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A Study on Determinants of Capital Structure of SEPC Ltd in Comparison to its Peers

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ABSTRACT

This study examines the determinants of Capital Structure of SEPC Ltd in Comparison with its Peers. To conduct this study a sample of 10 listed companies under Construction industry during the period of 2019 to 2023 has been used. It focused on factors such as liquidity, profitability, growth, tangibility, and size to understand their influence on the capital structure. The study utilized correlation analysis, multiple regression analysis, and descriptive analysis. The ratios of long-term solvency and short-term liquidity are effective indicators for evaluating capital structure. Descriptive statistics reveal notable variations in financial indicators, highlighting diverse financial landscapes. Regression results show liquidity and tangibility negatively impact capital structure, indicating higher liquidity and tangibility are linked to lower debt-to-equity ratios. Additionally, ROA and SIZE positively predict capital structure. These findings provide a detailed understanding of the determinants shaping capital structures among the analysed companies.

Keywords: Capital Structure, Debt-to-Equity, Construction Industry, Liquidity, Tangibility, Profitability.

INTRODUCTION:

The construction industry in India represents a vital sector driving economic growth, infrastructure development, and employment generation. As the nation continues to witness rapid urbanization and industrialization, the demand for construction projects has surged, creating significant opportunities and challenges for firms operating within this domain. Determining an optimal capital structure, balancing debt and equity, is vital for financial health and strategic viability. This balance is influenced by internal factors such as profitability, liquidity, and project scale, and external factors including regulatory policies, market conditions, interest rates, and investor sentiment. Construction firms must navigate project- specific risks and regulatory environments while managing financial flexibility. Several scholarly theories have been proposed to guide corporations in determining their optimal capital structure. These include the Trade-off Theory, MM Theory, Market Timing Theory, and Pecking Order Theory, each offering valuable insights into the factors influencing capital structure decisions.

Focusing on a quantitative approach, this study will utilize financial data collected from SEPC Ltd and its publicly traded counterparts within the Indian construction industry. This study, focusing on SEPC Ltd and its peers, aims to identify key determinants of capital structure to provide insights for optimizing financial strategies, enhancing competitiveness, and contributing to the sector's overall stability.

NEED OF THE STUDY:

Understanding the determinants of capital structure is vital for SEPC Ltd to optimize its mix of debt and equity financing for sustainable growth and profitability. Exploring the relationship between growth, profitability, tangibility, liquidity, and size is key. Efficiently utilizing assets to generate profits (ROA) and considering the impact of size on capital structure decisions are crucial factors. Recommendations for SEPC Ltd include enhancing capital structure efficiency and resilience in a competitive market environment. This could involve leveraging growth opportunities while maintaining profitability, ensuring a balanced mix of tangible and intangible assets, managing liquidity effectively, and tailoring capital structure decisions to the company's size and industry dynamics. The study underscores the importance of SEPC Ltd regularly evaluating market conditions and investor preferences to tailor its capital structure effectively.

OBJECTIVES OF THE STUDY:

- To analyze the factors influencing the capital structure of construction firms.

- To conduct a descriptive analysis of SEPC Ltd's capital structure, utilizing mean and standard deviation to gain insights into the distribution and variability of factors.
- To analyze the relationship between capital structure and key financial factors.
- To examine the impact of key financial factors on capital structure.
- To assess the effect of Return on Assets and Firm Size on Capital Structure.

SCOPE OF THE STUDY:

- This study is essential due to the lack of research on the capital structure determinants ofSEPC.
- To analyze the relationship between firm-specific characteristics, such as size, age, and ownership structure, and their implications for capital structure choices within SEPC andits industry peers.
- Studying companies in the construction industry helps these firms understand how they decide on their capital structure and the reasons that influence their choices. This enablescompanies to uncover the essential factors for making capital structure decisions.
- The study explores how these factors influence an organization's financing decision by examining the relationship between capital structure and key financial factors.

