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A Comprehensive Investigation of AI-Based Start-Ups in India

A. R. Swami[1], V. S. Kumbhar[2], K. G. Kharade[3]

[1]Department of Computer Science, Dattajirao Kadam Art, Science and Commerce College, Ichalkaranji (Maharashtra, India)

[2,3]Department of Computer Science, Shivaji Univesity, Kolhapur (Maharashtra, India)

E-mail: akshayswami99@gmail.com[1], vsk_csd@unishivaji.ac.in[2], kabirkharade@gmail.com[3]

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ABSTRACT:

AI has become one of the emerging technologies that organizations throughout the nation have been progressively adopting over the past few years. Against this context, startup adoption of AI has been remarkable. Numerous AI-based startups cater to end users' and other businesses' requirements by utilizing artificial intelligence and related developing technologies such as Machine learning, Computer Vision, NLP, and DL. The funding that startups have gotten over the past several years in India suggests the rise of several AI-based startups. With the world's fastest-growing economy and second-largest population, India has a major stake in AI-based startups. Also, increased digitization and automation during the COVID-19 period has increased the demand for artificial intelligence-based services, therefore the use of AI in many industries and increased investment in AI-based start-ups. This paper focuses on investigating the contribution of Artificial Intelligence based start-ups to India's development compared to other start-ups.

KEYWORDS: *Artificial Intelligence, AI-based start-ups, Start-ups, Emerging Technology*

INTRODUCTION:

Artificial intelligence (AI) is expected to completely alter how businesses operate and improve and expand client services. The conventional link between production facilities and human resources will shift when manufacturing becomes digital. In addition to increasing productivity, AI will replace labor and capital as a factor of production. The new technology will also significantly impact how players are positioned in the market: Investing in AI not only reduces costs but also

strengthens the market advantage of innovative firms *[1]*. Artificial Intelligence-based Start-ups will greatly aid India's development. Artificial intelligence exists right now; it is not just a concept for the future. Artificial intelligence revolutionizes India by assisting with healthcare, road safety, education etc. *[2]*. India could add USD1 trillion to its economy through AI-based Startups *[3]*. By 2025, AI is projected to increase India's GDP by USD 450–500 billion, or 10% of its USD 5 trillion GDP goal. The adoption of AI has been pioneered by highly digitized sectors like IT, financial services, telecommunications and media, and retail *[4]*. The third-largest startup ecosystem in the world is in India. The Indian AI startup ecosystem boomed in 2021, adding more than 2,250 companies and 42 unicorns in a single year. In 555 districts, India had at least one startup. Currently, AI startups initiatives in the e-commerce, banking, and healthcare industries are receiving the majority of venture capital funding *[5]*.

The study's objective is to investigate the contribution of AI-based startups in the development of India. The study is divided into the following development considerations.

1) Increased AI funding has led to an increase in AI-based start-ups in India.
2) Investments in AI-based startups have increased significantly in the last ten years, which has provided Gov. of India with significant motivation to invest.
3) AI-based startups are boosting the GDP of India, and there is still a lot of room for growth.
4) By 2035, AI-based startups might increase India's GDP by 1 trillion dollars and its annual growth rate by 1.6%.
5) Analysis of investments in AI-based startups and the growth of AI in other nations in comparison

METHODOLOGY:

This paper focuses on 3 major aspects associated with AI-based startups in India with different parameters and their investigation using AI techniques. The study further focuses on startups producing AI solutions. Data is collected using different data sources, including market reports, white papers, corporate websites, specialized databases, news feeds, journals, and publications, among others. Integrity checks are conducted on both the investigation and the data. Redundant data is eliminated, inconsistent data is located and corrected, and the analysis correctness is validated. The information is subsequently prepared for tabulations utilizing a variety of formats, weightings, and visuals.

RESULTS AND DISCUSSION:

India has recognized the value of AI for its economic development and is working to establish itself as a global leader in the new and emerging fields of AI *[10]*. AI has the potential to speed development in India while also finding ways to get over more conventional roadblocks like

inadequate infrastructure and bureaucracy *[6]*. AI startups are pioneers in the fields of Industry 4.0 and Internet of Things. As a result of their partnership with the existing economy, they are one of the driving economic factors *[7]*. The Indian startup ecosystem has expanded significantly in recent years. In the recent year, the country has received millions of dollars in funding for AI based startups *[8]*. Artificial intelligence (AI) has great potential to shape India's economic and national security destiny. That's why the investment in AI based startups greatly increased over the recent years in India *[9]*.

There are around 3,782 AI-based startups in India. As COVID-19 is over, there is a huge increase in AI-based startups. The following is an investigation of AI-Based Start-Ups in India through some development considerations or the factors.

