STARTUPS AND INNOVATION ECOSYSTEM IN INDIA'S HEALTHCARE SECTOR: AN ECONOMIC, LEGAL AND POLICY ANALYSIS

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ABSTRACT

This article presents a comprehensive critical analysis of India's technological ecosystem, which has been robustly driven by startups, with a particular emphasis on the healthcare sector through the lens of economics, law and public policy. Recent trends like the surge to over 10,000 health and life-science startups by 2024 have been analysed along with investment patterns and their potential effects on the economy. Furthermore, the evolving regulatory framework consisting of corporate law reforms easing incorporation, digital health regulations that violate privacy and competition law adjustments and their impacts will be examined. From an economic point of view, the article looks into capital flows into biotech and digital health ventures and assesses how capital allocation influences R&D, scaling and labour markets. It also looks into the benefits of innovation being decentralized and the risks of resources being grossly misallocated. From a regulatory viewpoint, the article analyses how corporate law reforms have lowered the cost of entry and stimulated innovation. It also observes the trajectory of health-tech regulations and raises concerns regarding data-governance and vague compliance provisions presently accompanying the large scale innovation taking place. Both these viewpoints would be used simultaneously to identify salient governance gaps like incomplete health-data protection provisions, ineffective enforcement and the uneven impact of competition law on upcoming startup ventures in the health-tech sector. Through each observation, implications will be critically analysed and unresolved issues like fragmented health-data laws would be identified. This data-based analysis exposes gaps in research – like the limited study of how startup-led innovation affects public health outcomes or the impact of competition laws on innovation. This balanced analysis thus provides emphasis on both progress and blind spots in India's health innovation ecosystem and provides recommendations regarding public health, economic resilience and legal certainty, aiming to guide the policymakers towards a more effective and evidence-based framework.

Introduction

India's startup ecosystem has exploded in the recent past, with schemes like S*tartup India* and reforms to company law fueling this explosion[1]. Within this ecosystem, health technology has emerged as an area with great potential. With a population of over 1.4 billion people and rising healthcare needs, India's digital healthcare sector is one of the largest in the world[2]. Presently, there are hundreds of active health-tech firms which have attracted roughly $8 Billion in venture funding in the past decade[3]. For example, government data shows a tenfold increase in recognized health and life-sciences startups between 2020 and 22024 from approximately 900 to over 10000[4]. Investment trends further demonstrate this rapid growth with the funding for digital health peaking at $2.6 Billion in 2021[5].

But these shining figures conceal serious underlying challenges. The primary one being the survival rate of digital health ventures in India (approximately 80%) remaining substantially below the global average (approximately 92%)[6]. Health startups also involve complex dynamics within themselves. Some are disease-agnostic platforms that focus more on general health rather than specific diseases (comprising approximately 61% of the ecosystem)[7]. Such platforms mostly exist in Tier-2 and Tier-3 cities[8]. India's health sector itself is a major economic contributor with its National Institutes providing roughly 7.5 million direct health sector jobs in 2022[9]. Moreover, every $1 in health spending generates an additional $0.77 in GDP[10]. This is why by targeting significant market gaps systematically, health startups have yielded outsized welfare benefits[11].

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[1] Fox Mandal, *Recent Company and LLP Law Amendments Impacting Startups*, LEXOLOGY (MAY 2, 2025), https://www.lexology.com/library/detail.aspx?g=b5b3516c-b68e-4e60-b5d4-e4fafbf20271.

[2] Galen Growth, *India's Digital Health Ecosystem: Opportunities and Challenges for Investors*, GALEN GROWTH (AUG. 20, 2024), https://www.galengrowth.com/indias-digital-health-ecosystem-opportunities-and-challenges-for-investors/.

[3] Online Bureau, *India's Healthcare Startup Network Expands to Over 10,000 in 2024: Govt*, ET PHARMA (MAR. 13, 2025), https://pharma.economictimes.indiatimes.com/news/policy-and-regulations/indias-healthcare-startup-network-expands-to-over-10000-in-2024-govt/118956158.

[4] *id.*

[5] *supra* note 2.

[6] *id.*

[7] *id.*

[8] Manun Thakur, *India's Health Industry Startups: Key Business Opportunities and Growth Hurdles*, EXPRESS COMPUTER (JAN. 13, 2025), https://www.expresscomputer.in/guest-blogs/indias-health-industry-startups-key-business-opportunities-and-growth-hurdles/121036/.

[9] Rakesh Sarwal et al., *Investment Opportunities in India's Healthcare Sector* (NITI AAYOG MAR. 2021), https://www.niti.gov.in/sites/default/files/2023-02/InvestmentOpportunities_HealthcareSector.pdf.

[10] *id.*

[11] *supra* note 8.

