

## Financial Projections and Valuation Optimization for Pre-Seed Startups: A Strategic Framework

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Received: 04-03-2025 Revised: 12-03-2025 Accepted: 17-04-2025 Published: 19-04-2025

### ABSTRACT

*This study develops a strategic framework for optimizing financial projections in pre-seed startups to enhance valuation and attract seed investors. The research examines how these financial metrics influence startup valuation during early-stage funding by focusing on revenue growth projections, operating costs, gross and net profit margins, burn rate, runway, and the customer lifetime value (LTV) to customer acquisition cost (CAC) ratio. Using quantitative analysis of 100 Pakistani pre-seed startups across diverse industries, the study employs descriptive statistics, correlation analysis, and multiple regression to test five hypotheses. Key findings show that while revenue growth and profit margins have less statistical significance, value is considerably impacted by operating cost estimates ( $\beta = 0.249$ ,  $p = 0.017$ ), burn rate ( $\beta = 0.198$ ,  $p = 0.034$ ), and the LTV: CAC ratio ( $\beta = 0.386$ ,  $p < 0.001$ ). Investors prioritize financial sustainability and efficient resource allocation above aggressive growth expectations, as evidenced by the model's capacity to explain 57.2% of valuation variance ( $R^2 = 0.572$ ). The study adds to the body of literature by addressing gaps in pre-seed valuation in emerging countries and questioning the traditional focus on revenue growth. Practical ramifications indicate that to increase investor appeal, businesses should improve runway, streamline cost management, and maximize CAC efficiency. Investors are advised to give more weight to burn rates and LTV: CAC ratios when conducting due diligence. The study's sample size and geographic focus are limitations, and future studies are recommended to include non-financial aspects and cross-regional validation.*

**Keywords:** Pre-seed startups, financial projections, valuation optimization, burn rate, LTV: CAC ratio, emerging markets

### INTRODUCTION

Startups at the pre-seed stage often struggle with accurate financial projections, which are essential for attracting investors. This thesis will develop a framework for optimizing financial projections for pre-seed startups, particularly focusing on revenue forecasts, operating cost, Gross and net profit margin, Burn rate, and runaway (Customer acquisition cost and life time value) CAC & LTV ratio. The goal is to help startups refine their financial models, making them more attractive to seed investors while enhancing their valuation. Academic literature generally acknowledges that small and medium-sized businesses (SMEs) have difficulty obtaining financing (Bruns & Fletcher, 2008; Howorth, 2001; Madrid-Guijarro et al., 2009; C. Mason & Kwok, 2010; C. M. Mason & Harrison, 2000; Mole et al., 2017). The start-up and expansion stages often include the largest capital requirements. Beginner businesses are frequently "virtual" in their early phases of development; the only thing propelling the eventual growth of a whole firm is an idea, concept, or development. At this point, corporate survival is the most important issue to deal with. Businesses during the small and medium phases of growth need distinct support during the

expansion phase. For these businesses, maintaining growth is crucial to long-term sustainability and a smooth transition to a new phase of development. Shortage of funds during the early phases of the growth of the company is sure to result in the company's imminent collapse, private enterprise "freeze", and a preference not to bear new business risk. Problems with financing down the line in the development of the company are most likely to result in heightened Sensitivity to outside factors, possibilities for business that will not be actualized, and developmental stagnation (insufficient capital tends to result in restricted investments, which therefore results in restricted employment growth) (Gompers et al., 2020). The likely chain reaction of business failure that is going to spill over into other SME sector businesses is an unintended result of these hurdles in both phases of development. Problems with financing down the line in the development of the company are most likely to result in heightened sensitivity to external influences, business potential that will not be actualized, and developmental stagnation (insufficient capital tends to result in minimal investments, which in turn results in minimal employment growth). A likely chain reaction of business failure that is bound to be transmitted to other SME sector businesses is the unforeseen effect of these hindrances in both development stages. SMEs can both internally and externally derive sources of capital. SMEs can rely on their internal sources of funds. The business can utilize its funds to finance its growth if it has been established for some time and is profitable. The business can also manage its working capital in such a way that it can settle investments and liabilities in time even when it is not profitable. The government, banks, and venture capital are the three principal sources of external financing for the SME sector. Historically, commercial banks have provided the majority of the funding for SMEs, covering up to 80% of their financial requirements (Bruns & Fletcher, 2008) Bank finance might not be enough on its own to finance SMEs' innovation and growth (Avnimelech & Teubal, 2008; Bruns & Fletcher, 2008). Venture capital, with its focus on the supply of risk capital to businesses with greater than average growth potential, profitability, and full management, can provide additional capital. Historically, less than 10% of financially troubled SMEs are financed by venture capital (Oakey, 2007). With the pressure of having less, startup alliances must be strategic. Depending on their various strategic alignments, startups and their allies can form many types of partnerships (Cacciolatti et al., 2020; Herrera, 2015; Kumar et al., 2023). Other forms of alliances are both equity-based and non-equity-based cooperation models, so they are hybrid. Cacciolatti et al., 2020; Reuer et al., 2016) For example, accelerators expose entrepreneurs to pre-seed financing, the market, a peer-to-peer environment where expertise is shared, and each other's networks, which include other businesses. For startups, funding their growth is a constant concern throughout their existence (Puri & Zarutskie, 2012). Start-ups need different types of financial support from different investors at different levels of development. For instance, seed funding can be provided by angel investors or university endowments, venture capitalists can offer funding for venture expansion, and large corporations can offer investment for exit through mergers and acquisitions. As per recent studies, varying types of partnerships attract varying types of financing, which in turn sets the stage for the future of the startup: "Venture capitalists return their limited partners in ten or so years, and they often focus on making a timely exit in an IPO or acquisition (Gompers et al., 2020). Capital structure theory (Modigliani & Miller, 1958) examines how the valuation of a company is affected by its financing alternatives (debt versus equity). Even though companies typically rely on equity financing in their initial stages, venture capitalists' assessment of their potential for future capital raising is affected by how they project financial performance, including cash flows and profitability. In line with the hypothesis, companies that have good financial projections and control are also going to be priced higher because they are considered less-risky ventures. In accordance with the resource-based view (Barney, 1991), A firm's unique assets and capabilities are the basis of its competitive edge. Financial projections for startups indicate how effectively they plan to utilize their available resources, including intellectual property, financial capital, and human capital. Effective financial forecasting demonstrates to investors that the startup is capable of utilizing these resources to become profitable and grow. Efficient resource management is directly proportional to increased startup valuation (Flechas et al. 2024).

