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An Empirical Study of Factors that Influence The Profitability of South African Retail Firms Listed on the Johannesburg Stock Exchange

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Abstract: The aim of the study was to investigate empirical factors that influence the profitability of South African retail companies listed on the Johannesburg Stock Exchange (JSE). A positivism, quantitative and deductive research approach was employed to analyse data collected from the Iress database. The sample consisted of 20 JSE-listed retail firms whose information for the period 2011 to 2021 was considered. Retail firms contribute an estimated 3.5% to the gross domestic product (GDP) of the country, but are struggling to maintain their profitability due to limited financial resources. The fixed effect model revealed financial leverage, liquidity and growth to have been positive and to have significantly influenced profitability, whereas firm size and total debt to assets were found to be negative, and were also found to have significantly influenced profitability. The findings contribute to the existing literature and serve to inform future researchers about factors influencing profitability. However, the findings are limited to retail firms in South Africa, and therefore cannot be extended to other sectors of the economy. This suggests the value of conducting further studies in sectors other than retail. These results could be useful as a point of reference for future researchers, managers, and investors.

Keywords: Financial leverage; Liquidity; Total debt to assets; Profitability; JSE-listed firms.

JEL Classification: B26; M21

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1. Introduction

The factors that influence profitability, particularly in emerging markets, remain the focus of research attention. The retail industry in South Africa contributes significantly to the growth of both the economy and employment. Teuteberg (2020) states that South Africa employed around 3.4 million people in this sector in the third quarter of 2019. More recently, in 2021 in South Africa, the retail and wholesale sector employed 22% of the country's workforce (Stats SA, 2021). The retail sector thus occupies an important position within the South African economy. Retail firms contribute an estimated 3.5% to the gross domestic product (GDP) of the country, but are struggling to maintain their profitability due to limited financial resources. The factors influencing the profitability of the retail industry in South Africa appear to be inadequately understood, since most of the existing empirical work has focused on the determinants of profitability in the banking sector. Consequently, identifying the critical financial factors affecting retail and understanding the extent to which they affect the profitability of South African retailers is of significant interest to academics and scholars.

Only a small number of studies dealing with factors influencing profitability have been conducted in emerging markets, South Africa in particular, and those that have been conducted have produced inconsistent and mixed results. Studies in this field include those of Alharthi (2022), Rubab, Hanif, Bukhari, Munir, and Kamran (2022), Amanu and Gebissa (2021), Estiasih (2021), Kangogo (2021), Amoa-Gyarteng (2021), Mutascu and Murgea (2020), Kasozi (2018), and Sporta (2018).

Against this background, the study reported on in the present article was conducted to examine the empirical factors that influence profitability, with specific reference to retail companies listed on the Johannesburg Stock Exchange (JSE) in South Africa. The study supplemented the existing knowledge on the subject, and made use of a sample of retail companies listed on the JSE, the rationale for this selection being that the South African retail industry is an important and growing industry (Stats SA 2021). South Africa has the largest retail industry in Africa, and in sub-Saharan Africa particularly, and ranks twentieth in the world (Features, 2016).

The study had the following specific objectives:

- To determine the impact of liquidity on the profitability of selected listed retail firms.
- To establish the effect of total debt to assets on the profitability of selected listed retail firms.
- To analyse the effect of financial leverage on the profitability of listed retail firms.
- To determine the impact of firm size on the profitability of selected listed retail firms.

Research questions

This study will answer the following research questions:

- What is the impact of liquidity on the profitability of selected listed retail firms?
- What is the effect of total debt to assets on the profitability of selected listed retail firms?
- Does financial leverage have an effect on the profitability of listed retail firms?
- Does firm size have an impact on the profitability of selected listed retail firms?

3. Literature Review

This section presents the results of a literature review relating to factors influencing the profitability of retail firms listed on the JSE in South Africa.

3.1. Literature Covering Theory

There are several theories relating to factors that affect financial performance. Among them are the capital irrelevance, cash flow, and pecking order theories.

3.1.1. Capital Irrelevance Theory

In their foundational work, Modigliani and Miller (1958) proposed that in an efficient and functional financial market, companies would pay no taxes. The business climate would be characterised by uniform risk; companies would guarantee a 100% dividend pay-out; investors could borrow money at the same rate as an asset; and financial leverage would have no influence on profitability. This theory was heavily criticised by a number of academics, the fundamental subject of debate being the notion of a perfect market (Stiglitz, 1969; Jensen & Meckling, 1976; Frank & Goyal, 2003). The theory was deemed to be applicable to this study, since it establishes a link between leverage and profitability.