This article explores these facts and their implications. Each statistic and policy change has been deliberately analyzed integrated by asking two main questions: Why the trend matters? and what it reveals about India's innovation ecosystem. This analysis would span across three dimensions:

1. **Economic –** The funding, market structure and sectoral trends like investment cycles[12], preventive care[13] and macro benefits[14] that impact health startups. Gaps like scant empirical work on the correlation between startup-driven innovation and improvement in access to healthcare and affordability at scale will also be highlighted and analyzed.

2. **Legal (Incorporation and Competition) –** Reforms in company/LLP laws that have simplified startup formation and governance[15] along with competition law developments pertinent to digital markets and healthcare have been analyzed. For example, the new deal-value thresholds capturing "killer acquisitions"[16], and CCI's review of health tech mergers like PharmEasy-Medlife[17]. The sufficiency of such reforms would be examined along with the probability of such reforms actually leading to increased friction, for example, extended compliance deadlines do ease burdens, but foreign companies face stringent related-party rules[18]. Gaps here include an absence of studies on the impact of competition law reforms over startups and innovation ecosystem in India.

3. **Public Policy (Health and Data Regulation) –** How policies shape the health innovation landscape will also be considered in this article. Recent steps like the Ayushman Bharat Digital Mission (NDHM) and the Digital Personal Data Protection Act (DPDP) 2023[19] have made a significant claim of transforming healthcare delivery and data usage, despite the flux of the legal regime[20]. Further, the lack of specific telemedicine law or health-data privacy law

[12] *supra* note 2.
[13] *supra* note 8.
[14] *supra* note 9.
[15] *supra* note 1.
[16] Sourav Paul, *Deal Value Thresholds under The Competition (Amendment) Act, 2023: A Balanced Approach to Killer Acquisitions*, CBFL NLU DELHI (JUL. 9, 2024), https://www.cbflnludelhi.in/post/deal-value-thresholds-under-the-competition-amendment-act-2023-a-balanced-approach-to-killer-acq.
[17] Sandeep Soni, *CCI Approves PharmEasy's Merger With Rival Medlife; Deal to Help Compete With Reliance, Amazon, Others*, THE FINANCIAL EXPRESS (Sept. 22, 2020), https://www.financialexpress.com/business/sme-cci-approves-pharmeasys-merger-with-rival-medlife-deal-to-help-compete-with-reliance-amazon-others-2089487/.
[18] *supra* note 1.
[19] Digital Personal Data Protection Act, No. 22 of 2023 (India).
[20] Jain, *Regulation of Digital Healthcare*, 11 *Healthcare* 911 (2023).

(DISHA) in India has also been analyzed[21]. Such a situations posits research questions about the regulatory uncertainty that health tech startups have to undergo and operate under[22]. Similarly, targeted programs like the Rs. 5000 Cr. PRIP scheme for pharma/med-tech R&D have been launched[23], but there is a glaring shortage of the independent evaluation of their real-world impact on innovation.[24]

In each section, the most recent and precise data will be presented and analyzed. By juxtaposing the facts and their subsequent analysis, gap will be pinpointed and highlighted. In what follows, the article highlights novel issues that merit attention first in the economic sphere, then in the legal and policy frameworks and finally form open questions and future courses of action.

Economic dynamics of india's health innovation ecosystem

India's health-tech startups operate at the intersection of massive demand and evolving markets.

- **Scale and Growth –** Government data and industry reports have shown a massive boom of health startups. There have been reports that have shown that DPIIT-recognized health-tech startups have grown at a 127% CAGR from 2016-2023[25], reaching over 10,000 in number in the latter year. On similar lines, a government press release notes that life sciences startups rose tenfold to more than 10,000 from 2020 to 2024[26]. Such an increase is partly attributed to the geography – particularly the intriguing fact that nearly half of these startups are located in Tier-2 and Tier-3 cities, suggesting that innovation is no longer confined to metropolitan centers and has started spreading far and wide[27]. Such figures further underscore a robust entrepreneurial ecosystem that has been pretty responsive to the healthcare needs of the nation. The rapid growth implies a large number of new entrants, each aiming to solve the problems and exploit the market gaps in the healthcare sector. On one hand, this dynamism has been highly promising in improving rural access through its distributive nature (e.g. telehealth being used to bridge doctor shortages). On the other hand, the same growth has strained resources

[21] Knowledge Ridge, *Role of the DPDP Act 2023 in India's Digital Healthcare Transformation*, KNOWLEDGE RIDGE(June 30, 2024), https://www.knowledgeridge.com/expert-views/DPDP-act-2023-in-indian-digital-healthcare.
[22] *supra* note 20.
[23] *supra* note 21.
[24] *supra* note 3.
[25] *supra* note 8.
[26] *supra* note 3.
[27] *supra* note 8.

like incubators and mentorship that has led to many small firms vying in the same niche, for example, mental health apps[28]. The aforementioned low survival rate of the firms also indicates that startups presently are unable to scale in a sustainable manner[29]. Despite such observations, it is still unclear if such obstacles are a result of underlying systemic issues or just unviable business models of recent health startups. This gap on the determination of the reason behind the struggles and emergence of health startups is quite under-explored. For example, there is negligible empirical research on the post-funding trajectories of health-tech startups, or on how sector-specific factors like patient mistrust or tech literacy influence survival.