Startup valuation, especially at the seed financing level, is a difficult but vital exercise that does much to determine the path of a company. To make informed decisions regarding funding, future prospects for growth, and risk, entrepreneurs and investors alike want to know what drives the valuation of a startup. Startup valuation is determined by different variables, but most important among these are financial metrics and operating metrics. The objective of this article is to examine how different financial and operating variables are related to startup valuations in the seed fundraising round. We specifically target five major independent variables: burn rate and runway, net and gross profit margins, operating cost and revenue growth projections, and CAC and LTV ratios. Investors use these to assess the probability of success and risk because they reflect the fundamental areas of a startup's financial well-being, growth potential, and viability. This study attempts to determine the financial measures that are most reflective of valuation outcomes through examining the connection between such independent variables and startup valuation. Besides helping investors to make better, fact-driven choices, familiarity with such relationships may help entrepreneurs achieve optimal financial strategy and increase their chances of finding financing. The findings of the research will ultimately contribute to the knowledge of variables that influence startup valuations and have real-world implications for both investors and startups alike in the initial stages of business development (Gornall & Strebulaev 2023)

### **Applied & Scientific Contribution**

When evaluating early-stage firms, cognitive biases, and heuristics impact investors' valuation choices (Kahneman & Tversky, 1979). This explains why, even when revenue growth is not yet realized, firms with more precise financial estimates (which lower uncertainty) are valued more.

### **Research Problem**

The proper financial projections needed to attract seed investors and optimize firm value are often hard for pre-seed startups to develop. The purpose of this study is to determine the key financial factors that affect a startup's valuation during the seed funding phase, such as revenue growth projection, operating cost estimates, margins, burn rate, runway, and the CAC to LTV ratio. Pre-seed companies stand to gain from the study's strategic framework of maximizing financial forecasting, enabling them to enhance their models' attractiveness to investors and valuation outcomes (Saunders et al., 2019)

### **LITERATURE REVIEW**

Optimization of Financial Projections for Pre-seed Startups This literature review examines the major factors influencing financial projections for pre-seed startups, with a focus on independent variables like revenue growth projections, operating cost projections, profit margins, burn Rate, Customer acquisition cost (CAC), lifetime value (LTV), and the effect of these factors on the dependent variable. For startups to develop and survive, especially in the early stages, financial estimates are crucial. Accurate financial estimates are crucial for many early-stage firms, especially those in developing nations like Pakistan, in order to raise their valuation and bring in seed investors.

### **Revenue Growth Projection**

Revenue growth is one of the most crucial aspects that potential investors consider when assessing an investment in pre-seed companies. At the preseed stage, revenue predictions are sometimes uncertain due to the company's inexperience. To get funding, startups must, however, demonstrate a strong potential for growth. A study by (Clarke-Sather et al., 2011) found that revenue predictions might reveal a startup's future trajectory as well as its scalability and sustainability.

A good revenue growth forecast will demonstrate to investors that the business will be profitable in the long run, hence a better investment opportunity (Ahmad et al., 2025). According to a study (Herrera,

2015), venture capitalists seek high revenue growth potential as one of the primary considerations when evaluating early-stage businesses since it tends to be associated with future profitability and success. Forecasting revenue growth is especially difficult for pre-seed companies since they typically don't have enough data to back up their claims. Pre-seed stage companies commonly employ market research, competitive analysis, and assumptions about product-market fit to forecast revenue, (Ioachim, 2015). These projections might not be accurate, though, because of unanticipated competition, changing customer preferences, or unstable markets. Two popular methods for estimating income in financial models are top-down and bottom-up forecasting. Two common approaches to income estimation in financial models are top-down and bottom-up forecasting. Top-down projections evaluate the market size and the anticipated share of the startup, while bottom-up estimates concentrate on specific sales channels and customer acquisition processes. For instance, a study by (Ross, 2017) highlights the importance of market analysis to create realistic, scalable revenue models for pre-seed startups. In light of the startup ecosystem in Pakistan, this may be significant.

