

EFFECT OF CAPITAL STRUCTURE ON FIRM PERFORMANCE: A SYSTEMATIC REVIEW

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Abstract

This study provides a systematic review of the literature on the effect of capital structure on firm performance. A total of 100 articles are identified, reviewed and analyzed, including both empirical and theoretical studies. The findings suggest that there is no clear consensus in the literature on the effect of capital structure on firm performance. Some study finds a positive relationship, while others reported negative or no relationship. Future studies on the subject matter should explore the moderating or mediating effect on the nexus between capital structure and firm performance.

Keywords: Literature Review, Systematic Review, Capital Structure, Financial Performance.

Introduction

Financial performance (FP) could be described as the monetary outcomes of business entity's operations (Effiong & Ejabu, 2020). FP is crucial in every going concern business as it express the firm's ability to generate income, maintain stability as well as profit generation. Profit making and shareholders wealth maximization are among the significant objectives of companies.

There is no universally accepted definition of capital structure (CS) in the literature. Scholars in the field opined that measurements of CS should differs depending on the purpose of analysis (Lemma & Negash, 2013). Also, the competing theories that explain the capital mix have different interpretation and implications subject to metric and definition used (Frank & Goyal, 2009). Therefore, the

literature emphasizes the importance of examining long-term, short-term and total debts as well as book-based and market-based measures of CS.

CS of a firm could be described as a composition of equity and debt which the firm appropriately chooses to finance its productive assets, future growth and operations. The selection of different options for the proportion of equity and debt among the financing options can inevitably influences the firm financial performance (FP) as well as the firm value and in effect the shareholders wealth (Paul & Mas, 2019, Baker & Martins, 2011). The value of a firm is a function of its past, present and future investments. To optimally finance company investment decision, selecting an appropriate financing mix is inevitable. Financial decisions is a function of market forces as such they are critical for the

growth and survival of the firm. A false and misleading decision about the CS may lead to firm financial distress and eventually to bankruptcy, therefore, the management of a firm are expected to professionally set the firm CS in such a way that the firm's value is maximized.

Optimal financing mix helps in boosting organizational growth and development. This relates to modalities which a firm preselect its long-term investment decisions and single out befitting financing option. The importance of capital decisions in a going concern business cannot be overemphasized in corporate finance and as such it will continue to be considerably attracting the interest of both practitioners and academia. Modigliani and Miller (M & M, 1958) is first to examine the nexus between CS and performance at early stage of its theory development and they opined that capital structure is irrelevant to the performance of firms. They reject the perfect market assumptions and include taxes in their model. However, the concept of optimal CS also emerges due to imperfection as well as behavior of market conditions which leads to proposal of trade-off theory that consolidated the effect of agency problems, financial distress and taxes. In contrary, the conceding of information asymmetry also resulted to the arrival of signaling together with pecking order theories which made the term optimal capital unattended to. Thus, reflected that M & M did not take cost associated with bankruptcy into cognizance.

The theories that underpin the nexus between CS and firm performance have reported a divergent collection of results in terms of sign and their impacts. Subsequently, Jensen and Meckling (1976) proposes that leverage affects the performance of the firm in their renowned agency hypothesis of CS. They argue that high debt ratio lessens the agency cost of the firms because of the liquidation threat and risk of reduction in perquisites of the firm managers. Summarily, it is the findings of M & M (1958, 1963) that motivate many scholars in this area to delve into examining factors that drives firm leverage. Based on the review, there is no consensus on the CS mix debate from both practitioners and academic point of view. As a result it is still unclear what is considered to be the best CS mix. Thus, a gap in the literature and inconclusive empirical findings are a few reasons that have evoked the need for this empirical investigation. However, this study mostly work on the nexus between CS and FP. This study differ from that of Thin *et al.*, 2020 and Kumar *et al.*, 2017 whose papers worked on the review of CS determinants.

Although, examining the nexus between CS and corporate performance is considered as a prime area which is supposed to keep producing an update on issues that might directly or indirectly influence the performance of the firm, only a handful of research such as Mehzabin *et al.* (2022), Spitsin *et al.* (2020) and Nurlaela *et al.* (2019), systematically review the literature on the subject matter. Despite numerous investigation on the nexus between CS and FP, still there is no agreement in the existing literature regarding an optimal capital mix

for firms. Different scholars used different theories and empirical literature yielded conflicting findings making it difficult for listed firms to arrive at the most effective CS in order to maximize the overall FP of the firm. For example agency theory: Yazdanfar and Öhman, (2016) and Ganiyu *et al.*, (2019) on non-financial firms, trade-off theory: Amalina *et al.*, (2017) and Spitsin *et al.* (2020) also on manufacturing companies while Fauzi *et al.*, (2022) and Ajibola *et al.*, (2018) examined manufacturing companies using Pecking order theory. In addition, Almajali and Shamsuddin (2019) study insurance firms using M & M while Das and Swain (2018) assess manufacturing firms using market timing theory.

