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Institutional shareholders' monitoring and control over corporate decisions: Evidence from JSE listed companies

by

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- Oloyede Obagbuwa, Farai Kwenda and Gbenga Wilfred Akinola (2021). Monitoring intensity, investment inefficiency and institutional shareholders: Evidence from JSE listed companies in South Africa. Investment Management and Financial Innovations, 18(3), 1-15.

Articles Already Accepted for Publication

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Dedication

This work is dedicated to God Almighty and to my wife, Dr. Ibidun Christiana Obagbuwa, who held forth the homefront to enable me focus on my research.

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Abstract

This thesis seeks to intensify our understanding of the responsibility of the institutional shareholders in corporate governance. Whereas several studies have investigated the efficacy of institutional shareholders' monitoring and have considered the diversity of their investment, there is a dearth of research on the effect of limited attention caused by distraction on their monitoring intensity and particularly on the reaction of the corporate executives regarding corporate decisions to the temporarily relaxed monitoring intensity in emerging market space. As a result of a shift in institutional shareholders' attention occasioned by exogenous shocks to an unrelated firm in their portfolios, the intensity of their monitoring of corporate activities dropped. The executives make decisions beneficial to them and harmful to institutional shareholders' interest and the firm's value. The study considers corporate decisions on executive remuneration, earnings management, investment inefficiency and mergers and acquisitions (M&A). These decisions are crucial to the growth of firms and return to institutional shareholders. However, due to agency problems, corporate executives' decisions on these activities tend to be for personal interest at the detriment of institutional shareholders' interest and firm value. Effective institutional shareholders' monitoring seems to be the antidote against opportunistic executives. But the intensity of their monitoring is affected by distraction caused by the external shocks to another firm in their portfolios. When this distraction occurs, the executives maximise the space to make decisions on their remuneration, manipulate earnings, invest in the unprofitable venture, and uncontrolled acquisition sprees that is of private benefits. The first empirical analysis in this thesis examines the impact of institutional shareholders' distraction on executive remuneration. The study shows that when shareholders are distracted and their monitoring intensity drops, the executives are inclined to manipulate their remuneration without considering institutional shareholders' interest and firm performance. The second empirical analysis examines the relationship between the relaxed institutional shareholders' monitoring intensity and executive decision on earnings management. The study reveals that the executives tend to manipulate both the discretional accruals earnings and real activities earnings for personal interest. The third empirical analysis indicated that

executives could invest in projects with negative net present value (NPV) when the institutional shareholders monitoring is not sufficient. The final empirical research relates to the intensity of institutional shareholders' monitoring to M&A executive decisions. The finding reveals that the executives could engage in an uncontrolled acquisitions spree of personal interest, jeopardise institutional shareholder's investment and fail to improve the firm's value. The overall findings indicated that when institutional shareholders' attention is shifted, their monitoring intensity drops. The executives engage in corporate decisions that will not be in the shareholders' best interest and promote the firm's growth. These findings support the hypothesis that institutional shareholders monitoring intensity has a positive influence on corporate decisions. This insight has an implication for stakeholders and value-creating corporate governance mechanism.

The study employed the more robust Generalised Method of Moments (Sys-GMM) estimation approach to analyse the data collected for firms listed on the Johannesburg Stock Exchange (JSE) covering the period 2004-2019.

Chapter 1

1.1 Introduction

The involvement of institutional shareholders in corporate finance has become a crucial issue that has been open to comprehensive research in the corporate finance literature. Institutional shareholders have the skills, resources and enormous incentives to monitor the managers' corporate decisions to prevent their exploitative behaviour. It is improbable that individual shareholders have the power to influence corporate decisions; individuals find it difficult to organise themselves into active shareholders except when firms' actions become extensively publicised (Yin, 2018a). Therefore, institutional shareholders become the focal point when investigating the effective relationship between shareholders and corporate decisions. However, despite the institutions' involvement, it is difficult for one shareholder to control the corporate policy directions. It will take effective shareholding, which necessitates many institutions to become aware of possible ineffective management and then intervene. The firm's effective monitoring enhances shareholders' value, but at a cost. So, before institutional shareholders decide on monitoring, they consider the trade-off between monitoring costs and benefits. Institutional shareholders are not likely to monitor firms in their portfolio with the same intensity for two crucial reasons. First, institutional shareholders are heterogeneous in their investment styles, horizons and fiduciary duties (Bushee, 1998; Chen et al., 2007; Schmidt and Fahlenbrach, 2017a). Secondly, institutional shareholders' resources, including their time, are limited; hence, not allocating time equally across the firms in their portfolio (Kempf et al., 2017). Several studies have concentrated on the heterogeneity of the institutional shareholders and their impact on their monitoring intensity. Still, little attention had been paid to the limitation of their attention regarding equal monitoring of firms in their portfolios. This thesis aims to enhance understanding of the determination of institutional shareholders' monitoring intensity within their portfolios.

1.2 Background of the study

1.2.1 Institutional Shareholders' Incentive to Monitor

Institutional shareholders are organisations; large investors that invest on behalf of their members. They include the following: superannuation and pension funds, insurance companies (life and non-life), investment trusts (including unit trusts), financial institutions (including banks and finance companies, building societies and credit cooperatives) and investment companies (Survé, 2009; Koh, 2003). They are essential in the capital market due to their large holding of shares. The market value of their investment in the United States, British and South African stocks is vast and significant (Bhikha, 2014; Blume and Keim, 2012; Thomas, 2017; Ward et al., 2017). 80% of the US stock market's equity market is held by institutional investors (Intractive, 2017); institutional investors in FTSE 100 in the UK account for 62% of total ownership (Segerstrom, 2020). Institutional shareholders account for the large majority of investors on the Johannesburg Stock Exchange (JSE) (Zhang, 2016) and they mostly include pension and provident funds, collective investment schemes(CIS) and insurance companies (Nhlapo and Gumata, 2011; Sibanda and Holden, 2014). The size and significance of institutional shareholders have grown over time. This category of investors constitutes about 60% to 80% of assets managers records in South Africa (Bhikha, 2014). The assets under management (AUM) had grown from $168.9 billion in December 2018 to $173.5 billion in November 2019 (Refinitiv, 2019). According to Gompers and Metrick (2001), institutional shareholders' continuous growth over 40 years ago had ranked them as the most significant public firms' shareholders. Therefore, in comparison to individual shareholders, they have the incentives to closely engage in corporate decisions to align with firm performance and value creation.

Institutional shareholders have a significant positive influence on corporate decisions (Bird and Karolyi, 2016; Boone and White, 2015b; Crane et al., 2016; Schmidt and Fahlenbrach, 2017b; Ward et al., 2017). However, the recent accounting scandals in South Africa; Steinhoff International 2017, Tongaat Hulett 2018, VBS Bank 2018, EOH Holdings 2018, and Sasol LCCP 2019 generate a debate on the effectiveness of institutional shareholder's monitoring role on JSE listed firms. It is expected that the

growth of institutional shareholders vis a vis the volume of asset under management they controlled will guarantee effective monitoring of corporate decisions to ensure firm performance and growth. However, this seems not the case and the question now is why institutional shareholders' monitoring is not effective enough to prevent the recent accounting scandals that occurred in firms listed on the JSE? Will it be that they do not have all the time to monitor their investment? Otherwise, are the distracted? This study intends to enhance our understanding of the effects of institutional shareholders' monitoring on corporate decisions such as mergers and acquisitions (M&A), corporate investment, earnings management and chief executive officer (CEO) remuneration to stimulate effective strategies that will curtain executives excess such as devaluing acquisitions, investment inefficiency, excessive remuneration and false profitability which are major elements resulting in accounting scandals. These excesses led to minimum firm performance and reduced shareholders' wealth. It will specifically engage the concept of shareholder distraction which is tantamount to slack control proposed by Kempf et al. (2016) to determine if institutional shareholders' time is limited by distracting events in another firm within their portfolio and consequently, the executives take decisions for personal benefits.

The firm's decisions on investment, M&A, earnings management and CEO remuneration should lead to the firm's future growth (Garel et al., 2018; Kempf et al., 2017; Sheikh et al., 2018; Ward et al., 2017). However, following agency theory and the disparity of interest and objectives of shareholders and managers, ownership and control segregation will hurt firm performance. Company's executive decisions may result in either over or underinvestment (Aghion et al., 2013; Bertrand and Mullainathan, 2003; Jensen and Meckling, 1976; Richardson, 2006; Shleifer and Vishny, 1997). According to Lennox et al. (2018), Cai and Zhang (2011) and Titman et al. (2004). Over-investment can be described as the investment expenditure above required to maintain the asset in place and financing anticipated new investments with positive NPVs (Richardson, 2006). This depletes the firm cash flow and reduces earnings. Under-investment occurs when a firm faces financial constraints and because of agency problems, suitable projects were jettisoned for unprofitable ones. Both over and under-investment are prompted by the conflict of interest between managers and institutional shareholders and have a long-term effect on firm performance (Pellicani and Kalatzis, 2019). Furthermore, the corporate executive

decisions on earnings management distort the company's financial information (Dechow et al., 2010) and affect its long-run performance (Cohen and Zarowin, 2010; Gunny, 2010; Kim and Sohn, 2013; Kothari et al., 2016). Earnings management takes the form of either accruals management (appropriating future earnings by accelerating revenues or decelerating expenses) to enhance current profits (Dechow et al., 1995; Garel et al., 2018; Jones, 1991; Kothari et al., 2005) or manipulating real activities (using price discounts to increase sales in the interim, achieve lower cost of goods sold by overproduction, and reduced unplanned expenditures to enhance reported profits (Cohen and Zarowin, 2010; Garel et al., 2018; Mizik and Jacobson, 2007; Roychowdhury, 2006).

Similarly, when institutional shareholders are distracted, their attention is shifted due to shocks in their portfolios' unrelated firm. M&A decisions by managers are usually centred on value-destroying ones (Kempf et al., 2017). M&A activities happen regularly and may have a considerable impact on the firm's values. Research study implies that the merger's decision can either be useful to gain synergy or, for a corrupt purpose, which is agency costs (Qiu, 2008). Both the theoretical and empirical literature states that managers have the incentives to motivate M&A to the detriment of the shareholders' wealth (Agrawal and Mandelker, 1987; Avery et al., 1998; Morck et al., 1990; Roll, 1986; Shleifer and Vishny, 1989). Qiu (2008) documents that not all M&A, both around the announcement and the long run are gainful to the bidder shareholders. Kempf et al. (2017) found that bidder announcement returns dropped by 33% on average. The bidder and target announcement's combined returns become lower when institutional shareholders are distracted.

Additionally, many researchers have investigated the connection between executive compensation and firm values and they concluded that it leads to the abatement of agency problems (Hall and Liebman, 1998; Kaplan, 1994; Murphy, 1999; Tulepova, 2017; Zhou, 2000). Other studies documents that executive remuneration has no effects on firm performance (Conyon et al., 1995; Conyon and Peck, 1998; Gregg et al., 1993; Tulepova, 2017). For example, Tulepova (2017) notes that executive remuneration is still high despite the poor firm performance. This becomes part of the reason why executive remuneration remains debatable (Croci et al., 2012). Since the evidence from the literature shows that executive remuneration does not reduce or

eliminate agency problems, it does not serve as an incentive for the executives to pursue long-run shareholders' interest. Institutional shareholders must intensify their monitoring responsibility to repress the executive opportunism and align their interest with that of shareholders (Ozkan, 2007; Sheikh et al., 2018; Tulepova, 2017). Therefore, understanding the effects of institutional shareholders monitoring on corporate decisions, especially those that induce irregularities in the firms' financial position becomes imperative.

Fich et al. (2015) states that the inefficient investment, earnings management, diversifying deals and value-destroying acquisitions created by agency problems could be overcome through direct monitoring by institutional shareholders as submitted by Shleifer and Vishny (1986a). The individual shareholder cannot monitor managers because the incentives to do that are weak (Agarwal et al., 2014). No individual shareholder has large incentive to commit resources to ensure that agents act in his principal's interest. Grossman and Hart (1980) regard the lack of trust between the principal (shareholder) and the agent (manager) as free-rider problems and institutional shareholders are the solution to the free-rider problem (Shleifer and Vishny, 1986b). The free-rider problem does not occur with institutional shareholders since they enjoy most of the benefits connected to their monitoring efforts. Agarwal et al. (2014) conclude that increased institutional shareholders' monitoring would improve firm performance. Institutional shareholders have a more significant influence. Their investment decisions and how they carry out their responsibilities either strengthen or impair good governance in the companies where they invested (Directors, 2016).

Moreover, institutional investors must perform their fiduciary duty to the benefits of retirement funds members and other beneficiaries, informing the necessity for the effective discharge of their monitoring responsibility (Directors, 2016). Institutional shareholder monitoring becomes necessary to sustain and guide the worth of information obtained at the market and the business's appropriate management. Because of the increased level of risk inherent in evaluating firms' results, institutional shareholders are prompt to either demand more detailed information regularly (inclusive of non-financial information) or ask questions on the reasonability of strategies adopted and decisions at the earlier stages (Zogning, 2017). Liu et al.

(2017) states that when there is no effective institutional shareholders' monitoring, they will be exposed to serious agency problems and suffer significant losses.

The effect of institutional shareholders on corporate decisions have been broadly substantiated in the literature. For instance, active block-purchases precede growth in the firm value measured in stock returns and operations performance (Bethel et al., 1998; Ward et al., 2018). Kang and Shivdasani (1995) found that institutional investors' growth leads to higher managerial average turnover, indicating that underperforming managers are pressured to perform. Bertrand and Mullainathan (2001) state that institutional shareholders change remuneration plans to compensate managers for effective and efficient performance. However, despite the submission of large institutional shareholders' monitoring effect, other studies show mixed results. For example, Holderness and Sheehan (1988) found that large block-holders did not have any difference regarding investment value, Tobin's Q leverage and accounting returns compared with similar diffused ownership firms. McConnell and Servaes (1990); Mehran (1995) found no relationship between institutional block-holders and firm performance. In the same vein, Lemmon and Lins (2003) investigated 800 publicly traded firms in eight Asian countries and found a positive connection between large shareholding and firm value. Claessens et al. (2002) examined 1301 public companies and concluded that when extensive shareholder control rights outstrip its cashflow ownership, growth in the shareholding results in lower firm value.

Meanwhile, Cronqvist and Fahlenbrach (2008), in explaining the mixed conclusions, argued that the heterogeneous nature of institutional shareholders accounts for different results. For instance, institutional shareholders such as pension funds and corporations record a positive impact on a firm's performance. Clifford and Lindsey (2016) equally report the same findings. They conclude that only institutional shareholders that actively engage the management improve the firm value .

Garel et al. (2018) reveal that institutional shareholders' monitoring intensity could be subjected to attention restraints. This is corroborated by Kempf et al. (2017) in their study that Institutional shareholders cannot pay equal attention to their investment simultaneously as the intensity of monitoring their investments across firms drops due to attention restraints. Attention is considered a scarce resource. According to Kempf et al. (2017), consumers will not compare all viable products when making choices;

professors hardly pay the same attention to all the latest academic journals in their area of research. Moreover, investment managers cannot direct all attention to all securities they hold or could hold. Instead, they focus on prominent events such as products on the news, a journal article published by top-level authors and securities in the industries that are in crises or remarkably doing well. Wang (2017) argues that institutional shareholders neither pay attention to all information available nor exert information available to make reasonable investment decisions, thereby concluding that they have bounded attention. According to Baker and Wurgler (2012), studies on the impact of limited attention on corporate decisions is limited. Therefore, this study seeks to fill this gap by considering the relationship between managerial decisions and extraneous variant in the intensity of control by institutional shareholders occasioned by the time-variation in allocating attention across the securities they hold in their portfolio. The study will utilise the Johannesburg Stock Exchange (JSE) institutional shareholders data from 2004 to 2019 to show that managers seek to maximise personal interest when the shareholders lose control caused by limited attention, concerning corporate decisions.

1.3 Statement of the problem

The subject of institutional shareholders and its role in influencing corporate decisions through active monitoring has been conversed in the context of developed markets for a while without reaching a consensus conclusion. However, research studies that use evidence from emerging markets such as South Africa are limited (Zhang, 2016).

The pre-2008 corporation accounting scandal crisis and after the 2008 global financial crisis, which led to the collapse of high-profile companies, resulted in the accusation of institutional shareholders failing to monitor their investments (Mallin, 2012; O'Dwyer, 2014). The financial scandals distressfully affected shareholders' confidence across the world and a sincere need to pop up for its restoration (Jabeen and Ali, 2017). Considerable attention was put on the role of institutional shareholders such as pension funds, insurance companies and mutual funds to ensure that the companies where they invest function under the best corporate governance structure and practices (Jabeen and Ali, 2017; Mallin, 2012). Institutional shareholders were encouraged to exercise their influence on company management to enforce due

diligence. This vital role of monitoring is being played in many markets today, especially in the developed markets. It is believed to be gaining acceptance in the developing markets across the world (Jabeen and Ali, 2017). With reforms to various corporate governance codes (UK corporate governance code, US corporate governance code and King's code of corporate governance in South Africa), which focus on the monitoring role of an institutional shareholder, the recurring phenomenon of scandals resulting from corporate governance failure seems unabated. The aforementioned scandals raise the question of what would have been responsible for the inability of improved corporate governance to curb the scandals. The Steinhoff International scandal that occurred in 2017 was attributed mainly to the failure of the institutional shareholders and consequentially, failure of corporate governance (Rossouw, 2017; Rossouw and Styan, 2019). Rossouw (2017) states that the Steinhoff scandal is quite distressing because it indicates a serious gap in the control mechanisms in the investment management space. It is expected that, with a good working structure of corporate governance, a scandal of this enormity should not have happened. In like manner, Naudé et al. (2018). consider the Steinhoff scandal as the most significant corporate fraud case in business history in South Africa. Therefore, the question is, Why is institutional shareholders' monitoring of firms not practical enough to curb the executive manipulations? Or is it because of attention constraints occasioned by distraction, which loosen the monitoring intensity?.

In light of this, this study will use one of the determinants of institutional monitoring intensity in the investee companies which is limited attention (Kempf et al., 2017), to examine the effects of limited attention of institutional shareholders on corporate decisions such as earnings management, merger and acquisitions, firm investment efficiency and CEO remuneration in companies listed on the JSE.

1.4 The objective of the study

This study's main aim is to determine the effect of attention on institutional shareholders' monitoring intensity on corporate decisions. This will be achieved by the four specific objectives stated below:

1.4.1 Specific objectives.

1. To examine the relationship between the shareholder's distraction and the firm's investment efficiency.
2. To investigate the connection between shareholder's distraction and CEO remuneration.
3. To determine the relationship between shareholder's distraction and earnings management by company executives.
4. To find the relationship between shareholder's distraction and merger and acquisition activities of companies.

1.5 Significance of the study

This study will provide an understanding of how a shift in institutional shareholders' attention, caused by distraction affects their monitoring intensity and hence stimulates strategies for effective monitoring for firm value creation purposes. This will engender the following:

1. Corporate governance will be strenghtened to enhance long-run firm value. Institutional shareholder's wealth will be maximised for the benefits of its members.
2. Corporate executives will utilise the firm's resources maximally and efficiently for the growth of the company and consequently enjoy an increase in performance based compensation.
3. When there is stability and growth in the industrial sector of the economy, foreign investments will be attracted. The economy will boom and experience the alignment of interest of individuals, institutions and society at large hence poverty, unemployment and inequality will be addressed.

