International Journal for Novel Research in Economics , Finance and Management
www.ijnrefm.com
ISSN:
3048-7722
Volume 4, Issue 3, May-June-2026, PP: 01-33

Lost in Translation: Information Asymmetry and Signal Gaps in Early-Stage Venture Capital Fundraising

Author: Muntaha Sabuwala
Neville Wadia Institute of Management Studies and Research, Pune, Maharashtra – 411001.

Abstract- This study investigates how effectively Indian early-stage startups communicate investment-relevant information to venture capital investors through pitch decks and whether systematic signal gaps reinforce information asymmetry in fundraising markets. Analysing 50 startup pitch decks across Pre-Seed to Series A stages and sectors including Deep Tech, SaaS, FinTech, HealthTech and AI/IT, the research applies a manually coded binary rubric of 19 variables grouped into five VC evaluation dimensions: product differentiation, market opportunity, traction, financial viability and team credentials. The findings reveal significant imbalance in communication quality, with team and market signals appearing substantially more frequently than financial signals, while exit strategy communication remains nearly absent. Although most startups address all major investor evaluation areas, critical gaps persist in articulating competitive advantage and growth dynamics. These findings suggest that current fundraising communication practices only partially mitigate information asymmetry, increasing investor uncertainty, due diligence costs and the risk of inefficient capital allocation decisions.

Key words: Team, Market Size, Venture Capital, Financials, Pitch Deck

CHAPTER 1: INTRODUCTION

1.1 Background and Context

The Indian startup ecosystem has emerged as one of the most dynamic and consequential venture capital markets in the world. As of 2024, India ranks third globally in terms of the number of recognised unicorns, with over 110 startups valued at more than one billion USD. The country's early-stage funding landscape, characterised by a dense network of angel investors, micro-VCs, accelerators and institutional seed funds, processes thousands of investment decisions annually. At the heart of each such decision lies a single, critically important artefact: the startup pitch deck.

A pitch deck is a founder's primary instrument of capital communication. It is the document through which a startup's value proposition, market opportunity, team credentials, traction evidence, financial projections and fundraising ask are condensed into a format suitable for investor review. The pitch deck thus occupies a peculiar position in the venture capital ecosystem - it is simultaneously a marketing document, an analytical summary and a signalling mechanism. How well founders construct these documents and how effectively they address the informational needs of investors, has direct implications for the efficiency of capital formation in the early-stage market.

Despite its importance, the pitch deck as a communication artefact has received limited systematic empirical attention in the Indian context. Most existing research on venture capital decision-making focuses on deal terms, post-investment performance or the cognitive biases of investors. What remains relatively understudied is the supply-side dimension of information quality - specifically, whether founders systematically over-communicate or under-communicate certain types of signals and whether such patterns reflect deeper structural asymmetries in how early-stage fundraising communication is conceptualised and executed.

1.2 The Problem of Information Asymmetry

Information asymmetry - a concept originally formalised by George Akerlof in his 1970 paper on the market for lemons - arises when one party to a transaction possesses materially superior information to the other. In the context of venture capital, information asymmetry operates on multiple axes. Founders know more about their technology, team chemistry and market insight than any investor could. Investors, conversely, possess greater pattern recognition about what constitutes a fundable opportunity, having evaluated thousands of deals across sectors and stages.

The pitch deck is the primary instrument through which founders attempt to reduce this asymmetry, signalling quality and potential to investors who must otherwise make decisions under conditions of

significant uncertainty. But signal quality is not uniform. Founders may consciously or unconsciously emphasise certain types of information - those they feel confident about or those they believe investors want to see - while understating or omitting other types. This selective signalling does not eliminate information asymmetry; it reconfigures it in ways that may systematically disadvantage both founders (who may not raise capital despite having fundable businesses) and investors (who may make suboptimal allocation decisions based on incomplete information).
The five categories through which investors typically evaluate early-stage ventures - product differentiation, market opportunity, traction, financial viability and team credentials - each represent a distinct dimension of the startup's value proposition and risk profile. Imbalanced communication across these five dimensions creates a fragmented picture that amplifies rather than reduces information asymmetry. This study quantifies exactly how imbalanced that communication is across a representative sample of Indian early-stage pitch decks.

1.3 Research Motivation

This research was motivated by direct observation of the Indian early-stage funding ecosystem through the analysis of pitch decks obtained from the Tracxn database and from founders who were contacted directly through LinkedIn and email while working as an Investment Banking Analyst. In reviewing these documents, a recurring pattern became apparent: while many decks told compelling stories about their founding team, business model and the size of their target market, they were conspicuously silent on financial viability metrics, exit pathways and unit economics. This pattern appeared consistent across sectors and stages, suggesting a systemic rather than idiosyncratic phenomenon.
Three developments make this research timely. First, the sharp contraction in Indian startup funding between 2022 and 2024 - from approximately $35 billion in 2021 to less than $10 billion in 2023 - has dramatically tightened the information standards that investors apply to deal selection. In a capital-abundant environment, investors tolerate incomplete pitch documentation; in a capital-constrained environment, they do not. Founders who cannot produce high-quality, comprehensive pitch documentation are increasingly likely to find themselves unable to raise capital regardless of the quality of their underlying business.
Second, the increasing internationalisation of Indian startup capital means that Indian founders are now competing for dollars, euros and pounds from investors who apply globally standardised information quality requirements. A pitch deck that might have been acceptable to a domestic seed investor in 2019 may be wholly inadequate for a US or European investor in 2025.
Third and most importantly, no systematic, empirical, signal-level analysis of Indian early-stage pitch deck communication has, to the best of this researcher's knowledge, previously been published. This study fills that gap.
The research title - 'Lost in Translation: Information Asymmetry and Signal Gaps in Early-Stage Venture Capital Fundraising' - captures this central insight. Something is being lost in the translation from startup reality to investor communication. This study attempts to quantify and characterise what is lost, using a rigorous binary scoring methodology applied to a purposively sampled set of 50 anonymised Indian startup pitch decks.
The study's originality lies in its supply-side analytical focus. While abundant research exists on how investors evaluate startups, systematic empirical analysis of what founders actually communicate in their pitch documents - coded at the signal level and tested against specific VC evaluation criteria - is rare in the Indian context. This research addresses that gap.

1.4 Objectives of the Study

1. To systematically analyse early-stage Indian startup pitch decks across five key VC evaluation categories.
2. To quantify the balance between qualitative and quantitative signals in early-stage pitch decks.
3. To evaluate how frequently exit strategies are communicated and whether this meets investor expectations.
4. To determine the proportion of pitch decks that achieve complete coverage across all five evaluation categories.
5. To assess whether problem-definition is consistently accompanied by clear solution and competitive differentiation.
6. To compare the disclosure of static versus dynamic traction across funding stages and identify any systematic gaps.
7. To develop evidence-based recommendations to improve early-stage fundraising communication.

International Journal for Novel Research in Economics , Finance and Management
www.ijnrefm.com
ISSN:
3048-7722
Volume 4, Issue 3, May-June-2026, PP: 01-33

1.5 Scope and Delimitations

This study focuses exclusively on Indian startups at the Pre-Seed, Seed, Pre-Series A and Series A stages of funding. The sample of 50 pitch decks was obtained through Tracxn and through direct outreach to founders via LinkedIn and email. All company names and identifying information have been anonymised in the dataset to protect commercial confidentiality. The study does not assess the commercial success or post-investment performance of the startups in the sample. It does not evaluate the design or visual quality of pitch decks, nor does it assess the subjective persuasiveness of the narrative. The analysis is confined to the presence or absence of 19 pre-specified informational signals, as determined through manual review of the pitch decks.

1.6 Structure of the Report

This report is organised into eight chapters. Chapter 1 provides the introduction and context. Chapter 2 reviews the relevant academic and practitioner literature. Chapter 3 presents the problem statement and formal research hypotheses, including null and alternate hypothesis formulations for each. Chapter 4 describes the research methodology. Chapter 5 reports the results of the statistical analyses. Chapter 6 discusses the findings and their implications. Chapter 7 presents conclusions and recommendations.

CHAPTER 2: REVIEW OF THE LITERATURE

2.1 Introduction

The academic literature on venture capital decision-making, information asymmetry in financial markets, signalling theory and startup fundraising communication provides the theoretical and empirical foundation for this study. This chapter reviews twenty-five key works spanning economics, finance, management and entrepreneurship, identifying the conceptual gaps that motivate the present research.

2.2 Information Asymmetry and Adverse Selection in Capital Markets

Akerlof (1970) introduced the foundational concept of information asymmetry through his analysis of the used car market, demonstrating how unequal information between buyers and sellers can lead to adverse selection - the systematic crowding out of high-quality goods by low-quality alternatives.[1] Applied to venture capital, this framework predicts that investors, unable to perfectly distinguish high-quality from low-quality startups, may underprice the former and overfund the latter, leading to allocative inefficiency. Akerlof's model remains the conceptual cornerstone of all subsequent work on information asymmetry in entrepreneurial finance and directly motivates this study's focus on how founders signal quality through pitch documentation.

Spence (1973) extended this framework through his seminal work on job market signalling, demonstrating that individuals can use costly, observable actions to credibly signal private information to uninformed parties.[2] In the venture capital context, signal theory predicts that founders will use their educational credentials, prior startup experience and domain expertise as costly signals that investors use to infer latent quality. Spence's framework provides a theoretical basis for understanding why team credentials are so prominently featured in pitch decks - they represent a signal category where founders can most credibly communicate quality information.

Stiglitz and Weiss (1981) applied information asymmetry analysis to credit markets, showing how adverse selection leads to credit rationing in equilibrium.[3] Their work highlights how information gaps between borrowers and lenders can lead to market failures even in the presence of willing capital providers. While their analysis focused on debt markets, the parallel to equity financing in early-stage ventures is clear: the same information barriers that create credit rationing can create equity rationing, systematically excluding potentially high-return ventures from the capital they need.

2.3 Venture Capital Decision-Making

Tyebjee and Bruno (1984) conducted one of the earliest systematic empirical studies of venture capital investment decisions, identifying five key factors that VCs consider: market attractiveness, product differentiation, managerial capabilities, environmental threat resistance and cash-out potential.[4] Their framework remains foundational and directly informs the five-category analytical framework used in this study. Notably, their finding that managerial capabilities and market attractiveness are the most heavily weighted factors by VCs aligns with this study's hypothesis that team and market signals dominate early-stage pitch communication.

MacMillan, Siegel and Narasimha (1985) surveyed 102 venture capitalists about the criteria they use to evaluate investment proposals.[5] Their landmark study found that the characteristics of the entrepreneur - particularly their track record and capacity to sustain intense effort - were the most important investment criteria. Market familiarity and expected return on

investment were secondary. This research provides empirical support for the hypothesis that team signals are the primary communication currency of early-stage fundraising.

Kaplan and Stromberg (2001) analysed the actual investment decisions made by a sample of venture capital firms, linking pre-investment assessments to post-investment outcomes.[6] Their research found that VCs explicitly distinguish between internal risks (team-related uncertainties) and external risks (market and competitive uncertainties) and that signal quality in each domain has predictable effects on deal terms. This study's finding that financial signals are significantly underrepresented in pitch decks has direct implications for Kaplan and Stromberg's risk assessment framework - incomplete financial communication may increase the perceived internal risk of deals, ultimately affecting valuation and deal structure.

Gompers and Lerner (2001) provided a comprehensive review of the venture capital cycle, documenting the structural features of the VC industry that shape investment behaviour.[7] Their analysis of the screening process highlighted the enormous volume of deal flow that most VCs manage - typically reviewing hundreds of opportunities for each investment made - and the consequent importance of rapid, signal-based filtering. This context helps explain why pitch deck signal completeness matters so much: in a high-volume screening environment, the absence of key signals is likely to result in rapid rejection rather than investor follow-up.

2.4 Signalling in Entrepreneurial Finance

Connelly et al. (2011) provided a comprehensive review of signalling theory as applied to management and organisational research, identifying four key properties of effective signals: observability, cost, specificity and fit with receiver expectations.[8] Applied to pitch deck design, this framework suggests that signals which are present but poorly specified or weakly documented may not reduce investor uncertainty effectively - a finding that underscores the importance of not just signal presence but signal quality.

Hsu (2004) studied the role of reputation and network ties in VC financing, finding that startups connected to prominent VC firms received better terms and were more likely to succeed.[9] His work highlights the role of social proof - endorsements, partnerships and advisory relationships - as a form of third-party certification that can supplement or substitute for direct performance signals in early-stage fundraising. The 40.0% appearance rate of social proof signals in this study's sample suggests that founders significantly underutilise this high-credibility signal category.

Baum and Silverman (2004) examined the relative importance of honeybee signals (about the current state of the firm) versus showpiece signals (about future potential) in VC decision-making.[10] Their research found that VCs attend to both types but that the relative weighting varies by stage - with later-stage investors placing greater emphasis on performance metrics and unit economics than early-stage investors. This stage-dependent signalling preference provides important context for interpreting the underrepresentation of financial signals in the predominantly Seed-stage sample.

Drover et al. (2017) conducted a systematic review of angel investor decision-making, identifying key signal categories that shape investment decisions including entrepreneur characteristics, opportunity characteristics and social validation signals.[11] Their work found that early-stage investors rely more heavily on qualitative, narrative signals than quantitative performance metrics, reflecting the limited availability of hard data at the Pre-Seed and Seed stages. This finding provides theoretical support for the qualitative bias documented in this study.

