Journal of Intellectual Property Rights
Vol 29, March 2024, pp 120-126
DOI: 10.56042/jipr.v29i2.758

Impact Assessment of NEP and IPR on Institutes of Higher Education

Meghna Aggarwal[1†], Pramod Kumar[2], Seema Gupta[2] and Ruby Mishra[2]

[1]Deen Dayal Upadhyaya College, University of Delhi, Delhi — 110 078, New Delhi, India

[2]Deshbandhu College, University of Delhi, Delhi — 110 019, New Delhi, India

Received: 20th April 2023; revised: 19th January 2024

Youth nowadays can be considered as a wonderful reservoir of potential and innovation which is mostly untapped. Their new perspectives, vigour, curiosity, professionalism, and aspiration for a secured and better future are already revolutionising methods and igniting initiatives for innovation and change. Today's youth is demonstrating the ability to mobilise and spark support for change because they grew up in the internet era. Many people are devoting their energy as well as time in creating cutting-edge technologies and novelties to address the major problems of recent time, such as global warming, education, food security, access to healthcare, unemployment, and other issues. The youth can, however, overcome the challenge of creating a viable firm by knowing how to look after their intellectual property (IP) assets. (i.e., their creations and discoveries), harnessing their value, and increasing influence. The National Education Policy (NEP) 2020 focuses on the educational sector's vision for a contemporary India and aspires to meet the quality education target outlined in the United Nations Sustainable Development Goals for Education by 2030. Major changes to higher education have been made as a result of the NEP 2020, which are in line with the need to offer "inclusive and equitable quality education and promoting lifelong learning opportunities for all" (SDG 4), crucial to manage the demands of employment and bringing about a collective systemic change. It is crucial that the next generation understand how integral intellectual property is to their vision as they get ready to enter the workforce. In this regard, this paper examines how NEP affects higher education institutions (HEIs), how IPR fits into NEP, and how the New Education Policy and IPR policy together might cause a paradigmatic change in the current higher education system.

Keywords: Intellectual Property Rights, National Education Policy, Higher Education Institutes, Research, Inventions, Innovation

The complexity of the demands of the labour market along with changing demographics in India have given rise to a more diversified group of students. As a consequence, the emphasis on transversal skills in higher education[1] has increased along with ordered knowledge and competencies.[2] Due to digitization, the Higher Education Institutes (HEIs) are obligated to improve their education quality and performance time and again. Strategic transformation programs[3] that either look forward to improve institutional efficiency[4] or modify higher education policy, or that promote their competitive academic advantage[5] is instituted by a number of HEIs. In order to promote such transformation programs, the HEIs seek to adopt successful strategies enumerated in the NEP which will include effective institutional leadership (governance and management)[6], coherent operating models and structures[7], and institutional culture.[8] This calls for leadership to set goals and establish authority structures for strategic academic outcomes.[9]

†Corresponding author: Email: drmeghna@ddu.du.ac.in

However, frequent criticism is levelled against the Indian Education system for not getting recognized in the world. Though very few institutions are listed amongst the world's best universities, still students belonging to Indian universities are leading a number of MNCs globally. The major difference between the recognition and quality is that India does not give much importance to innovation and research. This is indicated by the Global Innovation Index (GII) ranking which reveals that India's ranking in the GII 2021 lies between ranks 43 and 48 among 132 economies (Table 1).[10]

The National Knowledge Committee reported that the future of the nation and its progress in the global market can be judged on the basis of generation of ideas and novelties in science and technology.[11] This lack of creative and critical thinking emanates from the fact that such thinking isn't rewarded by the extant educational framework. This has, as a consequence,

