

Digital talent gap: Antecedents and Consequences A Research Study on India

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Abstract—As India races to become the global technology leader and the rapid business transformations driven by emerging technologies both have created a surge in demand for digitally skilled employees. Consequently, this paper addresses three important research questions – what is the extent of digital talent gap in India? what are the drivers of digital talent gap in India? how this impacts India at macro level, organizational level, as well as individual level. To answer these questions, conduct explanatory and descriptive research study using secondary data from the major reports of 2025 - 2026 (NIIT, “Team lease”, Quesq digital talent report of 2026, Manpower group talent survey report, Brain & company report). The findings reveals that there is a sever Digital talent shortage in India across key economic sector and main Drivers of this talent gap are outdated education system, higher learning cost, digital divide between rural and urban area, and lack of effective government initiatives. Ultimately, this talent gap negatively affects India across three levels like it slowing down macroeconomic momentum, hindering organizational digital transformation, and limiting individual employment opportunities.

Index Terms—AI literacy, Digital talent gap, Digital talent pool, Training.

I. INTRODUCTION

In today’s world of digital era, Rapid advance digital transformation is mandatory for a business who is seeking for innovation and wants to remain competitive in fast evolving market. Advanced digital transformation refers to incorporation of some advanced technologies like AI, big data, cloud computing Cybersecurity, web development, mobile application design and robotics in an industry. But the wave of incorporating advanced technology, comes with certain challenges. one of them is digital talent gap which is a severe bottleneck. According to MIT

Center for Digital Business 77% of. Companies consider lack of digital skills as a primary barrier to successful digital transformation. To address this issue, it is essential to define a digital talent.

Digital talent comprises a combination of hard digital skills and soft digital skills. Hard digital skills include data analytics, programming, artificial intelligence, and machine learning capabilities, among others. Soft digital skills are troubleshooting, learning skills, customer centricity, collaboration, and goal-centric thinking. Talents that promote a “digital-first mindset” are key for any organization to successfully implement digital transformation (Nair, 2019). Without this mindset a digital talent gap is emerged which defines as disparity between the digital capabilities that organizations need and the workforce’s ability to apply those skills effectively, limiting the value gained from digital technologies. (Rusia, 2026).

This paper analyzes Digital talent gap as in Indian context. As India is in the race toward full digital transformation. Where Government actively implement advance technology across sector including healthcare, education, banking. This shift drastically alters the required capabilities of Human resource. Hence, this makes digital talent gap in context of India is worth studying for future growth.

Objective

1. To identify and map digital talent gap across India
2. To investigate the causes and key determinant contributing to digital talent gap in India
3. To evaluate the economical, organizational and Individual level consequences of digital talent gap India.

II. LITERATURE REVIEW

Karaboga, T., Gurol, Y. D., Binici, C. M., & Sarp, P. (2020) in his research paper, sustainable digital talent ecosystem in the new era: impacts on businesses, governments and universities. Investigate the effect of digital transformation and digital talent shortage on governments, corporations, and universities. Also highlight the importance of their collaboration to develop and sustain digitally talented people in a country This study concludes that Partnerships among governments, businesses, and higher educational institutions provide opportunities to assist students, researchers, managers, entrepreneurs, and policymakers for sustainable talent development by giving a chance for the discovery, support, and upbringing of potential digital talents in a country. The common objective of their collaboration is to develop a strong bond among the partners for knowledge, technology and organizational transfer to support digital skills development

Lutz Sommer (2023) in his research work the digital talent trap in the SME sector: make or buy solution approach The purpose of this study is to derive from this insight a pragmatic and cost effective solution which, in addition to the highly competitive “buy” option – i.e., classic recruitment via the labor market – offers a “make” option for SMEs that focuses more on their own employee resources. The findings show that SMEs could already access powerful, user-friendly and low-cost digital AI tools when searching for digital talent – especially in the search for digital talents within the company. The assumption that only larger companies with the corresponding financial resources can afford this option cannot be confirmed.

