

NAVIGATING HIGHER EDUCATION THROUGH NEP 2020

Metrics of Excellence and Digital Virtues

FESTSCHRIFT *in honour of* **PROF. ROSHAN LAL RAINA**

Editors

Prof. (Dr.) Sonal Singh
Dr. Bhaw Nath Pandey

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FESTSCHRIFT *in Honour of* **Prof. Roshan Lal Raina**

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NEP DRIVEN IDEATION, INNOVATION, AND ENTREPRENEURSHIP – MACRO AND MICRO PERSPECTIVES ON STARTUPS IN HEALTHCARE MANAGEMENT

P. R. Sodani
Himadri Sinha
Kirti Agarwal

Abstract: The National Education Policy (NEP) 2020 seeks to equip the students to meet global industry demands by fostering innovation and nurturing a start-up ecosystem. It encourages universities and educational institutions to promote a research-driven environment for encouraging outstanding research, and to foster start-ups that bridge society and the economy. The paper analyses the emerging trends of innovation and entrepreneurship promoted by academic institutions across India, the Pan Indian growth of start-ups in the healthcare sector and initiatives of IIHMR University to promote healthcare start-ups. Study findings recorded that till June 30, 2024, the Department for Promotion of Industry and Internal Trade (DPIIT) recognized 1,40,803 entities as start-ups. These start-ups are estimated to create over 15.53 lakh direct jobs. Interestingly, 67,499 DPIIT recognized start-ups have at least a woman director. Similarly, phenomenal growth has taken place in healthcare start-ups. The number of DPIIT recognised healthcare start-ups in India grew at 127% compound annual growth rate (CAGR) between 2016 and 2023. More than ten thousand start-ups came up in 2023. Nearly 47% of such start-ups were initiated from Tier 2 and 3 cities. IIHMR University is fostering a start-up centre to promote new ideas of students of hospital and health management, pharmaceutical management and healthcare analytics. During 2000-2023, nearly 3000 students and interested entrepreneurs oriented towards healthcare start-ups, twenty crore funds were mobilised for new initiatives and sixty-one start-ups were facilitated to achieve self-reliance. The paper also examines the push and pull factors for innovation and start-up promotion both in macro and micro levels and also provides future research leads.

Keywords: Innovation; Start-up; Entrepreneurship; NEP; Healthcare.

Introduction

One of the major objectives of National Education Policy 2020 (NEP-2020) is to create a conducive ecosystem for promoting research and innovation in higher educational institutions (HEIs). The chief purpose is on seeding and nurturing the culture of research and innovation at universities and colleges through funding support, guidelines/policies and establishing innovation and research centres. To achieve this goal, NEP, 2020 emphasizes on the multidisciplinary nature of education which can be made to present by application of entrepreneurship education. Several HEIs in India have initiated proactive measure to promote innovation and start up in the recent years. In this backdrop, this study analyses the emerging trends of innovation and entrepreneurship promoted by academic institutions across India, Pan Indian growth of start-ups in the healthcare sector and initiatives of IIHMR University to promote healthcare start-ups.

National Education Policy (NEP) and Innovation

Innovation and entrepreneurship are critical drivers of economic growth, social progress, and environmental sustainability in the 21st century. The previous National Policies on Education 1968, 1986, the Plan of Action 1992 and the current National Education Policy 2020 always emphasized the role of vocational and technical education to generate employment and entrepreneurs. All education policies aimed to relate with the constant changes and prepare the human resources to find opportunities catering to the changing needs of job market. A core principle of NEP 2020 is fostering creativity and critical thinking in learners to encourage innovation. The policy emphasizes that higher education should serve as the foundation for knowledge creation and innovation, thus contributing to national economic growth. NEP expects HEIs to prioritize research and innovation by establishing start-up incubation centres, technology development hubs, frontier research axis, stronger industry-academia partnerships, and interdisciplinary research. EP envisioned that HEIs to take the lead in researching infectious diseases, epidemiology, virology, diagnostics, instrumentation, vaccinology, and related fields.

Additionally, HEIs should foster targeted support mechanisms and competitions to foster innovation within student communities.

In recent times, education has been transformed by digitization and the forces of the fourth generation industrial revolution, which encompass technologies like artificial intelligence, machine learning, data analytics, robotics, and the Internet of Things. These advancements are poised to impact the education system and learning processes significantly. As a result, many traditional learning methods and thought processes have become obsolete. In a world where tools like Google search and ChatGPT can provide information instantly, memorization and rote learning have lost relevance. The Indian education system has made a sincere effort to adapt to the evolving nature of education and knowledge acquisition, aiming to address the shortcomings of previous education policies (Singh & Gunasekharan, 2023).

NEP 2020: The National Education Policy (2020), introduced after 34 years and replacing the 1986 policy (with modifications in 1992), aims to bring a transformative shift to India's education system. Its primary goal is to move students away from passive learning towards a deeper understanding, encouraging them to learn how to learn. This transformation is being achieved by dismantling the rigid silos of the current system, instead emphasizing interdisciplinary and holistic education across both schools and higher education. A key aspect of the NEP is fostering student entrepreneurship through exposure to vocational training aligned with industry needs. By integrating formal education with skills-based learning, the policy seeks to develop professional and industry-relevant competencies. This partnership with industry will help bridge the gap between theoretical knowledge and practical application, empowering students to become innovators and creators. Additionally, it ensures that the education system remains responsive to the rapid technological advancements reshaping the world. The NEP 2020 advocates for experiential and holistic learning. As outlined in the policy, "The aim of education will not only be cognitive development but also character-building and the creation of well-rounded individuals equipped with essential 21st-century skills." To achieve this, the policy introduces a cross-curricular pedagogical approach, incorporating art and sports into the curriculum. Moreover, students will have greater flexibility and choice in selecting subjects at the school level, moving away from rigid categorizations like Science, Commerce, and Arts. This flexible structure encourages self-discovery and personal growth. Recognizing the importance of language, the policy also promotes multilingualism, with a special focus on the mother tongue to honour India's diverse cultural and ethnic heritage. It emphasizes that "wherever possible, the medium of instruction until at least Grade 5, and preferably until Grade 8 and beyond, will be the home language/mother tongue/local language/regional language." Even beyond this stage, efforts will be made to continue teaching the home language. This approach is backed by extensive research demonstrating that learning in one's mother tongue fosters a deeper understanding and stronger cognitive development (NEP, 2020).

