



The Performance of Services Sector in India for Sustainable Development: Prospects and Challenges in the Age of Artificial Intelligence

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Manuscript ID:
BIJ-SPL2-Dec25-ECO-021

Subject: Economics

Received : 20.08.2025

Accepted : 30.08.2025

Published : 31.12.2025

DOI: 10.64938/bijsi.v10si2.25.Dec021

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Abstract

India's service sector has emerged as a key driver of economic growth and structural transformation over the past three decades. With its increasing contribution to Gross Domestic Product (GDP), employment, and exports, the sector holds significant potential for advancing the sustainable development. According to the Economic Survey 2024-25, service sector grew at 8.3% from the financial year 2023 to the financial year 2025 which accelerated economic growth and sustainability in a significant way. The crisis of global pandemic and the repercussions of geopolitical wars transformed the path of the landscape of the Indian service sector. The recent technological advancements in the service sector like the rise of digital platforms, increased automation of routine tasks, the use of artificial intelligent tools and cloud computing etc. has become the key factors which control the performance of service sector of the Indian economy today. Artificial Intelligence (AI) is changing the face of Indian service sector, automating processes, enabling smarter decision-making, and opening up new business models. AI is reshaping India's service sector, making it smarter, faster, and more inclusive. While it creates high-value jobs, it also demands urgent reskilling, policy support, and ethical frameworks to ensure the transition.

Keywords: service sector, Indian economy, sustainable development, artificial intelligence

Introduction

The services sector plays an undisputable role in promoting growth and development in the Indian economy. It is the vital component of the economy which plays a crucial role in expanding economic growth, generating diversified employment opportunities and attracting foreign investment. The extra ordinary growth pattern of Indian economy since 1980s can be mainly attributed to the phenomenal performance of the services sector. The services sector of the Indian economy has been the consistent and stable contributor to Gross Value Added (GVA) in the economy. Its contribution to the total GVA at current prices has increased from 50.6

per cent in the financial year 2014 to about 55 per cent in the financial year 2025. The service sector also provides employment to approximately 30 per cent of the workforce. It also contributes indirectly to the Gross Domestic Product (GDP) through the servicification of manufacturing, i.e., increasing utilization of services in manufacturing production and post-production value addition (Economic Survey, 2024-25).

The services sector of the Indian economy has immense potential to drive sustainable development, by balancing economic growth, social inclusion, and environmental sustainability.



The phenomenal growth of services sector of the Indian economy has been one of the most outstanding transformations since the economic reforms of 1991. Prior to 1991, India's services sector was underdeveloped and traditional in nature. It focussed on the services like trade, transportation and administration and government driven services like education and health. But the services sector grew and became the biggest and the most dynamic component of GDP. The expansion and growth were due to numerous reasons. The economic reforms of 1991 and the liberalisation policy measures opened up the economy to private and foreign participation and investment. It led to the deregulation of sectors like telecom, aviation, and banking and there was a large-scale entry of foreign companies in IT and BPO and there was a greater expansion of private education and health services. The rise of Information Technology (IT) sector in the late 1990s and early 2000s created new job opportunities in the services sector and IT exports became a key foreign exchange earner. Indian economy since 1990s witnessed the emergence of a consumption driven middle class which created the demand for the financial services, real estate, retail and E-commerce and healthcare and education.

Another major reason for the growth of services sector in the Indian economy was the globalisation. Globalisation and connectivity led to the massive expansion of trade in services and foreign direct investment. Government initiatives like Digital India, Startup India, Smart Cities Mission etc. gave a much-needed fillip to the service sector by boosting e-governance and expanding urban service infrastructure. The digital platform services of the 21st century transformation revolutionised the pace and performance of services sector in the Indian economy.

The service sector, comprising IT, finance, healthcare, education, retail, logistics, and public services, is being transformed by Artificial Intelligence. AI enhances efficiency, personalizes services, reduces costs, and improves decision-making. India, a global hub for IT and business services, AI is reshaping service delivery across

sectors, aligning with both economic growth and digital transformation goals.

AI is redefining the service sector, making it more intelligent, efficient, and customer-focused. In India, with its strong digital ecosystem and youthful workforce, AI has the potential to democratize service access, improve governance, and drive inclusive growth. However, for AI adoption to be truly sustainable and equitable, investment in infrastructure, ethics, and education is essential. But the threats, risks and challenges related to the using of AI tools are a matter of concern.

