# Research of How Profitability Affects Capital Structure in the Indian IT Industry

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**ABSTRACT**

Together, the digital economy and the information and communication technology (ICT) industry make up around 13 percent of India's GDP, making them two of the country's primary economic engines. India hopes to expand its ICT sector to $1 trillion within the next 5 years, or 20% of its projected GDP. The National Association of Software and Services Companies predicts that India's IT sector would reach $245 billion by 2023, based on an 8.4% annual growth rate.

Companies can finance their assets with debt or equity capital.. The ideal solution is a loan with equity combo. The main focus of the current study is how capital structure affects the profitability of Indian business enterprises. This research looks on the relationship between profitability and capital structure in the information technology sector. Capital structure decisions have a significant impact on a company's long-term development prospects and financial stability. Particular attention is given to the relationship between profitability measurements and important capital structure indicators.

The study aims to determine how profitability measurements impact IT firms' financing decisions and the resulting implications of their capital structure. The investigation focuses on information technology firms in India. We have utilized secondary data from twenty-five businesses throughout the course of ten years, from 2014 to 2023. The impact of the financial data from 25 firms—namely, Return on Asset (ROA), Market Leverage (ML), Earnings per Share (EPS), Asset Turnover Ratio (ATR), and Liquidity Ratio (LQ)—was examined using descriptive statistics. The relationship between two or more variables is examined in this study using the correlation technique.

Finding the root cause latent components, or factors, that explain the patterns of correlations observed between a set of data is done statistically using a technique known as factor analysis. To make the data easier to read after the initial Factor Analysis, researchers frequently use a method known as rotation. By increasing the elements' orthogonality or independence from one another, rotation seeks to simplify the factor structure and make interpretation easier. All things considered, the utilization of rotation in conjunction with Factor Analysis, as well as the analysis of the Rotated Component Matrix, offers an effective way to identify hidden components and comprehend the intricate interactions between variables in a dataset.

**KEY WORDS:** Capital structure, Profitability, India, IT sector.

## 1. Introduction

Although many studies have looked at the factors that influence capital structure in various industries, it is important to understand that the IT industry has certain dynamics and features that may influence its capital structure decisions in a different way. Driven by greater reliance on information and communication technology, digitization, and technological developments, the IT sector has seen extraordinary growth and transformation. Because of these characteristics, the IT industry now faces unique financing opportunities and needs. For this reason, it is critical to look into how profitability affects capital structure in this particular context.

A company's profitability, or its capacity to turn a profit from its operations, is a key component that influences its choices about capital structure. Beyond the original division of financing and investment decisions made by Modigliani and Miller, the study of capital structure has been an important field of study in finance.While early work viewed them as distinct processes, the acknowledgment by Jensen and Meckling opened the door for researchers to delve into how competitive strategy interacts with capital structure decisions (Jonathan P. O'Brien y).

Corporate finance theory has made significant strides in identifying the variables that impact a firm's capital structure decision since the groundbreaking work of Franco Modigliani and Merton Miller in 1958. However, despite decades of continuous study, no one theory has been able to provide a solution for the capital structure conundrum. Furthermore, because the pertinent characteristics put forth by different capital structure theories are quite abstract in nature and not readily observable, empirical study to determine the determinants of capital structure has lagged behind theoretical research (Wessels and Titman,1988). However, in order to explain the observed variance in capital structure between enterprises, the available empirical work has focused on characteristics including size, the rate of expansion of a firm's tangible assets, capital intensity, profitability, income volatility, and tax considerations.

However, the majority of empirical research to date has been conducted in the United States and a few other industrialized nations. For two reasons, the capital structure issue has gained attention in industrialized nations but has not received the same attention in developing ones. First, the relevance of enterprises in economic development has received little attention in development economics until lately. No single theory has been able to fully explain the capital structure conundrum despite significant efforts, and theoretical advances are not kept up with empirical studies. Factors put out by different theories are difficult to observe firsthand because of their abstract nature (Wessels and Titman, 1988).

The capital structure is playing an increasingly important role in determining the optimal financing mix for investment needs that might increase the company's value through profitability. Capital structure is a controversial and interesting topic in finance (Tifow & Sayilir, 2015). In general, modern theories emphasize how important it is to maintain the optimal capital structure, which is a debt-to-equity ratio. Research by Al-Najjar and Hussainey (2011) and Haron (2014) suggests that companies can use perfect debt and equity ratios as guides when creating their capital structure, despite the fact that there is no universally acceptable consensus regarding these ratios.

