

Macroeconomic Determinants and the Necessity-Opportunity Divide in India's Entrepreneurial Ecosystem

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Abstract: *Entrepreneurship serves as a driver of economic growth and transformation. This study examines whether India's entrepreneurial growth is primarily shaped by necessity or opportunity, and how various macroeconomic determinants influence this dynamic. Multivariate analysis reveals that both necessity- and opportunity-driven entrepreneurship positively and significantly influence entrepreneurial growth, indicating a structurally dual entrepreneurial landscape in India. Furthermore, the economic freedom index emerges as another significant determinant of entrepreneurial growth, highlighting the importance of a supportive regulatory and institutional environment. These findings suggest that entrepreneurial policy in India should strengthen inclusive microfinance initiatives while fostering opportunity-driven ventures through industry-academia linkages, aligning with the National Education Policy 2020. Finally, drawing on international best practices in digital governance, this study proposes that India can enhance its institutional efficiency through regulatory simplification of interoperable platforms, such as the National Single Window System, to cultivate an innovation-oriented entrepreneurial ecosystem.*

Keywords: Entrepreneurship, Growth, India, Innovation, Necessity, Opportunity, Venture.

INTRODUCTION

Entrepreneurship is recognized as a cornerstone of economic growth, not only for its contribution to innovation and job creation but also for its capacity to reshape the structural trajectory of economies. In developing countries, the nature of entrepreneurship is often dualistic. While it can drive productivity and competitiveness, it may also emerge as a survival response to labour market rigidities. In advanced economies, entrepreneurship is typically opportunity-driven, characterized by higher growth expectations, resource mobilization, and innovation. However, in developing economies, it is predominantly necessity-driven, with individuals pursuing self-employment primarily as a response to limited formal employment opportunities (Lim et al., 2024). The technological dimension further complicates this landscape. Businesses leveraging digital infrastructures demonstrated resilience during the COVID-19 pandemic, while those operating in traditional, location-dependent enterprises suffered disproportionately. This digital divide extends beyond technology adoption; as artificial intelligence is projected to contribute over \$15.7 trillion to the global economy by displacing traditional business models and creating new entrepreneurial priorities (The Hindu, 2025a). This trend is expected to reinforce inequality within the entrepreneurial ecosystem, where resource-constrained necessity entrepreneurs would face particular disadvantages, especially during economic downturns.

With an estimated 12 million individuals entering the workforce annually, the imperative to generate substantial employment opportunities has never been more critical in India. The nation is currently focusing on expanding its startup ecosystem, creating over 1.5 million entrepreneurship opportunities since 2016, while simultaneously providing Rs.64.1 trillion in loans to its Micro, Small, and Medium Enterprises (MSMEs) in 2024 to bolster scalability and employment (Shukla, 2024). Further the dominance of the informal sector—which accounts for 90 percent of India's workforce—suggests that entrepreneurship often emerges as a default livelihood strategy rather than a deliberate, innovation-led venture. This underscores the continuing prevalence of necessity-driven entrepreneurship (NDE) within India's growth narrative, particularly during periods of economic distress characterized by high inflation and unemployment (Kumar & Sureka, 2022). However, initiatives such as 'Make in India' and 'One Sun, One World, One Grid,' alongside collaborative ventures between India and other countries,

have created significant opportunities for the nation's educated youth to initiate their own entrepreneurial ventures. This reflects the emergence of opportunity-driven entrepreneurship (ODE) within India's entrepreneurial ecosystem (Walsh & Martin, 2021).

Therefore, an understanding of the primary drivers of India's entrepreneurship growth-necessity and/or opportunity-becomes essential. Equally critical is an analysis of how various macroeconomic determinants shape these dynamics. Thus, our study investigates the relative influence of NDE and ODE, along with assessing the influence of other macroeconomic determinants on India's entrepreneurial growth.

