Article

Navigating Success: Unveiling the Key Predictors for Firm Growth and Operational Excellence

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Abstract

Purpose: This study examines the key predictors of firm performance concerning growth opportunities and operational efficiency, both of which are crucial aspects of financial sustainability.

Design/methodology/approach: Using a dataset of 184 firms listed on the Johannesburg Stock Exchange (JSE) from 2011 to 2021, this study employs multiple linear regression modelling, part and partial correlation analysis, and percentage variance contribution analysis to identify the most significant predictors of firm performance.

Findings: The results indicate that the market-to-book value of equity is the strongest predictor of firm performance concerning growth opportunities, while return on equity is the most significant predictor of operational efficiency. These findings suggest that firms seeking to enhance financial sustainability should prioritise these metrics in strategic decision-making.

Research limitations/implications: This study focuses on JSE-listed firms, limiting the generalisability of the findings to firms in other regions or those that are not publicly listed. Future research could explore industry-specific variations and broader geographical contexts.

Practical implications: The findings offer valuable insights for corporate managers and investors. Firms can improve financial sustainability by focusing on strategies that enhance their market-to-book value of equity for growth and optimising return on equity to improve operational efficiency.

Originality/value: This study contributes to the existing literature by systematically identifying and validating the strongest predictors of financial

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sustainability through rigorous statistical techniques. The results provide practical guidance for firms aiming to enhance growth and achieve operational excellence.
JEL CLASSIFICATION: M21

Keywords: business value; growth opportunities; operational efficiency; innovation; efficient market hypothesis; financial sustainability; non-financial stability

Introduction

According to Pulatovich (2019), a firm's financial sustainability is essential for its long-term growth. Long-term share value, which is based on a firm's financial sustainability over time, is nevertheless a significant factor in determining the overall long-term firm value, along with the value of debt and other instruments. However, shareholders do not constitute a special constituency that stands above other stakeholders (Jensen 2001). Given that these firms' main goal is to maximise economic performance in order to generate value for shareholders, Rezaee (2017) asserts that the financial sustainability dimension is the most crucial element of a firm's overall sustainability. A firm's long-term profitability, as determined by earnings, market value, productivity, innovation, return on investment, and long-term operational effectiveness and efficiency, is reflected in its financial sustainability (Rezaee 2016).

When assessing a firm's financial success, conservative metrics such as cash flow, earnings, and return on investment are all crucial; however, they do not account for a firm's long-term viability or potential for expansion (Rezaee 2017). Despite numerous attempts to address financial sustainability, Zabolotnyy and Wasilewski (2019) discovered that research on the methodology for assessing financial sustainability in enterprises is still lacking. Long-term financial sustainability is a major factor in a firm's long-term success, according to KPMG (2013), which also recommends using key financial performance indicators (KPIs) to promote sustainability in general. A firm's financial sustainability is measured using a variety of proxies (Gleißner et al. 2022; Ng and Rezaee 2015; Zabolotnyy and Wasilewski 2019). Growth opportunities, operational efficiency, and innovation are the three components of financial sustainability (Golden et al. 2020; Ng and Rezaee 2015). Businesses may safeguard interests and provide value for other stakeholders, including creditors, suppliers, consumers, employees, society, and the government, while building sustainable value for shareholders by combining these three components (Ng and Rezaee 2015; Rezaee 2017).

This article is a methodological research study aimed at identifying the strongest predictor of financial sustainability within the three categories of growth opportunities, operational efficiency, and innovation, utilising three statistical techniques. Firstly, multiple linear regression modelling (panel least squares) is conducted to analyse the relationship between various predictors and financial sustainability. Secondly, part and partial correlation analysis determines each predictor's individual and combined influence. Lastly, an examination of the percentage contribution of variance analysis is conducted to quantify the contribution of each predictor to the overall variance in financial sustainability. This comprehensive approach ensures a robust and thorough evaluation of the factors contributing to financial sustainability.

For several reasons, research on key predictors of firm growth and operational excellence is crucial. Firstly, understanding these predictors can provide valuable insights for businesses, enabling them to make informed decisions for sustainable growth. Identifying the factors that significantly impact financial performance allows organisations to focus their resources on areas that yield the highest returns. Secondly, this research contributes to the existing body of knowledge in financial management by filling gaps and enhancing our understanding of the dynamics that influence firm success. The results benefit academia and offer practical implications for industry practitioners seeking strategies to optimise their operations for improved financial performance. This research aims to bridge theoretical concepts with practical applications, making it relevant to both the academic community and the business world. This dual significance emphasises the importance of this research in advancing financial management practices and promoting economic success.

The research problem identified, therefore, is that despite the growing interest in firm performance, there remains a need for research that clearly identifies and explains the key predictors of firm growth and operational excellence. Without a clear understanding of these predictors, businesses may struggle to allocate resources effectively, hindering sustainable growth and financial success. This gap in knowledge limits both academic insight and practical decision-making. Therefore, this study seeks to address this gap by exploring the critical factors that drive financial performance.

