
LEAN START UP AS BRIDGE BETWEEN ACADEMIA AND ENTREPRENEURSHIP PRACTICE - A DUAL REGRESSION EVIDENCE FROM INDIA

Shillpi Upadhyay¹, Dheeraj Nim²

¹Research Scholar, Management Studies, Oriental School of Business Management & Commerce, Oriental University, Indore, India. Email ID: mishrashilpii@gmail.com ORCID ID: 0009-0007-4882-995X

²Professor & Associate Dean Research (Faculty of Management), Oriental University, Indore, Madhya Pradesh, India. Email ID: Dheeraj.n@orientaluniversity.in ORCID ID: 0000-0003-1564-0097

Article History

Received : 2026-07-02

Revised : 2026-08-22

Accepted : 2026-09-20

Published : 2026-10-07

Abstract

Objective: This study aims at exploring the Lean Start-up approach as an empirical bridge between academic training and entrepreneurial practice in India. The central assumption is that the Lean Start-up approach would have the same primacy from both sides of the academic-practitioner divide, -it would predict how the practitioner views Gen Z; and it would also predict why Gen Z entrepreneurs are motivated to take entrepreneurship as career.

Research Design & Methods: The study adopts a quantitative, cross-sectional, positivist research design. Primary data were gathered from 371 respondents from three sets of stakeholders-128 entrepreneurs, 143 Generation Z students, and 100 academicians-using structured Likert scales questionnaires, which were distributed online through Google Forms in December 2025 in India. All analyses were performed using IBM SPSS Statistics Version 32 and included descriptive statistics, Pearson's correlation, and multiple linear regression.

Findings: The findings of the entrepreneur regression model show that Lean Start-up Practices have the strongest influence on Gen Z Perception ($= 0.490, p < .001$) with the entire model explaining 31.9 percent of variance ($R = 0.319, F(2, 125) = 29.262, p < .001$). For the Gen Z regression model, Lean Start-up Awareness had the strongest influence on Entrepreneurial Motivation ($= 0.340, p < .001$) and explained 56.9% of variance ($R = 0.569, F(3, 139) = 61.082, p < .001$). A combination of Lean Start-up as the dominant variable in both models provides empirical evidence to show that Lean Start-up can be viewed as a bridge between academia and practice.

Implications & Recommendations: Lean Start-up must be made a credit bearing and assessed component of all management and business courses offered at Indian higher education institutions. Concrete academic-practitioner partnership frameworks, similar to the triple-helix model, need to be established to sustain the integration of the Lean Start-up pedagogy into academic curricula. Minimum entrepreneurship infrastructure levels must be made mandatory for all UGC and AICTE affiliated colleges.

Contribution & Value Added: This is the first dual regression attempt to empirically validate the Lean Start-up bridge hypothesis across multiple Indian stakeholders by involving three diverse sets of respondents. While Ries (2011) laid the foundation for Lean Start-up at the practice level, this study goes beyond it to apply it in entrepreneurship education literature and propose some policy recommendations for developing economies facing academic-practitioner gap issues.

Keywords: Lean Startup; Generation Z; academic-practitioner gap; entrepreneurial motivation; India; dual regression; bridge construct; emerging economy

JEL codes: L26, M13, I23, O15

1. Introduction

A structural gap, the discrepancy between the knowledge delivered in universities and the practices sought in the start-up ecosystem (Rynes et al., 2001), has long been known as a defining issue within the academic-practitioner domain. In India, as in many economies, the skills mismatch between graduates, millions of whom enroll in management programs annually, and the start-up industry continues to present tangible economic consequences (Nasscom, 2023). To what extent the gap can be structurally bridged – pedagogically, institutionally, and empirically – becomes one of the most critical questions for entrepreneurship education in India.

The Lean Start-up methodology, introduced by Ries (2011), has been hypothesized as a potential solution to this bridge question. It describes venture creation in terms of principles like validated learning, minimum viable product development, iterative customer feedback, and build-measure-learn loops—all of which are arguably both teachable in academia and applicable in practice. In effect, scholars have argued that the Lean Start-up can be conceived as a bridge between academic and practitioner perspectives (Shepherd & Gruber, 2021; Bortolini et al., 2021). However, to the best of our knowledge, no previous study has empirically investigated the bridge hypothesis with regard to two independent stakeholder groups through two separate regression models.

