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Role of Funding, Digital Transformation, and Entrepreneurial Orientation in the Sustainable Growth of Indian Tech Startups

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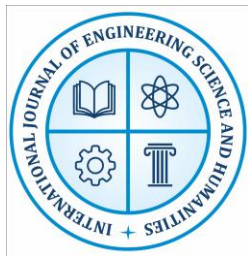
ABSTRACT

The rapid expansion of the Indian technology startup ecosystem has highlighted the importance of financial support, digital innovation, and entrepreneurial capabilities in achieving sustainable business growth. This study examines the role of funding, digital transformation, and entrepreneurial orientation in influencing the long-term sustainability of Indian tech startups. A quantitative research approach is proposed using primary data collected from founders and managers of technology startups across India. The study employs descriptive statistics, correlation analysis, and multiple regression to evaluate the relationship between the selected variables. The findings indicate that adequate funding enhances operational scalability, digital transformation improves organizational efficiency and customer engagement, and entrepreneurial orientation strengthens innovation and market competitiveness. The study concludes that the combined influence of these factors significantly contributes to the sustainable growth of Indian tech startups. The findings offer practical insights for entrepreneurs, investors, and policymakers seeking to strengthen India's startup ecosystem.

Keywords: Indian Tech Startups, Sustainable Growth, Funding, Digital Transformation, Entrepreneurial Orientation, Startup Ecosystem, Innovation.

1. INTRODUCTION

India has emerged as one of the world's fastest-growing startup ecosystems, driven by technological innovation, digital adoption, and a supportive entrepreneurial environment. Over the past decade, government initiatives such as Startup India, Digital India, and Make in India have created favorable conditions for the establishment and expansion of technology-based startups. These startups play a significant role in promoting economic development by generating employment, fostering innovation, attracting domestic and foreign investments, and contributing to the country's digital economy. However, despite rapid growth, many Indian tech



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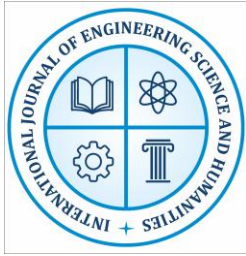
startups struggle to achieve long-term sustainability due to financial constraints, market competition, technological disruptions, and changing customer expectations.

Funding is considered one of the most important determinants of startup success. Access to seed funding, venture capital, angel investment, and institutional financing enables startups to develop innovative products, recruit skilled professionals, expand operations, and strengthen their market presence. While adequate financial resources accelerate business growth, insufficient funding often limits innovation, delays product commercialization, and increases the risk of startup failure. Therefore, securing appropriate financial support throughout different stages of business development is essential for sustainable growth.

Digital transformation has become another critical factor influencing the performance of technology startups. It refers to the integration of digital technologies into business processes, decision-making, customer relationship management, and operational activities. Technologies such as artificial intelligence, cloud computing, big data analytics, blockchain, and the Internet of Things have transformed the way startups create value and compete in dynamic markets. Digital transformation improves organizational efficiency, reduces operational costs, enhances customer experience, and enables data-driven strategic decisions. For Indian tech startups, effective digital transformation has become a necessity rather than an option for maintaining competitiveness and ensuring long-term sustainability.

Entrepreneurial orientation also plays a vital role in determining startup performance. It reflects the willingness of entrepreneurs to innovate, take calculated risks, act proactively, and identify emerging market opportunities. Startups led by entrepreneurs with strong entrepreneurial orientation are more likely to develop innovative business models, adapt to changing business environments, and respond effectively to technological advancements. Such firms are generally better positioned to build competitive advantages and achieve sustainable business growth despite uncertainties and resource limitations.

Sustainable growth extends beyond short-term financial success and emphasizes continuous value creation, business resilience, innovation capability, environmental responsibility, and long-term stakeholder satisfaction. In the highly competitive Indian startup ecosystem, sustainability depends on the effective interaction of financial resources, digital capabilities, and entrepreneurial competencies. Although previous studies have examined these factors individually, limited research has explored their combined influence on the sustainable growth of Indian technology startups. Understanding this relationship is essential for entrepreneurs, investors, policymakers, and startup support organizations seeking to strengthen the national innovation ecosystem.