1.6 Contributions to the literature

Firstly, this study will contribute to the literature on behavioural finance. The study will directly address open questions emphasised in the survey conducted by Baker and Wurgler (2011): What is the impact of attention on corporate finance? This will use

empirical evidence from listed companies on the JSE. Secondly, it will expand the empirical literature on behavioural finance on limited attention and distraction. Previous empirical study (Barber and Odean (2008); Dellavigna and Pollet (2009); Hirshleifer et al. (2009)) and theoretical work (Gabaix (2006); Hong and Stein (1999); Peng and Xiong (2006)) centred on individual shareholders and stock prices, limited work exit to-date that examine the effects of attention on institutional shareholders monitoring role. The most recent work on the impact of attention on the institutional shareholder is by Kempf et al. (2016) which uses data from NYSE, AMEX and NASDAQ (developed market) for analysis, this study will extend the work by using data from listed companies on the JSE (developing market) to analyse the effect of attention on institutional shareholders monitoring role as it relates to corporate decisions to include firm investment management which is not a feature in her study. Thirdly, the study of institutional shareholders monitoring intensity, in listed companies in JSE (developing market), to the best of the researcher's knowledge, is limited as compared to studies in a developed market like NYSE, making this study the first to examine the effect of institutional shareholders monitoring intensity using distracted measure on corporate decisions such as merger and acquisitions, earnings management, firm investment efficiency and CEO remuneration taking evidence from JSE listed companies. Furthermore, the study used a more robust dynamic panel data model (Sys GMM) in our analysis which is unique among related studies. Most of the existing studies used static panel data models like fixed effects and random effects. Static models cannot deal with endogeneity issues; consequently, results based on static models are prone to estimation problems.

1.7 The JSE securities exchange

This study makes use of data taken from companies listed on the JSE securities exchange, South Africa. It is the only stock market in the country and it was established in 1887 when gold was discovered in Witwatersrand to facilitate the funding of gold mining operations. Through the years, the JSE had expanded to be one of the largest securities exchanges in the world. More so, it has become one of the main fundable universal stock markets. It is rated as the most prominent securities market in Africa and one of the top 20 securities exchanges worldwide with regard to market

capitalisation (Firer, 2012). In the world of emerging markets, the JSE securities exchange is the oldest and the largest, both in the union of Brasil, Russia, India, China and South Africa (BRICS) and in other countries classified as emerging markets. In 2006. JSE was demutualised and listed on its exchange, leading to the changing of its name from JSE to JSE Securities Exchange (JSE). The exchange currently manages its operations using top-class technology.

1.8 Structure of the thesis

This study consists of seven main chapters and is organised as follows. The first chapter presents the study's introduction and background, the problem statement, the central and specific objectives, research problems, research hypothesis, significance of the study, contributions to the literature and a brief description of JSE Securities Exchange. Chapter two reviews the literature on both theoretical and empirical conceptual issues relating to the study.

The third, fouth, fifth and sixth chapters presents the relationship between limited attention and executive remuneration, limited attention and earnings management, limited attention and investment inefficiency and limited attention and M&A respectively. The chapters discuss the methodology, analysis and findings.

The seventh and last section presents the conclusion of the study. It summarises the main findings, underlines the significant conclusions reached from the study, and makes recommendations for corporate managers and governance in South Africa. The conclusion proposed suggestions on continuous monitoring of corporate executives despite distraction possibilities.

1.9 Chapter summary

Chapter 1 presented the introduction and background of the study. The concept of limited attention and its effect on institutional shareholders' monitoring intensity was reviewed in depth. The study considers this concept using firms listed on JSE to determine its impact on selected corporate decisions such as investment efficiency, CEO remuneration, earnings management, and M&A. The problem statement, the

study's objectives, hypothesis, significance, contributions to knowledge and a brief description of the JSE securities exchange were also covered in chapter 1.
The following chapter, chapter 2, discusses the theoretical and empirical conceptual issues related to the study.

Chapter 2

2.1 Literature review

2.2 Introduction

The evolution of institutional shareholders' investment is discussed in this chapter. We performed a top-level literature review to better comprehend the institutional shareholders' activism impact on corporate decisions which culminate in improved corporate governance challenges faced by their investee companies, as well as the relationship between the two parties. The first section of the chapter discusses the theoretical frameworks that conceptualise the relationship between institutional shareholders (owner) and the corporate manager (employee). While the second section discusses the various relevant studies on the effectiveness of institutional shareholders' activeness as relates to their monitoring of corporate managers' decision making.

2.2.1 Theoretical background:

2.2.1.1 Agency theory

The theoretical framework of this study will be based on the fundamentals of agency theory. Agency theory provides a conceptual illustration of the relationship between one party (the principal) entrusting responsibility to another party (the agent). It intends to describe global organisational behaviours by emphasising the relationship between a company's management as the agent and the shareholders as the principal Zogning (2017).

According to Jensen and Meckling (1976), an agency relationship is a contract whereby one or a group of persons referred to as the principal employ another person called the agent to perform some duties on behalf of them, granting the agent some

decision-making power. Naturally, due to the principal and agent's divergent personal interests, the agency relationship becomes problematic. This divergence of interest between the principal and the managers, which is occasioned by the separation of ownership from control, results in the agency cost (Agarwal et al., 2014). Agency costs eventuate because of the suspicion between principal and agent. Since it is not possible to be sure, without any cost, that agent will make the principal's best decisions, both the principal and the agent assume monitoring and obligation costs (Zogning, 2017).

Jensen and Meckling (1976) state that agency costs are in three categories: monitoring and incentive costs incurred by the principal to restrict and align the agent's behaviour, respectively, motivation cost incurred by the agent to earn the principal's trust, and the opportunity cost, also referred to as residual cost, which arises due to loss of utility suffered by the principal as a result of a conflict of interest. Following Lan and Heracleous (2010), agency cost and ownership structure by Jenson and Meckling had helped to establish agency theory as a dominant theoretical framework for corporate governance where shareholders become main stakeholders. Moreover, there exist two conjectures of agency theory: asymmetric information and opportunism. Agency theory proposes that both the agent and the principal seek to make the most of their service and bring about a conflict of interest. This means that an agent might prosecute a scheme contrary to the principal's interest. This is referred to as opportunism. However, when the principal and the agent have different access to information, it is called asymmetry information. The agent (executive) accesses more information that has to do with the firm and is much aware of the decisions to be taken compared to the principal (institutional shareholder) who cannot control such decisions and monitor executives' corporate activities. Consequently, the agent capitalises on the information asymmetry to the detriment of the principal's goal (Tulepova, 2017).

Therefore, it is a fundamental outline to comprehend the institutional shareholder's role in the modern corporation. The shareholders invest their money in the company to maximise returns. Due to information asymmetry, managers are most likely to act with prejudice for the shareholder's benefits for self-interest purposes (Bhikha, 2014) expediently. The self-centered manager will always work against the most interest of the shareholders. The implied manager's failure to maximise shareholders' wealth but instead aspire to maximise their benefits has proven a fundamental notion in the corporate governance research literature (Ward et al., 2018). Zogning (2017) states that agency theory had become researchers' increasingly used theoretical viewpoint when it comes to leadership behaviour's analysis in big private and public organisations.

2.2.1.2 Managerial Power Theory

Managerial power theory is defined as the manager's ability to impress their desires regarding remuneration decisions concluded either by the board of directors or the remuneration committee (Chen et al., 2011). Because of the scandals associated with the corporate governance in late 2001 and even after the 2008 financial crises, for instance, the Enron, Worldcom, Satyam, and Toshiba crises, the group of economics and law professors who contradict the optimised contracting theory, champion a distinct model called managerial power theory (Schneider, 2013). They submit that the managerial power theory plays an essential role in defining executive remuneration. The paradigm is of greater coherence theoretically and empirically concerning the link between shareholders and senior executives. The advocate of the managerial power theory shows that managers' control over pay structure has caused significant distortions, costly to both the shareholders and the economy (Schneider, 2013). It has also weakened the motivation to enhance shareholder value and encourages actions that negatively affect the firm value in the long run.

One of the fundamental effects of managerial power theory is that most chief executives earn more than the maximal shareholder value and market efficiency prescribed. Therefore, top executive remuneration exacerbates agency problems instead of reducing them. One of the critical areas in which this is manifested is stock options for the chief executives. The stock options structure enables the executives to

exercise the right immediately. It also allows them to benefit from the increase in the face value above the grant-date market price. They are equally free to singlehandedly relax their equity incentives and dispose of the underlying assets. They benefit from this because of their access to insider information. All these privileges provide an avenue for the executives to manipulate earnings and misreport financials. The board of directors could not influence any of the above decisions because the independent directors enjoy the CEOs' economic and non-economic inducements. This includes setting the director's remuneration, reappointing the board, and engaging the director's firm for business purposes (Schneider, 2013). However, the managerial power theory advocates recommended ways in which executives' pay can be regulated to promote shareholder value. First, the exercise right of the stock options should be indexed. Secondly, the right to exercise the options and power to sell the underlying assets should be separated. Thirdly, executive bonuses must be tied to long-term firm performance. Fourthly, excessive severance packages must be avoided, especially when linked with their removal due to bad performance (Schneider, 2013). This theory is quite relevant to this study because it highlights agency theory, which the researcher wants to prove.

2.3 Empirical review

2.3.1 Institutional shareholders

The dominant role of the institutional shareholders in the financial market has been on the increase. On average, they own over 60% of firms' total outstanding shares (Yin, 2018a; Zeng, 2016). In all United States publicly traded equity, institutional shareholders held more than half (Qiu, 2008). Moreso, institutional shareholders, had 75% of British equities, of which one-third of it was owned by pension funds (Bhikha, 2014). Bhikha (2014) and Cadbury (1999) see the global, large and growing presence of institutional shareholders as the propeller of future corporate governance. The growing institutional shareholding is expected to propel shareholder activism and engagement to monitor corporate management in the developing and constituted markets. Bhikha (2014) states that institutional shareholders decided to engage in

corporate governance to monitor their investee corporations to protect their interests because of the difficulties in disposing of investments within the mandate limits. Jabeen and Ali (2017) and Mallin (2012) document that prominent attention is on the institutional shareholders' role to ensure that investee companies operate under best governance practices and have a proper corporate governance structure.

Responsible institutional shareholders to create long-run firm value should demand accountability from the managers and put in place suitable controls and incentives that will ensure alignment of both parties (shareholders and managers) conflict of interest that agency theory postulates. Management, such as hiring an appropriately experienced and independent non-executive as board chairman and long-term performance incentives, like share options, must be paramount in the mind of the institutional shareholders (Harber, 2017). However, this desired corporate governance standard has not come to reality. One of the main reasons for this is the institutional shareholders' indifferent attitude towards executive monitoring and accountability. Institutional shareholders account for the largest shareholding in listed companies both in developed and emerging economies. They control the majority of the firm's equity security market and, therefore, possess the capability to ameliorate the problem of executive opportunism to enhance their investment (Harber, 2017)

United Kingdom stewardship code states that to protect and improve the value of institutional shareholders' investment to the benefit of the ultimate beneficiaries, they should, among other responsibilities, monitor their investee companies (FRC, 2012). In specific terms, they should do the following:

- Be acquainted with the company's performance;
- Be acquainted with both internal and external development of the company that propel a company's risk and value;
- Be convinced of the effectiveness of the company's leadership;
- Be convinced of the adherence of the company's board and committees to the dictate of the UK governance code by having meetings with the chairman and other board members;
- Must examine the quality of the company's reports and reporting; and
- Where suitable and feasible, must attend the general meetings of companies where they have a significant shareholding (FRC, 2012).

2.3.2 Effect of Institutional Shareholders' Monitoring on Corporate Decisions

The effect of institutional shareholders monitoring on corporate decisions has been broadly substantiated in the literature. For instance, active block-purchases precede growth in the firm value measured in stock returns and operations performance (Bethel et al., 1998; Yin, 2018a). Kang and Shivdasani (1995) discovered that growth institutional investors lead to higher managerial average turnover, indicating that underperforming managers are put under pressure to perform. Furthermore, Bertrand and Mullainathan (2001) state that institutional shareholder changes remuneration plans to compensate managers for effective and efficient performance. Strickland et al. (1996) established a positive link between institutional shareholders' settlement negotiation in a firm and its market reaction. However, Wahal (1996), Del Guercio and Tran (2012), and Gillan and Starks (2000) discovered little proof regarding any improvement to the shareholder's wealth for firms managed by pension funds. Karpoff et al. (1996) also document an insignificant difference concerning shareholder's wealth for firms that receive institutional management proposals.

Furthermore, McConnell and Servaes (1990) found a positive connection between the proportion of shares owned by institutional shareholders and Tobin's Q. Similarly, Gompers and Metrick (2001) discovered that growing demand by institutional shareholders for big firms stocks results in price rise, but, Woidtke (2002) reiterates that the value of the firm only relates to individual pension funds. Additionally, studies have detected that institutional shareholders influence amendments to antitakeover and research and development investment decisions (Agrawal et al., 1992; Chen et al., 2005). Likewise, Hartzell and Starks (2003) show that the presence of institutional shareholders enhances the incentive design of executive remuneration. Qiu (2006a) discovered that institutional shareholders of big pension funds become involved in small acquisition activities, but their presence positively relates to long-run post-merger performance.

In a nutshell, despite the submission of large institutional shareholders' monitoring effect, other studies show mixed results. Holderness and Sheehan (1988) discovered

that large block-holders did not have any difference as regards investment value, Tobin's Q leverage, and accounting returns compared with similar diffused ownership firms. Also, no relationship was found by McConnell and Servaes (1990) and Mehran (1995) between institutional block-holders and firm performance. Lemmon and Lins (2003) investigated 800 publicly traded firms in eight Asian countries in the same vein. They found that there is a positive connection between large share-holding and firm value. Simultaneously, Claessens et al. (2002) examined 1301 public companies and concluded that when large shareholder control rights outstrip its cash-flow ownership, growth in the shareholding results in lower firm value.

Meanwhile, Cronqvist and Fahlenbrach (2008) in explaining the mixed conclusions, argued that the heterogeneous nature of institutional shareholders accounts for different results. For instance, institutional shareholders such as pension funds and corporations record a positive impact on a firm's performance. Clifford and Lindsey (2016) report the same findings. They conclude that only institutional shareholders that actively engage management improve the firm value (Yin, 2018a).

2.3.3 Institutional Shareholder Monitoring Cost

Even though institutional shareholder monitoring is assumed to be the solution to agency problems, it is associated with costs. The first type of cost is the incentive for managers to restrict and align their behaviour. This incentive promotes the execution of value-maximising projects. Nonetheless, due to the manager's belief that a personal benefit-enhancing project will not be sanctioned, institutional shareholder monitoring decreases the manager's motivation to vigorously pursue new investment opportunities (Burkart et al., 1997; Yin, 2018a). Edmans (2014) states that the tradeoff between monitoring costs and benefits suggests a possible optimal level of large shareholding.

Another type of monitoring cost is the one caused by the conflict of interest. The institutional shareholder may want to pursue a private interest that is inconsistent with that of the manager and the minority interest, thereby potentially reducing firm value. For instance, an employees' pension fund could vote for a labour-friendly manager

(Agrawal, 2012; Yin, 2018a), a mutual fund might approve non-performing managers to sustain a business relationship (Davis and Kim, 2007) and an investment fund may express worries about the idiosyncratic risk that may lead to renouncing value-enhancing projects to manage their portfolio (Dhillon and Rossetto, 2014).

2.3.4 Institutional shareholders' methods of effecting monitoring.

Institutional shareholders may affect their investee companies' monitoring by two methods: The first one is by voice channel. This depicts the direct interference of the institutional shareholders in corporate decisions (Yin, 2018a). In McCahery et al. (2016) investigation of how institutional shareholders get engaged with firms, it was discovered that the methods they commonly used to interfere in descending order are: 1) outvote the management at the general meeting, 2) initialise discussion with the board of directors, 3) making contact with the management board, 4) uncovering their voting against the management and openly criticising the board of directors. The study provides empirical evidence of institutional shareholders' interference in corporate governance. Other studies regarding corporate activities through voice channels include Bradley et al. (2010) who discovered that institutional shareholders could enforce closed-ended funds to be open-ended; hence, creating value by eradicating discounts associated with a closed-ended fund. Brav et al. (2008) in applying the event study framework, discovered that shareholders' interference results in a 7% abnormal return about the announcement period. They found that it improves the payout ratio, operating margins, and return on assets, and Brav (2015) used plant-level data to discover that institutional shareholders' interference improves productivity, particularly in adjusting business strategy.

The second method is the exit channel. When an institutional shareholder, in reaction to devaluing corporate decisions made by the manager, decided to sell their shareholdings. The institutional shareholder's action brings about a fall in the share price and, subsequently, check the management for imprudent behaviour. The likelihood that the institutional shareholder may turn their back on the company intimidate the manager, thereby compelling them to behave in a manner that satisfies

their fiduciary responsibility (Edmans, 2014; Yin, 2018a). There is a close relationship between the effectiveness of the exit channel and market liquidity in corporate governance. When the underlying security becomes more liquid, the exit of institutional shareholders becomes easier.

Consequently, the threat of exit will be more severe and the impact of monitoring becomes noted. Contrarily, market liquidity is less related to the voice channel. This difference lays out the basis for differentiating between a voice and an exit channel. For instance, Fang et al. (2009) used the exogenous liquidity shocks occasioned by decimalisation and discovered that firm performance improves as liquidity increases. Bhagat (2013) and Roosenboom et al. (2013) examined the place of liquidity in monitoring as regards takeovers. They discovered that when companies have lots of institutional shareholders, monitoring through exit channels becomes effective, thus mitigating the negative relationship between liquidity and acquirer's returns.

2.3.5 Heterogeneity of Institutional Shareholders

The recent literature has broadly acknowledged the heterogeneous nature of institutional shareholders. They are different in terms of their independence, investment strategies, and investment horizons. Therefore, their incentive to monitor and the effectiveness of such monitoring are vastly different (Yin, 2018a).

The relatedness defines the institutional shareholders' independence to the investee company. Brickley et al. (1988) discovered that, compared with banks, private pension funds and insurance companies usually do business with firms under management control. They are typically called 'grey investors'. Contrarily, public pension funds, mutual funds, and endowment funds are more independent and probably vote against the manager. They are referred to as 'independent investors'. Chen et al. (2007) document that independent investors' monitoring function results typically in better deal performance. Ferreira and Matos (2008) used data from 27 countries. They found that independent institutional shareholders' monitoring has a positive impact on the firm's valuation and enhances operational efficiency compared to the effects related to grey institutional shareholders. Independent institutional shareholders' influence on

operating cash flow is positive (Cornett et al., 2007). Almazan et al. (2005) stated that there is a positive relationship between independent institutional shareholders and the manager's pay-for-performance.

