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Entrepreneurial Leadership and Firm Performance in Indian Start-ups

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Abstract

This study examines whether entrepreneurial leadership is associated with firm performance in Indian start-ups. It draws on Upper Echelons Theory, which proposes that organisational outcomes reflect the characteristics of top managers. Survey data were collected from 179 founders of start-ups affiliated with T-Hub, Hyderabad, using purposive sampling. Entrepreneurial leadership was measured with a six-item founder self-report version of the Renko et al. (2015)'s ENTRELEAD scale. Firm performance was measured with four financial and non-financial indicators reflecting the Balanced Scorecard perspective. A confirmatory factor analysis was conducted in IBM AMOS 24 using maximum likelihood estimation. The measurement model showed acceptable fit ($\chi^2/df = 2.035$, CFI = .964, TLI = .953, RMSEA = .076), with adequate reliability and discriminant validity. Entrepreneurial leadership was positively and significantly associated with firm performance ($\beta = .315$, $p < .001$), accounting for about 10% of the variance in performance. The findings suggest that founder leadership matters for start-up performance but explains only part of it, and the mechanisms linking the two need further study. The study provides quantitative evidence on the entrepreneurial leadership and performance relationship from Indian start-ups, a context that has received limited attention.

Keywords: Entrepreneurial leadership; Firm performance; Start-ups; Upper Echelons Theory; Confirmatory factor analysis; India

Introduction

India has become one of the world's largest start-up ecosystems, ranked third globally, with over one lakh ventures registered under the Government of India's Start-up India initiative. The ecosystem consists of health technology, software, fashion, water technology and many other sectors, and is spread well beyond the major metros. Yet most Indian start-ups remain small and founder-centric: a single founding entrepreneur typically serves as the main strategic decision-maker, resource mobiliser and team builder. This makes the founder's leadership a natural starting point for understanding why some ventures perform better than others.

Entrepreneurial leadership (EL) captures the kind of leadership suited to these conditions. Renko et al. (2015) define it as influencing and directing the performance of group members toward organisational goals that involve recognising and exploiting entrepreneurial opportunities. Unlike general leadership styles, EL is calibrated to the uncertainty and resource constraints that start-ups face. Gupta et al. (2004) similarly describe entrepreneurial leaders as those who create visionary scenarios and mobilise a committed team to discover and exploit value-creating opportunities.

Upper Echelons Theory holds that organisations reflect the characteristics of their top managers (Hambrick & Mason, 1984). In start-ups, where the founder's influence is direct and largely unfiltered by layers of management, this logic suggests that the founder's leadership should be visible in firm outcomes. A growing body of research supports a positive link between EL and performance, but much of it comes from established SMEs in other economies (Huang et al., 2014; Hayat et al., 2019; Nguyen et al., 2021). Evidence from Indian start-ups is scarce, and the literature also suggests that EL's influence on performance is often modest and channelled through organisational mechanisms rather than strong and direct (Nguyen et al., 2021; Pu et al., 2022).

This study addresses that gap by examining the relationship between entrepreneurial leadership and firm performance among 205 founders of Indian start-ups in the T-Hub ecosystem in Hyderabad. Firm performance is measured with financial and non-financial indicators reflecting the Balanced Scorecard perspective (Kaplan & Norton, 1992), and the analysis controls for firm age, size and venture stage. The study asks one central question: is entrepreneurial leadership associated with better performance in Indian start-ups, after accounting for basic venture characteristics?

The paper proceeds as follows. Section 2 reviews the literature and develops the hypothesis. Section 3 describes the method, Section 4 presents the results, and Section 5 discusses the findings, implications and limitations.

Literature review and hypothesis development

Entrepreneurial leadership

Entrepreneurial leadership sits at the intersection of leadership theory and entrepreneurship research (Cogliser & Brigham, 2004). Gupta et al. (2004) defined it as leadership that creates visionary scenarios used to assemble and mobilise a supporting cast committed to discovering and exploiting strategic value creation. Their definition highlights two linked tasks: crafting a compelling vision, and building a team capable of enacting it.

Renko et al. (2015) offered a more operational definition, centred on influencing and directing group members toward recognising and exploiting entrepreneurial opportunities. This definition has become the dominant anchor in the field and underpins the measure used in this study. EL is still a developing construct, with open questions about its boundaries and measurement (Leitch & Volery, 2017). It is particularly relevant in start-ups, where founders act simultaneously as visionary, strategist and operational leader.

