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Research Article

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The Impact of Agency Capital on Company Value - An Integrated Reporting Approach - Evidence from South Africa

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ABSTRACT

The measurement and reporting of the impact of agency capital on firm value has remained an elusive empirical and practitioner question. The advent of Integrated Reporting (IR) was initially considered as presenting an opportunity for firms to be able to measure and report on the contribution of non-financial capitals towards firm value creation. However, the IR framework fell short of providing a holistic solution as it lacked a measurement tool that could be used by IR report preparers, analysts and other users of corporate reports. Adopting the Agency theory lens, this study decomposed agency capital into two proxies, Directors' remuneration and Debt to Equity ratio that were used in a regression model. The findings of the study show that Agency capital has an impact on company value using market share price as a proxy.

Research Aims: While South Africa has globally recognised corporate governance processes guided mostly by the King Reports, the impact of agency capital (directors' influence) on company value is still a pertinent academic and practitioner question. This study was carried out to measure the impact of agency capital on the value of JSE-listed companies, develop a measurement model and offer recommendations to academics, integrated reporting practitioners, boards of directors and other stakeholders.

Design/Methodology/Approach: The study utilised data obtained from a sample of 91 JSE-listed companies, with company value as the dependent variable and directors' remuneration and debt to equity ratio as independent variables. Company value proxies used are market share price, Economic Value Added, TobinQ and share price at book value. Using secondary data from the IRESS database, the impact of agency capital was assessed through the use of regression equations.

Research Findings: The study reflected statistically significant relationship between market share price and agency capital. Economic Value Added, TobinQ and share price at book value returned statistically insignificant correlations to the independent variables. The results provide indications on the criticality of agency capital in the value creation activities of companies.

Theoretical Contribution/Originality: The agency capital model developed in this study provides a measurement tool for investors and other stakeholders that have an interest in the impact of agency capital on company value creation.

Practitioner/Policy Implications: Corporate governance practitioners, integrated reporting practitioners, academics and corporate reporting standard setters should consider the impact of agency capital on company value when making company value creation strategies. Directors' remuneration and directors' discretion on corporate debt become fundamental points of reference for setting remuneration practices and key performance targets for directors.

Research Limitations: The study was based on companies listed on the Johannesburg Stock Exchange (JSE). This excludes companies not listed on the JSE. The companies experience the same challenges as listed companies. This limitation is mitigated by the inclusion of all sectors for listed companies, making it possible for generalisation of findings and recommendations even to non-listed companies.

Keywords: Agency, Debt-to-Equity, Integrated Reporting, Remuneration

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Introduction and Rationale

Human capital (referred to as Agency capital in this study) has been identified in the Integrated Reporting (IR) framework as one of the five non-financial capitals that are crucial for firms to be able to create value [1,2]. The identification of more capitals other than financial capital came after the realisation that for firms to create value, it is important that the contribution of the other capitals be considered [3]. The International Integrated Reporting Council (IIRC), renamed the Value Reporting Foundation (VRF) in 2022, developed the IR framework which identified agency capital as an essential part of the non-financial capitals that are necessary accessories to financial capital. The other capitals are, intellectual, social and relationship, manufactured and natural capital [1,2]. The measurement and reporting of the impact of the different capitals has remained an elusive empirical and practitioner question in the domain of IR. The IIRC states that the Integrated Report is not there to report on how a company created or reduced value [1,2]. This statement by the IIRC left users of IR reports in a dilemma as the purported solution to holistic corporate reporting became vague. It is against this background that this research is carried out, focusing on the subject of the effect of agency capital on the value of firms listed on the Johannesburg Stock Exchange (JSE). The selection of agency capital is based on the researcher's assumption that for a company to operate in the contemporary business environment, it requires the skill, experience and loyalty of its directors (agents).

Agency capital is fundamental in the process of value creation for the organisation as it is arguably the dominating driver in mobilising and bringing together the other five (5) capitals of the IR framework. The talent, skills, intrinsic knowledge, experience and specific abilities possessed by an organisation's executives may be referred to as human capital [4]. People's abilities to innovate, utilise existing capitals and loyalty to the organisation and its strategic goals form the anchor of agency capital [2]. Organisational success has migrated from being financial and physical asset-based to being human capital based on the recognition that innovation, loyalty, and competency reside within the company's human resources [5]. Financial and physical assets can no longer be the differentiating factor to gaining competitiveness as they are easy to imitate [5].

A trained and skilled agency capital base is expected to yield more quality performance and increase company value [2]. This calls for close monitoring of directors' remuneration and their discretionary powers hence the corporate governance frameworks epitomised by the King Reports and the Companies Act [6-8].