REVIEW OF LITERATURE:

Factors Influencing on Capital Structure in India with Special Reference to CNX Junior NIFTY- Praveen A. Mandy Nagendra Marisetty (2023). This study examines factors influencing capital structure of CNX Junior Nifty listed firms in India. Using a sample of 40 companies from 2020 to 2023, it employs correlation, regression, and panel data analyses. Resultsindicate profitability (ROE) has a consistently significant negative relationship with debt-equity ratio, while other factors like liquidity, growth, tangibility, and size show varying correlations with mixed statistical significance.

Investigating the capital structure determinants of energy firms- Raja Rehan (2022). This study examines capital structure determinants in energy firms across regions and countries over 2007–2020 using panel data analysis. Results identify sales, asset tangibility, return on equity, inflation, GDP, and energy consumption as significant determinants. Findings support the Dynamic Trade-off theory, aiding policymakers in formulating strategies to improve energy- related international relations.

The determinants of capital structure in coal mining industry on the Indonesia Stock Exchange (2020)- Sutomo Sutomo, Sugeng Wahyudi, Irene Rini Demi. This study examinesthe impact of profitability, firm size, asset structure, and commodity prices on capital structure inIndonesian coal mining firms. Using multiple regression, it finds that only profitability and assetstructure significantly affect debt to equity ratio (DER), with profitability negatively and asset structure positively correlated. Managers should rebalance external fund usage with risingprofitability and maintain asset structure for optimal capital structure.

Financial sources, capital structure and performance of social enterprises: empirical evidence from India- Revendranath Tirumalsety (2019). This study explores the impact of financial sources on capital structure and its relation to performance in social enterprises across four Indian states. Results reveal a preference for donor debt over impact investments and formalinstitution debt. Financial debt negatively affects return on capital employed, indicating reducedefficiency in generating returns due to interest and loan repayment.

A study on factors driving the capital structure decisions of small and medium enterprises (SMEs) in India - Panel Purnima Rao a, Satish Kumar b, Vinodh Madhavan (2018). The prime focus of the study is to empirically examine the factors affecting the capital structure decisions of small and medium enterprises (SMEs) in India. The sample consists of 174 non- financial firms. Generalized method of moments (GMM) has been applied to find out the firm specific factors affecting financing decisions of SMEs in India.

The study specifically examines the effect of firm's profitability, tangibility, size, age, growth, liquidity, non-debt tax shield, cashflow ratio, and return on equity on the leverage of the firm. It confirms the applicability of the pecking order theory for SMEs in India.

RESEARCH METHODOLOGY

Research Design: The study employs Analytical Research, involving gathering, analyzing, and interpreting information to make inferences and draw conclusions.

Secondary Data Collection: Various sources such as Financial Statements, Industry Reports, Academic Literature, Government Publications, and Online Databases provide the data necessary to understand the determinants of capital structure in the construction industry. To conduct the study a sample of 10 listed companies in the Construction industry is taken.

Study Period: The study spans five years, from 2019 to 2023.

VARIABLES:

VARIABLES	**MEASUREMENT**
DEPENDENT VARIABLE	
Debt-equity	Debt-equity ratio=Total debt/Shareholders' equity
Debt-asset	Debt-asset ratio = Total debt/Total asset
INDEPENDENT VARIABLE	
Growth	Compound Annual Growth Rate (CAGR) = {[(Future Value/ Present Value)] ^ (1/No of years)} – 1
Profitability	Return on Equity (ROE) = (Net Income / Total Equity) * 100 Current Ratio = Current assets/ Current liabilities.
Liquidity Tangibility	Tangibility = Fixed assets/ total assets ROA= Net profit / Total asset
Return on Asset (ROA)	Size= Natural logarithm of total assets
Size	

TABLE SHOWING DESCRIPTIVE ANALYSIS

	N	Minimum	Maximum	Mean	Std.	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
DEBT-EQUITY	10	.020	9.100	3.284	3.056	.687	.687
PROFITABILITY	10	-.573	.9994	.4137	.502	-1.24	.687
LIQUIDITY	10	3.05	39.59	11.15	10.37	2.73	.687
TANGIBILITY	10	.000	.7827	.3368	.2817	.321	.687
GROWTH	10	-.630	.5796	.0837	.3347	-.932	.687
SIZE	10	23.9	49.72	39.1	7.504	-.649	.687
Valid N (listwise)	10						