Firm performance

Firm performance is a central but contested construct in entrepreneurship research. It is multidimensional, covering both operational and financial outcomes (Al Mamun et al., 2018). Studies use objective indicators such as sales growth, profitability and market share, and subjective indicators based on managers' assessments of their firm's performance relative to competitors or to its own past (Dess & Robinson, 1984; Venkatraman & Ramanujam, 1986).

In start-ups, objective financial data are often unavailable, unaudited or unstable because of early-stage conditions. Subjective measures are therefore widely used, and research shows they correlate well with objective measures (Wall et al., 2004). The Balanced Scorecard perspective argues for combining financial and non-financial indicators across the financial, customer, internal process, and learning and growth perspectives (Kaplan & Norton, 1992). This is well suited to start-ups, whose performance cannot be reduced to a single financial metric.

Theoretical lens: Upper Echelons Theory

Upper Echelons Theory proposes that organisational outcomes reflect the values, cognitive bases and behaviours of top managers (Hambrick & Mason, 1984). Leaders' characteristics shape the strategic choices they make, and those choices shape performance. The theory predicts stronger effects where managerial discretion is high.

Start-ups are a setting of unusually high discretion. Founders face few internal constraints, small teams and limited formal structure, so their leadership is likely to shape how opportunities are identified, how resources are committed and how the team works.

Entrepreneurial leadership and firm performance

Empirical studies generally report a positive association between EL and firm performance. Hayat et al. (2019) found that entrepreneurial leadership had a positive direct impact on firm performance among ICT SMEs. Huang et al. (2014) found that EL was positively related to both exploratory and exploitative innovation in Chinese new ventures, which in turn improved performance. Nguyen et al. (2021) and Pu et al. (2022) also found positive links between EL and performance in SMEs and start-ups.

However, the literature consistently suggests that EL works mainly through organisational mechanisms rather than as a strong direct driver. Reported mediators include competitive advantage, organisational innovation, perceived organisational support, knowledge sharing and entrepreneurial orientation (Nguyen et al., 2021; Pu et al., 2022; Leite & Rua, 2022). The overall association between EL and performance is therefore expected to be positive but modest in size. The context also matters: Hmieleski and Ensley (2007) found that the performance effects of entrepreneurs' leadership behaviour depend on team composition and environmental dynamism.

This study focuses on the overall relationship between EL and performance in Indian start-ups, rather than on the mechanisms through which it operates. Establishing whether, and how strongly, founder leadership is associated with performance in this context is a necessary first step.

Accordingly, the following hypothesis is proposed: **H1:** Entrepreneurial leadership is positively associated with firm performance in Indian start-ups.

Method

Research design

The study used a quantitative, cross-sectional survey design with a single key informant per firm. The founder was the respondent for each venture, as founders have the most complete knowledge of their own leadership, strategy and firm performance (Kumar et al., 1993).

Population and sampling

The target population was founders of formally recognised Indian start-ups. The accessible population was start-ups affiliated with T-Hub, Hyderabad, one of India's largest innovation and entrepreneurship ecosystems. Because T-Hub runs both physical and virtual incubation and acceleration programmes, the firms were located across India rather than only in Hyderabad. At the time of data collection, T-Hub's network included more than 3,300 registered start-ups.

Purposive sampling was used, because no publicly accessible sampling frame with founder contact details exists for Indian start-ups (Patton, 2015). Respondents had to (a) be the founding entrepreneur of the venture, (b) lead a venture recognised as a start-up through Start-up India or DPIIT certification and/or affiliated with T-Hub, and (c) have sufficient tenure and authority to report on leadership and firm performance.

Data collection

A pilot study with 15 founders was conducted to check the clarity and relevance of the items in the Indian start-up context; pilot responses were excluded from the main analysis. Contact details for founders of 350 T-Hub-affiliated start-ups were obtained through professional and institutional networks. A structured questionnaire was distributed through Google Forms and in hard copy, by email and personal visits, with periodic reminders. In total, 260 responses were received (a response rate of about 74%). Responses with substantial missing data, straight-line answering, logical inconsistencies, or a respondent who was not the founder were removed, leaving 179 usable responses.

Table 1 summarises the sample. Most founders were male (81.6%), aged 36–45 (53.0%), and held technical degrees (82.1%). Over half the ventures were at the growth stage (55.3%), and most employed fewer than 100 people (81.0%). Health technology was the largest sector (29.6%).