### **Operating Cost Projections**

Operating cost projections are important in determining whether a business is financially viable. For pre-seed startups, whose capital is minimal, cost management is just as vital as revenue growth. Some examples of fixed and variable expenses often found in operating expenses are salaries, rent, power, and marketing costs. Startup (Giannopoulos & Munro, 2019), one of the key issues pre-seed companies encounter is underestimating operating expenses. This may cause cash flow issues and increased burn rates. Pre-seed firms should also keenly evaluate their costs to make sure that their working budget aligns with their capability to generate money. According to a study by (Eesley & Wang, 2017) startups are more likely to face challenges in the early stages of their firm if they overestimate their potential revenue growth or underestimate their costs. On the other hand, with a precise cost estimate, business owners may better manage their finances and avoid failure too soon. Best techniques for operational cost forecasting include tracking both direct and indirect expenses, using industry benchmarks, and scaling prudently. In order to avoid unforeseen expenses, pre-seed companies should prioritize fixed cost minimization and keep a careful eye on variable costs as they expand, per a (*Mckinsey-Investing-7-Sectors*, n.d.) study.

### **Gross and Net Profit Margins**

Provide details regarding a startup's profitability at different stages. Whereas the gross The net margin displays the total profitability after all costs are subtracted, while the margin displays the percentage of revenue that remains after subtracting the cost of goods sold (COGS).

Profit margins are crucial for assessing a startup's financial health, according to PwC data from 2021. Even if pre-seed companies may not be profitable right now, it's crucial to demonstrate that there is a clear path to success and healthy margins.

High gross margins indicate that the company can generate a substantial profit from its primary operations, while the net margin gives insight into the total operational efficiency of the business.

For most pre-seed companies, being profitable is a long-term goal. In their early stages, many businesses place a higher priority on expansion than on immediate profitability. According to a 2019 McGrath study, startups typically don't break even until they reach the Series A investment level. Profitability must therefore be precisely estimated, even if it is a long-term objective.

Even in the pre-seed stage, a startup's valuation rises when its profitability outlook is positive. Investors are more likely to support companies with clear strategies for turning a profit since they are seen as having reduced risk. Zider (2018) found that companies with clear profitability milestones are often valued higher in initial rounds.

### **Burn Rate and Runway**

The runway is the period of time a business may operate before running out of money, whereas the burn rate is the rate at which it uses its capital. According to (Ross, 2017), the burn rate is an important metric for pre-seed companies because it determines when they need to raise further funds. A high burn rate may be a sign of unnecessary spending, whereas a low burn rate may indicate that the company is not making enough investments to expand. Before they run out of funds, companies that practice effective runway management can alter their business plan or get ready for future funding rounds. Studies like those by (Kaplan & Strömberg, n.d.) show that investors often look at a startup's burn rate during due diligence. Companies with high burn rates and a short runway are considered high-risk ventures. By accurately forecasting burn rate and runway, pre-seed firms can avoid cash flow issues and better negotiate seed investment terms.

### **Customer Acquisition Cost (CAC) & Lifetime Value (LTV)**

Two important indicators are Lifetime Value (LTV) and Customer Acquisition Cost (CAC). These measures affect the growth strategy and profitability of a startup. CAC portrays the cost of acquiring a new customer, whereas LTV determines the total revenue a client will generate during their time with the company. The ratio of LTV to CAC is often employed as a standard by investors. In a study by (Barwise & Strong, 2002), firms should target an LTV to CAC ratio of 3:1 or higher to make their customer acquisition efforts effective. When the CAC is overwhelmingly high in relation to LTV, the company risks the danger of spending more on acquiring customers than it receives. It can be difficult for pre-seed businesses to accurately forecast CAC and LTV, especially if they lack historical customer data. Pricing tactics, segmentation models, and industry benchmarks can be used by businesses to project these KPIs, according to (Cacciolatti et al., 2020) a study. The LTV/CAC ratio has a direct correlation with company value because it reflects how sustainable the startup's business model is. Companies that can achieve high returns on their investments in customer acquisition—illustrated by a high LTV against CAC—draw investors. The literature reviewed shows that precise financial projections are critical to pre-seed startups seeking seed investors and the appreciation of their value. Various parameters, including projected revenue growth, operating expense projections, margins, burn rate, CAC, and LTV, have a major bearing on financial results and investor attitudes. Robust financial models projecting these parameters precisely can go a long way toward securing early investment and raising startup valuation.

### **RESEARCH FRAMEWORK**

The conceptual framework of the research is a focus on a pre-seed firm valuation connection with other finance assumptions. A goal of the conceptual framework used here is a systematic explanation for how financial forces affect the valuation of a start-up during a seed funding cycle. The independent variables—revenue growth projections, operating cost projections, gross and net profit margins, runway and burn rate, and CAC and LTV ratios—are considered essential inputs in pre-seed firms' financial models. All of these factors are determinants of the firm's ability to scale, survive, and be profitable; these factors are of concern to seed investors.