The United States and a few other industrialized nations were the focus of the previously finished empirical investigation. The capital structure problem has drawn less attention in emerging nations despite its importance in developed nations for two reasons. First and foremost, the field of development economics has generally paid little attention to the contributions made by enterprises to economic growth. Thus, despite their capacity to propel industrialization and growth in numerous less developed countries, large firms have not gotten enough attention in the development literature. However, only a few research (Kunt and Maksimovic, 1995; Singh, 1995, etc.) have lately uncovered these difficulties.

Small business owners usually lack regular access to expert advice, which may contribute to their limited management abilities and knowledge. This may explain why financial decisions in small and large businesses differ. This trait, highlighted in SME research, is driven by both size and the degree to which business decisions are kept apart from the owners' personal ambitions and assets (Holmes et al., 2002). Existing finance theories may be employed confusingly in the SME sector due to SME owners/managers' inadequate awareness of funding sources and the human causes behind some of their unsatisfactory choices.

The capital structure analysis aims to clarify the mix of assets and funding sources that organizations utilize to fund real investments. This article presents an overview of capital structure research, while much of it has concentrated on debt-to-equity ratios on company balance sheets.

Debt-equity decisions are not guided by a single theory, although various conditional models provide helpful guidance. According to the trade-off method, tax-paying businesses should borrow money at a rate that weighs the benefits of having more debt in terms of taxes against the risks of future financial difficulties. When internal cash flow is insufficient for capital expenditures, corporations will prefer to borrow money rather than issue stock, according to the pecking order principle. As a result, total debt shows the company's overall need for outside financing. According to the free cash flow theory, having a lot of debt can boost a company's value even during a downturn, especially for well-established enterprises that are prone to overinvest.

According to Modigliani and Miller (1958), decisions about financing have little bearing on the cost and availability of capital, nor on the value of the company. Their presumptions regarding perfect, frictionless finance markets, however, are constrained. Even if these results are generally accepted, finance is a significant factor to take into account. Taxes, information gaps, and agency charges are only a few of the vital factors. Different optimum capital structure theories emphasize these factors differently: the free cash flow theory emphasizes agency expenses, a trade-off theory emphasizes taxes, and pecking order theory emphasizes knowledge gaps.

## 2. Literature Review and Problem Formulation

Myers (2001) questions the Modigliani-Miller theorem and proposes a pecking order hypothesis. Myers says that because managers and investors have unequal knowledge, firms prioritize internal finance over debt and equity. The research

emphasizes the importance of variables like taxes, bankruptcy expenses, and company-specific features in determining the best capital structure.

Corporate debt value and capital structure are related factors. Understanding the company's financial structure, which influences the likelihood of defaults and bankruptcies, is required to calculate debt values (and so yield spread); yet, capital structure can't be maximized without understanding how leverage affects debt value. Theoretical and empirical research on capital structure has resulted in numerous findings aimed at explaining the causes of capital structure.

Rajan and Zingales (1995) discovered that variables that earlier research in the US revealed to be connected in a cross-section with company leverage are also correlated in other nations. According to Shyam Sunder and Myers (1999), regardless of whether the pecking order theory is correct, leverage ratios can simply revert. It was acknowledged by Gleason, Mathur, and Mathur (2000) that factors other than capital structure affect business performance. If capital structure and performance are negatively correlated, agency problems may cause the capital structure to use more debt than is appropriate, which would reduce performance.

Graham (2000) calculated the debt's tax benefit. According to Stein (2001), a company can choose to take on more debt in the future since there are substantial tax benefits. According to Booth et al. (2001), debt ratio in certain developing nation appear to be influenced by the same kinds of factors that are important in affluent nations. Nonetheless, there exist consistent variations in the manner in which such ratios are impacted by national factors, including rates of GDP growth, inflation, and capital market development.

This results in the static trade-off theory of capital structure, according to Um (2001), which holds that a high profit level causes a larger debt capacity and accompanying tax shelter, with the net tax benefit of debt financing offsetting associated costs like bankruptcies. Therefore, it is expected that profitability and financial leverage will have a positive relationship.

According to Antoniou, Guney, and Paudyal (2002), a company's CSR decisions are influenced by both its internal and external environments for a variety of reasons, including the health of the economy and the presence of stock market, along with the size of the banking industry.