Table 1. Sample profile (N = 179)

Characteristic	Category	n	%
Gender	Male	146	81.6
	Female	33	18.4
Age	31–35 years	16	8.9
	36–40 years	40	22.3
	41–45 years	55	30.7
	46–50 years	31	17.3
	51 years and above	37	20.7
Education	Technical (Bachelor's / Master's / Engineering)	147	82.1
	Doctoral (PhD)	32	17.9
Venture stage	Early stage / MVP / Pilot	35	19.6
	Early traction / Traction	35	19.6
	Validation	10	5.6
	Growth	99	55.3
Sector	Health technology	53	29.6
	Fashion	26	14.5
	AI, data and software	21	11.7
	Water technology	21	11.7
	Others (media, industrial, energy, food, finance, animal care, agri and aquaculture)	58	32.4
Employees	Fewer than 100	145	81.0
	100 and above	34	19.0

Measures

All items were rated on a five-point scale from 1 (strongly disagree) to 5 (strongly agree).

Entrepreneurial leadership was measured with items adapted from Renko et al. (2015), worded in the first person as self-assessments by the founder. Originally there are eight items in the ENTRELEAD Scale but after pilot, it was suggested to remove two items due to repetitive wordings. Therefore, six items (EL1-EL6) were used in the measurement model.

Firm performance was measured with financial and non-financial indicators reflecting the Balanced Scorecard perspective (Kaplan & Norton, 1992), adapted from prior studies including Moorman and Rust (1999). Seven items were administered; three were excluded because of incomplete responses, leaving four items (FP1-FP4). Subjective performance measures are widely used in start-up research where audited financial data are unavailable, and correlate well with objective measures (Dess & Robinson, 1984; Wall et al., 2004).

Data Analysis

Data were screened in IBM SPSS for missing values, univariate normality (|skewness| < 2; |kurtosis| < 7; West et al., 1995), multivariate normality (Mardia's coefficient; Mardia, 1970) and multivariate outliers (Mahalanobis distance, $p < .001$). Common method bias was assessed with Harman's single-factor test (Podsakoff et al., 2003).

A two-factor confirmatory factor analysis (CFA) was estimated in IBM AMOS 24 using maximum likelihood. Model fit was assessed with χ^2/df (< 3), CFI and TLI (≥ .90 acceptable; ≥ .95 good), RMSEA (≤ .08; .08–.10 mediocre) and SRMR (≤ .08) (Hu & Bentler, 1999; MacCallum et al., 1996; Kline, 2023).

Reliability was assessed with composite reliability (CR > .70), and convergent validity with standardised loadings (> .50) and average variance extracted (AVE > .50; Fornell & Larcker, 1981; Hair et al., 2019). Discriminant validity was assessed with the Fornell–Larcker criterion.

Because the model contains only two constructs, a structural model specifying a single path from EL to FP is statistically equivalent to the CFA: it has the same fit, and the standardised path coefficient equals the latent correlation. H1 was tested using the standardised EL-FP estimate from the CFA, its critical ratio and its bias-corrected bootstrap confidence interval (Anderson & Gerbing, 1988).

Results

Data screening

There were no missing values in the final dataset of 179 responses. Univariate skewness ranged from -.877 to .018 and kurtosis from -.912 to 2.615, all within accepted limits for maximum likelihood estimation. Harman's single-factor test showed that a single factor explained 43.57% of the variance, below the 50% threshold, suggesting common method bias was not a serious concern.

Measurement model

The two-factor CFA showed acceptable fit to the data (Table 2). The χ^2 test was significant ($\chi^2 = 69.201$, $df = 34$, $p < .001$), as is common with samples of this size, but χ^2/df was 2.035. The incremental fit indices indicated good fit (CFI = .964; TLI = .953; IFI = .965), and RMSEA was .076 (90% CI .050–.102; PCLOSE = .049), below the .08 threshold. The upper bound of the RMSEA interval exceeded .08, which is expected in models with few degrees of freedom and modest samples (Kenny et al., 2015). No error covariances or other modifications were added to the model.