REVIEW OF LITERATURE

The growth of any country or business is possible through purposeful human activities. Schumpeter (2021) describes entrepreneurship as a process of 'creative destruction' or an 'act of innovation' whereby entrepreneurs disrupt existing norms with innovative ideas. According to Schumpeter, they achieve this by taking calculated risks to introduce innovative changes in the market through identifying and exploiting opportunities previously overlooked. Over time, the scope of entrepreneurship has expanded beyond individual traits to encompass resource management, value creation, opportunity recognition, and economic growth. Global Entrepreneurship Monitor (GEM) report NDE and ODE reveals that economies with high rates of entrepreneurial activity exhibit stronger economic growth and improved employment outcomes (GEM, 2025). Yu & Lu (2023) in this regard characterize NDE as the one, in which individuals compelled—or 'pushed'—into entrepreneurship due to a lack of viable employment alternatives, while ODE reflects those 'pulled' into entrepreneurial ventures by perceived business prospects. Block & Wagner (2010) note that NDE frequently operate in informal or low-capital-intensive sectors, characterized by limited growth prospects, low innovation intensity, and vulnerability to economic shocks. Conversely, ODE is driven by the potential to create value, exploit market inefficiencies, and introduce new products and services. Therefore, understanding the type of entrepreneurship within an economy provides insights into the trajectory of entrepreneurial growth.

Macroeconomic factors significantly influence these dynamics. Historical economic downturns, including the Great Depression of the 1930s and the COVID-19 pandemic, illustrate how crises reshape the entrepreneurial landscape through increased unemployment and inflation rates. The misery index (MI), calculated as the sum of unemployment and inflation rates, serves as a composite indicator of economic distress. Research indicates that high MI values correlate with greater prevalence of NDE, as individuals employ survival mechanisms in adverse economic climates (Cohen et al., 2014). Furthermore, entrepreneurial activity is also determined by institutional factors, such as the economic freedom index (EFI). The Heritage Foundation operationalizes the EFI through twelve dimensions, grouped into four categories: government size, rule of law, regulatory efficiency, and open market regulation (The Heritage Foundation, 2025). A high EFI facilitates entrepreneurs' ability to identify opportunities, access

resources, and capture returns on investments (Angulo-Guerrero et al., 2017). Similarly, trade openness (TO), measured as the ratio of trade to GDP, is identified as a structural factor that fosters entrepreneurship by facilitating innovation and productivity growth through technological spillovers from advanced economies. By integrating domestic economies with international markets, it expands market size, promotes technology diffusion, and encourages competition. This exposure to international markets compels entrepreneurs to adapt, innovate, and exploit emerging niches (Arshad et al., 2023).

Despite the extensive literature examining the relationship between entrepreneurship and economic growth, limited quantitative studies have investigated the relative influence of necessity- and opportunity-driven entrepreneurship alongside key macroeconomic determinants within the Indian context. This study addresses this gap by empirically investigating the types and determinants of entrepreneurial growth in India.

OBJECTIVES

To examine whether India's entrepreneurship growth is driven by necessity or opportunity.

To explore the influence of macroeconomic determinants on entrepreneurship growth in India.

HYPOTHESES

The research objectives outlined above necessitate the formulation of the following null hypotheses:

H_{01} : NDE has no significant impact on India's entrepreneurship growth

H_{02} : ODE has no significant impact on India's entrepreneurship growth

H_{03} : MI has no significant impact on India's entrepreneurship growth

H_{04} : TO has no significant impact on India's entrepreneurship growth

H_{05} : EFI has no significant impact on India's entrepreneurship growth

METHODOLOGY

The study employs a quantitative approach. Time-series analysis is used to explore the determinants of entrepreneurship growth in India between 2013 and 2023. Secondary data related to the total early-stage entrepreneurial activity (TEA), NDE, and ODE are compiled from year-wise GEM reports. Further, we use the World Bank's world development indicators (WDI) to compile data for MI and TO. Finally, EFI figures are collected from the Heritage Foundation's ranking reports. The dependent variable, TEA, is used to proxy entrepreneurship growth and measured both in its raw and natural logarithm forms to account for potential nonlinearities and to ensure robustness in the regression outcomes. TEA captures the proportion of the population aged between 18 and 64 years who either intend to initiate a new business venture or currently own a new enterprise (GEM, 2025). Independent variables include NDE, ODE, MI, EFI, and TO. These variables are selected based on established theoretical and empirical evidence,