3.1.2. Cash Flow Theory

In 1966, Beaver devised the cash flow hypothesis, which was expanded upon by Taffler (1983). According to the hypothesis, a company comprises a buffer of liquid assets with an entrance (cash inflows), which brings in liquid assets, and an exit (cash outflows), which reduces the firm's current resources. The empirical results of the research by Maripuu and Mannasoo (2014) are validated by the theoretical arguments proposed by Islam, Gosh, and Khatun (2021) and acknowledge that profitability, leverage, and liquidity are a set of factors to be depended on to anticipate company success as assessed by its ratios.

3.1.3. Pecking Order Theory

Myers and Majluf introduced the notion of the financing pecking order in 1984. Myers and Majluf suggested that companies with significant cash reserves are much less likely to utilise outside capital providers, giving financial managers additional flexibility in insolvency choices. Therefore, the importance of cash sources was highlighted, indicating a distinction between using cash as a form of payment and paying with internal funds. Due to information asymmetries between the desires of companies and investors, companies will choose internal funds over debt, short-term debt over long-term debt, and finally, debt over equity (Chen, Jung & Chen, 2011). In this situation, additional debt is a solid indicator that the company's future is bright. This notion was developed on the premise that debt finance might limit a manager's behaviour (Mohamed, 2016). Since financial leverage is one of the independent variables in the current study, the theory was deemed to be applicable.

3.2. Empirical Literature Review

Numerous empirical studies have been done on topics related to the one under discussion in the present article, but with inconsistent results. Alharthi (2022), Amanu and Gebissa (2021) and Kasozi (2018) have identified factors such as financial leverage, liquidity, firm size, growth and total debt to asset ratio as having a negative influence on profitability, whereas Rubab, Hanif, Bukhari, Munir, and Kamran (2022), Estiasih (2021), Kangogo (2021), Amoa-Gyarteng (2021), Mutascu and Murgea (2020), and Sporta (2018) have identified financial leverage, liquidity, firm size, growth and total debt to assets ratio as having a positive influence on profitability.

Alharthi (2022) investigated the financial impact of the COVID-19 pandemic on Kuwaiti listed banks; the study in question investigated the profitability of 11 publicly traded Kuwaiti banks from 2013 to 2020, and how this related to other profitability-related aspects. The generalised method of moments (GMM) model was used to examine linked data statistically. According to the study findings, capitalisation, leverage, and bank size all had a significant negative impact on the profitability of Kuwaiti listed banks. By contrast, Aloshaibat (2021) found financial leverage not to influence profitability.

In a study conducted over a nine-year period (2010–2018) in twelve selected institutions, Amanu and Gebissa (2021) examined the factors influencing the profitability of microfinance organisations in Ethiopia. The debt–equity, liquidity and operational expense ratios were among the profitability metrics of microfinance firms examined in the research. Secondary data were gathered, and a quantitative research methodology was used. The results showed the return on assets of

microfinance institutions to be negatively affected by the operational expenditure ratio, the debt-to-equity ratio, and the liquidity ratio.

The study conducted by Kasozi (2018) investigated whether the capital structure practices of identified firms influenced their profitability. A panel data methodology, using three regression estimators, was applied to a balanced sample of 16 retail firms listed on the Johannesburg Stock Exchange (JSE) during the period 2008 to 2016. The analysis estimated functions relating capital structure composition with return on assets (ROA). Results revealed a statistically significant but negative relationship between all measures of debt (short-term, long-term, total debt) and profitability, suggesting a possible inclination towards the pecking order theory of financing behaviour for listed retail firms.

Rubab, Hanif, Bukhari, Munir, and Kamran (2022) examined the impact of financial hardship on the profitability of manufacturing companies listed on the Pakistan Stock Exchange. The study found financial distress to have a negative and significant impact on the profitability of the firms, and other control variables such as firm size, net profit margin and revenue growth to have a positive and significant impact on profitability.

Estiasih (2021) examined the effects of various financial parameters, including net profit margin, debt to equity ratio, return on equity, return on assets, and firm size, on the financial performance of listed pharmaceutical businesses in Indonesia. A positive correlation was found between firm size, net profit margin, debt to equity ratio, return on assets, and return on equity for selected listed pharmaceutical businesses in Indonesia.

Kangogo (2021) examined the impact of financial crisis on the performance of selected companies listed on the Nairobi Securities Exchange, Kenya. The researchers' specific objective was to examine the impact of liquidity, leverage, firm size and stock conversion period on the profitability of selected distressed companies listed on the Nairobi Securities Exchange. The researcher found liquidity, leverage and company size to have a positive impact on profitability, calculated using the return on investments and return on equity of selected companies listed on the Nairobi Securities Exchange.