In general, this study is expected to review and critically analyze and augment the existing investigation on CS and FP. Furthermore, this study evaluated the different theoretical frameworks proposed in the area including Modigliani and Miller (M & M) firms proposition, Trade-off theory, Agency theory, Pecking order theory and Signaling theory among others. The literature review also delve into methodological segment of the previous studies such as proxies and metrics, sources of data and techniques of data analysis used in order to assess the robustness and generalizability of the study outcomes. In addition, the choice of the period 2014 – 2023 is to augment the work of Kumar *et al.* (2017) whose work stop at 2013 and identify the updates and gaps in the subject matter, thereby opening new frontiers for conducting further research.

This systematic literature review on the relationship between CS and FP of this nature aimed to provide a comprehensive understanding of the current state of knowledge on CS and FP, identify gaps and inconsistencies of previous researches if any, and propose areas for further research. The outcomes serves as a material source for researchers who intend to carry out studies in the area. In order to achieve academic quality, only peer-reviewed articles published between January 2014 and December, 2023 are considered. This produces result in 100 articles which this study critically examined.

3.0 Literature Review

Financial performance deals with the estimation or calculation of how healthy a company can utilize its resources or assets from its fundamental state of operations to create income. Financial performance therefore involves generation of funds and long-term debt and equity. In literature, scholars do employ various measurements of financial performance both accounting based measures and market based measures such as Return on Asset, Net earnings Margin, Return on shareholders' equity, TobinsQ amongst others. On the other hand, Capital structure is defined as the means by which an organization is financed. In simplest terms, Capital structure refers to the mix of debt and equity used to finance the assets of a business (Laux, 2011).

Studies on CS start from M & M (1958) which is the pioneer research that uncovers the association between CS and FP. The theory brought about the relevance of

financing decisions on firm FP. The theory argue that changes in the current mix of debt and equity has no effect on the value of firm. They propose that no CS is superior or inferior to the other and firm value remain irrelevant to different level of leverage (M & M, 1958). The assumptions of M & M theory of CS impel researchers to re-examine the significance and direction of the relationship between CS and FP. The coming of new CS theoretical model in relation to absence of tax in M & M theory give rise to the model of trade – off theory, also, asymmetry in the market give rise to the concept of pecking order and signaling effect of CS.

4.0 Research Methodology

This study uses systematic literature review in which the procedure of conducting the literature review was explicitly outline. In this study, the study used systematic methodology of literature review in order to critically evaluate the research work on CS. This is a tool that is primarily used to summarize, assess and communicate the output as well as the implication of enormous proportion of research. The methodology provides a comprehensive and summarize version of current literature related to the research area. This method of review is designed purposely to lessen any unintentional predisposition, which are likely to happen in the application of other review methodologies (Kumar *et al.* 2017). This study selected 100 journal articles published from 2014 to 2022 from platforms such as Emerald, Elsevier, Google Scholar JSTOR, ResearchGate, Social science research network (SSRN), Sage, Taylor and

Francis and other technical, working and conceptual papers.

In order to have better appreciation, the study classifies, analyzes and presents in a systematic manner the researches conducted so far on the nexus between CS and FP. The composite of the review involves categorization of the reviewed articles in order to pull out a precise and inferred relevant fact from the existing body of knowledge of the subject matter. The study provides a detailed analysis of the reviewed research article using the classification for easy understanding and references.

This study adopts Thi *et al.* (2020), Bajaj *et al.* (2020), Obermann and Velte (2018) and Kumar *et al.* (2017). They suggest that published researches on the subject reviewed should be investigated in the appropriate database and the observations obtained from the framework should be carefully and chronologically presented as the major findings so that gaps should be recognized without any ambiguity to unravel direction for prospective investigation studies. In order to evaluate the existing literature in the area, the selected articles were sorted based on database, year of publication, country and region, industry, theory backing and techniques of data analysis specifications.

5.0 Results and Discussion

The results of the analysis and their respective discussions are presented and discussed accordingly.