1) Increased AI funding has led to an increase in AI-based start-ups in India.

   One of the abilities with the most rapid global growth is AI. Between 2015 and 2021, the number of AI skills increased by 210 percent. Among the sectors with the greatest growth rates are those with a higher concentration of skilled AI employees.

   Regarding the highest AI integration skills, India comes in third place, following the United States and China.

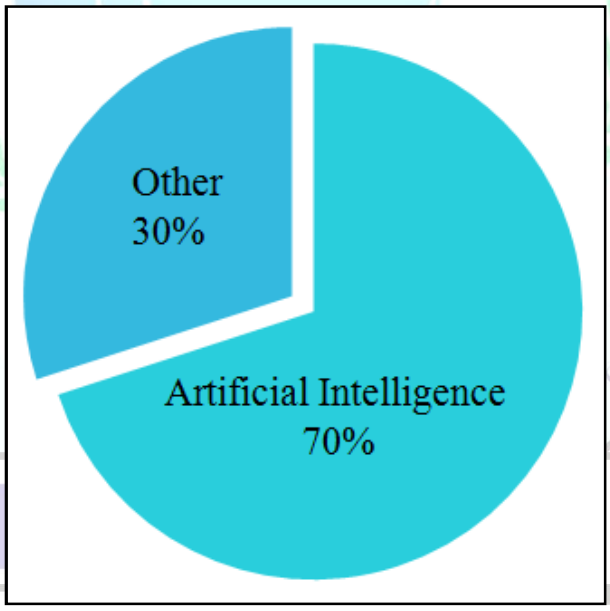

Fig. 1: Chart showing Technologies used by Indian startups

   In the upcoming year, AI technologies are expected to be adopted by 70% of Indian startups.

2) Investments in AI-based startups have increased significantly in the last ten years, which has provided Gov. of India with significant motivation to invest.

   A total of $762.5 million was invested in Indian AI-based startups in 2019, up 44% from the $529.52 million invested the previous year. The growth rate increased by 447.19% from 2017 to 2021.

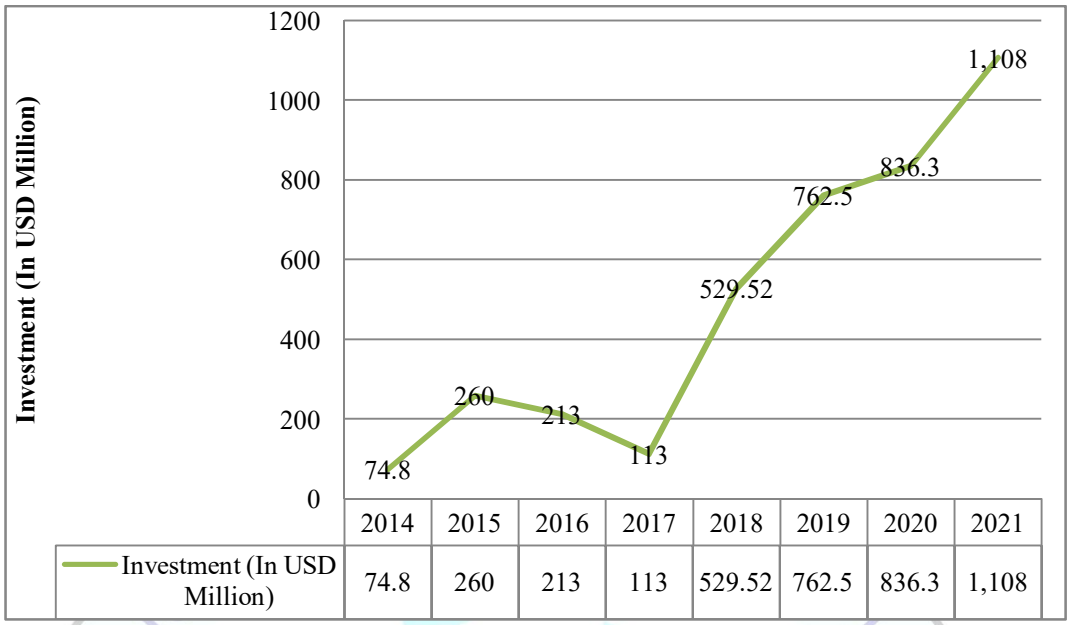

Fig. 2: Chart showing Investment in AI-based startups in India

3) AI-based startups are boosting the GDP of India, and there is still a lot of room for growth: The usage of AI is rising throughout numerous industries, and some startups are successfully utilizing AI techniques for social good in the fields of crime reduction, healthcare, education, agriculture, manufacturing, and climate change. These contribute to different sectors of the GDP.