On the basis of a sample consisting of 105 extractive companies in the United States, Amoa-Gyarteng (2021) conducted a study on the impact of liquidity, profitability, asset productivity, activity and solvency in cases of corporate financial distress. This was a particularly important study, since widespread corporate financial distress could lead to volatility in the global financial system. The variables were measured over the final two years before the distressed companies filed for bankruptcy. The researcher found firms' financial leverage profitability to have a positive impact on profitability.

In their investigation of the link between exports and financial results in the French cosmetics sector, Mutascu and Murgea (2020) utilised firm size as the additional variable affecting profitability. Their findings indicated firm size as significantly and favourably influencing profitability.

Sporta (2018) analysed the impact of financial distress, capital adequacy, liquidity, leverage, operational efficiency, and asset quality on the profitability of commercial banks regulated by the Central Bank of Kenya. The researcher discovered liquidity, leverage, operational efficiency, asset quality and capital adequacy to have a positive and significant effect on profitability.

4. Research Methodology

For the purposes of the study a positivism research paradigm or worldview, a quantitative research approach, and a deductive research strategy to test the research questions were employed. A targeted sample of 20 retail companies listed on the Iress database over the period 2011 to 2021 was used. The econometric utilised analysis of the financial reports of selected retail firms in South Africa.

The study of factors exercising an impact on the profitability of selected South African retailers listed on the JSE was underpinned by the following hypotheses:

H_1: Liquidity has a negative impact on the profitability of retail firms listed on the Johannesburg Stock Exchange.

H_2: Total debt to assets has a positive influence on the profitability of retail firms listed on the Johannesburg Stock Exchange.

H_3: Financial leverage has a negative influence on the profitability of retail firms listed on the Johannesburg Stock Exchange.

H_4: Firm size has a positive impact on the profitability of retail firms listed on the Johannesburg Stock Exchange.

To examine the impact of company size (SZ), financial leverage (FL), liquidity (LIQ), sales growth (GRS) and total debt to assets (TDA) on the profitability (ROA) of selected retail companies listed on the JSE, for the purposes of the study a panel regression analysis was used, based on the following regression model:

Model

$$ROA_{i,t} = \beta_0 + \beta_1 FL_{i,t} + \beta_2 GRS_{i,t} + \beta_3 LIQ_{i,t} + \beta_4 SZ_{i,t} + \beta_5 TDA_{i,t} + \varepsilon_{i,t} (1)$$

Where ROA_{it} represents return on assets at time t, $FL_{i,t}$ represents financial leverage at time t, $GRS_{i,t}$ represents sales growth at time t, LIQ_{it} represents liquidity at time

t, SZ_{it} represents firm size at time t, $TDA_{i,t}$ represents total debt to assets at time t, β_0, β1, β2, β3, β4, β5 represent the beta coefficient and ε_{it} is the error term.

Table 3. Operationalisation and Measurement of Variables

Variables	Measurement	Similar determinants
ROA	Net Profit/Total Assets	Aloshaibat (2021)
LIQ (financial liquidity)	Current Liabilities/Current Assets	Amanu and Gebissa (2021)
FL (Financial leverage)	Liabilities/Equity	Amanu and Gebissa (2021), Estiasih (2021), Sporta (2018).
SZ (firm size)	Log total assets	Rubab, Hanif, Bukhari, Munir and Kamran (2022), Estiasih (2021)
TDA (total debts to assets)	Total Assets/Total Liabilities	Alharthi (2022)
GRS (sales growth)	(Previous Sales–Current Sales)/Current Sales	Rubab, Hanif, Bukhari, Munir and Kamran (2022).

Source: Author's compilation

5. Results of the Study

Table 2 below presents the descriptive statistics of variables used in the estimations for the sample of 20 retail companies listed on the JSE.

Table 2. Summary of Descriptive Statistics

	ROA	FL	LIQ	SZ	TDA	GRS
Mean	0.094070	2.070790	0.858880	6.732953	0.603798	0.115643
Median	0.088135	1.300948	0.768670	6.865218	0.561138	0.076927
Maximum	0.331179	7.369044	9.409046	7.917642	8.725049	9.863815
Minimum	-0.955610	0.106281	0.135703	4.874760	0.093682	-0.917018
Std. Dev.	0.111828	1.582423	0.873738	0.670162	0.729238	0.706925
Observations	187	187	187	187	187	187

Source: Author's compilation

The results of the descriptive statistical analysis shown in Table 2, in particular the financial leverage, reveal considerable volatility, as shown by their high standard deviations. The other variables do not show much variability.