Figure 1. Confirmatory Factor Analysis

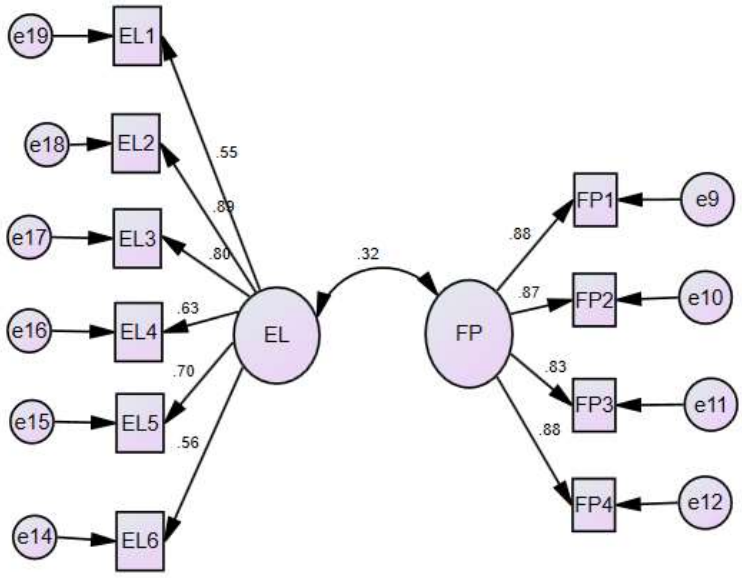


Table 2. Measurement model fit (N = 179)

Index	Value	Threshold
χ^2 (df)	69.201 (34), p < .001	-
χ^2/df	2.035	< 3
CFI	.964	≥ .95
TLI	.953	≥ .95
IFI	.965	≥ .90
GFI	.924	≥ .90
RMSEA (90% CI)	.076	≤ .08

All items loaded significantly on their intended constructs (p < .001; Table 3). Standardised loadings ranged from .547 to .892 for entrepreneurial leadership and from .828 to .885 for firm performance, all above the .50 minimum (Hair et al., 2019).

Composite reliability was .848 for EL and .923 for FP, both above .70. AVE was .750 for FP. For EL, AVE was .491, marginally below .50; Fornell and Larcker (1981) note that convergent validity remains adequate when AVE is below .50 but CR exceeds .60, as is the case here.

Table 3. Standardized loadings, reliability and convergent validity

Construct	Item	Standardized loading	CR	AVE
Entrepreneurial leadership	EL1	.547	.848	.491
	EL2	.892		
	EL3	.801		
	EL4	.629		

Construct	Item	Standardized loading	CR	AVE
	EL5	.703		
	EL6	.564		
Firm performance	FP1	.880	.923	.750
	FP2	.871		
	FP3	.828		
	FP4	.885		

Note: All loadings significant at $p < .001$.

Discriminant validity was supported (Table 4). The square root of AVE for each construct (EL = .701; FP = .866) exceeded the correlation between the two constructs (r = .315).

Table 4. Discriminant validity (Fornell-Larcker criterion)

Variables	EL	FP
Entrepreneurial leadership (EL)	**.701**	
Firm performance (FP)	.315	**.866**

Note: Diagonal values (bold) are the square root of AVE; the off-diagonal value is the latent correlation.

Hypothesis testing

H1 proposed that entrepreneurial leadership is positively associated with firm performance. The standardised estimate between EL and FP was .315 (unstandardised covariance = .151, SE = .045, C.R. = 3.359, $p < .001$. Because the structural model with a single EL → FP path is statistically equivalent to the CFA, this corresponds to a standardised path coefficient of $\beta = .315$, with entrepreneurial leadership accounting for about 9.9% of the variance in firm performance ($R^2 = .099$). H1 is supported.

Discussion

This study examined whether entrepreneurial leadership is associated with firm performance among 179 founders of Indian start-ups in the T-Hub ecosystem. The two-factor measurement model showed acceptable fit, reliability and discriminant validity, and entrepreneurial leadership was positively and significantly associated with firm performance ($\beta = .315$, $p < .001$). H1 was therefore supported. Entrepreneurial leadership accounted for about 10% of the variance in firm performance, indicating a relationship of moderate size.

The positive association is consistent with Upper Echelons Theory, which holds that organisations reflect the characteristics of their top managers (Hambrick & Mason, 1984). Indian start-ups are small and founder-centric, with few layers of management between the founder and the firm's decisions. In this high-discretion setting, founders who focus on recognising and exploiting opportunities and who mobilise their teams around them appear to lead better-performing ventures. The finding agrees with earlier evidence of a positive link between entrepreneurial leadership and performance in SMEs and new ventures (Hayat et al., 2019; Huang et al., 2014; Nguyen et al., 2021; Pu et al., 2022) and in micro-enterprises (Al Mamun et al., 2018), and extends that evidence to Indian start-ups, a context that has received little quantitative attention.