This study is an attempt to fill that void. It employs primary data from 371 individuals in India consisting of entrepreneurs ($n = 128$), Generation Z students ($n = 143$), and academicians ($n = 100$) in India, estimating two multiple linear regression models to investigate whether Lean Start-up is predictively prior on both sides of the academic-practitioner divide. It contributes to the literature in three ways: first, this paper represents the first dual-regression, multi-stakeholder, Indian empirical test of the Lean Start-up bridge hypothesis; second, this study shows that Lean Start-up holds a parallel predictive primacy in both models; third, this paper makes a set of empirical policy and curriculum recommendations for emerging economies.

Literature Review And Hypotheses Development

The Lean Start-up Framework

Developed by Eric Ries (2011), the Lean Start-up methodology arose from an analysis of the extremely high failure rate of start-ups, attributing this failure to the fact that businesses were often creating products and then attempting to find customer validation for them. The Lean Start-up Framework consists of three principles: valid learning – gaining information by interacting with customers rather than by making assumptions about them; the minimum viable product (MVP) – this is a simplified, or 'bare-bones', version of the product which is used to test key hypotheses with the lowest possible cost; and the build-measure-learn feedback loop – an iterative loop whereby a company builds the MVP, measures the results of this through contact with its customers, and then learns how best to proceed with either a pivot or continued development. The framework has been the subject of increasing academic research since its publication. Bortolini et al. (2021) provide a historical overview of the framework and identify the increasingly frequent use of the framework in pedagogy as a major emergent research theme. Shepherd and Gruber (2021) have provided a theoretical discussion, arguing that disciplined experimentation in this framework makes it particularly well-suited to Bridging the gap between academic knowledge and practice; this theory forms the basis of the empirical test of this study.

Generation Z and the Lean Start-up

Generation Z — broadly those born between 1997 and 2012 — is the first cohort to have grown up in a fully digital environment (Twenge, 2017). Their characteristics — comfort with rapid information processing, ease with ambiguity, orientation toward digital problem-solving, and tolerance of failure — map closely onto the Lean Start-up's core principles (Seemiller & Grace, 2019). The hypothesis that Lean Start-up awareness may therefore increase Generation Z entrepreneurial motivation — by providing a concrete, structured, legitimised way of being an entrepreneur that aligns with who they already are — is theoretically grounded. Bandura (1997) established that self-efficacy, which the Lean Start-up framework builds by providing concrete answers to how to start a venture, is a primary antecedent of entrepreneurial motivation. Yet no prior quantitative Indian study has tested Lean Start-up awareness as a predictor of Generation Z entrepreneurial motivation.

The Academic-Practitioner Gap

There is extensive literature detailing the Academic-Practitioner gap which is a systemic disconnect between the knowledge generated in academia and applied in practice (Rynes et al., 2001; Bartunek & Rynes, 2014).

This in the case of entrepreneurship education refers to a disjuncture between the theoretical aspects of a business education and the practical skills and abilities necessary to found and operate a new enterprise (Fayolle & Gailly, 2015). The gap in India also has an institutional component in that, within the three groups of respondents in this research, the construct of academic ecosystem support receives the lowest score overall and is consistent with established findings within institutional Research-Indian universities have failed to establish the support structures, curriculum designs, and connections with industry necessary to successfully provide adequate support for student entrepreneurship (Guerrero et al., 2016).

Hypotheses

On the basis of this review, the following hypotheses are proposed:

H1:	Lean Startup Practices is the strongest predictor of entrepreneur perception of Generation Z entrepreneurial capacity.
H2:	Lean Startup Awareness is the strongest predictor of Generation Z entrepreneurial motivation in India.
H3:	The convergence of Lean Startup as the dominant predictor in both models constitutes empirical evidence of its bridge function.

RESEARCH METHODOLOGY

Research Design

The design of this research is quantitative, cross sectional positivist research design (Saunders et al., 2019). A deductive design is applied by testing theories developed hypothesis with statistical test over collected primary data. The research is part of the greater doctoral study which use a quantitative dominated mixed-methods design (here only reported the quantitative findings concerning the Lean Start-up bridge hypothesis).

Sample and Data Collection

371 respondents from three stakeholder groups have participated and primary data were collected using a structured questionnaire based on a Likert-scale using the web-tool Google Forms in December 2025. Purposive and snowball sampling were utilized to reach stakeholders institutional and geographical across India (refer to Table 1 for sample profile).

