validate the proposal, and finally some conclusions and further work are presented.

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## **2** Theoretical Background

World university rankings today present a revolution for universities from all over the world. Rankings are perceived as being good evaluation tools and provide a gauge for competition in global knowledge creation [7]. For many others, it is seen as a reductionist, and at worst a criminally inaccurate set of indicators, which skew the actual picture and distort the vision and mission of higher education [8]. Given the extreme points of view, rankings have achieved an almost iconic status in some countries like Malaysia, Hong Kong, Singapore, and many others [9]. This is also receiving many accolades in India in recent times with the introduction of the Institution of Eminence (IOE) project. Many rankings including QS and THE use academic reputation surveys to assess the quality and perception of institutions and this means that universities with top of mind recall value will have a higher ranking [10]. The top institutions in the world have received a high ranking overall, but also receive reputation it has built, owing to brand and reputation effects over a period in time. Rankings also provide a reason for universities to engage in branding activities and in return, the branding activities help to increase academic reputation, which in effect increases rankings. On the other hand, universities are using rankings to brand themselves and to market them using their success in rankings. People's jobs are now linked to the performance in rankings and it is becoming very complex [11].

There is much talk about the globalisation of higher education, and how rankings become more relevant today. As arole of economic growth and development of a country through innovative academic research, higher education plays a vital role in the successful development of the economies. This is mainly because higher education and academic research mostly focus on political and geopolitical research around the world. This helps the individual researcher to exploit new-knowledge and develop assets through the intellectual procedure of competitive assets of academic research [12]. Depending on the factors that affect the quality of a variety of national and international universities, there are different types of methodologies used for ranking academic institutions. The various types of Rankings are

## 2.1 QS World University Rankings

The most important and popular ranking list is the world is QS World University Rankings list [13]. For the sake of the evaluation, the source of information is the hard data that is registered and the large global surveys. There are two large global surveys conducted before declaring QS World University Rankings, in that, one is from the academics side and another is from the employer's side evaluating the quality of university graduates. The QS World University Rankings has six major categories of indicators for quality evaluation [14], described below (Table 1):

Categories	Indicator	Weighting
Academic Reputation	Global survey of academics	40%
Employer Reputation	Global survey of employers	10%
Citations per Faculty	Total citation for last 6 years, for papersproduced in the last 5 years from Scopus	20%
Faculty Student Ratio	Full Time Equivalent Faculty Student Ratio	20%
International students	Proportion of International Students to Domestic	5%
International faculty	Proportion of International Faculty to Domestic	5%

Table 1: QS	World University	Rankings	[14].



2.2 Times Higher Education (THE) World University Ranking:

There are five categories based on which the Times Higher Education (THE) World University Ranking ranks universities [13], presented in Table 2.

Categories	Indicator	Weighting
Citation	Total number of academic in-cite citation perpaper	30%
Industry income	Total revenue generated from the innovative deas scaled by the academic staff	2.5%
International outlook	Ratio of staff, students, and research	7.5%
Research Volume of the research paper published, incomegenerated by scaling the research, reputation calculated through the survey		30%
Teaching	Learning environment	30%

Table 2: THE World University Rankings [13].

Today's world is preoccupied with university ranking systems across the globe, especially for higher education institutions. These ranking system helps institutions, universities, and research organisations to promote and attain a better level of their educational excellence in a myriad way. The higher education system is exerted in numerous ways due to global rankings. They are boosted by the rationalistic mantra of accountability [15] [16]. Besides this, it is also found that academicrankings are also evolved out of public interest, wherein, they are considered on the basis of accountability and assessment in response to the academic quality and significance provided to theranking system. Moreover, the higher education ranking systems helps the students to make choices in the subjects they wish to go to or the kind of university they choose to best fit in as pertheir interests.

#### 3 Model Proposed

In 2003, the era of global rankings began. It came into notice when the Shanghai Jiao Tong University published the ranking system called 'Academic Ranking of the University (ARWU)' [17]. The other ranking systems like THE, QS, and many international rankings were later on provided as the answer to ARWU with Thomson Reuters the next year [18]. The objective of thisranking system was to push the universities in frontiers towards the growth of knowledge and innovation. In the case of the Indian scenario, no higher education institutions in the global rankings gained much more attention [19]. The Higher education system in India is large and complex. India has the third largest higher education system in the world, behind China and the United States comprising of 795 universities, 39,671 affiliated colleges, 10,15,696 teaching faculty and 2,37,64,960 students including 29,34,989 post-graduate and 2,00,730 research scholars. The total enrolment has increased from a meagre 2 lakhs in 1947 to 238lakhs in 2013-14. Colleges, affiliated to 194 affiliating universities, constitute the bulk of the higher education system in India contributing around 86.48% of the total enrolment [20]. For this, a significant thought process was required. Hence, with the help of multiple direct and indirect stakeholders and for supporting Indians institutions to rise themselves in the ranking system, India created a new world of class universities based on the National Institutional Ranking Framework (NIRF). This helped the Indian universities to drive on three factors - "pride, prestige, and spin-off to the wider economy.' To date, the Ministry of Human Resources has surveyed and released five NIRF reports from the year 2016 to 2020 (NIRF) [21]. The National Institutional Ranking Framework (NIRF) is a methodology adopted by the Ministry of Education of the Government of India, to rank institutions of Higher Education in India. The Framework was approved by the MHRD and launched by Minister of Human Resource Development