The results of Berger, A.N. (2002) support the agency cost theory, which states that, under all other circumstances, higher leverage or a lower equity capital ratio are linked to higher profit efficiency. When leverage is sufficiently high, the relationship between leverage and performance may be inverse due to the agency cost associated with external debt. The ownership structure of the business is responsible for its profitability, according to agency theory and the idea that agency costs are ingrained in profit efficiency. According to Hung's (2002) research, high gearing is more indicative of a low equity foundation than a large debt load, suggesting a positive correlation between capital gearing and assets but a negative correlation with profit margins.

Because of the interplay of agency costs, costs of external financing, and interest tax shield, Pandey's (2002) findings validated the saucer-shaped connection between capital structure and profitability. They also demonstrated that size and tangibility have a positive influence on capital structure, while growth, risk, and ownership have a negative impact. According to Bhaduri (2002), there are restructuring costs involved in achieving an ideal capital structure and that factors including growth, cash flow, size, and product as well as industry characteristics might influence the choice of optimal capital structure.

According to Voulgaris, Asteriou, and Mirigianakis (2002), the capital structure is significantly impacted by increases in asset utilization, gross and net profitability, and total assets.

Pecking order theory was supported in 2003 by Ronny and Clarirette, who disagreed with the trade-off theory of capital structure. Furthermore, when a variety of explanatory criteria, including age, growth, risk, and profitability, are taken into account, the results demonstrate that the Mauritian capital markets have little influence as a source of long-term funding. The robust and favorable results for the size variable are consistent with the findings of other studies.

(O'Brien, 2003) examines the effects of an innovation-focused strategy on a company's capital structure. The study examines the capital structure decisions made by businesses that place a high priority on innovation in order to bolster their innovation initiatives. After conducting a thorough analysis, the author finds that businesses that prioritize innovation display unique characteristics in the choices they make about their capital structure. The results show that rather than depending mostly on external financing or equity, innovation- oriented firms fund their creative ventures using money generated internally, such as retained earnings.

The report also highlights how industry dynamics, firm size, and development opportunities influence the capital structure choices made by innovation-driven companies. The findings of this article will help managers, investors, and policymakers better understand and assist businesses that are adopting innovative methods. In the end, this will improve knowledge of the connection between innovation, capital structure, and business performance.

In the context of Malaysian public firms, some study (Salim and Yadav, 2012) examines the connection between capital structure and company performance. The study examines how different capital structure alternatives impact these firms' financial performance using a sizable dataset. A thorough empirical analysis conducted by the authors shows a high correlation between capital structure and company performance. The results demonstrate that businesses that have an ideal capital structure—that is, a suitable ratio of debt to equity— perform financially better. Additionally, the study looks into how the capital structure-firm performance relationship is impacted by firm-specific variables like profitability, growth potential, and size.

A firm's performance is influenced by many factors, one of which is its capital structure. The relationship between capital structure and firm performance has been the subject of empirical research, with varying degrees of success. In contrast to findings in Western economies, Pathak (2011) found a substantial negative correlation between debt levels and company performance, which is similar with some studies conducted in Asian nations. These contradictory findings can be attributed to the high cost of borrowing in underdeveloped countries like India.

Khan (2012) found no discernible relationship between efficiency and leverage, supporting Jensen and Meckling's (1975) agency cost model. Research points to nonlinearities in the capital structure, ownership type, and business performance relationships. Champion (1999) and Gosh et al. (2000) confirmed the favorable link that Roden and Lewellen (1995) found between capital structure and profitability in 48 US companies between 1981 and 1990.

According to Hadlock and James (2002), companies with high levels of profitability typically have larger debt levels. According to Abor (2005), capital structure and performance in Ghanaian businesses are positively correlated.

In Iranian listed enterprises, Arbiyan and Safari (2009) discovered a favorable correlation between short-term and total debt and profitability. Kester (1986) found that capital structure and performance in the US and Japan were negatively correlated. In different situations, Friend and Lang (1988), Titman and Wessels (1988), and the work of Rajan and Zingales (1995) confirmed this finding.

While Haung and Song (2006) discovered a negative association between leverage and performance in Chinese enterprises, Wiattanakantang (1999) observed a negative link among book and market leverage and ROA in Thai firms. In Indian enterprises, Chakraborty (2010) found a negative correlation between leverage and performance. According to Ebaid (2009), decisions about capital structure typically have little to no effect on how well a company performs.