The following Indian startups are using AI and boosting the Indian economy in several sectors: Niramai- Detecting Breast Cancer, Staqu- AI tackling etc., contributing in the services sector, Flutura - Increasing operational effectiveness and asset uptime in the industrial sector, contributing in the manufacturing sector, Intello labs contributing in the agriculture sector and Leverage Edu contributing in the industry sector.

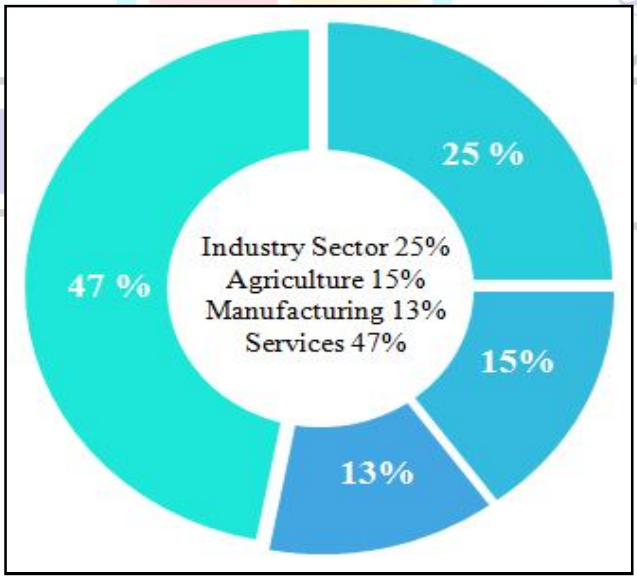

Fig. 3: Chart showing Percentage in GDP of India

4) By 2035, AI-based startups might increase India's GDP by 1 trillion dollars and its annual growth rate by 1.6%.

   AI has the potential to increase India's GDP by $957 billion (about Rs 62,29,113 crore) by altering the nature of employment in a way that benefits both enterprises and society.

   The new products, services, and innovations that AI will enable are anticipated to provide economic value. AI-based startups are predicted to increase India's yearly growth rate by 1.6 percentage points by 2035.

5) Investigation of investments in AI-based startups and the growth of AI in other nations in comparison.

   Investment in AI-based startups by country, China and the United States top the race in AI investment and funding, followed by India.

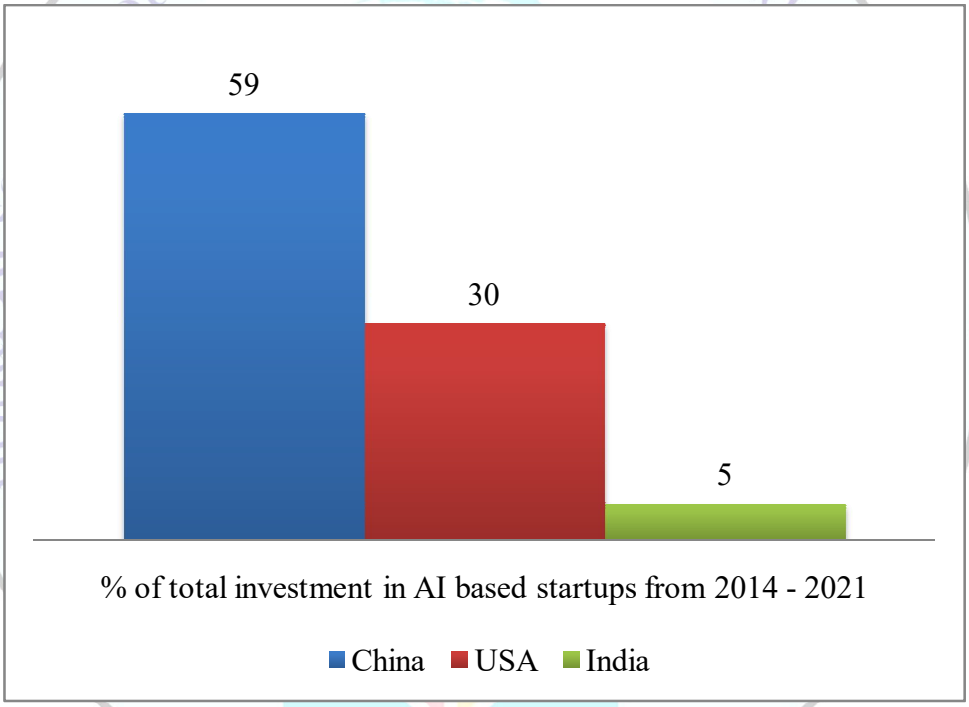

Fig. 4: Percentage of total investment in AI based startups

Development in AI-based startups by countries, India is third among the G20 nations in terms of the total number of artificial intelligence startups, behind the US and China. This demonstrates that the government is taking steps to support the development of AI in India. The problem, however, is that Indian AI businesses receive much less funding than their counterparts in the US and China. The development and effectiveness of Indian startups will be affected as a result.

