

# A STUDY ON FIN-TECH INNOVATION IN TRANSFORMING INDIA'S HIGHER EDUCATION SECTOR

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## ABSTRACT

The rapid expansion of financial technology (Fin-Tech) has significantly transformed various industries, including India's higher education sector. As the world's third-largest education system, following the United States and China, India is experiencing a major shift in financial accessibility and management. The integration of digital platforms, mobile payment systems, and alternative financing solutions has improved affordability and inclusivity for students from diverse economic backgrounds. This study examines the role of Fin-Tech innovations in addressing key challenges such as accessibility, affordability, and financial inclusion in higher education. It highlights the impact of digital financial products, including student loans, scholarship management systems, and automated fee payment solutions, in reducing financial burdens on students and institutions.

Furthermore, the research explores the potential of Fin-Tech adoption in India's education sector, emphasizing its role in promoting economic growth, financial literacy, and social mobility. The findings suggest that digital financial solutions enhance efficiency, reduce administrative complexities, and contribute to a more inclusive and sustainable learning ecosystem.

**Keywords:** Fin-Tech, Higher Education, Digital Payments, Financial Inclusion, Student Loans

## **INTRODUCTION**

Financial technology (Fin-Tech) is revolutionizing industries by integrating finance with technology, making financial transactions faster, more efficient, and widely accessible. While traditionally associated with banking and investment, Fin-Tech has now extended its impact to education, offering digital solutions that simplify fee payments, enhance financial accessibility, and improve personal finance management for students. The shift from traditional banking to digital financial services has eliminated the need for physical visits to financial institutions, reducing operational inefficiencies and expanding financial access. Innovations such as mobile banking, digital payments, and AI-driven financial management tools have transformed financial services, making them more adaptable to modern needs. Leveraging technologies like big data, artificial intelligence (AI), and automation, Fin-Tech has introduced cost-effective financial solutions that enhance funding, investment, and financial planning in education. The COVID-19 pandemic further accelerated the adoption of digital financial solutions, driving greater reliance on Fin-Tech for student loans, scholarship disbursement, and automated fee processing. This study explores how Fin-Tech is reshaping India's higher education sector by improving financial accessibility, streamlining administrative processes, and promoting economic inclusion.

## **OBJECTIVES**

- To analyse how Fin-Tech enhances financial support and accessibility for students in India's higher education system.
- To explore the impact of digital payments, student loans, and alternative financing on the affordability of higher education.
- To identify the challenges and opportunities in adopting Fin-Tech for education, including security concerns and regulatory policies.

- To assess how Fin-Tech can reduce financial and regional inequalities, improving access to higher education across India.

## **LITERATURE REVIEW**

Ernst & Young (2019)<sup>[2]</sup> conducted a global survey ranking India and China as having the highest Fin-Tech adoption rate at 87%, highlighting the rapid digital transformation in financial services. Vijai (2019)<sup>[9]</sup> emphasized that Fin-Tech innovations have significantly contributed to India's economic growth by enhancing financial accessibility and efficiency. Former RBI Governor Shaktikanta Das (2019)<sup>[8]</sup> also underscored Fin-Tech's potential in financial inclusion and transformation, particularly in improving access to banking and financial services. Kumar and Singh (2022)<sup>[4]</sup> explored the role of Fin-Tech-driven student loans in higher education, revealing that digital lending platforms offer faster processing, flexible repayment options, and lower interest rates, thereby benefiting students from economically weaker backgrounds. Patel and Bhat (2023)<sup>[6]</sup> identified regulatory challenges in India's Fin-Tech sector, particularly the absence of clear guidelines and data privacy concerns, which hinder seamless integration into education financing. Mehta and Rao (2021)<sup>[5]</sup> examined how block chain and AI are enhancing transparency, security, and efficiency in student loan management, while Sharma and Verma (2022)<sup>[7]</sup> analyzed the growing adoption of digital financial solutions in Indian universities, leading to improved fee management and financial aid access. Gupta and Desai (2023)<sup>[3]</sup> highlighted the impact of digital payment systems, such as UPI and mobile banking, in expanding financial inclusion for students. Additionally, Banerjee (2023)<sup>[1]</sup> assessed government policies supporting Fin-Tech adoption in education, emphasizing the need for regulatory frameworks to facilitate its sustainable growth. Collectively, these studies illustrate how Fin-Tech is transforming India's higher education landscape by improving accessibility, affordability, and efficiency in financial transactions while addressing key regulatory and technological challenges.