2.5 Pitch Deck Research and Communication

Clark (2008) analysed the structure and content of venture capital pitch presentations, arguing that the pitch is not merely an information transfer mechanism but a performative act through which founders construct entrepreneurial identity and demonstrate competence.[12] Clark found that the most successful pitches combined credible market data with compelling personal narratives about the founding team. This dual emphasis on quantitative market signals and qualitative team signals aligns with the signal frequency patterns observed in this study.

Pollack, Rutherford and Nagy (2012) conducted content analysis of written communications from nascent entrepreneurs to potential investors, finding that linguistic features including confidence, clarity and stakeholder orientation significantly predicted investor interest.[13] While their focus was on linguistic rather than informational signals, their methodology - content analysis of pitch documents - is methodologically analogous to this study's binary coding approach.

Sudek (2006) studied the criteria used by angel investors when evaluating business opportunities, finding that the passion and enthusiasm of the management team, followed by the quality of the

International Journal for Novel Research in Economics , Finance and Management
www.ijnrefm.com
ISSN:
3048-7722
Volume 4, Issue 3, May-June-2026, PP: 01-33

management team itself, were the two most important evaluation criteria.[14] Market growth potential ranked third and financial return potential ranked fourth. These investor priorities are reflected in the signal frequency patterns observed in this study - founders appear to be optimising for exactly the criteria that Sudek's research identifies as most salient to early-stage investors.

Nanda and Rhodes-Kropf (2013) studied how the financing environment affects the types of ventures that receive VC backing, finding that hot funding environments reduce the cost of experimentation and encourage riskier, more novel bets.[15] The signal gaps documented in this study may therefore be partly attributable to market conditions that have historically rewarded narrative quality over analytical rigour in India's abundant liquidity environment of the early 2020s.

2.6 Financial Signalling and Exit Communication

Brav and Gompers (1997) analysed the long-run performance of IPO firms backed by venture capital compared to non-VC-backed firms, finding that VC-backed firms significantly outperformed their peers in the long run.[16] Their research highlights the importance of exit pathways - specifically IPO - as a central component of the VC value creation model. The near-absence of exit strategy communication in this study's sample (6.0%) is particularly striking given the centrality of exit to the VC investment thesis.

Hellmann and Puri (2002) examined the relationship between venture capital and the professionalisation of startup management, finding that VC-backed startups are significantly more likely to professionalize management, adopt human resource practices and develop formal business systems.[17] Their work implies that the absence of professional financial communication in pitch decks may signal a broader gap in management sophistication.

Kaplan and Schoar (2005) documented persistence in venture capital performance, finding that top-quartile VC firms consistently outperform their peers across fund vintages.[18] One of their proposed explanations for this persistence is superior deal selection ability - specifically, the ability to identify quality signals in noisy information environments. The signal gaps documented in this study have direct implications for deal selection quality: if pitch decks systematically omit financial viability and exit signals, even the best deal selectors may face avoidable uncertainty.

2.7 Indian Startup Ecosystem Context

Dossani and Kenney (2002) analysed the emergence of the Indian entrepreneurial ecosystem, documenting the role of diaspora networks, returnee entrepreneurs and institutional investors in bootstrapping venture activity in India.[19] Their historical perspective helps contextualise the current study's findings: the Indian fundraising communication culture has evolved from a context where personal relationships and verbal assurances played a dominant role, which may explain the continued emphasis on founder narrative over quantitative performance documentation.

Krishnan et al. (2011) studied the impact of domestic versus foreign VCs on portfolio company performance in India, finding that foreign VCs - who typically bring more rigorous information requirements - are associated with better long-term company outcomes.[20] This finding has an interesting implication for this study's results: the signal gaps documented here may partly reflect the lower information standards historically set by domestic early-stage investors.

IVCA–EY (2023) reported that Indian startup funding reached approximately $25 billion in 2022 before declining significantly in 2023 in the face of global macro pressures, creating a more selective funding environment in which signal quality becomes increasingly important.[21] The flight to quality that characterises post-boom funding environments makes the signal gaps documented in this study particularly timely and consequential.

2.8 Research Gap

The literature review reveals a consistent pattern: while much is known about how VCs evaluate investments and what signals they find most credible, there is comparatively little systematic, empirical evidence on the supply side of this information exchange - specifically, how well founders actually communicate the signals that investors need. Studies of investor decision-making are abundant; studies of the information quality of pitch decks at scale are rare, particularly in the Indian context. This research addresses that gap directly by applying a systematic, replicable, binary coding methodology to a purposive sample of 50 Indian early-stage pitch decks, generating novel empirical data on the distribution of informational signals across the five core VC evaluation dimensions.

International Journal for Novel Research in Economics , Finance and Management
www.ijnrefm.com
ISSN:
3048-7722
Volume 4, Issue 3, May-June-2026, PP: 01-33

CHAPTER 3: PROBLEM STATEMENT AND RESEARCH HYPOTHESES

3.1 Problem Statement

The central problem addressed by this research is the structural information asymmetry that characterises early-stage venture capital fundraising in India and the role that pitch deck communication plays in perpetuating or mitigating this asymmetry. Specifically, this study investigates whether Indian early-stage startup founders systematically over-communicate qualitative, narrative signals (team credentials, use of funds, market opportunity) while underweighting quantitative, analytical signals (financial viability, business model, unit economics, exit pathways) in their pitch decks.

This problem is significant for several reasons. First, information asymmetry in early-stage financing has direct consequences for capital allocation efficiency. Second, the systematic omission of certain signal categories may create a persistent information gap that increases investor uncertainty and ultimately slows the pace of capital formation. Third, the Indian startup ecosystem is at a stage of maturation where improving the quality of fundraising communication could yield significant systemic benefits.

The overarching research question is: Do early-stage Indian startup pitch decks exhibit systematic signal gaps that perpetuate information asymmetry between founders and investors and if so, which signal categories are most underrepresented?

3.2 Conceptual Framework

The conceptual framework underlying this research integrates two theoretical traditions: Spencian signalling theory, which posits that agents under conditions of information asymmetry use observable actions and characteristics as credible signals of unobservable quality and the five-category VC evaluation framework derived from Tyebjee and Bruno (1984). The five categories - Product Differentiation, Market Opportunity, Traction, Financial Viability and Team Credentials - represent the principal domains through which investors assess venture quality and risk.

The framework hypothesises that information asymmetry in early-stage fundraising is not symmetric across these five categories. Specifically, it predicts that founders will more readily communicate signals in categories where they feel intrinsically confident (product, proof of concept, team credentials) or where industry norms have established strong communication expectations (market size), while underweighting categories that require sophisticated quantitative analysis (financial viability, unit economics) or that expose unflattering information (revenue, exit strategy).

3.3 Research Hypotheses

Each of the three research hypotheses is specified below in three forms: (i) the substantive Research Hypothesis (RH) - the theoretical claim being investigated; (ii) the Null Hypothesis (H0) - the default statistical claim of no effect or equality; and (iii) the Alternate Hypothesis (Ha) - the statistical claim being supported if H0 is rejected. The statistical test used to adjudicate between H0 and Ha is also specified for each hypothesis.

3.3.1 Hypothesis 1 - Qualitative Signal Dominance

RH (Research Hypothesis)	Team and market signals appear more frequently in early-stage startup pitch decks than financial viability signals, reflecting a qualitative bias in early-stage fundraising communication.
H0 (Null Hypothesis)	H0: There is no statistically significant difference between the average appearance rate of team+market signals and the average appearance rate of financial signals in early-stage pitch decks. [Formally: $\mu d = 0$, where d = (team +market rate) – finance rate for each pitch deck.]
Ha (Alternate Hypothesis)	Ha: The average appearance rate of team/market signals is significantly greater than the average appearance rate of financial signals. [Formally: $\mu d > 0$ (one-tailed) or $\mu d \neq 0$ (two-tailed).] The direction of Ha predicts team/market dominance over financial signals.
Statistical Test	Paired-samples t-test (primary) with Wilcoxon signed-rank test (non-parametric confirmation). Effect size measured using Cohen's d. $\alpha = 0.05$.

Rationale: Signalling theory predicts that founders will emphasise the signal categories in which they can most credibly demonstrate quality. Team credentials are both easily communicated and highly valued by early-stage investors (MacMillan et al., 1985; Sudek, 2006). Market opportunity signals are straightforward to construct using publicly available market research. Financial viability signals, by contrast, require

International Journal for Novel Research in Economics , Finance and Management
www.ijnrefm.com
ISSN:
3048-7722
Volume 4, Issue 3, May-June-2026, PP: 01-33

sophisticated modelling and expose the company to scrutiny on dimensions where early-stage ventures are inherently weak. The null hypothesis posits no difference in signal frequency, a claim the research hypothesis predicts will be rejected.

3.3.2 Hypothesis 2 - Exit Strategy Communication Gap

RH (Research Hypothesis)	Exit strategy signals (path to IPO, acquisition potential, investor return narrative) appear in fewer than 30% of early-stage pitch decks, creating a critical gap in investor return communication.
H0 (Null Hypothesis)	H0: The true population proportion of early-stage pitch decks that include exit strategy signals is greater than or equal to 30%. [Formally: H0: $p \geq 0.30$.]
Statistical Test	One-sample proportion z-test (one-tailed, lower). 95% Wilson confidence interval computed. Stage-wise breakdown provided as supplementary evidence. $\alpha = 0.05$.

Rationale: Exit strategy communication is uniquely important in venture capital, where the investment model depends entirely on eventual liquidity events. Yet exit strategy is also the signal category most psychologically remote from the day-to-day concerns of early-stage founders. The threshold of 30% was set based on a conservative interpretation of 'minority presence' - if fewer than one in three pitch decks addresses investor return expectations, this represents a structural gap. The null hypothesis posits that exit communication meets or exceeds this threshold; the research hypothesis predicts it falls dramatically below it.

3.3.3 Hypothesis 3 - Comprehensive Five-Category Coverage

RH (Research Hypothesis)	Pitch decks that include at least one signal from all five VC evaluation categories (team, market, traction, financials, product differentiation) represent fewer than 20% of the total sample.
H0 (Null Hypothesis)	H0: The true population proportion of pitch decks with complete five-category coverage is less than or equal to 20%. [Formally: H0: $p \leq 0.20$.]
Ha (Alternate Hypothesis)	Ha: The true population proportion of pitch decks with complete five-category coverage is not equal to 20%. [Formally: Ha: $p \neq 0.20$ (two-tailed). The research hypothesis predicts $p < 0.20$, but the z-test evaluates departure from 0.20 in either direction.]
Statistical Test	One-sample proportion z-test (two-tailed). 95% Wilson confidence interval computed. Category-level presence rates reported as supplementary evidence. $\alpha = 0.05$.

Rationale: While individual signal categories may be frequently present, the question of whether pitch decks achieve comprehensive coverage across all five VC evaluation dimensions is analytically distinct. A pitch deck that scores well on team and market but completely omits product, traction or financial signals still leaves significant investor questions unanswered. The 20% threshold reflects the prediction that comprehensive five-category coverage is relatively rare in early-stage Indian pitch decks. The null hypothesis posits that at most 20% of decks achieve this coverage; the research hypothesis predicts the true rate is even lower.

3.4 Analytical Enquiry

3.4.1 Analytical Enquiry 1: Problem Defined, Advantage Undefined

The Problem Statement is the single most frequently present signal in the dataset, appearing in 88% of pitch decks. Its high presence rate means that the Product Differentiation category broadly avoids categorical absence, but presence of the problem statement does not imply presence of the signals that answer the investor's most commercially important follow-on question: why will this particular solution win? USP and Competitive Landscape analysis are the two signals that directly address competitive defensibility and their absence alongside a problem statement leaves an investor with a clearly framed problem and no clear case for why the startup's solution is the right answer to it. This enquiry examines precisely how often that gap occurs and whether it is uniformly distributed across stages.

International Journal for Novel Research in Economics , Finance and Management
www.ijnrefm.com
ISSN:
3048-7722
Volume 4, Issue 3, May-June-2026, PP: 01-33

3.4.2 Analytical Enquiry 2: Traction Without Trajectory

Do startups consistently present both current traction (what they are doing now) and growth rates (how fast they are growing) in their pitch decks or do they tend to emphasise static performance metrics while underreporting forward-looking growth and does this pattern vary across funding stages in a way that reflects how founders perceive investor information needs? This question looks at whether founders are telling the full performance story. Traction metrics show the present state of the business, while growth rates signal future potential. Since investors care heavily about future value, the question explores whether founders are neglecting this forward-looking aspect-and whether that behaviour changes depending on how mature the startup is.

CHAPTER 4: RESEARCH METHODOLOGY

4.1 Research Design

This study employs a quantitative, descriptive-analytical research design grounded in a positivist epistemological framework. Pitch deck content is treated as observable, measurable evidence of founder communication behaviour that can be reliably coded, quantified and subjected to inferential statistical analysis. The design is cross-sectional: all 50 pitch decks were coded during a single exercise, producing a snapshot of early-stage pitch communication patterns in India at the time of data collection.