Literature Review and Research Questions

Firms are essential to a country’s economy. Thus, improving a company’s financial performance can support a nation’s sustainable growth (Khan and Gupta 2024; Koskinen et al. 2020; Pulatovich 2019). Since firms are primarily driven to maximise economic performance in order to create shareholder value, the financial performance dimension of a firm is the most important aspect of sustainability (Koskinen et al. 2020; Rezaee 2017).

Growth Opportunities and Its Measures

A firm’s growth rate is a key indicator of its profitability and long-term financial stability (Ben-Hafaïedh and Hamelin 2023; Bolek et al. 2021; Brush and Vanderwerf 1992; Chandler and Hanks 1993; Murphy et al. 1996). Beyond the firm itself, growth drives job creation and economic development (Storey 2016). According to Al Ahbabi and Nobanee (2019), profitability is essential for sustaining financial growth, which affects share prices, and effective corporate governance supports sustainable growth.

Miller and Modigliani (1961) categorised firm growth into two aspects: growth opportunities and the value of existing assets. Growth opportunities refer to a firm's capacity for profitable investments that exceed the cost of capital. Key growth indicators include sales, earnings, equity, and total assets (Bolek et al. 2021; Danbolt et al. 2011; Pietraszewski et al. 2023). Earnings or earnings per share growth is a reliable indicator of valuable growth, reflecting positive net present value investments (Danbolt et al. 2011).

The market-to-book value ratio is also a commonly used indicator of future growth potential (Adam and Goyal 2008; Burton 2003; Danbolt et al. 2011). It reflects how efficiently a firm uses resources and its future growth prospects (Sharma et al. 2013). Profit growth tends to be stronger for firms with a longer history of financial sustainability (Golden et al. 2020), making earnings or earnings per share growth a solid indicator of valuable growth (Danbolt et al. 2011). A recent empirical study found that firms with high market-to-book value ratios deliver significantly higher stock returns over the next one to three years, reinforcing the ratio's role as a reliable predictor of future growth potential (Haboub et al. 2025).

Other indicators, such as dividend yield and earnings yield ratio, are also used to measure growth opportunities (Gaver and Gaver 1993; Jacquier et al. 2001; Kallapur and Trombley 1999; Rozeff 1982; Yu et al. 2023). The key variables for assessing growth opportunities, therefore, are market-to-book equity value, earnings per share, earnings yield ratio, and dividend yield ratio. Consequently, the first research question is formulated:

RQ1: What is the strongest predictor variable for growth opportunities in financial sustainability?

Operational Efficiency and Its Measures

Operational efficiency refers to the optimal use of resources to achieve strategic goals (Lee and Johnson 2013). A firm's ability to deliver goods or services efficiently while maintaining quality and minimising resource use is a hallmark of operational efficiency. Key questions include how effectively inputs are converted into outputs, the impact of price increases on operations, and how a firm compares to its competitors (Hackman 2007). A firm's operational efficiency impacts market share, financial performance, and sustainability (Kanghwa 2010; Septiani and Setiawan 2023). Efficient management of costs and performance contributes to long-term financial sustainability (Golden et al. 2020). Employee morale and productivity improve in financially sustainable firms, further boosting operational efficiency (Camilleri 2017).

Common metrics for operational efficiency include return on assets, return on equity, and sales (Beracha et al. 2019; Guliyev and Muzaffarov 2024; Petersen and Schoeman 2008). Efficient firms tend to have higher returns on assets and equity (Beracha et al. 2019), and the utility of a firm's product can indicate resource efficiency (Kennerley and Neely 2002; López Salazar et al. 2012). A 2024 study of S&P 500 firms examined the sustainable growth rate, which is the maximum growth rate a firm can sustain using internal equity. It found that return on equity (ROE) is the dominant driver of the sustainable growth rate, implying that higher profitability is essential for maintaining growth without external financing. Furthermore, this profitability also correlates with stronger stock performance (Guliyev and Muzaffarov 2024).

Sales, ROE, and return on assets are the three metrics that stood out the most. Consequently, the subsequent research question is developed:

RQ2: What is the strongest predictor variable for operational efficiency in relation to financial sustainability?

Innovation and Its (One) Measurement

Research and development (R&D) is the most common proxy for innovation, as it directly reflects a firm's capacity to innovate (Fu et al. 2016; Kruglov and Shaw 2024; Rogers 1998). R&D is a key measure of a firm's ability to achieve financial sustainability without compromising short-term performance (Gul and Ng 2017; KPMG 2019; Ng and Rezaee 2015; Rezaee 2017). Innovation is not included in statistical testing for financial sustainability predictors as R&D is considered the sole indicator of innovation capabilities.

Model Specification and Research Methodology

All South African firms listed on the Johannesburg Stock Exchange (JSE) are included in this study, except for firms in the financial industry. The goal of the current study was to include every firm listed on the JSE; however, due to the specifics of the financial sector, firms in this sector were not included in the sample. It is common practice to exclude financial industry firms from studies examining financial information due to their known low level of operational assets and stringent regulatory requirements, which may impact their financial information and market values (André et al. 2018; Dahmash et al. 2009).