- **Venture Capital and Funding Trends –** Venture capital in the sphere of digital health in India has seen highs and lows. There has been significant cumulative investment to the tune of $7.9 billion in the past decade[30], making India the second-largest digital-health market in Asia-Pacific. During the post-pandemic boom, funding peaked at $2.6 billion in 2021 and then declined in 2022-2023[31]. Since mid-2024, the funding has been stabilizing and PharmEasy's $500 million Series F in 2021 was a standard outlier that year[32]. Such volatility, though a common characteristic of emerging tech startups, has detrimental consequences. The pandemic-driven tech adoption in 2021 led to increase in the investor enthusiasm and subsequently led to the surge observed. The subsequent pullback, on the other hand reflects venture-tightening on a global scale. Due to the investors becoming more cautious, early-stage health startups have found it difficult to raise follow-up rounds. Furthermore, the dominance of a few large deals suggests the idea of concentration, thus, subsequently leading to harmful winner-takes-all dynamic. Reports have suggested that contemporary investors prefer investing in later-stage firms with proven models rather than early-stage ventures, thus leaving the latter with a struggle to procure sufficient funding[33]. This further motivates young firms to exit quickly and pivot. Even though such problems are quite prevalent, these effects have not been quantified at all. How does cyclicality influence startup strategy and innovation? Do downturns weed out less promising ventures or choke potentially transformative but long-gestation projects? In the absence of data-driven analysis on burn rates, valuations or time-to-profitability in the health startup space, such prime questions remain totally unanswered.

[28] *id.*
[29] *supra* note 2.
[30] *supra* note 2.
[31] *id.*
[32] *id.*
[33] *supra* note 8.

- **Market Focus and Trends –** Sectoral analysis further reveals some noteworthy emphases. India's health-tech startups are mostly disease-agnostic (61%)[34]. This means that these startups mostly build like general healthcare platforms like EMR systems, wellness apps and telemedicine portals rather than targeting some specific diseases. Such segments which have high driving potential include elder care, AI-based diagnostics, low-cost devices, mental health and preventive health[35]. For example, investors see an opportunity in disease-agnostic solutions that improve overall access due to the rise of AI-driven diagnostics and wearables in India that follows global tech trends and addresses the local burdens of NCDs[36]. Broad solutions in India's healthcare sector which is very fragmented makes perfect sense as generalized platforms can be quickly adapted across diseases and geographies. But this strategy is not totally foolproof. Will disease-agnostic startups deliver sufficiently in any given area or just digitalize superficial aspects of healthcare? Conversely, are more specialized startups like biotech drug developers underrepresented due to higher scientific and regulatory hurdles? Such a generalized approach raises all these questions which have not yet been sufficiently answered. The lack of disease-specific innovation indicates an untapped niche where high-value drugs or specialized care technologies can emerge. Another issue that arises pertains to the problem of "survival v. saturation". This is because with multiple overlapping solutions, price competition and customer acquisition can become cutthroat and brutal. The aforementioned 80% survival rate does suggest that only the most robust models survive such a shakeout. Even though this is such an alarming issue, there has been no quantification of this phenomenon in India. The same can be done by measuring what fractions of health startup truly scale (revenue, user base)? and how does market segment (tele-health v. devices) correlate with success? The answers and quantifications from such questions can also guide policy formation, for instance, if AI diagnostic startups face bank credit constraints, targeted funds or public-private programs can be designed.