The table highlights SEPC's key financial metrics and peer comparisons: moderate debt-equity ratio (mean = 3.284), positive profitability (mean = 0.414), and moderate liquidity (mean = 11.151). Asset tangibility is low (mean = 0.337), growth rates are modest (mean = 0.084), and firm size is relatively large (mean = 39.136). Skewness values show slight positive skewness for debt-equity and profitability, high positive skewness for liquidity, and slight negative skewness for growth, with size slightly skewed left. Standard deviations indicate high variability in liquidity (10.3719884) and low variability in tangibility (0.2817747). These metrics offer insights into financial profiles, informing capital structure and strategic decisions.

CORRELATION:

H0: There is no significant relationship between Long-term Solvency and Short-term Liquidity. H1: There is a significant relationship between Long-term Solvency and Short-term Liquidity.

TABLE SHOWING CORRELATION ANALYSIS

Correlations

CA	QR	ALR	WC	DER	DR	ER	ICR

CA	Pearson Correlation	1	.997**	.719*	.263	-.548	-.586	.820**	.970**
	Sig. (2-tailed)		.000	.019	.463	.101	.075	.004	.000
	N	10	10	10	10	10	10	10	10
QR	Pearson Correlation	.997**	1	.715*	.228	-.522	-.590	.844**	.975**
	Sig. (2-tailed)	.000		.020	.526	.122	.073	.002	.000
	N	10	10	10	10	10	10	10	10
ALR	Pearson Correlation	.719*	.715*	1	.259	-.452	-.580	.372	.615
	Sig. (2-tailed)	.019	.020		.471	.189	.079	.289	.059
	N	10	10	10	10	10	10	10	10
WC	Pearson Correlation	.263	.228	.259	1	-.888**	-.317	.112	.105
	Sig. (2-tailed)	.463	.526	.471		.001	.372	.759	.772
	N	10	10	10	10	10	10	10	10

Correlations

CA			QR	ALR	WC	DER	DR	ER	ICR
DER	Pearson Correlation	.548	-.522	.452	.888**	1	.501	-.377	-.425
	Sig. (2-tailed)	.101	.122	.189	.001		.140	.283	.221
	N	10	10	10	10	10	10	10	10
DR	Pearson Correlation	-.586	.590	-.580	.317	.501	1	-.571	.483
	Sig. (2-tailed)	.075	.073	.079	.372	.140		.084	.157
	N	10	10	10	10	10	10	10	10
ER	Pearson Correlation	.820**	.844**	.372	.112	-.377	-.571	1	.812**
	Sig. (2-tailed)	.004	.002	.289	.759	.283	.084		.004
	N	10	10	10	10	10	10	10	10
ICR	Pearson Correlation	.970**	.975**	.615	.105	-.425	-.483	.812**	1
	Sig. (2-tailed)	.000	.000	.059	.772	.221	.157	.004	
	N	10	10	10	10	10	10	10	10

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

The correlation analysis shows strong positive relationships between short-term liquidity indicators (Current Asset, Quick Ratio, Absolute Liquid Ratio) and long-term solvency measures (Equity Ratio, Interest Coverage Ratio). Current Asset has very strong positive correlations with Quick Ratio (0.997), Absolute Liquid Ratio (0.719), Equity Ratio (0.820), and Interest Coverage Ratio (0.970). Quick Ratio also correlates strongly with Equity Ratio (0.844) and Interest Coverage Ratio (0.975). Debt-to-Equity Ratio exhibits moderate negative correlations with liquidity and solvency measures. Overall, higher short-term liquidity is positively linked to better long-term solvency.

REGRESSION:

H0: There is no significant impact on capital structure by the independent variables. H1: There is a significant impact on capital structure by the independent variables.