The size of the effect also deserves attention. Entrepreneurial leadership explained about one-tenth of the variance in performance, leaving most of it to other factors such as market conditions, access to finance, team capabilities and sector dynamics. This is in line with the view that leadership influences

performance mainly through organisational mechanisms rather than as a strong direct driver. Nguyen et al. (2021) found that entrepreneurial leadership improved SME performance through team creativity, dynamic capabilities and competitive advantage, and Pu et al. (2022) found that its effect on start-up performance operated through tacit knowledge sharing and job embeddedness. In a related stream, Leite and Rua (2022) found that the effect of transformational leadership on firm performance ran through entrepreneurial orientation. The estimate reported here is therefore best read as the overall association between founder leadership and performance, which is likely to include such indirect pathways, rather than as a purely direct effect.

Context may also shape the strength of the relationship. Hmieleski and Ensley (2007) showed that the performance effects of entrepreneurs' leadership behaviour depend on team composition and environmental dynamism. More than half of the ventures in this sample were at the growth stage and most employed fewer than 100 people. The relationship may differ for very early-stage ventures, where the founder carries nearly every function, or for larger ventures with more developed management structures.

The study used a six-item, first-person version of the Renko et al. (2015) scale completed by founders about themselves. The measure showed good composite reliability (.848) and clear discriminant validity from firm performance, but its average variance extracted (.491) was marginally below the conventional .50 threshold, and two items (EL1 and EL6) had the weakest loadings. This suggests that some items may work less well when founders rate their own leadership, consistent with the view that the measurement of entrepreneurial leadership is still developing (Leitch & Volery, 2017). Researchers using this scale with founder self-reports should test its structure in their own samples rather than assume it.

Theoretical implications

The study makes two contributions to theory. First, it supports Upper Echelons Theory in a setting where managerial discretion is unusually high, showing that the founder's entrepreneurial leadership is reflected in venture performance in Indian start-ups. Second, it provides an estimate of the size of this relationship in an emerging-economy start-up context. The moderate effect indicates that founder leadership is an important but partial explanation of performance, and it reinforces calls to study the mechanisms and conditions through which entrepreneurial leadership operates (Leitch & Volery, 2017; Nguyen et al., 2021).

Limitations and future research

Several limitations should be considered when interpreting the findings. First, the cross-sectional design does not allow causal conclusions. Better-performing ventures may lead founders to rate their own leadership more highly, so the direction of the relationship cannot be established. Longitudinal designs would allow stronger inferences.

Second, both constructs were reported by the same founder in a single survey. Harman's single-factor test (43.57%) fell below the 50% threshold, but common method variance cannot be ruled out entirely (Podsakoff et al., 2003). Future studies could combine founder reports with employee ratings of leadership and objective performance data.

Third, the sample was drawn purposively from a single ecosystem, T-Hub, and was predominantly male, technically educated and at the growth stage. The findings may therefore not generalise to all Indian star

t-ups, particularly those outside incubator networks.

Fourth, firm performance was measured subjectively, and three of the seven performance items were excluded because of incomplete responses. Although subjective measures are widely used and correlate well with objective measures (Wall et al., 2004), future research should include objective indicators where available. Similarly, entrepreneurial leadership was measured with six of the eight original items after the pilot, and its AVE was marginal; further validation of the founder self-report version is needed.

Finally, the study examined only the overall relationship between entrepreneurial leadership and performance. It did not include control variables such as firm age, size, sector or venture stage, or test mediating and moderating mechanisms. Future research could control for these venture characteristics and examine mediators such as entrepreneurial orientation, innovation and team creativity, and moderators such as environmental dynamism (Hmieleski & Ensley, 2007), to explain how and when founder leadership translates into performance.

Conclusion

This study set out to examine whether entrepreneurial leadership is associated with firm performance in Indian start-ups. Using survey data from 179 founders in the T-Hub ecosystem and confirmatory factor analysis, it found a positive and significant relationship of moderate size, supporting the view, grounded in Upper Echelons Theory, that the founder's leadership is reflected in venture outcomes.

The findings carry a balanced message. Entrepreneurial leadership matters for start-up performance, but it explains only part of it. For founders, incubators, investors and policymakers, developing entrepreneurial leadership is a worthwhile investment, best pursued together with building the organisational capabilities through which leadership is likely to work. For researchers, the next step is to explain the mechanisms and conditions that link founder leadership to performance in India's growing start-up ecosystem.

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