- **Economic Impact and Multipliers –** The health sector has greater macroeconomic role. According to NITI Aayog and FICCI, India has become the fifth-largest employer by providing 4.7 million jobs in 2015 and has reached 7.5 million in 2022[37]. Importantly, it has been witnessed that health sector spending has multiplier effects. WHO has presented estimates that

[34] *supra* note 2.
[35] *supra* note 8.
[36] *supra* note 2.
[37] *supra* note 9.

each dollar invested in health yields an additional $0.77 in broader economic output[38]. This implies that health-tech substantially contributes to productivity via higher efficiency and better business models, thus spurring ripple effects in the economy. These macro facts do justify the widespread support for startups as improvements in health or its delivery don't just improve wellbeing, it drives growth and employment, including for women as the healthcare sector employs many women[39]. For instance, if a telemedicine startup reduces rural hospital visits, the travel costs thus saved might be used for various other purposes. However, such startup-specific impact is difficult to accurately quantify. There is a great lack of studies measuring how a health-tech platform changes healthcare expenditure patterns at a general population level. There are gaps in analyzing whether government initiatives like the Ayushman Bharat Insurance create market opportunities that can be exploited by startups. Furthermore, there has been lack of investigation regarding the contributions of health startups towards public health goals like disease prevention and their contribution to private markets too. Research can be done in order to analyze startup performance data and correlate it with regional health outcomes and or service quality indicators. Without such analysis, policy remains reactive and celebrates high startup counts without any true evidence on their impact on the health sector.

In conclusion, Indian healthcare innovation sector's economic landscape has shown considerable growth and potential, but is characterized by volatility and complexity. The picture that has thus emerged is one of market-driven expansion which has taken place in spite of various regulatory and infrastructural and regulatory bottlenecks. All of the aforementioned facts invite deep scrutiny. For instance, does the 127% CAGR data[40] on health startups reflects bubble dynamics or genuine market demand? Are investments being channeled towards impactful channels? By treating each such figure as a point of scrutiny and inquiry, one can conclude that a certain answer to any of these questions is rare and difficult to arrive at. This analysis thus sets the ground for examining the rules of the game.

Legal framework: incorporation, regulation and competition

While economic trends reveal *what* is happening in the innovation ecosystem in India, the legal framework reveals *how* startups operate and compete. This section examines the corporate laws shaping startups and competition laws dictating how they operate, especially for digital and

[38] *id.*
[39] *id.*
[40] *supra* note 8.

health sectors. In each sphere, recent reforms and practices will be juxtaposed with a critical analysis, thus highlighting where statutory designs raise new questions.

- **Corporate and Startup Incorporation Law –** India has actively revised company and LLP laws to smooth down the process of startup incorporation and compliance. The default corporate menas for startups – private companies, are governed under the Companies Act, 2013[41], while LLPs offer an alternative structure for such startups. Recent amendments materialized under the Startup India and Digital India initiatives[42], aim to streamline procedures and reduce burdens. The government has introduced several amendments to reduce red tape and enhance transparency. For example, the LLP (Third Amendment) Rules, 2023[43] require maintaining updated partner registers and disclosures and introduce significant beneficial ownership rules mirroring those for companies[44]. Importantly, filing deadlines were extended and penalties were waived by the regulators, thus recognizing the limited capabilities of startups[45]. The Registrar of Companies gave LLPs additional time till May, 2024 to file critical forms about beneficial interests[46]. Similarly, routine filing deadlines (Forms 3, 4 and 11) were pushed to 30 November, 2024[47]. These changes sufficiently ease compliance for startups which are short on cash. At face value, such relaxed deadlines and unified beneficial-owner regulations enhance accountability without suffocating enterprises, but this creates a cluster of compliances with startups having larger workloads. There is hardly any empirical evidence to actually suggest that such deferrals actually help entrepreneurs to focus more on the core business rather than just delaying headaches. Further, transparency measures like disclosure of partners may conflict with the startups' desire to maintain confidentiality in the initial stages in order to attract investors – a tension that has not at all been fully resolved. Some questions need to be asked at this juncture – do such regulations hinder funding from informal sources like close-knit friends and family? Do such regulations prevent fraud? The answer to these questions, which are clearly lacking, would help one to determine the attitude of startups towards such legal developments. Moreover, to reduce financial pressures, the tax code has offered relief under Section 80-IAC of the Income Tax Act[48], which grants a 100% tax

[41] Companies Act, 2013, No. 18 of 2013 (India).
[42] *supra* note 1.
[43] *Limited Liability Partnership (Third Amendment) Rules, 2023*, G.S.R. 803(e), *Gazette of India, Extraordinary, Part II—Sec. 3(i)* (Oct. 27, 2023) (India).
[44] *supra* note 1.
[45] *id.*
[46] *id.*
[47] *id.*
[48] Income-tax Act, No. 43 of 1961, § 80-IAC (India).