San and Heng (2011) looked at Malaysian construction companies and found, with varying degrees of success, a relationship among capital structure and business performance. Capital structure and company performance as determined by EPS and Tobin's Q were shown to be positively correlated by Saedi and Mahmoodi (2011), although there was no significant correlation with ROE and a negative link with ROA. Pratheepkanth (2011) examined Sri Lankan enterprises from 2005 to 2009 and found a negative correlation between financial performance and capital structure.

In their 2008 study, Razak and Aliahmed examined the effects of ownership control structures on the performance of Malaysian GLCs and non-GLCs, concluding that government ownership had a major influence. Zertun and Tian's (2007) study of Jordanian businesses from 1989 to 2003 showed that capital structure had a very detrimental effect on business performance.

Hovakimian and Tehranian (2004) emphasized the relationship of Pecking order theory and Market Timing Behavior theory in their conclusion that stock returns have little bearing on business financing decisions. They also discovered that target leverage is unaffected by profitability, which lends credence to the notion that businesses have a goal capital structure. Nonetheless, the company's ability to keep its debt ratio around its aim may be hampered by internal financing preferences and market timing behaviors.

The bulk of earlier studies on capital structure have focused on large enterprises, usually ignoring the particular issues and challenges that SMEs face. Small and medium-sized enterprises (SMEs) may face difficulties in securing external funding, and they might display distinct risk profiles and growth trends in comparison to larger corporations. Examining the variables that affect and the optimal capital structure options for SMEs could provide insights into their unique

financial management needs.

Limited focus on the IT sector: Previous research on the relationship between capital structure and profitability has often included businesses from a variety of sectors, such as manufacturing, service, and finance. However, due to its unique characteristics and business tactics, the IT industry requires a focused analysis. Research on the particular dynamics and factors within the IT industry that influence capital structure decisions is lacking.

### 3. Problem Statement

**Title**: Research of How Profitability Affects Capital Structure in the Indian IT Industry

**Aim**

To investigate and understand, within the framework of India's IT industry, the relationship between capital structure choices and profitability.

little focus on the IT sector, Previous research on the link between capital structures and earnings has usually included companies from a variety of industries, such as manufacturing, services, and finance. However, due to its unique characteristics and business models, the IT industry requires a close investigation. Research on the particular dynamics and factors in the information technology industry that influence capital structure decisions is scarce.

**Companies used for Analysis**

1. HCL TECHNOLOGY LTD
2. 3I Infotech LTD
3. MPHASIS LTD
4. INFO EDGE (INDIA) LTD
5. TATA CONSULTANCY SERVICES LTD
6. INFOSYS LTD
7. WIPRO LTD
8. TECH MAHINDRA LTD
9. MINDTREE LTD
10. PERSISTENT SYSTEMS LTD
11. ORACLE FINANCIAL SERVICES SOFTWARE LTD
12. COFORGE LTD
13. SONATA SOFTWARE LTD
14. ROLTA INDIA LTD
15. ECLERX SERVICES LTD
16. DATAMATICS GLOBAL SERVICES LTD
17. CYIENT LTD
18. ZEN TECHNOLOGIES LTD
19. ZENSAR TECHNOLOGIES LTD
20. R SYSTEMS INTERNATIONAL LTD
21. TATA ELXSI LTD
22. HAPPIEST MINDS TECHNOLOGIES LTD
23. NIHAR INFO GLOBAL LTD
24. MASTEK LTD
25. CIGNITI TECHNOLOGIES LTD

**Variables**
**Dependent Variable**

- Return on Assets

**Independent Variables**

- Earnings per Share
- Liquidity ratio
- Market Leverage
- Assets Turnover Ratio

**Tests Run**

- Descriptive Statistics
- Regression Analysis
- Correlation
- Heteroskedasticity Test: Breusch-Pagan-Godfrey

## 4. METHEDOLOGY

Descriptive statistics and correlation analysis will be carried out on the capital structure metrics and profitability factors using EViews. This will assist in determining the direction and strength of the correlations among these variables.

and sprinting as well Beyond correlation, regression analysis provides a mathematical model that quantifies the impact of a change in profitability on capital structure.

Finally, the research will offer suggestions for businesses on how to use profitability variables to improve their capital structure by deriving conclusions from the analysis carried out in the first two objectives. This will depend on the connection between capital structure elements and profitability that has been found.