Table 3. Correlation Matrix for the Main Variables Used in this Study

	VIF	ROA	FL	LIQ	SZ	TDA	GRS
ROA	DV	1.000					
FL	1.694	0.192***	1.000				
LIQ	2.041	-0.138*	-0.558***	1.000			
SZ	1.223	0.201***	-0.318***	-0.035***	1.000		
TDA	1.623	-0.503***	-0.333***	0.598***	-0.138***	1.000	
GRS	1.019	0.020***	-0.050***	-0.047***	-0.013***	-0.066***	1.000

*,** and *** indicate significance at 10%, 5% and 1% respectively.

Source: Author's compilation

The correlation matrix reported in table 3 shows the directions between independent and dependent variables. The coefficient ranges from -0,066 minimum to 0,598 maximum; therefore there is no problem of multicollinearity below 0,80 (Wooldridge 2018). The results show very low VIF values for all variables, indicating that multicollinearity is not an issue in the independent variables used for the study. The correlation matrix shows the direction of the relationship between independent and dependent variables, and also shows that the value of VIF for each independent variable is well below 10 (James, Witten, Hastie & Tibshirani, 2013).

6. Diagnosis Test

Before performing a regression analysis, it is customary practice to run a normality test. The normality test was performed to confirm that the data was normally distributed; nevertheless, the data was found to be not normally distributed; accordingly, outliers were eliminated to normalize the data as advised when the number of observations exceeds 100 (Gujarati, 2021).

Table 4. Hausman Test

Test Summary	Cross-section Chi-square statistics	Decision
Cross-section	45.995814	**Fixed effect model**
Hypothesis testing	*H*0: Random effect is appropriate *H*1: Fixed effect model is appropriate	

*, ** and *** indicate significance at 10%, 5% and 1% respectively.

Source: Author's compilation

Diagnostic testing, along the lines of the Hausman test, was performed to determine whether the random effects model was preferred to the fixed effects model for the data set. The results in Table 4 show that the fixed effects is the better model, based

on the significant probability statistics. This test yields a chi-square of 45.995814and p-values of 0.000, implying that the null hypothesis of the random effect model has been rejected. These results indicate that both cross-section and period chi-square are significant at 1% significance levels and can be used to identify the determinants the factors that influence the profitability for retail companies listed on the JSE.

The fixed effects model was adopted as the most appropriate model, with the results as shown in table 5.

Table 5. Regression Analysis Results

Dependent variable: ROA				
	Fixed effect model	**Pooled effect robust**	**Random effect model robust**	**GLM robust**
FL	0.019***	0.019774***	0.021977***	0.019774***
	(0.005)	(0.005793)	(0.004432)	(0.005793)
LIQ	0.129***	0.050381**	0.116656**	0.050381**
	(0.009)	(0.010830)	(0.0085542.2198)	(0.010830)
SZ	-0.106***	0.037718***	-0.050660***	0.037718***
	(0.016)	(0.011308)	(0.015136)	(0.011308)
TDA	-0.154***	-0.092385***	-0.140341***	-0.09239***
	(0.008)	(0.011302-3.6704)	(0.007725)	(0.011302)
GRS	0.006**	0.002631	0.004183	0.002631
	(0.004)	(0.009566-0.1958)	(0.004875)	(0.009566)
_cons	0.748	-0.194225	0.371829	-0.194225
	(0.129)	(0.085964)	(0.107746)	(0.085964)
N	187	187	187	187
R-squared	**0.857**	**0.358352**	**0.649372**	
Durbin Watson (DW)	**1.643**	**0.677788**	**1.271773**	
F-stat	**0.839**	**20.21724**	**67.04328**	
Prob> F-stats	**0.000**	**0.0000**	**0.0000**	

Hausman Test	**0.0000**			
Prob> chi2	**45.995814**			
t statistics in parentheses				
* p<0.10	" ** p<0.05"	"*** p<0.01"		

Source: Author's compilation

The probability (F-statistic) of less than 0.01 supports the adoption of the fixed effects model. Therefore, 85.70% of the profitability variance can be explained by the independent variables included in the data set. The fixed effects model results indicated financial leverage (FL), liquidity (LIQ), sales growth (GRS) to be positive and to exert a significant influence on the profitability of selected retail firms listed on the JSE. By contrast, size (SZ) and total debt to assets were shown to be negative and to significantly decrease the profitability of selected retail firms listed on the JSE.