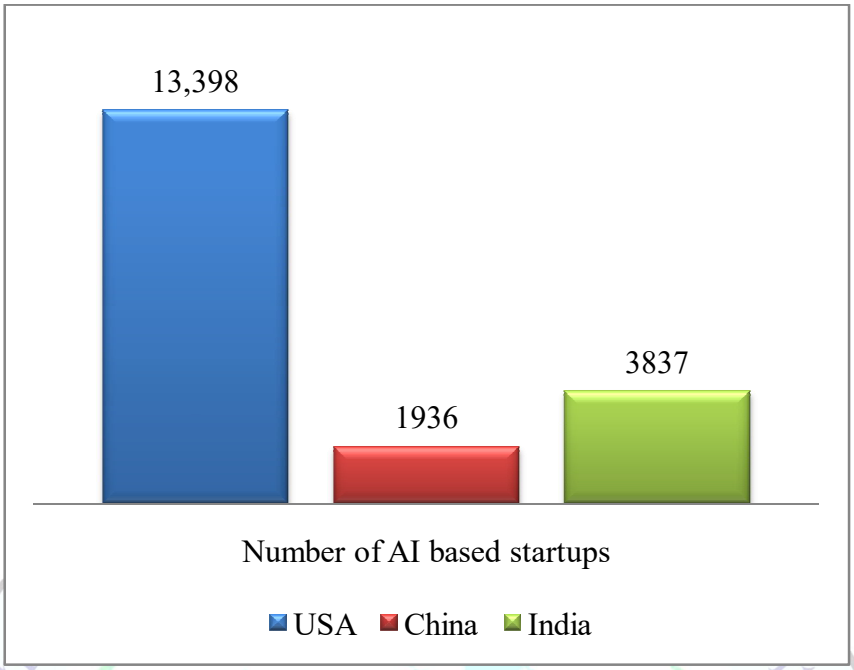

Fig. 5: Chart showing the number of AI-based startups as of 2022

CONCLUSION:

This research describes how Artificial Intelligence-based startups helps in the advancement of India. Our initial investigation is that AI-based startups might increase India's GDP in recent years. Maximum start-ups in the Indian start-up ecosystem are AI-based, and it has improved each year noticeably. India's GDP has since been growing annually. From 2010 onwards, as Indian start-ups increased, their impact on the nation's GDP was seen. Investments in AI-based startups have increased significantly in the last ten years, which has provided the Government of India with significant motivation to invest. This investigation clearly describes India has the capacity and moving in the right direction to build its AI industry. AI is anticipated soon to make a major contribution to India's GDP and improve a lot of people's lives.

REFERENCES:

1. Lemaire A, Lucazeau R, Rappers T, Westerheide F, Howard C. (2018). Artificial Intelligence – A strategy for European startups. Recommendations for policymakers. Roland Berger GmBH, 32.
2. Soni, N., Sharma, E. K., Singh, N., & Kapoor, A. (2020). Artificial Intelligence in Business: From Research and Innovation to Market Deployment. Procedia Computer Science, 167, 2200–2210. https://doi.org/10.1016/j.procs.2020.03.272
3. National Strategy for Artificial Intelligence. (2018). NITI Ayog, Government of India.
4. Gamechangers, A. (n.d.). Accelerating India With Innovation.
5. Economic Survey 2021-22. (2021). Ministry of Finance, Gov. of India.

6. Shivram Kalyanakrishnan, Rahul Alex Panicker, Sarayu Natrajan, Shreya Rao (2018) Opportunities and Challenges for Artificial Intelligence in India, AIES 2018 - Proceedings of the 2018 AAAI/ACM Conference on AI, Ethics, and Society, 164–170.
7. Dr. Alexander Hirschfeld, Jannis Gilde, Vanusch Walk, Vanessa Cann, Prof. Dr. Jürgen Seitz, Katharina Willbold, Robin Haiber (2021).Startups and Artificial Intelligence : Innovation Meets Responsibility, German Startups Association
8. V. Palanivelu and V. B, "Role of Artificial Intelligence In Business Transformation," *Int. J. Adv. Sci. Technol.*, vol. 29, no. 4, pp. 392–400, 2020.
9. Vempati, S. S. (2021). *INDIA AND THE ARTIFICIAL INTELLIGENCE REVOLUTION.*
10. Malik, P. (2020). AI INITIATIVES BY INDIAN GOVERNMENT: JOURNEY TOWARDS BECOMING GLOBAL TECHNOLOGY LEADER. 7(19).