A binary content analysis methodology was selected for its reliability and accuracy. Each pitch deck was assessed against a rubric of 19 pre-specified signal variables, each coded 1 (explicitly present or only implicitly present) or 0 (absent). This approach sacrifices signal depth (a passing mention and a detailed analysis receive the same code) in exchange for consistency (the same coding decision rules apply to all 50 decks) and replicability (a second coder applying the same rubric to the same decks should arrive at substantially the same results).

4.2 Data Collection

4.2.1 Primary Data Sources

Pitch deck data was collected from two primary sources. The first source was the Tracxn database, a comprehensive repository of startup investment data that includes pitch deck documentation for many of the startups it tracks. Tracxn was used to identify early-stage Indian startups across a diverse range of sectors and funding stages. The second source was direct outreach to founders via LinkedIn or email, where founders were contacted with a request for their pitch decks. Several founders responded positively and shared their decks directly.

Data collection methodology: Pitch decks were manually reviewed on-screen, slide by slide. Each deck was reviewed in its entirety before coding was commenced, so that the coder could form a holistic understanding of the document's structure and content before making binary judgements at the signal level.

4.2.2 Sample Selection and Characteristics

The study employs purposive sampling, with inclusion criteria specifying: (i) Indian-domiciled or India-focused startup; (ii) Pre-Seed, Seed, Pre-Series A or Series A funding stage; (iii) primary fundraising document; (iv) minimum five identifiable slides. The final sample comprised 50 pitch decks: Pre-Seed (n=8, 16.0%), Seed (n=34, 68.0%), Pre-Series A (n=3, 6.0%) and Series A (n=5, 10.0%). The sample spans various sectors with DeepTech (16%), Consumer (14%) and SaaS (12%) being the most represented. All company-identifying information has been anonymised.

4.3 Measurement Instrument: Binary Coding Rubric

The primary data collection instrument was a binary coding rubric consisting of 19 signal variables organised across five VC evaluation categories plus one exit category. Each variable was coded 1 (present) or 0 (absent).

Category	Signal Variable	What It Means and Why Investors Care
Product	Problem Statement	An explicit articulation of the real-world problem the startup is solving. Investors assess this for specificity and magnitude - vaguely stated problem signals insufficient customer research.
	USP / Competitive Moat	The unique characteristic that makes the

International Journal for Novel Research in Economics , Finance and Management
www.ijnrefm.com
ISSN:
3048-7722
Volume 4, Issue 3, May-June-2026, PP: 01-33

Category	Signal Variable	What It Means and Why Investors Care
		startup's product better or harder to replicate than alternatives. Investors look for structural defensibility - proprietary technology, network effects, exclusive data assets or switching costs.
	Competitive Landscape Analysis	A structured comparison against existing alternatives - direct competitors, indirect substitutes or the default status quo. Demonstrates market knowledge and intellectual honesty about competition.
	Proof of Concept / MVP Status	Tangible evidence that the product has moved from idea to reality. Even a rudimentary prototype substantially reduces investor uncertainty about technical feasibility and team execution capability.
Market	Market Size (TAM/SAM/SOM)	Quantified market opportunity across three tiers: Total Addressable Market, Serviceable Addressable Market and Serviceable Obtainable Market. Market size sets the ceiling on investor return potential.
	Target Customer Defined	Specific identification of the first and most important customers - their profile, pain point and decision-making context. Precision here signals go-to-market discipline and customer interview depth.
Traction	GTM Strategy	The plan for reaching target customers and converting them to paying users - acquisition channels, customer journey and unit-level economics of customer acquisition.
	Business Model	The revenue mechanism - how the startup makes money, at what price point, from whom and with what frequency. Essential for any financial modelling.

International Journal for Novel Research in Economics , Finance and Management
www.ijnrefm.com
ISSN:
3048-7722
Volume 4, Issue 3, May-June-2026, PP: 01-33

Category	Signal Variable	What It Means and Why Investors Care
Financials	User Traction Metrics	Quantitative evidence of actual product usage - users, customers, transactions or other engagement metrics. Represents revealed preference: real people paying or engaging with the product.
	Growth Rate Mentioned	Any explicit statement of how fast key metrics are growing. Compound growth rates are the most important forward-looking signal in early-stage VC, because they determine future scale.
	Social Proof	Third-party validation - named advisors, press coverage, strategic partnerships or institutional endorsements. Each form represents external quality certification that supplements investor assessment.
	Revenue Figures	Current or historical revenue - the most direct evidence of commercial value creation. Enables investors to compute early valuation multiples and begin financial modelling.
Ask	Financial Projections	Forward-looking revenue and cost estimates, typically covering 3–5 years. Tests both the growth ambition of the plan and the analytical sophistication of the founding team.
	Unit Economics (CAC/LTV/Margins)	Customer Acquisition Cost, Lifetime Value and gross margins - the building blocks of business model scalability. A startup with CAC exceeding LTV loses money on every customer and cannot scale sustainably.
	Funding Ask Amount	The specific capital amount being sought in the current round. Without this, investors cannot assess deal terms or begin modelling their expected return.
	Use of Funds	How the requested capital will be deployed across activities. Tests strategic

International Journal for Novel Research in Economics , Finance and Management
www.ijnrefm.com
ISSN:
3048-7722
Volume 4, Issue 3, May-June-2026, PP: 01-33

Category	Signal Variable	What It Means and Why Investors Care
		clarity - whether the allocation is coherent with the milestones being used to justify the current round.
Team	Founder Background / Credentials	Educational background, professional history and prior achievements. At the early stage, the founding team is often the single most important asset being funded.
	Team Experience in Domain	Specific prior hands-on experience in the industry or problem space being addressed - distinct from general business experience. Signals depth of problem understanding that cannot be quickly acquired.
Exit	Exit Strategy / Return Potential	Any explicit acknowledgement of how investors will achieve liquidity - a potential IPO pathway, named potential acquirers, comparable acquisition multiples or an explicit investor return narrative. The most investor-relevant signal of all and the most absent.

Table. 4.1: Binary Coding Rubric - 19 Signal Variables Across Six Evaluation Dimensions

4.4 Coding Reliability

Each pitch deck was reviewed in full before coding commenced, ensuring a holistic understanding of the document's structure and content before binary judgements were made at the signal level. A conservative coding rule was applied throughout: a signal was coded 1 if explicitly or ambiguously stated in the deck. Implicit or unambiguous signals were coded 0. This conservative approach ensures that the presence-rate data considers each avenue of information in the deck and provides credibility even if the criteria isn't clearly mentioned but shows that the founder is aware/knowledgeable.

4.5 Statistical Analysis Plan

Three statistical tests were applied, one per hypothesis. The choice of test for each hypothesis was determined by the nature of the data and the type of comparison being made.

4.5.1 Hypothesis 1 - Paired-Samples t-test

For Hypothesis 1, the paired-samples t-test is used because each pitch deck provides two matched measurements - its team and market signal rate and its financial signal rate - from the same document. Comparing these paired observations is more powerful than comparing independent group averages because it controls for between-deck variability: the team-finance gap within any one deck is informative regardless of how high or low that deck's overall signal score is.
The test statistic is computed as $t = \bar{d} / SE$, where $\bar{d}$ is the mean of the 50 paired differences (team rate + market rate – finance rate for each deck) and SE is the standard error of those differences. The resulting t-value is compared to the critical value from the t-distribution with 49 degrees of freedom ($n - 1 = 50 - 1$). If the computed t-value exceeds the critical value, the null hypothesis of no difference is rejected. The p-value gives the probability of observing a t-value as extreme as ours if the null hypothesis were true - a very

International Journal for Novel Research in Economics , Finance and Management
www.ijnrefm.com
ISSN:
3048-7722
Volume 4, Issue 3, May-June-2026, PP: 01-33

small p-value means that the null hypothesis is implausible given the data.
A Wilcoxon signed-rank test is run in parallel as a non-parametric alternative that does not assume the differences are normally distributed. Concordance between the two tests strengthens the conclusion. Cohen's d is reported as a measure of practical significance, calculated as $\bar{d}$ divided by the standard deviation of the differences.

4.5.2 Hypothesis 2 - One-Sample Proportion z-test

For Hypothesis 2, the one-sample proportion z-test is appropriate because we are comparing a single observed proportion (the fraction of decks with exit signals) to a specified null hypothesis value (30%). The test statistic is $z = (\hat{p} - p_0) / SE$, where $\hat{p}$ is the observed proportion, p_0 is the null hypothesis value and $SE = \sqrt{(p_0 \times (1 - p_0) / n)}$. The z-statistic follows a standard normal distribution under the null hypothesis, so its significance is evaluated against the standard normal critical value of −1.645 for a one-tailed test at $\alpha = 0.05$. A 95% Wilson confidence interval, which is more accurate than the standard Wald interval for extreme proportions near 0 or 1, is also reported.

4.5.3 Hypothesis 3 - One-Sample Proportion z-test (Two-Tailed)

For Hypothesis 3, the same z-test formula is applied, but the test is two-tailed because we are assessing whether the observed proportion differs significantly from 20% in either direction. The critical z-values for a two-tailed test at $\alpha = 0.05$ are ±1.960. A 95% Wilson confidence interval is reported. The category-level presence rates (the proportion of decks with at least one signal from each individual category) are also computed and reported as supplementary descriptive statistics that contextualise the all-five coverage finding.
All tests use a significance threshold of $\alpha = 0.05$ (the 5% level), which is the universal convention in social science research. This means that a result is declared statistically significant - and the null hypothesis rejected - only when the probability of observing our data by chance (assuming H0 is true) is less than 5%.

4.5.3 Analytical Enquiries

In addition to the inferential statistical tests applied to the three formal hypotheses, the binary dataset was subjected to direct comparative analysis to address the two analytical enquiries. For each enquiry, signal presence counts were computed for defined subgroups - for example, the number of decks with a Problem Statement that also include a USP, that also include a Competitive Landscape, that include both and that include neither. All counts are expressed as percentages of the relevant base population, which is stated explicitly for each comparison. Stage-level breakdowns were computed by calculating the relevant rates separately for each of the four funding stages in the sample. Co-occurrence rates - the presence rate of one signal among decks where a second signal is present versus absent - were used to assess how strongly two signals travel together across the deck population. No inferential tests are applied to any of these comparisons; all conclusions are based on counts, percentage differences and subgroup mean scores drawn directly from the binary data matrix.

4.6 Ethical Considerations and Limitations

Founders who shared pitch decks on Tracxn or via LinkedIn or email did so voluntarily. All company names have been anonymised in the final dataset. The binary coding approach is reductive - signal presence does not capture signal quality or depth. Purposive sampling limits generalisability. The cross-sectional design cannot capture dynamic improvements in individual pitch decks across fundraising iterations.

CHAPTER 5: RESULTS

5.1 Sample Description

5.1.1 Stage and Sector Distribution

The sample of 50 pitch decks is distributed across four funding stages, with Seed-stage companies accounting for 68% of the sample. This reflects the dominance of the Seed stage in Indian early-stage deal volume and ensures that the study's findings are most directly applicable to the most active segment of the market.

Funding Stage	n	%	Description
Pre-Seed	8	16.0%	Concept or prototype stage; no institutional funding raised
Seed	34	68.0%	First institutional round; product-market fit testing
Pre-Series A	3	6.0%	Bridge round; revenue traction emerging

International Journal for Novel Research in Economics , Finance and Management
www.ijnrefm.com
ISSN:
3048-7722
Volume 4, Issue 3, May-June-2026, PP: 01-33

Funding Stage	n	%	Description
Series A	5	10.0%	First major institutional round; scaling phase
TOTAL	**50**	**100.0%**	

Table 5.1: Sample Distribution by Funding Stage

The sector distribution spans 19 categories. DeepTech (16%, n=8), Consumer (14%, n=7), SaaS (12%, n=6), AI/IT (8%, n=4), Health/HealthTech (12%, n=6), Fintech (6%, n=3) and DroneTech (6%, n=3) are the primary sectors, with the remaining 26% distributed across EV, BioTech, EdTech, AgriTech, PropTech, HRTech, B2B and FnB.

5.1.2 Overall Signal Score Distribution

The total signal score (sum of 19 binary variables) ranged from 5 to 19, with mean = 11.82 (SD = 3.62) and median = 13.0. The dataset demonstrates that the average early-stage pitch deck contains approximately 62.2% of all 19 possible signals. The standard deviation of 3.62 indicates substantial inter-deck variability.

Statistic	Value	Interpretation
Mean Score	11.82 / 19	62.2% of all possible signals present on average
Median Score	13.0 / 19	Skewed distribution; several low-scoring outliers
Standard Deviation	3.62	Substantial inter-deck variability
Minimum	5 / 19	Lowest coverage in sample
Maximum	19 / 19	Complete signal coverage - only 1 deck in full sample

Table 5.2: Descriptive Statistics - Total Signal Score

5.1.3 Individual Signal Frequencies

Table 5.3 presents the frequency and appearance rate of each of the 19 signal variables across the full sample. The data reveals a striking 82-percentage-point spread in signal appearance rates, from a high of 88.0% (Problem Statement; Founder Background) to a low of 6.0% (Exit Strategy). This heterogeneity is the foundational empirical result of the study.