Theoretical Framework and Literature Review

The Agency Theory

This study follows the agency theory lens and in the following sub-sections, the background to agency theory and a review of some of the empirical studies on the theory are given.

Agency Theory Background

The underpinning principle of the agency theory is that the management of the company is epitomised by a dual connection between the principals (shareholders) and the agents (directors) [9]. The agency theory is embedded in the assumption that the principal uses reward and delegation power to incentivise the agent to work to satisfy the interests of the shareholders [10].

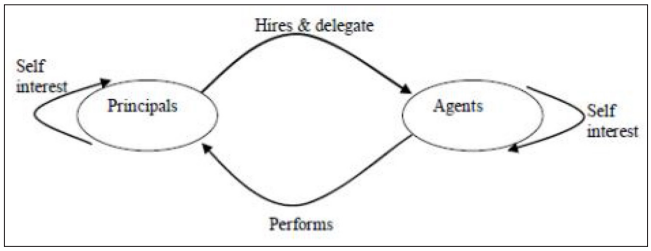

Figure 1: The Agency Model
Source: Snippert et al [11].

In Figure 1, it is noticeable that self-interest surrounds both the principals and the agents. It is the inherent attitude of self-interest, where the agent's behaviour is opportunistic and only fulfils the principal's mandate after securing his reward that leads us to the agency problem [12].

The Agency Problem

The agency problem is rooted in the separation of control of equity from the hands of those who provided it and relaying it to the directors [9]. A hint to the agency problem was picked up way back in 1776, when Adam Smith, as quoted by, said, "You may not expect those who manage other people's money to be as careful and caring as it would belong to them [13]. Waste and negligence are present, always, more or less, in the management of every business".

Where the agent expects a higher reward, more risk is taken and on the contrary, where rewards are lower, the agent becomes more risk-averse [14]. To mitigate the agency problem, corporate governance measures are taken, such as an independent board of directors to supervise executive directors, responsibility for encouraging incentive schemes to directors (share of pains and gains), equity participation and executive compensation [8,12].

The agency problem might seem like a conflict only between the manager and shareholder, however, the costs of this result in losses for society [15]. To curb the narrow view of the classical agency theory, an alternative is proposed; the stakeholder-agency and social welfare concept [16]. In this approach, the modern corporation is viewed as a multi-objective entity that seeks to satisfy a plethora of stakeholders, not only the principal and the agent. In that perspective, the company's value creation task ceases to be a task for management on behalf of the investors but an effort to address the needs of the coalition of all stakeholders [8].

The stakeholder-agency theory, being an attempt to converge the stakeholder and the agency theories, poses a challenge to corporate reporting. The preparers of reports, in this case, the directors (the agents), need a format that will satisfy the stakeholders that the value created, and the value creation potential is transparently exposed. Each stakeholder who has a role in the value creation process will require to see his (her) current and future contribution clearly explained, giving credence to the need for IR.

Empirical Evidence on Agency Theory

Studies have been carried out to test the impact of the agency theory on company value. The studies have focused on agency theory issues such as earnings management, ownership structure and employee management strategy. Earnings management is where executives of a company put in place strategies that will maximise reported profits. The abuse of power by executives over the direction of a company's earnings has been cited as one of the reasons for the scandals that hit corporate history such as Enron and WorldCom [17]. Jiraporn et al. propose that earnings management can be used for harmful opportunistic purposes by managers and also for beneficial purposes that improve company value [17]. Opportunism is used by managers who want to report higher earnings so that they get paid high bonuses or are in the final years of their contracts. In a study of USA companies, Jiraporn et al. tested the relationship between agency costs, earnings management and company value [17]. Their investigation revealed that there is a positive relationship between earnings management and company value. Managers who used earnings management tactics such as releasing internal earnings information to the market managed to increase their companies' share value.

Dawar carried out a study on Indian companies to test the intuitive positive relationship between agency discretion on leverage and company value [18]. The results from this study indicated that in an emerging economy like India, leverage essentially reduced company value. A similar study in Malaysia gave contrasting results compared with Dawar [18]. Ayaz et al. studied 528 non-financial companies listed on the Malaysia stock exchange and empirical evidence suggested that leverage increased company value, confirming the classic belief that managers can exercise their agency power to increase company value [19-22].

In the quest to establish the impact of the agency theory of company value, Naik et al. used directors' remuneration for JSE-listed companies as a proxy to measure the relationship to company value [23]. Revenue, total assets, return on assets, and measures of Tobin Q were used as variables. The results of the study showed a negative relationship between directors' remuneration and revenue and assets measurements. A weak positive relationship was established between TobinQ and directors' remuneration. The study signalled that South African companies should use other strategies to increase company value rather than varying directors' remuneration.