5.1 Database and Number of Publication

The table below represents the statistics of articles reviewed that constitute the database

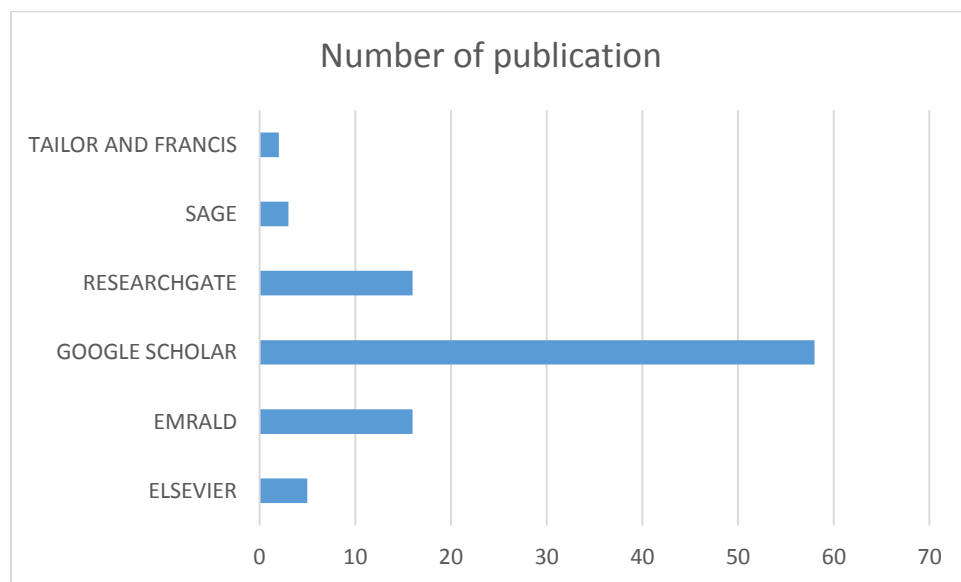
and the number of articles appeared in the database for the period under study.

Table 1. Database and Number of Publication

PUBLISHER	NO.
ELSEVIER	5
EMRALD	16
GOOGLE SCHOLAR	58
RESEARCHGATE	16
SAGE	3
TAILOR AND FRANCIS	2
TOTAL	100

Source: Author's compilation 2024

Figure 1.



Source: Author's computation (2023)

Figure 1 represents the trend of empirical researches on the relationship between CS and FP that were published in various high-

quality journal database for the period under study. The result from the analysis depict that 58 out 100 articles representing 58% are

published in google scholar database, Emerald and Research gate each has 16 articles representing 16% each followed by Elsevier with 5 publication reflecting 5% while Sage and Tailor & Francis published 2 articles each.

5.2 Number of Publications and Publication Year

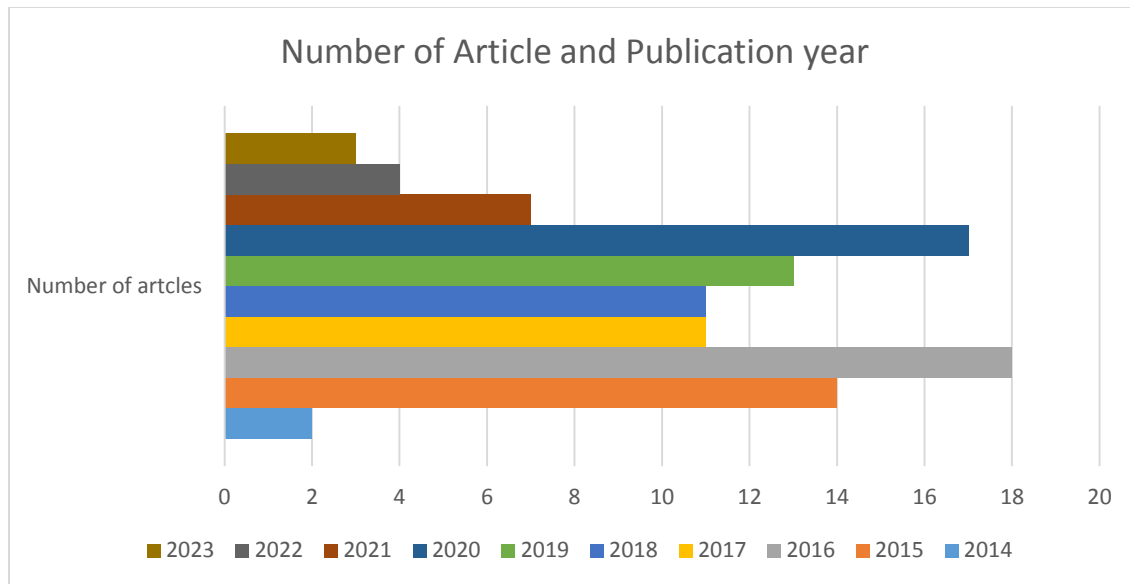
Table 2 represents the number of articles reviewed and their respective year of publications for the period under study.