reflecting their influence on entrepreneurship growth. To conduct the analysis, both linear and semi-log regression models have been considered, as specified below:

$$\text{Linear model: } (TEA)_i = \alpha_0 + \alpha_1(NDE)_i + \alpha_2(ODE)_i + \alpha_3(MI)_i + \alpha_4(EFI)_i + \alpha_5(TO)_i + u_i \quad \text{--- (I)}$$

$$\text{Semi-log model: } (\log-TEA)_i = \beta_0 + \beta_1(NDE)_i + \beta_2(ODE)_i + \beta_3(MI)_i + \beta_4(EFI)_i + \beta_5(TO)_i + u_i \quad \text{--- (II)}$$

The stationarity of the data series is verified using the Augmented Dickey-Fuller (ADF) test to avoid spurious regressions. To ensure the reliability and validity of the regression estimates, White’s test is undertaken to assess heteroskedasticity; where a non-significant test outcome (p-value > 0.05) indicates reliable standard errors. Furthermore, the presence of multicollinearity is tested using the variance inflating factor (VIF); where a VIF value close to zero confirms its absence, and exceeding 10 confirms its presence. The Durbin-Watson (DW) test is then used to detect autocorrelation, with a d-statistic value ranging from 1.5 to 2.5 indicating its absence. Finally, the Ramsey regression equation specification error test (RESET) is employed to assess specification and omitted variable bias in the regression model; where a significant test statistic (p-value > 0.05) indicates the absence of omitted variable bias and confirms model specification.

RESULTS

Figure 1 illustrates a moderate fluctuation in TEA until 2019, followed by a sharp decline in 2020, with the percentage decreasing by 9.67 points to 5.3 percent in India. This percentage subsequently improved from 2021 onwards, reaching 12 percent in 2023.

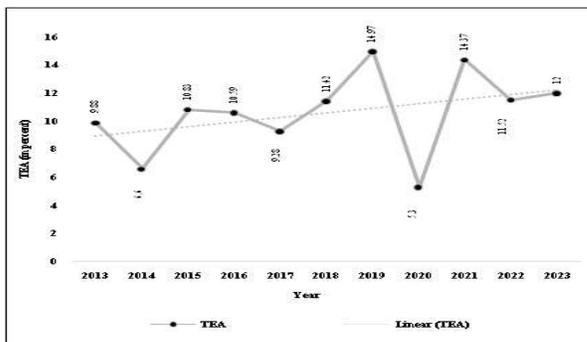


Figure 1: Growth Trend of TEA in India (in percent)

The ADF test results, presented in Table 1, reveal that TEA and TO are stationary at level I(0), indicating the absence of unit roots. However, NDE, ODE, MI, and EFI denote the presence of unit roots [I(1)], which are made stationary through first differencing, enabling the use of OLS to estimate both linear and semi-log models.

Table 1: ADF Test Results

Variables	Test Statistic	Integration Order
TEA	-4.360***	I(0)
NDE	-2.920**	I(1)
ODE	-3.705***	I(1)
MI	-4.472***	I(1)
EFI	-3.838***	I(1)
TO	-3.385***	I(0)

Note: *** and ** indicate level of significance at 1 and 5 percent respectively

Results of multivariate regression analyses are presented in Table 2. It highlights that both NDE and ODE consistently exhibit statistically significant and positive impacts on TEA across the models. EFI also shows a positive and significant association with entrepreneurial growth. Consequently, the null hypotheses H₀₁, H₀₂, and H₀₅ can be rejected. MI and TO, however, do not show any statistically significant impact in any specification, even though their signs are theoretically correct. Hence, we can accept the null hypotheses H₀₃ and H₀₄.