Research Problem

India's service sector symbolises the pillar of economic strength as well as the indicator of economic transformation. From IT corridors to rural telemedicine, the reach out of the service sector is vast and its potential immense. With the recent inclusive growth and strategic reforms in the Indian economy, the service sector contributes to elevate India's global standing and economic resilience. The recent trends in the service sector of the Indian economy portrays a picture in which AI tools are leading the economy to a new direction reshaping the growth trajectory. The profound influence of the AI tools brings both opportunities and challenges to the economy.

Objectives

- To examine the performance of service sector in India's Gross Value Added.
- To analyse the contribution of service sector in job creation and employment in the Indian economy.
- To explore the prospects of AI tools in the service sector.

Materials and Methods

The study is primarily based on secondary data obtained from official statistical publications, economic survey 2023-24, industry reports, and digital labour market datasets. National Statistical Data has been obtained from Ministry of Statistics



and Programme Implementation (MOSPI), National Accounts Statistics and Handbook of Statistics on Indian Economy (RBI) for Gross Value Added (GVA) in services. Periodic Labour Force Survey (PLFS) and National Sample Survey Office (NSSO) for employment and wages in the service sector. The study is descriptive and analytical in nature. It is descriptive with respect to examination of the performance of service sector in India's GDP. It is analytical with regard to the contribution of service sector in job creation and employment in the Indian economy.

Findings and Results

India's growth trajectory has followed an unconventional path, moving directly from an agrarian economy to a service-dominated economy, bypassing large-scale industrialization. This distinct transition has enabled the country to integrate quickly into global value chains through IT-enabled services, finance, and professional outsourcing. The 1991 economic reforms, along with the demographic advantage of a young, English-speaking, skilled workforce, accelerated the services boom, making

the sector the largest contributor to Gross Value Added and GDP.

However, this service-led model presents mixed outcomes. On one hand, it has propelled India into becoming a global knowledge hub, created foreign exchange reserves, and improved per capita incomes. On the other hand, the limited capacity of services to absorb low-skilled labour has given rise to the phenomenon of "jobless growth." This structural imbalance raises concerns about inclusivity, especially as a large share of the workforce remains in agriculture and informal sectors.

The Service Sector and GVA

The service sector continues to be the backbone of India's economy, contributing more than half of total GVA. Despite a temporary contraction during the COVID-19 pandemic, the sector rebounded strongly, driven by financial services, construction, and renewed demand in trade and transport. Its sustained growth underscores India's service-led development path, while also highlighting the need to strengthen resilience in segments vulnerable to external shocks.

Table 1 Components of Gross Value Added (Service Sector) at Basic prices GVA at Basic Prices | (Base Year: 2011-12) Constant Prices

(Amount in Rs. Crores)

Items	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Construction	964306	1026789	1043429	995371	1193532	1306256	1436081
Trade, Hotels, Transport, Communication and Services Related to Broadcasting	2368419	2538757	2690060	2153888	2480380	2777723	2955767
Financial, Real Estate & Professional Services	2537190	2714222	2898243	2954130	3122847	3405474	3691645
Public Administration, Defence and Other Services	1512542	1625477	1732404	1601295	1721699	1875304	2021798
GVA (Service Sector) at basic prices	7382458	7905246	8364137	7704684	8518458	9364757	10105291

Source: Hand Book of Statistics on Indian Economy 2023-24

The service sector has remained the largest contributor to India's Gross Value Added (GVA) over the period 2017-18 to 2023-24. In constant prices

(base year 2011-12), the sector's GVA increased from ₹73.82 lakh crore in 2017-18 to ₹101.05 lakh crore in 2023-24, registering an overall growth of



about 37 per cent. This translates to a compound annual growth rate of nearly 5.5 per cent.

During the pre-COVID period (2017-18 to 2019-20), the service sector recorded steady expansion, rising from ₹73.82 lakh crore to ₹83.64 lakh crore. However, the COVID-19 pandemic severely disrupted the sector in 2020-21, leading to a contraction of around 8 per cent, with services GVA declining to ₹77.04 lakh crore. From 2021-22 onwards, the sector rebounded strongly and reached ₹101.05 lakh crore by 2023-24, reflecting both domestic recovery and renewed global demand.