Table 2. Number of articles & Publication year

Year of publication	Number of articles
2014	2
2015	14
2016	18
2017	11
2018	11
2019	13
2020	17
2021	7
2022	4
2023	3
TOTAL	100

Source: Author's compilation 2023

Figure 2.



Source: Author's computation (2023)

Figure 2 provides the pattern of literature on the nexus between capital structure and firm performance based on the year of publication. Based on the sampled articles it can be deduced that CS and FP as an area of research substantially acquired the researchers interest around 2015 and keep developing up to 2020. Furthermore, the analysis highlights that a total of 14 articles representing 14% of the sample articles was published in a high-quality and reputable journals in the year 2015 and increased to

18% in 2016. In addition, based on the articles reviewed, the results shows that the year 2022 and 2023 witnesses a downward of research and publication in the area to the tune of only 4% and 3% respectively while year 2014 has the least publication of 2% in the high-quality journal publications.

5.3 Country/Region and Publication Year

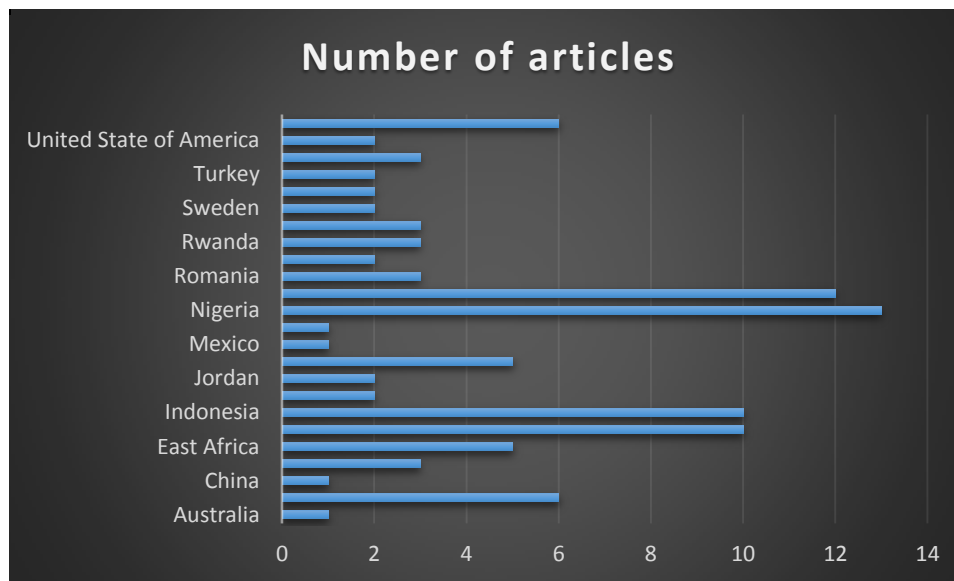
Table 3 represents the analysis of the studies conducted based on country and geographical location and year of publication.

Table 3. Country and Number of Articles

COUNTRY/Region	Number of articles
Asia	1
Australia	1
Bahrain	1
Bangladash	4
China	1
Cross country	3
East Africa	1
Ethiopia	4
Europe	1
Ghana	1
India	10
Indonesia	10
Iran	1
Iraq	1
Jordan	2
Kenya	2
Malaysia	4
Mexico	1
Morroco	1
Nepal	1
Nigeria	12
Pakistan	12
Peru	1
Romania	3
Russia	1
Rwanda	1
Saudi Arabia	3
Srilanka	1
Sweden	1
Tanzania	1
Thailand	1
Turkey	2
Uganda	1
United Kingdom	3
USA	1
Viatnam	5
TOTAL	100

Source: Author's compilation 2023

Figure 3.



Source: Author's Computation (2023)

Nurlaela *et al.* (2019) opine that CS is the outcome of country's economic development that principally comprises the growth rate of economy, development of capital market, rate of inflation among others. The emergence of the concept and studying of CS is firstly observed in the developed countries such as United Kingdom (UK) and United State of America (USA) and other developed economies across the globe. Baa *et al.* (2020) does a systematic review of application of capital structure theories documented that 69% of the CS investigation studies were carried out in the developed countries while in contrast 23% of this research studies was conducted in the developing economies. He further attributed the low investigation in this area of study among the developing nation to

data constraints due to smaller extent of accounting disclosure requirement in the region.