Provisions of NEP 2020 for Vocational Education in Higher Education:

The National Education Policy (NEP) 2020 aims to ensure that by 2025, at least 50% of higher education learners will benefit from vocational education. It envisions integrating vocational education into both school and higher education over the coming decade. To facilitate this, the Ministry of Education has proposed the establishment of the National Committee for the Integration of Vocational Education (NCIVE). This committee will oversee the blending of various educational streams within an interdisciplinary and multidisciplinary framework. It will also identify key focus areas and recommend models and best practices for embedding vocational education into mainstream academic programs. A key initiative of the NEP is the establishment of incubation centers within Higher Education Institutions (HEIs) in collaboration with industry partners. These centers will implement different models of vocational education and apprenticeship, enabling practical learning experiences alongside traditional academic instruction. The policy also provides equal importance to vocational education by incorporating it into the multiple entry and exit options of undergraduate programs. As the policy outlines, "the undergraduate degree will be either 3 or 4 years in duration, with multiple exit options within this period." For instance, students can earn a certificate after one year of study in a specific discipline, including vocational or professional fields; a diploma after two years; or a bachelor's degree after completing the full three-year program. NEP 2020 also supports the continuation of the Bachelor of Vocational Education (B.Voc) degree, which was introduced in 2013, and allows students from other streams to enter vocational education at

any stage of their higher education. Additionally, higher education institutions will have the flexibility to offer short-term courses, including those promoting "Lok Vidya"—vocational knowledge developed in India—by integrating this rich heritage into vocational education programs (NEP, 2020).

Pan Indian Growth of Innovation and Entrepreneurship during 2015-2024

A. Innovation and Entrepreneurship (Start-up) Ecosystem in India

India has become the world's third-largest innovation and entrepreneurship (startup) ecosystem, with over 112,718 start-ups recognized by the Department for Promotion of Industry and Internal Trade (DPIIT) across 763 districts as of October 3, 2023. India ranked second in innovation quality. India leads in the quality of scientific publications and the strength of its universities among middle-income countries. Country's innovation extends across 56 diverse industrial sectors, with notable contributions from IT services (13%), healthcare and life sciences (9%), education (7%), agriculture (5%), and food & beverages (5%).

The Indian startup ecosystem has witnessed remarkable growth between 2015 and 2022:

- A fifteen fold increase in total startup funding
- A nine fold rise in the number of investors
- A seven fold growth in the number of incubators

India's unicorns privately held startups valued at over \$1 billion. They are thriving in the fast-paced economy, driving innovation and job creation. Until FY 2016-17, the country added approximately one unicorn per year. However, since FY 2017-18, the number of unicorns has grown exponentially, with a 66% year-on-year increase. By October 2023, India boasted listed 111 unicorns valued at a total of \$349.67 billion. In 2021 alone, 45 unicorns were created, contributing \$102.30 billion in valuation, followed by 22 unicorns in 2022 valued at \$29.20 billion. In 2023, Zepto was the sole unicorn, with a valuation of \$1.4 billion (Invest India, 2023).

B. The Unicorn Boom

A "unicorn" refers to a privately held startup with a valuation of over \$1 billion. The surge of unicorns in 2021 was driven by the pandemic, which accelerated the growth of digital businesses in India. Three key factors contributed to this boom: the flourishing digital payments ecosystem, the large smartphone user base, and digital-first business models, all of which attracted significant investor interest. Notably, tech companies that became household names contributed to this growth, fuelled by increasing smartphone penetration and the digitization of commerce. Sectors like fintech, e-commerce, SaaS, and marketplaces played major roles in expanding India's unicorn list (Invest India, 2023).

C. Geographical and Sectoral Insights

Bengaluru, often referred to as India's "unicorn capital," leads with the highest number of unicorn headquarters, followed by Delhi NCR and Mumbai. While Tier 1 cities dominate, the startup ecosystem is expanding across the country, even into smaller districts. Traditional sectors such as e-commerce, fintech, and supply chain logistics remain key players, but unconventional sectors like content creation, gaming, hospitality, and data analytics are also gaining ground. Startups have varied journeys to becoming unicorns, with the fastest being Mensa Brands, which achieved unicorn status in just six months in 2021—making it one of the fastest-growing unicorns in Asia. On the other hand, some startups have taken up to 26 years to reach unicorn status (Invest India, 2023).

D. Unicorns of 2021 and Beyond

In 2021, India saw an unprecedented 45 startups enter the unicorn club, collectively valued at \$102.30 billion. These unicorns represent a diverse range of sectors, including NBFCs (non-banking financial companies), conversational messaging, cryptocurrency exchanges, direct-to-consumer (D2C) brands, and cloud kitchens. Many of these unicorns, including companies like Zomato, Nykaa, Policy Bazaar, Paytm, and Freshworks, have pursued public listings to expand their growth potential. Other notable

startups, such as Delhivery, Mobikwik, and CarDekho, are expected to follow suit with IPOs in the near future. In 2022, 22 more unicorns emerged with a combined valuation of \$29.2 billion, while 2023 witnessed the emergence of just one unicorn, Zepto, with a valuation of \$1.4 billion (Invest India, 2023).

E. Investor Trends and Funding Shifts

The Indian startup ecosystem continued to demonstrate its robustness in 2022, with 891 funding deals recorded in the first half of the year, representing an 82.8% increase compared to the first half of 2021. Startups raised over \$17 billion, nearly double the \$9.4 billion raised in the same period the previous year. Leading investors included Sequoia Capital India, Tiger Global Management, Kunal Shah (founder of CRED), Better Capital, and Inflection Point Ventures, among others.

The most funded sectors include fintech, edtech, e-commerce, social networking, foodtech, logistics, and healthtech. Fintech, edtech, and e-commerce alone accounted for 19.7%, 9.4%, and 6.2% of the total funding, respectively. In addition to traditional funding routes, Indian startups are exploring alternative options like crowdfunding, revenue-based financing, venture debt, and bank loans. Bootstrapped unicorns like Zerodha are shifting norms, promoting financial independence and early-stage revenue generation. Since the onset of COVID-19, a new trend has emerged where startups are entering the unicorn club without requiring billion-dollar investments (Invest India, 2023).