**Research Deficit**: Businesses of modest to medium size (SMEs): SMEs' particular issues and challenges have often been overlooked in Favor of large organizations in the bulk of prior study on capital structure. In addition to typically having difficulty securing outside funding, small and medium-sized enterprises (SMEs) may differ from bigger corporations in terms of their risk profiles and development trends. By examining the variables that affect and the optimal capital structure options for SMEs, one may obtain insights into the unique financial management needs of these businesses.

**Study Period:** Data covering the years 20014–2023 have been gathered and taken into consideration for analysis. Data for the years combined for the it firms is available, however not all of the firms were constantly listed.

## 5. Result and Interpretation

- **Descriptive Statistics**

|  | ROA | EPS | LQ | ML | ATR |
|---|---|---|---|---|---|
| Mean | 0.108246 | 36.1793824 | 17093.65245 | 0.126652 | 0.5135033 |
| Median | 0.12562 | 26.88975036 | 2584.88808 | 0.055153 | 0.4968818 |
| Maximum | 0.622938 | 990.6498447 | 142858.9998 | 2.866731 | 1.779746 |
| Minimum | -1.73239 | -220.4593128 | 0 | 0 | 0 |
| Std. Dev. | 0.173525 | 77.15512822 | 32246.34322 | 0.313864 | 0.2735652 |
| Skewness | -5.62459 | 7.551786693 | 2.174480061 | 5.84735 | 0.8031602 |
| Kurtosis | 55.55091 | 95.95642037 | 6.648895286 | 43.81287 | 4.737512 |
|  |  |  |  |  |  |
| Jarque-Bera | 30084.81 | 92385.56268 | 335.7071974 | 18775.58 | 58.325134 |
| Probability | 0 | 0 | 0 | 0 | 2.16E-13 |
|  |  |  |  |  |  |
| Sum | 27.06143 | 9044.8456 | 4273413.112 | 31.66302 | 128.37582 |

| | | | | | |
|---|---|---|---|---|---|
| Sum Sq. Dev. | 7.497605 | 1482275.539 | 2.58917E+11 | 24.52911 | 18.634641 |
| | | | | | |
| Observations | 250 | 250 | 250 | 250 | 250 |

Descriptive statistics provide a thorough view of the variables' central tendency, dispersion, and distributional features. Beginning with Return on Assets (ROA), we see a mean value of roughly 10.82%, implying that, on average, IT industry companies create a return of around 10.82% on total assets. However, the prevalence of negative values, as evidenced by the minimum figure of -173.24%, demonstrates the variety in ROA between organizations, potentially revealing instances of losses. The high standard deviation of 17.35% emphasizes this variability, implying that ROA values differ greatly from the norm. The skewness and kurtosis values of -5.62 and 55.55, respectively, suggest a significant departure from normalcy, with the distribution skewed to the left and showing heavy tails.

Moving on to the independent variables, Earnings Per Share (EPS), Liquidity Ratio (LQ), Market Leverage (ML), and Asset Turnover Ratio (ATR), we see significant differences in their descriptive statistics. For example, EPS has a large range of values, with a mean of 36.18 and a maximum of 990.65, indicating the presence of extreme values or probable outliers that could affect the study. The skewness and kurtosis values for EPS are very prominent, with skewness of 7.55 and kurtosis of 95.96, indicating a highly skewed and leptokurtic distribution. Similarly, Market Leverage (ML) has a wide range of values, with a mean of 0.13 and a high of 2.87, demonstrating significant diversity in the amount to which businesses use debt financing in their capital structures.

- **Regression Analysis**

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| | | | | |
| C | 0.082215 | 0.0208 | 3.952621 | 0.0001 |
| EPS | 0.000898 | 0.000116 | 7.746688 | 0 |
| LQ | 7.05E-07 | 2.65E-07 | 2.655969 | 0.0084 |
| ML | -0.198285 | 0.029133 | -6.806129 | 0 |
| ATR | 0.012871 | 0.031913 | 0.403315 | 0.6871 |
| | | | | |
| R-squared | 0.413668 | Mean dependent var | | 0.108246 |
| Adjusted R-squared | 0.404095 | S.D. dependent var | | 0.173525 |
| S.E. of regression | 0.133952 | Akaike info criterion | | -1.16287 |
| Sum squared resid | 4.396084 | Schwarz criterion | | -1.09244 |
| Log likelihood | 150.3587 | Hannan-Quinn criter. | | -1.134524 |
| F-statistic | 43.21304 | Durbin-Watson stat | | 1.766358 |
| Prob(F-statistic) | 0 | | | |