Conversely, the figure 3 exhibits that 65% of the sampled study is carried out among the developing countries with studies conducted in Nigeria ranking first with 13% followed by Pakistan with 12% , while India and Indonesia respectively has 10% each. This signifies that researchers are now very interested in investigating the financing mix that ultimately in tandem with the nature of their economy which is characterized by less efficient of capital market which rendered the findings of the studies from the developed economies inapplicable. In addition, this also give room for comparison of the findings from both economies.

5.4 Classification by industry

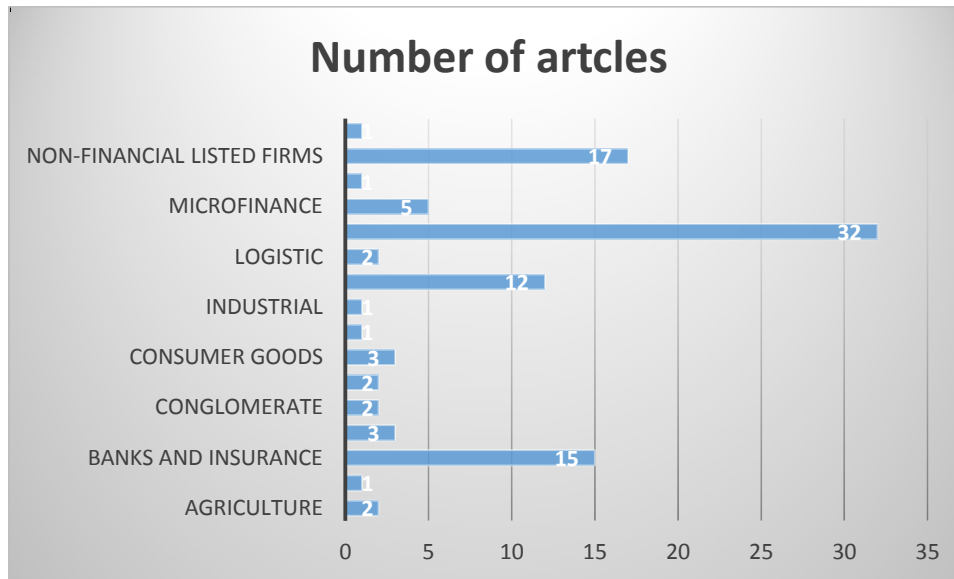
Table 4 and figure 4 represent the analysis of the studies reviewed in this study based on industry classification.

Table 4. Industry Classification

INDUSTRY	Articles
Agriculture	2
Airline	1
Banks	13
Cement	3
Conglomerate	2
Construction	2
Consumer Goods	3
Electricity	1
Industrial	1
Insurance	2
Listed firms	12
Logistic	2
Manufacturing	31
Microfinance	5
Mining	1
Non-financial Listed firms	16
Telecommunication	1
Textile	1
Unlisted firms	1
Total	100

Source: Author's compilation 2023

Figure 4.



Source: Author's Computation (2023)

The CS of a firm is also contingent with the industry in which it operates; this signifies that the category of industry a firm belongs to influences the determination of its CS mix. The analysis as exhibited in figure 4 revealed that 32% of the studies are carried out on the manufacturing sector of the economy across the economies followed by non-financial listed sector as well as banking and insurance sector of the economy with 17% and 15% respectively. The reasons behind this domination is the fact that in both developed and developing countries there is strict enforcement of disclosure in those sector of the economy which provide

an easier access to relevant data for the conduct of this kind of study. In addition, this also evidently proved that no economy will grow without growing its manufacturing sector and banking and insurance sector remains the backbone of every economy, hence conducting researches in the 3 areas across the economies is of paramount important. Furthermore, the result shows that airline, mining and telecommunication sectors has 1% each signifying that despite the importance of this 3 sectors to all economies, the combined proportion of studies in the area is only 3%.