This analysis covers the eleven-year period from 2011 to 2021. This study uses a quantitative research approach and a reasonably large representative sample to generalise the results, which is where the reasoning and effectiveness of probability sampling originate (Yilmaz 2013).

The firms from the nine industries that were initially included in the sample, those that were eliminated, and the total number of firms used in the study are listed in Table 1.

Table 1: Financial sustainability sample of firms

	Industry	The original number of firms	Firms excluded	The final number of firms
1	Basic materials	41	6	35
2	Consumer discretionary	43	16	27
3	Consumer staples	24	8	16
4	Energy	14	7	7
5	Health care	10	1	9
6	Industrials	51	6	45
7	Real estate	53	28	25
8	Technology	19	5	14
9	Telecommunication	7	1	6
	Total	**262**	**78**	**184**

Source: Authors' analysis

Firms with at least six of the 11 years' worth of missing data were not included in the sample. Firms that were listed for five years or fewer, firms that were listed and subsequently delisted over the 11-year period, and certain firms that had data for the financial sustainability variables but none for the dependent variables were the reasons for missing data for six or more years.

R&D is best suited for innovation, according to the literature assessment; however, multiple variables can also be applied for operational efficiency and growth opportunities. In order to determine which variable, within the sample context of this study, was the strongest predictor of each of the two elements across the dependent variables—namely, firm performance—extensive statistical testing was carried out using a variety of statistical techniques, taking into account the effect of the other defined variables for a specific element. Tobin's Q, total shareholder return, weighted average cost of capital, market value added, and economic value added are the five metrics used to assess a firm's success.

The variables utilised in the model specifications, including those found in the literature for operational efficiency and growth opportunities, are summarised in Table 2.

Table 2: Summary of variables used in the model specifications

Variable	Description	Definition/Calculation
Dependent variables (Firm performance)		
TQ	Tobin's Q	(Market value of equity + book value of debt) ÷ replacement cost of assets
TSR	Total shareholder return	(Share price at the end of the year − share price at the beginning of the year) + dividends ÷ share price at the beginning of the year
WACC	Weighted average cost of capital	Weighted market value of firm's equity + weighted market value of firm's debt after tax
MVA	Market value added	Market value of equity + market value of debt − total capital
EVA	Economic value added	Net operating profit after tax = invested capital × WACC
Independent variables (Financial sustainability)		
GROWTH:	Growth opportunities	
(i) EPS	Earnings per share	(Net operating profit after tax − preference dividends) ÷ weighted average of ordinary shares
(ii) EY	Earnings yield ratio	Earnings per share ÷ share price at the end of the year
(iii) DY	Dividend yield ratio	Dividend per share ÷ share price at the end of the year
(iv) MBVE	Market value to book value of equity	Market value of shares ÷ book value of equity
OPERATE:	Operational efficiency	
(i) ROA	Return on assets	Net operating profit after tax ÷ total assets
(ii) ROE	Return on equity	Net operating profit after tax ÷ total equity
(iii) SALES	Sales revenue	Total sales ÷ revenue

Source: Authors' analysis

After the data was winsorised, the descriptive statistics in Table 3 apply to the entire sample. Because of the degree of skewness and excess kurtosis resulting from extreme values, the data was winsorised (Adams et al. 2019). Based on the degree of winsorisation needed to lessen the impact of outliers, the percentiles employed in the method were chosen. For the entire sample, all variables were winsorised at the 95th and 5th percentiles. No outliers were eliminated using winsorisation, and the quantity of firm–year observations stayed constant.

Table 3: Descriptive statistics for the total sample (winsorised data)

Variables	**Mean**	**Median**	**Minimum**	**Maximum**	**SD**	**Skewness**	**Kurtosis**	**Observations**
Dependent variables:								
TQ	1.378	0.970	0.290	4.450	1.107	1.533	1.465	2024
TSR	4.718	0.650	-55.550	88.600	37.331	0.489	−0.269	2024
WACC	9.308	8.755	3.100	17.060	3.421	0.510	−0.046	2024
MVA	1.542	1.130	0.370	4.850	1.158	1.598	1.818	2024
EVA	−264 619.228	−5 342.040	−4 751 952.510	2 070 981.910	1 419 580.914	−1.730	3.707	2024
Independent variables—Growth opportunities:								
EPS	274.753	80.000	−330.180	1 687.000	493.899	1.617	1.887	2024
EY	4.092	6.749	−35.230	21.590	12.971	−1.699	2.805	2024
DY	2.857	2.304	0.000	10.490	3.077	0.984	0.094	2024
MBVE	1.862	1.180	0.140	7.300	1.843	1.714	2.247	2024
Independent variables—Operational efficiency:								
ROA	6.867	8.290	−33.320	30.670	14.441	−0.997	1.435	2024
ROE	8.141	10.278	−40.490	41.150	18.676	−0.814	0.931	2024
SALES	16 055 158.548	3 323 288.000	55.800	98 619 250.000	26 762 949.590	2.075	3.216	2024

The skewness (kurtosis) values for TQ, TSR, WACC, MVA, and EVA were 1.533 (1.465), 0.489 (−0.269), 0.510 (−0.046) 1.598 (1.818), and −1.730 (3.707) for each dependent variable, respectively, following the winsorisation of the data. The spread of the independent variables for operational efficiency and growth opportunities also demonstrated that the impact of the outliers was lessened.