In this current study, Agency theory was tested using directors' remuneration and debt to equity as a proxies of agency influence. The study developed a model where the impact of Agency capital on company value was tested.

Research Methodology

Research Methodology of Choice - Scientific Research Method and the Quantitative Approach

The study uses the scientific research method which leads to the adoption of the quantitative research methodology. The scientific research method is an investigation or enquiry where conclusions and recommendations are driven by data and facts [24]. In the use of the scientific research method, measures have to be taken to minimise bias and imposition of the researcher's opinions [25].

The quantitative research approach investigates relationships that exist among variables. The relationships are exposed using numerical, statistical, and graphical analytical tools [26]. This study analyses how agency capital impact the value of the companies under review.

Guided by the post-positivist philosophy and the deductive research approach, this study matches a construction of knowledge using empirical evaluations. Empirical evaluations and statements are expressed in numerical format [27]. This study relies on numerical data, with the main dependent variable (company value) and the independent variables (directors' remuneration and debt to equity ratio) being values obtained from published financial statements and integrated reports.

Using Cresswell's definition of quantitative research, which states that quantitative research explains phenomena through the collection of numerical data that is analysed by utilising statistical methods, this study's characteristics require quantitative methodology [28]:

- The collection of numerical data: the study involves the collection of numerical data for the sample companies for 11 years (2010 to 2020).
- The use of statistical methods to analyse data: the collected data was analysed through descriptive statistics and panel data regression modelling.

From the above discussion, one may conclude that the quantitative methodology is the most appropriate for this study.

The Research Strategy of Choice - Secondary Data

Having identified the research methodology of choice, the researcher selects an appropriate research strategy. The selected research strategy enables the researcher to collect and analyse data to answer the research questions [26,29]. To support the quantitative research methodology, the archival and documentary (secondary data) research strategy was used.

The Archival and Documentary Strategy

The archival and documentary research strategy refers to the collection of data from existing documents. Documents include physical copies, online archives, digitised data, and textual, visual and audio repositories [26,30].

This study utilises audited financial statements, integrated reports, and other company documents for companies whose data is available in the IRESS database. Due to them being public companies, the target organisations are obliged by law to publish annual reports. With the upsurge in the utilisation of internet-based publication of company reports, the accessibility of this secondary data is easy and practical. Given the speciality aspect of IR and that it is a developing discipline, a survey research strategy has the risk of not getting the sufficient mass necessary to perform meaningful data analysis, hence its exclusion from this study.

Time Horizon

The time horizon of a study can be separated into two broad categories, cross-sectional and longitudinal studies. This study utilised both cross-sectional and longitudinal approaches. The study sample includes a cross-section of listed companies on the JSE, covering various industry sectors. Longitudinal data

was collected covering the period from 2010 to 2020. This approach necessitates the generation of panel data to be used in the quantitative analysis.

Research Techniques and Procedures

In the following sub-sections, the research techniques and procedures will be covered, dealing with data collection and sampling methods.

Data Collection

Data collection involves the gathering of information necessary for the researcher to be able to answer the research questions [31]. Data collection procedures can be classified into primary and secondary data collection.

Secondary data collection involves the collection of information from published documents, online portals, and internet archives. With the prevalence of internet sources, secondary data collection has become popular because of ease of access, the variety of sources available without geographical limitations and the big quantum of references from which to choose. Care is required in ensuring that the chosen sources of secondary data are reputable and from recent publications.

Primary data collection includes the collection of information using quantitative and qualitative approaches. In a quantitative approach, the researcher collects data using tools such as questionnaires that have close-ended questions. The research targets are usually selected using random sampling. In the collection of qualitative data, the researcher can use interviews, open-ended questionnaires, focus groups as well as case studies [31].

For this study, secondary data was collected from mainly the IRESS database. This secondary data is considered valid as it is collected from audited financial reports and professionally reviewed IR.

Population Description of the Study

The population for this study is made up of companies listed on the JSE as of 30 August 2021. As indicated in Table 1, the population is grouped into industry clusters using the Industry Classification Benchmark (ICB).

Table 1: Population of JSE-listed companies

Sector	Total Population	Total Capitalisation ZAR trillion	Capitalisation USD trillion
Telecommunications and Technology	21	4.23	0.29
Health Care	8	0.19	0.01
Financials and real estate	10	2.13	0.15
Consumer Services	60	5.01	0.34
Manufacturing and Industrials	55	0.41	0.03
Basic Materials/ Mining and Energy	41	4.34	0.30

Source: JSE (2021). Exchange rate R14.66 to USD as of 30 August 2021

Table 1 shows the total population of 327 companies with a total market capitalisation of R16.3 trillion (USD 1.11 Trillion). The companies are grouped into six (6) sectors.