Table 1. Sample profile

Group	n	% of Total	Mean LS	Key Profile
Entrepreneurs	128	34.5%	3.914	Startup founders, CEOs, directors
Gen Z Students	143	38.6%	3.726	UG/PG management and technology students
Academicians	100	26.9%	3.658	Faculty from management institutions
Total	371	100%	—	Google Forms, December 2025

Source: own study.

Measurement Instruments

A different set of questionnaires was used to measure the constructs. The questionnaire to be distributed to entrepreneurs measures three constructs the Lean Startup Practices (LS, 5 items), the Academia-Industry Integration (AE, 5 items) and the Gen Z Perception (GZ, 4 items). A different questionnaire is designed to measure the four constructs of the Generation Z. This set of questionnaire measures: the Lean Startup Awareness (LS, 5 items), the Entrepreneurial Motivation (EM, 5 items), the Digital Technology comfort (DT, 3 items) and the Academic Ecosystem Support (AE, 5 items). All variables are measured by using a five-point Likert scale from 1 (Strongly Disagree) to 5 (Strongly Agree). Both instruments were pre-tested on 29 experts, and modifications were made based on their feedback. Table 2 displays the Cronbach's Alpha reliability coefficients for all the constructs.

Table 2. Reliability coefficients (Cronbach's Alpha)

Group	Construct	Items	α	Interpretation
Entrepreneurs	Lean Startup Practices (LS)	5	0.693	Acceptable*
	Academia-Industry Integration (AE)	5	0.749	Acceptable
	Gen Z Perception (GZ)	4	0.772	Acceptable
Gen Z Students	Lean Startup Awareness (LS)	5	0.864	Good
	Entrepreneurial Motivation (EM)	5	0.830	Good
	Digital Technology Comfort (DT)	3	0.797	Acceptable
	Academic Ecosystem Support (AE)	5	0.897	Good

Note: $\alpha \geq 0.70$ acceptable; $\alpha \geq 0.80$ good; $\alpha \geq 0.90$ excellent (Nunnally, 1978). *LS for Entrepreneurs ($\alpha = 0.693$) approaches the acceptable threshold and is retained with acknowledgement. Source: own study.

Data Analysis

All analyses were performed in IBM SPSS Statistics Version 32 (IBM Corp., 2023). The analysis was performed as follows: (1) descriptive statistics and one-sample t-tests for each scale and all scales together comparing means to 3.0; (2) Pearson correlation within each group; (3) two multiple linear regressions models where the dependent variables were Gen Z Perception and Entrepreneurial Motivation (Model 1 predicting Gen Z Perception using LS and AE in entrepreneur sample, Model 2 predicting Entrepreneurial Motivation using LS, DT, and AE in Gen Z sample). Multicollinearity was assessed by looking at VIF. Level of significance used was $< .05$.

RESULTS AND DISCUSSION

Descriptive statistics

The descriptive statistics for both samples are included in Table 3 below. Every construct tested has a mean above the midpoint of 3.0 in both samples. This indicates both samples view Gen Z entrepreneurs positively overall. In the entrepreneur sample the highest mean was in Gen Z Perception ($M = 4.084$) validating positive entrepreneur attitudes towards Gen Z entrepreneurial abilities. In the Gen Z sample, Entrepreneurial Motivation had the highest mean ($M = 4.066$) while Academic Ecosystem Support had the lowest mean ($M = 3.306$). Using a practical interpretation, students rated Academic Ecosystem support well below the accepted score (4.0). In the t-test result it was stated, "The perceived Academic Ecosystem Support mean for students was statistically significantly lower than the midpoint of 3 ($t=7.750$, $p<.001$)". However, this test is not correct because this would indicate that students are negatively influenced, and as established, students are receiving adequate support but simply not to their highest perceived capacity. Instead, a t-test comparing the students perceived level of support against an adequate mean of 4.0 yields a score below the midpoint ($t=7.750$, $p<.001$).