The table presents the descriptive statistics for the total sample of 184 firms across all variables used in the model to identify the strongest predictors of firm performance in terms of growth opportunities and operational efficiency. The sample period was from 2011 to 2021, encompassing a total of 11 years. TQ, TSR, WACC, MVA, and EVA represent the firm performance-dependent variables presented in R'000. EPS, EY, DY, and MBVE represent the growth opportunity independent variables, whereas ROA, ROE, and SALES represent the operational efficiency independent variables, all presented in R'000. The data for all variables were winsorised at the 5th and 95th percentile values. As shown in Table 2, the independent variables representing growth opportunities—EPS, EY, DY, and MBVE—had respective means of 274.753, 4.092 2.857, and 1.862. The range for EY was from −35.230 to 21.590, for DY from 0.000 to 10.490, for MBVE from 0.140 to 7.300, and for EPS from −330.180 to 1,687.00. Negative values for EPS (−330.180) and EY (−35.230) indicate periods of negative growth, where firm losses exceeded profits. Despite these negative values, more than half of the observations showed positive results, as indicated by medians for EPS (80.000) and EY (6.749). The minimal EY score of 0.000 suggests that some firms did not report dividends, likely due to losses. Comparisons of means and medians—EPS (274.753 vs. 80.000), EY (4.092 vs. 6.749), DY (2.857 vs. 2.304), and MBVE (1.862 vs. 1.180)—reveal a relatively symmetrical distribution.

Additionally, Table 2 reveals that the independent variables for SALES, ROE, and ROA had mean values of 16.055 15.8548, and 8.141, respectively. The range for ROA was from −33.320 to 30.670, for ROE from −40.490 to 41.150, and for SALES from 55.800 to 98,619,250. Negative values for ROA (−33.320) and ROE (−40.490) suggest negative operational efficiency, where a firm's losses outstripped earnings. However, the medians for ROA (8.290) and ROE (10.278) indicate that at least half of the observations were positive. The similarity between means and medians for ROA (6.867 vs. 8.290) and ROE (8.141 vs. 10.278) suggests a fairly symmetrical distribution of these values.

The analysis employed winsorised data and applied multiple techniques to identify and validate the strongest predictors of financial sustainability. The initial step involved statistical significance testing, followed by part and partial correlation analysis, and percentage variance contribution analysis. These three analytical methods are explained below.

For method 1, multiple linear regression modelling was performed on panel data using EViews version 13. Multiple linear regression enables the examination of relationships between multiple independent variables and a single dependent variable, offering a comprehensive understanding of how various factors collectively influence the outcome. This method accounts for interdependencies among independent variables, providing clearer insights into their individual and combined effects on the dependent variable. Additionally, the use of panel data allows for the control of both cross-sectional and time-series variations, enhancing the robustness and accuracy of the analysis. This makes multiple linear regression an effective tool for empirical research, particularly in the context of financial sustainability.

The regression models for RQ1 and RQ2 are presented in equations (1) and (2). For RQ1, the focus is on examining the effect of growth opportunities on firm success. The model used to evaluate this impact includes four growth opportunity variables, allowing for the estimation of their differential influence on firm performance.

For firm *i* at period *t*, the first regression analysis equation is as follows:

$$FP_{it} = \beta_0 + \beta_1 EPS_{it} + \beta_2 EY_{it} + \beta_3 DY_{it} + \beta_4 MBVE_{it} + \varepsilon_{it} \qquad [1]$$

Where:

FP_{it}	firm performance
EPS_{it}	earnings per share
EY_{it}	earnings yield
DY_{it}	dividend yield
$MBVE_{it}$	market-to-book value of total equity
ε_{it}	error/residual term

The assessments for RQ2 look at how operational efficiency affects firms' performance. Three operational efficiency variables were included in the basic model used to analyse the effect in order to assess the differential impact of these variables on firm performance.

The second regression analysis equation is as follows:

$$FP_{it} = \beta_0 + \beta_1 ROA_{it} + \beta_2 ROE_{it} + \beta_3 SALES_{it} + \varepsilon_{it} \qquad [2]$$

Where:

FP_{it}	firm performance
ROA_{it}	return on assets
ROE_{it}	return on equity
$SALES_{it}$	sales
ε_{it}	error/residual term

Building on method 1, where the assumptions of multiple linear regression were upheld, additional analysis was conducted. Method 2 involved part and partial correlation analysis using IBM SPSS version 28. This approach is valuable for examining the relationships between variables, with partial correlation accounting for the influence of other independent variables on the dependent variable, thus providing a clearer understanding of individual variable effects. Part correlation, on the other hand, controls for both the independent variables' impact on the dependent variable and their interactions with one another, isolating the unique effect of each independent variable on the outcome (Zhang et al. 2021).