deduction on profits for up to three assessment years. Notably, this exemption has been extended multiple times: as of 2025, startups can take advantage of this exemption until April 1, 2030 (extended from 2025)[49]. This has been shown by the government as measures being taken to provide additional time to operate by providing tax breaks, which is of great help during the crucial early years[50]. Even though extending tax benefits does incentivize incorporation and gives breathing space during scaling, but a pertinent question that arises is if those same firms would have survived without such benefits, i.e., is the law capturing firms that genuinely needed a break or is it just aimlessly providing blanket exemptions? By definition, the benefit expires after a few years, which creates a fiscal cliff wherein startups which have scaled suddenly have to pay full tax and directions to plan for such a cliff from the government's side are totally absent. Therefore, alteration of strategies, for example, reinvesting profits to stay in deduction by fast growing health-tech startups while nearing expiry of such tax benefits is one of the speculative strategies that has been suggested. But in absence of concrete data, it is a mere hypothesis. Hence, there is a need for research on the distributional effect of Section 80-IAC[51] in the health-tech sector and whether it biases startups towards short-term profitability versus long-term innovation. India has further modified rules in order to attract global entrepreneurship and investments. In September 2024, the MCA fast-tracked cross-border restructurings: a foreign-incorporated startup can now "reverse merge" into its Indian subsidiary without the lengthy procedure to obtain the NCLT approval[52]. This streamlines the process from over a year to just a few months. For example, a U.S. startup owned by an Indian founder could reorganize quickly under the Indian law. Such measures recognize the reality of founders who incorporate their companies abroad but want access to Indian capital and markets. Health startups often need global partnerships, for example, med-tech hardware co-developed overseas. Therefore, this step is really helpful. But it also creates a legal loophole: foreign entities with just nominal Indian presence can list themselves as startups and take advantage of tax breaks and many other benefits that are offered. There was an attempt to address this legally by requiring a minimum level of Indian operations, but the impact of such attempts remains uncertain. Policymakers need to investigate whether these reverse mergers lead to creation of shell companies that exploit Indian benefits or if they genuinely deepen domestic research. Therefore, it can be concluded that company law reforms

[49] *supra* note 1.
[50] *id.*
[51] *supra* note 48.
[52] *supra* note 1.

have led to greater flexibility and transparency as these were enacted with an explicit policy goal of making India a hub of startup activity in mind[53]. But each change raises significant questions relating to the real impact of such reforms on innovation[54]. For instance, while compliance extensions help, the underlying complexities relating to multiple forms and evolving regulations still require legal expertise, which is absent is many small startups. A systematic survey on compliance costs before and after these reforms were enacted by the government would better help in evaluating the impact of such government reforms. Furthermore, the cumulative effect of multiple overlapping amendments in company law, LLP rules, tax, etc. on startup behavior needs to be rigorously assessed. This is an alarming gap as without sufficient data, policymakers risk equating deregulation with growth without taking note of the unintended burdens of loopholes that may exist.

- **Competition Law and Market Dynamics –** Startup innovation does not occur in a vacuum. Competition law dictates when and how firms can merge, the constraints on market power and what constitutes as an anti-competitive product. These questions have become really pertinent for the digital and health markets. The Competition Act, 2002[55] has made it mandatory to obtain pre-merger clearance for M&A crossing financial or asset thresholds. Historically, Indian thresholds have not captured high-value deals with limited local turnover which has been a loophole that has been exploited by 'killer acquisitions.' A well-known case is that of Zomato wherein Zomato bough out UberEats India, with the valuation of the deal being around Rs. 2500 Crore in 2020[56]. This deal escaped the CCI's scrutiny as Zomato's turnover was below the threshold. Due to such gaps, the Competition (Amendment) Act, 2023[57] introduced a new deal-value threshold. It states that any acquisition over Rs. 2000 Cr., if the target has substantial business in India, it now requires CCI approval[58]. In practice, this widens the safety net as it is a "significant milestone" to capture large startup deals[59]. The motivation behind the latest amendment was the apprehension about tech giants undermining smaller enterprises. In health-tech, this could apply to a large pharma company or an insurer acquiring a promising tele-health startup. By design, a situation should be prevented where, for example, an established e-pharmacy platform acquires an AI diagnostics startup without any scrutiny. On the positive

[53] *id.*
[54] *id.*
[55] Competition Act, 2002, No. 12 of 2003 (India).
[56] *supra* note 16.
[57] *id.*
[58] *id.*
[59] *id.*