### **Theoretical Alignment**

- **Capital Structure Theory (Modigliani & Miller, 1958):** Startups that depend on equity funding should maximize predictions in order to indicate reduced risk.
- **Resource-Based View (Barney, 1991):** Competitive advantage and valuation are improved by effective resource allocation (such as CAC optimization).

- **Behavioral Finance (Kahneman & Tversky, 1979):** even before a company generates money, investors reward accurate forecasts that lower uncertainty.

### **Research Model Explanation**

As per the model, certain fiscal parameters such as independent variables influence the dependent variable of startup valuation at pre-seeding.

**Hypothesis 1 (H1):** Greater revenue growth estimates are positively correlated with higher startup valuation at the seed funding level.

**Justification:** Since it indicates scalability and demand in the market, investors seek companies with high revenue growth potential. A better product-market fit, a successful business plan, and the potential for long-term profitability are all signaled by a higher revenue growth estimate approach (Ross, 2017).

**Hypothesis 2 (H2):** More realistic and accurate operating cost estimates are positively correlated with higher startup valuation in the seed funding period.

**Justification:** Financial stability and avoiding premature capital exhaustion require cost-effectiveness in initiating operations (Giannopoulos & Munro, 2019).

**Hypothesis 3 (H3):** Higher net and gross profit margins are positively correlated with higher startup valuation at the seed funding level.

**Justification:** Profit margins of the startup indicate its financial soundness and ability to generate consistent profits. High-margin startups are more attractive to investors since they show effective cost management and pricing strategy (PwC, 2021)

**Hypothesis 4 (H4):** A lower burn rate and a longer runway are positively associated with higher startup valuation at the seed funding stage.

**Justification:** Financial sustainability is impacted by the runway (period before requiring extra cash) and burn rate (spending rate). Startups with a longer runway and lower burn rate exhibit capital efficiency, which lowers the chance of an early failure and boosts investor confidence (Gornall & Strebulaev, 2023).

**Hypothesis 5 (H5):** A higher LTV to CAC ratio is positively associated with increased startup valuation at the seed funding stage.

**Justification:** Customer profitability and business sustainability are reflected in the ratio of customer acquisition cost (CAC) to customer lifetime value (LTV). A high ratio of LTV to CAC suggests that a startup can effectively acquire and retain customers, maximizing long-term revenue and lowering reliance on aggressive marketing expenditures (Gompers et al., 2020).

### **RESEARCH METHODOLOGY**

We used data from surveys of numerous startups in different industries to assess the hypotheses that were put forth. Data was gathered directly from important players and company founders to learn more about mergers and acquisitions. A quantitative research methodology is used in this research to gather and analyze data. Data from a Pakistani startup community, specifically Seed and Pre-seed stage firms in a variety of industries, was used to test the hypothesis.

#### **Data Collection, Sample Selection, and Description**

Stratified random sampling was used to choose the sample. This strategy was used to reduce sampling error and guarantee that the sub-strata mean differences between the collection and the whole population were as low as possible.

The sampling strata were defined based on the following criteria:

**1. Business Stage of Development:** Ensuring that startups in comparable phases of growth are represented.

**2. Industry:** Including a range of industries to give a comprehensive study.

**3. Startup Year:** To account for variations in early-stage growth patterns, firms from different starting years are included. A final sample of 100 companies was obtained by using these criteria. The sample description is summarized in the table below (Table 1).

## **RESEARCH MEASURES**

### **Dependent Variable**

#### **Startup Valuation at the Pre-Seeding Stage**

**Definition** Pre-seeding startup valuation is the estimated value of a business prior to obtaining official venture capital funding. Numerous operational and financial metrics have an impact on it (Behl, 2022)

**Significance:** According to (Ross, 2017), investors utilize valuation to evaluate the startup's financial stability, market attractiveness, and possible return on investment.

### **Independent Variables**

#### **1. Revenue Growth Projection**

**Definition:** The anticipated rise in a startup's revenue over a specific time frame is known as a revenue growth projection (Campero & Kacperczyk, 2020).

**Significance:** As it indicates market demand and scalability, higher anticipated revenue growth boosts investor confidence (Gornall, n.d.).

#### **2. Operating Cost Projection**

**Definition:** This is the amount of money a startup is expected to spend in order to continue operating for a given amount of time (Steiber & Alänge, 2021).

**Significance:** Investors find startups with precise and well-thought-out cost predictions more appealing since they are seen as financially competent (Flechas et al., 2023).

#### **3. Gross and Net Profit Margins**

**Definition:** While net margin takes into consideration all expenditures, gross margin calculates profitability after subtracting production costs (Nanda & Rhodes-Kropf, 2013).

**Significance:** Strong profit margins show financial efficiency and increase a startup's chances of obtaining investment (Ghezzi et al., 2022).

#### **4. Burn Rate & Runway**

**Definition:** Runway is the period of time until a business runs out of money, whereas burn rate is the rate at which it burns its capital (Pathak et al., 2020).

**Significance:** Investors are reassured by a controlled burn rate and a longer financial runway, which demonstrate sustainability (Gornall, n.d.).