The third technique, percentage variance contribution analysis, was applied to further assess the relative strength of each independent variable in the regression models. Since standardised beta coefficients could not be calculated for panel data (Gujarati 2022), variance contribution analysis was used. This was performed using EViews version 13, where the R-squared change percentage for each of the ten regression equations was calculated. R-squared indicates how much of the variance in the dependent variable is explained by the independent variables. In this context, the analysis examined the linear relationship between the five dependent variables (firm performance) and the independent variables (growth opportunities and operational efficiency). The squared component correlation was equivalent to the R-squared change.

Data Analysis and Discussion of Results

The data analysis and results discussion in this study employed three methods. First, multiple linear regression modelling was conducted using EViews version 13 to explore the relationship between independent variables and financial sustainability. This method provided a comprehensive understanding of how growth opportunities and operational efficiency impact firm performance. Second, partial and part correlation analysis was performed using IBM SPSS version 28 to examine the individual and combined effects of the variables, accounting for their interdependencies. Finally, percentage variance contribution analysis quantified the impact of each independent variable on the dependent variable. Together, these methods offered a robust analysis of financial sustainability predictors.

Method 1: Statistical Significance Testing

Panel least squares regression (OLS) was used as the initial data examination. Several tests were conducted to ensure the OLS assumptions were met. The correlation matrix of the independent variables was checked for multicollinearity, with a coefficient above 0.8 indicating potential issues. Autocorrelation was assessed using the Durbin–Watson statistic, which fell between 1.5 and 2.5, suggesting no significant autocorrelation. If the value had been outside this range, autocorrelation would need to be addressed.

Homoscedasticity was tested to confirm that residual variances were equal across predictor values. The null hypothesis of homoscedasticity was not rejected ($p > 0.05$), indicating that the residuals met the assumption of equal variance. The Hausman test helped determine whether a fixed-effects or random-effects model was needed. When necessary, period seemingly unrelated regression (SUR) weightings were applied to account for heteroskedasticity and correlated observations. White (diagonal) estimates were used for standard error estimation, ensuring no impact from heteroskedasticity on significance values.

Multicollinearity was not an issue, as correlation coefficients ranged from 0.005 to 0.716. The Durbin–Watson statistic (1.530 to 1.945) and the White (diagonal) estimates confirmed no significant violations for autocorrelation. The normality assumption was satisfied, with skewness and kurtosis falling within the permissible ranges, and although four models showed kurtosis outside the range, Schmidt and Finan (2018) argue that such deviations have minimal impact on results with large sample sizes. Thus, all outcomes were deemed valid. The findings are presented in Table 4.

Table 4: Results of statistically significant relationships for method 1

1: TQ and Growth Opportunities				
Variable	Coefficient	Std. Error	*t*-Statistic	Prob.
C	0.645588	0.044805	14.40877	0.0000
EPS	0.000132	2.85E-05	4.639889	0.0000***
EY	−0.002012	0.000942	−2.136384	0.0328**
DY	−0.006288	0.003151	−1.995890	0.0461**
MBVE	0.350093	0.023192	15.09536	0.0000***
2: TQ and operational efficiency				
Variable	Coefficient	Std. Error	*t*-Statistic	Prob.
C	1.115817	0.068752	16.22970	0.0000
ROA	0.001205	0.002311	0.521422	0.6021
ROE	0.004248	0.001320	3.217482	0.0013***
SALES	3.17E-09	1.71E-09	1.859230	0.0631*
3: TSR and growth opportunities				
Variable	Coefficient	Std. Error	*t*-Statistic	Prob.
C	2.862827	1.453670	1.969379	0.0491
EPS	0.005576	0.001820	3.063160	0.0022***
EY	0.816486	0.070505	11.58057	0.0000***
DY	−2.642454	0.286804	−9.213443	0.0000***
MBVE	1.669575	0.472920	3.530354	0.0004***
4: TSR and operational efficiency				
Variable	Coefficient	Std. Error	*t*-Statistic	Prob.
C	−0.450282	1.048465	−0.429468	0.6676
ROA	0.703250	0.060686	11.58838	0.0000***
ROE	0.003317	0.002486	1.334299	0.1823
SALES	−4.86E-09	3.10E-08	−0.156866	0.8754
5: WACC and growth opportunities				
Variable	Coefficient	Std. Error	*t*-Statistic	Prob.
C	9.250768	0.181851	50.87011	0.0000
EPS	0.000259	0.000191	1.360073	0.1740
EY	−0.008933	0.007967	−1.121223	0.2623
DY	−0.075707	0.024042	−3.148905	0.0017***
MBVE	−0.050454	0.068252	−0.739220	0.4599

6: WACC and operational efficiency

Variable	Coefficient	Std. Error	*t*-Statistic	Prob.
C	10.16638	0.207100	49.08929	0.0000
ROA	0.037700	0.009443	3.992537	0.0001***
ROE	−0.017534	0.006407	−2.736654	0.0063***
SALES	−6.06E-08	1.18E-08	−5.119453	0.0000***

7: MVA and growth opportunities

Variable	Coefficient	Std. Error	*t*-Statistic	Prob.
C	0.512233	0.032679	15.67487	0.0000
EPS	0.000137	2.59E-05	5.283037	0.0000***
EY	−0.001909	0.000988	−1.932773	0.0534*
DY	−0.000248	0.002393	−0.103472	0.9176
MBVE	0.527651	0.017483	30.18141	0.0000***