Sample Description and Size for This Study

It is deemed impractical for most studies to adopt a census approach due to the amount of time required to reach the entire population. A sampling approach is considered effective and appropriate as it may provide a representative view of the entire population.

For this study, a purposive sampling approach on JSE-listed companies was adopted, where 327 companies listed on the JSE were grouped according to their industrial sectors and the companies were selected, as explained in the next section. This method was selected for this study due to the following reasons;

(a). Companies that have foreign stock exchanges as their primary listings (55 companies) are not mandated to produce IR in a similar way to those companies primarily listed on the JSE as they are expected to comply with the reporting requirements of their primary stock exchanges [32]. Therefore, the target population is narrowed down to 272 companies that have the JSE as their primary listing. After the exclusion of the organisations with JSE secondary listing, the following purposive sampling filters were implemented as explained in (b) and (c).

(b). 126 companies that were listed by 2001 were selected for inclusion. The JSE joined the FTSE Global Classification system in 2002 leading to its capability to release the FTSE/JSE Africa Index Series which produces indices that are comparable to other exchanges in the world markets. In the researcher's view, these companies are expected to have matured reporting and stable data trends for the study. Therefore, 146 companies listed after 2001 are excluded.

(c). King III report was released in 2009 and the JSE made IR mandatory for reporting starting from March 2010 [33]. To obtain a consistent mass of data on IR, 2010 becomes a logical starting year for data collection.

This purposive sampling approach yields a sample size of 91 companies. This provided the researcher with 1 001 company years and 3 003 possible observations considering the 3 variables identified in Table 2. The 91 companies in the sample represent 28% of the population. The researcher considers this sufficient for a successful study. Some previous successful studies on non-financial capitals that used JSE companies had samples sizes as follows: Firer and Stainbank had a sample size of 75, Dzomonda worked with 32 companies while Schultz and Molele used a sample size of 43 [34-36].

Research Instruments (Data Collection Instruments)

This study utilises quantitative data. Data was collected from the IRESS database. This database provides information extracted from published audited financial statements of JSE-listed companies.

Secondary Data Collection

Secondary data may be classified into three categories, documentary, survey and multiple sources [26]. For this study, reliance is placed on documentary secondary data. Examples of relevant documents to be used in secondary data collection

include organisations databases, organisations communications and company reports. With the rapid expansion of internet-based archiving of data, obtaining data through searching the company and organisational websites has become a viable research method [37]. In South Africa, JSE-listed companies are required to publish annual Audited Financial Statements (AFS) and Integrated Reports [38]. Companies load these reports on their websites, allowing easy accessibility.

Data was collected from company AFS from 2010 to 2020 as loaded on the IRESS database, giving data sets for 11 years.

Validity and Reliability

Validity refers to the suitability of the research methodology used in delivering accurate results that can be generalised (the research method is valid if its results are accurate and can be generalised) [26]. Validity can be split into internal and external validity. Internal validity occurs when the secondary data collected is sufficient and can be analysed such that the research questions are answered leading to the establishment of a causal relationship between variables.

Validity can be assessed by confirming that the research instrument has measurement, content, criterion-related (predictive) and construct validity [26]. Measurement validity refers to the ability of the research tool to measure what it is intended to measure. The dilemma facing the researcher is how to declare measurement validity before the research tool is used. For this study, this challenge was managed through reference to similar studies that relied on secondary data in the area of company valuations and IR [4,39-44].

The reliability of the data used in this research is based on the reputation of the IRESS database, built by McGregor BFA, as a source of data gathered from audited financial statements [45]. The financial statements are audited according to the Companies Act 2008, IFRS and King IV. IRESS is recognised by universities as a reliable database [45,46].

Research Questions, Objectives and Hypothesis

Research questions (RQ), research objectives (RO) and hypothesis (H) provide a platform from which the researcher sets out on a goal to identify and collect data for analysis and interpretation, such that new knowledge is created [47].

Human Capital (HC) resides in the faculties of individuals in the organisation through their unique skill set that is vital for the organisation to carry out its value-addition mandate [48]. In this study, agency, represented by directors' remuneration and debt-to-equity ratio, are used as a proxy.

Therefore

Research Question

What is the impact of agency capital on company value?

Research Objective

To investigate the effect of agents' interests on the company value of JSE-listed companies.

Null Hypothesis

Agency capital has no impact on company value.

Alternative Hypothesis

Agency capital has an impact on company value.

Panel Regression Models for Agency (Human) Capital

The panel regression model of the study is an augmentation of the Feltham-Ohlson model [49].