Table 1 — GII rankings for India from 2019 to 2021

Year	2019	2020	2021
GII ranking	52	48	46

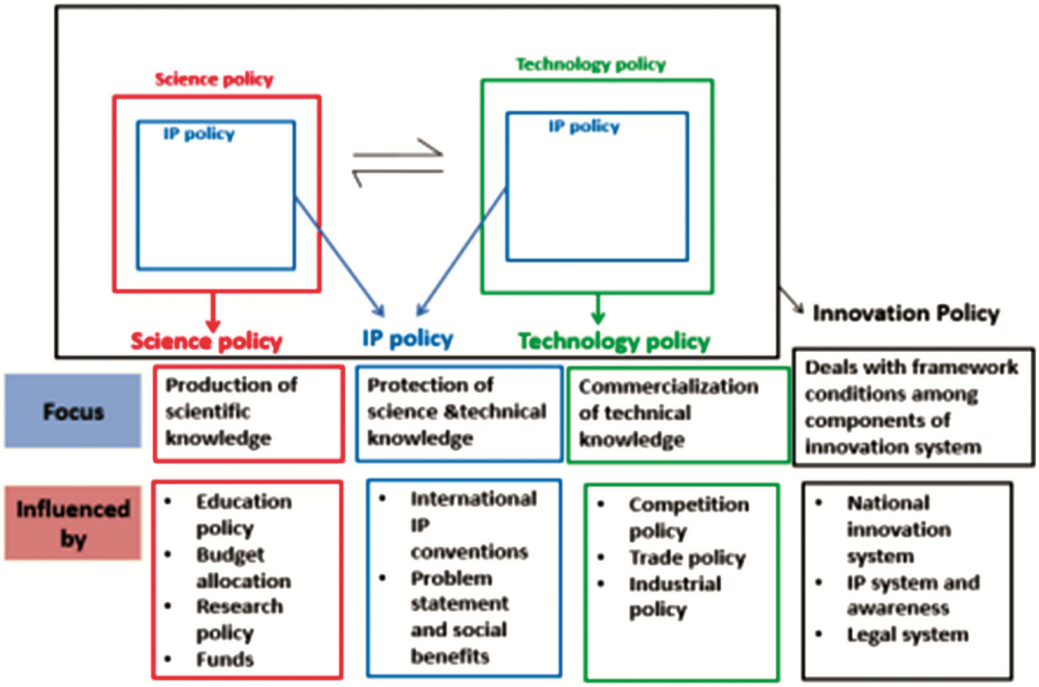

Fig. 1 — IP Policy as an integral part of Science, Technology and Innovation Policies

brought about stagnation of intellectual properties, local manufacturing, and self-sustainability. Creativity is the foundation for innovation which paves the way for the creation of intellectual property, entrepreneurial endeavours and the launch of new businesses.

The Government, considering the GII rankings and the National Knowledge Commission Report 2006, launched a new National Intellectual Property Right (IPR) Policy in 2016 with the objective to promote innovation and creativity in HEIs as well as amongst entrepreneurs.[11] The University Grant Commission, the nodal authority dealing with the standards of educational institutes, is looking forward to include IPR as a general elective subject for all the courses in the National Education Policy (NEP), 2020. The paradigm shifts in the policies framed by UGC may prove to be a game-changer and a trendsetter (Fig. 1).

The National Knowledge Commission Reports that as per World Intellectual Property Organisation (WIPO), out of 13,38,503 patent applications submitted by China 10% were by non-resident Chinese whereas in India out of 45,057 submitted applications over 70% were submitted by non-resident Indians. Further, the USA submitted 605,571 patent applications.[12] The present research therefore aims to evaluate how higher education institutions (HEIs) deal with IP Policy and innovation practices and the ten criteria enumerated by the National Board of Accreditation have been used for impact analysis. The GE-McKinsey Nine Box matrix[13] has been used for impact analysis considering the pertinent characteristics of the NEP 2020.

Methodology

Benchmarking

A suitable means to examine a reference point crucial to determine an institution's competitive standing with respect to the NEP can be benchmarking. It is performed on the basis of standards, accountability, competitive advantage and development[14] (Fig. 2).