Table 2: Results of Multivariate Regression Analysis

Variables	Model Coefficients	
	Linear	Semi-Log
NDE	0.351*** (0.072)	0.037** (0.008)
ODE	0.246** (0.071)	0.027** (0.018)
MI	-0.419 (0.219)	-0.049 (0.025)
EFI	0.902 [†] (0.355)	0.105 [†] (0.040)
TO	0.179 (0.165)	0.020 (0.019)
Model Summary		
R ²	0.877	0.863
Adj-R ²	0.723	0.691
Mean VIF	2.670	2.670
White Test	10.000 (p = 0.351)	10.000 (p = 0.351)
DW Test	1.676	1.727
RESET Test	1.320 (p = 0.552)	0.430 (p = 0.776)

Note: ***, **, and * indicate level of significance at 1, 5, and 10 percent respectively.

Diagnostic tests further reveal that both of our considered models have high R² and adjusted-R² values, indicating their strong explanatory power. Further more, mean VIF values below 10 suggest the absence of multicollinearity. The White test indicates homoscedasticity (p-values > 0.05), while the DW test statistic, within the prescribed limits across the models, confirms the absence of autocorrelation. Finally, the RESET test (p-value > 0.05) indicates no evidence of functional form misspecification, thereby supporting the model specifications and robustness of the findings.

DISCUSSION

The sharp decline in TEA, as depicted in Figure 1, is largely attributable to the COVID-19 pandemic, which disrupted business activities, labor markets, and investor confidence. In the Indian context, the total economic cost of the nationwide lockdown was estimated to be \$120 billion, representing nearly 4 percent of its GDP. The pandemic’s economic fallout was particularly detrimental to the country’s micro-enterprises and small ventures, which typically lack the financial buffer and strategic flexibility of

larger firms, thereby amplifying the contraction in entrepreneurial activity during the crisis (Chen et al., 2023).

The statistically significant and positive relation of both NDE and ODE with TEA indicates that India's entrepreneurial growth is shaped by a dual-motivation structure. This aligns with recent literature that rejects a strict dichotomy between NDE and ODE, instead emphasizing their complementary roles and the importance of entrepreneurial ability in fostering growth (Huang et al., 2023). In developing economies like India, NDE is particularly prevalent due to structural labor market rigidities and weak social safety nets, which compel individuals into self-employment rather than voluntary choice. This underscores why entrepreneurship in India functions as a 'push factor' response (Lim et al., 2024). This trend has become evident, particularly following the emergence of COVID-19, which resulted in a 28.4 percent global surge in the proportion of individuals engaging in NDE (Sieger et al., 2021). In India, NDE increased from 46.3 percent during COVID-19 to 87.8 percent in 2023, suggesting that many individuals entered self-employment not solely by choice, but due to job losses, limited formal sector opportunities, and economic compulsion (GEM, 2025). However, following the expansion of digital infrastructure, startup-friendly policies, and institutional reforms such as 'Startup India,' ODE has also risen. India has witnessed a ten-fold increase in its unicorn count, rising from 11 to over 118 in nine years since the launch of 'Startup India' in 2016, positioning the country as the third-largest unicorn hub globally, after the U.S. and China (The Hindu, 2025b). ODE in India is primarily concentrated in technology-enabled services, including fintech, health-tech, and platform-based ventures, which possess greater growth and employment generation potential. These activities are prominent in urban clusters and digitally connected regions such as Bengaluru, Delhi, Mumbai, and Pune. The agglomeration economies of these regions contribute to the dominance of ODE, as enhanced access to networks of firms, suppliers, skilled labor, and knowledge spillovers increases productivity, innovation, and subsequently, access to venture capital, motivating individuals to pursue entrepreneurship based on opportunity exploitation rather than compulsion (Tiwari, 2023).