Case of IMK Live

IIMK LIVE: AI Laboratory for Innovation Venturing and Entrepreneurship of -Indian Institute of Management Kozhikode

- Total Available Balance with the Incubator :- ₹ 2,44,99,995
- Available Grant Balance with the Incubator :- ₹ 1,00,00,000
- Incubator Associated with IIMK Live: Since June 2021
- Evaluation Rate :- 75%

The Indian Institute of Management Kozhikode (IIMK), the fifth IIM established by the Government of India, is dedicated to advancing research and education in the field of management to meet the nation's human resource development objectives. Over the past two decades, the institute has made a substantial intellectual, economic, and social impact both nationally and locally. IIMK LIVE, the business incubator and entrepreneurship development center at IIM Kozhikode, was established in June 2016 with support from the Department of Science and Technology, Government of India. Designed as a National Centre of Excellence, the center aims to foster innovation, promote new business ventures, and support entrepreneurship. Its mission is to serve as a collaborative platform that transforms innovative ideas into successful business enterprises, driving significant economic and social impact. The primary focus of IIMK LIVE is the incubation of startup enterprises. In addition to its core Incubation Program for Start-ups, it engages in various activities to promote entrepreneurship both on the IIMK campus and within the broader community.

IIMK LIVE: AI Laboratory for Innovation Venturing and Entrepreneurship of -Indian Institute of Management Kozhikode

These initiatives include conducting training and research in entrepreneurship, fostering innovation through competitive events, offering pre-incubation support to refine business ideas, running accelerator and cohort-based programs to scale up ventures, and providing other essential support to entrepreneurs. As an on-campus incubator, IIMK LIVE benefits greatly from the expertise of faculty, access to research and knowledge resources, and the engagement of students, alumni, and institutional networks at IIM Kozhikode. Its incubation program is designed to help entrepreneurs launch and grow their business ventures into successful enterprises.

Key Features:

1. **Co-working Environment:** IIMK LIVE offers a modern co-working space called "LIVE HIVE" at the IIM Kozhikode campus in Kerala. This smart workspace is equipped with a secure Wi-Fi network, access to digital and physical library resources, cloud services, and essential amenities such as meeting rooms, a seminar hall, and a lounge. Startups also have access to shared services like fax machines, printers, scanners, teleconferencing, and projection equipment.
2. **Mentoring:** Mentorship is a crucial component of IIMK LIVE's incubation program. Startups are paired with mentors based on their specific needs, drawing from a pool of industry experts, serial entrepreneurs, angel investors, as well as IIMK faculty, alumni, and successful entrepreneurs, to provide guidance, coaching, and valuable connections.
3. **Training & Workshops:** A series of training programs and workshops are regularly organized by industry experts, academic professionals, and investors to help startups build sustainable organizations and navigate key challenges.
4. **Professional Services:** IIMK LIVE partners with service providers to offer discounted professional services such as cloud computing, accounting, auditing, financial services, legal and intellectual property (IP) assistance, and startup valuation. Periodic awareness sessions on these topics are also conducted on campus.
5. **Networking:** Startups are connected to a vast network of investors, mentors, and industry forums, providing them with valuable business insights and experiences. The overarching goal of IIMK LIVE is to offer the necessary support for entrepreneurs to grow their ventures into impactful commercial enterprises.
6. **Fundraising Support:** IIMK LIVE is well connected with the angel and venture capital communities, helping startups raise seed funding. The incubator also facilitates fundraising through various programs such as the Startup India Seed Fund Scheme, NIDHI-SSS, IIMK LIVE-MRPL Seed Fund Scheme, MSME Startup Seed Fund, and CSR grants.

Source: IMK Live, 2019.

F. Start-ups in The Healthcare Sector

Healthcare has become one of the largest sectors in India, both in terms of revenue and employment. It encompasses a wide range of services, including hospitals, medical devices, clinical trials, outsourcing, telemedicine, medical tourism, health insurance, and medical equipment. The sector is expanding rapidly, driven by improved coverage, enhanced services, and increased investment from both public and private players.

India's healthcare system is divided into two main components: public and private. The public healthcare system, run by the government, focuses on providing basic healthcare services through Primary Healthcare Centres (PHCs) in rural areas, with limited secondary and tertiary care facilities in major cities. In contrast, the private sector dominates secondary, tertiary, and quaternary care, primarily in metropolitan, tier-I, and tier-II cities.

India's competitive edge lies in its vast pool of highly skilled medical professionals and its cost-effectiveness compared to other countries in Asia and the West. Medical procedures in India cost roughly one-tenth of what they do in the US or Western Europe, making the country a growing destination for medical tourism, attracting patients globally. Additionally, India has become a hub for research and development (R&D) for international companies, owing to its lower clinical research costs.

Health-Tech Market in India

The Health-Tech market in India is growing at a CAGR of 39% as post the pandemic impact and estimated to achieve \$5 Bn by 2023. This growth has occurred due to digital shift, use of better technology, and favourable government policies. Noida-based health-tech start-up Innovaccor became the first Indian unicorn in

the healthcare sector currently valued at \$1.3 Bn. Innovaccer analyses healthcare data to provide actionable insights to healthcare providers, hospitals, insurance companies and other organisations and businesses. Pharmany, an online pharmacy and diagnostics brand, became a unicorn, bagging a valuation close to \$1.5 Bn. The online pharmacy is now planning to go public soon with a target valuation of about \$7 Bn through its IPO. Tata 1mg, Cure-fit and Pristyn Care have joined the unicorn club bringing the total number of Healthcare unicorns to 5 with a total valuation of \$12.79 Bn.

The Indian Healthcare industry including both the private and the government sector continued its healthy growth in 2023 and reached a value of US\$372 billion. As of 2024, the Indian healthcare sector is one of India's largest employers employing a total of 7.5 million people. Progress in telemedicine, virtual assistants, and data analytics is expected to create another 2.7-3.5 million new tech jobs.

Public expenditure in Healthcare

As per the Economic Survey 2022-23, India's public expenditure on healthcare touched 2.1 % of GDP in FY23 and 2.2% in FY22, against 1.6% in FY21. India's hospital market was valued at US\$98.98 billion in 2023. It is projected to grow at a CAGR of 8.0% from 2024 to 2032. It is estimated to reach US\$ 193.59 billion by 2032. Driven by increased demand for remote healthcare solutions and advancements in technology, the telemedicine market is expected to reach US\$5.4 billion by 2025. In FY24 (Till February 2024), premiums underwritten by health insurance companies grew to Rs. 2,63,082 crore (US\$ 31.84 billion).

Medical Tourism

The health segment has a 33.33% share in the total gross written premiums earned in the country. The health-tech sector is set for significant expansion, with a hiring projected to rise by 15-20% in 2024, reflecting the increasing demand for innovative healthcare solutions and the integration of technology in medical services.