HEIs can benchmark themselves using various ways. They can use the ten criteria enumerated by The National Board of Accreditation (NBA).[15] Based on the classification, the institutes use certain distinctive tools in order to analyse their position for each of these criteria using Platform for Digital Transformation (P4DT)[16] etc. HEI make use of the National Institutional Ranking Framework (NIRF) in order to be aware of their position relative to the other HEI's on a variety of attributes like (i) Research Productivity Impact and IPR (RPII); (ii) Teaching, Learning and Resources (TLR); (iii) Perception (PR); (iv) Outreach and Inclusivity (OI); and (v) Graduation Outcome (GO).[17]

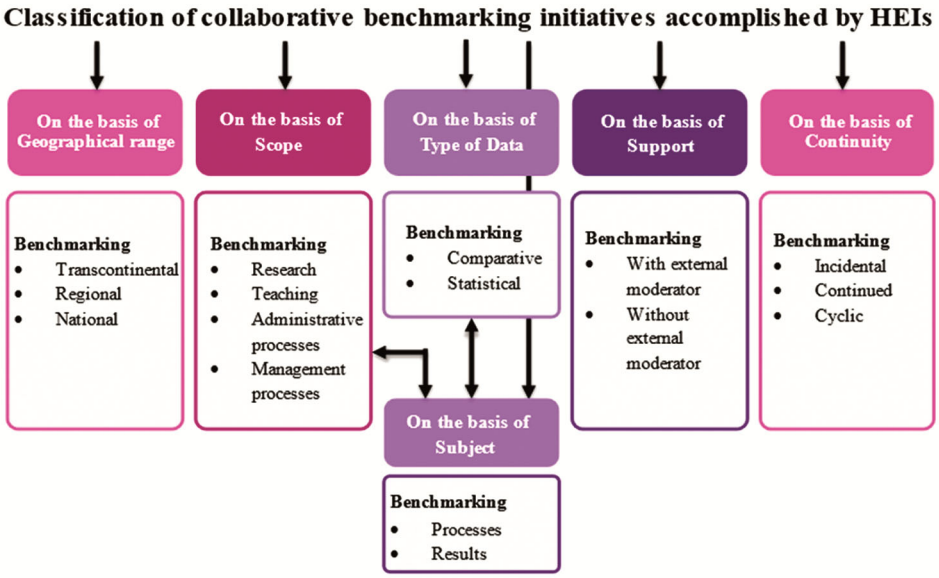

Fig. 2 — Benchmarking initiatives in HEIs and their classification

Balance Scorecard

A balance scorecard based on the NEP is required to be constructed in the context of the following parameters:

Student Growth

Provision of an excellent learning environment equipped with the extant infrastructure and technology must be assured. The NEP advocates that the programs offered to students should cater to the needs of the industry that would in turn push them to be innovative. According to Cantù *et al.*[18] while industries are considered as the main source of research, development, and innovation, HEIs serve as the major source of knowledge creation and dissemination. In developing countries such as India, the main source of knowledge generation is credited to public funded research in HEIs.[19] Also, a special emphasis on vocational training is required along with creating provisions for students to get suitable certificates/degrees if they give up the course before completion as is generally done in foreign universities.

Internal Process of the Institution

Communication at all levels needs to be enhanced and the regulatory procedures must be remodelled to suit present needs. The NEP envisions the collaboration of academia and industry by building a research ecosystem that would comprise of the government, HEIs, research institutes, and the industry. This would entail modification of the internal processes of the HEIs in order to fulfil the requirements of the students and the faculty in this regard.

Financials Involved

Given the new NEP framework, equitable finances need to be allocated by the HEIs to fund all the changes recommended in NEP. This would entail obtaining funds from the third party for various research projects. From the standpoint of employment, the HEIs are required to recruit the best and experienced faculty who are active in research and would help in capacity building and mentoring the youth as well as getting funds across borders by collaborating internationally.