Institutional shareholder's investment management strategies are other characteristics that are of interest. Generally, institutional shareholders can be categorised as active or passive based on their intense monitoring of the market index. Passive institutional shareholders are involved in creating a portfolio designed to track the returns of a specific market index at the closest possible. An active institutional shareholder's portfolio is designed to outperform the benchmark (Yin, 2018a).

The debate on the role of a passive institutional shareholder in corporate governance is ongoing. Appel et al. (2016) document that, in a way, passive shareholders can be referred to as 'active' owners. Their ownership may result in an increasing proportion of independent board members, thereby reducing the intensity of applying takeover defenses and more equitable voting rights. They cast block votes and this results in improved long-term firm performance. Mullins (2014) agrees with this view and indicates that passive institutional shareholders may influence higher pay for good performance, increasing CEO turnover, lower consideration of the manager's proposal, and higher acceptance of the shareholder's proposals. These conclusions imply that passive institutional shareholders should play an active role in corporate governance. However, Schmidt and Fahlenbrach (2017a) found otherwise. They argue that the growth of passive ownership increases CEO power and reduced the appointment of independent directors. These changes could give rise to low returns and worse M&A performance. They also submitted that the differences noted were due to monitoring costs. Passive institutional shareholders will get involved when the cost of monitoring is low and may be reluctant when the cost is high.

The investment horizon is another institutional shareholder's characteristic. Institutional shareholders are generally classified as short-term and long-term groups using turnover rates. Short-term institutional shareholders are the ones that frequently trade with much higher portfolio turnover, while those who do not deal regularly are termed, long-term shareholders (Derrien et al., 2013; Gaspar et al., 2005; Yan and Zhang, 2007; Yin, 2018a). From the literature, other classifications of institutional shareholders based on turnover portfolio diversification are quasi indexers, dedicated

shareholders, and transient shareholders. Quasi indexers are diversified institutional shareholders that trade irregularly; dedicated shareholders are concentrated institutional shareholders that trade irregularly while temporary shareholders are those who trade regularly (Bushee, 1998; Bushee, 2001). Chen et al. (2007) describe quasi-indexer and dedicated institutional shareholders as long-term investors.

It is broadly acknowledged that long-term institutional shareholders play an efficient role in firm operation monitoring compared to short-term investors. For instance, Attig et al. (2012) discovered that long-term institutional shareholders' monitoring mitigates unsymmetrical information and agency problems. There is a reduction in the difficulty in obtaining external and internal finance, which leads to the firm's less sensitivity to cash flow availability regarding investment decisions. Chen et al. (2007) state that long-term institutional shareholders improve deal performance in M&A because of the propensity to monitor the firm's decisions. Long-term institutional shareholders result in enhanced firm operations and lower capital costs (Elyasiani et al., 2010a; Elyasiani et al., 2010b). It results in the stock market's stability and reduces idiosyncratic volatility and ensures that they do not sell their shareholdings in crisis periods (Cella et al., 2013; Chichernea, 2015).

2.3.6 Institutional Shareholders' Monitoring and Limited Attention

Standard economic models speculate that shareholders use every information available to make prudent decisions. However, psychology and the behavioural finance literature assert that shareholders are contingent upon cognitive restraints and psychological tendencies. The central intellectual-processing capacity of the human brain is limited. The volume of information appropriate for the firm's valuation is enormous and the time and intellectual resources needed to handle such information are substantial. Therefore, shareholders usually fail to integrate every appropriate information because of limited attention (Wang, 2017). This limited attention does not apply to individual shareholders alone but also to institutional shareholders. It was documented by Abarbanell and Bushee (1998) that analysts could not efficiently use available information in the financial ratios. Likewise, the analysts failed to discount discretional accruals of the firm's new issue sufficiently (Teoh and Wong, 2015). Furthermore, Hirst and Hopkins (1998) provide empirical evidence that professional

analysts usually fail to recollect and react appropriately to information in detailed financial disclosures.

Findings from the survey conducted by the Investor Responsibility Research Center Institute (IRRC) reveal that institutional shareholders have limited attention (IRRC, 2011). The center document a direct connection between restriction to institutional shareholders' attention and monitoring of corporate decisions and state that three-fourths of the institutional shareholders submit that time is the most usual barrier to engagement with the corporations, while staff plan ranks second.' So, institutional shareholders do not equally monitor firms they invested in with the same enthusiasm. The implication of this is that the institutional shareholders may become distracted at a particular time. Whilst distracted, they provide below the optimal control level (Kempf et al., 2017).

Since the determinants of investor attention are not known, measuring shareholders' attention becomes problematic. To sidestep this challenge, various empirical proxies have been suggested to secure shareholders' attention. These proxies have produced many exciting and keen findings regarding stock price movement around important corporate information events such as earnings announcements, analyst recommendations, prominent attention-grabbing events, to name a few. (Wang, 2017).

A typical empirical proxy relating to shareholders' attention is firm size. More prominent firms are generally focused upon by shareholders for several reasons. For example, they have more analyst coverage typically. More significant firms have more news media coverage than smaller firms. However, because firm size is also being used as proxies for other variables like information asymmetry, using it as a proxy for shareholders' attention makes it a noisy measure. Additionally, even though the firm size and analyst coverage proxies for the volume of the available information in the public domain, the measure becomes indirect because it is difficult to determine the extent to which the shareholder will utilise the information (Wang, 2017).

In this regard, researchers have suggested several optional proxies for institutional shareholders' attention or inattention. Dellavigna and Pollet (2009) document that since shareholders are distracted from stock valuation duties on Fridays, they become

less attentive to earnings announcements made on Fridays than non-Fridays. In line with this thought, they noted restrained reactions to the stock market on Friday earning announcements trailed by the strong stock market movement compared to an announcement on a non-Friday. Francis et al. (1992) and Bagnoli et al. (2005) discovered less reaction to earnings announced within nontrading hours. Similarly, Hirshleifer et al. (2009) investigated a lot of information overflow by numerous earnings announcements per day. They discovered that the response to the day's announcement is smaller than the reaction after the announcement, which is better about several competitive announcements. However, the earnings announcement on that same day from unrelated industries is a lot more distracting than industry-related announcements.

Engelberg and Gao (2011) suggest that the Google search volume index offers a better direct measure for shareholders' attention. They debated that a large amount of search for stock in Google is an indication that lots of shareholders pay attention to and find information about the particular stock. They recorded a positive relationship between changes in the volume of search and shareholders' trading. Besides, they documented that an increase in shareholders' attention is related to stock returns of the first-day IPO.

Considering the optional empirical proxies, trading volume is the most notable and broadly used. The perception is unambiguous. Shareholder hardly trades in stocks they pay less attention to; whereas, the likelihood of stock trade they pay greater attention to is high. That is to say, attention is well correlated with the volume of trade. Evidence from the literature has lent credence to the linkage between shareholders' attention and trade volume. Boone and White (2015a) demonstrate that trade volume, especially in large stocks, attracts shareholders' attention. Chordia (2000) shows that, despite controlling for firm size, high-volume stocks respond quickly to market returns information compared to low-volume stocks. This indicates that trading volume reflects information regarding shareholder attention over and above firm size. Gervais et al. (2001) propose that stock visibility is induced by the high trading volume, which attracts shareholders. Barber and Odean (2008) used an abnormal daily trading volume of stock to reflect the stock's change in shareholders' attention. In addition to unusual trading volume, the authors also suggested news and extreme returns as

proxies for attention. Hou et al. (2009) discovered that earnings momentum profits are higher within the low volume stocks. This is attributable to less shareholder's attention and intense reaction to earnings announcements in the stock market. Kempf et al. (2017) established that an institutional shareholder's effective monitoring could be hampered when distracted by external shock affecting their investment in unrelated firms.

2.3.7 Institutional Shareholder in South Africa

Institutional shareholders account for the large majority of investors on the JSE (Zhang, 2016) and they mostly include pension and provident funds, collective investment schemes(CIS), and insurance companies (Nhlapo and Gumata, 2011; Sibanda and Holden, 2014). The size and significance of institutional shareholders have grown over time. This category of investors constitutes about 60 to 80% of asset managers' records in South Africa (Bhikha, 2014). The institutional shareholders' total assets held have grown considerably in the last decades. For example, the non-bank financial institutions' assets constitute 112% of the country's gross domestic product as of 2017 (WorldBank, 2019). The assets under management (AUM) in equity held by institutional shareholders like pension funds, assets managers and insurers are enormous compared to the total funds invested. For instance, Coronation fund managers and Allan Gray constitute the two biggest equity asset management houses in March 2016, with total AUM in a unit trust worth R569 billion and R2.86 billion(SA Equity fund) respectively (AllanGray, 2019; Coronation, 2020). Association for Savings and Investments SA (ASISA) states that their members' worth R6.52 trillion manages their members' total equity as of June 2020 (ASISA, 2020). Public Investment Corporation (PIC), manages the South African Government Employee Pension Fund (GEPF) with total assets valued at R1.82 trillion as of 2019 (Gepf, 2019). The size of these figures places a crucial responsibility on the institutional shareholder to monitor the executives for accountability purposes.

Globally, institutional shareholders have manifested a growing interest in alternative asset classes. But in South Africa, no significant shift in the allocation of assets from the traditional asset classes. Institutional shareholders mostly invested in equity shares. They believed in long-term investment, enabling them to tolerate additional

risk in return for higher yield from equities than bonds and cash. Moreover, equity investment hedge risks of wage growth and reduced expected contribution plan of the same level of benefits from the pension fund (Bhikha, 2014; Nhlapo and Gumata, 2011).

2.3.8 The Role of Institutional Shareholder in Corporate Governance in South Africa

The King's report affirmed an institutional shareholder's important role in corporate governance best fit in South Africa. The King's Report on corporate governance is the detailed booklet of guidelines that provided companies' governance structures and operations in South Africa. The King committee on corporate governance issues the guidelines. The Institute of Directors in South Africa (IoDSA) possesses the King's copyright report on corporate governance and the King Code of corporate governance. Companies listed on the JSE are required to comply with the King's Report requirements. King Reports issued to date are King I in 1994, King II in 2002. King III in 2009 and King IV in 2016.

About King II, institutional shareholders in South Africa have shown less concern in actively participating in a shareholder's meeting. Hence, they were advised to consider the National Association of Pension Funds' action and the Association of British Insurers in the United Kingdom in creating a standard in line with good corporate governance that companies must follow. The report further stated that the lack of shareholder activism in South Africa weakens managerial compliance. The institutional shareholder maintained a passive nature despite apparent occurrences of inadequate and unsuitable corporate governance practices by companies. However, in recent times, a moderate level of shareholder activism is noticed. For instance; the influence of the institutional shareholder on the former co-operative OTK (now Afgri) in adopting a new restructuring strategy, the Camparex (now known as Business Connexion), the reconstituted boards of Kersaf, and the rejection of the delisting of plans of Energy Africa and Mutual & Federal as well as the intervention of Public Investment Corporation (PIC) in the payment of executive remuneration for both companies of Dorbyl and Aveng (Survé, 2009)

Regarding King III, in 2011, the Code for Responsible Investment in South Africa (CRISA) was released. This code proffers a guide to institutional shareholders' ways of executing their investment and using their rights to improve governance. After CRISA was released, South Africa became the second country after the United Kingdom to motivate institutional shareholders to incorporate environmental, social, and governance (ESG) contemplations into their investment preferences. In the King IV draft report, critical attention was paid to institutional shareholders' responsibilities. While the earlier King reports from the board of directors' positions as a contact point of corporate governance, the King IV report extends the implementation to cover institutional shareholder responsibilities that are referred to institutional shareholder fiduciary duty. From the 17 principles of the King's Report beginning from 75 in King lll, there is one that relates explicitly to institutional shareholders. This shows their investee companies' gains when they pay attention to corporate monitoring activities (Harber, 2017). As stated in King IV principle 17, the institutional shareholder must ensure that profitable investment is initiated and practiced by their investee companies to strengthen good governance and value creation (Harber, 2017; IoDSA, 2016). They should pursue and enforce high-yielding investments that guarantee long-term and lasting returns. Their actions and inaction will either strengthen or weaken good governance (IoDSA, 2016). Also, Zhang (2016) reiterated the responsibility of the institutional shareholders' to comply with their fiduciary duties by incorporating ESG contemplations and ensuring the continuing development of investee firms (Zhang, 2016). However, generally, it seems that institutional shareholders are still inactive as regards their responsibilities. The King reports have highlighted the limited role institutional shareholders have played with regards to corporate governance developments and expressly demand greater engagement in shareholder monitoring.

2.3.9 Corporate Decisions.

This study's corporate decisions include merger and acquisitions, earnings management, investment efficiency, and CEO remuneration.

2.3.9.1 Merger and Acquisitions Activity

The test of institutional shareholders' monitoring can be confirmed through the activities of M&A (Qiu, 2008). Decisions on (M&A) by managers usually centered on value-destroying ones (Kempf et al., 2017). M&A activities happen regularly and may have considerable implications on the firm's values. Theories imply that the merger's decision can either be for a useful purpose; to gain synergy or for a sinister purpose; agency costs (Qiu, 2008). Both the theoretical and empirical literature state that managers have the incentives to motivate M&A to the detriment of the shareholders' wealth (Agrawal and Mandelker, 1987; Avery et al., 1998; Morck et al., 1990; Roll, 1986; Shleifer and Vishny, 1989). Qiu (2008) documented that not all M&A that is either close to the announcement date or happened, in the long run, is gainful to the bidder shareholders. Kempf et al. (2017) found that bidder announcement returns dropped by 33% on average. The bidder and target announcement's combined returns become lower and lower returns from stocks for the bidding firm in the subsequent three years when institutional shareholders are distracted.

2.3.9.2 Earnings Management.

Earnings management is defined by Schipper (1989) as a deliberate interference in the financial reports to external users for personal benefits. Healy and Wahlen (1999: 6) provide a more elaborate definition: "Earnings management occurs when managers use judgment in the financial reporting and in structuring transactions to alter financial reports to either mislead the stakeholders about the underlying economic performance of the company or to influence the contractual outcome that depends on reported accounting numbers".

Earnings management types and consequences were analysed by many research studies (Cohen and Zarowin, 2010; Dechow et al., 1995; Jones, 1991; Kothari et al., 2005; Mizik and Jacobson, 2007; Roychowdhury, 2006). Dechow et al. (2010) discovered that managers usually dilate earnings and distort the firm's financial information through the manipulation of either accrual or real activities. Significantly, both possibly have adverse effects on the long-term performance of the firm. Earnings management debases the quality of information regarding earnings utilised by outside

shareholders, resulting in financing new projects with higher capital costs (Garel et al., 2018; Kim and Sohn, 2013). Furthermore, earnings management's prospective earnings and stock returns are negatively affected (Garel et al., 2018).

As regards accruals management, making use of the future period earnings brings about future loss. Teoh et al. (1998) revealed that the initial public offer (IPO) issued with too high accruals makes the firm suffer the miserable performance of their stock returns in the subsequent three years. As regards real earnings management, increased sales are probable to dissipate when the firm return to old prices, overproduction produces unsustainable earnings and results in enormous inventory, reduction in the discretionary cost of research and development (R&D), and employee training, as well as advertisement, can affect firm's competitive advantage in the long run and future sales respectively. Various research studies found a negative impact of real earnings management on the long-term performance of a firm. For instance, Bhojraj et al. (2009) investigated the effects of reduced discretionary costs and accruals' management to surpass analyst forecasts. They discovered that firms that marginally exceed the analyst forecasts with manipulated earnings only enjoy temporary stock price benefits from others with unmanipulated earnings but miss the analyst forecasts. However, these temporary benefits regress over three years. Likewise, Kothari et al. (2016) and Cohen and Zarowin (2010) connect post seasoned equity offering (SEO) stock market low performance to real activities earnings management, while Gunny (2010) documents that there is a negative relationship between earning management and operating performance.

Kothari et al. (2016) document the complexity faced by shareholders to detect short-run earning management, which requires consistent and robust monitoring from the shareholders.

2.3.9.3 CEO Remuneration

The extant literature of Devers et al. (2007) and Van Essen et al. (2012) underlines whether executive remuneration with the firm's financial viability could be justified. Following agency theory, Jensen and Meckling (1976), corporate executives are self-serving and in most cases, act at the detriment of shareholders' interest (Sheikh et al.,

2018). Additionally, many researchers have investigated the connection between executive remuneration and firm values and they conclude that it leads to abatement of agency problems (Hall and Liebman, 1998; Kaplan, 1994; Murphy, 1999; Tulepova, 2017; Zhou, 2000). Other studies documented that executive remuneration has no sufficient effects on firm performance (Conyon et al., 1995; Conyon and Peck, 1998; Gregg et al., 1993; Tulepova, 2017). For example, Tulepova (2017) documents that executive remuneration was still high despite the poor firm performance. This becomes part of the reason why executive remuneration remains debatable (Croci et al., 2012). Since the evidence from the literature still shows that executive remuneration does not reduce or eliminate agency problems, it did not serve as an incentive for them to pursue long-run shareholders' interest, the institutional shareholders must intensify their monitoring responsibility to restrain the executive opportunism and align their interest with that of the shareholder (Ozkan, 2007; Sheikh et al., 2018; Tulepova, 2017).

2.3.9.4 Investment inefficiency

A firm's decision to invest is driven by investment opportunities that always lead to the firm's growth as a result of the positive net present value (NPV) estimated. This investment decision is expected to be maintained until the minimum benefit is reached (Benlemlih and Bitar, 2018; Hayashi, 1982; Modigliani and Miller, 1958). In reality, firms face financial difficulties that prevent managers from executing all projects with positive NPV (Hubbard, 1997). The extant literature discovered that capital market contentions could make firms divert from executing optimum investment (Chen et al., 2017), eventually leading to either underinvestment or overinvestment. It leads to underinvestment when due to high-cost funding capital, all projects with a positive NPV are dropped (Biddle et al., 2009). On the other hand, it results in overinvestment when managers deliberately select destructive projects and misappropriate their resources. Stein (2003) states that there is a range of market contentions and other forces of distortions that prevent the optimum level of investment. However, research studies highlighted two major types critical to investment efficiency; agency problem and information asymmetry (Benlemlih and Bitar, 2018).

Myers and Majluf (1984) reiterate information asymmetry effects on the cost of capital and the selection of projects. When managers are aware that stocks are overvalued, they tend to issue new ones, but, when shareholders have this information, they discount new issuance of stocks. However, the managers may decide not to raise capital at a discounted price even when it means abandoning profitable investment opportunities, ultimately leading to underinvestment. Besides information asymmetry, Chen et al. (2017) emphasise the agency problem perspective. That managers are self-serving and always tend to select investment opportunities that enhance their private benefits to the detriment of shareholders (Jensen and Meckling, 1976). So, the agency problem increases investment inefficiency. As Jensen (1986) predicted, managers with illusions of grandeur will always overinvest with available free cash flow. This attitude is promoted when the monitoring intensity of the shareholders is relaxed. Other extant literature equally affirmed that the conflicting interest between shareholders and managers might prevent companies from investing efficiently (Ward et al., 2017). Jensen and Meckling (1976), Richardson (2006), and Shleifer and Vishny (1997) document that agency problem leads to overinvestment while Aghion et al. (2013), Bertrand and Mullainathan (2003), and Porter (1992) confirm that it leads to underinvestment. Furthermore, Titman et al. (2004) and Cai and Zhang (2011) state that high investment inefficiency reduces firm value. Therefore, having an insight into the impact of institutional monitoring on companies' investment decisions becomes imperative.