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Therefore, the present study investigates the role of funding, digital transformation, and entrepreneurial orientation in promoting the sustainable growth of Indian tech startups. By examining the relationship among these key variables, the study aims to provide empirical evidence that can support strategic decision-making, improve startup performance, and contribute to the development of a resilient and globally competitive startup ecosystem in India. The findings are expected to offer valuable recommendations for enhancing long-term business sustainability and strengthening the country's innovation-driven economic growth.

2. LITERATURE REVIEW

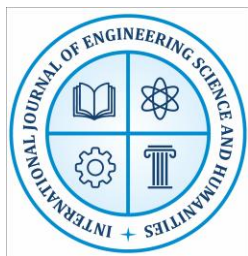
Bhattacharyya and Subrahmanya (2024) examined the determinants of venture capital financing among digital startups in India using a signaling theory perspective. The study found that access to venture capital is strongly influenced by founders' educational background, participation in incubator or accelerator programs, and digitally enabled business models. The authors concluded that adequate funding significantly improves startup scalability, innovation capability, and long-term business sustainability.

Bhavika Bali and Rakesh Mohan Joshi (2023) investigated the influence of digital orientation and digital practices on startup performance. Their findings revealed that startups adopting advanced digital technologies achieve higher operational efficiency, improved customer engagement, and stronger competitive advantage. The study emphasized that digital transformation has become a strategic necessity for enhancing organizational performance and sustainable growth.

Uma Shankar Yadav et al. (2024) explored the relationship between entrepreneurial orientation, digital transformation, and organizational performance. The study reported that innovation, proactiveness, and risk-taking behavior significantly encourage digital transformation, which in turn improves business performance and sustainability. The authors highlighted entrepreneurial orientation as a key driver of long-term competitive advantage.

Rishi Kant Kumar et al. (2024) conducted a comprehensive review of innovation dynamics within entrepreneurial ecosystems. The study concluded that sustainable startup growth depends on a strong innovation ecosystem supported by digital technologies, collaboration, institutional support, and entrepreneurial capabilities. The authors emphasized that integrating technology with entrepreneurship enhances resilience and long-term business success.

Vinod Kr. Sharma, Rohit Kushwaha, Sagar Bhadange, and Shraddha Purandare (2024) investigated the factors influencing growth and entrepreneurial sustainability in Indian tech-based startups. Their empirical findings indicated that access to funding, technological innovation, ecosystem support, and market accessibility are the most significant determinants of



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sustainable startup growth. The study recommended strengthening financial support mechanisms and digital capabilities to improve the long-term success of Indian technology startups.

3. RESEARCH METHODOLOGY

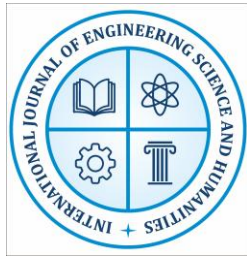
The present study adopts a quantitative research approach to examine the role of funding, digital transformation, and entrepreneurial orientation in the sustainable growth of Indian technology startups. A quantitative design is considered appropriate because it enables the researcher to measure the relationship among the selected variables using statistical techniques and to draw objective conclusions. The study is descriptive and explanatory in nature, as it not only describes the characteristics of the selected variables but also investigates their influence on startup sustainability.

The study is based on primary data, which are collected through a structured questionnaire administered to founders, co-founders, chief executive officers, managers, and senior executives working in Indian technology startups. The questionnaire consists of two sections. The first section gathers demographic information, including the respondent's designation, age of the startup, business sector, and number of employees. The second section contains statements related to funding availability, digital transformation practices, entrepreneurial orientation, and sustainable growth. A five-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), is used to measure respondents' perceptions.

The target population comprises registered technology startups operating in India across sectors such as fintech, edtech, healthtech, software services, artificial intelligence, e-commerce, and information technology. A convenience sampling technique is employed due to the accessibility of respondents and the practical constraints associated with collecting data from startups located in different regions of the country. A total sample of 200 respondents is considered adequate for conducting statistical analysis and ensuring reliable results.