Indian medical tourism market was valued at US\$7.69 billion in early 2024 and is expected to reach US\$14.31 billion by 2029. According to India Tourism Statistics, in 2023 around 634,561 foreign tourists came for medical treatment in India. This was nearly 6.87% of the total international tourists who visited the nation during the same period. With US\$5-6 billion size of medical value travel (MVT) and 500000 International patients annually, India is among the global leader destinations for international patients seeking advanced treatment. The e-health market size is estimated to reach US\$ 10.6 billion by 2025. As per information provided to the Lok Sabha by the Minister of Health & Family Welfare, Dr. Bharati Pravin Pawar, the doctor population ratio in the country is 1:854, assuming 80% availability of 12.68 lakh registered allopathic doctors and 5.65 lakh AYUSH doctors.

Investments and Developments

Between April 2000-March 2024, the FDI inflow for the drugs and pharmaceuticals sector stood at US\$ 22.57 billion. The Indian healthcare sector is witnessing unprecedented growth, with private equity and venture capital investments surpassing US\$1 billion in the first five months of 2024, marking a 220% increase from the previous year.

Inflows in sectors such as hospitals and diagnostic centres and medical and surgical appliances stood at US\$ 10.26 billion and US\$ 3.28 billion, respectively, between April 2000-March 2024. During 2022-23 (up to December 2022) Foreign Direct Investment, (FDI) inflow in India stood at US\$36,746 million. Some of the recent developments in the Indian healthcare industry were as follows:

1. Apollo 24|7 has merged with Keimed in a Rs. 2,475 crore (US\$ 296 million) deal. Furthermore, Advent International acquiring a 12.1% stake in the new entity valued at Rs. 22,481 crore (US\$ 2.69 billion). Apollo Hospitals will maintain a majority stake of at least 59.2%.
2. DocPlix, a health-tech startup, raised Rs 1.2 crore (US\$ 0.14 million) in a bridge round led by Inflection Point Ventures (IPV), aiming to digitize health records for India's 1.4 billion population and enhance healthcare accessibility.

3. IIT Bombay partners with Blockchain for Impact (BFI) to receive a US\$900,000 investment. The partnership aimed at developing affordable healthcare technologies, as part of a broader US\$15 million BFI-Biome initiative to address urgent health challenges and advance biomedical innovation.
4. In May 2023, Temasek, a Singaporean investment company, invested US\$ 2 billion in Manipal Health Enterprises, a leading healthcare provider in India, highlighting the growing interest in the Asian healthcare market.
5. In September 2023, Nirma a diversified Indian conglomerate, acquired a 75% stake in Glenmark Life Sciences, a pharmaceutical company, for US\$689 million. This transaction marked one of the biggest Indian healthcare M&A deals of the year.
6. As of August 1, 2023, a total of 24.33 crore Ayushman cards were created. To prevent, detect, and deter healthcare fraud and to ensure that eligible beneficiaries receive adequate treatment, the Government of India is using Artificial Intelligence (AI) and Machine Learning (ML).
7. In January 2022, Phase 3 trials commenced of India's first intranasal vaccine against COVID-19 which is being developed by Bharat Biotech, in conjunction with the Washington University School of Medicine in St Louis, the US. As of February 20, 2023, more than 220.63 crore COVID-19 vaccine doses were administered across the country. While as of May 11, 2023, more than 2.20 billion COVID-19 vaccine doses were administered across the country. As of July 15, 2023, India has exported 30.12 crore vaccine doses.
8. Multinational healthcare company Abbott has committed to converting 75 Primary Health Centres (PHCs) to Health and Wellness Centres (HWCs) in nine Indian States, in collaboration with AmeriCare's India Foundation, a nonprofit organisation dedicated to relief and development in the field of health. This would benefit over 2.5 million people from under-resourced communities every year.
9. In November 2022, diabetes management app BeatO raised US\$ 33 million in its Series B funding round led by impact investor Lightrock India.
10. In August 2022, Edelweiss General Insurance partnered with the Ministry of Health, Government of India, to help Indians generate their Ayushman Bharat Health Account (ABHA) number.
11. The healthcare and pharmaceutical sector in India had M&A activity worth US\$ 4.32 billion in the first half of 2022.
12. As of 2023, the number medical colleges in India stood at 706. In July 2022, the Indian Council of Medical Research (ICMR) released standard treatment guidelines for 51 common illnesses across 11 specialities to assist doctors, particularly in rural regions, in diagnosing, treating, or referring patients in time for improved treatment outcomes.
13. In July 2022, the National Pharmaceutical Pricing Authority (NPPA) fixed the retail prices for 84 drug formulations, including those used for the treatment of diabetes, headache, and high blood pressure.
14. In March 2022, Hyderabad-based pharmaceutical company Biological E applied for emergency use authorisation (EUA) for its Covid-19 vaccine Corbevax for the 5-12 years age group.

Startup HealthifyMe, with a total user base of 30 million people, is adding half a million new users every month and crossed US\$ 40 million ARR in January 2022.

1. The number of policies issued to women in FY21 stood at 93 lakhs, with one out of every three life insurance policies in FY21 sold to a woman.
2. As of November 18, 2021, 638 e-Hospitals are established across India as part of the central government's 'Digital India' initiative.
3. In November 2021, Aster DM Healthcare announced that it is planning Rs. 900 crore (US\$ 120.97 million) capital expenditure over the next three years to expand its presence in India, as it looks at increasing the share of revenue from the country to 40% of the total revenue by 2025.
4. In September 2021, Biocon Biologics Limited, a subsidiary of Biocon, announced a strategic alliance with Serum Institute Life Sciences, a subsidiary of Serum Institute of India (SII). The alliance is expected to strengthen India's position as a global vaccine and biologics manufacturing powerhouse.

G. Ideation, Innovation and Start-up at IIHMR University, Jaipur

IIHMR University has been fostering a start-up centre to promote new ideas of students of hospital and health management, pharmaceutical management and healthcare analytics. During 2000-2023, nearly 3000 students and interested entrepreneurs oriented towards healthcare start-ups, twenty crore funds were mobilised for new initiatives and sixty one start-ups were facilitated to achieve self-reliance.

i. Genesis of IIHMR Startup

IIHMR Startups is a collaborative unit of IIHMR Foundation and IIHMR University. It aims at fostering entrepreneurship through its Health Incubation Centre. IIHMR Startups is a unique Health Incubator supporting startups from Health and allied sectors. The focus is to nurture and stimulate health and health-based innovators, aspiring entrepreneurs, and early-stage start-ups.