side, it protects competition and preserves venture exits. But there is a catch: this greater scrutiny can possibly lead to the deterrence of consolidation that has the chance to enhance efficiency as acquisitions are often exit routes for investors[60]. Early indicators like a report stating a 71% drop in startup deal value in 2024 suggests that there is delaying and downsizing of transactions in anticipation of stricter review and scrutiny[61]. This raises serious questions relating to the slowdown of necessary capital flow as well as skewing of deals and acquisitions under the radar. A comparative analysis with jurisdictions like EU, which has established a new test to determine any significant impact of effective competition can provide valuable insights but there has been no systematic study of the same effect in India[62]. India has been considering wider reforms for digital markets, like the proposed Digital Competition Bill[63]. While such reforms are aimed at giants like Google and Amazon, if platform rules do undergo a change, it will matter for startups too. It can be easily analyzed that India's approach to digital mergers has historically been quite measured. The government in India has not reversed the burden of proof or mandated probabilistic tests, unlike its western counterparts[64]. Such a stance is concerned with the interest of capturing large deals without disrupting the basic rules of a merger[65]. For health startups, this means that the current focus is on post-entry mergers rather than ex-ante regulation of platform power. But health-tech is increasingly power-driven. For example, online pharmacy networks and telemedicine marketplaces. In such a scenario, there is an inherent risk that without proactive oversight, a few dominant platforms could emerge, potentially stifling smaller investors. For example, one national telemedicine portal vs. multiple clinics. But there has been an absence of study and research on the exhibition of natural monopolistic tendencies by Indian health platforms and when exactly should the CCI step in to prevent such a scenario. The CCI itself has seen handful of cases involving digital conduct, for example, the BharatMatrimony-Google case took 6 years. Theres is no study on this pertaining to the healthcare sector. Therefore, empirical research by evaluating market concentration in online pharmacies or lab testing is needed as without it, policymakers rely on analogous data from general digital markets which may or may not apply to health. The CCI has already been active in health-tech deals. For example, it approved the merger of two major online pharmacies – PharmEasy and MedLife[66]. This notable merger was described as a

[60] *id.*
[61] *id.*
[62] *id.*
[63] Digital Competition Bill, 2024 (draft), Ministry of Corporate Affairs (India), released Mar. 12, 2024.
[64] *id.*
[65] *id.*
[66] *supra* note 17.

strategic merger with no financial involvements and designed to help both firms compete with giants like Reliance and Amazon[67]. Such behavior and approach of the CCI suggests that consolidation will be allowed if it enhances viability in a competitive battleground. But, the impact of such mergers on consumer welfare in the form of lower prices and better services has not been documented at all. This merger shows a tension: consolidation has the ability to rescue startups from cut-throat competition, which is a positive aspect, but on the other hand, if it is taken too far, there will be a reduction in the number of independent players which is an obvious negative. Actions of the CCI can be said to be a strategy to approve mergers that create a buzz and stimulate investors[68]. This hints at the fact that competition authorities themselves are concerned with startup funding cycles. This blurs the line between anti-trust and industrial policy. There needs to be an analysis of CCI orders and data in order to determine how competition interventions align or conflict with startup ecosystem goals. Due to the absence of such analysis, questions relating to blocking mergers which would have delivered innovation and approving those which lead to formation of dominant firms remain totally unanswered. In sum, Indian competition law is adapting to the digital and startup realities of the new age, but many questions still remain unanswered. The introduction of deal-value thresholds has been a significant step in controlling 'killer acquisitions,'[69] but the practical impact of such measures has not yet been totally unfolded. The balance between preventing anticompetitive consolidation and preserving investment incentives is delicate. Therefore, a systematic evaluation of these rules is necessary. This can be done by tracking the number and type of transactions filed post the 2023 amendment and by assessing the market outcomes. Sector specific issues in healthcare like the consideration of patient welfare as result of healthcare being a public good and the lack of scholarships in these intersections should be thoroughly examined too. Overall, while legal reforms like corporate tax breaks and compliance eases do reduce entry costs, others like competition law reforms can both protect and complicate startups[70]. These debates are far from being settled and the legal landscape with respect to the health-tech sector is itself an evolving experiment as many proposed bills like DPDP[71] and DCB[72] may further alter rules and that is why a continual evidence-based review, something

[67] *id.*
[68] *id.*
[69] *supra* note 16.
[70] *supra* note 1.
[71] *supra* note 19.
[72] *supra* note 63.

which has not yet been comprehensively done for India's health innovation ecosystem, needs to be materialized.

Public policy and health innovation

India's public policies on health and innovation both enable and prove to be a roadblock for startups. In this section, key policy actions affecting the health innovation ecosystem have been examined and paired with the appropriate critique.

- **Startup-Friendly Policies –** Broad entrepreneurship policies like Startup India, Atal Innovation Mission, Startup Funds, etc. indirectly benefit healthcare entrepreneurs. For example, Startup India's simplified rules regarding patents, incubation grants and recognition schemes offered support across sectors[73]. Tax exemptions were also provided by the 2025 Union Budget to the startups, which led to the removal of the infamous 'angel tax' on investments above fair market value[74]. This step was widely praised as it reduced compliance burdens and fostered a more supportive environment[75]. Furthermore, foreign startups have also benefitted from relaxed merger rules[76]. These general policies do indicate a pro-entrepreneurial stance and have certainly benefitted health startups as well. But the question is about the fulfilment of sector-specific needs. Health innovation often requires heavy R&D and regulatory approvals like clinical trials and device licenses and generic startup benefits do not sufficiently cover these costs. For example, India's new Medical Devices Policy of 2023 encourages manufacturing innovation, but rural clinical infrastructure remains weak[77]. Government programs like the PRIP scheme which are research-linked incentives for pharma and med-tech launched in 2023 are rare exceptions of sector-specific target schemes[78]. But how these schemes have fared in channeling resources to startups is yet to be evaluated. Are PRIP funds being matched by agile young firms, or flowing mainly to established labs? Lastly, initiatives like the Clinical Trials Network aim to integrate industry and research, but it is unclear if startups can compete with big pharma in accessing these resources[79].