Category	Signal Variable	Present (n)	Absent (n)	Rate (%)	Rank
Product	Problem Statement	44	6	**88.0**	1st
	POC / MVP Status	36	14	72.0	7th
	Competitive Landscape	33	17	66.0	10th
	USP / Competitive Moat	27	23	54.0	12th
Market	Target Customer Defined	43	7	**86.0**	3rd
	Go-To-Market Strategy	35	15	70.0	8th
	Market Size (TAM/SAM/SOM)	30	20	60.0	11th
Traction	Business Model	43	7	**86.0**	3rd
	User Traction Metrics	32	18	64.0	9th
	Social Proof	20	30	40.0	15th
	Growth Rate Mentioned	18	32	36.0	17th
Team	Founder Background / Credentials	44	6	**88.0**	1st

International Journal for Novel Research in Economics , Finance and Management
www.ijnrefm.com
ISSN:
3048-7722
Volume 4, Issue 3, May-June-2026, PP: 01-33

Category	Signal Variable	Present (n)	Absent (n)	Rate (%)	Rank
	Team Experience in Domain	38	12	76.0	5th
Ask	Use of Funds	37	13	74.0	6th
	Funding Ask Amount	36	14	72.0	7th
Financials	Revenue Figures	26	24	52.0	13th
	Financial Projections	26	24	52.0	13th
	Unit Economics (CAC/LTV/ Margins)	20	30	40.0	15th
Exit	Exit Strategy / Return Potential	**3**	**47**	**6.0**	19th

Table 5.3: Frequency Distribution of All 19 Signal Variables (n = 50)

5.2 Hypothesis 1

5.2.1 Hypothesis, Null and Alternate

Hypothesis 1 tests whether team and market signals appear significantly more frequently than financial signals in early-stage pitch decks. The null hypothesis (H0) states there is no significant difference - the two types appear equally often. The alternate hypothesis (Ha) states that team and market signals appear significantly more often.

For each of the 50 pitch decks, a normalised team and market signal rate and a financial signal rate were computed. The team rate averages the scores on Founder Background and Team + Market Experience; the finance rate averages the scores on Revenue, Financial Projections and Unit Economics. The difference d = (team rate + market rate) – finance rate was computed for each deck and the statistical analysis applied to these 50 paired differences.

RH	Team and market signals appear more frequently than financial viability signals in early-stage pitch decks.
H0	H0: $\mu d = 0$ (no significant difference in average signal rates between team/market and financial categories)
Ha	Ha: $\mu d > 0$ (team/market signal rates are significantly higher than financial signal rates)

5.2.2 Category-Level Appearance Rates

Signal Category	Signals Included	Avg. Appearance Rate	Rank
Team	Founder Background (88%), Team Experience (76%)	**82.0%**	1st
Market	Target Customer (86%), GTM (70%), Market Size (60%)	**72.0%**	2nd
Product	Problem Statement (88%), Proof of Concept/MVP (72%), Competitive Landscape (66%), USP (54%)	70.0%	3rd
Traction	Business Model (86%), User Traction (64%), Social Proof (40%), Growth Rate (36%)	56.5%	4th
Financials	Revenue (52%), Projections (52%), Unit Economics (40%)	**48.0%**	5th
Exit	Exit Strategy / Return Potential (6%)	6.0%	6th

International Journal for Novel Research in Economics , Finance and Management
www.ijnrefm.com
ISSN:
3048-7722
Volume 4, Issue 3, May-June-2026, PP: 01-33

Table 5.4: Category-Level Average Appearance Rates

The qualitative-to-quantitative signal ratio across the dataset is 5.01:1 - for every quantitative financial signal present in the sample, there are 5.01 qualitative signals. This ratio provides strong descriptive confirmation of the qualitative dominance predicted by the research hypothesis.

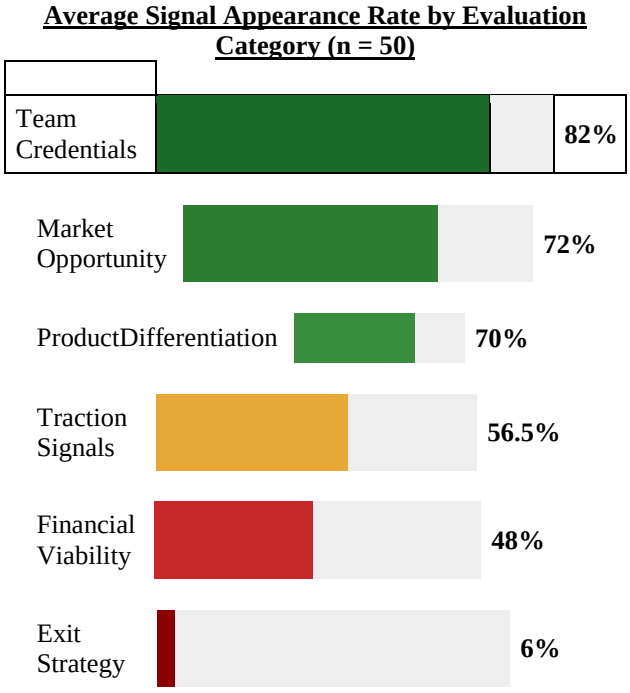


Fig. 5.1: Each bar represents the average appearance rate of signals within that category across 50 pitch decks. Green bars indicate categories where H1 predicts dominance; red bars indicate categories where the gap is most severe. The 34-percentage-point gap between Team (82%) and Financials (48%) is confirmed statistically at t = 5.413, p < 0.001.

Interpretation of H1 Result: The t-test result (t = 5.413, p < 0.001) confirms that Indian early-stage pitch decks exhibit a strong and statistically significant qualitative bias. Team + Market signals appear at an average rate of 82.0% and market signals at 72.0%, while financial signals appear at only 48.0%. The gap of 34 percentage points between team and financial signal rates is not random variation - it is a consistent, large-effect pattern (d = 0.77) that reflects a systematic imbalance in how founders allocate their communication effort across VC evaluation dimensions. The null hypothesis of no difference is rejected at the 0.001 level. H1 is supported.

5.2.3 Statistical Test Results

Statistical Test	Statistic	df / -	p-value	Interpretation
Paired-samples t-test (Team vs. Finance)	**t = 5.41**	49	**< 0.001**	**Reject H0**
Wilcoxon Signed-Rank Test (non-parametric confirmation)	**W = 57.0**	-	**< 0.001**	**Reject H0**
Cohen's d (effect size)	**d = 0.77**	-	-	Large effect (d>0.5 = large by Cohen's convention)
Critical t-value (df=49, α=0.05, two-tailed)	±2.010	-	-	|t|=5.41 >> 2.010 → significant

Table 5.6: Statistical Test Results - Hypothesis 1

RESULT 1 - Paired t-test (H1): t(49) = 5.41, p < 0.001. The null hypothesis H0: μd = 0 is rejected. Team/market signal rates are significantly higher than financial signal rates.
RESULT 2 - Wilcoxon Signed-Rank Test (H0): W = 57.0, p < 0.001. Non-parametric confirmation that team/market rates significantly exceed financial signal rates. H0 rejected.
RESULT 3 - Cohen's d (H1): d = 0.77, indicating a large practical effect size. The difference between team/market and financial signal dominance is not only statistically significant but substantively important.

Verdict: Hypothesis 1 is SUPPORTED. The null hypothesis is rejected at α = 0.05 across both parametric and non-parametric tests. Team signals

International Journal for Novel Research in Economics , Finance and Management
www.ijnrefm.com
ISSN:
3048-7722
Volume 4, Issue 3, May-June-2026, PP: 01-33

(82.0%) and market signals (72.0%) appear significantly and substantially more frequently than financial signals (48.0%). The effect size of d = 0.77 is large. H0: μd = 0 is rejected in favour of Ha: μd > 0.

5.3 Hypothesis 2

5.3.1 Hypothesis, Null and Alternate

Hypothesis 2 tests whether exit strategy signals appear in fewer than 30% of early-stage pitch decks. The null hypothesis states the true proportion is 30% or more. This is a one-tailed test because we are specifically interested in whether exit communication falls below a defined threshold.

5.3.2 Exit Signal Presence by Funding Stage

5.3.3 Observed Proportions and Confidence Interval

Parameter	Null Value	Observed	Interpretation
Exit Strategy Appearance Rate	≥ 30.0%	**6.0%**	24 percentage points below threshold
z-statistic	H0: p=0.30	**z = −3.703**	Far into the rejection region
p-value (one-tailed lower)	α = 0.05	**< 0.001**	**Reject H0**
95% Wilson Confidence Interval	-	**[2.06%, 16.22%]**	Upper bound (16.22%) well below 30% threshold
Critical z (one-tailed, α=0.05)	−1.645	**z = −3.703**	z far below critical value → reject H0

Table 5.8: Statistical Test Results - Hypothesis 2

RESULT 4 - Proportion z-test (H2): z = −3.703, p < 0.001 (one-tailed lower). The null hypothesis H0: p ≥ 0.30 is rejected. Exit strategy signals appear in only 6.0% of pitch decks.

RESULT 5 - Wilson 95% Confidence Interval (H2): 95% CI: [2.06%, 16.22%]. The upper bound of the confidence interval (16.22%) is well below the null hypothesis threshold of 30%, providing strong confirmatory evidence.

RESULT 6 - Stage-wise Breakdown (H2): Exit signal rates: Pre-Seed 0.0%, Seed 2.9%, Pre-Series A 33.3%, Series A 20.0%. The near-total absence at Pre-Seed and Seed stages (which account for 84% of the sample) confirms structural underrepresentation.

Verdict: Hypothesis 2 is SUPPORTED. The null hypothesis H0: p ≥ 0.30 is rejected. The observed rate of 6.0% is dramatically below the threshold, with a z-statistic of −3.703 far exceeding the one-tailed critical value of −1.645. The 95% confidence interval [2.06%, 16.22%] confirms that the true population rate is well below 30% even accounting for sampling uncertainty.

5.4 Hypothesis 3

5.4.1 Hypothesis, Null and Alternate

Hypothesis 3 tests whether fewer than 20% of pitch decks contain at least one signal from all five core VC evaluation categories. A deck was classified as 'all-five present' if it scored 1 on at least one signal within each of Product, Market, Traction, Financials and Team. The exit category was assessed separately and not included in this criterion.

RH	Pitch decks with all five VC evaluation categories represented constitute fewer than 20% of the sample.
H0	H0: p ≤ 0.20 (the true proportion of decks with five-category coverage is at most 20%)
Ha	Ha: p ≠ 0.20 (the true proportion is different from 20%) - two-tailed test. Note: Ha does not specify direction; the evidence strongly indicates p >> 0.20.

5.4.2 Category Presence Rates

Category (≥1 signal present)	Present (n)	Absent (n)	Rate (%)	Signal Definitions
Product	49	1	**98.0%**	Problem Statement, USP, Competitive Landscape, POC/MVP
Market	48	2	**96.0%**	Market Size, Target Customer, GTM

International Journal for Novel Research in Economics , Finance and Management
www.ijnrefm.com
ISSN:
3048-7722
Volume 4, Issue 3, May-June-2026, PP: 01-33

Category (≥1 signal present)	Present (n)	Absent (n)	Rate (%)	Signal Definitions
Traction	45	5	**90.0%**	Business Model, User Traction, Growth Rate, Social Proof
Team	45	5	**90.0%**	Founder Background, Team Experience
Financials	37	13	74.0%	Revenue, Financial Projections, Unit Economics
ALL FIVE PRESENT	**32**	**18**	**64.0%**	At least one signal from each of 5 categories

Table 5.9: Five-Category Coverage Analysis (n = 50)

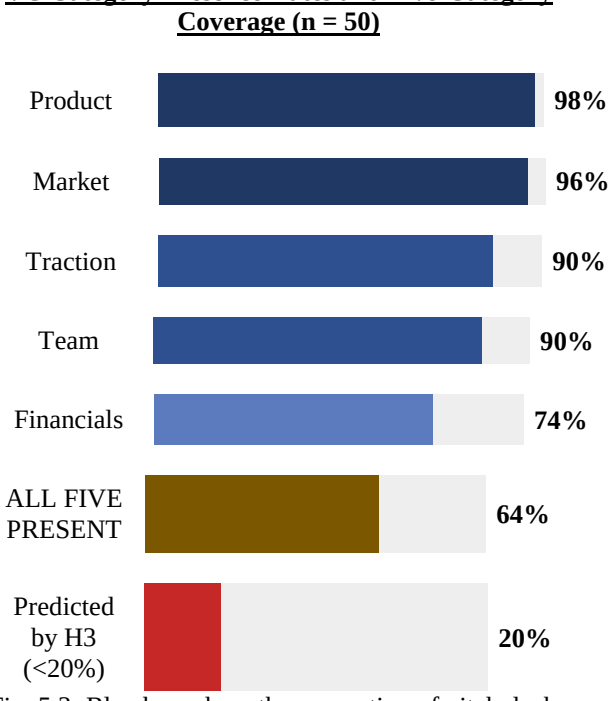


Fig. 5.3: Blue bars show the proportion of pitch decks containing at least one signal from each individual VC evaluation category. The gold bar shows the proportion with all five categories present simultaneously (64%). The red bar marks the 20% threshold that Hypothesis 3 predicted would be the upper bound. The actual rate of 64% exceeds the prediction by 44 percentage points, refuting the research hypothesis but revealing that breadth of coverage is not the primary information gap.