Learning & Growth

The NEP claims that for the all-around development of students in HEIs, the emphasis is on a knowledge-driven economy that lays stress on multi-disciplinarity and flexibility. This would entail encouraging students to learn skills by cultivating in them the 21st century competencies, such as problem-solving, critical thinking, creativity, team-work, communication, and digital literacy. The NEP also proposes promotion of learning culture in HEI's by way of webinars, training, projects, internships, and FDPs. NEP additionally recommends that HEIs should collaborate with reputed institutions which are located worldwide by establishing bilateral academies. Such a balanced scorecard on the basis of Key Performance Indicator, adapted from Kaplan and Norto,[20] can be shown through schematic representation involving critical success factors and metric (Fig. 3).

The HEIs are required to assess their effectiveness after creating the Balanced scorecard. The assessment

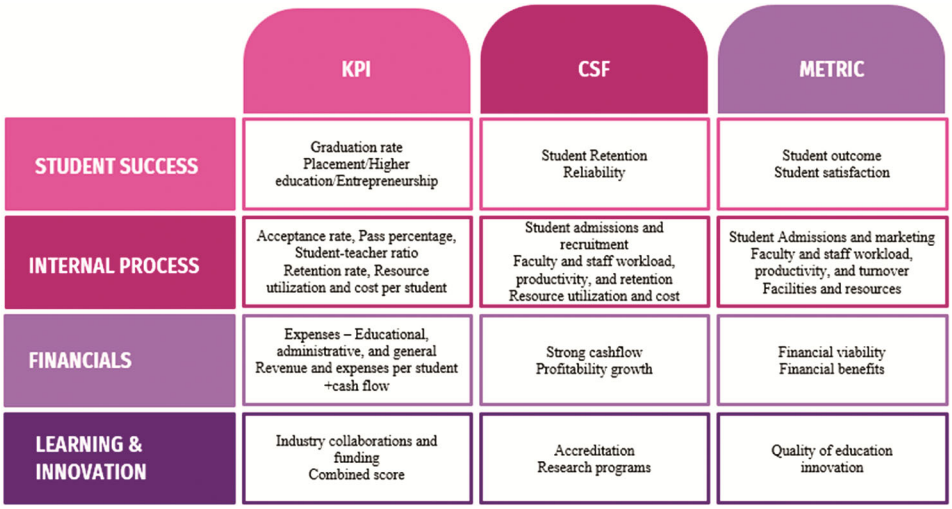

Fig. 3 — Balanced scorecard based on KPI, CSF and Metric

can be made based on the competitive advantage of the HEI with respect to the New Education Policy.

Competitive Advantage of the HEIs

The NEP will bring about academic and administrative freedom for HEIs. As a consequence, the HEIs will have an advantage in terms of both monetary and non-monetary benefits, multidisciplinary and holistic education, much needed impetus to faculty development, improved student enrolment in various programs offered through online platforms as well as national and international exchange programs and collaborations. Such benefits would entail enhanced fundings in research and innovation on account of merit-based peer-reviewed process of funding.

The competitive strength of the HEIs can improve if the focus is on the growth of the students, education and research/research and innovation, funding, and the in-house processes of the institution. The following methods can be adopted to bring about this improvement:

Academic Growth of Students

Academic and industrial collaborations and exchange programs of HEIs with reputed institutes and organizations respectively can benefit students in terms of earning a dual degree (one online and the other offline), training, internships, and greater learning opportunities. These collaborations also give the students an opportunity for research and placement.

Research & Innovation

The HEIs can improve their competitive strength by introducing multidisciplinary courses or converting existing ones into multidisciplinary, more engagement in practical based assessment, and enhancing skill sets such as programming, computational thinking, data analysis, and IoT etc. Technology for embedded software and systems and data driven control systems have started a new era to the industrial processes and NEP emphasizes to orient the students towards Industry 4.0

Funding

HEIs can fund and support start-up related activities by creating incubation cells and providing mentoring to interested students in addition to a provision of a minimum of 15% of their annual budget for funding the start-ups. The HEIs can also allow the students to work part-time if they are willing to establish their start-ups. The HEIs can also initiate distance learning and virtual programs that will enhance student enrolment ratio thereby enabling them to gain more funds.

In-House Processes

The HEIs can adopt ICT to introduce reforms in governance that would result in enhanced administrative productivity, accountability and transparency.