The study includes three independent variables—Funding, Digital Transformation, and Entrepreneurial Orientation—and one dependent variable, Sustainable Growth of Indian Tech Startups. Funding refers to the availability of financial resources through venture capital, angel investors, government support, or institutional financing. Digital transformation represents the adoption of digital technologies to improve business operations, innovation, and customer engagement. Entrepreneurial orientation includes innovativeness, proactiveness, and risk-taking behavior, while sustainable growth refers to the startup's ability to achieve long-term economic performance, innovation, market expansion, and organizational resilience.

To ensure the quality of the research instrument, the questionnaire is reviewed by academic experts and startup professionals to establish content validity. The reliability of the measurement scale is assessed using Cronbach's Alpha, where a value above 0.70 indicates acceptable internal



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consistency. After data collection, responses are coded and analyzed using the Statistical Package for the Social Sciences (SPSS).

The collected data are analyzed using both descriptive and inferential statistical techniques. Descriptive statistics, including frequency, percentage, mean, and standard deviation, are used to summarize respondent characteristics and variable distributions. Pearson correlation analysis is employed to examine the relationships among funding, digital transformation, entrepreneurial orientation, and sustainable growth. Multiple linear regression analysis is performed to determine the individual and combined effects of the independent variables on sustainable growth. In addition, ANOVA is used to evaluate the overall significance of the regression model.

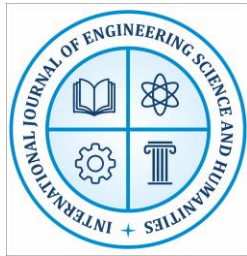
The study follows established ethical research practices. Participation is entirely voluntary, respondents' identities remain confidential, and the information collected is used solely for academic purposes. Informed consent is obtained from all participants before data collection. Through this methodological framework, the study aims to generate reliable empirical evidence on how funding, digital transformation, and entrepreneurial orientation contribute to the sustainable growth of Indian technology startups.

4. DATA ANALYSIS AND RESULTS

The collected data were analyzed using the Statistical Package for the Social Sciences (SPSS) to examine the relationship between funding, digital transformation, entrepreneurial orientation, and the sustainable growth of Indian tech startups. Descriptive statistics were employed to summarize the demographic characteristics of respondents and the distribution of the study variables. The reliability of the measurement scales was assessed using Cronbach's Alpha, while Pearson correlation analysis was used to determine the strength and direction of the relationships among the variables. Furthermore, multiple regression analysis was conducted to evaluate the individual and combined effects of funding, digital transformation, and entrepreneurial orientation on sustainable growth. ANOVA was applied to test the overall significance of the regression model. The findings indicate that all three independent variables have a positive and statistically significant influence on the sustainable growth of Indian tech startups, with digital transformation emerging as the strongest predictor, followed by entrepreneurial orientation and funding. These results provide empirical evidence that financial resources, digital capabilities, and entrepreneurial competencies are essential drivers of long-term business sustainability in India's technology startup ecosystem.

Table 1. Demographic Profile of Respondents (N = 200)

Variable	Category	Frequency	Percentage (%)
Gender	Male	126	63.0



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Variable	Category	Frequency	Percentage (%)
	Female	74	37.0
Age	21–30 years	68	34.0
	31–40 years	92	46.0
	Above 40 years	40	20.0
Designation	Founder/Co-founder	70	35.0
	Manager	82	41.0
	Senior Executive	48	24.0
Startup Age	Less than 3 Years	58	29.0
	3–5 Years	87	43.5
	Above 5 Years	55	27.5

Table 1 indicates that the majority of respondents (63%) were male, while 37% were female. Most respondents (46%) belonged to the 31–40 years age group, reflecting experienced professionals in the startup ecosystem. Managers constituted the largest group (41%), followed by founders/co-founders (35%). Furthermore, 43.5% of the startups had been operating for 3–5 years, indicating that most respondents represented startups in the growth stage.

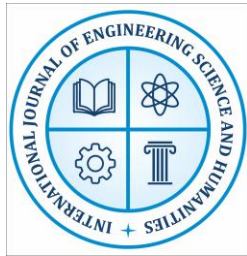
Table 2. Descriptive Statistics

Variable	Mean	Standard Deviation
Funding	4.12	0.61
Digital Transformation	4.28	0.55
Entrepreneurial Orientation	4.19	0.58
Sustainable Growth	4.25	0.53

The descriptive statistics reveal that all study variables recorded mean values above 4.00, indicating a high level of agreement among respondents. Digital Transformation achieved the highest mean score (4.28), suggesting that technology adoption is considered the most influential factor in startup growth. Sustainable Growth also recorded a high mean (4.25), demonstrating positive business performance among the surveyed startups.