2.4 Chapter summary

The theoretical frameworks and the empirical studies were discussed in this chapter. The chapter set the groundwork for conceptualising as well examining in detail the relationship that exists between institutional shareholders (the principal) and their agents. The relationship between limited institutional monitoring intensity and investment inefficiency will be discussed in the following chapter.

Chapter 3

3.1 Limited Institutional Shareholders' Monitoring and Investment Inefficiency.

3.1.1 Introduction

This chapter describes the relationship between limited institutional shareholders' attention occasioned by distraction and investment inefficiency. An investment decision is one of the corporate decisions that affect the firm's value and consequently, institutional shareholders because they are prominent stakeholders. This study examines the link between a temporary shift in institutional shareholders' monitoring of corporate executives and how corporate executives react during this period primarily related to investment decisions. This chapter set the stage for discussing the effect of institutional shareholders' weakening monitoring control and corporate decisions such as inefficient investment, earnings management, executive remuneration, and M&A.

3.1.2 Brief literature review

Attention is considered a scarce resource. Customers never compare all likely merchandise when they make choices; professors will not review all latest journal articles relevant to their field and mutual fund managers never give equal concentration to all securities in their portfolio. Instead, they pay attention to outstanding issues such as well-advertised merchandise, an article published by prominent authors, and securities considered attractive either by high-profit potentials or with loss tendencies Kempf et al. (2017). Baker and Wurgler (2012) state that despite the increasing literature on limited attention regarding economics and finance studies, the effect of limited attention on corporate decisions had not been thoroughly examined. This study intends to fill this gap by emphasising the connection between managerial decisions and change to institutional monitoring intensity occasioned by a temporary change in their allocation of attention to stocks in their portfolio. The study utilises the JSE institutional shareholders' data to demonstrate that managers take advantage of relaxed monitoring intensity caused by limited attention to engage in

investments that enhance their private interest to the detriment of the institutional shareholders.

Therefore, the impact of limited institutional shareholder monitoring on corporate investment inefficiency is reviewed in this chapter. Project investment decisions are one of the most crucial factors that determine the future growth of firms. Companies may invest inefficiently due to conflicting interests between institutional shareholders and managers. Research studies, such as Jensen and Meckling (1976), Shleifer and Vishny (1997), and Richardson (2006) link agency problems to overinvestment, while reviews by Porter (1992), Bertrand and Mullainathan (2003) and Aghion et al. (2013) connect it with underinvestment. Moreover, authors like Titman et al. (2004) and Cai and Zhang (2011) associate investment inefficiency with poor firm performance. Therefore, having insight into the correlation between institutional shareholders' monitoring intensity and company investment inefficiency becomes imperative.

As economic stakeholders have capacity constraints in information processing, it is reasonable to adjust the attention given to various information sources in taking decisions (Sims, 2003; Yin, 2018b). Kacperczyk et al. (2016), based on the presumption that attention is limited, formulated a model for allocating attention to anticipate the perfect choice of information for mutual funds. Similarly, Kempf et al. (2017) discovered that exogenous shock on stock returns of discrete firms in institutional shareholders' portfolios causes distraction, thereby affecting their monitoring intensity. They developed a distraction measure model and relate it to selected corporate decisions, including M&A, lucky option grants, and dividend cuts using data from firms listed on the New York Stock Exchange (NYSE). This study will extend Kempf et al. (2017) study to a firm's investment decisions using data from firms listed on JSE. The study considers the institutional shareholders for each company and other securities held by the institutional shareholder concomitantly. This enables us to observe variations in the shareholder's attention by reviewing their portfolio vis-a-vis the external shock to an unrelated company in the portfolio. This likely variation period is noted and then construct a company-level distraction measure by cumulating institutional shareholders' information for each company and linking the measure to corporate decisions such as investment decisions.

3.1.3 Hypothesis and the empirical approach

This empirical approach's fundamental idea is to follow Kempf et al. (2017) firm-level proxy identification construct that identifies temporary shifts in institutional shareholders' attention. From the thought examination described above, we detect times where institutional shareholders shift attention to company one and, consequently, the monitoring intensity decreases in company two. This explains looser monitoring pressure confronting the manager, which induces the maximisation of corporate decisions for personal benefits. This assertion will always be valid provided a decrease in attention by one institutional shareholder cannot be immediately and liberally substituted by other institutional shareholders or board of directors. The hypothesis is summarised as follows:

H_0: There is no statistically significant relationship between shareholders' distraction and firms' investment inefficiency.

H_1: There is a statistically significant relationship between shareholders' distraction and firms' investment inefficiency.

3.2 Data and variable descriptions

3.2.1 Data sources

Data on institutional shareholders' shareholding and other variables were sourced from S&P Capital IQ. The institutional shareholders' data were used in computing the distraction measure, which is the variable of interest. The sample period is from 2004 to 2019 and all listed companies in JSE were considered subject to data availability. Details of the variables were outlined in Appendix A.

3.2.2 Research design

3.2.2.1 Measuring institutional shareholder distraction

Following Kempf et al. (2017) and Liu et al. (2017), the study constructed a company-level proxy for total institutional shareholder distraction. This shows how many institutional shareholders in a given $firm\ f$ is distracted in a given period. This distraction measure is denoted Dt and it is defined to assign higher values to more distracted shareholders. Concerning the alternative hypothesis, a higher *Dt* suggests a temporary loosening of institutional shareholders' monitoring intensity.

The thinking behind Dt is that a given shareholder i in a given $firm\ f$ is most probably distracted in the event of an attention-grabbing occurrence in another industry that is important in the investor i's portfolio. Therefore, the shareholder-level distraction score is calculated first and after that, sum it across all investors in the firm. More precisely, Dt for each $firm\ f$ at period t is modeled as:

$$Dt_{ft} = \sum_{i\epsilon ft-1} \sum_{IND \neq INDf} w_{ift-1}\ X\ w_{it-1}^{IND}\ X\ IS_{t}^{IND} \quad (3.1)$$

Where f_{t-1} connotes institutional shareholders' set of firms at the end of period $t-1$, IND connotes JSE 11 industry classification and $IND\ f$ connotes $firm\ f$'s industry sector, IS_t^{IND} indicates if there is a distraction in industry IND and w_{it-1}^{IND} connotes the weight of the industry sector IND in the institutional shareholder i's portfolio. The weight w_{ift-1} estimates the significance of investor i in $firm\ f$ at the end of period $t-1$ By intuition, investor i *is* significant if 1) $firm\ f$ weight in investor i's portfolio is higher and 2) if the proportion of $firm\ f$'s shares owned by investor i is large. Hence, we estimate $w_{i,f,t-1}$ as:

$$W_{ift-1} = \frac{QPFweight_{ift-1} + QPerOwn_{ift-1}}{\sum_{i\epsilon ft-1}(QPFweight_{ift-1} + QPerOwn_{ift-1})} \quad (3.2)$$

Where $PFweight_{ift-1}$ is the $firm\ f's$ market value weight in the $investor\ i's$ portfolio while $PerOwn_{ift-1}$ is the proportion ownership the $investor_i$ has in $firm\ f$. To avoid outliers firms in $investor\ i's$ portfolio in the period t-1 are classified into quintiles based on $PFweight_{ift-1}$ and this connotes $QPFweight_{ift-1}$. Likewise, $QPerOwn_{ift-1}$ represents the quintile value of $PerOwn_{ift-1}$. Consequently, the distraction measure delivers more weight to institutional shareholders that possess somewhat more shares in $firm\ i$. This is because managers take good care of their significant shareholders as they believe they have an incentive to monitor (Edmans and Holderness, 2017). Moreover, it allocates more weight to institutional shareholders that $firm\ i$ takes a higher proportion in their portfolio. This is due to the fact that institutional shareholders pay more attention to the largest position in their portfolio.

3.2.2.2 The Validity of the distraction measure

This measure has two advantages: First, even though return shocks occur in unrelated industries, the measure captures the external change in institutional shareholders' monitoring. This mitigates issues concerning reverse causality and missing variables, affecting both firm behaviour and institutional shareholders' monitoring level. Secondly, there is a difference in the investors-level measure over the firms' portfolio held by every institutional shareholder by construction. Therefore, the difference in the insider investors distraction level will be matched as relates to its portfolio firms, thereby considering the options that the individual, institutional shareholders have to make firms portfolio choices (Liu et al., 2017).

Furthermore, unrelated industry tenacity of distraction events will be evaluated to determine the lengthy effect on monitoring capability. According to Kempf et al. (2017), the primary examples of economic circumstances that warrant distraction are unexpected, industry-specific changes in technology, demand, regulation, and competitive outlook. These occurrences take some time to show and comprehend. They take advantage of limited attention capability for a more extended period, reducing the intensity of industries that are not in focus. However, short-term shocks such as court rulings, a breakthrough in technology, new regulations, and natural disaster can lead to a temporary shift to the marginal benefit of providing attention,

which induces institutions to alleviate their attention allocation monitoring intensity across their portfolio. In other words, if the relative marginal benefit of getting information is higher, shareholders with limited attention can shift attention off from an industry regardless of how short the shock is (Kempf et al., 2017).

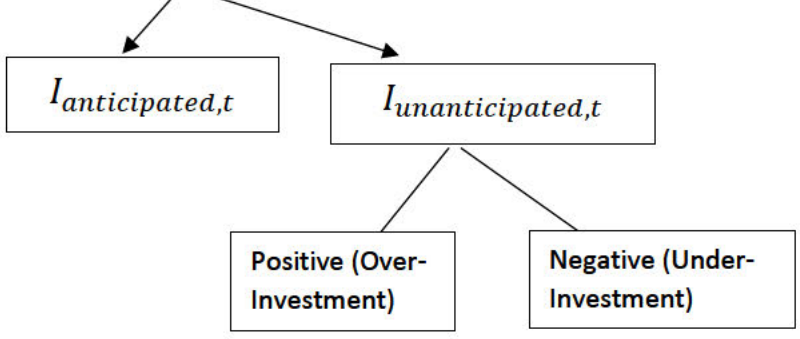
In a nutshell, the distraction measure regarding yearly industry returns can capture the shift in shareholder attention, thereby influencing external changes in monitoring intensity that are pertinent to managerial decisions.

3.2.2.3 Measuring investment inefficiency

Inefficient investment is defined as the digression from the investment level capable of being anticipated by a company-specific investment model Ward et al. (2017).

Richardson (2006) studied the link between free cash flow and the extent of overinvestment at the company level. Employing the framework of accounting, he formulates investment efficiency measures by breaking down the total investment. He separates the total investment $\left(I_{Total,t}\right)$ into two parts; the needed investment cost to sustain asset in place $\left(I_{Maintain,t}\right)$ and investment cost on new ventures $\left(I_{New,t}\right)$. Further, $I_{New,t}$ is separated into anticipated investment and unanticipated investment. The unanticipated investment measures inefficient investment and it can be negative or positive. The negative value is the under-investment, while the positive value is the overinvestment.

$$I_{Total,t} = I_{Maintain,t} + I_{New,t} \tag{3.3}$$



Source: Gao and Yu (2020); Richardson (2006)

Following Richardson (2006), Stoughton et al. (2017), and Gao and Yu (2020), the expectation model below was used to estimate the anticipated new investment, and the residuals were used as a proxy for the company-specific unanticipated (inefficient) investment:

$$INew_{it} = \alpha + \beta_1 \frac{v}{p_{it-1}} + \beta_2 Leverage_{it-1} + \beta_3 Cash_{it-1} + \beta_4 Age_{it-1} + \beta_5 Size_{it-1} + \beta_6 Return_{it-1} + \beta_7 INew_{it-1} + \delta_i + \mu_t + \epsilon_{it} \quad (3.4)$$

where $INew_{it}$ is the investment expenditure on new projects of $company_i$ in $year_t$ *and* $INew_{it}$ = $ITotal_{it} - IMaintenance_{it}$. $ITotal_{it}$ *is the whole investment* while $IMaintenance_{it}$ is the investment cost of maintaining the assets. $INew_{it}$ is broken down into anticipated investment and unanticipated investment. The unanticipated investment is the measure of inefficient investment.

The extant literature in economics and finance shows that investment in a firm is influenced by opportunities for growth, financial restraints, and other firm peculiarities (Gao and Yu, 2020; Hubbard, 1997; Yin, 2018b). Firm growth opportunities are calculated by V/P, computed as the ratio of firm value to the firm market value of equity. V is the asset in place derived from the income model; P is the firm market value (Ohlson, 1995; Yin, 2018a). Factors that influence investment decisions have been incorporated as control variables. Financial restraints are measured by Cash and Leverage. It is expected that $INew$ will be negatively associated with *Leverage* and positively associated with *Cash.* Other firm peculiarities as contained in Equation 3.4 include a natural log of the company's total assets (Size), the firm Age (Age), aggregate returns on the stock over the previous year (Return), and lag of new investment $\mathrm{I}_{\mathrm{Newit}-1}$ to appropriate other firm attributes that impact investment, the firm fixed effects (δ_i) as well as year fixed effects (μ_t) are incorporated to control for

unobserved company peculiarities and the trend in stock market respectively. ϵ_{it} is the error term.

Income model for the asset in place:

$$(1-\propto \mathfrak{r})BV+\propto (1+\mathfrak{r})X-\propto \mathfrak{r}d \qquad (3.5)$$

where $\propto = \mathcal{W}/1+\mathfrak{r}-\mathcal{W}$, $\mathfrak{r}=12\%, \mathcal{W}=0.62$, BV is the book value of equity, d is the annual dividend and X is the operating income (Ohlson, 1995; Richardson, 2006; Ward et al., 2017).

3.3 Inefficient investment and successive stock returns

It is implied from earlier empirical studies that there is a negative effect of inefficient investment on firm performance (Titman et al., 2004). Relating to an efficient market, stock prices will reflect all information which includes decisions on firm investment. According to Jensen (1986), there are tendencies that when investment expenditure increases, stock returns will be negative because of the self-centered managers. They invest in their benefits and not in the interest of the shareholders. Therefore, the negative effect of inefficient proxy and successive stock returns will be examined to connect institutional shareholders monitoring with firm value. To examine this relationship, we will consider if successive stock returns of firms with the high inefficient investment are considerably lower compared to those with better efficient investment.

Following Daniel and Titman (1997); Faulkender and Wang (2006); Fich et al. (2016) and Ward et al. (2017), we measured the successive stock returns as the differences between the returns from buy-and-hold of our sample firms and that of a benchmark portfolio:

$$ExcessReturn_{it} = [\prod_{j=1}^{12}(1+Ret_{ij})-1]-[\prod_{j=1}^{12}(1+BenchmarkRet_{ij})-1] \qquad (3.6)$$

Where Ret_{ij} is the $firm_{\ i}$ stock return in the month of *j* of the $year_{\ t}$ while *Benchmark* Ret_{ij} is the return of the $firm_i$ benchmark portfolio in the same month. The benchmark

portfolio is the FTSE/JSE all shares index. After, we regress the excess return on our inefficient proxy using the model below as motivated by (Ward et al., 2017).

$$ExcessReturn_{it+1} = \alpha + \beta_1 Inefficient_{it} + B * Controlvariables_{it} + \theta_j + \epsilon_{it} \quad (3.7)$$

where inefficient investment is proxy by the residuals of equation (3.4). The control variables are leverage, size, MTB, and cash. θ_j is the year fixed effects. ϵ_{it} is clustered by the company.

3.3.1 The effect of shareholder distraction on inefficient investment.

Limited attention occasioned by shareholders' distraction has been proven in the extant literature of Cheung et al. (2021); Garel et al. (2018); Kempf et al. (2017); Ward et al. (2017) to limit the monitoring responsibility of the institutional shareholder and enable executives to invest inefficiently. To test our hypothesis one, we adapt the baseline regression model stated below to examine the impact of shareholder distraction on inefficient investment decisions:

$$Inefinvest_{it} = \alpha_0 + \delta\, Inefinvest_{it-1} + \beta Dt_{ft} + yX_{it} + \mu_i + W_t + \epsilon_{it} \quad (3.8)$$

where inefficient investment ($InefInvest_{it}$) is proxy by the residual of equation (3.4). Dt_{ft} is Institutional shareholders distraction measure; X is the vector of other explanatory variables, as motivated by Stoughton et al. (2017) and Ward et al. (2017), which are *MTB, tangibility, size, age, leverage, and cash*; μ is the unobserved firm-specific fixed effect; W is the time trend; δ, β and y are parameters; i is the number of firms $(= 1, \ldots., N)$; t is the number of years $(= 1, \ldots., T)$ and ϵ is the error term.

3.4 Estimating technique

The panel models were primarily divided into the static panel model and the dynamic panel model (Bai, 2009; Wilfred, 2017). The extant literature established two static panel models. These are within-group panel fixed effect and the least square dummy variable (LSDV), a development from fixed effects and random effects (Hedges and Vevea, 1998; Rowland and Torres, 2004; Wilfred, 2017).

In the literature, it is established that the fixed effect produces a consistent estimator, which means that the values around the sample mean are differenced (Blundell et al., 2001). Fixed effect and LSDV cross-sectional variation effectively adopt dummy variables (Andrews et al., 2006; Kezdi and Sevak, 2004). Moreover, Gujarati (2009a) and Hayes and Preacher (2014) claim that when dummy variables are overlarge, they must be carefully handled to avoid the degree of freedom becoming large, thereby affecting the result's outcomes.

The summary fixed effect equation is as stated below:

$$y_{it} = X_{it}\beta + \pi_i + \mu_{it} \quad (3.9)$$

In Equation (3.9), the intercept is missing. y_{it} is the vector for firms' inefficient investment; X_{it} is the explanatory variables; π_i is the unobserved firm-specific effect; β is the parameters for the explanatory variables and μ_{it} is the error term.

Regarding LSDV, its equation is stated below:

$$y_{it} = \sum_{j=2}^{4} D_j + X_{it}\beta + \pi_i + \mu_{it} \quad (3.10)$$

Here, D_j are the dummy variables for the N-1 cross-section of firms. The addition of a dummy variable differentiated the equation from that of the fixed effect. However, when dummy variables become too large, there will be a likelihood of multicollinearity among the regressors, thereby leading to erratic and biased estimators (Gujarati, 2009b; Wilfred, 2017).

Furthermore, we examine the random effect model initiated by Nerlove and Balestra (1996), which seeks to control for omitted variables that are a likely problem in fixed effect. The random effect model equation is stated below:

$$y_{it} = \alpha + X_{it}\beta + \pi_i + \mu_{it} \quad (3.11)$$

where y_{it} represents firms' investment inefficiency; α is the constant; X_{it} is the explanatory variables; β is the parameters for the independent variables; π_i is the within-firm error and μ_{it} is the between-firm error. In estimating random effect, it is assumed that π_i is random and correlated with the independent variables.

To choose between the fixed effect model and random effect model, the Hausman (1978) test is performed in this study (Mutl and Pfaffermayr, 2011).