The regression model for Agency capital, was done to test the impact of agency interests on company value. The model will assist in answering the research question and obtaining an opinion on whether the hypothesis can be accepted or rejected.

$$\Delta Y_{it}=\beta_0+\beta_{ij}\Delta\sum_{ij=1}^{n} X2_{ij}+D\,u_t+\varepsilon_{it} \quad (1)$$

Expanded equation

$$\Delta Y_{it}=\beta_0+\beta_1\Delta DR_{it}+\beta_2\,\Delta\frac{D}{E_{it}}+Du_t+\varepsilon_{it} \quad (2)$$

Where:

$X2_{ij}$ represents a vector of Agency (Human) capital that is:

DR_{it} = Directors' remuneration for company i at time t

D/E_{it} = Debt to Equity ratio (as a measure of company size) for company i at time t

Du_t= Dummy variable, corona virus impact in 2020

ε_{it} = Error term

The equation will use market share price Y1 as a proxy of company value.

$$\Delta Y1_{it}=\beta_0+\beta_1\Delta DR_{it}+\beta_2\,\Delta\frac{D}{E_{it}}+Du_t+\varepsilon_{it} \quad (3)$$

To test the robustness of the agency capital model above, the following equations are used where more proxies of company value are used. Y2 = Economic Value Added, Y3 = TobinQ and Y4 = share price at book value.

$$\Delta Y2_{it}=\beta_0+\beta_1\Delta DR_{it}+\beta_2\,\Delta\frac{D}{E_{it}}+Du_t+\varepsilon_{it} \quad (4)$$

$$\Delta Y3_{it}=\beta_0+\beta_1\Delta DR_{it}+\beta_2\,\Delta\frac{D}{E_{it}}+Du_t+\varepsilon_{it} \quad (5)$$

$$\Delta Y4_{it}=\beta_0+\beta_1\Delta DR_{it}+\beta_2\,\Delta\frac{D}{E_{it}}+Du_t+\varepsilon_{it} \quad (6)$$

Findings

Descriptive Statistics for Panel Data

This section presents summary statistics on the variables used in this research. Utilising pooled estimations in EViews, the independent variables that are assumed to be correlated to company value were assessed and their descriptive statistics are provided in Table 2.

Table 2: Summary Statistics for Company Value Variables

Variables	Variables Description	Observations	Mean	Std. Dev.	Maximum	Minimum
Y1	Market Share Price as a proxy of company value	1001	0.0540	0.3952	2.9128	- 0.9750
Y2	Economic Value Added (EVA) as a proxy of company value	1001	- 0.0414	0.2865	2.4642	- 0.8877
Y3	TobinQ as a proxy of company value	1001	- 0.0118	0.1967	0.8015	- 0.8944
Y4	Share price at book value as a proxy of company value	1001	0.0655	0.1803	0.7926	- 0.7593
DR	Directors' Remuneration (Agency/human capital)	1001	0.0210	1.0193	11.4671	- 14.3665
D_E	Debt to Equity (Agency/human capital)	1001	- 0.0169	0.2678	0.9596	- 0.9762
DU	Dummy (Covid 19 year 2020 effect	1001	0.0909	0.2876	1.0000	0.0000

Source: Calculated for this study

Explanation of the Summary Statistics

The summary of the descriptive statistics shown in Table 2 indicates that on average, for the period under observation (2010 to 2020), share price returns (Y1) for the 91 JSE-listed companies studied were 5.4%. The share price at book value (Y4) returns show a positive mean of 6.6% growth over the same period and sample. Using market share price and share price at book value as measures of company value will project positive growth over this period. The results on share returns and share price at book value returns are consistent with the assertion by Harvey and supported by Goetzmann and Jorion who stated that share returns in emerging markets demonstrate positive returns and higher volatility [50,51]. A 10-year time series study of JSE shares indicated the same trend as found in the current study [52]. In a later study, Schultz and Molele calculated a 4.1% mean on total share returns on JSE companies, aligning with the positive nature of shares in emerging markets [4].

EVA (Y2) and TobinQ (Y3) show negative means of -4.1% and -1.2% respectively. EVA relies on Net Operating Profit After Tax less Cost of Capital. A negative mean on EVA returns reflects an adverse profitability environment versus the cost of capital. In a study on EVA and share returns from 2000 to 2013, Sauro and Tafirei found a positive EVA mean of 8.9%, albeit only in the financial services sector [53]. In an earlier study, using a wider sample of 43 JSE companies, Magwegwe found that there were wide differences between the means for share price returns compared to EVA [54]. The findings of this current study are consistent with Magwegwe, although the objectives of the studies are not the same, this indicates the resilience of this result over the years [54].