Table 3. Descriptive statistics and one-sample t-test results (test value = 3.0)

Group	Construct	Mean	SD	t	p	Sig.
Entrepreneurs	Lean Start-up Practices (LS)	3.914	0.673	15.370	$< .001$	***
	Academia-Industry Integration (AE)	3.719	0.750	10.846	$< .001$	***
	Gen Z Perception (GZ)	4.084	0.693	17.691	$< .001$	***
Gen Z	Lean Start-up Awareness (LS)	3.726	0.888	9.771	$< .001$	***
	Entrepreneurial	4.066	0.888	14.346	$< .001$	***

	Motivation (EM)					
	Digital Technology (DT)	3.816	0.969	10.071	< .001	***
	Academic Ecosystem (AE)	3.306	1.070	3.422	.001	**

Note: ** $p = .001$; *** $p < .001$. Gen Z AE tested against benchmark of 4.0: $t = -7.750$, $p < .001$. Source: own study.

Correlation Analysis

Table 4 and 5 provide the Pearson correlation matrices for entrepreneurs and Gen Z students. All the inter-construct correlations were positive and statistically significant ($p < .001$). The strongest correlation within the entrepreneur matrix is LS-GZ ($r = 0.541$) implying that the more closely practitioners are integrated with Lean Start-up practice, the more they perceive Gen Z is entrepreneurial in nature. With respect to Gen Z students' matrix, LS-DT had the strongest correlation ($r = 0.769$), implying that Gen Z students' Lean Start-up awareness and digitally comfortable was interrelated two facets of Gen Z entrepreneurial readiness rather than discrete constructs.

Table 4. Pearson correlation matrix — Entrepreneurs (n = 128)

Variable	LS	AE	GZ
LS — Lean Startup Practices	1.000	0.372**	0.541**
AE — Academia-Industry Integration	0.372**	1.000	0.353**
GZ — Gen Z Perception	0.541**	0.353**	1.000

Note: ** $p < .001$ (two-tailed). Source: own study.

Table 5. Pearson correlation matrix — Generation Z students (n = 143, selected constructs)

Variable	EM	LS	DT	AE
EM — Entrepreneurial Motivation	1.000	0.704**	0.699**	0.587**
LS — Lean Startup Awareness	0.704**	1.000	0.769**	0.531**
DT — Digital Technology Comfort	0.699**	0.769**	1.000	0.549**
AE — Academic Ecosystem Support	0.587**	0.531**	0.549**	1.000

Note: ** $p < .001$ (two-tailed). Source: own study.

Regression analysis- dual model outcomes

Both regression models are displayed simultaneously in table 6. In Model 1 (Entrepreneur sample), Lean Start-up Practices serves as the predominant predictor of Gen Z Perception ($= 0.490$, $p < .001$), with the overall model predicting 31.9% of variance ($R = 0.319$, $F(2, 125) = 29.262$, $p < .001$). H1 is supported. In Model 2 (Generation Z sample), Lean Start-up Awareness serves as the predominant predictor of Entrepreneurial Motivation ($= 0.340$, $p < .001$), with the overall model predicting 56.9% of variance ($R = 0.569$, $F(3, 139) = 61.082$, $p < .001$). H2 is supported. The convergence of Lean Start-up as the dominant predictor within both independently- run models (drawn from completely separate sets of respondents using different survey instruments and testing different outcome variables) is the main empirical contribution of the study and therefore H3 is also supported. Lean Start-up acts as a empirical bridge construct connecting the two academia and practitioner entrepreneurship ecosystems in India.

Table 6. Dual regression models — Entrepreneurs (Model 1) and Generation Z Students (Model 2)

Predictor	β	SE	t	p	Sig.
Model 1 — Dependent Variable: Gen Z Perception (GZ) $R^2 = 0.319$, Adj. $R^2 = 0.308$, $F(2, 125) = 29.262$, $p < .001$					
(Constant)	1.563	0.339	4.609	< .001	***
Lean Startup Practices (LS)	0.490	0.082	5.976	< .001	***
Academia-Industry Integration	0.163	0.074	2.211	.029	*

(AE)					
Model 2 — Dependent Variable: Entrepreneurial Motivation (EM) $R^2 = 0.569$, Adj. $R^2 = 0.559$, $F(3, 139) = 61.082$, $p < .001$					
(Constant)	1.180	0.221	5.348	< .001	***
Lean Startup Awareness (LS)	0.340	0.093	3.650	< .001	***
Digital Technology Comfort (DT)	0.316	0.082	3.834	< .001	***
Academic Ecosystem Support (AE)	0.125	0.063	1.984	.049	*

Note: * $p < .05$; *** $p < .001$. VIF values < 3.0 confirming absence of multicollinearity. Source: own study.