New Educational Policy (NEP)

According to Narayanan *et.al.* (2000)[21] and NEP Document 2000[22], the New Educational Policy emphasizes the following:

(i) Vocational Education Integration: The mainstream education should be integrated with vocational education in a phased manner.

(ii) Enhanced Equity & Inclusion: To ensure quality education to all students focussing particularly

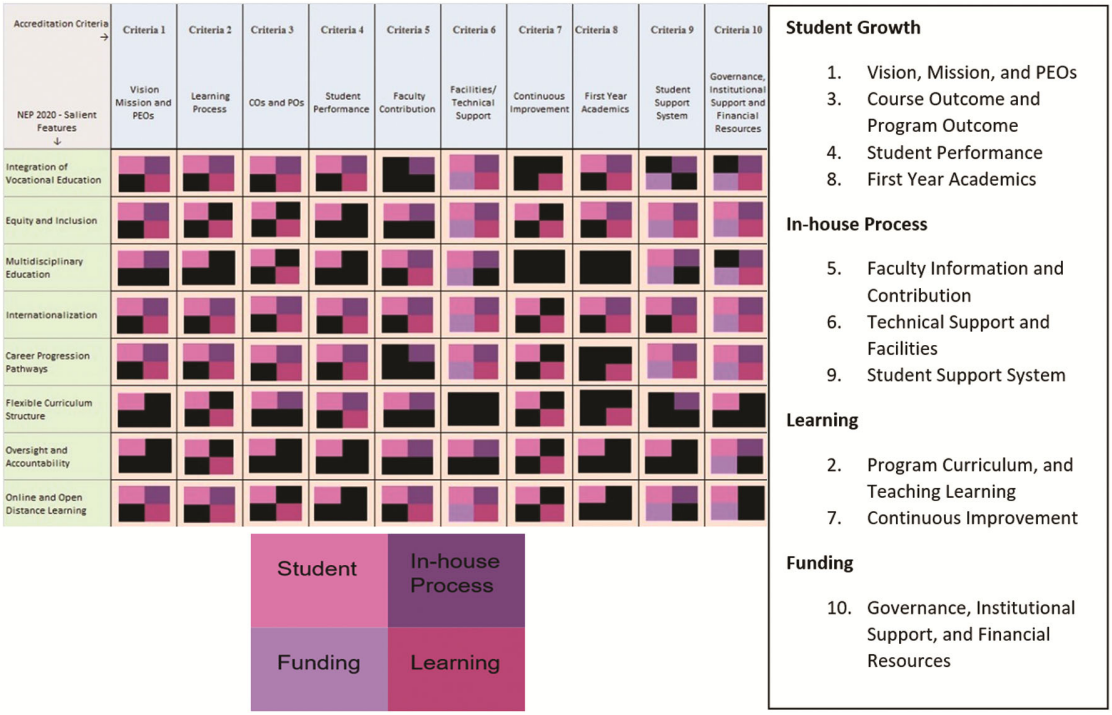

Fig. 4 — QFD Matrix with respect to Accreditation and NEP

on Socio-Economically Disadvantaged Groups (SEDGs) to enable improvement in the Gross Enrolment Ratio of SEDGs.

(iii) Multidisciplinary & Integrated Teacher Education: Providing multidisciplinary education to the students by the HEI's so that they can develop the 21st century skills to cater to the needs of Industry 4.0.

(iv) Internationalization: Facilitating academic and research collaborations and faculty/student exchange programs with foreign institutions of repute. The Policy also aims to facilitate Indian universities showing performance at par with international standards eligible for setting up campuses internationally, and likewise, select global universities/institutions to run in India.

(v) Career Progression Pathways: The faculty will focus on research and pedagogical skills keeping career progression in mind. The students will have the opportunity to take internships, open start-ups, take research-based projects etc. so that they may engage themselves in practical based learning and improve their prospects of employability.

(vi) Flexible Curriculum Structure: This would create new possibilities for life-long learning (SDG 4) by offering multiple entry and exit points.