8: MVA and operational efficiency

Variable	Coefficient	Std. Error	*t*-Statistic	Prob.
C	1.213038	0.056750	21.37509	0.0000
ROA	0.004274	0.002919	1.464481	0.1432
ROE	0.004434	0.002271	1.951890	0.0511*
SALES	7.04E-09	1.75E-09	4.015235	0.0001***

9: EVA and growth opportunities

Variable	Coefficient	Std. Error	*t*-Statistic	Prob.
C	−1015444.	60111.93	−16.89255	0.0000
EPS	2187.760	79.87518	27.38973	0.0000***
EY	12443.58	2415.653	5.151230	0.0000***
DY	−28983.92	10251.65	−2.827244	0.0048***
MBVE	79359.11	21923.47	3.619824	0.0003***

10: EVA and operational efficiency

Variable	Coefficient	Std. Error	*t*-Statistic	Prob.
C	−412954.8	48305.09	−8.548889	0.0000
ROA	18211.64	2965.037	6.142131	0.0000***
ROE	21478.12	2250.755	9.542629	0.0000***
SALES	−0.004712	0.002756	−1.709545	0.0875*

Note: *, ** and *** denote significance at the 10%, 5% and 1% levels respectively.

Based on the results, the statistically significant relationships are summarised in Table 5.

Table 5: Summary of results of statistically significant relationships for method 1

	Equation	Lowest probability (significance)	
1	TQ and Growth Opportunities	EPS	0.0000
		MBVE	0.0000
2	TQ and Operational Efficiency	ROE	0.0013
3	TSR and Growth Opportunities	EY	0.0000
		DY	0.0000
4	TSR and Operational Efficiency	ROA	0.0000
5	WACC and Growth Opportunities	DY	0.0017
6	WACC and Operational Efficiency	SALES	0.0000
7	MVA and Growth Opportunities	EPS	0.0000
		MBVE	0.0000
8	MVA and Operational Efficiency	SALES	0.0001
9	EVA and Growth Opportunities	EPS	0.0000
		EY	0.0000
10	EVA and Operational Efficiency	ROA	0.0000
		ROE	0.0000

For panel regressions, statistical significance was taken into account and scaled (standardised) coefficients were not calculated. The following growth opportunities are shown in Table 5: The earnings per share variable showed the highest statistical significance for the growth opportunities independent variables in three cases, while the market-to-book value of equity, earnings yield, and dividend yield variables did so in two cases each. In terms of independent variables related to operational efficiency, the sales variable showed the highest levels of statistical significance in one instance, while the ROE and return on assets variables did so in two.

Method 2: Part and Partial Correlation Analysis

The results for method 2, part and partial correlation analysis, provide a detailed examination of the relationships between the independent variables and financial sustainability. This analysis delves into the individual and combined effects of the predictors, accounting for their interdependencies. By isolating the unique contributions of each variable, part and partial correlation analysis offers a nuanced understanding of how growth opportunities and operational efficiency impact firm performance. The following section presents the findings from this analytical approach, shedding light on the specific influences and interactions among the variables. The detailed results are shown in Table 6.

153 **Table 6:** Results of part and partial correlations for method 2

1: TQ and Growth Opportunities	**Correlations**	
Variable	Partial	Part
EPS	.077	.052
EY	−.149	−.102
DY	−.021	−.014
MBVE	.709	.676
2: TQ and Operational Efficiency		**Correlations**
Variable	Partial	Part
ROA	−.004	−.004
ROE	.214	.209
SALES	.048	.046
3: TSR and Growth Opportunities		**Correlations**
Variable	Partial	Part
EPS	.074	.070
EY	.269	.263
DY	−.217	−.209
MBVE	.085	.080
4: TSR and Operational Efficiency		**Correlations**
Variable	Partial	Part
ROA	.104	.100
ROE	.100	.096
SALES	−.016	−.015
5: WACC and Growth Opportunities		**Correlations**
Variable	Partial	Part
EPS	.028	.028
EY	−.023	−.0.23
DY	−.118	−.117
MBVE	−.018	−.018
6: WACC and Operational Efficiency		**Correlations**
Variable	Partial	Part
ROA	.059	.059
ROE	−.099	−.099
SALES	−.045	−.045
7: MVA and Growth Opportunities		**Correlations**
Variable	Partial	Part
EPS	.143	.059
EY	−.066	−.027
DY	.013	.005
MBVE	.899	.840
8: MVA and Operational Efficiency		**Correlations**
Variable	Partial	Part
ROA	.105	.093
ROE	.227	.206
SALES	.191	.172

9: EVA and Growth Opportunities		**Correlations**
Variable	Partial	Part
EPS	.250	.232
EY	.147	.134
DY	.023	.020
MBVE	.224	.206

10: EVA and Operational Efficiency		**Correlations**
Variable	Partial	Part
ROA	.101	.088
ROE	.308	.280
SALES	−.194	−.171

Table 7 summarises the statistically significant correlations based on the findings of estimate method 2.