IIHMR University is dedicated to the improvement in standards of health through better management of health care and related programmes. It seeks to accomplish this through management research, education, training, consultation, and networking in a national and global perspective. Keeping this 40 years legacy in mind university launched its Health Incubation Centre IIHMR Startups in October 2021 to support start-ups, innovations, and entrepreneurship in the health sector to respond to changing paradigm of health care globally and prepare the young IIHMRU graduates of hospital and health management, pharmaceutical management and development management.

The vision of IIHMR Startups is to become a global leader in healthcare innovation, empowering a diverse ecosystem of health startups and entrepreneurs to transform healthcare solutions and improve health outcomes for communities worldwide. The mission of IIHMR Startups is to accelerate healthcare innovation by connecting startups with industry leaders and providing essential support, including infrastructure, mentorship, and networking opportunities. We aim to promote the commercialization of diverse healthcare solutions, foster mutual growth, and enhance health outcomes for communities.

The objective of IIHMR Startups is to inspire and empower entrepreneurs to create innovative healthcare and medical technology solutions tailored to the unique needs of the Indian healthcare landscape.

- **Legacy of excellence:** With 40 years of experience in health management research, we are uniquely positioned to nurture MedTech and healthcare startups, providing them with the essential support needed to thrive and succeed.
- **Addressing market gaps:** As one of the few established health-focused incubators in India, it recognizes the growing demand for innovative solutions in the wake of recent global health challenges. The intention is to bridge existing gaps and strengthen the health startup ecosystem.
- **Unmatched expertise:** The sector-specific knowledge, combined with a vast network of resources and mentors, sets us apart from other institutions in India. IIHMR start-ups are committed to leveraging this expertise to support aspiring entrepreneurs in their journey toward building impactful healthcare enterprises.

ii. Ideation: Aarambh- Startup School

Aarambh- Startup School is an exclusive 3-month learning program designed for all the individuals who are curious about entrepreneurship, whether you're a faculty, working professional, student, startup founder or simply eager to explore the World of Entrepreneurship. This comprehensive program focuses on helping individuals expand their knowledge via workshops and mentoring sessions which will serve as a Launchpad to learn about the foundation of entrepreneurship and for those with unique and innovative ideas, providing them with the tools and guidance needed to transform their visions into viable ventures. During this transformative journey, participants will not only receive support in refining their ideas, identifying market

opportunities, and achieving customer validation but also will get a chance to learn from the prominent domain experts of the industry. The curriculum has been meticulously designed to cover the fundamental aspects of entrepreneurship, ensuring that everyone gains a strong foundation to establish and scale their ventures successful.

iii. Benefits of Aarambh- Startup School

1. **Prestigious Certification:** Earn a certificate that highlights your dedication and skills in entrepreneurship.
2. **Grant Opportunities:** Access grants up to INR 1 Lac to accelerate your idea or product development.
3. **Exclusive Resources:** Gain access to our extensive knowledge pool, upcoming events, and support for additional grants and seed funding.
4. **Complimentary Startup Services:** Access to services, including Zoho for Startups, AWS Credits, Digital Ocean Credits, MSG91, and more.
5. **Incubation Program - Saamarthya:** Get the opportunity to join our flagship incubation program – “Saamarthya”.
6. **Expert Mentorship:** Receive guidance from industry leaders and experienced professionals at IIHMR Startups.
7. **Industry & Investor Networking:** Connect with key industry players and potential investors to boost your startup journey.

Sl. No.	Data	Numbers
1	Total Numbers of Training Conducted	40
2	Total number of idea stage startups incubated in pre-incubation	21
3	No. of speakers and experts involved	17
4	Total No. of student innovators participated in this program	15
5	No. of beneficiaries received grant	4
6	Total Amount of Grant disbursed in this Program	200,000

Table 1: Achievement of Aarambh start-up school

iv. The Impact

As on October 2024, The IIHMR start-ups has 47 mentors. The start-ups have raised more than 20 crores external funds. The incubator unit has disbursed nearly 15 lacs internal funds to support 61 startups. More than 3000 students were oriented to various kind of startups. 162 trainings and workshops were conducted to promote new ideas and facilitate incubation. Till October 2024, 47 active start-ups are doing good business and created more than 350 employments.



47
Mentors



20+ CR
External Funds
raised by startups



15 Lacs
Internal Funds
disbursed by Incubator



61
Startups supported



47
Partners



3000+
Students oriented



350+
Jobs created



162
Training/ workshops



42
Active Startups

Figure 1: Glimpses of IIHMR Start-ups

Sl. No.	Name of Startup	Domain	Description
1	Wo-Care	Women Care using Technology	WoCare is developing a hardware solution connected with cloud based application system and striving to see a world where no new-born or mother dies during pregnancy
2	BlissCare	Edtech, Device for visually impaired	BlisCare is an edutech startup that aims to provide affordable digital classroom solutions for the students in visually impaired community.
3	Muditam Ayurveda	Health Drink	Muditam Ayurveda is India's first ayurvedic brand to launch natural detox & diabetic care effervescent tablets.
4	Logos Transformation	Training and Creative Content services provider	LOGOS Transformation offers the opportunity of dignified livelihood for people with disability or those disadvantaged who are otherwise capable, by training them.
5	Orrina	Organic Health Products	Orinna is an ayurveda brand providing products infused with Panchagavya ingredients, but also, customized health supplements and solutions for a variety of health conditions

Sl. No.	Name of Startup	Domain	Description
6	Sewaarth	Home Care Solution	Sewaarth Care is a unique home care solution startup that is bringing the best of care to your doorsteps.
7	Vitarka	Medical Devices	Vitarka is developing a glucose testing strip dispenser which will dispense testing strips one at a time solving the problem of degradation of enzyme present on the test strip.
8	SocioDent	Social Impact in Dentistry	SocioDent is focused on redefining oral care for dependent and disadvantaged individuals through product and service innovations.
9	Carepan	Tech led innovation in Pharmacy	A Unique e-Pharmacy and mobile Portal which serves people: Delivery of branded as well as generic drugs, Delivers Ayush and Alternative medication, Supply of equipment and medical products to B-B-C market
10	Packart	Waste recycling	Packart is doing waste recycling and creating sustainable things
11	Medyseva Technologies	Telehealth and Telemedicine	Medyseva is bridging the gap between urban doctors and rural patients. With a team of qualified specialist doctors and other healthcare professionals they provide teleconsultation and related healthcare services
12	DigiSwasthya Foundation	Telehealth and Telemedicine	DigiSwasthya aim to be self-sufficient as they provide early diagnosis and prevention of diseases through multiple interventions
13	Telemed on Wheels	Telehealth and Telemedicine	Telemedhealth interoperability made easy and affordable through an API Botz framework. A CMVR Approved Electric MeDBus which is equipped with basic medical device that could analyse and report the basic health and heart health of the patients
14	Mozek Healthtech	Medical Devices	Mozek is a wearable watch-like band, akin to fitness bands which monitors the patient's vitals to detect tonic-clonic seizures and alerts their family or other caregivers in real-time that they're experiencing a seizure
15	Easy Heals Technologies	Telehealth and Telemedicine	Digital Solution with EasyHeals achieves all of these – to ensure easy access of healthcare for everyone, located near to them, just a few clicks away.
16	Vini Brawn	Medical Devices	A device with an alarming circuit, with GPS tracking system for people suffering from Alzheimer condition