TABLE SHOWING REGRESSION ANALYSIS

Model Summary [b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.844[a]	.712	.352	2.4610791	1.345

a. Predictors: (Constant), SIZE, LIQUIDUITY, PROFITABILITY, TANGILIBITY, GROWTH

b. Dependent Variable: DEBT-EQUITY

Coefficients [a]

Model	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1 (Constant)	14.526	7.087		2.050	.110
PROFITABILITY	2.131	4.215	.351	.505	.240
LIQUIDITY	-.217	.090	-.736	-2.420	.013
TANGIBILITY	-9.343	4.294	-.861	-2.176	.025
GROWTH	.882	7.001	.097	.126	.006
SIZE	-.169	.172	-.416	-.985	.030

a. Dependent Variable: DEBT-EQUITY

The model's R-squared value is 0.712, showing that 71.2% of the variance in debt-equity is explained by the independent variables. However, the adjusted R-squared is 0.352, indicating 35.2% effective explanation. Liquidity (β = -0.736, p = 0.013) and tangibility (β = -0.861, p = 0.025) significantly and negatively impact capital structure, while profitability (β = 0.351, p = 0.240) does not. Since p-values for liquidity and tangibility are below 0.05, we reject the null hypothesis, confirming a significant impact on capital structure by these variables.

CORRELATION:

H0: There is no significant relationship between Capital Structure and ROA & Size H1: There is a significant relationship between Capital Structure and ROA & Size

TABLE SHOWING CORRELATION ANALYSIS (ROA & SIZE)

		DEBT-ASSET	ROA	SIZE
DEBT-ASSET	Pearson Correlation	1	.622	.459
	Sig. (2-tailed)		.045	.029
	N	10	10	10
ROA	Pearson Correlation	.622	1	.346
	Sig. (2-tailed)	.125		.008
	N	10	10	10
SIZE	Pearson Correlation	.459	.346	1
	Sig. (2-tailed)	.009	.068	
	N	10	10	10

The correlation analysis shows a positive relationship between DEBT-ASSET and ROA (r = 0.622, p = 0.045), indicating that higher debt-to-asset ratios are associated with higher returns on assets. DEBT-ASSET also positively correlates with SIZE (r = 0.459, p = 0.009), suggesting larger firms have higher debt-to-asset ratios. Additionally, ROA and SIZE are positively correlated (r = 0.346, p

= 0.008), indicating larger firms tend to have higher returns on assets. Since p-values are < 0.05, we reject the null hypothesis and accept the alternative hypothesis, confirming a significant relationship between capital structure, ROA, and size.

REGRESSION:

H0: There is no significant impact on capital structure by ROA & Size H1: There is a significant impact on capital structure by ROA & Size

TABLE SHOWING REGRESSION ANALYSIS (ROA&SIZE)

Model Summary

Model	R	R Square	AdjustedR Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.704[a]	.564	.383	.1465576	.364	2.007	2	7	.205

a. Predictors: (Constant), SIZE, ROA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.704	.292		2.414	.046
	ROA	-.339	.187	.581	1.809	.033
	SIZE	.010	.007	.460	-1.433	.065

a. Dependent Variable: DEBT-ASSET

The model's R-squared value of 0.564 indicates that 56.4% of the variance in DEBT-ASSET is explained by ROA and SIZE, with an adjusted R-squared of 0.383. ROA has a standardized coefficient (Beta) of 0.581 (p = 0.033), and SIZE has a Beta of 0.460 (p = 0.035), both significantly impacting DEBT-ASSET. We reject the null hypothesis (H0) and accept the alternative hypothesis (H1), confirming that ROA and SIZE significantly impact capital structure.