The ontological framework of the ranking system in India focuses on the following factors depicted in Figure 1:



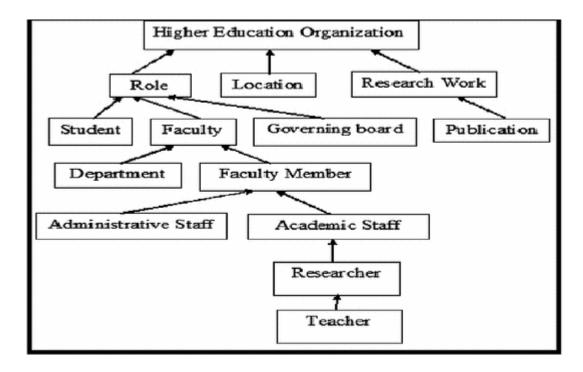


Fig. 1: Ontological Framework [22].

The comprehensive framework of NIRF, QS and THE is based on 3 dimensions broadly:

- a) Institutions, a dimension that considers from where the HEIs belongs to.
- b) Parameter, a dimension that takes into consideration the requirements, or categories of the ranking institutions, or parameters to enlist themselves in the ranking list.
- c) Effect, a dimension that considers the overall impact of the parameters used in the process and the outcome of same on the ranking.

In the dimensions of the framework, the NIRF's dominant focus is on publication and Intellectual Property Right - IPR. This dominant focus helped the institutions to focus on research and try to be more innovative by focusing on innovation factors and getting themselves towards better rankings in the list. Besides this, the other significance of this ontology of ranking system that is considered by higher education institutions is that its emphasis in the creation of blind spot that includes elements like income, productivity, academic, staff and collaboration, the domestic ratio of staff, and many others depending on the ability of the institution to attract scholars and academics from across the globe. In conclusion, there is a significant gap between the framework of the ranking system for higher education institutions in India and international universities. Thus, there is a need for policymakers to take into consideration rethinking the gap for increasing the quality, branding, and efficiency of the Indian institutions.

The feeling for growth and competing for better rankings has helped the institutions to perform better every year and become peer performers with more value and better placement in the industries. Besides this, rankings have become a tool for the parents to understand the institution in which their child is studying, is better or not than the other institutions. Moreover, the phenomena of becoming top-performing institutions help them to build their brand and grow without any media publicity. Not only this, when the institutions mature, the quality and high score parameters, help them to expand more and cover more institutions while gaining funds that help them to expand their list.

#### **4** Discussions

The existing literature shows that ranking is mainly focused on the validity of indicators and weights. This, in turn, helps the institutions to improve in a direction and validate arguments in a different aspect. In western countries, it shows that rankings have an impact on student choice of subject, access to education, and opportunities available in the practical

market. In the case of unequal opportunities for different students, institutions look for the aspects of improvement to generate equal opportunities for all [23], [24]. In particular, the rankings tend to most advantage high-income and highachieving students and to most disadvantaged minority students and those from low-income homes. These differential outcomes are related to the student selectivity indicators used in the US News & World Report (USNWR) and other rankings and highlight the need for rankings that reward schools for their relative success in educating students as opposed to their relative ability in recruiting already high-achieving ones [25]. In the last few years, a newaddition to the rankings scene: so-called 'world' rankings that appear to do something falsely on the lists of the top universities or programs in the world. These rankings reflect the fact that education increasingly operates in a global environment, and also provide this global market withits "performance measure" [26]. Evidence is just starting to emerge as to the impact of these rankings on student access, choice, and opportunity. Taken together, the data suggest that the outcomes may be somewhat similar to those seen for commercial rankings in the U.S and other Western countries. Regarding access, the potential impacts appear mixed [27]. These rankings also appear to be putting pressure on some national systems to free up at least one university to pursue a meritocratic approach to education (without regard to quotas or affirmative action) so that the country will have representation among the world's leading universities. Regarding choice, the rankings have been linked to changes in national and cross-national application patterns as achievement-oriented students seek the globally top-ranked program in their area [28]. Such applicant shifts, which are similar to those seen in response to the USNWR rankings, have the potential to affect a country's share of the international market for foreign students [29].