Based on the regression results, we may gain useful insights into the relationship between profitability (measured by Return on Assets,) and other independent factors in the IT industry dataset. The intercept term (C) has a coefficient of 0.082, suggesting when all independent variables are zero, the predicted ROA value is 0.082. Moving on to the

individual independent variables, we see statistically significant coefficients for Earnings Per Share (EPS) and Liquidity Ratio (LQ), at 0.000898 and 7.05E-07, respectively.

These coefficients indicate that increases in EPS and LQ are associated with increases in ROA, assuming other factors remain constant. Notably, the Market Leverage (ML) coefficient is negative (-0.198), implying that higher levels of market leverage are related with lower ROA, which is consistent with assumptions about the trade-off between debt financing and profitability. However, the coefficient for Asset Turnover Ratio (ATR) is not statistically significant, implying that ATR may have no meaningful impact on ROA in this situation.

Moving on to the overall fit of the regression model, the R-squared value of 0.414 indicates that the model's independent variables explain approximately 41.4% of the variance in ROA. This shows that the model has a modest amount of explanatory power, however additional factors that the model does not account for may influence ROA in the IT business. Furthermore, the modified R-squared value of 0.404 compensates for the number of independent variables and penalizes overfitting, resulting in a more cautious estimate of the model's goodness-of-fit.

Furthermore, diagnostic statistics such as the F-statistic (43.21) and its related probability (p- value = 0) show that the whole regression model is statistically significant, implying that at least one independent variable has a meaningful effect on ROA. However, the Durbin-Watson statistic of 1.77 indicates the presence of autocorrelation, which may necessitate additional research or attention in the interpretation of the data.

- Correlation

|  | ROA | EPS | LQ | ML | ATR |
|---|---|---|---|---|---|
| ROA | 1 | 0.519989 | 0.208857 | -0.492231 | 0.107819 |
| EPS | 0.519989 | 1 | 0.114613 | -0.294605 | 0.006049 |
| LQ | 0.208857 | 0.114613 | 1 | -0.087298 | 0.037237 |
| ML | -0.492231 | -0.294605 | -0.087298 | 1 | -0.22371 |
| ATR | 0.107819 | 0.006049 | 0.037237 | -0.223708 | 1 |

The correlation matrix gives useful information about the links between the variables in our collection, offering light on the extent and direction of their associations. Beginning with the correlation coefficients between Return on Assets (ROA) and the independent variables, we see varied degrees of correlation. ROA has a reasonably significant positive connection with Earnings Per Share (EPS) (0.52), indicating that companies with greater EPS typically have higher ROA values. This positive connection implies that profitability, as measured by ROA, is positively influenced by earnings per share, which is consistent with predictions about the role of earnings in creating returns on assets.

Conversely, ROA has a moderately substantial negative connection with Market Leverage (ML) (-0.49). This negative association implies that larger levels of market leverage are linked to lower ROA values, indicating a potential trade-off between debt financing and profitability. Furthermore, there is a weak positive correlation between ROA and Asset Turnover Ratio (ATR) (0.11), indicating a slight positive association between asset turnover and profitability, but the correlation is quite weak.

Moving on to the correlations between the independent variables, we see some fascinating patterns. For example, EPS and ML have a moderately negative association (-0.29), indicating that companies with higher profits per share may have lower market leverage, and vice versa. This negative correlation represents organizations' potential strategic capital structure and financing decisions. Furthermore, there is a weak positive correlation (0.11) between EPS and Liquidity Ratio (LQ), indicating that earnings per share and liquidity have a slight positive link, albeit a minor one.