Within the sector, Financial, Real Estate and Professional Services emerged as the most dominant component, contributing about 36 per cent of services GVA in 2023-24. This sub-sector demonstrated resilience even during the pandemic year, supported by digitalisation, IT-enabled services, and strong financial market performance. Trade, Hotels, Transport, Communication and Broadcasting services formed the second largest component, accounting for nearly 29 per cent of services GVA. This segment was the most affected by COVID-related restrictions in 2020-21 but staged a sharp recovery in subsequent years. Public Administration, Defence and Other Services, with about 20 per cent share, grew steadily, reflecting the role of government expenditure in stabilising the economy. The Construction sector contributed around 14 per cent, showing cyclical fluctuations but recovering strongly in recent years due to infrastructure investment and housing demand.

Overall, the service sector has continued to be the backbone of India's economy, accounting for more than half of the total GVA. Its performance highlights the service-led growth trajectory of India, in contrast to the conventional agriculture-industry-services transition observed in many other countries. While the sector remains resilient and dynamic, it also exhibits vulnerability in segments such as trade, hotels, and transport, which are highly sensitive to global shocks.

Employment Trends in the Service Sector

The services sector plays a critical role in India's employment landscape, contributing significantly to job creation and overall economic development. As of 2023-24, approximately 30% of India's usually working population-around 182 million workers-are employed in the services sector. This represents a net increase of nearly 40 million workers over the past six years, highlighting the sector's expanding capacity to absorb labor and reflecting a structural shift in the Indian economy.

While agriculture's share of employment has steadily declined, the services sector has emerged as a primary source of new job creation, especially in urban areas. According to the Economic Survey of India 2022-23, employment growth has been particularly strong in information technology (IT & IT-enabled services), healthcare, education, e-commerce, logistics, and retail. These sectors have been beneficiaries of digitalisation, rising incomes, and demographic changes such as a young workforce and growing urbanisation.

However, when compared to its contribution to Gross Value Added, which consistently remains above 52-55% of India's GDP, the sector's employment share (30%) appears relatively low. This gap reflects high labour productivity in knowledge- and capital-intensive service industries such as IT, finance, and communications, but also exposes the "jobless growth" challenge-where output expands faster than employment.

The COVID-19 pandemic further underlined this contrast. While the services sector's output rebounded rapidly after the initial contraction, employment recovery lagged, particularly in contact-intensive segments such as tourism, hospitality, and retail trade, which employ large numbers of informal and low-skilled workers.

Table 2 Percentage Share of Employment in Service Sector in India

Year	% share
2017-18	31.0
2018-19	32.4
2019-20	30.8



2020-21	29.6
2021-22	29.7
2022-23	28.9
2023-24	29.7

Source: NITI Aayog

The table 2 shows the percentage share of employment in the services sector in India from 2017-18 to 2023-24. A structured trend analysis show that employment share increased from 31.0% to 32.4%, the highest in the 2017-18 to 2018-19 period. This increase is likely linked to robust growth in IT services, financial services, and urban demand-driven sectors. During 2019-20 to 2020-21 period its share fell to 29.6%. This drop coincides with the COVID-19 pandemic onset, which severely disrupted tourism, hospitality, retail, and transport.

During the period 2021-22 there has been a partial recovery and the employment share slightly rose to 29.7% which indicates the recovery in some urban service activities post-COVID lockdowns. But during 2022-23 period the share sharply fall down to 28.9%, reflecting lagged effects of the pandemic, job losses in informal urban services, and possibly rising employment in agriculture and construction due to rural distress migration. The employment share improved to 29.7%, during the period 2023-24 suggesting services sector job recovery with revival of IT, digital platforms, and tourism.

Employment in India's services sector peaked in 2018-19, fell significantly during COVID years, and is now showing signs of recovery but hasn't regained pre-pandemic levels. Despite services being the largest contributor to GDP (55%), its share in employment remains stagnant (29–32%). This reflects a low employment elasticity compared to agriculture and construction. The service sector also shows that urban-centric services like IT, finance, hospitality, and retail are vulnerable to global shocks, while rural fallback options absorb workers. Skilling programs, digital economy expansion, and MSME support in services are crucial to restore and grow employment share.

Prospects AI Tools in the Service Sector

Artificial Intelligence (AI) represents a general-purpose technology that has the potential to reshape industries, economies, and societies. Unlike previous waves of automation focused primarily on routine physical or clerical tasks, AI enables higher-order cognitive functions such as learning, reasoning, decision-making, and perception. This expands its impact beyond traditional automation into knowledge - based work, creative domains, and strategic decision-making.