Sl. No.	Name of Startup	Domain	Description
17	Always Live Yoga	Wellness	They bring highly qualified trainers from Rishikesh, land of yoga. Take personal or group yoga classes & make this a lifelong habit to be yoga fit.
18	Kode Blue	Tech led innovation	Ayushmanbhava Technologies have built a one-stop communication system between ambulances & receiving hospitals. The data transfer is initiated right when the patient is onboard in the emergency vehicle, EMTs/paramedics inside the ambulance can use our mobile application to communicate the patient's case & vital signs in real time by using simple speech recognition and computer vision technology.
19	Sparcolife (Vyli)	Tech led innovation	Vyli (Sparcolife) is a Digital Health platform to detect and address Behavioral & Mental Health issues alongside the Reproductive Health Treatment, using the principles of Integrated Health Care.
20	Enrica	Medical Devices	Enrica is a healthcare startup working with a vision to develop an automated foot scrubber for diabetic as well as obese patients. This foot scrubber provides scrubbing and massaging experience with hygiene environment Furthermore chances of diabetes related foot problems will be reduced and it helps to prevent the feet from bacterial and viral infection. Moreover, it stimulates blood circulation on the foot.
21	VR Upchar	Digital therapeutics	They are focused on implementing and distributing immersive therapeutic into the Indian healthcare system and providing a deeply Researched and Evidence-based Therapeutic Virtual Reality Platform. They are providing proven and clinically validated XR therapies designed by the world's leading experts and deploying them across healthcare institutions.
22	Cares at Home Health Management Pvt. Ltd.	Home Care Solution	Cares At Home is India's fastest growing home health care technology company delivering high quality health care service at doorstep with high customer satisfaction rate.

Sl. No.	Name of Startup	Domain	Description
23	Edith healthcare	ICU Isolation Bed	Edith-ICU Isolation Bed is a unique hospital bed specially designed for Infectious disease & immunocompromised patients which filters air with 3-stage filtration & sterilization system, thus providing clean air to patients and outside environment which helps patients to recover faster and create a sterile environment for hospitals.
24	Telidox	Telehealth and Telemedicine	Telidox is a clinically-researched online platform for medical services. Through their platform, they are bridging the gap between the patients and doctors, pharmacies, path labs, and diagnostic centres in India and Africa
25	Jamitson	HealthTech	JAMITSON is jubilant automated machine intelligence technology (tools) solving optimisation needs and their Vision is to make (hardware/software) Automation affordable, available, accessible with maximum use cases
26	Advance Digitel Solution India Pvt. Ltd.	HealthTech	YORE Care is a Healthtech platform to Digitize, Preserve & Empower the Care Seeker. It is an effectively crafted digital product keeping end user at the center and integrating all the Offline and Online Healthcare services under one roof. It enables care seeker to build & revisit health and medical related market offerings.
27	Onco-Connect	HealthTech	They have developed a cancer care platform where they offer these services 1. Cancer Risk Prediction (Pre-Screen) 2. Cancer Screening Programs 3. Cancer Diagnostics & Pharmacy 4. Cancer Expert Opinions 5. Cancer Condition Management Programs. They work mainly in the insurance, life sciences, corporates, healthcare provider networks and employee benefit platform domains.

Sl. No.	Name of Startup	Domain	Description
28	Nirvesh Enterprises	HealthTech	Their company is a MedTech startup that is poised to revolutionize the Neurotech sector with our innovative solution Synapsil. For healthier brains, synaptic pruning can be spontaneous when engaged in activities. But for injured brain the degree of spontaneous change is limited. Hence, the after effects can be very scary especially for those who undergo post-operative acute care which is a complex affair that requires careful management and attention. It comes with several challenges that need to be addressed.
29	Pro and Supps Private Limited	Wellness	At Pro and Supps Private Limited, they are dedicated to elevating the standards of the Indian Nutrition and wellness industry through their cutting-edge product and technology. Their vision is to create a health-conscious economic ecosystem that supports informed consumer decisions. They recognize the negative impact of artificial additives and preservatives in nutritional supplements, and our products are designed to provide clean and nutritious options for macro and micro-nutrients deficient populations without compromising their health.
30	REFU Engineering Pvt. Ltd.	Biomedical Waste Management	At Refu Engineering, they are covering waste management sector which is mostly unorganized so far in the world, their idea is to make SMART BIN to solve enviro-social problems using technology to improve quality of life, In India. Their target customers are segmented as per the littering behavior of peoples i.e. Hospitals, Govt offices, Corporate offices, Railway stations, Airports, Hotels, Public Places etc.
31	Verdant one Health	Telehealth and Telemedicine	They are a lot sensors based telemedicine startup enabled affordable health for rural population in India
32	Vigorus Healthtech Private Limited(Chikitsa)	HealthTech	Chikitsa is a 360 degree automated healthcare solution right from booking appointment to getting prescription everything is automated. They provide an IOT Pad to doctors which is in the form of notepad on which the doctors can write the prescription by keeping paper on it and the prescription is stored in your chikitsa app at the same time you can also get the readable prescription on your WhatsApp as well and AI will convert doctors handwriting in a normal handwriting.