In terms of opportunity, it has been noted that in a globalising economy that draws on an increasingly international labour market, employability will come to depend more on the global status or rank of the university conferring the degree. Messick [30] notes that "to appraise how well [a measuring instrument] does its job, we must inquire whether the potential and actual social consequences of ... interpretation and use are not only supportive of the intended ... purposes, butat the same time are consistent with other social values" (p. 8, emphasis added). Both national and world rankings suggest that the impact of rankings on students is more consistent with some social values (e.g., meritocracy, competition) than with others (e.g., access, equity). Moreover, whether these outcomes are deemed appropriate depends, in large part, on the value system that characterizes the global higher education environment is yet to be analysed and elaborated.

The educational institutions have become 'engines of development' after the post-industrial knowledge economy placed a strong value on the development of the economy. This changed therole of higher education in the elite system to a more universal and quality system. Due to this, governments found an increase in the investment for higher education and also in the research and development sector which helps in assuring the necessary base of knowledge for economic growthand development [31]. This is mainly because knowledge production is rewarded more than capital investment or labour investment. As a result, competition has become intense in the higher education sector. Thus, it becomes difficult to differentiate between which institution is better than the other one. For this, branding and reputation play a vital role. Branding helps the higher education institution to set their own challenges and remain responsive to the local problems that are being strived by the student, due to local competitiveness. Whereas, reputation helps in building a larger degree of research excellence. Besides this, the other factors that help in contributing to the reputation are teaching and learning factors, freedom of subject selection in the academic, facilities, tradition, and experience of students that help in building up the reputation of the institutions more often. Due to the growth in the business of the school rankings industry, the validity of the current ranking system as credible measures are questioned by researchers and agencies worldwide. As the economics are globalizing the salient features of today's institutional landscape and schools with new status in the field of higher education worldwide have changed a lot. Although, definitional issues are continued to be debated, as for the organisation's reputation is a perceptual phenomenon that has emerged from the observers' collective judgment for the performance of the organisation over a period of time [32]. A good reputation is considered by academics and business professionals alike to be one of the most valuable intangible assets an organisation can possess - reducing stakeholder uncertainty about future organisational performance, strengthening competitive advantage, contributing to public confidence, and creating value by maximizing an organisation's ability to receive a premium for product or services [33]. Whereas, branding is in particular conceived with the universities being inorganic, tension lying between classical academia when community scholars and the competitors have different points of language towards branding. Although academia is usually known for its clean form wherein ethical consideration and pure undertaking of marketing and sales are seen in mainly vulgar activities of growth and making education as commercial [34]. Moreover, knowing that a strong university brand is considered a major asset in global marketing, for stakeholders of higher education institutions and their branding has become the most important criterion to be known across the globe. Thus, the Figure 2, shows the stakeholders' group and their expectations from the business institutions. school/higher educational



Stakeholder	Stakeholder expectations of a business school	
group		
Students	Career advancement	
	<ul> <li>Specialized business skills</li> </ul>	
	<ul> <li>Professional contacts</li> </ul>	
	<ul> <li>Procedural and financial support</li> </ul>	
	<ul> <li>High quality, accessible faculty</li> </ul>	
Alumni	<ul> <li>Networking opportunities</li> </ul>	
	<ul> <li>Service to the business community</li> </ul>	
	<ul> <li>Professional development opportunities</li> </ul>	
	Preserving value of degree	
Employers	Competent, trustworthy graduates	
Faculty	Research time and resources	
	<ul> <li>Professional development support</li> </ul>	
	<ul> <li>Achievement recognition and reward</li> </ul>	
	<ul> <li>Stimulating intellectual climate</li> </ul>	
Business community	Service to the business community	
	<ul> <li>Networking opportunities</li> </ul>	
	<ul> <li>Professional development programs</li> </ul>	
Parent university	<ul> <li>Prestigious, productive faculty</li> </ul>	
	<ul> <li>High performing students</li> </ul>	
	<ul> <li>Strong ties to business/</li> </ul>	
	academic communities	
	<ul> <li>Strong financial performance</li> </ul>	
	Competent leadership	
External evaluators:	Strong curriculum	
Accreditation agencies/	<ul> <li>Prestigious, productive faculty</li> </ul>	
Administrative peers	<ul> <li>Effective governance procedures</li> </ul>	
	Competent Leadership	
Scholarly peers	<ul> <li>Prestigious, productive faculty</li> </ul>	
	<ul> <li>Faculty professional service</li> </ul>	

Fig. 2: stakeholders' group and their expectations [33].