5.5 Techniques of Analysis

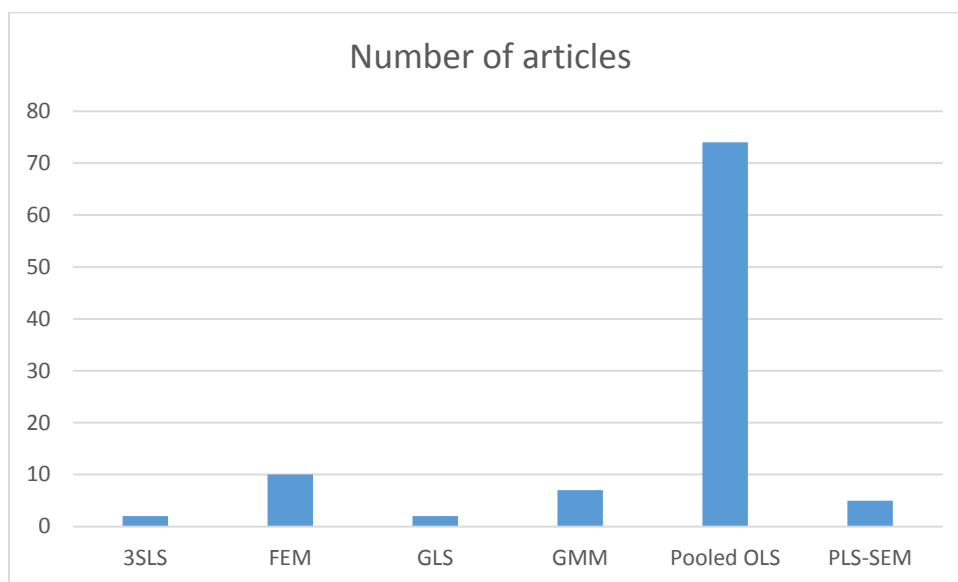
The table 5 and figure 5 shows the analysis of the techniques used by various researchers for the articles reviewed in this study.

Table 5. Techniques of Data Analysis

TECHNIQUE	Number of articles
3SLS	2
FEM	10
GLS	2
GMM	7
Pooled OLS	74
PLS-SEM	5
Total	100

Source: Author's Compilation 2023

Figure 5.



Source. Author's Computation (2023)

Selection of an appropriate technique of data analysis is one of the researcher's authority even though the techniques differs from basic descriptive statistics to inferential statistics and the choice is guided by the nature of the study data collected. Figure 5 below depicts the diverse techniques of data

analysis used by researchers in the CS and FP literature for the period 2014 to 2023. The analysis reveals that 74% uses panel data in the conduct of their analysis. The reasons for choosing panel data might be connected to the fact that it permit researchers to control for individual

differences and since it constitutes observations for same individuals or firms overtime it can provide an insight on how individual attribute affect the outcome. Furthermore, panel data can be used to test causation because it allows for addition of variables that changes over time and also used to control for the effect of unobserved variables that happened to be constant over time. A total of six (6) different types of techniques used by researchers in the study on the nexus between CS and FP were identified. It is pertinent to observe that the regression techniques in different set up (pooled OLS, FEM, GMM, GLS and 3SLS) are found to be the leading and most acceptable technique represented a total of

74% of the sampled article while the remaining 26% goes to the other techniques altogether. Records has shown that other techniques such as PLS-SEM and survey questionnaire are recently employed as a technique of data analysis in this domain of study.

5.6 Theories

The literature review reveals that six theories were predominantly used, these theories includes agency, M & M, market timing, pecking-order and trade – off theories.

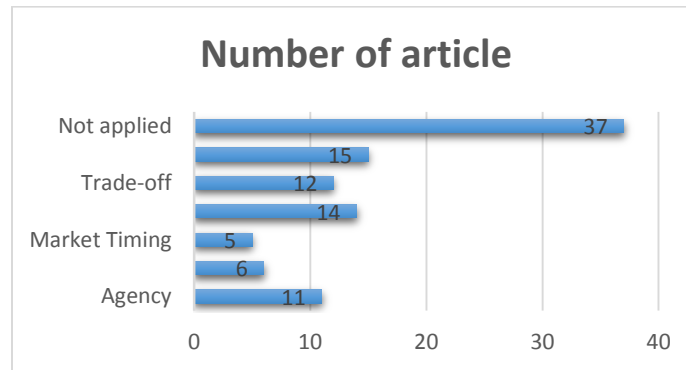
Table 6 and figure 6 shows the analysis of theories used by the researchers for the articles reviewed.

Table 6 Theoretical Framework

Theory	Number of article
Agency	11
M & M	6
Market Timing	5
Pecking order	14
Trade-off	12
Mixed	15
Not applied	37
	100

Source: Author's compilation 2023

Figure 6.