- **Digital Health Infrastructure (NDHM/NDHB) –** One of the most novel policies is the

[73] *id.*
[74] *supra* note 8.
[75] *id.*
[76] *supra* note 1.
[77] *supra* note 8.
[78] *supra* note 3.
[79] *id.*

Ayushman Bharat Digital Mission (formerly NDHM) – a centralized digital health ID and records system established with an aim to create "digital building blocks" like data consent manager, health lockers and registries in order to unify patient data[80]. Complementing this is the draft Digital Health Blueprint and the proposed Digital Information Security in Healthcare Act (DISHA)[81] – which is India's version of HIPAA[82] – to standardize health-data privacy[83]. The government also launched telemedicine practice guidelines in 2020 and set the target of spending 2.5% of the GDP on health by 2025 as per the National Health Policy of 2017. These policies do have the potential to greatly benefit health startups as a robust digital health infra could provide health startups ready access to medical records with consent and streamline insurance processes. However, stringent data standards could raise entry barriers if compliance becomes expensive. The reality today is mixed. On one hand, NDHM's building blocks like the health ID are available, but adoption by states and private providers in uneven and uncertain. Furthermore, the legal framework is incomplete as Indian tech laws do not explicitly address telehealth and there are still no strong data protection laws for health data[84]. DISHA[85] was drafted to create the National Electronic Health Authority (NeHA) and to codify e-health norms, but it has not yet been enacted[86]. Instead, India has enacted the general DPDP Act, 2023[87], which covers personal data on a general level[88]. There is a notable gap here since there is no cohesive legal framework specifically for digital health which raises questions regarding the navigation of health startups in this sphere. For instance, an AI diagnostic app might arguably deal in "sensitive personal data", which is now a defined term under DPDP[89]. In such a case, it has to obtain express consent and possibly appoint a data officer, but the exact requirements still remain ambiguous[90]. Meanwhile, India's first healthcare privacy law lays dormant[91]. This regulatory uncertainty raises many questions. Are startups deterred from entering due to uncertain rules? Do they implement best practices voluntarily (perhaps guided by global norms)? Policymakers need to evaluate industry feedback on these regulations.

[80] *supra* note 9.
[81] Digital Information Security in Healthcare Act, 2018 (draft), Ministry of Health & Family Welfare (India).
[82] Health Insurance Portability and Accountability Act of 1996 (HIPAA), 42 U.S.C. §§ 1320d–1320d-9 (2018).
[83] *supra* note 21.
[84] *supra* note 20.
[85] *supra* note 81.
[86] *supra* note 21.
[87] *supra* note 19.
[88] *supra* note 21.
[89] *supra* note 19.
[90] *supra* note 21.
[91] *supra* note 8.

- **Healthcare Delivery Programs –** Government health schemes directly impact the health startup landscape. The Pradhan Mantri Jan Arogya Yojana (PMJAY) insurance cover, National Telemedicine Services (eSanjeevani) and public health digital stacks are points of interface for private innovators. For example, e-pharmacy startups must grapple with the Drugs and Cosmetics Act[92] as all medical devices were recently reclassified as drugs for pricing control[93]. This means that a startup selling a diagnostic kit might face drug-level price caps, thus disincentivizing innovation. Government procurement policies, which favor public over private clinics also affect market opportunities. Therefore, there is a policy tension: the State wants affordable healthcare due to which it has implemented price controls and free services but also encourages private innovation. The extent of healthy co-existence of these two aspects is still unclear. For example, does price-capping a med-tech device innovation encourage domestic R&D by guaranteeing affordability or does it deter investment by squeezing margins? There is no empirical study on this. Similarly, ambulatory startups may seek to integrate with PMJAY, but bureaucratic hurdles remain. On the positive side, the expansion of health insurance can expand the demand for startups offering digital insurance broking and cashless services. However, research on such market linkages is scarce.

In sum, India's public policy status for health innovation is actively evolving. The government has launched high profile programs like NDHM and PRIP that have contributed in reshaping the ecosystem and has continued to extend general startup incentives[94]. But, analysis of the on-ground effects of such schemes is lacking[95].