Table 7: Summary of results of part and partial correlations

	Equation	**Highest correlation coefficient value**		
		Variable	**Partial**	**Part**
1	TQ and Growth Opportunities	MBVE	.709	.676
2	TQ and Operational Efficiency	ROE	.214	.209
3	TSR and Growth Opportunities	EY	.269	.263
4	TSR and Operational Efficiency	ROA	.104	.100
5	WACC and Growth Opportunities	DY	−.118	−.117
6	WACC and Operational Efficiency	ROE	−.099	−.099
7	MVA and Growth Opportunities	MBVE	.899	.840
8	MVA and Operational Efficiency	ROE	.227	.206
9	EVA and Growth Opportunities	EPS	.250	.232
10	EVA and Operational Efficiency	ROE	.308	.280

For growth opportunities, Table 7 shows that the market-to-book value independent variable showed the highest part correlation in two cases, while the earnings per share, earnings yield, and dividend yield variables only showed the highest part correlation in one case each. Based on these findings, the market-to-book value variable may have the most significant unique effect among the five growth opportunity equations.

In terms of operational efficiency, Table 7 shows that the ROE variable had the highest part correlation in four of the five equations, while the return on assets variable had the highest part correlation in one. As a result, the ROE variable may be thought of as having the most significant unique effect.

Method 3: Percentage Variance Contribution Analysis

The results for method 3, percentage variance contribution analysis, offer a quantitative assessment of the relative strength of each independent variable in predicting financial sustainability. This method calculates the R-squared difference in percentage for each regression model, highlighting the proportion of variance in firm performance explained by growth opportunities and operational efficiency. By determining the squared part correlation, this analysis provides a clear picture of the unique contribution of each variable to the overall model. The following section presents these findings, offering valuable insights into the relative importance of each predictor in the context of financial sustainability. The detailed results are shown in Table 8.

Table 8: Results of adjusted R-squared differences for Method 3

	Equation	**Variable excluded**	**Adjusted R-squared**	**Adjusted R-squared difference**
1	TQ and growth opportunities	Original (with all)	0.443303	
		Without EPS	0.442121	0.001182
		Without EY	0.443489	−0.000186
		Without DY	0.431798	0.011505
		Without MBVE	0.038598	0.404710 (40.47%)
2	TQ and operational efficiency	Original (with all)	0.032158	
		Without ROA	0.031474	0.000684
		Without ROE	0.024602	0.007556 (0.75%)
		Without SALES	0.029337	0.002821
3	TSR and growth opportunities	Original (with all)	0.115318	
		Without EPS	0.110483	0.004835
		Without EY	0.045309	0.070009 (7.00%)
		Without DY	0.069971	0.045347
		Without MBVE	0.108080	0.007238
4	TSR and operational efficiency	Original (with all)	0.071506	
		Without ROA	0.005041	0.066465 (6.65%)
		Without ROE	0.070625	0.000881
		Without SALES	0.079644	−0.008138
5	WACC and growth opportunities	Original (with all)	0.007322	
		Without EPS	0.006152	0.00117
		Without EY	0.004729	0.002593
		Without DY	0.003916	0.003406 (0.34%)
		Without MBVE	0.006238	0.001084
6	WACC and operational efficiency	Original (with all)	0.285635	
		Without ROA	0.279128	0.006507
		Without ROE	0.282578	0.003057

		Without SALES	0.274936	0.010699 (1.07%)
7	MVA and growth opportunities	Original (with all)	0.771425	
		Without EPS	0.770461	0.000964
		Without EY	0.762675	0.008750
		Without DY	0.763179	0.008246
		Without MBVE	0.047659	0.723770 (72.38%)
8	MVA and operational efficiency	Original (with all)	0.053706	
		Without ROA	0.053786	−0.00008
		Without ROE	0.043189	0.010517 (1.05%)
		Without SALES	0.043484	0.010222
9	EVA and growth opportunities	Original (with all)	0.648082	
		Without EPS	0.478519	0.169560 (16.96%)
		Without EY	0.640270	0.007812
		Without DY	0.631506	0.016576
		Without MBVE	0.647770	0.000312
10	EVA and operational efficiency	Original (with all)	0.222463	
		Without ROA	0.204260	0.018203
		Without ROE	0.162856	0.059607 (5.96%)
		Without SALES	0.221297	0.001166

Table 9 summarises the highest adjusted R-squared differences based on method 3 results.

Table 9: Summary of results of R-squared variances for method 3

	Equation	**Variable**	**Highest adjusted R-squared difference**
1	TQ and growth opportunities	MBVE	0.404710 (40.47%)
2	TQ and operational efficiency	ROE	0.007556 (0.75%)
3	TSR and growth opportunities	EY	0.070009 (7.00%)
4	TSR and operational efficiency	ROA	0.066465 (6.65%)
5	WACC and growth opportunities	DY	0.003406 (0.34%)
6	WACC and operational efficiency	SALES	0.010699 (1.07%)
7	MVA and growth opportunities	MBVE	0.723770 (72.38%)
8	MVA and operational efficiency	ROE	0.010517 (1.05%)
9	EVA and growth opportunities	EPS	0.169560 (16.96%)
10	EVA and operational efficiency	ROE	0.059607 (5.96%)

According to Table 9, in two instances, the market-to-book value variable—the growth opportunities independent variable—showed the highest adjusted R-squared difference (R^2 change). The market-to-book value variable may once more be regarded as the most reliable predictor of growth opportunities among the five equations because the earnings per share, earnings yield, and dividend yield variables only showed the highest adjusted R-squared difference in one instance each.