Interpretation of H3 Result: The z-statistic of 7.778 and the 95% confidence interval of [50.14%, 75.86%] leave no statistical ambiguity: the null hypothesis is rejected decisively, but in the direction opposite to the research hypothesis. 64% of pitch decks achieve five-category coverage - not fewer than 20%, as predicted.

5.4.3 Statistical Test Results

Parameter	Null Value	Observed	Interpretation
Five-Category Coverage Rate	≤ 20.0%	**64.0%**	44 percentage points ABOVE threshold
z-statistic	H0: p=0.20	**z = 7.778**	Extreme departure from H0 in opposite direction
p-value (two-tailed)	α = 0.05	**< 0.001**	H0 rejected, but in opposite direction to RH
95% Wilson Confidence Interval	-	**[50.14%, 75.86%]**	Entire CI above 20% threshold
Critical z (two-tailed, α=0.05)	±1.960	**z = 7.778**	z far exceeds critical value

Table 5.10: Statistical Test Results - Hypothesis 3

RESULT 7 - Proportion z-test (H3): z = 7.778, p < 0.001 (two-tailed). The null hypothesis H0: p ≤ 0.20 is rejected, but in the direction opposite to the research hypothesis. The observed rate of 64.0% far exceeds the 20% threshold.

RESULT 8 - Wilson 95% Confidence Interval (H3): 95% CI: [50.14%, 75.86%]. The entire

International Journal for Novel Research in Economics , Finance and Management
www.ijnrefm.com
ISSN:
3048-7722
Volume 4, Issue 3, May-June-2026, PP: 01-33

confidence interval lies above 20%, confirming that the true proportion with five-category coverage is substantially higher than predicted.

RESULT 9 - Category Presence Rates (H3): Product: 98%, Market: 96%, Traction: 90%, Team: 90%, Finance: 74%. All five categories have majority presence rates. The key gap is within categories (signal depth and quality), not between them (categorical absence).

Verdict: Hypothesis 3 is NOT SUPPORTED. The null hypothesis H0: $p \leq 0.20$ is rejected, but in the direction opposite to the research hypothesis. 64.0% of pitch decks (not fewer than 20%) achieve five-category coverage. The research hypothesis significantly underestimated the breadth of categorical coverage in Indian early-stage pitch decks. The critical issue is signal depth within categories, not categorical absence.

5.5 Summary of All Hypothesis Test Results

Hypothesis	H0 Stated	Ha Stated	Test Statistic	p-value	Verdict
H1: Qualitative Signal Bias	No difference: μd = 0	Team > Finance: μd > 0	t(49) = 5.413; W = 57.0; d = 0.77	< 0.001	**SUPPORTED**
H2: Exit Strategy Gap	p ≥ 0.30 (exit rate ≥ 30%)	p < 0.30 (exit rate < 30%)	z = −3.703; CI: [2.06%, 16.22%]	< 0.001	**SUPPORTED**
H3: Five-Category Coverage	p ≤ 0.20 (coverage ≤ 20%)	p ≠ 0.20 (two-tailed)	z = 7.778; CI: [50.14%, 75.86%]	< 0.001	**NOT SUPPORTED**

Table 5.11: Summary of All Nine Results Across Three Hypotheses

5.6 Analytical Enquiry 1: Problem Defined, Advantage Undefined

5.6.1 Question

Among decks that clearly articulate the problem being solved, what proportion also articulate the unique advantage of their solution and contextualise it against the competitive landscape?

5.6.2 Data Analysed and Compared

The 44 decks with a Problem Statement present were cross-referenced against USP/Moat (present or absent) and Competitive Landscape Analysis (present or absent) within those same 44 decks. Four mutually exclusive subgroups were defined: (i) both USP and Competitive Landscape present; (ii) USP only, no Competitive Landscape; (iii) Competitive Landscape only, no USP; and (iv) neither USP nor Competitive Landscape. Results were disaggregated by funding stage. Mean total signal scores were compared between decks with the full product clarity trio (Problem Statement + USP + Competitive Landscape) and decks with the Problem Statement alone.

5.6.3 Results

Subgroup	Count	% of PS-Present Decks	% of Full Sample (50)
Problem Statement + USP + Competitive Landscape	**21**	**47.7%**	42.0%
Problem Statement + Competitive Landscape only (no USP)	8	18.2%	16.0%
Problem Statement + USP only (no Competitive Landscape)	4	9.1%	8.0%
Problem Statement only - neither USP nor Competitive Landscape	**11**	**25.0%**	22.0%

International Journal for Novel Research in Economics , Finance and Management
www.ijnrefm.com
ISSN:
3048-7722
Volume 4, Issue 3, May-June-2026, PP: 01-33

Subgroup	Count	% of PS-Present Decks	% of Full Sample (50)
Total with Problem Statement	**44**	**100%**	**88.0%**

Table 5.12: Product Clarity Signal Distribution Among 44 Decks with Problem Statement Present

Stage	n	Problem Statement	USP / Moat	Competitive Landscape	All Three Present
Pre-Seed	8	7 (88%)	**6 (75%)**	5 (62%)	5 (62%)
Seed	34	30 (88%)	17 (50%)	22 (65%)	13 (38%)
Pre-Series A	3	3 (100%)	**3 (100%)**	2 (67%)	2 (67%)
Series A	5	4 (80%)	**1 (20%)**	4 (80%)	1 (20%)
Total	**50**	**44 (88%)**	**27 (54%)**	**33 (66%)**	**21 (42%)**

Table 5.13: Product Clarity Signals by Funding Stage - All Decks

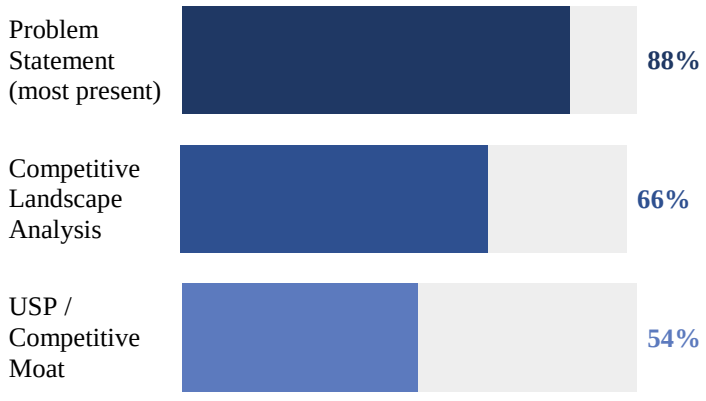
Deck Group	n	Mean Total Score (out of 19)
All three present: Problem Statement + USP + Competitive Landscape	21	**13.76**
Problem Statement only - neither USP	11	**9.82**
nor Competitive Landscape		
Full sample	50	11.82

Table 5.14: Mean Total Signal Score by Product Clarity Completeness

Verdict - Competitive Clarity Gap: Among the 44 pitch decks that articulate a problem statement, 25% include neither a USP nor a Competitive Landscape analysis and only 47.7% complete the full product clarity trio. The competitive clarity gap is most acute at Seed stage (43% of problem-defining Seed decks include no competitive moat or USP) and unexpectedly severe at Series A (only 25% complete the full trio). Decks completing the product clarity trio average 13.76 total signals - nearly 4 points above the 9.82 average of problem-statement-only decks. Problem definition without competitive articulation is not a minor omission; it is a marker of overall pitch underdevelopment.

Product Clarity Signal Presence and Subgroup Breakdown

Panel A: Presence Rate of All Three Product Differentiation Signals (Full Sample, n = 50)



Panel B: Among 44 Problem-Defining Decks - What Else Is Present?

International Journal for Novel Research in Economics , Finance and Management
www.ijnrefm.com
ISSN:
3048-7722
Volume 4, Issue 3, May-June-2026, PP: 01-33

Fig. 5.4 - Panel A shows the presence rates of all three Product Differentiation signals. Panel B disaggregates the 44 problem-defining decks into four subgroups. Dark navy = full trio present (47.7%); blue shades = one competitive signal only; red = neither competitive signal present (25.0%). Only 47.7% of problem-defining decks complete the full product clarity argument.

5.7 Analytical Enquiry 2: Traction Without Trajectory

5.7.1 Question Examined

How does growth rate communication compare to user traction communication at each funding stage and what does this reveal about the way founders frame their progress narratives?

5.7.2 Data Analysed and Compared

The presence of User Traction and Growth Rate was computed for the full sample and for each of the four funding stages. Four mutually exclusive combinations were defined: both present, traction only (no growth rate), growth rate only (no traction) and neither. The presence rate of growth rate among decks where traction is present was compared against its presence rate among decks where traction is absent. Mean total signal scores were compared between growth-rate-present and growth-rate-absent decks. Growth rate presence rates were computed for high-scoring (total ≥14) and low-scoring (total ≤9) decks.

5.7.3 Results

Combination	Count	% of Total Sample
User Traction present + Growth Rate present	**16**	**32%**
User Traction present + Growth Rate absent	16	**32%**
Growth Rate present + User Traction absent	2	4%
Neither User Traction nor Growth Rate	**16**	**32%**
Total	**50**	**100%**

Table 5.15: Traction and Growth Rate - Four Combinations Across Full Sample (n = 50)

Stage	n	User Traction	Growth Rate	Both Present	Traction Only (no GR)	Neither
Pre-Seed	8	3 (38%)	1 (12%)	1 (12%)	2 (25%)	**5 (62%)**
Seed	34	23 (68%)	14 (41%)	12 (35%)	11 (32%)	9 (26%)
Pre-Series A	3	**3 (100%)**	1 (33%)	1 (33%)	**2 (67%)**	0 (0%)
Series A	5	3 (60%)	2 (40%)	2 (40%)	1 (20%)	2 (40%)
Total	**50**	**32 (64%)**	**18 (36%)**	**16 (32%)**	**16 (32%)**	**16 (32%)**

Table 5.16: Traction and Growth Rate Presence by Funding Stage

Stage	User Traction %	Growth Rate %	Gap (percentage points)
Pre-Seed	38%	12%	26 pp
Seed	68%	41%	27 pp
Pre-Series A	**100%**	**33%**	**67 pp ◄ WIDEST GAP**
Series A	60%	40%	20 pp
Overall	**64%**	**36%**	**28 pp**

Table 5.17: User Traction vs Growth Rate - Gap by Funding Stage

International Journal for Novel Research in Economics , Finance and Management
www.ijnrefm.com
ISSN:
3048-7722
Volume 4, Issue 3, May-June-2026, PP: 01-33

Signal	Growth Rate Present (n=18)	Growth Rate Absent (n=32)	Difference
User Traction	**89%**	50%	+39 pp
Revenue	**83%**	34%	**+49 pp**
Financial Projections	67%	44%	+23 pp
Unit Economics	61%	28%	+33 pp
Business Model	**100%**	78%	+22 pp
Mean Total Score	**14.67**	**10.22**	**+4.45 points**

Table 5.18: Signal Profile When Growth Rate Is Present vs Absent

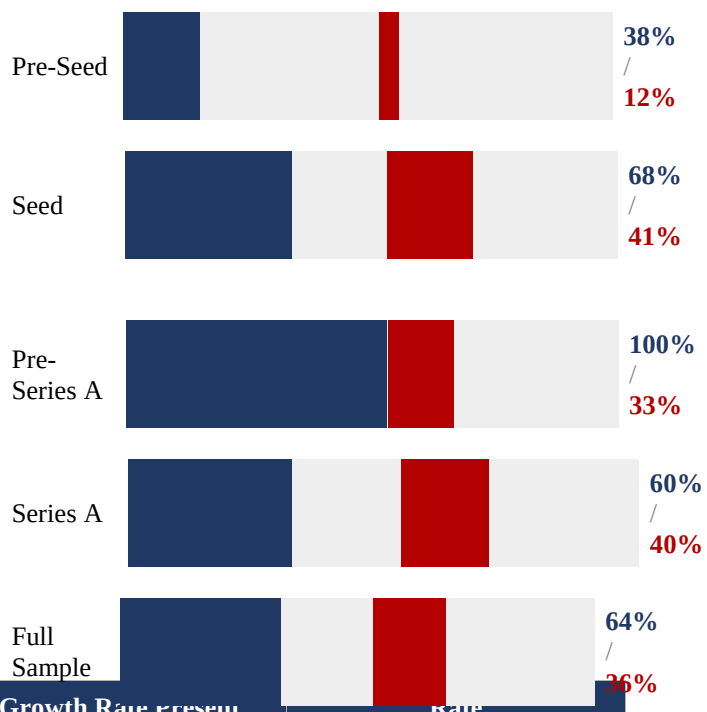
Score Group	n	Growth Rate Present	Rate
High scorers (Total ≥ 14)	19	Traction 12 Growth Rate	**63%**
Low scorers (Total ≤ 9)	15	**0**	**0%**
Full sample	**50**	**18**	**36%**

Table 5.19: Growth Rate Presence in High- and Low-Scoring Decks

Verdict - Growth Rate Communication Gap: The gap between user traction and growth rate is 28 percentage points overall and widest at Pre-Series A (67 pp), where all three decks report traction but only one provides growth rate. Decks with growth rate data average 14.67 total signals versus 10.22 for those without - a 4.45-point gap larger than any other binary split in the analysis. Not a single bottom-quartile deck (score ≤9) includes a growth rate figure. Growth rate is the single most reliable binary marker of underprepared pitch communication in the dataset.