Source. Author's Computation (2023)

The central theme of this section is to take a stock of the applicability of CS theories in order to identify the most accepted theory. Figure 6 below provides the analysis of theories that underpinned the sample studies on the relationship between CS and FP for the period 2014 – 2023. The results indicates that for the period under study 37% of the article did not used any of the CS theories to underpin their studies while 15% used mixed theories of CS. However, it is worthy of mention that the graph exhibits that pecking order theory has 14% articles that used it while trade-off theory and agency has 12% and 11% articles respectively. The pecking order and trade-off theories have gained momentum as evidenced by increased number of their application in CS researches. The possible reason for adopting the trade-off theory could be the fact that companies in the current business and economic framework are prone to regularly fine-tuning their CS. On the other hand, the application of pecking order theory of CS further explicates that firms in the developing countries that constituted 65% of

the sample which are further classified by representation of 32% each from manufacturing and financial sector (banking and insurance) acquired more external financing when internal funds are not sufficient to satisfy the investment needs. Also, looking at the contribution of manufacturing sector in the overall economic growth, the pecking order theory posits that a high-rise growth of manufacturing firms consistently with huge financing needs, will results to high debt to equity ratios due to the reluctance of managers to issue equity. Equity is less entrancing to firms and entails larger information asymmetry costs, making its issuance immoderate compare to other funding sources (Shaqqour & Harb, 2020). This justifies the reason why majority of firms among the developing economy followed conservatives approach.

5.7 Measurements of Dependent Variable (Financial performance)

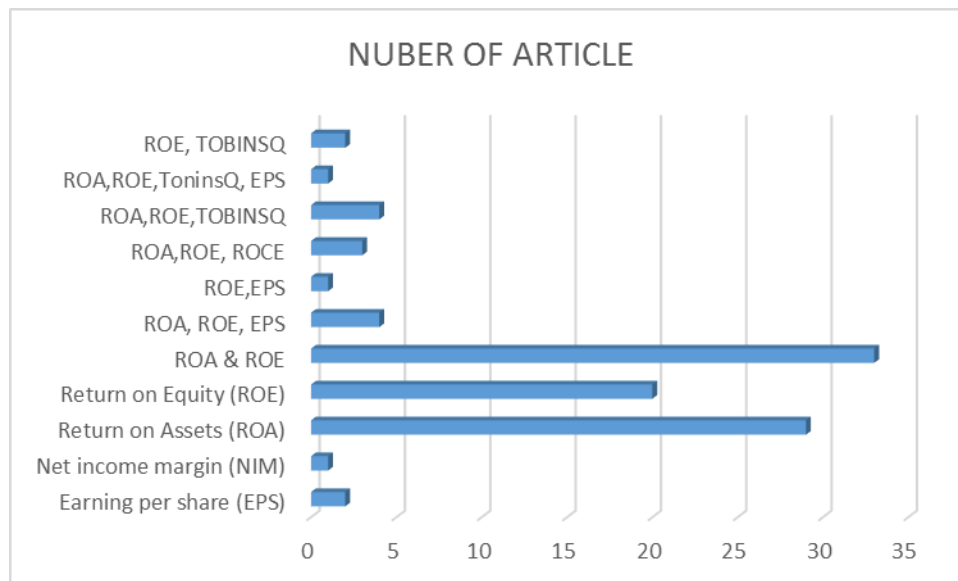
Table 7 and figure 7 represent the analysis of the dependent variable proxies for the studies reviewed in this study.

Table 7. Proxies of dependent variable

DEPENDENT VARIABLE PROXIES	NUBER OF ARTICLE
Earnings per share (EPS)	2
Net income margin (NIM)	1
Return on Assets (ROA)	29
Return on Equity (ROE)	20
ROA & ROE	33
ROA, ROE, EPS	4
ROE, EPS	1
ROA, ROE, ROCE	3
ROA, ROE, TOBINSQ	4
ROA, ROE, ToninsQ, EPS	1
ROE, TOBINSQ	2
	100

Source: Author's compilation 2023

Figure 7.