3.4.1 GMM model specifications.

This study explored the dynamic panel data approach called the generalised method of moment (GMM) proposed by Arellano and Bond (1991). It generates a model that enhances the efficiency of the estimator.

This equation modifies the fixed effect equation with the incorporation of instrumental variables.

GMM can either be estimated using a difference GMM or system GMM.

Difference GMM: This was proposed by Arellano and Bond (1991). It corrects endogeneity by transforming independent variables through differencing. It also removes the fixed effect. However, the first differencing transformation has a weakness because it subtracts the previous observation from the contemporary one, which magnifies gaps in an unbalanced panel.

The difference GMM initial model is stated below:

$$y_{it} = \varphi y_{it-1} + \beta X_{it} + (n_i + \epsilon_{it}) \quad (3.12)$$

where y_{it} represents firms' investment inefficiency; β for i =1,2 and estimate parameters for independent variables; φ is the coefficient of lagged dependent variable; X_{it} is the exogenous independent variables and n_i connotes firm-specific effect and ϵ_{it} is the error term.

Transformed model:

$$\Delta y_{it} = \varphi \Delta y_{it-1} + \beta \Delta X_{it} + \Delta \epsilon_{it} \quad (3.13)$$

By transforming the regressors through first differencing, the fixed effect is removed since it does not vary over time, but endogeneity remains. From equation (3.13), the model becomes

$$\Delta \mu_{it} = \Delta n_i + \Delta \epsilon_{it} \quad (3.14)$$

or

$$\mu_{it} - \mu_{it-1} = (n_i - n_i) + (\epsilon_{it} - \epsilon_{it-1}) = \epsilon_{it} - \epsilon_{it-1} \quad (3.15)$$

The unobserved fixed effects no longer enter the equation as they are, by assumption, constant between periods. The first-differenced lagged dependent variable is instrumented with its past levels and now changes in the dependent variable as assumed to be represented by equation (3.13). So, equation (3.13) still shows that there is endogeneity in the model due to the lagged dependent variable Δy_{it-1} being correlated with the error term $\Delta \epsilon_{it}$.

System GMM: This is proposed by Arellano and Bover (1995) and Blundell and Bond (1998). It corrects endogeneity by introducing more instruments to improve efficiency significantly. Also, it transforms the instruments to make them uncorrelated (exogenous) with the fixed effects. Moreover, it builds a system of two equations: the original equation and the transformed one. It used orthogonal deviations. That means rather than deducting the previous observation from the contemporaneous one, it deducts the average of all future available observation of a variable. Regardless of gaps in the data, all observations except for the last for each individual are estimated and this reduces data loss.

For the system GMM model, the initial model under difference GMM equation (3.12) refers. The equation is assumed to be a random walk model and the dependent variable (y) is persistent. In this case, applying the difference GMM estimator will yield both bias and an inefficient estimate of φ in limited samples and this is especially keen when ***T*** is short. According to Blundell and Bond (1998), the underperformance of difference GMM in these circumstances is due to poor instruments. Therefore, the system GMM is applicable because of the following reasons:

One equation is stated in level form with the first difference as instruments and the second equation is expressed in the first difference with levels as instruments. This approach includes more significant numbers of moment conditions but in the study by Arellano and Bond (1991) Monte Carlo evidence indicates that when ***T*** is short and the dependent variable is persistent, there are gains in accuracy and little sample bias is minimised. Besides, when there are heteroscedasticity and serial correlation, a two-system GMM estimator should be used utilising a weighting matrix using residual from the first step. However, where there are limited samples, standard errors tend to be downward biased. In such a case, practitioners' usual approach is to use Windmeijer adjustment to correct for such small sample bias (Arellano and Bond, 1991; Arellano and Bover, 1995; Blundell and Bond, 1998; Windmeijer, 2005).

To estimate our dynamic model in nature and control for the problem of endogeneity, the GMM estimation method was adopted. The extant literature established that a dynamic panel model improves estimators' efficiency in a panel model (Arellano and Bond, 1991). Oyedokun et al. (2009) state that the combination of static specification of fixed effect model and autoregressive coefficients, that is the lagged value of the dependent variable provides responses from both past and present shocks to the current value of the dependent variable. This specification method is referred to as GMM. The GMM eliminates temporal autocorrelation in the residual and averts running a spurious regression that may cause inconsistent estimators. The GMM model that explains the link among firm investment inefficiency, distraction measure, and other regressors is specified below:

$$Inefinvest_{it} = \alpha_0 + \delta\, Inefinvest_{it-1} + \beta_1 Dt_{ft} + \beta_2 MTB_{it} + \beta_3 Tangibility_{it} + \beta_4 Size_{it} + \beta_5 Age_{it} + \beta_6 Leverage_{it} + \beta_7 Cash_{it} + \mu_i + W_t + \epsilon_{it} \quad (3.16)$$

Subsequently, taking the first difference of equation (3.16), the following equation (3.17) will be obtained:

$$\Delta Inefinvest_{it} = \alpha_0 + \Delta\delta Inefinvest_{it-1} + \Delta\beta_1 Dt_{it} + \Delta\beta_2 MTB_{it} + \Delta\beta_3 Tangibility_{it} + \Delta\beta_4 Size_{it} + \Delta\beta_5 Age_{it} + \Delta\beta_6 Leverage_{it} + \Delta\beta_7 Cash_{it} + \mu_i + W_t + \Delta\varphi_{it} \quad (3.17)$$

To ensure that likely correlation between $inefinvest_{it-1}$ and φ_{it} is avoided, an instrumental variable N', which will not be correlated with the two is achieved by matrix transcription of the regressors. Equation (3.14) is multiplied in vector form by N' resulting in:

$$N'\Delta Inefinvest_{it} = \alpha_0 + N'\Delta\delta Inefinvest_{it-1} + N'\Delta\beta_1 Dt_{it} + N'\Delta\beta_2 MTB_{it} + N'\Delta\beta_3 Tangibility_{it} + N'\Delta\beta_4 Size_{it} + N'\Delta\beta_5 Age_{it} + N'\Delta\beta_6 Leverage_{it} + N'\Delta\beta_7 Cash_{it} + \mu_i + W_t + N'\Delta\varphi_{it} \quad (3.18)$$

By transforming equation (3.14), the fixed effect is removed as it never changes over time, but the problem of endogeneity remains. The orthogonal conditions in the variance-covariance application control for correlation of errors, heteroscedasticity, simultaneity, and endogeneity issues (Antoniou et al., 2008; Vengesai, 2019). The two-step system GMM estimated equation 3.15.

3.5 Data Analysis and Model Estimation.

3.5.1 The panel unit root

The existence of unit roots in variables usually gives rise to spurious regression analysis. Following the extant literature, we determined the exact nature of the variables by confirming unit root availability. Variables with unit roots tend to manifest particular features like finite variance and mean reversion. Therefore, this study checked for stationarity (unit-roots) of the variables by employing the robust version of the Augmented Dickey-Fuller Test (ADF), Levin, Lin, and Chu (LLC) and Im, Pesaran and Shin (IPS) with individual intercept. These three methods were used to compare and validate results and ascertain consistency (Moon et al., 2007; Wilfred, 2017). The results established that all the variables are stationary at levels (I (0)) and the p-values are at a 1% significance level. The results are displayed in Table 3.1.

Table 3.1 Unit root results

Variables	Levin, Lin and Shu		Im Pesaran & Shin		ADF- Fisher chi-square	
	P-Value	Integration Order	P-Value	Integration Order	P-Value	Integration Order
Inefinvest	0,0000	I (0)	0,0000	I (0)	0,0000	I (0)
Dt	0,0000	I (0)	0,0000	I (0)	0,0000	I (0)
Leverage	0,0000	I (0)	0,0000	I (0)	0,0000	I (0)
Cash holding	0,0000	I (0)	0,0000	I (0)	0,0000	I (0)
Size	0,0000	I (0)	0,0000	I (0)	0,0000	I (0)
Tangibility	0,0000	I (0)	0,0000	I (0)	0,0000	I (0)
Age	0,0000	I (0)	0,0000	I (0)	0,0000	I (0)
MTB	0,0000	I (0)	0,0000	I (0)	0,0000	I (0)

Source: Author's computation 2021

3.5.2 Effects of Inefficient investment on successive stock returns.

3.5.2.1 Summary statistics

Table 3.2 presents the sample's summary statistics regarding the impact of inefficient investment on firms' excess stock returns. The sample period is between 2004 and 2019. The summary statistics reported the mean, standard deviation, median,

minimum, maximum, skewness, and kurtosis values across the panel data variables. The detailed definition of variables is provided in the Appendix A

Table 3.2 Summary statistics

	Bhar	Inef	Leverage	Mtb	Size	Tangibility	Age	Chr
Mean	0.0093	-0.0018	0.2248	9.3125	8.3119	0.3601	1.0694	0.1687
Std. Dev.	0.0474	0.5654	0.4720	135.175	2.4139	1.1937	0.3556	0.6555
Median	0.0012	-0.0076	0.1326	1.7746	8.4133	0.1867	1.1760	0.0939
Minimum	-0.1151	-9.0050	0.0000	-3.3332	-2.0423	0.0000	0.0000	0.0000
Maximum	1.0264	11.8576	9.5031	5187.24	16.7298	30.9364	1.6020	20.8247
Skewness	6.5376	5.5168	8.8713	28.860	0.0189	16.3646	-1.6896	23.4179
Kurtosis	107.258	211.011	117.173	994.59	2.9964	341.2653	5.4537	630.745
Jarque-Bera	1088447.	3999145.	1282741.	943436	0.1390	11101921	1720.82	3809023
Probability	0.0000	0.0000	0.0000	0.0000	0.9328	0.0000	0.0000	0.0000
Sum	22.2235	-4.12528	518.501	213724	19158.9	830.9322	2532.51	389.252
Sum Sq. Dev.	5.31550	706.880	513.523	419167	13426.1	3286.186	299.457	991.1291
Observations	2366	2212	2306	2295	2305	2307	2368	2307

Source: Author's computation 2021

The statistics shown in Table 3.2 demonstrate typically low values as the whole set gravitated towards the minimum instead of the maximum. Regarding the inefficient investment (Inef), which is the variable of interest, the maximum value is 11. 8576, while the minimum value is -9.0050 and compared to the mean value of -0.0018 shows that Inef is closer to the minimum than the maximum. This indicates that the regressor (Inef) effect on the dependent variable (Bhar) is minimal. Other regressors leverage,

Mtb, tangibility and Chr displayed similar characteristics due to their closeness to the minimum rather than the maximum, suggesting that they have a small impact on the dependent variable. Size and age were closer to the maximum instead of the minimum, thereby suggesting a higher effect on the dependent variable. However, the standard deviation for all the variables except for size and age demonstrates higher variability because their values were closer to the mean and higher indicating that the data sets are not evenly distributed. The Jargue-Bera probability value of 0.000 implied that all the variables except for size were not normally distributed, which could be due to the high variability of the variables caused by outliers.

3.5.2.2 Correlation matrix on inefficient investment effects on stock returns.

To ensure that the multicollinearity problem did not exist in the study's estimations, table 3.3 shows the extent of the relationship between the variables.

Table 3.3 Pairwise correlations matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) BHAR	1.000							
(2) Inef	-0.030	1.000						
(3) Lev	0.069	-0.170	1.000					
(4) CHR	0.019	-0.068	0.287	1.000				
(5) Size	0.004	0.059	-0.066	-0.051	1.000			
(6) Tan	0.036	0.058	0.594	0.711	-0.048	1.000		
(7) Age	-0.005	-0.005	-0.011	-0.032	0.062	-0.029	1.000	
(8) MTB	0.056	-0.010	0.114	-0.011	-0.008	0.050	-0.017	1.000

Source: Author's computation 2021

Table 3.3 displays the correlation matrix, which suggests the association between the variables used in this panel model. The variables showed diverse forms of relationships among themselves. However, the study focuses on the correlation between BHAR and a regressor (Inef), which is the interest variable. Inef showed a negative correlation with BHAR, indicating that an increase in the level of inefficient investment will decrease the firms' abnormal returns. The correlation among the

regressors showed both positive and negative relationships. The positive coefficients are weak except for that of tangibility (Tan), concerning leverage (0.594) and cash holding ratio (0.711). In general, the result indicated that there is no problem of multi-collinearity among the variables. Having performed both the summary statistics and correlation matrix analysis, the econometric analysis is performed to either validate or invalidate preliminary findings under the summary statistics analysis. Therefore, the study proceeds to estimate panel data analysis, including pooled OLS, fixed and random effects and the results are displayed in the table below.

3.5.2.3 Panel estimation results

3.5.2.3.1 Static panel model

The study used panel data analysis because it controls for unobserved heterogeneity. The study considered ordinary least square (OLS), fixed effects (FE) and random effects (RE) estimating techniques in the model to explain the causal relationship between the dependent variable and the regressors. Also, the Hausman test was performed to select the most suitable model between fixed and random effects. The study chose fixed effects and reported the results based on the data set and Hausman test results.

3.5.2.3.2 Ordinary least square (OLS), fixed and random effects regression

Table 3.4 shows the regression results of OLS, fixed effects and random effects. The dependent variable is buy and hold abnormal returns (BHAR). In contrast, the independent variable of interest is the inefficient investment which is the outcome of the investment regressions reported in Table 3.4 above. Our sample consists of 148 firms and the years for the period were 2004 – 2019.

Table 3.4 Effect of inefficient investment on stock returns

	Model 1	Model 2	Model 3
VARIABLES	OLS	fe	re

Inefficient Investment	-0.0023**	-0.0019*	-0.0022**
	(0.0011)	(0.0011)	(0.0011)
Leverage	0.0001	0.0019	-0.0003
	(0.0037)	(0.0047)	(0.0036)
Cash Holding ratio	0.0032	0.0065*	0.0032
	(0.0027)	(0.0034)	(0.0026)
Firm Size	0.0121***	0.0122***	0.0121***
	(0.0027)	(0.0029)	(0.0027)
Tangibility	-0.0006	-0.0024	-0.0005
	(0.0019)	(0.0024)	(0.0018)
Age	0.0127**	0.0820***	0.0012
	(0.0062)	(0.0274)	(0.0067)
Market to book ratio	0.0000	0.0000	0.0000
	(0.0000)	(0.0000)	(0.0000)
Constant	-0.0143*	-0.0856**	0.0233**
	(0.0074)	(0.0371)	(0.0098)
Observations	1,899	1,899	1,899
R-squared	0.015	0.081	
Number of id		148	148
Year Dummies		Yes	Yes
Firm fixed effect		Yes	Yes

Source: Author's computation 2021

Note: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1 are 1%, 5% and 10% statistically significant level. Model 1 represents OLS, Model 2 represents fixed effects and Model 3 random effects.

3.5.2.3.3 Hausman Test

Table 3.5 shows the Hausman test results to determine the most suitable model between fixed and random effects.

Table 3.5 Results of Hausman's test

	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
Variables	**fe**	**re**	**Difference**	**S.E.**
Inef	-.0019157	-.0021675	.0002518	.0001838
Lev	.0019477	-.0003044	.0022521	.0029103
CHR	.0065115	.0031549	.0033566	.0020625
Size	.0122298	.0120651	.0001647	.00083
Tan	-.0023947	-.0004701	-.0019246	.0015323
Age	.0820356	.0012231	.0808125	.0259957
MTB	8.45e-06	3.93e-06	4.52e-06	9.48e-06

chi2(18) = (b-B)'[(V_b-V_B)^(-1)](b-B)= 35.67 Prob>chi2 = 0.0078

The hypothesis testing for the Hausman test is that:

Null hypothesis: Random-effects model is the appropriate model to be adopted.

Alternative hypothesis: Fixed effects model is the appropriate model to be adopted.

The Hausman test results show that the p-value is less than 5% significant, indicating that the null hypothesis should be rejected and the alternative hypothesis is accepted. Therefore, we accept the fixed effects as a suitable model. The acceptance of the fixed effects model is based on the fact that it takes care of the heterogeneity issue that can affect our findings. The fixed effects outcome displayed in the table showed that inefficient investment negatively affects a firm's abnormal returns. It has a negative coefficient (-0.0019) and is statistically significant at 10% denoting that a unit change in inefficient investment will lead to a 0.2 unit decrease in abnormal returns. Other variables, such as cash holding ratio, firm size and age, positively affect abnormal returns and are statistically significant. However, static panel data models are always misspecified due to serial correlation of the within-group error terms which consequently invalidate the point estimates and statistical inference. They have the problem of heteroskedasticity and endogeneity of some explanatory variables (Tripathi

and Leitão, 2013). Contrarily, dynamic models tend to be specified correctly, because the dynamics form part of the estimated variables of the model instead of being shifted to the error terms, which invalidates static fixed effects or random effects estimation. Moreover, the dynamic panel data models such as Sys-GMM resolve the issue of serial correlation, heteroskedasticity, and endogeneity that may present in the explanatory variables. This study used a Sys-GMM estimator to analyse and interpret our data.

3.5.2.4 Dynamic panel data analysis

The extant literature confirmed that static panel data analysis might be inconsistent and not efficient. To conduct an appropriate robustness check and follow up on the results of the static panel estimates, the dynamic panel data analysis proposed by Arellano and Bond (1991); Blundell and Bond (1998) is used. This technique is called the Systemic Generalised Method of Moments (SYSGMM). The SysGMM had been reported to efficient estimates. Therefore, we estimate the dynamic panel model to determine the effects of inefficient investment on firms' abnormal returns (Arellano and Bond, 1991; Blundell and Bond, 1998). Table 3.6 presents the findings from the dynamic panel data analysis.

As shown in Table 3.7, the findings confirmed the static panel model of fixed effects with a slight difference. There is no variation as regards the effects of inefficient investment on firms' excess returns. The coefficient is still negative but with a higher magnitude (1.28%) and a 5% statistically significant level. This means that a change in inefficient investment will lead to a 1.28% decrease in excess returns ceteris paribus. All other variables showed little dissimilarities. Variables like CHR, Size, and Age have a positive relationship with excess returns and are statistically significant in the fixed effects analysis. However, in SysGMM estimates, CHR now has a negative association with excess returns and is statistically significant. Size is still positive in its coefficient but not significant. Leverage which is positive and not significant in the fixed effects estimate is now negative and significant. Tangibility and MTB are positive in terms of their coefficients and equally statistically significant. Tangibility is negative and not significant in the fixed-effects model. Moreover, the lagged dependent variable

showed a negative relationship to the dependent variable, suggesting a steady connection from the past period of excess returns to the present.

3.5.2.4.1 Two system-GMM estimate

Table 3.6 shows the regression results of system GMM. The dependent variable is BHAR. In contrast, the independent variable of interest is the inefficient investment which is the outcome of the investment regressions reported in Table 3.4. Our sample consists of 148 firms and the period 2004 – 2019.

Table 3.6 Effect of inefficient investment on stock returns

	Model
VARIABLES	Two-step sys GMM
Inefficient Investment	-0.0128**
	(0.0062)
Lag Bhar	-0.3702***
	(0.0524)
Leverage	-0.2037***
	(0.0689)
CHR	-0.1302**
	(0.0540)
Firm Size	0.0117
	(0.0146)
Tangibility	0.1552**
	(0.0617)
Age	1.8783***
	(0.3930)
Market to book ratio	0.0001***
	(0.0000)
Constant	-1.8686***
	(0.3933)

Observations	1,899
Number of id	148
Year Dummies	Yes
Instruments/Groups	33/148
Arellano-Bond AR(2) p-value	0.28
Hansen statistics p-value	0.10
F-Statistic/p-value	7.31/0.000

Source: Author computation, 2021.