Emerging challenges in the ecosystem

Throughout the above analysis, a recurrent theme is that many policy assumptions remain untested. As a result, some of the most salient challenges that emerge are:

- **Outcome Measurement –** There is a stark absence of systematic evaluation of the impact of startups on health outcomes or systematic efficiency. For example, the fund flow towards digital health is known but how such funds translate into patient access or disease control is widely unknown[96]. Comparative studies using state-wise data could inform whether regions

[92] Drugs and Cosmetics Act, 1940, No. 23 of 1940 (India).
[93] *supra* note 8.
[94] *supra* note 1.
[95] *supra* note 3.
[96] *supra* note 2.

with many startups see improved health indicators. Empirical work in the economic sphere could also estimate the return on health-tech investments, thus filling the gap left by output-focused statistics.

- **Regulatory Complexity v. Innovation –** The interaction of regulations like corporate, tax, healthcare and data privacy has not been thoroughly modeled. There has been a lack of research on how these overlapping regulations like needing both DPDP[97] compliance and telemedicine guidelines affect decision making in startups. Ethnographic studies or legal analyses of startup experiences could uncover various barriers too.

- **Competition and Market Structure –** There has been negligible research on market concentration in Indian health-tech. Do cities have dominant players in telemedicine or diagnostics? If so, how do they enter or exit the markets? Academic case studies or market surveys could inform whether antitrust enforcement is needed and where it might be concentrated. Furthermore, study on informal competition like unregulated patent medicine shops and how they coexist with tech startups can also be undertaken.

- **Investor Behavior and Corporate Strategy –** The noted funding patterns showing peak and decline, which focus on later-stage deals raise strategic questions like do investors seek quick exits because they are too shortsighted to support deep innovations and novel devices that need more than 5 years? [98] Similarly, what role do large conglomerates like Reliance and Amazon play in the ecosystem – is it one of crowding-in innovation by creating markets or one of outnumbering small players through acquisitions?

- **Equity and Inclusion –** Nearly half of the health startups are in smaller cities[99], which is advantageous, but it poses questions on availability of resources like talent and infrastructure. It also needs to be evaluated whether startups in Tier-2/3 cities are systematically different with regards to addressing rural needs and whether such startups face unique hurdles in the form of state-specific enactments and regulations. Another equity angle is gender: given the health sector's high female employment[100], how many women-founded health startups exist, and do they receive equal support? These questions do touch on socio-economic policy gaps.

[97] *supra* note 19.
[98] *supra* note 8.
[99] *id.*
[100] *supra* note 9.

- **Integration with Public Health –** Lastly, a gap exists in integrating startups into India's public health goals. For instance, the government aims to increase health spending to 2.5% of the GDP by 2025 according to NHP, 2017, but without proper mechanisms to trigger private innovation, increased funding will only benefit existing institutions. There is little analysis of how startups could be systematically involved in national programs like TB elimination and maternal health. Pilot programs like state tele-ICU networks exist, but strict assessment of their value is missing.

Conclusion

India's startup and innovation ecosystem has been changing rapidly, especially in the health sector and it can only move forward if policies and practices are designed to convert innovation into tangible healthcare gains. The future lies in reconciling capital, regulation and technology with patient outcomes. Funding mechanisms must have a positive social impact alongside financial returns. Investor incentives like tax benefits and government-backed funds should be linked to measurable health outcomes like increased rural access, better affordability of diagnostic services or reduction in treatment times. Furthermore, digital health regulation must be compiled into a coherent framework that strikes the perfect balance between innovation and protection of rights. A uniform, sector-specific digital health-code which integrates data privacy, interoperability and security norms has to be enacted in order to provide the startups with clarity and the patients with trust. Such a code must be developed in collaboration with innovators, hospitals and civil society to ensure practical enforceability. Also, regulatory tests can be implemented to test novel health-tech business models under flexible supervision. Such oversight ensures that startups are not suffocated by ancient frameworks, while at the same time preventing dominance by a few firms. Moreover, government procurement and insurance systems should actively integrate health-tech solutions and create guaranteed markets for startups which are engaged in serving underserved communities. Thus, tiered pricing and reimbursement models can incentivize solutions tailored specifically for rural and low-income communities which makes inclusive healthcare commercially viable. Lastly, collaboration across disciplines is important. Economists, lawyers, technologists and public health experts have to work together in order to create empirical evidence on what works in the Indian context. Dedicated research centers and policy labs can provide continuous feedback to startups and regulators, thus ensuring that the ecosystem matures in a way that strengthens both innovation and equity. By implementing such solutions into practice, India can transform its health innovation ecosystem into a globally significant model of inclusivity.