(vii) Oversight and Accountability: Improve overall accountability of HEIs through the implementation of a platform that would track academic and financial data thus bringing about greater transparency.

(viii) Online & Open Distance Learning: Provides an opportunity to institutions to run accredited online and Open Distance Learning (ODL) programmes which would in turn improve Gross Enrolment Ratio and provide opportunities for lifelong learning (SDG 4).

The competitive strength of the HEI's pertaining to NEP is measured on the basis of the ten criteria laid down by the Accrediting Agencies. A connect between the competitive strength so measured and the NEP framework can be summarized through a Quality Function Deployment (QFD) Matrix (Fig. 4).

Through this analysis, the HEIs are able to decide the criteria they've to emphasize upon both from the perspective of accreditation as well as NEP. On one hand, this will help HEIs to gain funding from government organizations and on the other it helps the HEIs to achieve a good from the assessment and accreditation institutions such as NIRF, NAAC etc. This would hold the HEIs accountable and compel quality control networks, institutions, and stakeholders of higher education to collaborate and

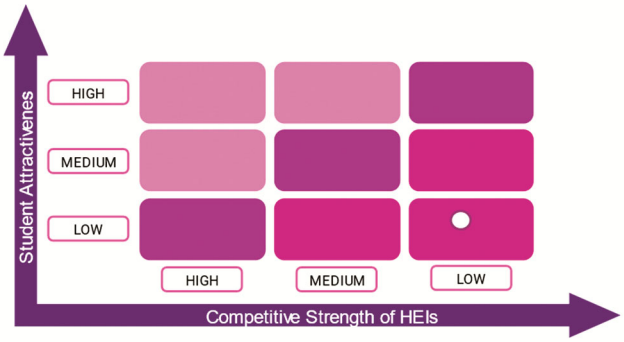

Fig. 5 — GE-McKinsey Nine Box Matrix

commit to work together to upgrade higher education for students and society.[23]

Performance

Once the analysis is carried out, it becomes essential for the HEIs to know their current position/status. This can be best done by mapping the competitive strength of the HEI and how much the institution appeals to the student on a Nine Box Matrix by GE-McKinsey (Fig. 5).

The HEIs are able to analyse both short-term and long-term initiatives which they aspire to undertake with the help of the QFD and the GE-McKinsey Nine Box Matrix. Also, the HEIs need to work out a comprehensive plan of action and measure their progress periodically by marking it on the GE-McKinsey Nine Box Matrix.

Conclusion

The NEP is expected to have an impressive impact on HEIs. By studying the impact of NEP on HEIs, the HEIs can take proper actions to work out the proposed changes to their advantage and in that way making education worthwhile. HEIs must benchmark their performance in order to generate a balanced scorecard, recognize improvement opportunities, work out on them through a detailed plan, and measure the progress periodically. It is expected that the NEP will place India on the right path towards accomplishing sustainable development goals 2030 providing 'inclusive and equitable quality education for all and promoting lifelong learning opportunities in the next decade'.[24]

In conclusion, young people throughout the globe have a lot of untapped potential that can help drive the reforms we need to get to a more sustainable footing. The moment has come for young people to become aware of intellectual property and learn how IP rights may help them bring their ideas to fruition. It is imperative that policymakers throughout the world invest in young inventors and creators and ensure they have the IP knowledge and resources they need to convert their futuristic vision into reality. It is crucial for our future success.

References

1 Almeida F, Simões E, Belchior-Rocha H & Casquilho-Martins I, The importance of transversal skills in higher education curricula for today's labor market, *INTED2018 Proceedings*, 2018, 7136.

2 Benferhat S, Lagrue S & Papini O, Reasoning with partially ordered information in a possibilistic logic framework, *Fuzzy Sets and Systems*, 144 (1) (2004) 25, https://doi.org/10.1016/j.fss.2003.10.012.

3 George B & Walker R & Monster J, Does Strategic planning improve organizational performance? A meta-analysis, *Public Administration Review*, 79 (2019) 810, doi:10.1111/puar.13104.