#### **5. CAC & LTV Ratio**

**Definition:** The (CAC) is the cost paid to gain a client, whereas the (LTV) is the amount of money a client brings in over the course of their lifetime (Flechas et al., 2023).

**Significance:** According to (*Mckinsey-Investing-7-Sectors*, n.d.), a startup with a greater LTV-to-CAC ratio is more desirable to investors since it indicates a viable business plan.

### **Statistical Tools and Software Used**

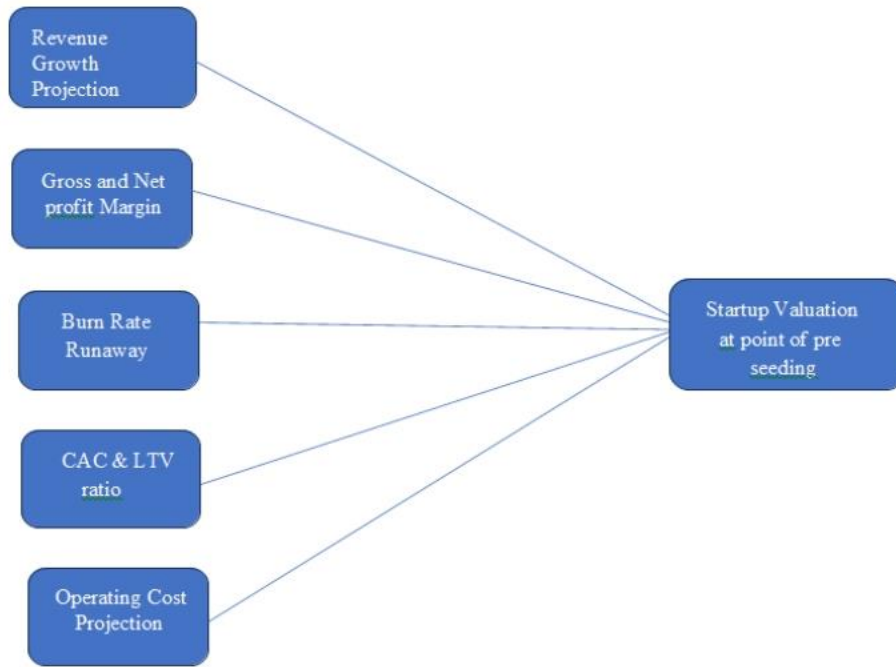
**SPSS Statistics** was applied to the analysis of data. The statistical methods and instruments listed below were used:

- **Descriptive Statistics** – The dataset's mean, standard deviation, lowest, and maximum value are summarized.
- **Frequency Analysis** – to examine the distribution of responses for various variables.
- **Reliability Analysis** The scale's internal consistency was evaluated using Cronbach's Alpha.
- **Correlation Analysis** To ascertain the correlations between variables, Pearson's correlation coefficient was calculated.

- **Regression Analysis** Multiple regression analysis was used to assess the impact of independent variables on the dependent variable.
- **ANOVA (Analysis of Variance)** – applied to implications of the regression model for statistics.

To ensure accuracy and dependability in the results, SPSS was used for all statistical analyses.

**RESEARCH MODEL**



**ANALYSIS & RESULT**

**Descriptive Statistics**

Descriptive statistics summarize the dataset, such as indicators of dispersion (standard deviation, minimum, and maximum values) and central tendency (mean).

**Table 1: Descriptive Statistics**

Variable	Mean	Std. Deviation
<b>RG</b>	3.9320	0.60983
<b>GPM</b>	3.9220	0.56490
<b>OCP</b>	3.9540	0.52018
<b>BRN</b>	3.9100	0.54114
<b>CLR</b>	3.8480	0.56577
<b>SVS</b>	3.8600	0.54643

**Key Findings:**

- **Revenue Growth (RG):** The majority of startups in the survey anticipated moderate to high revenue growth, as evidenced by the mean value of 3.9320 (on a scale of 1 to 5). There may be some variation in the estimates of revenue growth, as indicated by the standard deviation of 0.60983.
- **Gross Profit Margin (GPM):** Startups often anticipated excellent gross profit margins, as indicated by the mean number of 3.9220. Moderate variability is shown by the standard deviation of 0.56490.



- Operating Cost Projections (OCP): Based on the mean value of 3.9540, it appears that startups estimated operating expenses with a reasonable degree of accuracy. Consistency in cost forecasts is indicated by the standard deviation of 0.52018.
- Burn Rate (BRN): The majority of startups had a moderate burn rate, according to the mean value of 3.9100. The 0.54114 standard deviation points to some variation in expenditure patterns.
- Customer Lifetime Value to CAC Ratio (CLR): Startups often had a good LTV to CAC ratio, as indicated by the mean value of 3.8480. Moderate variability is shown by the standard deviation of 0.56577.
- Startup Valuation at Pre-Seed Stage (SVS): The majority of the sample's firms had moderate valuations, according to the mean value of 3.8600. There may be some variation in valuations, as indicated by the standard deviation of 0.54643.