Note: White heteroscedasticity-consistent standard errors in parentheses, *** p<0.01, ** p<0.05 and * p<0.1 are statistically significance at 1%, 5% and 10% levels respectively. Hansen statistics p-value of 0.10 indicates that the instruments are valid while Arellano-Bond AR(2) p-value of 0.28 showed no 2nd order autocorrelation. The F-statistics with a p-value of 0.000 indicated that the regressors are jointly significant in explaining the dependent variable.

3.6 Analysis and Discussion of Findings

SysGMM results in Table 3.7 strongly validate our findings from the static panel models estimated. This shows clearly the consistency of results among the models evaluated. The findings show that inefficient investment affects firms' excess stock returns. The coefficient of inefficient investment is negative and statistically significant. The result suggested that an increase in inefficient investment will give rise to a 0.0128 unit decrease in the firm's annual abnormal stock returns. This result is in agreement with the study conducted by Yin (2018b). This evidence implies that inefficient investment harms firms' subsequent performance, thereby placing responsibility on the institutional shareholders to strengthen their monitoring role in investment activities. Because of the possibility of the agency problem, a corporate executive can either over or under-invest, which impacts negatively on corporate performance. From the recent financial scandals that affect some of the firms listed on JSE, which include Steinhoff International, Tongaat Hulett, EOH holdings, and Sasol, uncontrolled investment expenditure contributed mostly to the financial loss suffered by the companies. This result validates the effect of inefficient investment on corporate

performance which is proxy by stock returns and provides an understanding of the important monitoring role of institutional shareholders.

3.7 Conclusion on the effect of inefficient investment on stock returns

While the primary focus in this chapter is to determine the impact of limited attention on inefficient investment, the study shows whether inefficient investment influences subsequent stock performance. Since excess stock returns usually link to an increase in firm value, associating limited attention with the inefficient investment will influence firms' value. Employing the dynamic panel data model that was estimated using sysGMM, the study established that inefficient investment negatively affects firms' subsequent excess stock returns. Stock returns of firms listed on the JSE will fall following an increase in inefficient investment.

This study contributes to the continuing debate on the implications of loose monitoring intensity on institutional shareholder effects on corporate governance. Our evidence strongly indicates that corporate executives may engage in inefficient investment either by over or under-invest because of the possibility of agency problems, which can affect the firm value negatively. Institutional shareholders can reduce company inefficiency by adequate monitoring and consequently enjoy the resultant increased company value.

3.8 Impact of Shareholder Distraction on Inefficient Investment.

3.8.1 Summary statistics

Table 3.7 presents the sample's summary statistics regarding the impact of distraction measures on inefficient Investment. The sample period is between 2004 and 2019. The summary statistics reported the mean, standard deviation, median, minimum, maximum, skewness, and kurtosis values across the panel data variables. A detailed definition of variables is provided in the Appendix.

Table 3.7 Summary statistics

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)

VARIABLES	N	sum	mean	sd	min	max	kurtosis	skewness
Inefficient	2,248	-0.0187	-0.000	0.562	-9.005	11.86	212.9	5.525
Leverage	2,367	531.5	0.225	0.467	0	9.503	119.3	8.936
Cash	2,368	394.0	0.166	0.647	0	20.82	646.9	23.71
Size	2,367	19,789	8.360	2.418	-2.042	16.73	2.975	0.00432
Tan	2,368	855.1	0.361	1.179	0	30.94	349.3	16.54
Age	2,448	2,557	1.044	0.381	0	1.602	4.736	-1.560
MTB	2,353	21,421	9.104	133.5	-3.333	5,187	1,020	29.22
Distraction	1,924	1.530	0.000795	0.0816	-0.877	0.932	47.51	0.446
Number of id	150	150	150	150	150	150	150	150

Source: Author's computation 2021

The summary statistics show that the distraction measure(Dt) has a minimal effect on the inefficient investment. The mean value of Dt is 0.000795 while the minimum and maximum values are -0.877 and 0.932, respectively. The mean value is close to the minimum, indicating that the impact of distraction on the dependent variables is small. It confirms our alternative hypothesis that distraction measure affects inefficient investment. Moreover, the standard deviation of 0.0816 reflects a low level of variability from the mean.

3.8.2 Correlation Matrix

Table 3.8 : Pairwise correlations matrix analysis.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) Inef	1.000							
(2) Dt	0.090	1.000						
(3) Lev	0.002	0.001	1.000					
(4) CHR	0.006	0.065	0.287	1.000				
(5) Size	0.010	0.015	-0.038	-0.108	1.000			
(6) Tan	0.490	0.062	0.592	0.710	-0.049	1.000		
(7) Age	0.004	0.011	-0.012	-0.023	0.241	-0.028	1.000	
(8) MTB	0.030	-0.020	0.113	-0.011	-0.046	0.050	-0.012	1.000

Source: Author's computation 2021

In the correlation analysis in Table 3.8, distraction measure(Dt), which is the variable of interest is positively correlated with inefficient investment. This means that an increase in Dt will lead to a rise in investment inefficiency. All other independent variables displayed a positive association with the dependent variable, showing both positive and negative relationships. Generally, the analysis indicates that there is no multicollinearity among the variables.

3.8.3 Panel Data Estimation

Panel data analysis controls for unobserved heterogeneity. The study will estimate the panel data model using pooled OLS, fixed effects, and random effects techniques. The Hausman test will also be performed to choose between fixed effects and random effects, which is the best fit for the model.

3.8.3.1 Results of the panel data analysis

Table 3.9 shows the regression results of OLS, fixed effects, and random effects. The dependent variable is an inefficient investment while the independent variable of interest is the distraction measure(Dt) Our sample consists of 153 firms and the period of 2004 – 2019.

Table 3.9 Effect of shareholders' distraction on inefficient Investment

VARIABLES	Model 1 OLS	Model 2 fe	Model 3 re
Dt	0.3801***	0.3099***	0.3825***
	(0.0759)	(0.0707)	(0.0764)
Lev	-0.7789***	-0.9005***	-0.7786***
	(0.0173)	(0.0199)	(0.0174)
CHR	-0.7484***	-0.7252***	-0.7482***

	(0.0152)	(0.0180)	(0.0153)
Size	-0.0074**	0.1147***	-0.0074**
	(0.0030)	(0.0119)	(0.0030)
Tan	0.7086***	0.7500***	0.7085***
	(0.0109)	(0.0135)	(0.0110)
Age	-0.0191	-0.1382	-0.0282
	(0.0285)	(0.0935)	(0.0312)
MTB	0.0008	0.0085**	0.0013
	(0.0017)	(0.0040)	(0.0017)
Constant	0.1252***	-0.8464***	0.1504***
	(0.0375)	(0.1681)	(0.0491)
Observations	1,889	1,889	1,889
R-squared	0.704	0.697	
Number of id		153	153
Year dummies		Yes	Yes
Firm fixed effects		Yes	Yes

Source: Author's Computation 2021

Note: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1 are 1%, 5% and 10% statistically significant level. Model 1 represents OLS, Model 2 represents fixed effects and Model 3 random effects.

3.8.3.2 Hausman Test

Table 3.10 Results of Hausman's test

	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
Variables	**fe**	**re**	**Difference**	**S.E.**
Dt	.3098736	.382485	-.0726114	.0125954
Lev	-.9004906	-.7786127	-.1218779	.0131331
CHR	-.7252245	-.7482171	.0229926	.0124556

Size	.1147251	-.0073539	.1220791	.0126971
Tan	.7500285	.7084775	.041551	.0099409
Age	-.1382404	-.0282307	-.1100098	.0975994
MTB	.0085001	.0012573	.0072428	.0040202

chi2(21) = (b-B)'[(V_b-V_B)^(-1)](b-B) = 352.30 Prob>chi2 = 0.0000

Source: Author's computation 2021

The Hausman test in Table 3.10 shows a probability value that is significant at 1%, meaning that the null hypothesis, which says that random effects are suitable should be rejected and the alternative hypothesis that says fixed effects are suitable, should be accepted. Therefore, the study discusses the fixed effects results.

Although, the three models estimated confirmed that distraction measure has positive effects on inefficient investment. Particularly, the fixed-effects model has a positive coefficient (0.3099) and statistically significant at 1% indicated that an increase in distraction measure will lead to a 30.99% increase in inefficient investment. Other control variables like leverage (Lev), cash holding ratio (CHR) and age showed a negative association with inefficient investment and statistically significant. Whereas, size, tangibility (Tan), and market to book ratio(MTB) indicated a positive relationship with inefficient investment.

3.8.3.3 Dynamic panel data analysis.

Investment patterns are dynamic; companies thrive on straightening their investment trends over time. Consequently, prior-year investment behaviour affects current trends. Incorporating the lagged dependent variable helps measure the impact of previous investment on the current levels of investment and minimise the autocorrelation that emerges from misspecification (Arellano and Bond, 1991). A dynamic panel model vis a vis the estimating techniques mitigate against likely heterogeneity and endogeneity problems in the data sample. Over a while, investment dynamics are captured in the dynamic model and partial adjustment instrument modeling is allowed (Baum et al., 2001; Vengesai, 2019). So, intending to determine our estimation's robustness, the study used dynamics panel data model techniques,

system GMM. System GMM had been proved in the literature to produce an efficient estimate (Arellano and Bover, 1995; Blundell and Bond, 1998). It corrects endogeneity by introducing more instruments to improve efficiency significantly. According to Antoniou et al. (2008), the conventional estimation techniques that are the OLS, fixed, and random effects cannot control the dynamic biasness. Therefore, it is necessary to introduce stochastic variation into the model. The System GMM had been confirmed to be an appropriate estimation technique when there is an existence of serial correlation from idiosyncratic disturbances, heteroscedasticity, and endogenous regressors (Roodman, 2009).

3.8.3.3.1 Two-step system GMM results

Table 3.11 shows the regression results of the two-step system GMM. The dependent variable is an inefficient investment, while the independent variable of interest is the distraction measure(Dt). Other regressors include lagged inefficient, leverage, cash holding ratio, size, age, tangibility, and MTB Our sample consists of 153 firms and the period of 2004 – 2019.

Table 3.11 Impact of shareholders' distraction on inefficient investment

	(1)
	Model
Variables	Two-step system GMM
Dt	0.1674*
	(0.0909)
LInefinvest	-1.0833***
	(0.0354)
Leverage	-0.7214***
	(0.1948)
Cash holding ratio	-0.8114***
	(0.1292)
Size	-0.0267
	(0.1377)
Age	-0.0973**

	(0.0463)
Tangibility	0.7528***
	(0.0835)
MTB	0.0020
	(0.0014)
Constant	0.1519**
	(0.0674)
Observations	1,860
Number of id	153
Year Dummies	Yes
Instruments/Groups	45/153
Arellano-Bond AR(2) p-value	0.364
Hansen statistics p-value	0.410
F-Statistic/p-value	94.79/0.000

Source: Author Computation, 2021.

Note: White heteroscedasticity-consistent standard errors in parentheses, *** p<0.01, ** p<0.05 and * p<0.1 are statistically significance at 1%, 5% and 10% levels respectively. The Hansen statistics p-value of 0.410 indicates that the instruments are valid while the Arellano-Bond AR(2) p-value of 0.364 showed no second-order autocorrelation. The F-statistics with a p-value of 0.000 indicated that the regressors are jointly significant in explaining the dependent variable.

3.9 Analysis of Findings

Table 3.12 presents the regression outcome of the dynamic models. The finding produces evidence that there is a positive relationship between the shareholder's distraction and inefficient investment and it is statistically significant. The result indicates a positive coefficient of 0.1674 and is statistically significant at 10%. This implies that a unit of 0.1674 increase in a shareholder's distraction will lead to a 0.1674 unit increase in the level of inefficient investment. This confirms the assumption that institutional shareholders are subject to distraction due to the extreme events in an unrelated industry in their portfolio, thereby relaxing their corporate monitoring

control. The executive takes advantage of that and gets involved in an unprofitable investment that will jeopardise the firm value to the shareholders' detriment. The results are similar to the study conducted by Ward et al. (2017), where they relate the less motivated institutional investor to investment inefficiency and obtain positive coefficients. The author found out that institutional shareholders' higher motivated monitoring leads to a reduction in over and under-investment. Furthermore, tangibility, in which the firm's tangible assets has a positive effect on investment inefficient while other control variables such as leverage, cash holding ratio, size, and age reported a negative impact on investment inefficient.

3.10 Conclusion on shareholders' distraction and inefficient investment

The findings from our analyses have shown that institutional shareholders' distraction has significant effects on corporate investment inefficiency. Also, the firm assets tangibility affects investment inefficient significantly. In light of the conducted diagnostic checks in the estimating techniques used in the study, we established the robustness of our results. The results have proven the study hypothesis that institutional shareholders' distraction has a positive statistically significant effect on investment inefficiency. The findings that indicated that shareholders' distraction has a positive relationship with investment inefficiency are supported theoretically and empirically from research studies carried out by other researchers in countries worldwide.

Furthermore, taking into consideration the recent accounting scandals in South Africa, where ineffective corporate governance was blamed, our findings provide evidence to support the claim that ineffective corporate governance brought about by insufficient institutional shareholders' monitoring gives rise to opportunistic executive behaviour, which ultimately leads to financial scandals. Effects of limited attention on institutional monitoring intensity has been explored in the literature, our study, however, contributes to the extant literature by providing an understanding of how executives in the emerging economy respond to shifts in institutional shareholders' monitoring intensity which, to the best of our knowledge is the first research evidence in South Africa. This understanding will spur actions that will strengthen corporate governance

against future accounting scandals. Moreover, the study employed more robust dynamic panel data estimation - Sys GMM in the analysis, which establishes our result's reliability. Most of the existing studies used static panel data models like fixed effects and random effects. Static models cannot deal with endogeneity issues; consequently, results based on static models are prone to estimation problems. Overall, our findings indicate that having insight into how corporate executives react to temporally loosening monitoring intensity can considerably enhance corporate governance perception of value creation in companies.

3.11 Chapter summary

This chapter discussed the relationship between the institutional shareholders' limited attention and earnings investment inefficiency. The relationship between inefficient investment and subsequent stock returns was presented. The chapter laid a foundation for examining the link between limited institutional shareholders' attention and corporate decisions. The next chapter will explore the relationship between institutional limited attention and earnings management.

Chapter 4

4.1 Institutional Shareholders' Distraction Nexus Accruals and Real Activities Earnings Management.

4.1.1 Introduction.

This chapter presents the relationship between loosening institutional shareholders' monitoring intensity and manipulating discretional accruals and real activities earnings management. Earnings management is one of the corporate decisions that affect the firm's value and, consequently, institutional shareholders' considerable investment. This study examined the link between a temporary shift in institutional shareholders' monitoring of the corporate executives and actions of the executives as regards corporate decisions. In the previous chapter, the association between the monitoring intensity and investment inefficiency as one of the corporate decisions is examined. In this chapter, this study determines the effect of a drop in institutional shareholders' monitoring intensity occasioned by distraction events of an unrelated firm on the manager's management of both discretional accruals and real activities earnings.

4.1.2 Brief literature review

Earnings management is defined by Schipper (1989) as a deliberate interference in the financial reports to external users for personal benefits. Healy and Wahlen (1999: p.6) provide more elaborate definitions: "Earnings management occurs when managers use judgment in the financial reporting and in structuring transactions to alter financial reports to either mislead the stakeholders about the underlying economic performance of the company or to influence the contractual outcome that depends on reported accounting numbers". Furthermore, Giroux (2003) establishes that earnings management is effectuated when discretionary and operating accounting methods modify earnings to an expected outcome.

Earnings management types and consequences were analysed by many research studies (Cohen and Zarowin, 2010; Dechow et al., 1995; Jones, 1991; Kothari et al., 2005; Mizik and Jacobson, 2007; Roychowdhury, 2006). Dechow et al. (2010) discovered that managers usually inflate earnings and distort the firm's financial information by manipulating either accrual earnings or real activities earnings.

Significantly, both possibly have adverse effects on the long-term performance of the firm. Earnings management lowers the quality of information regarding earnings utilised by outside shareholders, resulting in financing new projects with higher capital costs (Garel et al., 2018; Kim and Sohn, 2013). Furthermore, prospective earnings and stock returns are negatively affected by earnings management (Garel et al., 2018).

Regarding accruals earnings management, it is manipulating earnings by exploiting the opportunity set of widely accepted processes as set out by accounting standards (Healy, 1985). This opportunistic attitude negatively influences earnings and makes it an unreliable measure of company performance (Dechow, 1994). It is making use of the future period earnings, which brings about future loss. Teoh et al. (1998) revealed that the initial public offer (IPO) issued with too high accruals, the firm suffered poor performance of their stock returns in the subsequent three years. Kothari (2001) states that self-centered managers use accounting discretion to falsify accruals for personal benefits. However, real earnings management uses financing decisions or timing investments to change declared earnings or some portions (Schipper, 1989). For example, adjusting the rate of depreciation of assets, putting off write-off of assets, and under-provision for doubtful and bad debt may form the basis for increasing and decreasing cash income strategies.

Furthermore, Roychowdhury (2006) defines real activities earnings management as the manager's decision that is at variance with standard business practice to achieve a particular level of earnings. Usually, the decision on research and development, giving price discounts, adjustment to credit policy, and increasing or decreasing other discretionary expenses may cause increasing or decreasing cash income strategies. Because increased sales are probable to disappear when the firms return to old prices, overproduction produces unsustainable earnings and results in large inventory, reduction in the discretionary cost of research and development (R&D) and employee training as well as advertisements can affect the firm's competitive advantage in the long run and future sales, respectively. Various research studies found a negative impact of real earnings management on the long-term performance of a firm. For instance, Bhojraj et al. (2009) investigate the effects of reduced discretionary costs and accruals' management to surpass analyst forecast. They discovered that firms

that marginally outperform the analyst forecasts with manipulated earnings only enjoy temporary stock price benefits over the others with unmanipulated earnings but miss the analyst forecasts. However, these temporary benefits relapse over three years. Likewise, Kothari et al. (2016) and Cohen and Zarowin (2010) connect post seasoned equity offering (SEO) stock market low performance to real activities earnings management, while Gunny (2010) documents that there is a negative relationship between earning management and operating performance.