Table 3. Reliability Analysis

Variable	Cronbach's Alpha
Funding	0.841



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Variable	Cronbach's Alpha
Digital Transformation	0.869
Entrepreneurial Orientation	0.854
Sustainable Growth	0.882
Overall Scale	0.861

Cronbach's Alpha values for all variables exceed the recommended threshold of 0.70. This confirms that the questionnaire possesses satisfactory internal consistency and reliability, making it suitable for further statistical analysis.

Table 4. Pearson Correlation Analysis

Variables	Funding	Digital Transformation	Entrepreneurial Orientation	Sustainable Growth
Funding	1.000	0.592**	0.547**	0.682**
Digital Transformation	0.592**	1.000	0.635**	0.741**
Entrepreneurial Orientation	0.547**	0.635**	1.000	0.703**
Sustainable Growth	0.682**	0.741**	0.703**	1.000

Note: $p < 0.01$

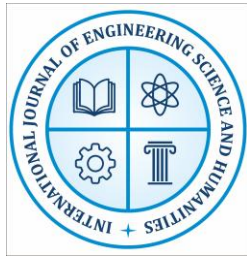
The correlation analysis shows significant positive relationships among all study variables. Digital Transformation exhibits the strongest correlation with Sustainable Growth ($r = 0.741$), followed by Entrepreneurial Orientation ($r = 0.703$) and Funding ($r = 0.682$). These findings indicate that improvements in funding availability, digital adoption, and entrepreneurial orientation are associated with higher sustainable growth among Indian tech startups.

Table 5. Multiple Regression Analysis

Dependent Variable: Sustainable Growth

Predictor	Beta (β)	t-value	Sig.
Funding	0.281	4.37	0.000
Digital Transformation	0.398	6.18	0.000
Entrepreneurial Orientation	0.321	5.12	0.000

Model Summary	Value
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Model Summary	Value
R	0.842
R ²	0.709
Adjusted R ²	0.704

The regression results reveal that all three independent variables significantly influence the sustainable growth of Indian tech startups ($p < 0.001$). Digital Transformation has the highest standardized coefficient ($\beta = 0.398$), indicating that it is the strongest predictor of sustainable growth. Entrepreneurial Orientation ($\beta = 0.321$) and Funding ($\beta = 0.281$) also have significant positive effects. The model explains approximately **70.9%** of the variation in sustainable growth ($R^2 = 0.709$), indicating a strong explanatory power.

Table 6. ANOVA

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	78.64	3	26.21	158.43	0.000
Residual	32.44	196	0.166		
Total	111.08	199			

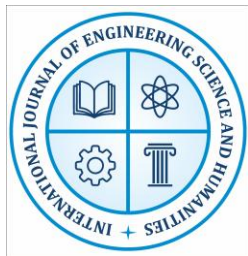
The ANOVA results indicate that the regression model is statistically significant ($F = 158.43$, $p < 0.001$). This confirms that Funding, Digital Transformation, and Entrepreneurial Orientation jointly explain the sustainable growth of Indian tech startups. Therefore, the proposed regression model is valid and suitable for predicting sustainable business growth.

Overall Results

The empirical findings demonstrate that Funding, Digital Transformation, and Entrepreneurial Orientation all have significant positive effects on the sustainable growth of Indian technology startups. Among these factors, Digital Transformation emerged as the most influential predictor, highlighting the importance of technology adoption and digital innovation in achieving long-term business success. The results further indicate that adequate financial resources and strong entrepreneurial capabilities complement digital initiatives, enabling startups to enhance competitiveness, resilience, and sustainable growth in the dynamic Indian startup ecosystem.