User Traction vs Growth Rate - Stage-wise Comparison and Combination Split

Panel A: User Traction (navy) vs Growth Rate (red) by Funding Stage



Panel B: Traction–Growth Rate Combination Split - Full Sample (n = 50)

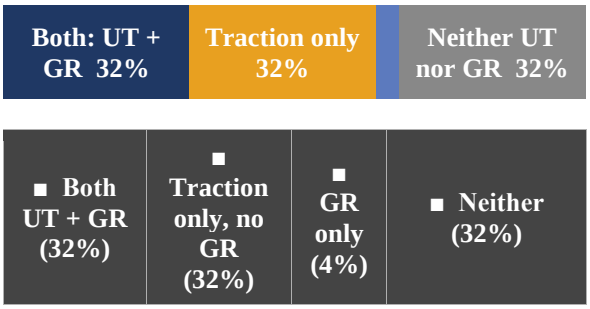


Fig. 5.5 - Panel A: Each row shows two bars - navy for User Traction, red for Growth Rate - for each stage. The gap is widest at Pre-Series A (100% vs 33% = 67 pp). Panel B: The full sample divides into three near-equal thirds - both signals present (32%), traction only (32%) and neither (32%) - with a residual 4% reporting growth rate alone. Two-thirds of the sample is either not reporting performance or reporting it without directional context.

International Journal for Novel Research in Economics , Finance and Management
www.ijnrefm.com
ISSN:
3048-7722
Volume 4, Issue 3, May-June-2026, PP: 01-33

CHAPTER 6: DISCUSSION

6.1 Overview of Significant Findings

This study set out to examine whether early-stage Indian startup pitch decks exhibit systematic signal gaps that perpetuate information asymmetry between founders and investors. The three hypothesis test results, taken together, tell a single coherent story about early-stage Indian pitch deck communication that is more nuanced than either optimistic or pessimistic priors would have predicted. Hypotheses 1 and 2 are confirmed, establishing that significant signal gaps exist in the team-financial balance and in exit communication. Hypothesis 3 is rejected in the direction opposite to the research prediction, establishing that categorical coverage is far broader than anticipated. Far from contradicting Hypotheses 1 and 2, the H3 finding clarifies them: the information asymmetry problem in Indian early-stage fundraising is not one of categorical omission but of intra-category depth, balance and analytical quality.

Indian early-stage founders are telling a consistent story. They address their team, their market, their product, their business model and their financial prospects in the large majority of pitch decks. But they are doing so at profoundly unequal depths. The product story is focused on the problem and not its solution. The team story is vivid and detailed. The market story is well-structured and ambitiously sized. The financial story is skeletal - headline numbers and aspirational projections without the analytical rigour that unit economics analysis provides. The exit story is absent. This imbalance does not eliminate information asymmetry between founders and investors; it concentrates that asymmetry in the financial and exit dimensions where it is most consequential for investor return assessment.

6.2 Discussion of Hypothesis 1 Results

Hypothesis 1 Outcome: SUPPORTED

The confirmation of Hypothesis 1 provides robust empirical evidence for what practitioners in the Indian VC ecosystem have long observed anecdotally: founders are far more comfortable communicating about their teams and markets than about their financial performance and projections. The 34-percentage-point gap between team signal rates (82.0%) and financial signal rates (48.0%) is statistically significant, large in effect size and consistent across both parametric and non-parametric tests.

The confirmation of Hypothesis 1 - the 34-percentage-point gap between team/market signal rates (82.0%/72.0%) and financial signal rates (48.0%), confirmed at $t = 5.413$, $p < 0.001$, $d = 0.77$ - is consistent with a rational signalling equilibrium. Founders invest most in signal categories where their signal quality is highest and where the cost of producing and defending the signal is lowest. Team credential signals are low-cost to produce: biographical information is easily assembled and most founders have educational or professional credentials they can present with confidence. Market opportunity signals are only marginally harder to construct, drawing on widely available industry reports and government data. Financial viability signals, by contrast, require the construction and defence of a financial model - a demanding analytical exercise that exposes the company to rigorous investor scrutiny.

This finding aligns strongly with the existing literature. MacMillan et al. (1985) and Sudek (2006) both found that investor attention is heavily weighted toward team quality. Founders in this sample appear to be rational signal producers in one sense: they emphasise the categories that investors have historically indicated they care most about. However, this rational response to investor demand may have second-order negative effects. When financial projections are absent, investors must construct their own revenue models using conservative assumptions that may undervalue the opportunity. When unit economics are unstated, investors must infer them from traction data, typically reaching less optimistic conclusions than founders would. The qualitative dominance of pitch decks may therefore be self-reinforcing: low financial information standards produce low financial analysis investment, creating an equilibrium of informational insufficiency. The consequences of the qualitative bias are systemic. When 60% of a sample's financial signal rate comes from just two signals - revenue figures and financial projections, each present in 52% of decks - and the most analytically important signal (unit economics) is present in only 40% of decks, investors face a fundamental challenge: the data they need to assess business model scalability is absent from the document that is supposed to provide it. Investors must either conduct intensive additional diligence to compute CAC/LTV ratios and gross margin estimates from first principles or make investment decisions without these inputs. The former is expensive; the latter is risky. Both are consequences of the signal gap this research has documented.

International Journal for Novel Research in Economics , Finance and Management
www.ijnrefm.com
ISSN:
3048-7722
Volume 4, Issue 3, May-June-2026, PP: 01-33

6.3 Discussion of Hypothesis 2 Results

Hypothesis 2 Outcome: SUPPORTED

The confirmation of Hypothesis 2 - exit signals present in only 6% of decks against a 30% threshold, $z = -3.703$, $p < 0.001$, CI: [2.06%, 16.22%] - is the most dramatically striking finding of the study. Venture capital is, structurally, a return-on-investment model that cannot generate returns without liquidity events. A VC fund that fails to achieve exits across its portfolio generates zero returns for its limited partners regardless of how many of its portfolio companies grow impressively. Exit, therefore, is not peripheral to the VC investment thesis - it is the thesis. An investor who provides capital without any communication from the founder about the expected exit pathway is investing on an incomplete information set regarding the most essential dimension of the return calculation.

Three possible explanations for the near-total absence of exit communication deserve consideration. The first is stage-appropriateness: at the Pre-Seed and Seed stages, which account for 84% of the sample, a liquidity event is 7–10 years in the future, making exit discussion feel premature and speculative. The stage-wise data provides partial support: exit signal rates do increase with stage (Pre-Seed 0.0%, Seed 2.9%, Pre-Series A 33.3%, Series A 20.0%). However, even at Series A - where investors are making larger bets with shorter implicit investment horizons - only 1 in 5 decks addresses exit. The stage-appropriateness argument partially explains but does not fully account for the observed pattern.

The second explanation is founder psychology. Building a startup is, for most founders, a project constituting identity and purpose. Discussing the eventual sale or public listing of the company requires founders to acknowledge dimensions of the VC contract - dilution, loss of operational control, eventual exit - that run counter to the builder's narrative of long-term company building. This psychological resistance may manifest as avoidance: founders simply do not include the exit slide because confronting its implications is uncomfortable. The implication is that improving exit communication requires not just technical training but a cultural shift in how Indian founders understand and accept the terms of venture capital financing.

The third explanation is ecosystem-specific: India's early-stage investment culture has historically been relationship-driven, with much of the substantive financial negotiation occurring through informal conversations rather than documented in pitch materials. Founders who are embedded in investor networks may reasonably believe that exit discussions belong in term sheet negotiations rather than in the pitch deck. But this cultural norm creates a systematic information gap for investors operating outside those networks - including international investors, sector-specialist funds and newer angel investors - who do not have the relationship context to fill in what the pitch deck does not say.

The practical implications are significant. Investors who receive a pitch deck with no exit communication must independently assess the likelihood and timing of an exit - a task that increases due diligence burden and introduces unnecessary uncertainty. For Indian startups seeking international capital, the absence of exit communication may be particularly consequential, as global VC standards consistently expect at minimum a brief discussion of comparables, potential acquirers or IPO pathways.

6.4 Discussion of Hypothesis 3 Results

Hypothesis 3 Outcome: NOT SUPPORTED

The rejection of Hypothesis 3 - the finding that 64.0% rather than fewer than 20% of pitch decks contain signals from all five evaluation categories - is the most counterintuitive result of the study and requires careful interpretation. At first glance, this finding appears to contradict the narrative of significant signal gaps established by H1 and H2. If 64% of decks cover all five categories, are the information gaps really as severe as the other hypotheses suggest?

The resolution lies in distinguishing between categorical coverage and signal depth. A pitch deck that mentions revenue once in passing is coded identically to one that provides three years of detailed P&L with commentary on CAC trends. The binary coding approach measures categorical coverage but not signal depth. The H3 result tells us that most Indian startup pitch decks say something about each of the five evaluation dimensions. The H1 result tells us that what they say about financial dimensions is systematically and significantly less than what they say about team and market dimensions.

This distinction is analytically important. It suggests that the information asymmetry problem in Indian early-stage fundraising is not primarily one of categorical omission but rather one of qualitative imbalance and analytical depth. The 18 decks (36%) that did not achieve five-category coverage are themselves instructive. Of these 18 decks, 13 (72%)

International Journal for Novel Research in Economics , Finance and Management
www.ijnrefm.com
ISSN:
3048-7722
Volume 4, Issue 3, May-June-2026, PP: 01-33

failed specifically because the Financials category was absent - no revenue figure, no financial projection, no unit economics of any kind. The 5 remaining decks were missing either Traction or Team signals. The concentration of five-category failure in the Financials dimension reinforces the central finding of H1: financial viability is the dimension most systematically underweighted in Indian early-stage pitch communication.

The comparison between the predicted less than 20% and observed 64% five-category coverage rate also invites reflection on the hypothesis itself. The H3 prediction appears to have been based on an overly pessimistic prior about how comprehensively Indian founders cover the standard VC evaluation framework. The data suggests that founders are, in fact, reasonably aware of the categories that investors care about and generally attempt to address all of them. The challenge is not awareness but execution - particularly in the financial and exit dimensions where analytical depth is most lacking.

6.5 Analytical Enquiry Findings

6.5.1 Competitive Clarity Gap

The within-category coherence failure revealed by the competitive clarity analysis deepens and extends the H3 verdict in an important direction. Hypothesis 3 found that 64% of pitch decks achieve five-category coverage, leading to the conclusion that the information asymmetry problem is one of intra-category depth rather than categorical omission. The competitive clarity gap data illustrates precisely what that depth failure looks like in practice within the Product Differentiation category. Problem statements appear in 88% of decks - the sample's highest signal rate - yet 25% of those decks provide no corresponding articulation of what makes the solution competitively superior or defensible. From an investor's perspective, a well-framed problem statement without a USP or competitive landscape analysis raises a question it does not answer: you have identified a gap in the market, but why will your solution be the one to fill it? This unanswered question is particularly consequential at the Seed stage, where 43% of problem-defining decks include neither a competitive moat nor a landscape comparison. The score differential between decks completing the full product clarity trio (mean 13.76) and those that include the problem statement alone (mean 9.82) confirms that this gap does not occur in isolation - it is part of a broader pattern of analytical incompleteness.

The Series A finding in this analysis deserves separate attention. Competitive positioning should be the most fully developed at Series A - the stage at which institutional investors are typically making their deepest early-stage bets and require the clearest case for why the startup can defend its market position against well-resourced competition. Yet only 1 of the 4 problem-defining Series A decks in the sample (25%) includes all three product clarity signals. USP articulation, at 20% across all 5 Series A decks, is the lowest rate of any stage for that signal. This unexpected finding - that competitive clarity does not improve reliably with funding stage in the sample - suggests that the gap is not simply a function of early-stage developmental immaturity but of a broader founder communication pattern that persists even as companies scale. Founders may increasingly take their competitive advantage as understood, communicating it less explicitly as they become more confident in their own positioning, at precisely the moment when investor scrutiny of defensibility is most intense.

6.5.2 Growth Rate

The growth rate analysis adds a nuance to the qualitative bias finding of Hypothesis 1 that the hypothesis test itself cannot surface. H1 established that team signals dominate financial signals at the category level, with a 34-percentage-point average gap. But the growth rate data shows that a parallel gap exists within the traction category between its two most investor-relevant variables. User traction is communicated at 64% - a rate that places traction comfortably in the mid-range of category average rates. Growth rate is communicated at only 36%, producing a 28-percentage-point within-category gap that mirrors the structure of the H1 finding at a finer level of resolution. In both cases, founders appear to communicate the easier version of a signal - team credentials rather than financial analysis; current traction rather than growth trajectory - while withholding the version that is analytically more demanding but investor-relevantly more important.

At the Pre-Series A stage, founders consistently show traction (100%), but most fail to communicate growth rate (only 33%), meaning they present what they've achieved without showing how fast they're scaling-an omission that weakens investor evaluation of future potential. Since growth velocity is critical for justifying a Series A valuation, its absence removes a key decision-making input.

More broadly, including growth rate strongly correlates with higher-quality pitch decks: those that

report it score significantly higher on overall signals and are far more likely to include revenue and unit economics data. This suggests that growth rate disclosure is not just an extra metric, but a proxy for deeper financial discipline and analytical sophistication.