A negative mean on TobinQ indicates that companies, on average, did not invest in new assets in a manner that would equal or surpass the prior year. This aligns with contemporary empirical findings that more value resides in intangible assets rather than tangible assets [55-57].

A consideration of the Standard Deviations (SD) on the measures of company value indicates that share price has the highest SD of 0.3952 followed by EVA with 0.2865. TobinQ and share price at book value have almost equal SD of 0.1967 and 0.1803 respectively. The high SD on share price returns compared with the other measures shows that share prices are more volatile than the other measures of company value. The maximums and minimums of company value follow the same characteristics as revealed by the SD, following the same ranking.

The Agency capital proxy of directors' remuneration has a positive mean of 2.1% indicating that rewards to directors increased on average, consistent with the trend in increases in the returns on market share price and the share price at book value. Debt to Equity as a proxy of Agency capital has a negative mean implying that the directors (Agents) borrowing discretion is reduced by 1.7% on average. The directors' remuneration present the highest SD (1.0193) compared to the other proxies. This indicates that this measure went through some volatile trends during the period being studied. The same finding also appears on the minimum and maximum for this proxy where these emerge as the highest (11.47) and lowest (-14.37) compared with the other proxies in the study. This status signals that executive directors are compensated based on share price growth - the executives claim that share price growth was a result of their strategies and therefore claim monetary benefits in line with what shareholders gained when share prices gave a positive return [7,58].

The negative mean on debt can be interpreted as a conscious act by directors to keep gearing at stable levels in the face of reduced economic growth as mentioned above [7,59]. Growth in borrowing while the economy is stagnant will result in solvency and liquidity challenges prompting the need to keep debt at the optimum capital structure [22,60].

Diagnostics and Checks for Robustness

This section is used to summarise the diagnostics and check for robustness. This includes tests for collinearity, the Hausman, specification test for heteroscedasticity and Durbin Watson statistic autocorrelation [61].

Correlations

The correlation test measures the collinearity among the dependent variables and independent variables and vice versa [62]. The correlations checked for this study are indicated in Table 3. According to Hair Jr et al. collinearity is not considerable if the coefficients are less than 0.9. Based on that threshold, the coefficients in Table 3 are less than 0.9, therefore, the variables do not have a considerable problem with collinearity [62].

Table 3: Correlations

Variables	Y1	Y2	Y3	Y4	DR	D_E	DU
Y1	1.0000						
Y2	0.0350	1.0000					
Y3	-0,0895***	0,1018***	1.0000				
Y4	-0.0468	0.0176	0,1569***	1.0000			
DR	0.2443***	-0.0087	-0.0142	-0.0294	1.0000		
D_E	0,1519***	-0.0026	-0.0490	-0.0075	0.0336	1.0000	
DU	-0,1985***	-0.0313	0,2147***	0,0891***	-0,0660	-0,1911	1.0000

Source: Calculated for this study

To further confirm that there is no problem of collinearity, a Variance Inflation Factor (VIF) test was conducted. The test was based on the guideline adopted from García et al, who stated that an acceptable VIF should be at a level of 10 or below, any values higher than that are a signal of a severe presence of multi-collinearity with is undesirable [63].

Table 4: Results of VIF on the Variables

Variance Inflation Factors			
Sample: 2010 2020			
Included observations: 1001			
Variable	**Coefficient Variance**	**Uncentred VIF**	**Centred VIF**
C	0.000534	4.146397	NA
LU	0.002109	1.177354	1.172657
DR	0.000127	1.022632	1.022196
DU	0.002240	1.580414	1.436740

Source: Calculated for this study

The results in Table 4 show that the VIF for all the variables used in this study are less than 10, indicating that there is no problem of collinearity among the independent variables.

Other Diagnostic Statistics

Several tests were conducted on the pooled OLS, fixed effects and random effects models. These included the Hausman test for the choice between random and fixed effects, specification test for heteroscedasticity, Durbin Watson statistic was employed to test for autocorrelation and Cross-sectional dependence was tested as well [61].