The rapid advances in data collection, cloud computing, machine learning algorithms, and processing power have accelerated AI adoption across sectors. AI has the potential to drive a “second machine age,” where machines complement and sometimes surpass human capabilities.

For India, AI adoption intersects with two pressing challenges: employment generation and productivity growth. On one hand, AI can supplement human labour in IT, financial services, healthcare, agriculture, and logistics, thereby raising efficiency. On the other, it risks displacing low-skilled service jobs (BPO, retail, transport), which have traditionally absorbed India's surplus labour. The NITI Aayog National Strategy for AI (2018) emphasizes “AI for All,” focusing on inclusive growth by deploying AI in social sectors like agriculture, education, and health.

NITI Aayog's National Strategy for Artificial Intelligence (AI for All, 2018) identifies five priority sectors where AI can address India's pressing developmental needs. These align closely with the dual objectives of economic growth and social inclusion. NITI Aayog's five-sector focus shows a development-first vision of AI in India. By integrating AI into healthcare, education, agriculture, smart cities, and mobility, India can leverage AI not only as a productivity enhancer but as a tool for inclusive employment generation.

NITI Aayog's focus on these sectors reflects an inclusive growth model. Using AI is not just for economic competitiveness but also to solve developmental bottlenecks (healthcare access, farmer incomes, education gaps). If implemented



effectively, AI can transform India's services sector into a socially embedded growth driver—generating both output gains and employment opportunities, while reducing inequality. The challenge remains reskilling and digital infrastructure and without these, the benefits may be unevenly distributed, deepening the digital divide.

AI roles in India's services sector are highly rewarding but highly exclusive, concentrated in elite clusters, large firms, and among highly educated workers. While this drives India's global IT competitiveness, it also risks widening socio-economic and regional inequalities unless deliberate policies promote diffusion, skilling, and decentralisation of AI opportunities. The surge in AI skill demand since 2016 marks a turning point in India's services sector. While it strengthens India's global competitiveness in IT and finance, it also exposes workers to risks of polarisation and exclusion. To ensure inclusive growth, India must align skill development, digital infrastructure, and AI adoption policies with its service sector transformation (IMF Research Perspectives)

Interpretation and Discussion

The services sector in India has shown resilient and broad-based growth, with financial services and construction emerging as growth leaders, while trade, transport, and hospitality are recovering strongly after the pandemic shock.

The services sector remains a major employer (around 30%), but its employment share has shown volatility in recent years. The peak in 2018-19 highlights strong service-led growth, while the post-2019 decline reflects pandemic-related disruptions, possible structural shifts (automation, digitalisation reducing low-skill service jobs) and relative expansion of employment in agriculture/industry due to government support programs. The recent recovery (2023-24) signals resilience, especially in IT, finance, e-commerce, and urban services, but the share has not returned to the 2018-19 peak. The data on share of employment in service sector shows that while the services sector is a key pillar of India's employment, it is experiencing a slowdown in labour

absorption capacity post-2019, with signs of partial recovery in 2023-24. This suggests India may need to focus on upskilling, digital readiness, and diversification within services to sustain job growth.

Conclusion

India's services sector is at a crossroads - sustaining high growth while addressing sustainability imperatives. Artificial Intelligence, if ethically and inclusively deployed, can reduce environmental footprint (like smart mobility, green IT etc.), promote social inclusion (like telemedicine, ed-tech, financial inclusion etc.), and boost economic resilience (like automation, productivity, innovation). Thus, the services sector—powered by AI—can become the engine of India's sustainable and equitable growth, aligning with sustainable development goals while positioning India as a global leader in tech-driven green services. Two emerging paradigms that is sustainability and artificial intelligence are expected to play a decisive role in reshaping India's services sector. Sustainable development requires services such as transport, logistics, healthcare, and urban infrastructure to be reorganized around efficiency, environmental responsibility, and social equity. Similarly, AI-driven digital transformation is already disrupting traditional service delivery in finance, education, healthcare, and governance. While AI promises efficiency gains, higher productivity, and new value creation, it also risks displacing routine white-collar jobs, further intensifying inequalities if adequate reskilling and adaptation strategies are not adopted. India's challenge, therefore, lies in balancing high-value service growth with broad-based employment generation, while ensuring that sustainability and technological adaptation remain at the core of its development strategy. If India can harness AI responsibly and integrate sustainability into service delivery, the sector will not only retain its role as the engine of growth but also become a driver of inclusive and resilient development.

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