Source. Author's Computation (2023)

A total of six (6) metrics are used as proxies of financial performance for the sampled articles these includes earnings per share (EPS), net income margin (NIM), return on assets (ROA), return on equity (ROE),

return on capital employed (ROCE) and Tobin's. In addition, 52 studies used only one proxy as explained variable, 56 combined two proxies whereas eleven and 1

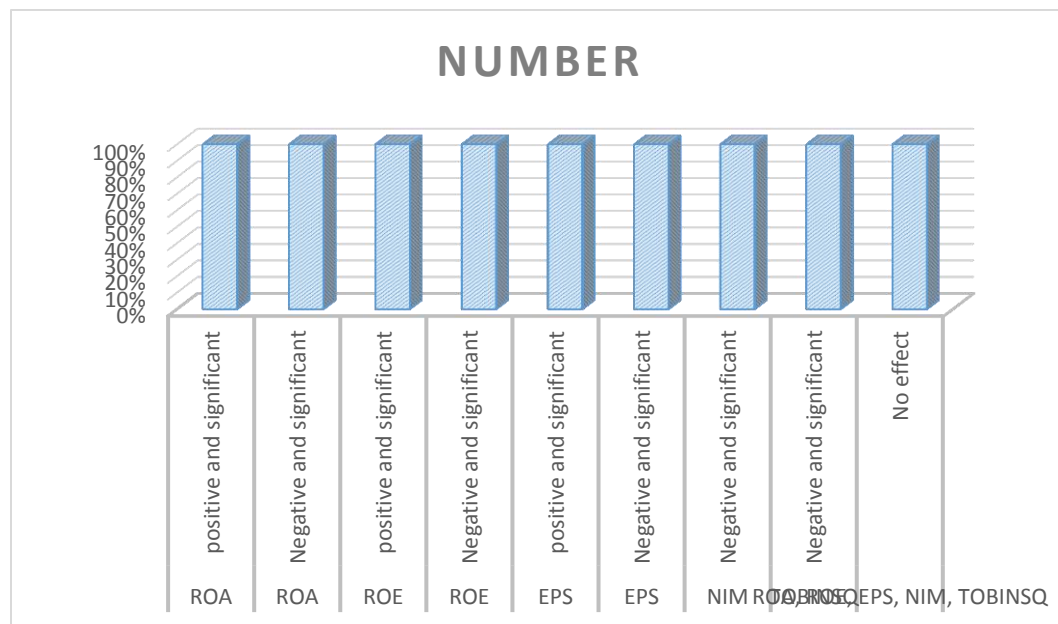
articles used a combination of 3 and 4 dependent variable proxies in their studies.

The result as depicted in figure 7 shows that 29% of the sampled articles used ROA, 20% uses ROE, 2% uses EPS and 1% uses NIM. Furthermore, 33% combined ROA and ROE, 4% represents the articles that combined ROA, ROE and EPS, 2% of the article uses the combination of ROE and TOBINSQ while 1% each goes to the articles that combined ROA together with EPS and ROA, ROE, TobinsQ and EPS respectively.

5.8 Findings

This study examines 100 empirical studies, the study analyzed the effect of CS on FP of various firms and industries. Figure 8 below presents a summary of findings with respect to the direction and effect of the relationship between the explanatory variables (capital structure) and the explained variable (financial performance). The findings show an overall significant effect of 96% with 20% and 30% negative and positive effect of CS on FP proxied by ROA, 23% and 16% on ROE, 1% and 2% positive and negative effect respectively on EPS 3% and 1% significant negative effect on TobinsQ and NIM respectively. The remaining 4% shows no effect of CS on FP.

Figure 8.



Source. Author's Computation (2023)

6.0 Conclusion and recommendations

The empirical review assesses the nexus between CS and FP was on the basis of database of the article; publication year;

geographical region of the study; industry classification; techniques of data analysis; theoretical framework; proxies of independent variables and findings

emanated from the review. The review depicts that the CS and FP investigation is still relevant and holding researchers attention in both developed and developing economies around the world. However, the study found that 100% of the reviews consider quantitative approach using secondary data, this signifies that there is limited qualitative studies that utilizes primary data. Hence, there is strong need for conducting research in this area using primary source of data. Also, the reviews show that 97% of the studies are conducted on a single country basis, only the studies of Ramli *et al.* (2019), Ozcan (2019) and Abrar and Javaid (2016) considere a cross-country studies. Therefore, conducting an empirical studies on the nexus of CS and FP using cross countries will permits comparison of the effect of CS and FP among countries which contribute to the empirical literature of the subject matter.

Furthermore, the results show that 74% of the sampled articles used regression analysis even though using a different methodology of analysis on same data are bound to produce different result leading to varied findings. Hence, researchers are encouraged to consider for an alternative techniques for data analysis or adopting different techniques in same study. This will guide the researchers in selecting a technique that is more robust and appropriate. Also, some studies documented a positive and significant relationship, while others find a negative significant or no relationship. Future research is required to further explore the complex relationship by introducing moderating or mediating variable on the nexus between CS and FP.

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