Corina-Georgiana Antonovici (2020) digital talent in a learning European union. The purpose of this paper is to explore how digital talents can better foster the development of countries and the way they could address the current worldwide challenges. This study find out that In Europe, a successful digital transformation will be based on improving the organizational adaptability, a structured approach to digital services development, a holistic approach to analytics and ecosystem engagement, talent management, robot process automation. European digital citizens should also change their mindset and

way of interaction. the paper emphasizes the necessity to develop digital competencies and digital talents in all the EU countries and especially in Romania by modernizing the education and training systems.

III. RESEARCH GAP

Existing studies have explored digital talent development, talent ecosystems, and digital transformation in developed economies. However, limited research Available on the antecedents and consequences of the digital talent gap in India using recent industry reports. This study attempts to bridge this gap by synthesizing contemporary evidence from India and analyzing both the causes and implications of digital talent shortages.

IV. RESEARCH METHODOLOGY

Research design: Explanatory and descriptive

Data source: Secondary

Period covered: 2025–2026

Sources: Team Lease

Quess

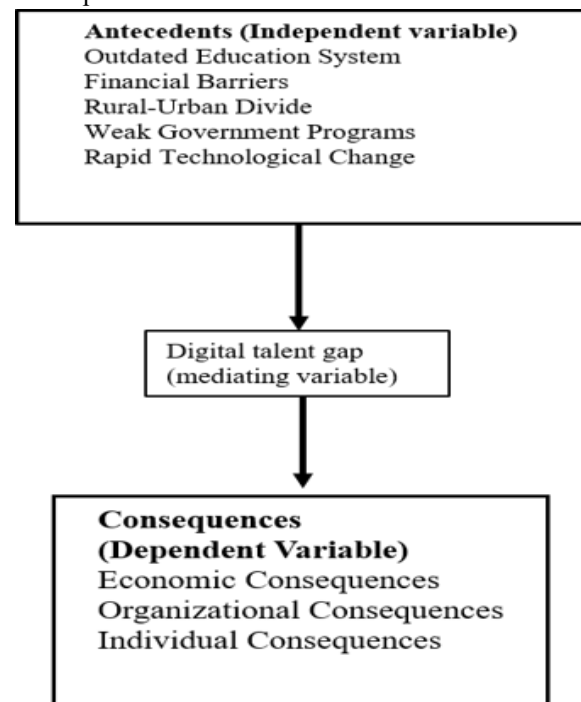
Bain & Company

LinkedIn

ManpowerGroup

NIIT

Conceptual Framework

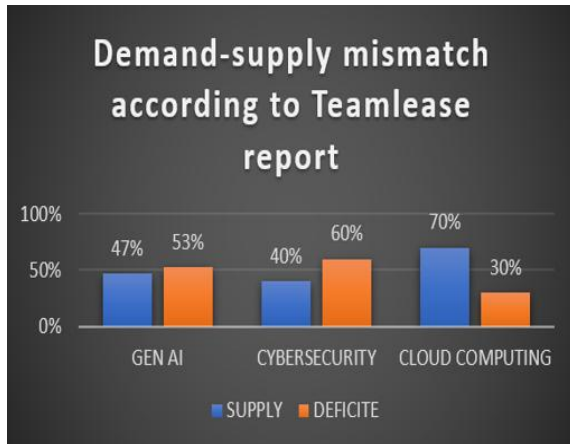


V. DIGITAL TALENT GAP IN INDIA

There are survey reports that shows severe talent shortage in India:

Report of team lease digital report 2025-26

	Supply	Deficite
Gen AI	47%	53%
Cybersecurity	40%	60%
Cloud computing	70%	30%



Interpretation: According to above report, cloud computing faces a demand–supply mismatch of 55-60 per cent, while cybersecurity has a deficit of 25-30 per cent at mid-to-senior levels. The report finds that AI and generative AI (GenAI) roles have the sharpest mismatch. For every 10 open GenAI positions, only one qualified engineer is available, pointing to a 53 per cent shortfall projected by 2026

Skill Gap Data from Qness Report 2026

Skill Cluster	Supply Gap
Gen AI deployment	83%
AI Deployment Engineering	72%
AI Governance	70%
MLOps	68%
AI Security	67%
Natural language processing	63%