Overall, the correlation matrix gives useful information about the interrelationships between profitability, earnings, liquidity, market leverage, and asset turnover in the IT business. These findings help us understand the elements that influence profitability and capital structured decisions, and they provide insights that may be used to improve sector-wide strategic decision-making and financial management practices.

|  |  |  |  |  |
|---|---|---|---|---|
|  |  |  |  |  |

| F-statistic | 5.172641 | Prob. F(4,245) | | 0.0005 |
|---|---|---|---|---|
| Obs*R-squared | 19.46867 | Prob. Chi-Square(4) | | 0.0006 |
| Scaled explained SS | 751.5482 | Prob. Chi-Square(4) | | 0 |
| | | | | |
| | | | | |
| | | | | |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| | | | | |
| C | -0.050222 | 0.023748 | -2.114821 | 0.0355 |
| EPS | -0.000157 | 0.000132 | -1.18911 | 0.2355 |
| LQ | -1.70E-07 | 3.03E-07 | -0.560373 | 0.5757 |
| ML | 0.088387 | 0.033262 | 2.657309 | 0.0084 |
| ATR | 0.126986 | 0.036435 | 3.485253 | 0.0006 |
| | | | | |
| R-squared | 0.077875 | Mean dependent var | | 0.017584 |
| Adjusted R-squared | 0.06282 | S.D. dependent var | | 0.157978 |
| S.E. of regression | 0.152935 | Akaike info criterion | | - |

| | | | | 0.897809 |
|---|---|---|---|---|
| Sum squared resid | 5.73034 | Schwarz criterion | | -0.82738 |
| Log likelihood | 117.2261 | Hannan-Quinn criter. | | -0.869463 |
| F-statistic | 5.172641 | Durbin-Watson stat | | 2.072117 |
| Prob(F-statistic) | 0.000512 | | | |

- **Heteroskedasticity Test: Breusch-Pagan-Godfrey**

The Heteroskedasticity Test, specifically the Breusch-Pagan-Godfrey test, determines whether the variance of residuals (the discrepancies between observed and projected values) in a regression model is constant across all levels of independent variables. The test findings in our study show that the model is heteroskedastic, implying that the variance of the residuals does not remain constant across independent variables. This breach of the homoscedasticity assumption can result in biased and inefficient parameter estimations, reducing the trustworthiness of regression results.

Examining the test statistics, we first see a statistically significant F-statistic of 5.17, with a corresponding p-value of 0.0005. This suggests that at least one of the independent variables in the model contributes to the residuals' heteroskedasticity. Furthermore, the Observed*R-squared statistic of 19.47 and its related probability (p- value = 0.0006) support heteroskedasticity, implying that the model's explanatory capacity contributes to the variation in the residuals.

The test equation clarifies the relationship between the independent variables and the squared residuals. Notably, the coefficient for Market Leverage (ML) is statistically significant (p = 0.0084), implying that ML has a considerable impact on the residual variance. In contrast, the coefficients for the intercept term (C), Earnings Per Share (EPS), Liquidity Ratio (LQ), and Asset Turnover Ratio (ATR) are not statistically significant, indicating that these variables do not significantly contribute to the model's heteroskedasticity.

Overall, the presence of heteroskedasticity in the regression model emphasizes the need of resolving this issue in order to assure the reliability of the regression results. Transforming variables, adopting robust standard errors, or employing other estimate techniques such as weighted least squares are all possible solutions to heteroskedasticity. Addressing heteroskedasticity improves the reliability of the regression analysis and the accuracy of the model's results.

## 6. Conclusion

In conclusion, the research of the impact of profitability on capital structure in the IT business provides useful insights into the correlations between key financial variables.

Descriptive statistics show significant variability in the data, with ROA having a mean of roughly 10.82% and significant skewness and kurtosis, indicating potential outliers and non-normality in the distribution of some variables. Regression study shows that EPS and Liquidity Ratio (LQ) have statistically significant positive effects on ROA, however Market Leverage (ML) has a negative impact. However, the Asset Turnover

Ratio (ATR) does not have a strong correlation with ROA. The model accounts for approximately 41.4% of the variance in ROA, demonstrating moderate explanatory power.

association study confirms these findings, indicating positive correlations between ROA and EPS/LQ but a negative association with ML. Furthermore, the Breusch- Pagan-Godfrey test reveals heteroskedasticity in the regression model, with machine learning accounting for a considerable portion of residual variability.

In conclusion, these data highlight the complicated interplay between profitability and capital structure decisions in the IT business. Firms can increase profitability by enhancing profits and liquidity, while carefully managing leverage to avoid negative effects on ROA. Addressing heteroskedasticity in future investigations is critical to assuring the reliability of regression results. Overall, this study adds to our understanding of financial decision-making dynamics in the IT sector and offers useful insights for businesses, investors, and governments navigating this landscape.

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