6.6 Limitations

Several limitations of this research must be acknowledged. The sample of 50 pitch decks, while rich in information, is relatively small for drawing population-level inferences. The purposive sampling approach introduces selection biases that limit generalisability. The binary coding approach sacrifices depth for breadth - signal quality is not assessed, only signal presence. The cross-sectional design cannot capture how individual decks evolve across fundraising rounds. The voluntary self-selection involved in the LinkedIn outreach may introduce positive bias.

6.7 Implications of study for professional practice

6.7.1 For Founders

The most direct implication for founders is the need for two specific additions to their pitch decks. First, a unit economics slide grounded in real data or carefully reasoned assumptions - specifying at minimum the Customer Acquisition Cost, Lifetime Value and gross margin for the core product or service. This need not be presented as a precise financial model; a well-reasoned range of estimates with explicit assumptions clearly stated will demonstrate the analytical sophistication investors need to assess business model scalability. Second, an exit pathway section that explicitly acknowledges the investor's return expectations - identifying two or three likely acquirers in the sector, referencing one or two comparable acquisitions with public price information and stating a realistic return multiple timeline. This signals to investors that the founder understands the VC contract and has thought about how the investment will eventually be resolved.

Beyond these two targeted additions, founders should seek to improve the analytical depth of their financial projections. Rather than presenting top-down revenue forecasts driven by market size assumptions, bottom-up projections built from specific conversion rate, pricing and customer acquisition assumptions are far more credible and provide investors with the building blocks they need to stress-test the plan. Founders should present a complete investment narrative by clearly articulating not just the problem and solution, but also their explicit competitive advantage, while consistently tracking a key metric over time to credibly demonstrate growth. This ensures they communicate both differentiation and forward-looking performance, not just current traction.

6.7.2 For Investors

Investors can reduce the costs of information asymmetry by explicitly communicating their documentation expectations before initial meetings. Publishing a standardised pitch deck template - specifying the minimum informational content expected in each of the five evaluation categories, including unit economics and exit pathway - would signal to the ecosystem what standards are expected and give founders a clear target to meet. Investors should also design their screening and due diligence processes to compensate for known gaps: the absence of unit economics from the pitch deck does not mean the data does not exist; a direct request for CAC/LTV analysis as a standard first-meeting deliverable can efficiently fill this gap. Investors should treat missing competitive or growth information as a prompt for targeted follow-up rather than immediate rejection, using questions on defensibility and growth rates to assess founder quality. The presence or absence of growth data, in particular, serves as a strong early signal of pitch preparedness.

6.7.3 For Incubators and Accelerators

Incubator and accelerator curricula should be redesigned to give financial modelling and exit strategy training equal prominence to market sizing and team narrative coaching. Workshops on building bottom-up financial projections from conversion rate assumptions, on constructing a credible unit economics analysis and on presenting an exit pathway that resonates with investor return expectations would directly address the two most consequential gaps identified in this research. Assessment criteria for demo day pitches should explicitly include a financial depth score and an exit communication score, creating accountability for improvement in the most underweighted dimensions. Programs should enforce structured pitch frameworks that require competitive differentiation alongside problem and solution, while also mandating early metric tracking to ensure founders can present meaningful growth rates. The goal is to build both strategic clarity and measurement discipline before fundraising.

International Journal for Novel Research in Economics , Finance and Management
www.ijnrefm.com
ISSN:
3048-7722
Volume 4, Issue 3, May-June-2026, PP: 01-33

6.7.4 For Ecosystem Bodies

Ecosystem bodies - IVCA, NASSCOM, Startup India and sector-specific associations - should consider developing and publishing an industry-level pitch deck standard specifying the minimum informational content that constitutes a well-formed early-stage Indian pitch deck. This type of public standard, if widely adopted, would raise the baseline information quality of the early-stage market and reduce the transaction costs associated with information asymmetry for both founders seeking capital and investors deploying it. Policy bodies should standardize startup guidance and pitch requirements to explicitly include competitive differentiation and growth rate disclosure, creating systemic incentives for better strategic articulation and data discipline. This shifts the focus from just presentation quality to building fundamentally stronger, measurable businesses

6.7.4 For Future Research

Future research could productively pursue several directions: larger-scale studies using machine learning-based content analysis applied to hundreds of pitch decks; qualitative interviews with both founders and investors to explain the mechanisms underlying signal gaps; comparative studies examining Indian pitch deck signal patterns against US, European or Southeast Asian benchmarks; and outcome-linked research correlating pitch deck signal profiles with fundraising success and post-investment company performance.

CHAPTER 7: CONCLUSION

7.1 Summary of Findings

This research set out to investigate whether early-stage Indian startup pitch decks exhibit systematic signal gaps that perpetuate information asymmetry between founders and investors. Through the systematic binary coding of 50 anonymised pitch decks across 19 signal variables and five VC evaluation categories, the study produced the following key conclusions:

Hypothesis 1 is supported: Indian early-stage pitch decks exhibit a large and statistically significant qualitative bias, with team signals appearing at an average rate of 82.0% and market signals at 72.0%, compared to financial signals at only 48.0%. This 34-percentage-point gap is confirmed at $t(49) = 5.413$ ($p < 0.001$) with a Cohen's d of 0.77, indicating a large practical effect. The qualitative-to-quantitative signal ratio across the sample is approximately 5:1.

Hypothesis 2 is supported: exit strategy signals are present in only 6.0% of pitch decks - just 3 out of 50 - against a null hypothesis threshold of 30%. The z-statistic of -3.703 ($p < 0.001$) and 95% confidence interval of [2.06%, 16.22%] confirm that exit communication is structurally, not incidentally, absent from Indian early-stage pitch decks. 94% of the decks reviewed ask for venture capital without acknowledging the investor return framework within which that capital is being requested.

Hypothesis 3 is not supported in the predicted direction: 64.0% of pitch decks - not fewer than 20% as predicted - achieve comprehensive five-category coverage. The z-statistic of 7.778 ($p < 0.001$) and 95% CI of [50.14%, 75.86%] confirm that broad categorical coverage is the norm rather than the exception. This finding clarifies the nature of the information asymmetry gap: it is not one of categorical omission but of intra-category depth and balance, concentrated most severely in the financial viability dimension.

The competitive clarity gap carries an implication that extends beyond individual founder preparation. If 43% of Seed-stage decks that define a problem include no USP or competitive landscape, it suggests that the standard pitch coaching materials and templates available in the Indian ecosystem - including those circulated by incubators, accelerators and investor networks - may not be giving adequate weight to the competitive differentiation component of the Product section. Templates that list the problem slide and the solution slide as separate entries without requiring a third entry for competitive positioning are implicitly licensing the very gap this analysis documents. Pitch template revision is a low-cost, high-reach intervention that ecosystem bodies could implement immediately.

The growth rate finding implies that the Indian ecosystem's traction culture is oriented toward milestone achievement rather than velocity measurement. Founders learn to hit user targets and customer targets and report them as evidence of product-market fit. They are less systematically trained to define a primary metric, track it over consistent time intervals and report its rate of change. The distinction matters because milestone achievement - we have 2,000 users - is a backward-looking claim about what has been accomplished, while growth rate - we are adding 300 users per month and the rate has been increasing - is a forward-looking claim about what the trajectory implies for the future. Shifting the ecosystem's traction culture from milestone-oriented

International Journal for Novel Research in Economics , Finance and Management
www.ijnrefm.com
ISSN:
3048-7722
Volume 4, Issue 3, May-June-2026, PP: 01-33

to velocity-oriented communication is a deeper pedagogical change than adding a slide and it requires curriculum-level intervention at the incubator and university stages.

7.2 Theoretical Contributions

This study makes three theoretical contributions. First, it provides empirical support for the application of Spencian signalling theory to pitch deck communication, demonstrating that founders systematically over-invest in signals (team credentials, market narrative) where credibility is most easily established and under-invest in signals (financial viability, exit pathways) where credibility is hardest to establish. Second, it extends the Tyebjee-Bruno five-category VC evaluation framework from a demand-side investor perspective to a supply-side founder communication analysis, demonstrating that the distribution of signal investment across the five categories is highly asymmetric. Third, it introduces the distinction between categorical coverage and signal depth as an analytically important dimension of pitch deck quality, demonstrating that the presence of a category-level signal does not ensure adequate informational content within that category.

7.3 Practical Recommendations

Based on the findings, the following practical recommendations are made:

- **Building Investor-Ready Financial Narratives**
  Founders should include a dedicated unit economics slide covering CAC, LTV and gross margins across all stages. They should also outline clear exit pathways, including likely acquirers and comparable public benchmarks. This ensures the pitch reflects both operational performance and investor return potential.
- **From Problem Statement to Strategic Positioning**
  Founders must move beyond problem definition by clearly articulating their unique advantage and positioning against competitors. A complete pitch answers three questions: what is the problem, why is the solution superior and how does it compare to alternatives. Even a simple competitive map with key players and positioning is enough to close this gap.
- **Institutionalising Minimum Pitch Standards**
  Early-stage VC firms should define and communicate standardised pitch expectations, explicitly requiring financial viability and exit visibility. Structured templates can ensure consistent coverage across all critical evaluation areas. This improves screening efficiency and reduces ambiguity in early-stage assessments.
- **Rebalancing Founder Training Priorities**
  Incubators should place equal emphasis on financial fundamentals-unit economics, modelling and exit strategy-alongside storytelling and market sizing. Current training often overweights narrative at the expense of analytical depth. A more balanced approach produces founders who are both persuasive and investment-ready.
- **Growth Rate as a First-Pass Quality Filter**
  The absence of growth rate data is a strong early signal of weaker pitch quality, especially when only static traction is presented. Investors should request growth rates upfront as a standard practice during initial evaluation. This enables faster and more accurate assessment of both execution and momentum.
- **Reducing Information Asymmetry at the Ecosystem Level**
  Policy and ecosystem institutions should develop standardised pitch guidelines to improve the consistency and completeness of startup disclosures. Clear expectations reduce information gaps between founders and investors. This ultimately lowers transaction costs and improves capital allocation efficiency.

7.4 Final Reflection

The title of this research - 'Lost in Translation' - captures a genuine and consequential phenomenon in India's early-stage startup ecosystem. Founders possess rich, detailed knowledge of their businesses that is only partially transmitted through the pitch documents they produce. What is systematically lost in translation is not information about the team or the market - those signals are communicated consistently and prominently - but information about the financial mechanics and the exit terms of the investment being proposed. Closing this communication gap requires structural changes: in how founders are trained, in what investors demand and in what ecosystem institutions reinforce as the minimum standard for high-quality fundraising communication.

The findings of this research suggest that these changes are achievable. Founders are already addressing all five VC evaluation categories in the majority of their pitch decks; the challenge is depth, not direction. Unit economics and exit communication are not exotic investor requirements - they are baseline inputs for any credible investment thesis. The gap

between what investors need and what Indian founders currently provide in these dimensions is large, but it is tractable. The ecosystem has the knowledge, the institutions and the motivation to close it. Closing this communication gap - through better founder preparation, clearer investor expectations and stronger ecosystem standards - represents a tractable and high-value opportunity for the Indian venture capital ecosystem as it matures from a relationship-driven to a data-driven capital allocation culture.