The first test was to test for heteroscedasticity and several models had a problem with heteroscedasticity. The second test that was carried out was the test of serial correlations using the Durbin Watson statistic and the results showed that all the models had no problem with serial autocorrelation. The third test that was carried out was cross-sectional dependence and most of the models showed some cross-sectional interdependence. This was addressed through the white standard robust errors that were used [64]. The fourth test was the F Test. The model demonstrated moderate R2 of 41% as indicated in Table 4. Previous studies that used the Feltham-Ohlson model recorded R2 values of less than 40% and the results were considered acceptable because of the strength of the p values. Cooray et al. explained that their R2 of 36.1% was due to the accounting recognition lag when returns are used [44]. In this current study returns on accounting data for the variables were used in the regression models. In accounting data, it is observed that factors affecting the current returns may not be the same over the next same period due to the application of accounting principles such as reliability, prudence and accruals [65]. Other studies also used returns on accounting data and obtained R2 of less than 40% [66-68]. In this current study, accounting data is used, and the accounting recognition lag argument would be relevant. The R2 reported in the current study model was complimented by the F statistic whose p-values were all zero. The F statistic showed the elements which are explained by the model and also the elements that explained the error. This assures that there are associations between the dependent and predictor variables and that the models are adequately strong for use [69,70].

The Hausman test was employed to determine whether to select the fixed effects model or the random effects model [61]. The results from the Hausman test are presented but not discussed for brevity as the study focused on the fixed effects model given that the study used purposive sampling [71]. Through the use of EViews panel data software, the FE regression models were run with Cross-section weights and White cross-section standard errors and covariance. To correct for heteroscedasticity and cross-sectional interdependence, the white standard robust errors were used [64].

The panel data was tested for stationarity using the Levin, Lin and Chu unit root test. This test is important to establish if the mean, variance and covariance of the panel data are independent of the time or not. If panel data is non-stationary, there is a risk that the model results will be spurious. The Levin, Lin and Chu assumption was used which states that if $P < 0.05$ then the panel data is stationary. The stationarity test output from Eviews gave p values of zero meaning that the panel data is stationary at level.

Table 5 gives the summary of the FE regression results which will be explained in detail in the next sections.

Table 5: Summary of Results on the Agency Capital Measures

Variable	Y1 Share price return	Y2 EVA	Y3 Tobin Q	Y4 Share price@Book Value
C	0.223848***	-0.066681***	-0.073697***	0.012258
	(0.046825)	(0.008495)	(0.007351)	(0.012344)
DR	0.085208**	-0.002575	0.000332	0.001207
	(0.027791)	(0.011171)	(0.003559)	(0.001913)
D_E	0,101447***	-0,0201	0,031294	0,002896
	(0.030469)	(0.018021)	(0.017767)	(0.009825)
DU	-0.084105*	-0.083744***	0.050908***	-0.012241
	(0.035352)	(0.016368)	(0.009497)	(0.008772)
Observations	1001	1001	1001	1001
R-squared	0.410979	0.159998	0.209429	0.303064
Adjusted R-squared	0.349866	0.072845	0.127406	0.230755
F-statistic	6.724939	1.835837	2.553275	4.191236
Prob (F-statistic)	-	0.000007	0	0
Mean dependent var	0.063305	-0.042347	-0.019698	0.104482
S,D, dependent var	0.441288	0.294563	0.201187	0.198079
Durbin-Watson stat	2.175759	2.157405	1.928142	1.914422
Hausman Stats	0000	4,255144	0000	0000
Heteroskedasticity	529.2103***	347,2809***	402,2108***	603.0972***

Note: Robust Standard errors in parentheses and * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

The following sections discuss each variable in more detail.

Impact of Directors' Remuneration on Company Value

The model results show that there is a statistically significant positive relationship between agency capital and market share price. EVA, TobinQ and share price at book value all give insignificant relationships to DR.

The positive statistically significant relationship found between agency capital and market share price in this study agrees with the model expectations as well as literature and empirical evidence. Directors who actively pursue their mandate of increasing shareholder value will need incentives for them to effectively deliver these expectations [9,10,12,14]. Directors can influence company value through higher dividends, ROE or market share price returns through the release of market information that is attractive to investors. The market share price finding aligns to IR theory which posits that the capitals of the IR framework should create value. Empirical studies that used market share price as a proxy of company value found that it has a positive significant association with agency capital [36,72]. However, Ozkan, also used share price as a proxy of company value and found a positive but insignificant relationship with agency capital. Kirsten and Du Toit found no direct link between directors' remuneration and company value.

EVA, TobinQ and share price at book value all have statistically insignificant relationships with agency capital, contrary to the result on market share price. This shows that under market share price, directors and shareholders have a consensus on the directors' earnings. Shareholders are satisfied with the growth in share value and thus allow the reward to the directors, perhaps ignoring the impact of this on the other stakeholders. This indicates that market share price is not sufficient to measure agency influence on company value but that a longer-term metric such as TobinQ which addresses the interests of the other stakeholders be also considered. South Africa is noted as the most unequal society in the world hence the need for equal treatment of stakeholders becomes pertinent [8]. For purposes of contracting with directors, TobinQ should possibly be used in addition to market share price so that other stakeholders are included and this aligns with stakeholder theory. EVA and share price at book value are historical and may not provide valuable input for future strategic value creation discourse.