#### 5 Validation

The National Institutional Ranking Framework (NIRF) adopted by the Ministry of Education of Government of India, to rank institutions of Higher Education in India has been tested with some institutions in order to obtain the main advantages and recomme

A survey with Professors and staff of different HIE, where they manifested the importance of the Method, however, there are some suggestions could be important to take into account:

- It is recommended to set-up a Committee, which will oversee the implementation of ranking work for the first year, after which a suitable Ranking Agency duly authorized to receive and verifythe data, and declare the rankings, may be set up.

- This document identifies a set of suitable forms in which these parameters can be easily measured and verified across a variety of universities and colleges.

- A strategy is suggested for calculating scores to measure the performance of the universities and colleges across each such parameter. This will help to obtain an overall score for obtaining the institution rank.

- Separate ranking formulae for universities and colleges is suggested to ensure that institutions are compared within an appropriate peer group of institutions, and provided a level-playing field.

- A system for data collection from public bodies and random sample checks is suggested for eachparameter.

### 6 Conclusions and Further Work

World university rankings today present a revolution for universities from all over the world. Rankings are perceived as being good evaluation tools and provide a gauge for competition in global knowledge creation. For many others, it is seen as a reductionist, and at worst a criminallyinaccurate set of indicators, which skew the actual picture and distort the vision and mission of higher education. Given the extreme points of view, rankings have achieved an almost iconic status in some countries like Malaysia, Hong Kong, Singapore, and many others. This is also receiving many accolades in India in recent times with the introduction of the Institution of Eminence (IOE) project. Many rankings including QS and THE use academic reputation surveys to assess the quality and perception of institutions and this means that universities with top of mind recall valuewill have a higher ranking. The top institutions in the world have received a high ranking overall, but also receive reputation votes in subjects which they are not strong in, or at worst do not at all offer. The reason is a strong perception and reputation it has built, owing to brand and reputation effects over a period in time.

Therefore, having a clear knowledge and critical thinking about the current aspects of modern traditional philosophy the analysis of academic institutions needs to be done even before advancing the knowledge provided by the institutions. There are three core qualities of rankings research, i.e., determinist, instrumental, and positivity. Besides this, rankings are manifested as an inevitable sign of globalisation and marketization of higher education. On this paper a study about the National Institutional Ranking Framework has been done with emphasis on methodology for ranking universities and colleges across India. Some suggestions in order to apply it in a better way have been exposed. As future work it is expected to include the suggestions in the methodology proposed and will have wider appeal across universities and colleges.

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#### **References:**

- [1] Castle P, Buckler S. How to be a successful teacher: strategies for personal and professional development: SAGE. 2009.
- [2] Grewal, R., The University Rankings Game: Modeling the Competition among Universities for Ranking, The American Statistician., 62(3) (Aug., 2008), 232-237, 2009.
- [3] Brese, F. and T. Daniel (2012), OECD Assessment of Higher Education Learning Outcomes (AHELO) Feasibility Study: Report on Quality Adherence, IEA Data Processing and Research Center, Hamburg.
- [4] John, S., & Hasnain, S.E., Role of Higher Education Institutions in Building India. Reimaging Indian Universities, Association of Indian Universities, New Delhi (India)., 2020.
- [5] Overton-de Klerk, N., & Sienaert, M. (2016). From research excellence to brand relevance: A model for higher education reputation building. South African Journal of Science., **112(5-6)**, 1-8, 2016.
- [6] Reddy, K. S., Xie, E., & Tang, Q. (2016). Higher education, high-impact research, and world university rankings: A case of India and comparison with China. Pacific Science Review B: Humanities and Social Sciences., 2(1), 1-21, 2016.