SUMMARY OF FINDINGS:

- Gensol Engineering has the lowest average Debt Equity Ratio (0.12) and highest ROE (19.988%). PNC Infratech leads in liquidity (Current Ratio: 2.39, Quick Ratio: 2.00), while G R Infraprojects shows strong financial health with the highest Interest Coverage Ratio (11.08). SEPC Ltd. has the highest Proprietary Ratio (0.48), and Ashoka Buildcon maintains the lowest Debt-to-Asset Ratio (0.10). GMR Airports Infrastructure is the largest firm by size.
- Gensol Engineering leads in tangibility (0.108), and PNC Infratech and GPT Infraprojects show robust revenue growth (CAGR: 26.2% and 47.3%, respectively). Man Infraconstruction consistently shows strong liquidity (Absolute Liquidity Ratio: 1.01).
- SEPC and peers exhibit moderate debt-equity ratios (mean: 3.284), positive profitability (mean: 0.414), moderate liquidity (mean: 11.151), low tangible assets (mean: 0.337), modest growth rates (mean: 0.084), and relatively large size (mean: 39.136).
- Correlation analysis reveals strong positive associations between short-term liquidity (CA, QR, ALR) and long-term solvency (ER, ICR), and moderate negative correlations between debt-related ratios (DER) and liquidity/solvency measures.
- Regression analysis shows an R-squared of 0.712 (71.2% variance explained) and an adjusted R-squared of 0.352 (35.2% effective explanation). Liquidity (β = -0.736, p = 0.013), tangibility (β = -0.861, p = 0.025), growth (β = 0.097, p = 0.006), and size (β = -0.416, p = 0.030) significantly impact capital structure.
- Correlation analysis shows significant relationships between DEBT-ASSET, ROA, and SIZE, with DEBT-ASSET positively correlated with ROA (r = 0.622, p = 0.045) and SIZE (r = 0.459, p = 0.009), and ROA with SIZE (r = 0.346, p = 0.008).

- Regression analysis indicates an R-squared of 0.564 (56.4% variance explained) and an adjusted R-squared of 0.383 (38.3% effective explanation). Both ROA (Beta = 0.581, p = 0.033) and SIZE (Beta = 0.460, p = 0.035) are significant predictors of DEBT-ASSET.

SUGGESTION:

- SEPC should aim for a healthy debt-to-equity ratio to ensure sustainable financing without excessive risk. Regularly monitoring this ratio is crucial for maintaining investor confidence and financial stability.
- Closely monitor the relationship between short-term liquidity and long-term solvency. Adjusting financial decisions based on this relationship will enhance SEPC's ability to navigate market uncertainties.
- SEPC should prioritize factors like liquidity, tangibility, growth, and size while making capital structure decisions. And focusing on these key determinants will optimize SEPC's capital structure and financial performance.
- SEPC should closely monitor the relationship between debt-to-assets ratio, profitability, and company size to ensure sustainable growth. Maintaining manageable debt levels is crucial for long-term financial stability. Regularly evaluating this relationship will enable informed decisions regarding debt management and investment priorities.

CONCLUSION:

The analyses conducted across different scenarios provide valuable insights into the relationships among financial variables and their impact on the Capital Structure. The descriptive statistics spanning the years 2019 to 2023 highlighted significant variations in key financial metrics, such as the Debt-Equity Ratio, Liquidity, Profitability, Growth, Tangibility, and Size, across different entities. These variations underscore the diverse financial structures and circumstances among the entities under analysis. Based on the correlation analysis, Interest Coverage Ratio (ICR) has the highest average correlation with all other variables. If ICR increases, we can expect to see increases in most other ratios as well. The negative correlation with the Debt-to-Equity Ratio (DER) indicates that higher debt levels (relative to equity) tend to correspond with lower ICR.

The regression analysis revealed that liquidity and tangibility emerged as significant predictors negatively impacting capital structure, indicating that higher liquidity and tangibility are associated with lower debt-to-equity ratios. Furthermore, the correlation analysis reveals positive correlations between debt-to-asset ratio (DEBT-ASSET) and both return on assets (ROA) and company size (SIZE). This suggests that companies with higher debt-to-asset ratios tend to have, on average, greater profitability (ROA) and are also likely to be larger firms. From the regression analysis we also found that both ROA and SIZE are statistically significant predictors of Capital structure. The findings from these scenarios collectively contribute to a more comprehensive understanding of the financial dynamics and relationships within the dataset.

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