According to the descriptive data, the sample's startups often anticipated strong profit margins, moderate to high revenue growth, and reasonable operational expenses. Sustainability and financial restraint were demonstrated by the burn rate and LTV to CAC ratio, both of which fell within acceptable bounds. These results imply that the sample's companies had quite well-prepared financial predictions, which is essential for drawing in seed money. (Pallant, 2004) and (Creswell, n.d.)

**Reliability Analysis**

A reliability analysis was conducted to ascertain the internal consistency of the scale in measuring the variables. Cronbach's Alpha was used for this. The scale employed to measure the variables is dependable, as indicated by the high internal consistency value of 0.896.

**Table 2: Reliability Statistics**

Cronbach's Alpha	N of Items
.896	30

The high Cronbach's Alpha value (0.896) indicates strong internal consistency and confirms the validity of the scale used to measure the variables. It is commonly considered that a Cronbach's Alpha value of greater than 0.7 indicates strong dependability, while values larger than 0.8 do the same. (Pallant, 2004) By showing that the survey instrument consistently measured the target constructs, this improves the validity of the findings. Additionally, a reliable measurement scale reduces the likelihood of errors in data gathering, enhancing the validity of the study's conclusions. (Creswell, n.d.)

**Correlation Analysis**

The associations between the independent variables (RG, GPM, OCP, BRN, and CLR) and the dependent variable (SVS) were investigated using Pearson's correlation coefficient.

**Key Findings:**

- **Revenue Growth (RG):** Revenue Growth (RG) and SVS have a positive correlation ( $r = 0.468$ ,  $p < 0.01$ ). This indicates that greater startup valuations are linked to higher revenue growth estimates.
- **Gross Profit Margin (GPM):** GPM and SVS had a positive relationship ( $r = 0.586$ ,  $p < 0.01$ ). This implies that startups are typically valued higher when their gross profit margins are bigger.
- **Operating Cost Projections (OCP):** There was a positive relationship between OCP and SVS ( $r = 0.615$ ,  $p < 0.01$ ). This suggests that higher valuations are linked to precise and reasonable operating cost predictions.
- **Burn Rate (BRN):** Burn Rate (BRN) and SVS positively correlate with each other ( $r = 0.565$ ,  $p < 0.01$ ). This suggests that startups that control their burn rate usually command higher prices.

**Table 3: Correlation**

Independent Variable	Correlation (r)	Significance (p)	Interpretation
Revenue Growth (RG)	0.468	$p < 0.01$	Higher revenue growth projections are associated

Gross Profit Margin (GPM)	0.586	p < 0.01	with higher startup valuations. Startups with higher gross profit margins tend to have higher valuations.
Operating Projections (OCP) Cost	0.615	p < 0.01	Accurate and realistic operating cost projections are associated with higher valuations.
Burn Rate (BRN)	0.565	p < 0.01	Startups with a controlled burn rate tend to have higher valuations.
Customer Lifetime Value to CAC Ratio (CLR)	0.645	p < 0.01	A higher LTV to CAC ratio is associated with higher valuations.

**Interpretation:**

The correlation test finds that all the independent variables have a positive and significant relationship with startup valuation. This implies that financial factors like revenue growth, profit margins, operating expenses, burn rate, and LTV to CAC ratio have a major role in establishing a startup's valuation in the pre-seed phase. The findings corroborate with the hypotheses stated in the study. (Flechas et al., 2023)

**Regression Analysis**

The impact of independent variables (RG, GPM, OCP, BRN, and CLR) on the dependent variable (SVS) was assessed with multiple regression analysis.

**Table 4: Model Summary**

Statistic	Value	Explanation
R <sup>2</sup>	0.572	shows that the independent variables account for 57.2% of the variation in startup valuation (SVS).
Adjusted R <sup>2</sup>	0.549	A decent model fit is suggested when taking into account the number of variables utilized, after adjusting for the number of predictors.
F-value	25.089	evaluates the model's overall importance. A stronger correlation between predictors and SVS is shown by a higher F-value.
Significance (p)	< 0.001	It is evident that at least one of the variables significantly influences the valuation of startup, as attested by statistical significance of the model.

**Table 5: Regression Coefficients**

Independent Variable	Beta	p-value	Significance	Explanation
Revenue Growth (RG)	0.158	0.071	Not significant	Positive but not statistically significant.
Gross Profit Margin (GPM)	-0.028	0.807	Not significant	No significant impact on startup valuation.
Operating Cost	0.249	0.017	Significant	Positive impact on startup

Projections (OCP)					valuation.
Burn Rate (BRN)	0.198	0.034	Significant	Controlled burn rate positively impacts valuation.	
Customer Lifetime Value to CAC Ratio (CLR)	0.386	< 0.001	Highly Significant	A higher LTV to CAC ratio positively impacts valuation.	

### Key Takeaways

1. These independent variables are strong predictors as the model explains 57.2% of variation in startup valuation. (Clarke-Sather et al., 2011)
2. OCP (Operating Cost Projections) and BRN (Burn Rate) have the second largest impacts on startup valuation, after CLR (LTV to CAC Ratio).
3. Although positively correlated with valuation, RG (Revenue Growth) is not statistically significant
4. The gross profit margin, or GPM, has little bearing on valuation.

### Hypothesis Testing

The results of the regression analysis were used to test the hypotheses.