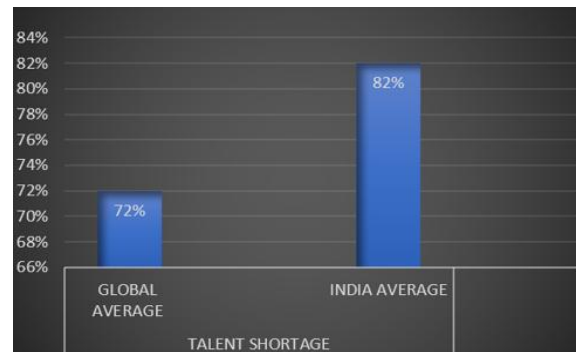


Interpretation: GenAI deployment (83%), AI deployment engineering (72%), AI governance (70%), MLOps (68%), AI security (67%), and natural language processing (63%), reflecting growing demand for production-ready AI expertise rather than model-building alone. The biggest talent gaps are in Gen AI Deployment which is 83%.

Manpower global talent shortage survey

ManpowerGroup interviewed 39,063 employers in 41 countries between October 1 – 31, 2025.

Talent Shortage	
Global Average	India Average
72%	82%



Interpretation: According to the above survey, India's average skill gap is 82% which is 10% more than the global average i.e. 72%. Even India is in 5th position in skill shortage global survey which based on 41 countries.

Data from LinkedIn

Year / Period	AI Jobs Demand	Available Talent	Talent Gap
2025–26 (Current)	AI demand is rising rapidly across sectors	~400k–650k professionals with AI-related skills	~50–53% shortage projected
2026 (Near term)	Demand expected to cross ~1 million AI roles	~600k–800k professionals expected	~50%+ demand–supply gap
2027 (Projection)	1–2.3 million AI roles possible depending on adoption	~1.2–1.25 million professionals	Potential shortfall approaching ~1 million jobs
Workforce readiness insight	AI demand crossing 1M roles	Only ~16% of the IT workforce is currently AI-skilled	Large reskilling requirement

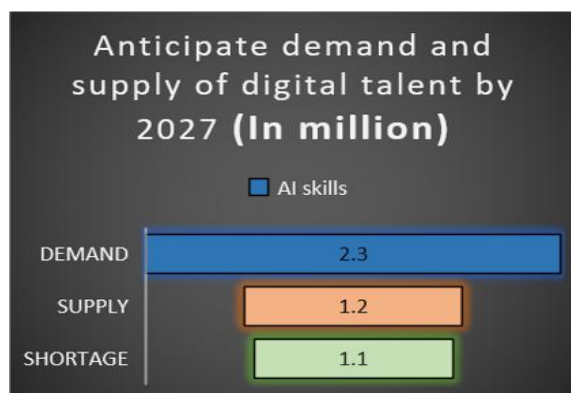
(Dhariwal, 2026)¹

Interpretation: This above table clearly showcase digital skill gap in AI related jobs. the current talent gap (50-53%), in near term more than 50% of gap, and till 2027 Digital talent gap reaches approximately 1 million

A Report by Bain & Company²

reveals that by 2027, over 2.3 million AI-related job openings are anticipated in the country. However, the current trajectory suggests that the talent pool will only reach approximately 1.2 million qualified professionals, leaving a shortfall of over a million skilled workers.

Anticipate demand and supply of digital talent by 2027				
Skill	Demand	Supply	Shortage	% shortage
AI Skills	2.3	1.2	1.1	48%



Interpretation: reveals that by 2027, over 2.3 million AI-related job openings are anticipated in the country. However, the current trajectory suggests that the talent pool will only reach approximately 1.2 million qualified professionals, leaving a shortfall of over a million skilled workers. it simply means 48% of shortage face by India in Artificial intelligence skills

VI. CAUSES OF DIGITAL TALENT GAP IN INDIA

There are various causes of India is falling apart in Digital skill some of them are this is based on NIIT report on India skill gap 2026:

- **Obsolete Educational framework:** One of the important causes of talent gap is outdated academic framework which push theoretical rote learning rather than practical knowledge. According to the report of NIIT on India skill gap report 2026 that job readiness rate 57 out of 100 by entry level job seeker this creates confidence and competency gap.
- **Financial barriers:** Training and programs relate to learning Advance technologies such as artificial intelligence, cyber security, cloud computing is expensive. According to NIIT report on India skill gap 2026 reason the courses or training programs

¹ (Dhariwal, 2026)¹¹

² (Bridging India's AI Talent Gap: The Imperative for Upskilling, 2025)

related to digital upskilling is associated with higher cost.