REFERENCES

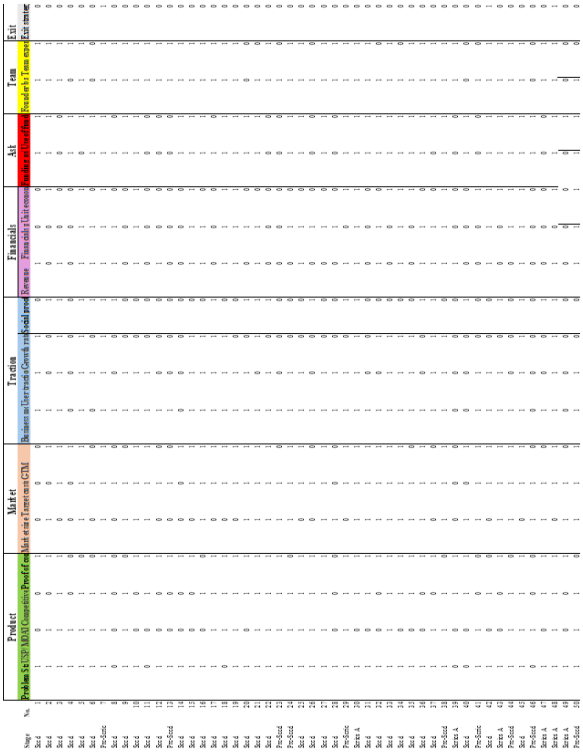
1. Akerlof, G. A. (1970). The market for 'lemons': Quality uncertainty and the market mechanism. The Quarterly Journal of Economics, 84(3), 488–500. https://doi.org/10.2307/1879431
2. Spence, M. (1973). Job market signaling. The Quarterly Journal of Economics, 87(3), 355–374. https://doi.org/10.2307/1882010
3. Stiglitz, J. E., & Weiss, A. (1981). Credit rationing in markets with imperfect information. The American Economic Review, 71(3), 393–410. https://www.jstor.org/stable/1802787
4. Tyebjee, T. T., & Bruno, A. V. (1984). A model of venture capitalist investment activity. Management Science, 30(9), 1051–1066. https://doi.org/10.1287/mnsc.30.9.1051
5. MacMillan, I. C., Siegel, R., & Narasimha, P. N. S. (1985). Criteria used by venture capitalists to evaluate new venture proposals. Journal of Business Venturing, 1(1), 119–128. https://doi.org/10.1016/0883-9026(85)90011-4
6. Kaplan, S. N., & Stromberg, P. (2001). Venture capitalists as principals: Contracting, screening and monitoring. American Economic Review, 91(2), 426–430. https://doi.org/10.1257/aer.91.2.426
7. Gompers, P. A., & Lerner, J. (2001). The venture capital revolution. Journal of Economic Perspectives, 15(2), 145–168. https://doi.org/10.1257/jep.15.2.145
8. Connelly, B. L., Certo, S. T., Ireland, R. D., & Reutzel, C. R. (2011). Signaling theory: A review and assessment. Journal of Management, 37(1), 39–67. https://doi.org/10.1177/0149206310388419
9. Hsu, D. H. (2004). What do entrepreneurs pay for venture capital affiliation? The Journal of Finance, 59(4), 1805–1844. https://doi.org/10.1111/j.1540-6261.2004.00680.x
10. Baum, J. A. C., & Silverman, B. S. (2004). Picking winners or building them? Alliance, intellectual and human capital as selection criteria in venture financing. Journal of Business Venturing, 19(3), 411–436. https://doi.org/10.1016/S0883-9026(03)00038-7
11. Drover, W., Busenitz, L., Matusik, S., Townsend, D., Anglin, A., & Dushnitsky, G. (2017). A review and road map of entrepreneurial equity financing research. Journal of Management, 43(6), 1820–1853. https://doi.org/10.1177/0149206317690584
12. Clark, C. (2008). The impact of entrepreneurs' oral 'pitch' presentation skills on business angels' initial screening investment decisions. Venture Capital, 10(3), 257–279. https://doi.org/10.1080/13691060802151945
13. Pollack, J. M., Rutherford, M. W., & Nagy, B. G. (2012). Preparedness and cognitive legitimacy as antecedents of new venture funding in televised business pitches. Entrepreneurship Theory and Practice, 36(5), 915–939. https://doi.org/10.1111/j.1540-6520.2012.00531.x
14. Sudek, R. (2006). Angel investment criteria. Journal of Small Business Strategy, 17(2), 89–103. https://libjournals.mtsu.edu/index.php/jsbs/article/view/37
15. Nanda, R., & Rhodes-Kropf, M. (2013). Investment cycles and startup innovation. Journal of Financial Economics, 110(2), 403–418. https://doi.org/10.1016/j.jfineco.2013.07.001
16. Brav, A., & Gompers, P. A. (1997). Myth or reality? The long-run underperformance of initial public offerings. The Journal of Finance, 52(5), 1791–1821. https://doi.org/10.1111/j.1540-6261.1997.tb02742.x
17. Hellmann, T., & Puri, M. (2002). Venture capital and the professionalization of start-up firms: Empirical evidence. The Journal of Finance, 57(1), 169–197. https://doi.org/10.1111/1540-6261.00419
18. Kaplan, S. N., & Schoar, A. (2005). Private equity performance: Returns, persistence and capital flows. The Journal of Finance, 60(4), 1791–1823. https://doi.org/10.1111/j.1540-6261.2005.00780.x
19. Dossani, R., & Kenney, M. (2002). Creating an environment for venture capital in India. World Development, 30(2), 227–253. https://doi.org/10.1016/S0305-750X(01)00110-7
20. Krishnan, C. N. V., Ivanov, V. I., Masulis, R. W., & Singh, A. K. (2011). Venture capital reputation,

International Journal for Novel Research in Economics , Finance and Management
www.ijnrefm.com
ISSN:
3048-7722
Volume 4, Issue 3, May-June-2026, PP: 01-33

post-IPO performance and corporate governance. Journal of Financial and Quantitative Analysis, 46(5), 1295–1333. https://doi.org/10.1017/S0022109011000317
21. IVCA–EY. (2023). India venture capital report 2023: Trends, opportunities and outlook. Indian Venture and Alternate Capital Association. https://ivca.in/publications
22. Tracxn Technologies. (2024). Tracxn startup database. https://tracxn.com
23. Mason, C. M., & Stark, M. (2004). What do investors look for in a business plan? International Small Business Journal, 22(3), 227–248. https://doi.org/10.1177/0266242604042377
24. Bernstein, S., Korteweg, A., & Laws, K. (2017). Attracting early-stage investors: Evidence from a randomized field experiment. The Journal of Finance, 72(2), 509–538. https://doi.org/10.1111/jofi.12470
25. Fried, V. H., & Hisrich, R. D. (1994). Toward a model of venture capital investment decision making. Financial Management, 23(3), 28–37. https://doi.org/10.2307/3665619
26. Tracxn Technologies Limited. (2024). Tracxn startup intelligence platform https://tracxn.com
27. LinkedIn Corporation. (2024). LinkedIn professional network. https://www.linkedin.com
28. Department for Promotion of Industry and Internal Trade. (2024). Startup India: Scheme overview and recognition portal. Ministry of Commerce and Industry, Government of India. https://www.startupindia.gov.in
29. Securities and Exchange Board of India. (2024). SEBI (Alternative Investment Funds) Regulations, 2012 as amended. SEBI. https://www.sebi.gov.in/legal/regulations/aug-2024/sebi-alternative-investment-funds-regulations-2012_11168.html
30. National Association of Software and Service Companies. (2024). Indian tech startup ecosystem report 2024. NASSCOM. https://nasscom.in/knowledge-center/publications
31. Cohen, J. (1988). Statistical power analysis for the behavioral sciences (2nd ed.). Lawrence Erlbaum Associates.
32. Landis, J. R., & Koch, G. G. (1977). The measurement of observer agreement for categorical data. Biometrics, 33(1), 159–174. https://doi.org/10.2307/2529310

ANNEXURE

1. Master Data



2. Hypothesis 1: Statistical Test: Paired-Samples t-test

The step-by-step calculation is presented below. The paired-samples t-test requires four inputs: the mean of the differences ($\bar{d}$), the standard deviation of the differences (s_d), the sample size (n) and the degrees of freedom ($df = n - 1$).

Calculation Step	Formula	Values and Working	Result
Step 1: Mean difference	$\bar{d} = \Sigma d / n$	Sum of all 50 differences = 17.0000;	$\bar{d}$ = **0.3400**

International Journal for Novel Research in Economics , Finance and Management
www.ijnrefm.com
ISSN:
3048-7722
Volume 4, Issue 3, May-June-2026, PP: 01-33

Calculation Step	Formula	Values and Working	Result
		divided by 50	
Step 2: Variance of differences	$s^2_d = [\Sigma d^2 - n \cdot \bar{d}^2] / (n-1)$	[15.4444 − 50×0.1156] / 49 = 9.6644 / 49 = 0.1972	**s^2_d = 0.1972**
Step 3: Standard deviation	$s_d = \sqrt{s^2_d}$	√0.1972 = 0.4441	**s_d = 0.4441**
Step 4: Standard error	SE = s_d / √n	0.4441 / √50 = 0.4441 / 7.0711 = 0.06281	**SE = 0.06281**
Step 5: t-statistic	t = $\bar{d}$ / SE	0.3400 / 0.06281 = 5.413	**t = 5.413**
Step 6: Degrees of freedom	df = n − 1	50 − 1 = 49	**df = 49**
Step 7: Critical t-value	t_{crit} at α=0.05, df=49, two-tailed	From t-distribution table: for 49 degrees of freedom and a two-tailed test at the 5% significance level, the critical value is ±2.010. This means that any |t| above 2.010 leads to rejection of H0.	**t_{crit} = ±2.010**
Step 8: Decision	|t| > t_{crit}	|5.413| = 5.413 > 2.010 → The computed t-value lies far beyond the critical boundary. The probability of observing a t-statistic this large by chance, if H0 were true, is p = 0.00000185 - effectively zero.	**Reject H0**
Step 9: Cohen's d	d = $\bar{d}$ / s_d	0.3400 / 0.4441 = 0.7657 ≈ 0.77. By Cohen's (1988) convention: d < 0.2 = small; d ≈ 0.5 = medium; d ≥ 0.8 = large. d = 0.77 approaches large, confirming practical importance.	**d = 0.77 (large)**
Step 10: Wilcoxon confirmation	Non-parametric cross-check	W = 57.0, p = 0.00000788 (< 0.001). This confirms the t-test result using a method that does not assume normality of the differences. Both tests point to the	**p < 0.001**

International Journal for Novel Research in Economics , Finance and Management
www.ijnrefm.com
ISSN:
3048-7722
Volume 4, Issue 3, May-June-2026, PP: 01-33

Calculation Step	Formula	Values and Working	Result
		same conclusion.	

Table 1: Step-by-Step Calculation - Hypothesis 1 (Paired-Samples t-test)

Where the t-value Comes From

The t-statistic of 5.413 is produced by the formula t = $\bar{d}$ / SE. Conceptually, it answers the question: how many standard errors is the observed mean difference (0.34) away from zero (the null hypothesis value)? A t-value of 5.413 means the observed mean difference is 5.413 standard errors above zero. The critical value of 2.010 - obtained from a standard t-distribution table for 49 degrees of freedom at the 5% level - is the threshold that separates statistically significant from statistically non-significant results. Because 5.413 is more than twice the critical value, the evidence against H0 is overwhelming.

3. Hypothesis 2: Statistical Test: One-Sample Proportion z-test

Calculation Step	Formula	Values and Working	Result
Step 1: Observed proportion	$\hat{p} = x / n$	3 / 50 = 0.0600	**$\hat{p}$ = 0.0600**
Step 2: Standard error under H0	SE = $\sqrt{(p_0 \times q_0 / n)}$	$\sqrt{(0.30 \times 0.70 / 50)} = \sqrt{(0.21 / 50)} = \sqrt{0.004200} =$ 0.06481	**SE = 0.06481**
Step 3: z-statistic	$z = (\hat{p} - p_0) / SE$	(0.0600 − 0.3000) / 0.06481 = −0.2400 / 0.06481 = −3.703	**z = −3.703**
Step 4: Critical z (one-tailed lower)	z_crit at α=0.05, lower tail	From standard normal table: for a one-tailed lower test at the 5% level, the critical value is −1.645. Any z more negative than −1.645 leads to rejection of H0.	**z_crit = −1.645**
Step 5: Decision	z < z_crit	−3.703 < −1.645 → Yes. The z-statistic lies deep in the rejection region. p-value = 0.000106 (< 0.001).	**Reject H0**
Step 6: 95% Wilson CI	Wilson interval formula	Lower = 2.06%; Upper = 16.22%. The entire interval lies below 30%. We are 95% confident the true proportion is between 2.06% and 16.22%.	**[2.06%, 16.22%]**

Table 2: Step-by-Step Calculation - Hypothesis 2

4. Hypothesis 3: Statistical Test: One-Sample Proportion z-test (Two-Tailed)

International Journal for Novel Research in Economics , Finance and Management
www.ijnrefm.com
ISSN:
3048-7722
Volume 4, Issue 3, May-June-2026, PP: 01-33

Calculation Step	Formula	Values and Working	Result
Step 1: Observed proportion	$\hat{p} = x / n$	32 / 50 = 0.6400 = 64.0%	**$\hat{p}$ = 0.6400**
Step 2: Null hypothesis value	p_0 = 0.20	The research hypothesis predicted coverage below 20%; the null assumes $p \leq 0.20$	**p_0 = 0.2000**
Step 3: Standard error under H0	$SE = \sqrt{(p_0 \times q_0 / n)}$	$\sqrt{(0.20 \times 0.80 / 50)} = \sqrt{(0.16 / 50)} = \sqrt{0.003200} = 0.05657$	**SE = 0.05657**
Step 4: z-statistic	$z = (\hat{p} - p_0) / SE$	(0.6400 − 0.2000) / 0.05657 = 0.4400 / 0.05657 = 7.778	**z = 7.778**
Step 5: Critical z (two-tailed)	z_{crit} at α=0.05, two-tailed	From standard normal table: for a two-tailed test at the 5% level, critical values are ±1.960. H0 is rejected if $\lvert z \rvert > 1.960$.	**z_{crit} = ±1.960**

Calculation Step	Formula	Values and Working	Result
Step 6: Decision	$\lvert z \rvert > z_{crit}$	$\lvert 7.778 \rvert = 7.778 >> 1.960 \rightarrow$ Yes. The z-value is nearly four times the critical threshold. p < 0.000001. H0 is rejected decisively.	**Reject H0**
Step 7: Direction of departure	Is $\hat{p} >$ or $< p_0$	$\hat{p}$ = 0.64 is far ABOVE p_0 = 0.20. The departure from H0 is in the opposite direction to what the research hypothesis predicted.	**$\hat{p} >> p_0$**
Step 8: 95% Wilson CI	Wilson interval	Lower = 50.14%; Upper = 75.86%. The entire interval lies far above 20%, with even the lower bound (50.14%) being more than double	**[50.14%, 75.86%]**

International Journal for Novel Research in Economics , Finance and Management
www.ijnrefm.com
ISSN:
3048-7722
Volume 4, Issue 3, May-June-2026, PP: 01-33

Calculation Step	Formula	Values and Working	Result
		the predicted threshold.	

Table 3: Step-by-Step Calculation - Hypothesis 3