#### Key Findings:

**H1 (Revenue Growth):** Supported in part. Despite having a positive correlation with valuation, revenue growth does not appear in the regression model as a statistically significant predictor (Varma & Jacob, 2016).

**H2 (Operating Cost Projections):** Accepted. Startup valuation is greatly impacted by accurate operating cost predictions.

**H3 (Gross and Net Profit Margins):** There is no statistically significant correlation between valuation and gross profit margin.

**H4 (Burn Rate and Runway):** Runway and Burn Rate Supported. The startup valuation is greatly impacted by a regulated burn rate.

**H5 (LTV to CAC Ratio):** Supported. Startup valuation is greatly impacted by a higher LTV to CAC ratio. (Gornall, n.d.)

#### Interpretation:

The findings suggest that investors prioritize financial sustainability (controlled burn rate, accurate cost projections) and customer profitability (LTV to CAC ratio) over revenue growth and profit margins when valuing pre-seed startups. This highlights the importance of demonstrating efficient resource management and a clear path to profitability in early-stage startups (Behl, 2022).

#### Practical Implications

For Startups: Pre-seed companies should concentrate on developing precise and realistic financial estimates, especially about operational expenses, burn rate, and the effectiveness of client acquisition. Investors may find them more appealing if they exhibit sustainability and financial discipline.

• For Investors: Investors should prefer firms with effective cost management, controlled burn rates, and favorable LTV to CAC ratios, as these criteria are strong predictors of financial health and long-term success. (Flechas et al., 2023)

### LIMITATIONS AND FUTURE RESEARCH

**Limitations:** The focus of the study on Pakistani startups could limit how widely the findings can be generalized. Additionally, while 100 startups is a good sample size, it could be made larger for more valid results.

**Future Research:** The influence of non-financial considerations (e.g., team experience and market size) on startup valuation could be investigated further. Additionally, a longitudinal study could illuminate how financial metrics evolve and impact valuation across different phases of growth.

### **CONCLUSION**

The research highlights the need for financial sustainability and customer profitability in the pre-seed startup valuation. Startups must emphasize financial discipline and customer profitability to secure investors, while investors must prioritize sustainability and efficiency over fast growth. These results provide a strategic framework for early-stage financing and long-term success. The main findings are:

1. **Financial Metrics Matter:** Operating cost projections (OCP) and burn rate (BRN) play a significant role in valuation, emphasizing the importance of financial prudence and efficient resource utilization.
2. **Customer profitability is key:** The LTV to CAC ratio (CLR) is the most accurate predictor of valuation, illustrating that companies with long-term customer value are more attractive to investors.
3. **Revenue Growth is Less Significant:** While positively related, revenue growth (RG) is not statistically significant, suggesting that investors prefer sustainability over rapid growth.
5. **Profit Margins Are Not a Driver:** Investors value overall financial health, thus, gross profit margin (GPM) has minimal influence on valuation.
6. **Reliable Results:** Reliable Results: The high Cronbach's Alpha (0.896) and regression model ( $R^2 = 0.572$ ) indicate the dependability and strength of the analysis.

### **RECOMMENDATIONS**

#### **For startups:**

1. Prioritize proper financial projections, control burn rates, and good cost control.
2. Optimize client acquisition techniques to boost the LTV to CAC ratio.
3. Provide a clear route to profitability through long-term growth strategies.

#### **For investors:**

1. Prioritize startups that have great cost management and low burn rates.
2. Consider startups' LTV to CAC ratio as a crucial predictor of long-term worth.
3. Look beyond revenue growth to determine financial viability and profit. (Campero & Kacperczyk, 2020)

#### **For Future Research:**

1. Increase the sample size to include companies from other areas.
2. Consider non-financial considerations such as team experience and market size.
3. Conduct longitudinal studies to better understand how financial measures change over time.

#### **Research Gap**

Despite substantial study on startup valuation and financial predictions, there are still gaps in our understanding of the exact financial aspects that drive pre-seed business valuation, especially in emerging economies such as Pakistan. While earlier research has looked into the importance of revenue growth, cost efficiency, and customer profitability in company success, there is no empirical evidence on how these aspects affect valuation during the early phases of fundraising. (Clarke-Sather et al., 2011)

#### **Limited research on pre-seeded startups**

The majority of existing research focuses on venture-funded or later-stage firms, which have more specific financial data. However, pre-seed firms work in an uncertain environment, making financial estimates exceedingly risky. This study fills a gap by investigating how early-stage financial parameters affect valuation before major external investment. (Gompers et al., 2020)

there are gaps in the knowledge of the precise financial drivers of pre-seed startup valuation, especially in developing markets such as Pakistan. While existing research has analyzed the influence of revenue growth, cost-effectiveness, and customer profitability in determining startup success.