- **Rural Urban Digital Divide:** Small towns and villages suffer from severe resource constraints, including bandwidth connectivity, frequent power cut, slow internet, insufficient computer-to-student hardware ratios. According to the World Economic Forum report, only 17% of rural youth can read and write basic computer commands in digital English
- **Limited reach or Effectiveness of government initiative:** NIIT reports 2026 reveals that the whether its student or mid-career professional or senior executive accept that they are unable to discover various training programs which require to achieve digital skills also MSDE (2022) reports reveals that these initiatives often fall short in terms of quality, reach, and overall effectiveness. Challenges such as inconsistent implementation, bureaucratic inefficiencies, and lack of monitoring contribute to the underperformance of these programs (Pasha, 2023)

VII. CONSEQUENCES OF DIGITAL TALENT GAP

Digital skill gap is one of the critical challenges that impact India on the Economy level, organizational level as well as individual level. Hence some of the effects are:

Consequences at Economy Level: First and foremost, it Slow down the GDP growth. India's digital economy contributes around 15% of GDP and projected to reach \$1.2 trillion. By 2030. According to TeamLease, the digital talent deficit severely impacts India's \$1.2 trillion digital economy ambition. Impact on National income of the country. According to an AWS-commissioned study, Digital skilled worker contributes rupees 10.9 lakh crores (507.9 billion dollars) to annual GDP. If the digital skill gap reduce it definitely enhance national income of India. Digital talent gap intensifies Wages inequality between digital skilled and unskilled labor. The Digital Skills & Salary Primer 2025–26 by Team Lease freshers in AI and Cloud command starting salaries of ₹7–8.5 LPA, reflecting the market's pivot to job-ready, skill-based hiring. Also offers clear insight on the most in-demand skills and compensation trends across tech, GCCs, and non-tech sectors. Drawing on insights from over 30,000 salaries, the report highlights where digital

talent value is concentrating, how salary premiums are shifting, and which capabilities will define competitiveness in the AI era. It also examines city-based salary landscapes, fresher hiring patterns, diversity and pay equity, and the evolution of leadership with new roles like Chief AI Officer now commanding salaries of ₹2–2.5 Cr. According to the study conducted by Gallup on behalf of AWS, workers with advanced digital skills earn 92 per cent higher salaries in India compared to those with a similar education who do not use digital skills at work. Other macroeconomic consequences include an increased dependency on imported digital expertise and reduced attractiveness for foreign direct investment (FDI).

Organizational Level: Difficult in finding capable human resource for digital position which enhance hiring cost. According to CII (Confederation of Indian Industry) “The cost of recruitment, time spent onboarding, and investment in training, as well as performance risks, are all accumulated. According to a report by NIIT, a primary cause of the digital gap is the lack of collaboration between industry requirements and academic curriculum. This creates the need of training to fresher that enhances the recruitment and training cost. Other consequences for organizations include lower revenue growth, decreased profitability, higher cybersecurity threats, operational risks, and wage inflation.

Individual level: At the individual level, the gap escalates unemployment among graduates due to a lack of industry-ready skills and increases the workload on existing skilled employees, leading to burnout.

VIII. LIMITATIONS

- This study completely based on secondary data published by various organizations
- This analysis is confined to the reports published during 2025-2026 (till June 2026).
- This study focused exclusively on Indian context. So, findings may not generalize to other countries.
- This study discussed Digital talent gap across India. It does not take into consideration digital skill gap in specific sector of the country.

IX. CONCLUSION

The above reports from NIIT, Quess, Manpower digital talent survey, team lease digital talent report clearly depict the severe shortage of digital skill in India. The wide digital talent gap primarily driven by broken education framework, lack of targeted government initiatives, Digital divide and Higher learning cost this will push India backward in the race of Becoming the global technology leader. Furthermore, this gap negatively impacts India at economy level, organizational level, and individual level. Hence, we can conclude that India urgently needs to pay attention toward this challenge in order to secure its position as a global Artificial Intelligence hub.

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