- [7] Bekhradnia, B. (2016). International university rankings: For good or ill?. Oxford, UK: Higher Education Policy Institute.
- [8] McAleer, M., Nakamura, T., & Watkins, C. (2019). Size, internationalization, and university rankings: Evaluating and predicting Times Higher Education (THE) data for Japan. Sustainability., 11(5), 1366, 2019.
- [9] Hazelkorn, E. (2009, January). Impact of global rankings on higher education research and the production of knowledge. UNESCO, Forum on higher education, research and knowledge.
- [10] Baty, Ph. (2014). THE World University Rankings. Times Higher Education, http://www.timeshighereducation.co.uk/world-universityrankings/2014-15/world-ranking, retrieved 3 September 2014.
- [11] Nandi, E., & Chattopadhyay, S. (2016). Quality, Accreditation and Global. India infrastructure report 2012: Private sector in education, 167.
- [12]Brinkley, I. Defining the Knowledge Economy. The Work Foundation, July, 2006.
- [13] Welcome to the World University Rankings. Available from: https://www.timeshighereducation.co.uk/world-university-rankings. Date accessed: 12/09/2020.
- [14] QS World University Rankings Top Universities. Available from: http://www.topuniversities.com/qsworld-university-rankings. Date accessed: 12/09/2020.
- [15] Birnbaum, R. (2012). New ways to rank universities. International Higher Education, 67.
- [16] Delgado-Márquez, B. L., Hurtado-Torres, N. E., & Bondar, Y. (2011). Internationalization of higher education: Theoretical and empirical investigation of its influence on university institution rankings. International Journal of Educational Technology in Higher Education., 8(2), 265-284, 2011.
- [17] Yeravdekar, V. R., & Tiwari, G. (2014). Global rankings of higher education institutions and India's effective non-presence: Why have world-class universities eluded the Indian higher education system? And, how worthwhile is the Indian Government's captivation to launch world class universities. Procedia-Social and Behavioral Sciences, 157, 63-83, 2014.
- [18] Rauhvargers, A., Where Are the Global Rankings Leading Us? An Analysis of Recent Methodological Changes and New Developments, European Journal of Education., 49(1), 2014.
- [19] Kumar, A., & Nagabhushanam, M. (2017, November). A Ranking Framework for Higher Education Institutions in India: A Policy Analysis. In 2017 5th IEEE International Conference on MOOCs, Innovation and Technology in Education (MITE) (pp. 27-30). IEEE.
- [20] "NIRF India Rankings 2018: IISc Bangalore overall best, AIIMS Delhi tops medical institutes' list Times of India". The Times of India. Retrieved 11 June 2020.
- [21] National Institutional Ranking Framework: Overview". MHRD, Government of India. Retrieved 5 April 2020.
- [22] Reddy, A. B., & Govardhan, A. (2015). Ontology for an Education System and Ontology Based Clustering. In Proceedings of the Fifth International Conference on Fuzzy and Neuro Computing (FANCCO-2015) (pp. 163-173). Springer, Cham.
- [23] Medina-García, M., Doña-Toledo, L., & Higueras-Rodríguez, L. (2020), Equal Opportunities in an Inclusive and Sustainable Education System: An Explanatory Model. Sustainability ., 12, 462, 2020.
- [24] Salmi, J. and A. Saroyan (2007), "League Tables as Policy Instruments", International Higher Education, Vol. 47, CIHE, Chestnut Hill., 2-4, 2007.
- [25] Marope, P. T. M., Wells, P. J., & Hazelkorn, E. (Eds.). (2013). Rankings and accountability in higher education: Uses and misuses. Unesco.
- [26] Hood, C., Dixon R., Beeston, C., 2008. Rating the Rankings: Assessing International Rankings of Public Service Performance. International Public Management Journal., 11(3), 298-358, 2008.
- [27] Dembereldorj, Z., (2018). Review on the Impact of World Higher Education Rankings: Institutional Competitive Competence and Institutional Competence, International Journal of Higher Education., **7(3)**, 25, 2018.
- [28] Clarke, M. 2004. "Weighing Things Up: A Closer Look at U.S. News and World Report's Ranking Formulas". College and University., 79(3), 3–9, 2004.
- [29] Maslen, G. (2005) 'Falling Chinese student numbers threaten income'. The Times Higher Education Supplement, 8 April.

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- [30] Messick, S. (1989). Validity. In R.L. Linn (Ed.), Educational measurement (3rd ed., pp. 13- 104). New York: American Council on Education and Macmillan.
- [31] Gibbon, Ch. (2011). How much can the Creative Industries Contribute to Regional Development in Britain? Available online at http://www.regional-studies- assoc.ac.uk/events/2011/april-newcastle/papers/Gibbon.pdf
- [32] Lange, D., (2011). Organisation's reputation is a perceptual phenomenon that has emerged from the observers' collective judgment for the performance of the organisation over a period of time. Journal of Management., **37(1)**, 153-184, 2011.
- [33] Vidaver-Cohen, D., Brønn, P. (2008). Corporate Citizenship and Managerial Motivation: Implications for Business Legitimacy. Business and Society Review., **113(4)**, 2008.
- [34] Aithal, P. S., Shailashree, V., & Kumar, P. M. (2016). The study of new national institutional ranking system using ABCD framework. International Journal of Current Research and Modern Education (IJCRME), 1.