Impact of Debt to Equity on Company Value

In the regression equation for agency capital, the Debt to Equity (D/E) is used to measure the impact of directors' influence on company value. Directors influence the capital structure of a company through their ability to tilt the capital structure of the company through the use of debt aggravation [73]. Thriving on the tenets of Modigliani and Miller which state that debt increases firm value, directors may minimise equity market funding in favour of debt [21]. Where directors' compensation is based on share returns, the preference of debt capital over equity may be predisposed by the reward expectation.

The regression results displayed in Table 4 indicate that D/E has a statistically significant impact on the market share price at the $p < 0.001$ level. Insignificant relationships are shown if EVA, TobinQ and share price at book value are used as the dependent variables, meaning that, for the Agency capital model, these cannot be used as proxies of company value when D/E is the independent variable. The impact of Covid-19, captured through DU, shows negative results for all the company value proxies except for TobinQ.

The results obtained in the Agency regression model are in line with the Modigliani and Miller theory and the later clarification by Miller in his work on "Debt and Taxes" [20,21]. Miller improved Modigliani and Miller's proposition by stating that debt concentration will increase the value of the company but only to a certain optimum level [20,21]. Debt beyond the optimum level opens the company to bankruptcy and liquidity risks.

The study conducted by Hull indicated that Australian energy companies used different debt levels to maximise company values [74]. Ratshikuni studied 97 JSE-listed companies with panel data of 22 years and concluded that companies used D/E to steer company value [75]. Previous studies corroborate the findings of this current study where a significant positive impact of D/E on company value is recorded [76,77]. These previous studies were, however, not done to develop a model for Integrated Reporting and their findings cannot be used for that purpose, hence the need for this current study.

Karani investigated the impact of D/E on company values for firms listed on the Nairobi Stock Exchange and found that there was no evidence of D/E influencing share price returns [78]. This result coincides with the findings of Zeitun and Tian and Onaolapo and Kajola who also concluded no relationship between D/E and company value [79,80]. These findings may be due to different market profiles whereas the JSE is arguably considered more mature than the Jordanian, Kenyan and Nigerian markets where the studies were done.

This Study's Contribution to The Body of Knowledge

From the results presented on Directors' remuneration, it is important to note that this study has found that this metric is robust as a measure of the impact of Agency capital on company value. This variable retained its explanatory power over the years from earlier studies [36,71]. This means that Directors' remuneration continues to sustain its influence on market share price across different economic cycles. During the years of high economic performance in South Africa from 1994 to 2007 and the later years of 2008 to 2020 when the economy took a downturn, Directors' remuneration has remained to have a positive impact on the market share price. This means that Directors' remuneration is a plausible measure of the impact of Agents on the market share price.

The Debt-to-Equity ratio has exhibited a strong relationship to the market share price. This result is consistent with classical theory and IR theory where debt finance is a strategy to increase company value. The robustness of Debt to Equity is confirmed by it also having a positive significant relationship to market share price under the stakeholder model.

The regression equation used in this study, through the results obtained, can be used to measure the impact of Agency capital on company value. This fulfils the research question and objective of the study. The findings dispel the null hypothesis since the study has found support that Agency capital has an impact of company value with differing levels across the proxies chosen.

Recommendations

It is recommended that IR use Directors' remuneration to measure the impact of directors' influence on company value. The finding is critical in corporate governance as it lays a foundation for directors' key performance measures. It is credible to state that companies in South Africa consider directors in preparing stakeholder maps. The VRF, standard setters, academics and IR reporters can use Directors' remuneration as a proxy for directors' influence on company value, especially market share price. Remuneration committees are urged to set directors' key performance indicators using the directors' value creation on the multiple capital basis and not only on financial metrics. The multiple capitals approach provides an opportunity for companies to make directors consider other stakeholders in the process of company value creation.

The results on D/E indicate that directors of companies in South Africa can use debt to raise the capital required for their operations. Optimality of the D/E is supposed to be observed to prevent unsustainable debt aggravation. IR reporters, academics, finance strategists and standard setters are encouraged to consider Debt to Equity as a proxy of directors' influence on company value when profiling factors that impact company value creation.

Conclusion

The independent variables of the Agency model, i.e., Directors' Remuneration and Debt to Equity, both have a statistically significant positive impact on company value thereby assisting in answering the research question as well as achieving the research objective. The Null hypothesis is therefore rejected. Based on the results of this study Directors' Remuneration and Debt to Equity are plausible metrics for measuring the impact of the value creation or otherwise of Agency capital and the regression equation used in the study can be used as a model to measure the impact of Agency capital on company value.

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