5.1. Discussions of Findings

Results from the system fixed effect model showed a positive and significant as a proportion of leverage and its lagged value. Financial leverage was shown to be positive, and significantly influenced profitability (β=0,019; p<0,01). An increase of 1% in financial leverage raised the profitability of the retail firms by approximately 2%. The findings are in line with those of Sporta (2018), Kangogo (2021) and Amoa-Gyarteng (2021), who also identified a positive connection. Alharthi (2022), however, disagrees with these results, finding the link between financial leverage and profitability to be negative. These results contradict with the capital irrelevance theory, which predicts no relationship.

Liquidity (LIQ) was positive, and significantly influenced profitability (β=0,129; p<0,01). An increase of 1% in financial liquidity increased the profitability of the retail firms by approximately 13%. These results are in accordance with the results reported by Sporta (2018), Kangogo (2021) and Amoa-Gyarteng (2021), who also found a positive connection between liquidity and profitability. Alharthi (2022), however, reports different results, having found an adverse relationship between liquidity and profitability. These results are consistent with the pecking order theory, which anticipates a positive connection between liquidity and profitability.

Firm size (SZ) was negative, and significantly influenced profitability (β=0,106; p<0,01). A 1% decrease in firm size decreased the profitability of the retail firms by 11%. These results contradict the findings of Kangogo (2021) and Rubab, Hanif, Bukhari, Munir and Kamran (2022), who identified a positive relationship between

firm size and profitability. These results bear out those reported by Mutascu and Murgea (2020).

Total debts to assets (TDA) was negative, and significantly influenced profitability (β=0,154; p<0,01). A 1% decrease in total debt to assets decreased the profitability of the retail firms by 15%. The results bear out the findings of Amanu and Gebissa (2021), who found total debt to assets to have a negative influence on profitability.

Growth in sales (GRS) was positive, and significantly influenced profitability (β=0,01; p<0,01). An increase of 1% in growth increased the profitability of the retail firms by approximately 1%. The results are supported by Rubab, Hanif, Bukhari, Munir and Kamran (2022).

6. Conclusions

The aim of the study was to investigate the factors influencing the profitability of selected retail companies listed on the Johannesburg Stock Exchange (JSE). The study revealed liquidity, financial leverage and sales growth to have a positive and significant effect on profitability, whereas firm size and total debt to assets, on the other hand, had a negative and significant effect on profitability.

Stock exchange-listed retail firms in an emerging market can achieve profitability by focusing on financial leverage, liquidity and growth opportunities. Interestingly, total debt to assets and firm size were found to have a negative and significant effect on the profitability of selected retail firms in South Africa. The study contributes to the literature by illustrating the relevant determinants of profitability in the case of retail firms listed on the JSE. South Africa forms part of the BRICS compact, and the South African retail industry is the one of the largest on the African continent. Therefore, the results have important implications for emerging economies, adding value to the body of knowledge on the scope of the South African, African, and emerging economies.

This study is recommended to scholars and other researchers for industry comparison, especially with studies carried out in other sectors of the economy, or in the same industry, but in different countries. Policy makers may well find this study useful when deciding on policies that boost the profitability of the retail industry. All these considerations are important, considering the financial leverage, liquidity and growth required to ensure sustainable profitability.

The study differs from other previous studies in that it focuses exclusively on the retail industry, rather than examining the capital structure determinants for publicly traded companies independent of the industry. As mentioned earlier, little research has been done in Africa; the study reported on was conducted in South Africa, an emerging and central African economy. To the best of the researchers' knowledge,

this is the first study to be conducted on the retail industry in South Africa, and it therefore makes an important practical contribution. There is still room to expand the literature on the retail industry in other emerging markets, as many variables remain to be explored.

The findings of this study are relevant to finance managers of publicly traded retail companies, who could use them to maximise shareholder wealth by considering the key drivers. This is extremely important, as the capital structure affects the value of the company, and therefore the value of the shares in the market. Finance managers of publicly traded retail companies can therefore capitalise on the key factors to maximise shareholder wealth and shareholder value. Capital structure decisions affect the investment decisions that a company makes, and therefore corporate growth, which is important for increasing shareholder value and shareholder wealth.

The significant factors to consider when making financing decisions for retail firms listed on the JSE are firm size, profitability and growth opportunities. Knowing that these significant factors have a positive relationship with leverage will assist managers of retail firms to make sound capital structure decisions so as to contribute to a financially healthy firm, ultimately maximising shareholders' wealth.

Future studies could focus on other emerging markets so as to broaden the knowledge base on less mature business systems. It would be extremely interesting to repeat this study for the period covering or including the COVID-19 pandemic, and to examine the impact of the pandemic on the retail sector to see whether retail companies follow the same capital structure theories during times of severe financial distress.

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