### **Contradictory Expectations vs. Results**

- The study hypothesized that revenue growth projections (RG) would significantly impact valuation (H1). However, while positively correlated ( $r = 0.468$ ,  $p < 0.01$ ), RG was not statistically significant ( $p = 0.071$ ) in the regression model. This suggests that investors may prioritize financial sustainability over aggressive revenue growth at the pre-seed stage.
- Gross Profit Margin (GPM) was expected to significantly influence valuation (H3), but the regression results ( $p = 0.807$ ) indicate that it is not a significant predictor. This contradicts the assumption that high margins signal financial health to investors.
- Operating Cost Projections (OCP), Burn Rate (BRN), and Customer Lifetime Value to CAC Ratio (CLR) showed strong statistical significance, indicating that cost control and customer acquisition efficiency are more critical valuation drivers than revenue or profit margins.

### **Investor Priorities for Emerging Markets**

The data indicate that investors in Pakistan's startup ecosystem prioritize financial discipline (cost management, burn rate) and customer profitability (LTV to CAC ratio) over rapid revenue growth or profit margins. This contrasts with trends in developed markets, where growth potential frequently surpasses short-term efficiency.

### **Conclusion on Research Gap**

This study bridges a critical gap in understanding how early-stage financial parameters influence company valuation in emerging markets. The unexpected findings call into question traditional startup valuation methodologies, underlining that investors value financial sustainability above aggressive growth expectations. Future research should look into how non-financial elements (such as founder experience and market trends) interact with financial metrics to affect valuation (Herrera, 2015)

### **Future Research Directions**

Given the geographical scope of the research to Pakistan, more research should examine wider startup ecosystems in other regions to establish the extent to which these findings can be generalized. Additionally, an examination of non-financial factors like founder experience, market conditions, and competitive landscape could offer a better understanding of startup valuation. A longitudinal study of how financial metrics change over time would give more insight into their long-term effect on valuation. Finally, our research addresses a basic void in knowledge regarding how financial conditions at the stage of early development impact firm valuation, particularly in emerging economies. These findings challenge conventional startup valuation practices, pointing out that financial efficiency and sustainability matter more to investors than aggressive growth. Startups using strategic financial management practices have the potential to significantly enhance their chances of valuation, guaranteeing easier access to capital and sustainable success.

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## Research Questionnaire

### Section # 1 General Information

- Company Name \_\_\_\_\_
- Industry \_\_\_\_\_
- Established year \_\_\_\_\_

### Current Stage of Development

- Pre-Seeds
- Seed
- Others

Questionnaire: Optimizing Financial Projections for Pre-seed Startups

**Instructions:** Please indicate your level of agreement with each of the following statements regarding your startup's financial projections at the pre-seed stage. Use the following scale:

- 1 = Strongly Disagree
- 2 = Disagree
- 3 = Neutral
- 4 = Agree
- 5 = Strongly Agree

**Section # 2 Revenue Growth Projection**

1. Our revenue projections are based on a thorough analysis of market research and competition.
2. We have clearly identified a scalable business model that will generate consistent revenue growth.
3. Our revenue forecasts are realistic and achievable considering current market conditions.
4. We have accounted for potential market disruptions or changes in customer behavior in our revenue projections.
5. We can demonstrate a clear path to profitability through our revenue growth estimates.

**Section # 3 Operating Cost Projections**

6. We have accurately estimated both fixed and variable costs in our financial model.
7. We have taken into account all operational costs, including salaries, rent, utilities, and marketing expenses.
8. Our cost projections are aligned with our capacity to generate revenue in the short to medium term.
9. We actively track and update our operating cost projections as our business model evolves.
10. We have made provisions for unexpected cost increases in our projections.

**Section # 4 Gross and Net Profit Margins**

11. Our gross profit margin projections show that we can achieve profitability through core activities.
12. We have a clear understanding of our cost of goods sold (COGS) and its impact on gross margin.
13. Our net profit margin projections reflect a realistic path toward overall profitability.
14. We are confident in our ability to achieve positive gross and net profit margins in the future.
15. Our projected profit margins are competitive within our industry. **Burn Rate and Runway**
16. We have a well-defined understanding of our current burn rate (rate at which we are spending capital).
17. Our financial model accurately reflects how long our current runway (time until we run out of cash) will last.
18. We regularly monitor our burn rate and adjust spending to ensure the longevity of our runway.
19. Our current burn rate allows us to invest adequately in growth while maintaining financial stability.
20. We can confidently predict when we will need to secure additional capital to sustain operations.

**Section # 5 Customer Acquisition Cost (CAC) and Lifetime Value (LTV)**

21. We have accurately estimated our customer acquisition cost (CAC) based on realistic customer acquisition strategies.
22. Our LTV estimates are based on solid assumptions about customer retention and repeat business.
23. The ratio of our LTV to CAC is favorable, ensuring that our customer acquisition strategies are profitable.



24. We continually refine our CAC estimates based on the effectiveness of our marketing and sales strategies.
25. Our financial model incorporates a high LTV to CAC ratio, indicating sustainable customer acquisition.

Section # 6 General Valuation Impact

26. Our financial projections as a whole effectively demonstrate the scalability and sustainability of the business to potential investors.
27. We believe our projected financial outcomes are strong enough to attract seed investors.
28. Our financial model showcases clear milestones for growth, profitability, and cash flow management.
29. We have a comprehensive understanding of how our financial projections impact our startup's valuation.
30. The financial assumptions behind our projections are clearly articulated and can be easily understood by investors.