The firm's decision on earning management in the form of accruals management (appropriating future earnings by accelerating revenues or decelerating expenses) to enhance current profits (Dechow et al., 1995; Garel et al., 2018; Jones, 1991; Kothari et al., 2005) or manipulating real activities (using price discounts to increase sales in the interim, achieve lower cost of goods sold by overproduction, and reduced unplanned expenditures to enhance reported profits (Cohen and Zarowin, 2010; Garel et al., 2018; Mizik and Jacobson, 2007; Roychowdhury, 2006), distort the company's financial information (Dechow et al., 2010) and affect the long-run performance of the firm (Cohen and Zarowin, 2010; Gunny, 2010; Kim and Sohn, 2013; Kothari et al., 2016). Gunny (2010) documents a negative relationship between earning management and operational efficiency, while Kothari et al. (2016) stated that shareholders' found it difficult to detect earnings management in the short run. Therefore, it is required consistent and robust monitoring by institutional shareholders to curtail earnings management. This is supported by the work of Hsu and Koh (2005) and Velury and Jenkins (2006). They document that institutional shareholder active monitoring role controlled executive discretion, thereby bringing about top-quality reported earnings. Moreover, Rajgopal and Venkatachalam (1998) conclude that institutional ownership reduces the manipulation of earnings management. The study conducted by Chung et al. (2002) also found that institutional shareholders hinder executives from using discretionary accruals in earnings management.

However, studies have shown that institutional shareholder monitoring intensity can be impaired by a distraction caused by events in an unrelated company (Kempf et al., 2017). Their attention concerning a portfolio of investments is limited (Baker and Wurgler, 2011; Garel et al., 2018). Institutional shareholders hold a portfolio of stocks in hundreds and thousands and they cannot monitor this portfolio with the same

intensity at a particular point in time. So, they get distracted, and when distraction occurs, they render reduced monitoring responsibilities. This study examines corporate executive decisions on earnings management during this period of distraction.

4.1.3 Hypothesis and the empirical approach

This empirical approach's fundamental idea is to follow Kempf et al. (2017) firm-level proxy identification construct that identifies temporary shifts in institutional shareholders' attention. From the thought examination described above, we detect times where institutional shareholders shift attention to company one and in consequence, the monitoring intensity decreases in company two. This explains looser monitoring pressure confronting the manager, which induces the maximisation of corporate decisions for personal benefits. This assertion will always be valid provided that a decrease in attention by one institutional shareholder cannot be immediately and liberally substituted by other institutional shareholders or the board of directors. We, therefore, summarise our hypothesis as follows:

H_0: There is no statistically significant relationship between shareholders' distraction and earnings management by company executives

H_1: There is a statistically significant relationship between shareholders' distraction and earnings management by company executives.

4.2 Data sources and methodology

To effect our analysis, the study sourced data from two main databases. We got financial information, market data, and institutional shareholder data from S&P Capital IQ and Bloomberg. We sampled all firms listed on JSE between 2004 and 2019 subject to data availability to compute the variables used.

4.2.1 Measuring earnings management

The two channels of influencing earnings management are maneuvering of accruals and maneuvering of real activities. The study measured earnings management (dependent variable) using either the manipulation of accruals or real activities. Following Kothari et al. (2005) and Garel et al. (2018), we compute discretionary accruals, which are the residuals of the regression below:

$$Discretionary\ Accruals_{it} = \beta_0 + \beta_1\left(\frac{1}{ASSETS_{it-1}}\right) + \beta_2(\Delta SALES_{it} - \Delta REC_{it}) + \beta_3 PPE_{it} + \beta_4 ROA_{it} + \epsilon_{it} \quad (4.1)$$

Where $Discretionary\ Accruals_{it}$ equals total accruals calculated as the change in non-cash current assets less change in current liabilities after deducting the current portion of long-term debt, less depreciation and amortisation, then divided by the previous year's total assets. $ASSETS_{it-1}$ equals total assets for the prior year, $\Delta SALES_{it}$ is current year sales minus prior year sales divided by one year lagged total assets, ΔREC_{it} is the current year account receivable minus the prior year account receivable divided by one-year lagged total assets, PPE_{it} are the current year net property, plant, and equipment scaled by one-year lagged total assets and ROA_{it} is the income before extraordinary items divided by one-year lagged total assets.

Next, various measures of real earnings management are computed. Motivated by Roychowdhury (2006) and Garel et al. (2018), the study considered three types of real earnings management, namely sales manipulation - an abnormal reduction of cash flow from operations, overproduction – an abnormal increase in production cost and discretionary cost reduction – an abnormal decreasing R&D and advertising expenses.

Sales manipulation is when sales increased during the year by giving a short period of price discounts and soft credit terms. An abnormal decline in cash flow from operating activities will be used to discover sales manipulation (sales revenue becomes lower due to reduced margins caused by the price discount or soft credit terms). Following Roychowdhury (2006) and Garel et al. (2018), we will compute an abnormal decline in operating cash flows (*REM CFO*) as the residues from the regression below:

$$REMCFO_{it} = \beta_0 + \beta_1 \left(\frac{1}{ASSETS_{it-1}}\right) + \beta_2 SALES_{it} + \beta_3 \Delta SALES_{it} + \epsilon_{it} \quad (4.2)$$

where $REMCFO_{it}$ is the operating cash flows scaled by one year lagged total assets, $ASSETS_{it-1}$ is the prior year total assets, $SALES_{it}$ is the current year sales scaled by one year lagged total assets and $\Delta SALES_{it}$ is the current year sales minus prior year sales divided by the previous year's total assets.

The residues will be multiplied by -1 so that the abnormal decline in operating cash flow will be a positive number.

Overproduction relates to the production of more than enough goods to increase earnings. Production cost is defined as the cost of goods sold + inventories scaled by lagged total assets. We will detect overproduction through the abnormal favourable cost of production. Following Roychowdhury (2006) and Garel et al. (2018), abnormal production cost (*REM Prod*) is the residuals of the regression below:

$$REMProd_{it} = \beta_0 + \beta_1 \left(\frac{1}{ASSETS_{it-1}}\right) + \beta_2 SALES_{it} + \beta_3 \Delta SALES_{it} + \Delta LSALES + \epsilon_{it} \quad (4.3)$$

where $REMProd_{it}$ is the cost of production scaled by one year lagged total assets, $SALES_{it-1}$ is the prior year total asset, $SALES_{it}$ is the current year sales scaled by one year lagged total assets, $\Delta SALES_{it}$ is the current year sales minus prior year sales divided by one year lagged total assets and $\Delta SALES_{it}$ The disparity between the current year lagged sales and lagged sales of the year before is divided by one year's total assets.

Discretionary costs include research and development (R&D), advertising, maintenance, employee training, and other miscellaneous expenses. The manager is at the discretion to reduce these types of costs to raise declared earnings. Following Roychowdhury (2006) and Garel et al. (2018), we will calculate the abnormal discretional cost (*REM Disc Cost*) as a residue of the regression below:

$$REMDiscCost_{it} = \beta_0 + \beta_1 \left(\frac{1}{ASSETS_{it-1}}\right) + \beta_2 SALES_{it} + \epsilon_{it} \quad (4.4)$$

where $REMDiscCost_{it}$ is the addition of R&D and Advertising expenses divided by lagged total assets, $ASSETS_{it-1}$ is the prior year total assets and $SALES_{it}$ is the current year sales divided by one year lagged total assets.

Furthermore, we will compute the total real earnings management (*Total REM*) measure by aggregating the three types of REM activities (abnormal decrease in operating cash flows, an abnormal increase in the cost of production, and an abnormal reduction in discretionary cost).

$$Total\ REM_{it} = REMCFO_{it} + REMDisc\ Cost_{it} + REMProd_{it} \quad (4.5)$$

4.2.2 Shareholder distraction and earnings management

To establish the effect of shareholder distraction on earnings management, we will follow Garel et al. (2018) and run the baseline regression using the types of earnings management (discretionary accruals and real activities earnings management) as a proxy for earnings management.

$$Discretionary\ Accruals_{it} = \beta_0 + \beta_1 Dt_{it} + \beta_2 Size_{it-1} + \beta_3 Leverage_{it-1} + \beta_4 Book - to - market_{it-1} + \beta_5 Profitability_{it-1} + \beta_6 Asset\ Growth_{it-1} + \beta_7 Momentum_{it-1} + \beta_8 Volatility_{it-1} + YearFE_t + \epsilon_{it-1} \quad (4.6)$$

For real activities earnings management, one of the components (REMCFO, REMProd, and REMDISCCost) can be used as a proxy for earnings management on one hand and the total of the elements (REMCFO+REMProd+REMDiscCost) on the other hand (Garel et al., 2021). This study examined the effect of shareholder's distraction on each component and the total real activities earnings management. Thus, we run the following regressions.

$$REMCFO_{it} = \beta_0 + \beta_1 Dt_{it} + \beta_2 Size_{it-1} + \beta_3 Leverage_{it-1} + \beta_4 Book - to - market_{it-1} + \beta_5 Profitability_{it-1} + \beta_6 Asset\ Growth_{it-1} + \beta_7 Momentum_{it-1} + \beta_8 Volatility_{it-1} + YearFE_t + \epsilon_{it-1} \quad (4.7)$$

$$REMProd_{it} = \beta_0 + \beta_1 Dt_{it} + \beta_2 Size_{it-1} + \beta_3 Leverage_{it-1} + \beta_4 Book - to - market_{it-1} + \beta_5 Profitability_{it-1} + \beta_6 Asset\ Growth_{it-1} + \beta_7 Momentum_{it-1} + \beta_8 Volatility_{it-1} + YearFE_t + \epsilon_{it-1} \quad (4.8)$$

$$REMDiscCost_{it} = \beta_0 + \beta_1 Dt_{it} + \beta_2 Size_{it-1} + \beta_3 Leverage_{it-1} + \beta_4 Book - to - market_{it-1} + \beta_5 Profitability_{it-1} + \beta_6 Asset\ Growth_{it-1} + \beta_7 Momentum_{it-1} + \beta_8 Volatility_{it-1} + YearFE_t + \epsilon_{it-1} \quad (4.9)$$

$$TotalREM_{it} = \beta_0 + \beta_1 Dt_{it} + \beta_2 Size_{it-1} + \beta_3 Leverage_{it-1} + \beta_4 Book - to - market_{it-1} + \beta_5 Profitability_{it-1} + \beta_6 Asset\ Growth_{it-1} + \beta_7 Momentum_{it-1} + \beta_8 Volatility_{it-1} + YearFE_t + \epsilon_{it-1} \quad (4.10)$$

where earnings management is proxied by the discretionary accruals, each component of real activities earnings management (REMCFO, REMProd, and REMDiscCost), and the sum of the components (Total REM). *Distraction (Dt_{fq})* is as measured in Chapter 3. *Size* is the lagged log of total assets, *profitability* is the income before extraordinary items divided by total assets, l*everage* is the total debt divided by total assets, *book to market* is the firm book value divided by its market value, a*sset growth* is the change in total assets over lagged total assets, *momentum* is the excess of accumulated monthly returns on FTSE/JSE all share index for the last twelve months and *volatility* is the excess of the standard deviation of daily returns over the FTSE/JSE all share index computed for the previous fiscal year.

The standard corporate policies control variables are size, profitability, and book-to-market. However, we will control for leverage because it proxies for limited free cash flow that should repress managerial advantageousness (Garel et al., 2018; Nikolaev, 2010). It will be expected to have a negative effect. According to Aghion and Stein (2008) and Garel et al. (2018), we will also control for asset growth; there is a tendency for fast-growing firms to focus on development rather than margins. Therefore, since real activities management serves to diminish value creation and future growth, fast-

growing firms will have a lesser incentive to be involved in real activities management. So, we anticipate a negative association with earnings management.

Moreover, we will control for momentum and volatility. Momentum is an indication of the firm's high performance over the market benchmark in the prior year. Therefore, we expect a negative impact on earnings management since an already performing firm may not resort to an overstatement of share price through earnings management. Regarding volatility, we expect a positive effect on earnings management because a high volatile share price may result in a fall of the share price that can stimulate earnings manipulation. Besides, we will control for Distracted Shareholder (Kempf et al., 2016) because it captures the institutional shareholders' monitoring impact on earnings management. We expect distracted shareholders to have a positive effect on earnings management.

We include a firm's fixed effect to capture time-invariant firm characteristics and fiscal year fixed effects to control uniform shock across the firms in a given fiscal year. All the control variables were lagged by one year to reduce the likely simultaneity bias.

4.2.3 Estimating technique and summary procedures for panel data analysis.

According to Bai (2009), panel data models comprise static panel models and dynamic panel models. The extant literature identified the two static panels as the within-group panel fixed effects, its extension-least square dummy variable (LSDV), and random effects (Hedges and Vevea, 1998; Rowland and Torres, 2004).

Fixed effects had been widely used in the literature. This alludes to the fact that it produces a consistent estimator, which means that values about the various sample mean are differenced (Blundell et al., 2001). Andrews et al. (2006); Kezdi and Sevak (2004) stated that when fixed effects and LSDV cross-sectional variation adopt dummy variables, they operate efficiently. However, when dummy variables become too much, the required degree of freedom will be high and the estimation result could be affected.

The fixed effect equation is given below:

$$Y_{it} = X_{it}\beta + \pi_i + \mu_{it} \quad (4.11)$$

In equation (4.7), the intercept is missing, Y_{it} is the vector of Earnings Management($EarnMgt_{it}$), π_i is the unobserved firm-specific effects, X_{it} is the independent variables (Dt_{it} + $Size_{it-1}$ + $Leverage_{it-1}$ + $Book-to-Market_{it-1}$ + $Profitability_{it-1}$ + $Asset\ Growth_{it-1}$ + $Momemtum_{it-1}$ + $Volatility_{it-1}$) and β is the vector of the estimated parameter for the independent variables. μ_{it} is the error term.

The LSDV equation is as stated below:

$$Y_{it} = \sum_{j=2}^{4} Dj + X_{it}\beta + \pi_i + \mu_{it} \quad (4.12)$$

In equation (4.8). D_j depict the dummy variables for the N-1 cross-section of firms. Equation (4.8) is different from equation (4.7) because of the addition of dummy variables to equation (4.8). This means all the firms now have a dummy with the reference firm's exemption, which is usually the first firm. However, Gujarati (2009b) stated that once dummy variables become too large, multicollinearity is anticipated and can cause the explanatory variables to correlate, resulting in bias and inconsistent estimator.

Furthermore, Nerlove and Balestra (1996) introduced random fixed effects seeking to control omitted variables in the fixed-effects model. The random-effects equation is stated below:

$$Y_{it} = \propto + X_{it}\beta + \pi_i + \mu_{it} \quad (4.13)$$

where Y_{it} is the vector of Earnings Management, $\propto$ is the constant, X_{it} is the independent variables (Dt_{it} + $Size_{it-1}$ + $Leverage_{it-1}$ + $Book-to-Market_{it-1}$ + $Profitability_{it-1}$ + $Asset\ Growth_{it-1}$ + $Momemtum_{it-1}$ + $Volatility_{it-1}$) and β is the vector of the estimated parameter for the independent variables. μ_{it} is the between-entity error while π_i is the within-entity error.

To decide between the fixed effects model and the random-effects model, the Hausman (1978) test is applied (Mutl and Pfaffermayr, 2011).

In this study, the dynamic panel data method used by (Arellano and Bond, 1991; Eigner and Kunst, 2009) is examined. This method is generally referred to as the generalised method of moments (GMM). This estimating technique improves estimator efficiency.

The GMM equation is stated below:

$$Y_{it} = \beta_1 X_{it} + \beta_2 Z_{it} + \in_{it} \quad (4.14)$$

where Y_{it} is the vector of Earnings Management($EarnMgt_{it}$), X_{it} is the exogenous independent variables, Z_{it} is the vector of predetermined independent variable which includes lag(s) of Y, β_1 for *i*=1,2 are parameter estimates for the independent variables and $\in_{it} = \pi_i + \mu_{it}$ is the error term.

Furthermore, to address the problem of weak instrumental variables, Blundell and Bond (1998); Blundell et al. (2001) introduced System-GMM. Also, System-GMM incorporates time-invariant explanatory variables that are not available in Difference-GMM. Besides lagged levels applied by Arellano-Bond, System-GMM utilises more restraints by using adjusted instruments with lagged differences. Moreover, Sys-GMM ensures orthogonality by properly differencing variables and their applicability. Besides, Sys-GMM is preferred because of the broad range of sample size in our model. Our estimated equation comprises both endogenous and lagged endogenous explanatory variables. Consequently, there is a correlation between the lagged endogenous variable and the error terms in the differenced equation through simultaneous terms in period *t*. However, there was no unobserved firm fixed effects that are correlated with the explanatory variables.

The GMM model that depicts the relationship between earnings management, distraction measure, and other control variables is stated below:

$$Y_{it} = \beta_1 + ZY_{it-1} + \beta_2 K_{2it} + \beta_3 K_{3it} \dots\dots\dots\dots\dots \beta_8 K_{8it} + \mu_{it} \quad (4.15)$$

Equation (4.15) is the modified dynamic panel data that includes the lagged dependent variable. By differencing equation (4.15), equation (4.16) is obtained as follows:

$$\Delta Y_{it} = \beta_1 + Z\Delta Y_{it-1} + \beta_2 \Delta K_{2it} + \beta_3 \Delta K_{3it} \ldots \ldots \beta_8 \Delta K_{8it} + \Delta \varphi_{it} \quad (4.16)$$

To avoid the likely correlation between Y_{it-1} and φ_{it}, an instrumental variable is used. Then by matrix transposition of the regressors, instrumental variable W' is obtained. Equation (4.16) is multiplied in vector form by W' resulting in equation (4.17).

$$W\Delta Y_{it}\, W'\Delta Y_{it} = \beta_1 + W'(\Delta Y_{it-1})p + W'(K_{it})\beta + W'\Delta\varphi_{it} \quad (4.17)$$

Using the generalised least square (GLS) to estimate equation (4.17) will yield one-step consistent GMM estimators. However, the study used system-GMM developed by Blundell and Bond (1998). It tackles weak instrumental variables and more suitable when there is a large sample. Hence, it yields more efficient and consistent parameter estimates.

4.3 Data Analysis and Interpretation

4.3.1 Panel root analysis

To understand our panel data's makeup before performing the analysis, we conducted the panel root analysis. The main reason for testing for unit root is to confirm the stationarity of variables. Engle and Granger (1987) stated that a linear combination of non-stationary variables might affect the variables' stationarity. This study's three methods to conduct the panel root test are the ADF - Fisher chi-square, Im, Pesaran and Shin (IPS) test, and Levin, Lin and Chu. These three methods are reliable, consistent, and suitable in determining variables' stationarity (Im et al., 2003; Maddala and Wu, 1999). The unit root test result showed that all the model variables were stationary at level- integration order zero (I (0)). Table 4.1 displays details of the unit root test:

Table 4.1 The series unit root test results

Variables	Levin, Lin and Shu		Im Pesaran & Shin		ADF- Fisher chi-square	
	P-Value	Integration Order	P-Value	Integration Order	P-Value	Integration Order
EarnMgt	0,0000	I (0)	0,0000	I (0)	0,0000	I (0)
Dt	0,0000	I (0)	0,0000	I (0)	0,0000	I (0)
Leverage	0,0000	I (0)	0,0000	I (0)	0,0000	I (0)
Book to market	0,0000	I (0)	0,0000	I (0)	0,0000	I (0)
Size	0,0000	I (0)	0,0000	I (0)	0,0000	I (0)
Profitability	0,0000	I (0)	0,0000	I (0)	0,0000	I (0)
Asset growth	0,0000	I (0)	0,0000	I (0)	0,0000	I (0)
Momemtum	0,0000	I (0)	0,0000	I (0)	0,0000	I (0)
Volatility	0,0000	I (0)	0,0000	I (0)	0,0000	I (0)

Source: Author's computation 2021

4.3.2 Summary statistics of shareholders' distraction effect on discretional accruals earnings.

Table 4.2 shows the summary statistics of the variables used in analysing the impact of distraction measures on discretionary accruals earnings. The descriptive statistics' characteristics revolve around the mean, standard deviation, minimum, and maximum of the panel data variables.