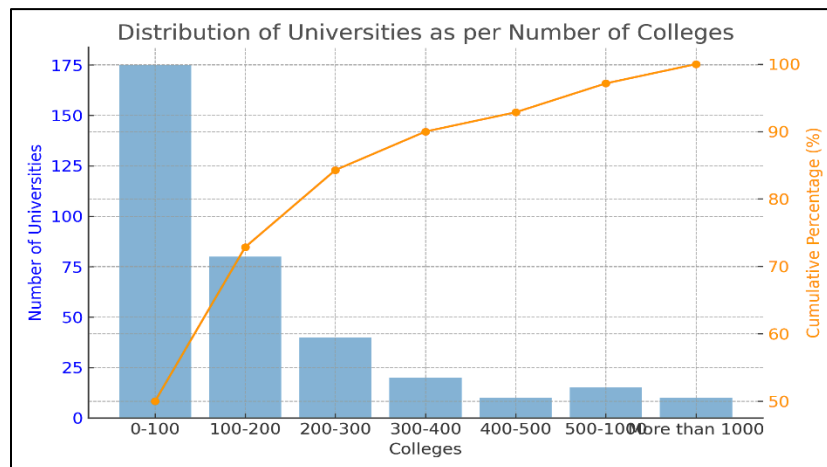
## **RESEARCH METHODOLOGY**

This study adopts a descriptive research approach and relies entirely on secondary data. Various reports and publications have been referenced to support this research, including the AISHE (All India Survey on Higher Education)<sup>[10]</sup> 2018-19 report issued by the Ministry of Human Resource Development and reports from UNESCO (United Nations Educational, Scientific and Cultural Organization)<sup>[11]</sup> on financial accessibility in

education. Additionally, recent guidelines from the University Grants Commission (UGC) related to financial transactions in higher education were reviewed. Industry reports from Deloitte (2017)<sup>[13]</sup>, Ernst & Young (2017)<sup>[14]</sup>, and KPMG (2017)<sup>[15]</sup>, which focus on Fin-Tech innovations and startup ecosystems, were also analyzed. Furthermore, reports from PwC (2018)<sup>[16]</sup> on digital payment transformation and McKinsey & Company (2019)<sup>[17]</sup> on financial inclusion through Fin-Tech in India were consulted to provide a broader perspective on the role of financial technology in higher education.

### Fintech and Higher Education

The global population, now exceeding 8 billion, continues to expand rapidly due to advancements in healthcare and high fertility rates in developing regions. This growth places increasing demands on infrastructure and equitable access to essential services. The education sector, projected to exceed \$10 trillion by 2030, is evolving through innovations such as artificial intelligence (AI) and online learning, accelerated by the COVID-19 pandemic and global initiatives like the United Nations' Sustainable Development Goal 4 (SDG 4). Despite persistent disparities in access and quality, increasing investments in EdTech, public-private collaborations, and lifelong learning initiatives provide pathways to meet workforce and societal demands, solidifying education as a key pillar of sustainable development in a growing and interconnected world.