Sl. No.	Name of Startup	Domain	Description
33	BIO HUBB	Biotech	Bio Hubb is a bio-bank that aims to provide the highest quality processing and storage of human tissue samples for third-party research institutions. Their mission is to ensure the preservation of biological samples and their related information while facilitating research and innovation in various fields of study.
34	NeuraSim Pvt Ltd	VR	NeuraSim is core software based startup leveraging Xtended reality with AI as wearable technology to advance healthcare treatment. Bee Vee™, is a CE certified immersive virtual reality therapy that offers effective treatment options for Amblyopia (lazy eye), squint eyes, headache, and eye movement disorders. Their aim is to improve the quality of life of children with Amblyopia and other eye care problems.
35	Blue Phoenix Technologies Pvt. Ltd.	Medical Equipments	Blue Phoenix Technologies Pvt Ltd is into Design, R&D, Manufacturing and Marketing of Medical Devices. Their strongest asset is the superior quality of products. Each of the surgical devices has been soundly designed to serve its purpose well. Their range of Laparoscopic Instruments are designed and developed utilizing modern machinery and technology that is installed at their infrastructure facility.
36	ONI Cares Education	HealthTech	ONI is a connected ecosystem between ObGyns and Mothers. Third focus is to improve Patient Care and Health through Epigenetics. They use LEAP Score, which is a combination of WHO test to access the overall health of the mother. ObGyns are fully digitised so that they save on time and operational inefficiencies through a specialised EMR. Mothers are also digitised to provide with all consultations that the ObGyn does, reminders of prenatal visits and test, Education and Consultation on Epigenetics. Their focus is to improve Fetal Health and Labour outcomes
37	MedTel Healthcare Private Limited	Medical device	By using their IoT medical devices platform, they eliminate paper-based health data collection, and human errors, and provide reliable real-time data along with risk prediction and health analytics. This enables proactive, data-driven interventions, improving health outcomes.

Sl. No.	Name of Startup	Domain	Description
38	Nav-In	AR	Their idea is to provide a comprehensive indoor navigation solution to the healthcare system with a huge campus area that empowers users to effortlessly navigate and explore indoor spaces while offering venue owners invaluable tools for enhancing customer experiences and operational efficiency.
39	Merak Labs Pvt Ltd	Healthcare	Femease, is a one stop solution for women health and wellness providing curated plans for managing lifestyle disorders and diseases like PCOD, Diabetes, Arthritis through a blend of healthcare professional, fitness experts and nutritionists. Also, women can consult specialist doctors through telemedicine and use the application for period tracking, reading blogs and discussing in forums. Finally the e-com section provides curated products that improve their wellness relating to skin, hair, nutrition and menstruation.
40	Momcare healthcare solutions private limited	Healthcare	Newbees is the first and only platform available in India where a woman's journey is mapped from Pre-Pregnancy to Post Pregnancy. Through their accredited and clinically validated AI enabled data and information along with real time availability of specialists and round the clock data recovery through wearables, they wish to provide women a very safe and informed Pregnancy and child birth.
41	Larkai Healthcare Pvt. Ltd.	Medical device	Larkai is a global company that is dedicated to improving the lives of people by using Artificial Intelligence to detect heart Issues at an early stage. Their mission is to make this critical diagnostic process more accessible, affordable, and accurate, so that patients can receive prompt and life-saving treatments.
42	Mobilab	Medical device	Mobilab V1 is a multi parameter pocket size point-of-care testing (POCT) device. The device can provide up to 150 test with a single charge, app enabled digitally-connected ecosystem making robust even for the remotest locations. The platform enables testing of 25+ parameters related to Kidney, Heart, Liver and Pancreas, which are being developed phase-wise.

Table 2: List of active start-ups

H. How to get associated with IIHMR Start-ups

There are five steps by which one can be associated with the IIHMR Start-ups. It begins with ARAMBH, a three months pre-incubation programme for idea generation. This is followed by SAAMARTHYA, a four months growth incubation association when ideas are shaped into workable viable project. This is followed up by UTKARSH, a healthcare expo and investor connect programme. The viable startups then taken forward through health innovation challenge or healthathon. Finally, JIGYASA, a fireside chat with healthcare entrepreneurs are arranged to kick start the business ventures (Fig 2A).

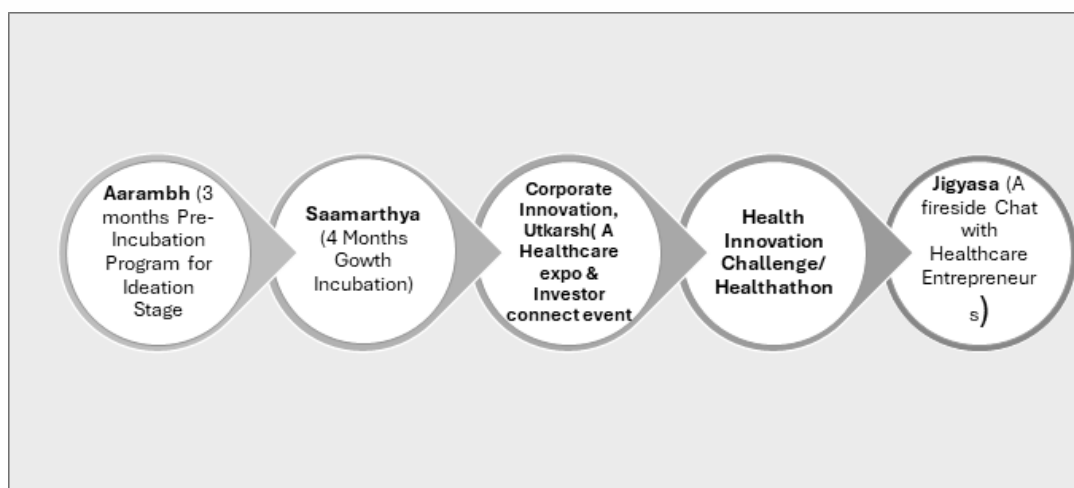


Fig 2A: Process of association with IIHMR start-ups

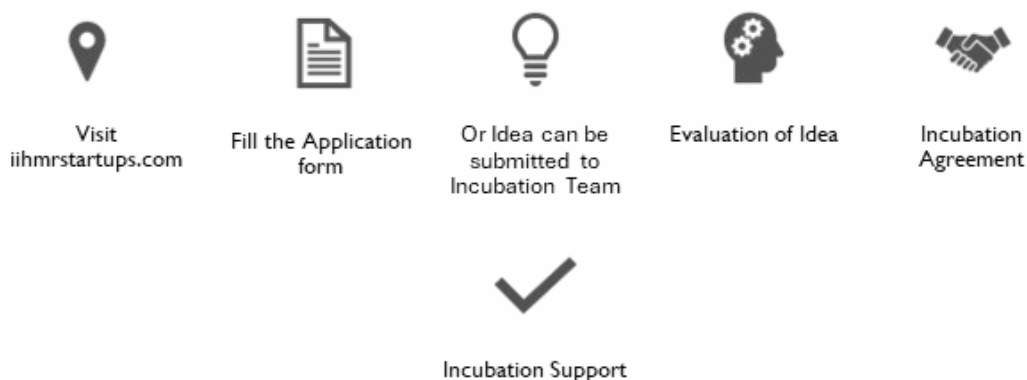


Fig 2B: Process of association with IIHMR start-ups

Conclusion

NEP 2020 has ushered a new era for fostering innovation and entrepreneurship at the higher education level. It has provided a grand opportunity for HEIs to be associated with entrepreneurs across the country as well as global level. Several universities have initiated the process and have made significant impact on young minds to be involved in business. Substantial progress has been made by Indian start-ups, particularly in the field of healthcare.