4 Amina N & Turyahebwa A, Institutional efficiency in selected universities in Uganda, *Journal of Education and Practice*, 6 (10) (2015) 90.

5 Ngaruko D D, Fweja Leonard L W T & Mohamed F M, Building competitive advantage in academic programmes in Open and Distance Learning (ODL) Institutions: Case of The Open University of Tanzania, *HURIA Journal of The Open University of Tanzania,* 18, 2014, doi: https://doi.org/10.61538/huria.v18i0.16.

6 Jais I & Ghani K, Erlane Institutional leadership in universities: Does talent management matter? *Universidad y Sociedad*, 13 (2021) 234.

7 Deshpande R, de Silva C, Myoungkyu L, Jason M & Ivan M, Data-driven enhancement of coherent structure-based models for predicting instantaneous wall turbulence, *International Journal of Heat and Fluid Flow,* 2021, doi:10.1016/j.ijheatfluidflow.2021.108879.

8 Marilyn N, Challenging the status quo of an institutional culture in theological training, *Stellenbosch Theological Journal*, 3 (2) 2017.

9 Chacko M & Sarnad P, Impact analysis of National Education Policy on engineering and technology higher education institutes, *International Research Journal of Engineering and Technology*, 8 (1) 2021.

10 World Intellectual Property Organization (WIPO) (2023), Global Innovation Index 2023: Innovation in the face of uncertainty, Geneva: WIPO. doi:10.34667/tind.48220.

11 Lundvall Bengt-Åke & Borrás S, Science, Technology and Innovation Policy, in Fagerberg J, Mowery D C & Nelson R R, *Innovation Handbook* (Oxford: Oxford University Press) Chapter 22 (2005) 599-631.

12 National Knowledge Commission (2009), Report to the Nation 2006-2009.

13 Coyne K, Enduring ideas: The GE-McKinsey nine-box matrix, *McKinsey Quarterly*, 4 (September issue) (2008) 142.

14 Katarzyna A K, Benchmarking in University Toolbox, *Business, Management and Education*, 13 (1) (2015) 158, doi:10.3846/bme.2015.259.

15 Farida I & Setiawan D, Business strategies and competitive advantage: The role of performance and innovation, *Journal of Open Innovation: Technology, Market, and Complexity*, 8 (3) 2022 163, https://doi.org/10.3390/joitmc8030163.

16 Tagarev T, Digilience - A platform for digital transformation, cyber security and resilience, *Information & Security: An International Journal,* 43 (1) (2019), 7-10, doi: https://doi.org/10.11610/isij.4300.

17 Srimathi H & Krishnamoorthy A, Review of NIRF, *Journal of Critical Reviews*, 7 (4) (2020), doi: http://dx.doi.org/10.31838/jcr.07.04.48.

18 Cantù C, Corsaro D, Tunisini A, de Zubielqui G C, Jones J, Seet P S & Lindsay N Knowledge transfer between actors in the innovation system: A study of higher education institutions (HEIS) and SMES, *Journal of Business & Industrial Marketing,* 30 (3/4) (2015), doi: https://doi.org/10.1108/JBIM-07-2013-0152.

19 Kashyap A & Agrawal R, Academia a new knowledge supplier to the industry! Uncovering barriers in the process, *Journal of Advances in Management Research,* 16 (5) (2019) 715, doi: https://doi.org/10.1108/JAMR-02-2019-0017.

20 Robert S K & David P, Norton the balanced scorecard: Translating strategy into Action, *Harvard Review Press*, 1, 1996.

21 Narayanan R, Debabrata G & Madhavan V, Impact of National Educational Policy 2020 and opportunities for stakeholders, *KPMG Report,* August 2020.

22 National Education Policy, 2020, *Ministry of Human Resource Development*, Government of India.

23 Bengaluru Statement 2016 on Next - Generation Quality Assurance of Higher Education at Global Summit organised by NAAC.

24 Enhancing quality of education in India by 2030: A F.I.T. approach to realising SDG 4, *KPMG Report,* 2020.