Among macroeconomic determinants, EFI has consistently demonstrated a significant positive association with TEA, confirming that increased economic freedom facilitates opportunity identification, resource access, contract enforcement, and captures better returns for entrepreneurs (Díaz Casero et al., 2012). Furthermore, it improves access to credit markets by reducing restrictions on financial intermediation, including delayed and costly procedures for venture creation and licence acquisition. This, in turn, decreases entrepreneurial uncertainty and stimulates venture capital funding (Dempere & Pauceanu, 2022). Finally, the lack of significant effects observed for MI and TO suggests that adverse macroeconomic conditions and global integration do not independently exert strong influences when controlling for entrepreneurial motivations and institutional factors.

IMPLICATION

The consistent significance of NDE and ODE

across our models suggests that India's entrepreneurial ecosystem reflects the co-existence of survival-oriented self-employment and opportunity-led, growth-oriented ventures. While NDE continues to function as an essential labor absorption mechanism in the presence of persistent informality and unemployment, the growing influence of ODE reflects the gradual maturation of the Indian startup ecosystem, supported by digitalization and policy reforms. However, structural constraints, including wage employment limitations, bureaucratic bottlenecks, and a flawed social security system, have hindered India's entrepreneurial ecosystem from becoming a significant engine of innovation.

Therefore, India can strengthen its social insurance schemes, such as the 'Pradhan Mantri Shram Yogi Maandhan Yojana,' by integrating entrepreneurship promotion within broader employment and skills strategies, rather than treating it as a residual safety net. Furthermore, the 'Pradhan Mantri MUDRA Yojana' (PMMY), which has sanctioned over 520 million loans totaling to Rs 32.61 trillion to micro-entrepreneurs since 2015, requires enhancement to facilitate graduation from micro to small enterprises through collateral-free lending mechanisms. PMMY should also offer flexible credit and promote women-focused incubation programs to enhance entrepreneurial opportunity recognition. In this regard, India could learn from the U.S., which has fostered ODE through strong university-industry linkages under the 'Bayh-Dole' framework, encouraging technological innovation while managing risk. For India, the 'New Education Policy 2020' (NEP-2020) presents a potential pathway to enhance opportunity-driven entrepreneurial mindsets. This is because, NEP-2020 has put forward experiential learning, vocational integration, entrepreneurship education, and industry-academia collaboration as the fundamental ideals of pedagogy. This boosts opportunity recognition and risk-taking ability, which are crucial for venture formation.

Moreover, the significant positive relationship between EFI and entrepreneurship underscores the importance of maintaining a supportive regulatory and institutional environment. In Europe, countries such as Estonia and Finland have fostered entrepreneurship through digital governance frameworks that streamline enterprise registration, taxation, and compliance via integrated e-government platforms, thereby reducing entry barriers for new ventures. India can operationalize similar steps through digital India-enabled platforms, including the 'National Single Window System' and 'MCA-21,' which promote interoperability across central and state governments. It can also enhance the efficiency of its 'Single Window Clearance Systems' to improve the ease of doing business, while simultaneously unifying indirect tax compliance through the 'GST Network' platform.

CONCLUSION

To summarize, India's entrepreneurial growth reflects a layered process in which necessity and opportunity motivations operate in parallel. The significance of both NDE and ODE, combined with economic freedom, indicates that entrepreneurial growth in India is also shaped by the nation's institutional capacity to convert entrepreneurial intent into venture creation. Therefore, policies

should move beyond a one-size-fits-all approach. While ODE requires continued strengthening of innovation ecosystems and regulatory simplicity, NDE calls for supportive measures that enhance venture sustainability and formalization. Strengthening institutional conditions that foster both forms of entrepreneurship is therefore central to sustaining a more resilient and innovation-led entrepreneurial ecosystem for India.

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