Discussion

The main finding - that Lean Start-up is the significant predictor from both academic and practitioner sides - needs to be theorized. From the practitioner perspective, the value (0.490) in Model 1 is much higher than the value for AE (0.163). This reveals that practitioners have this understanding of Gen Z not because they have worked with academics but because they have learned the Lean Start-up mind-set themselves. Thus, a practitioner who tests an MVP, gets feedback, and pivots is inclined to believe that Gen Z individuals, digital native and eager to experiment, will also be a strong Lean Start-up practitioner. Their high Gen Z Perception is not simply benevolence but an identification of how effectively they perform within a Lean Start-up environment.

From the student perspective, both LS-Awareness and DT-Comfort have values (0.340 and 0.316) close to each other and this corresponds to the high correlation (0.769) between them and is likely because both constitute a cluster of entrepreneurial skill in the mind of a Gen Z student since Lean Start-up requires technology-enabled experimental learning. In fact, in the mind of the target student, LS-Awareness is what students learn (and find interesting to learn).

This gap shows that the problem is not a lack of motivation on the students' side (since a 3.224 level of familiarity suggests good prior exposure) but a lack of curricular delivery. Finally, while AE is statistically significant but still of a lower value (0.125) in Model 2, institutional engagement indeed influences student self-efficacy which is found to have a high correlation (0.634) in the larger study and therefore its main effect on motivation is indirect through boosting students' confidence in their entrepreneurial capacity.

Conclusions

In this research we tested whether the Lean Start-up framework serves as an empirical bridge between academic learning and practitioner experience. The dual regression design offers a direct and converging evidence for it. It is Lean Start-up Practices, which predicts the experienced entrepreneurs' views on Generation Z entrepreneurship ability ($\beta = 0.490$, $p < .001$); it is Lean Start-up Awareness, which predicts Generation Z students' entrepreneurship motivation ($\beta = 0.340$, $p < .001$). It is new empirical evidence of the bridging function of Lean Start-up, as it is predicted as strongest in two separate regression models using two independent sets of respondents. All three hypotheses are supported.

There are three practical conclusions arising from this research. First, the Lean Start-up framework represents an empirical linking connective thread between the world of academics and world of practice at least in the Indian context of generation Z entrepreneurship. Second, there is a clear, measurable and fixable institutional failure represented by the generation Z student's awareness-motivation gap, and it can be fixed through curricular restructuring; such reform would focus on incorporating Lean Start-up as an examinable, credited element of the curriculum. Third, it needs the both hands; Lean Start-up pedagogical implementation from the academic part and formal industry partnership mechanisms from the practitioner part.

This study advances the literature of entrepreneurship by offering the first dual-regression empirical analysis of Lean Start-up's bridging effect in the context of Indian multi-stakeholders. Future research should attempt to employ experimental designs to see if lean start-up intervention on curriculum could increase entrepreneurial motivation in general, and SEM analysis for testing mediation process that are implied by correlation pattern in this dataset.

Authors

Contribution share of authors: Shilpi Upadhyay — 60% (conceptualisation, data collection, writing);
Dr. Dheeraj Nim — 40% (supervision, methodology review, editing).

Shilpi Upadhyay (corresponding author)

Research Scholar, Department of Management, Oriental University, Indore (M.P.) — 453555, India.

Research interests: Generation Z entrepreneurship, Lean Startup methodology, entrepreneurship education, academic-practitioner gap.

Correspondence to: mishrashilpii@gmail.com

ORCID: <https://orcid.org/0009-0007-4882-995X>

Dr. Dheeraj Nim

Supervisor, Department of Management, Oriental University, Indore (M.P.) — 453555, India.

Research interests: Entrepreneurship, management education, VUCA leadership.

ORCID: <https://orcid.org/0000-0003-1564-0097>

Acknowledgements and Financial Disclosure

The authors acknowledge the support of Oriental University, Indore. No external funding was received for this study.

Use of Artificial Intelligence

The authors declare that AI tools were used for initial drafting assistance only. All data analysis, interpretation, literature review, and final writing were performed by the authors. All statistical results are original outputs from IBM SPSS Statistics Version 32.

Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Published by Krakow University of Economics — Krakow, Poland.

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