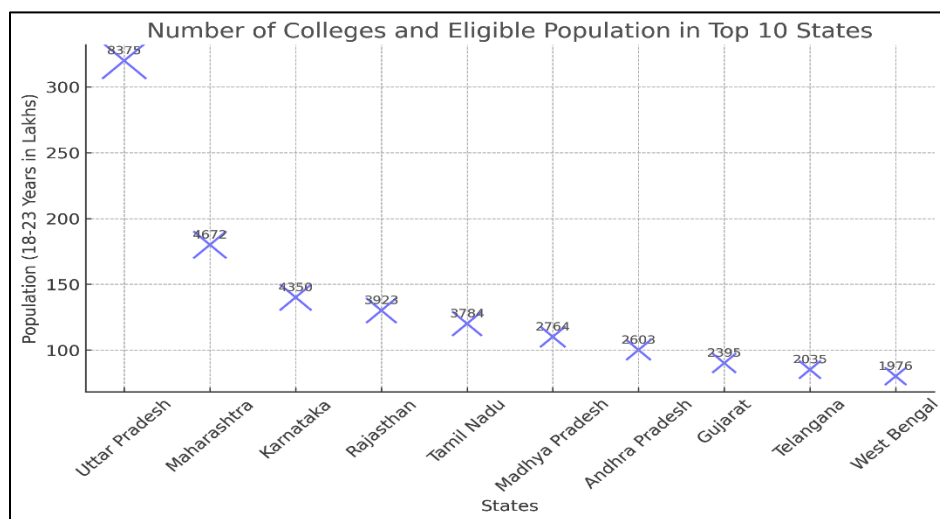


*Graph 1: Distribution of Universities as per Number*

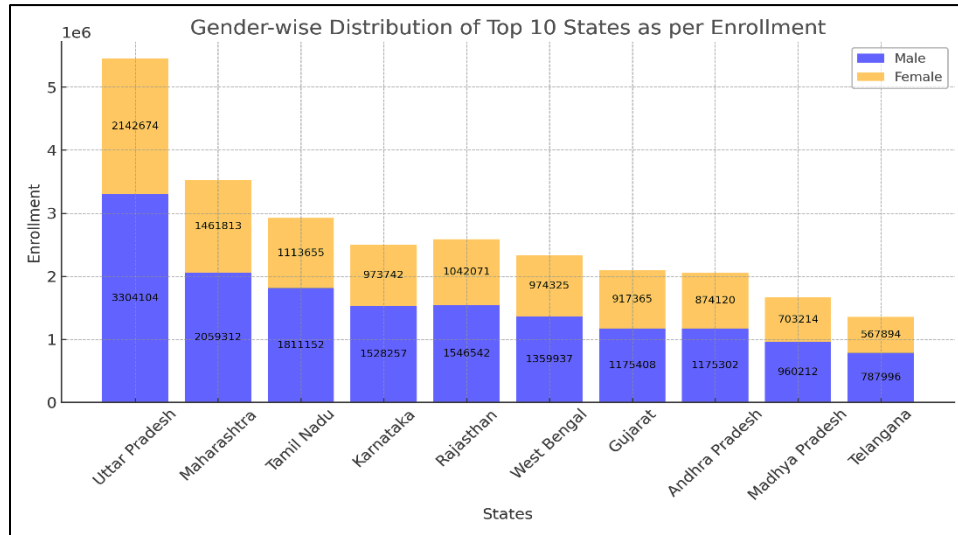
The *Graph 1* categorizes Indian universities based on the number of affiliated colleges, ranging from 0–100 to 300–400 institutions. The data indicates that most universities fall within the lower range (0–100 colleges), reflecting scalability challenges in financial and

administrative coordination. This fragmented structure highlights the significance of FinTech innovations in streamlining institutional operations. Digital payment platforms, AI-driven management tools, and block chain-based financial systems offer cost-effective solutions for smaller institutions while providing scalability for larger universities to efficiently manage scholarships, fee transactions, and resource allocation. The distribution aligns with the study's focus on FinTech's role in addressing systemic disparities, promoting financial inclusivity, and strengthening India's standing as the world's third-largest education system. Technology-driven financial solutions contribute to advancing SDG 4 by improving efficiency and accessibility in higher education.

The *Graph 2* illustrates the "Distribution of Colleges and the Eligible Student Population (18–23 Years) Across the Top Ten States in India", where the bubble size represents the number of colleges. Uttar Pradesh leads with the highest number of institutions (8,375) and a large eligible student population, followed by Maharashtra, Karnataka, and Rajasthan. In contrast, states like West Bengal and Telangana have relatively fewer colleges despite a significant student base, highlighting regional disparities in educational infrastructure. This uneven distribution underscores the necessity for technology-driven solutions to bridge accessibility gaps in higher education. FinTech-enabled mechanisms, such as digital financial aid platforms, real-time enrollment analytics, and mobile payment systems, can facilitate equitable access by improving financial support mechanisms and institutional efficiency.