IIHMR University in collaboration with IIHMR Foundation has made phenomenal progress in promoting healthcare start-ups during 201-2024. Young MBA graduates are showing much interest in business ventures rather than seeking employment in established firms. If morning shows the day, then growth of IIHMR University's start-up has a bright future ahead.

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EDITORIAL TEAM



Prof. (Dr.) Sonal Singh

**Former Dean and Professor School of Studies in LIS
Vikram University, Ujjain (M.P.)**

Dr Sonal Singh, served as Former Dean-Faculty of Arts and Professor of Library & Information Science at Vikram University, Ujjain, Madhya Pradesh. She has a teaching experience of Thirty-Six (36) years and administrative experience of Heading the Department for Fifteen (15) years in addition to Seven (07) years' experience of Librarianship at Kendriya Vidyalaya (Central Government), Ujjain. She is M.Sc. (Zoology), M.Lib Sc., B.Ed., B.Mus. (Vocal), Ph.D. (Library Science), PGDCA and Sangeet Visharad in Kathak Dance. She has authored Four (04) books, and edited Thirteen (13) books and has contributed more than Two Hundred (200) papers in various

LIS Journals of repute and Conference Proceedings, translated SOUL Software manual in Hindi, delivered many Radio talks in Hindi and English, contributed many articles in Hindi in State level Newspapers to make the general public aware of the importance of library, thereby creating interest in library reading and contributing in the intellectual upliftment of the society.

Twenty-Three (23) Scholars have been awarded Ph.D. under her supervision in addition to Dissertation supervision of Thirty-Five (35) M.Phil. and Twenty-Six (26) MLISc students.

She has been the Key note speaker, Chief Speaker, Chairperson, Resource person in many International, National and Regional Conferences, refresher courses, orientation courses, workshops and short term training courses, member of Expert Committee at NCERT to develop a training manual for SCERT/SIBT, DIET and School Librarians and worked as Subject Expert with Commission of Scientific and Technical Terminology (Ministry of Human Resources), Government of India in preparation of definitional Dictionary of Library and Information Science, Organizer of INFLIBNET sponsored One week Regional Training Program for Library Automation (RTPLA), Two days National Conference on Contrivance of Academic Libraries in Digital Era (NCCALDE) and Two days International Conference on Opportunities and Challenges for Libraries in the Changing Education and Social Construct (OCLCESC) at Vikram University, Ujjain.

She has been Honored for the publicity of Malwa Language through musical means by Malwa Rangmanch on 5th September 1998, Honored on Librarian's Day by Government Ahilya Central Library in association of Indore Division Library Association on 12th August 2010, Guest of Honor at UGC sponsored National Seminar on New Dimensions in Library Management organized by SBES College of Science, Aurangabad on 31st August 2010, Honored by Professor Sushila Motiwale Best LIS Teacher Award on World Book Day- 23rd April, 2012, Guest of Honor at National Conference on Emerging Trends in Academic Libraries on 18th January 2013, Honored by Manisha Award by Bhartiya Manisha Sutram, Prayaga on 23rd July 2013, Honored by Distinguished Leadership Award by Home of Letters (India) on 28th November 2014, Honoured for contributing articles in Hindi at the Golden Jubilee function of Hindi Journal "Granthalaya Vigyan", on 13/10/2019, Honoured by Life Time Achievement Award by Madhya Pradesh Library Association on 14/12/2021, honoured by award of Honour by Shri Sammati Pustakalaya, Jaipur on 24/04/2022, honoured by Indian Library Pride Award by Anecdote Publishing House, New Delhi on 12/08/2022, honoured by Best Woman Teacher award Social Science and Management Welfare Association, Jabalpur on 09/04/2023, Lifetime Achievement award by Manav Rachna International Institute of Research and Studies, Faridabad, Haryana during international Conference on 18th August 2023, Dr. Sarvpalli Radhakrishnan Distinguished Professor and Researcher Award by Centre for Professional advancement Continuous Education, India on 5th September 2023, Real Life Hero award on United Nations Day Celebrations on 28th October 2023, Vikram Samman by Vikram University on 26th January 2024, Kriti Kusum Samman by Indore Division Library Association on 23rd April 2024, Honored with Shashi, shirfal and Abhinandan Patra by Indore Division Library Association on 12th August 2024, Lifetime Achievement Award by Library Professional Association on 20th February 2025.

She has launched a yearly award in the memory of her mother Smt. Kamla Shrivastava who was the student of the First batch of Library Science at Vikram University and was the student of S.R. Ranganathan. She served as the teacher of Library Science at K.R.G. College, Gwalior and then switched over to College Librarianship.

The award started under the banner of Madhya Pradesh Library Association as "MPLA LIS Student of the Year Smt. Kamla Shrivastava Memorial Award"

She is life member of Foundation for Information and Communication, ILA, IALIS, IASLIC, MANLIBNET and LPA. She is Patron member of ASLIP and LAB. She superannuated on 31st August 2024. During her Superannuation ceremony Three festschrift Volumes and a documentary was released on her contributions.



Dr. Bhaw Nath Pandey

**Dean, School of Information and Communication Studies and Head, DLIS
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Dr. Bhaw Nath Pandey, is Dean, School of Information and Communication Studies and Head, DLIS, Central University of Punjab (CUP), Bathinda, Punjab. He is a distinguished academic with over decades of academic experience. Holding a Ph.D. in LIS, he has been guiding Ph.D. scholars and has published over a dozen research papers. His contributions to areas like Knowledge Management, Information Management, Library Resources and Services and Educational Leadership, continue to have a measurable impact. He has been on the panel of reviewers of a number of peer reviewed national and international journals. He has also been on the panel of experts in faculty selection in different disciplines. He has been a member of Academic Council, Chairman of School Board and Board of Studies at the CUP. He has organised several international and national seminars and workshops where he has chaired as well as co-chaired plenary and technical session. He is a recipient of South Asia Foundation (SAF) Madanjeet Singh Scholarship-2004 (On behalf of Ambassador Madanjeet Singh, Goodwill Ambassador to UNESCO and Founder, South Asia Foundation).

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