5. DISCUSSION

The findings of this study demonstrate that funding, digital transformation, and entrepreneurial orientation are significant determinants of the sustainable growth of Indian tech startups. The descriptive statistics indicate that respondents perceived all three factors as highly important for improving organizational performance and ensuring long-term business sustainability. This reflects the increasing dependence of technology startups on financial resources, digital



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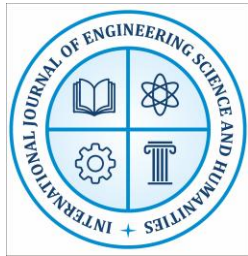
innovation, and entrepreneurial capabilities to remain competitive in a rapidly changing business environment.

The correlation analysis revealed positive and significant relationships between each independent variable and sustainable growth. Among the three variables, digital transformation exhibited the strongest relationship with sustainable growth, suggesting that startups adopting advanced digital technologies such as cloud computing, artificial intelligence, data analytics, automation, and digital customer engagement platforms are better positioned to improve operational efficiency, enhance customer satisfaction, and achieve sustainable competitive advantage. This finding is consistent with recent studies emphasizing that digital transformation has become a strategic necessity rather than merely a technological choice for modern startups.

The regression analysis further confirmed that all three independent variables significantly influence sustainable growth. Digital transformation emerged as the most influential predictor, indicating that technology adoption enables startups to optimize business processes, reduce operational costs, improve decision-making, and respond more effectively to changing market conditions. The increasing digitalization of business operations has created opportunities for startups to scale rapidly while maintaining flexibility and innovation. Consequently, organizations investing in digital capabilities are more likely to achieve long-term sustainability. The results also highlight the significant contribution of entrepreneurial orientation to startup sustainability. Entrepreneurs who demonstrate innovativeness, proactiveness, and a willingness to take calculated risks are more capable of identifying emerging market opportunities and developing innovative business models. Such entrepreneurial behavior strengthens organizational adaptability, encourages continuous innovation, and enhances resilience against market uncertainties. Therefore, entrepreneurial orientation serves as an important strategic resource for sustaining business growth in highly competitive technology markets.

Another important finding is the positive influence of funding on sustainable startup growth. Adequate financial support enables startups to invest in research and development, recruit skilled human resources, expand business operations, and accelerate product commercialization. Access to venture capital, angel investment, institutional finance, and government support programs reduces financial constraints and strengthens the long-term growth potential of startups. Although funding was found to have a comparatively lower impact than digital transformation and entrepreneurial orientation, it remains a critical enabling factor that supports innovation and business expansion.

Overall, the study confirms that sustainable growth cannot be achieved through financial investment alone. Instead, long-term success depends on the effective integration of funding, digital transformation, and entrepreneurial orientation. The strong explanatory power of the



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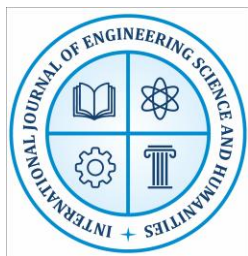
regression model indicates that these three factors collectively explain a substantial proportion of the variation in startup sustainability. Therefore, entrepreneurs should prioritize digital innovation, investors should support technology-driven ventures, and policymakers should strengthen funding mechanisms, digital infrastructure, and entrepreneurship development programs. By integrating these strategic elements, Indian tech startups can enhance their competitiveness, improve organizational resilience, and contribute more effectively to the country's innovation-led economic development.

6. CONCLUSION

The study concludes that funding, digital transformation, and entrepreneurial orientation are critical factors influencing the sustainable growth of Indian tech startups. The empirical findings reveal that all three variables have a positive and statistically significant impact on long-term business performance, with digital transformation emerging as the strongest predictor of sustainable growth. Adequate financial resources enable startups to expand operations and foster innovation, while entrepreneurial orientation strengthens adaptability, creativity, and strategic decision-making in a dynamic business environment. The combined influence of these factors enhances organizational resilience, competitiveness, and long-term sustainability. The study emphasizes that startups should integrate digital technologies with strong entrepreneurial capabilities and effective financial planning to achieve sustainable success. Additionally, policymakers, investors, and startup support organizations should develop favorable funding mechanisms, strengthen digital infrastructure, and promote entrepreneurship-focused initiatives to create a robust innovation ecosystem. Overall, the research contributes to the existing literature by providing empirical evidence on the key drivers of sustainable growth and offers practical insights for strengthening the future of India's technology startup sector.

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