*Graph 2: Number colleges in state wise*



*Graph 3: Students enrolments through state-wise*

The *Graph 3* emphasizes disparities in access to higher education. Uttar Pradesh records the highest enrollment for both male and female students, followed by Maharashtra and Tamil Nadu. While male enrollment remains dominant in most states, the substantial presence of female students indicates a positive shift toward gender inclusivity in education. However, continued disparities necessitate FinTech-driven interventions, such as digital scholarships, secure fee payment gateways, and automated loan disbursement systems, to bridge gender gaps and enhance financial accessibility. Such solutions can ensure equitable higher education opportunities for students across India, supporting broader inclusion and economic empowerment.

Levels	2017-18	2018-19	2019-20	2020-21	2021-22	CAGR (%)
<b>Ph.D.</b>	161,412	169,170	202,250	211,852	212,568	7.1
<b>Post Graduate</b>	4,114,310	4,042,522	4,312,355	4,716,649	5,217,753	6.1
<b>Undergraduate</b>	29,016,350	29,829,075	30,647,287	32,657,509	34,139,233	4.1
<b>Integrated</b>	195,777	241,126	300,373	385,541	460,579	23.8
<b>Diploma</b>	2,707,934	2,699,395	2,672,562	2,979,320	2,916,445	1.9

*Table 1: Level-wise Enrolment and its compound growth rate*

The *Table 1* refers to the enrolment trends (2017–2022) in India's higher education system highlights significant growth in multidisciplinary education. Integrated programs show the highest compound annual growth rate (CAGR) of 23.8%, reflecting rising demand for interdisciplinary learning. Undergraduate enrollment, the largest numerically (34.1 million in 2021–22), grows at a modest 4.1% CAGR, suggesting saturation in this

segment. Meanwhile, postgraduate (6.1% CAGR) and Ph.D. (7.1% CAGR) enrollments indicate a growing interest in advanced education, aligning with FinTech's role in facilitating access through digital loans and automated fee payment systems. The comparatively lower growth in diploma programs (1.9% CAGR) highlights the need for FinTech-enabled microloans and digital financing solutions to support vocational education and skill development. Overall, the data underscores FinTech's potential in reducing financial barriers, enhancing affordability, and accelerating India's higher education transformation.

## **FINDINGS OF THE STUDY**

### **Fintech's Role in Enhancing Accessibility and Affordability**

- Fintech is making higher education more affordable and accessible through digital loans, online payment systems, and scholarship platforms. These innovations enable students from diverse financial backgrounds to pursue education without significant financial hurdles.

### **Bridging Regional Disparities in Higher Education**

- Graph 2 highlights regional variations in the number of colleges, with states like Uttar Pradesh, Maharashtra, and Karnataka having a higher density of institutions compared to others.
- Digital financing models and AI-driven resource allocation can enhance access to funding for students in underserved regions, reducing regional disparities.

### **Enhancing Financial and Administrative Efficiency**

- Graph 1 showcases the operational challenges universities face due to varying numbers of affiliated colleges.
- Fintech innovations, such as AI-powered fee management and blockchain-based transactions, can improve financial transparency, reduce costs, and streamline operations.

### **Promoting Gender Inclusivity in Higher Education**

- Graph 3 reflects the rising female enrolment in higher education, indicating progress toward gender inclusivity.

- Fintech-driven scholarships, digital lending platforms, and financial aid programs can further support female participation by minimizing financial constraints.

### **Need for a Strong Regulatory Framework**

- While FinTech solutions offer numerous benefits, concerns related to data privacy, cybersecurity, and regulatory compliance must be addressed.
- A well-defined policy framework is essential to ensure the ethical and secure use of FinTech in education.

## **CONCLUSION**

Fintech is transforming India's higher education landscape by making education more accessible, streamlining financial processes, and improving institutional efficiency. Digital payments, AI-driven financial tools, and student loan platforms simplify fee transactions, enhance transparency, and reduce administrative burdens. Additionally, FinTech helps bridge financial and regional disparities by offering better funding opportunities to students across diverse socio-economic backgrounds. However, addressing challenges like data security, regulatory compliance, and cybersecurity risks is crucial for the responsible integration of FinTech in education. With clear policies and security measures, FinTech has the potential to revolutionize higher education financing, making it more efficient, inclusive, and transparent. By embracing these advancements, India can foster a digitally-driven education system that promotes economic and social mobility.

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