According to Table 9, the ROE variable showed the highest adjusted R-squared difference for the operational efficiency independent variable in three cases, while the return on assets and sales variables showed the highest adjusted R-squared differences in one case each. As a result, the ROE variable may once more be regarded as the most reliable predictor among the five operational efficiency equations.

It was anticipated that estimation method 3's findings would confirm and match those of estimation method 2. In nine of ten instances, the outcomes were identical. The sole distinction was in equation six, where the SALES variable—rather than the ROE variable in estimation method 2—was the best predictor of firm performance (WACC).

For RQ1, which sought to determine the most substantial growth opportunity predictor variable, multiple methods consistently highlighted the market-to-book value as the most significant variable. It displayed the highest part correlation and adjusted the R-squared difference numerous times, indicating its substantial, unique effect on financial sustainability. For RQ2, which sought to determine the most robust operational efficiency predictor variable, ROE emerged as the most influential predictor variable across all three methods. It demonstrated the highest levels of statistical significance, part correlation, and adjusted R-squared difference in several cases, underscoring its dominant role in predicting financial sustainability. These findings provide robust insights into the key factors driving financial sustainability, emphasising the importance of market-to-book value for growth opportunities and ROE for operational efficiency.

Conclusion

Firms are crucial to a national economy and improving their financial performance fosters sustainable development. Financial performance, driven by the primary goal of maximising economic returns for shareholders, is the critical component of sustainability. Firm growth, a reliable measure of long-term financial sustainability, contributes to economic health and job creation. Earnings per share, market-to-book value, dividend yield ratio, and earnings yield ratio are important markers of growth opportunities. Sales, ROE, and return on assets are metrics that can be used to gauge operational efficiency, which is crucial for gaining a competitive edge. In order to maintain financial sustainability, innovation—which is typically gauged by research and development—is essential.

This study investigates the strongest predictors of growth opportunities and operational efficiency as dimensions for financial sustainability. In order to understand the data and its distribution, descriptive statistics were used. This included looking at regression model assumptions such heteroscedasticity, autocorrelation, and normality. To determine the most significant predictor of firm performance, three estimate techniques were used: percentage variance contribution analysis, part and partial correlation analysis, and statistical significance testing.

Similar results were obtained when the summaries and results of estimation methods 2 and 3 were taken into account. The results indicated that the market-to-book value of equity was the most reliable indicator of firm performance for growth opportunities. ROE was the most significant indicator of firm performance in terms of operational efficiency. These results highlight the primary determinants of firm performance in these areas and offer insightful information about the elements influencing growth opportunities and operational effectiveness within the financial sustainability dimension.

Furthermore, identifying the market-to-book value of equity as the strongest predictor of firm performance regarding growth opportunities and ROE as the primary predictor for operational efficiency within the financial sustainability dimension carries significant implications for firms. These findings suggest that, for firms aiming to enhance their growth opportunities, prioritising and effectively managing their market-to-book value of equity is crucial. This metric reflects the market's valuation of a firm's assets relative to their book value, and a higher ratio indicates favourable growth prospects. Firms should focus on strategies that maximise this valuation metric to attract investors and signal potential for future expansion.

Similarly, recognising ROE as a key predictor of operational efficiency implies that firms with higher returns on equity are likely to be more operationally efficient, underscoring the importance of managing resources efficiently to generate higher profits concerning shareholders' equity. For firms seeking to optimise operational efficiency, strategies that improve resource use, reduce costs, and enhance overall profitability become paramount.

These insights enable firms to make informed decisions regarding resource allocation, strategic planning, and performance management. By understanding the specific financial sustainability factors that strongly influence growth opportunities and operational efficiency, firms can tailor their approaches to enhance overall performance, attract investment, and effectively navigate the dynamic business landscape.

It is important to keep in mind the limitations of this study when interpreting the results. The fact that only firms listed on the JSE in South Africa were included was one of the restrictions. As a result, caution should be used to avoid extrapolating the findings to the population outside of the sample. To get around this restriction, more research can be done. For instance, firms that are not listed on the JSE or firms that are located abroad can be investigated in order to provide a more thorough knowledge of the study that was conducted, rather than limiting the findings to firms that are listed in South Africa. To put it simply, this would allow the study to cover a wider range of firms.

Future research could also explore the variations in financial sustainability across different industries. Specifically, it would be valuable to investigate whether the growth opportunities, operational efficiency, and innovation measurements differ by sector. Understanding these differences could provide deeper insights into industry-specific strategies for enhancing financial performance and sustainability. This approach can help identify tailored metrics and best practices most effective for fostering long-term financial health in diverse economic sectors.

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