Table 4.2 Summary statistics

Variables	Obs	Mean	Std. Dev.	Min	Max	Skew.	Kurt.
Disc Accruals	2619	.277	2.625	0	126.607	43.23	2053.306
Distraction(Dt)	2282	1.370	6.540	0	3.130	47.739	2280
Size	2626	8.382	2.429	-2.042	17.937	.101	3.141
Leverage	2627	.224	.45	0	9.503	9.02	124.54
Book to Mkt	2454	1.307	7.183	-13.943	269.47	27.199	906.77
Profitability	2628	.129	.411	-8.203	7.637	5.814	201.719
Asset Growth	2626	2.976	43.158	0	1644.487	32.411	1122.138
Momentum	2896	.117	.731	-1.594	23.125	14.86	392.237
Volatility	2896	.057	.154	-.078	4.28	14.485	312.732

Source: Author's computation 2021

The summary statistics in Table 4.2 indicate that discretionary accruals (Disc Accruals) is 28% of lagged assets. The distraction measure(Dt) showed a minimal effect on the discretionary accruals over the sample period because the mean value of 1.370 is closer to the minimum than the maximum value. This implies that when shareholders are distracted, the executive's probability of manipulating earnings through discretionary accruals is low. The standard deviation of the distraction measure displaced higher variability from the mean, indicating widespread data values. The mean value of firm size (8.382) is closer to the maximum (17.937), showing a higher impact on discretionary accruals. While profitability and book to market mean values (0.129, 1.307) are close to the minimum values suggesting that their effect on discretionary accruals is minimal.

4.3.3 Panel Correlation Matrix

To ensure that issue of multicollinearity does not occur in our estimation, the correlation analysis is carried out to determine the extent of association among the variables and the result is displayed in Table 4.3

Table 4.3: Correlations matrix analysis

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) Disc Accruals	1.000								
(2) Distraction	0.004	1.000							
(3) Size	0.044	-0.007	1.000						
(4) Leverage	-0.012	0.001	-0.048	1.000					
(5) Book to market	0.002	-0.004	-0.036	0.011	1.000				
(6) Profitability	0.013	-0.002	-0.057	0.179	-0.056	1.000			
(7) Asset growth	-0.241	-0.001	-0.104	-0.007	-0.004	-0.002	1.000		
(8) Momentum	0.010	-0.009	-0.059	0.067	0.205	-0.079	-0.005	1.000	
(9) Volatility	0.006	-0.001	-0.147	0.050	0.159	-0.100	-0.003	0.824	1.000

Source: Author's computation 2021

As shown in Table 4.3, the correlations among the variables range between -0.001 to 0.205, indicating that multicollinearity will hardly be a concern. However, volatility

showed a strong positive correlation (0.824) with momentum, but, this will not affect our result as the model used for our analysis control for collinearity. The result shows that distraction measure positively correlates with discretionary accruals earnings suggesting that corporate executives can take advantage of the relaxed monitoring intensity to manipulate accruals to enhance fake earnings for private benefits.

4.3.4 Panel estimation analysis

The research study justifies panel data analysis because it can tackle the problem of unobserved heterogeneity. The research study adopts the error-component models that include fixed effects and random effects to describe the relationship and within the variation between the dependent variable and the independent variables.

4.3.4.1 Regression result of fixed effects (Within)

Having performed the summary statistics and the correlation matrix to establish the data characteristics, the study went ahead to test the functional relationship both from the static and dynamic analysis view.

Table 4.4: Effect of shareholders' distraction on discretionary accruals

VARIABLES	Model 1 fe
Distraction Measure	0.2058
	(0.1736)
Size	0.3335***
	(0.0647)
Leverage	-0.1830***
	(0.0614)
Book to Market ratio	-0.0006
	(0.0018)
Profitability	0.3421***

	(0.0957)
Asset Growth	0.2422***
	(0.0304)
Momentum	-0.0810**
	(0.0340)
Volatility	0.3223*
	(0.1816)
Constant	0.0991***
	(0.0356)
Observations	1,225
R-squared	0.098
Number of id	159
Year Dummies	Yes

Source: Author's computation 2021

Note: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1 are 1%, 5% and 10% statistically significant level. Model 1 represents fixed effects.

4.3.4.2 Regression result of the random effects.

The random-effects analysis result is given in the section to compare the fixed effects and random effects. The best-fitted model will be determined through the Hausman test.

Table 4.5: Effect of shareholders' distraction on discretionary accruals

VARIABLES	Model 2 re
Distraction Measure	-0.0462
	(0.1073)
Size	0.1723***
	(0.0480)
Leverage	-0.0740

	(0.0503)
Book to Market ratio	-0.0003
	(0.0017)
Profitability	0.0521
	(0.0731)
Asset Growth	0.2091***
	(0.0273)
Momentum	-0.0690**
	(0.0299)
Volatility	0.2701*
	(0.1530)
Constant	0.1106***
	(0.0331)
Observations	1,225
R-squared	
Number of id	159
Year Dummies	Yes

Source: Author's Computation 2021

Note: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1 are 1%, 5% and 10% statistically significant level. Model 2 represents random effects.

4.3.4.3 Hausman test

This section displayed the Hausman test regression result. This test is performed to confirm if there is a significant difference between fixed and random effects. The hypothesis states that:

The null (H_0): Random-effects model is appropriate.

The alternative (H_a): fixed effects is preferred.

Table 4.6 Hausman test result

	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	fe	re	Difference	S.E.
Variables				

Distraction	.2058049	-.0461881	.251993	.1280828
Size	.3334862	.1723245	.1611616	.0397154
Leverage	-.1830101	-.0739551	-.1090551	.0309537
Book to Mkt	-.0006469	-.0003224	-.0003245	.0002535
Profitability	.342114	.0520671	.2900469	.0559388
Asset Growth	.2421761	.2091251	.0330511	.0105768
Momentum	-.0810034	-.069014	-.0119894	.013249
Volatility	.3223258	.2700648	.052261	.0844597
chi2(17) = (b-B)'[(V_b-V_B)^(-1)](b-B) = 40.44 Prob>chi2 = 0.0011				

The findings of the panel model are presented in tables 4.4 and 4.5. The results of fixed effects and random effects are reported. The study further considered the Hausman test to determine the best fit model between the two. The result of Hausman's test (p-value of 0.0011) showed that the null hypothesis should be rejected and we accept the alternative hypothesis, which states that fixed effects is preferred.

The fixed effects result showed that the distraction measure effect on discretionary accruals is positive but not significant. Other control variables such as firm size, asset growth, volatility and profitability have a positive relationship with discretional accruals and is statistically significant. In contrast, leverage and momentum have a negative link with discretional accruals and statistically significant.

As we earlier stated, fixed effects is one of the static model estimating techniques, which has cross-sectional dependence, heteroscedasticity, and serial correlation problems. These problems can cause biases in our results and hence, are not relied upon. Therefore, we estimated a dynamic panel data model (system GMM), which corrects these problems.

4.3.5 Dynamic panel data estimation: Result of two-step system GMM

This study used generalised methods of moments, also known as System GMM, to estimate the dynamic panel data. We used the two-step system GMM because of its intrinsic benefits. It can deal with endogeneity issues, tackle weak instrumental variables and be suitable when there is a large sample, and produce more efficient and consistent parameter estimates.

Table 4.7 Effect of shareholders' distraction on discretionary accruals

VARIABLES	Two-step sys-GMM
Lagged Accruals	-0.5523***
	(0.1118)
Distraction	0.1593**
	(0.0655)
Size	0.0258
	(0.0540)
Leverage	-1.3983***
	(0.5287)
Book to market	-0.0030***
	(0.0010)
Profitability	0.9483***
	(0.3464)
Asset Growth	0.0759
	(0.0770)
Momentum	-0.0114
	(0.0408)
Volatility	0.0660
	(0.3572)
	(0.0447)
Constant	-0.0825**
	(0.0321)
Observations	1,222
Number of id	159
Year Dummies	Yes

No of instruments/Group	46/159
Arellano-Bond AR(2) p-value	0.339
Hansen statistics p-value	0.412
F-Statistic/p-value	3.58/0.000

Source: Author computation, 2021.

Note: White heteroscedasticity-consistent standard errors in parentheses, *** p<0.01, ** p<0.05 and * p<0.1 are statistically significance at 1%, 5% and 10% levels respectively. The Hansen statistics p-value of 0.412 indicates that the instruments are valid, while the Arellano-Bond AR(2) p-value of 0.339 showed no 2nd order autocorrelation. The F-statistics with a p-value of 0.000 indicated that the regressors are jointly significant in explaining the dependent variable.

4.4 Analysis of finding.

The two-step system GMM results in Table 4.7 show that shareholders' distraction, which is the variable of interest, has a significantly positive relationship with discretionary accruals earnings. This is contrary to the fixed effects models (static model) that reported a positive relationship but were not significant. Dynamic panel models can resolve estimation problems that are capable of affecting static models' results thereby making them unreliable. The result suggested that the effect of distraction measure on discretionary accruals with a coefficient of 0.1593 means that a unit change in distraction measure leads to 0.1593 units increase in discretionary accruals at a 5% statistically significant level on average ceteris paribus. The implication of this is that when institutional shareholders are distracted and their monitoring intensity drops, the executive managers tend to engage in discretionary accruals earnings management for personal interest. This result is consistent with Garel et al. (2018) study, which also reported a positive relationship. Other variables such as leverage and book to market negatively correlate with discretionary accruals earnings and statistically significant. This indicates that executives will not be motivated to manipulate earnings when there is limited free cash flow (leverage). Likewise, when the firm's value (book to market) is high, it will demotivate earnings management. On the contrary, when it is low, it can encourage earnings management. Profitability reported a positive link with discretionary accruals earnings and was

statistically significant, implying that when the ratio of income before the extraordinary item to the total asset is high, it can stimulate earnings management.

4.5 Discussion of findings.

Discretionary accrual earnings are the alteration of the period for reported earnings. In other words, the timing for recognition of cash flow is altered (Franceschetti, 2018). The institutional shareholders can check this through effective monitoring. Still, because of shareholders' distraction and according to agency theory, the modification of timing of recognising cash flow in the earnings by the corporate executives can be majorly for personal benefits. The result of our finding corroborates this assertion. Moreover, the result is consistent with one of the causes of the recent accounting scandals affecting some firms listed on the JSE (Steinhoff international, Tongaat Hullett, EOH Holdings, etc.). They failed to recognise bad debts and not disclose the level of their obligations in their earnings, thereby reporting fake earnings and deceiving the stakeholders.

4.6 Conclusion on shareholders’ distraction and discretionary accruals

This chapter examines how institutional shareholders' attention influences corporate executive decisions on earnings management. There are two types of earnings management: accruals, earnings management, and real activities earnings management. This section of the chapter investigates the relationship between institutional shareholder monitoring intensity and discretionary accruals earnings. Our central assumption is that institutional shareholders are subject to limited attention. These limitations prevent them from maintaining the same monitoring intensity for all the companies they invest in concurrently. At a particular time, institutional shareholders become distracted because their attention is shifted to an unrelated company in their portfolio, thereby weakening their control intensity. Following Kempf et al. (2017), we use the firm-level proxy for distraction measure to capture when institutional shareholders suffer shocks in unrelated companies in their portfolios.

The study finds substantial evidence that corporate executives catch on the opportunity of the institutional shareholders' distraction to involve in discretionary

accruals earnings management. The study documents a statistically significant effect on discretionary accruals manipulation. We indicate that this is a causal effect since the distraction measure captures the shift in the institutional shareholders' attention occasioned by shocks in an unrelated company.

Prior research studies document the shapes and implications of earnings management. It particularly discloses that the manipulation of both the discretionary accruals and real activities earnings would have negative consequences regarding the creation of firm value in the future (Bhojraj et al., 2009; Cohen and Zarowin, 2010; Gunny, 2010; Kim and Sohn, 2013; Kothari et al., 2016; Li, 2010; Mizik and Jacobson, 2007; Teoh et al., 1998). The adequate monitoring of the institutional shareholders can ensure the report of high-quality earnings, which ultimately enhances firm value in the long run (Hsu and Koh, 2005; Velury and Jenkins, 2006). The distraction measure's impact on real activities earnings management is examined in this chapter's next section.

4.7 Real activities earnings management

Real activities earning is defined "as departures from normal operational practices, motivated by managers' desire to mislead at least some stakeholders into believing certain financial reporting goals have been met in the normal course of operations" (Roychowdhury, 2006: p.337). Real activities earnings are carried out using the three following manipulation methods:

1. Sales manipulation: This is speeding up sales timing and creating unmaintainable sales by raising price discounts or favourable credit terms.
2. Reduction of discretionary expenditures: Discretionary expenditures like research and development(R&D), maintenance, and advertising are usually expensed during the same period they are incurred. However, for the firm to increase their earnings, they reduce the reported expenses by decreasing discretionary expenditure.
3. Overproduction: This is when managers of manufacturing companies, in an attempt to increase earnings, produce more goods than necessary to meet

desired demand. The production fixed cost will be apportioned on all the units, thereby decreasing the fixed cost per unit. Consequently, if there is no increase in the unit marginal cost, the total cost per unit will reduce and the reported cost of goods sold will be lower, increasing reported operating margins.

According to the extant literature, any of the types of real activities earnings can be used as a proxy for real activities earnings as well as the sum of the three types of real earnings (sales manipulation, decrease in discretionary expenditures, and overproduction) (Garel et al., 2018). This study relates the distraction measure to each type of real activity and the sum of the three. This is to enable us to determine the magnitude of its impact on each class and its total. The study focuses on the relationship between the distraction measure and the total real activities earnings management.

4.8 The Impact of Shareholders' Distraction on Sales Manipulation

4.8.1 Data Analysis and Interpretation

4.8.1.1 Summary statistics

Table 4.8 summarises the characteristics of the variables used in analysing the impact of distraction measures on sales manipulation. The sales manipulation averaged 0.307 during the period considered. The standard deviation indicated that the data sets are widely distributed as the mean's dispersion is large. The statistics also showed that the impact of distraction is small as the mean is closer to the minimum value. Again, the data showed mixed normality given the skewness and kurtosis result.

Table 4.8 Summary statistics

Variables	Obs	Mean	Std. Dev.	Min	Max	Skew.	Kurt.
SalManip	2626	.307	2.018	0	72.449	26.426	816.173
Distraction	2282	1.370	6.540	0	3.130	47.739	2280
Size	2626	8.382	2.429	-2.042	17.937	.101	3.141
Leverage	2627	.224	.45	0	9.503	9.02	124.54
Book to Market	2454	1.307	7.183	-13.943	269.47	27.199	906.77

Profitability	2628	.129	.411	-8.203	7.637	5.814	201.719
Asset Growth	2626	2.976	43.158	0	1644.487	32.411	1122.138
Momentum	2896	.117	.731	-1.594	23.125	14.86	392.237
Volatility	2896	.057	.154	-.078	4.28	14.485	312.732

Source: Author's computation 2021

4.8.1.2 Correlation matrix

In ensuring that the issue of multicollinearity does not occur in our estimation, the correlation analysis is conducted to determine the extent of association among the variables and the result is displayed in Table 4.9

Table 4.9 Correlations matrix analysis

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) Sal Manip	1.000								
(2) Distraction	0.003	1.000							
(3) Size	-0.103	0.008	1.000						
(4) Leverage	0.010	0.009	-0.048	1.000					
(5) Book to market	-0.005	0.008	-0.036	0.011	1.000				
(6) Profitability	0.025	-0.006	-0.057	0.179	-0.056	1.000			
(7) Asset growth	-0.069	-0.002	-0.104	-0.007	-0.004	-0.002	1.000		
(8) Momentum	0.011	0.036	-0.059	0.067	0.205	-0.079	-0.005	1.000	
(9) Volatility	0.022	0.039	-0.147	0.050	0.159	-0.100	-0.003	0.824	1.000

Source: Author's computation 2021

The correlations among the variables shown in Table 4.9 are in the range between -0.002 to 0.205, indicating that there is no multicollinearity problem. Although volatility with a correlation coefficient of 0.824 demonstrates a strong and positive correlation with Momentum. This did not affect our result as our model controlled for collinearity. The analysis showed that distraction has a positive correlation with sales manipulation, implying that when a shareholder is distracted, corporate executives tend to relax credit terms or offer price discounts that will enhance sales in the short term and improve earnings as well, all for personal interest.

4.8.2 Panel data analysis

The research study used error-component models that include fixed effects and random effects to illustrate the relationship and within-variation between the dependent and independent variables.

4.8.2.1 Fixed effects, random effects, and Hausman test regression results.

Having performed the summary statistics and the correlation matrix to establish the traits of the data, the study went ahead to test the applicable relationship both from the static and dynamic analysis view

Table 4.10 Effect of shareholders' distraction on sales manipulation

VARIABLES	Model 1 fe	Model 2 re
Distraction	0.0000	0.0000
	(0.0000)	(0.0000)
Size	-0.0334**	-0.0391**
	(0.0162)	(0.0165)
Leverage	-0.0216*	-0.0236*
	(0.0122)	(0.0124)
Book to market	0.0001	0.0000
	(0.0006)	(0.0007)
Profitability	0.0824***	0.0812***
	(0.0133)	(0.0137)
Momentum	-0.0134*	-0.0112
	(0.0076)	(0.0078)
Volatility	0.0775**	0.0715*
	(0.0378)	(0.0388)
Asset Growth	0.0137*	0.0124

	(0.0081)	(0.0083)
Constant	-0.0686***	-0.0456**
	(0.0114)	(0.0200)
Observations	1,720	1,720
R-squared	0.063	
Number of id	179	179
Year Dummies	Yes	Yes

Source: Author computation 2021

Note: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1 are 1%, 5% and 10% statistically significant level. Model 1 represents Fixed effects and Model 2 represents Random effects results

Table 4.11 Hausman test result

	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	fe	re	Difference	S.E.
Variables				
Distraction	7.05e-14	6.49e-14	5.59e-15	9.82e-15
Size	-.0333596	-.0391207	.0057611	.0022833
Leverage	-.0216257	-.0235622	.0019365	.0013586
Book to market	.0000822	.0000341	.0000481	.0000118
Profitability	.0824143	.0811652	.0012491	.0008596
Momentum	-.0134238	-.0112041	-.0022197	.00051
Volatility	.077498	.0714669	.006031	.0020508
Asset Growth	.0136733	.0124377	.0012356	.0007781
chi2(19) = (b-B)'[(V_b-V_B)^(-1)](b-B) = 108.51 Prob>chi2 = 0.0000				

Source: Author's computation 2021

The findings of the panel model are presented in Table 4.10. The results of fixed effects and random effects are reported. The study further considered the Hausman test to decide the best fit model between the two. The hypothesis states

- The null (H_0): Random-effects model is appropriate.
- The alternative (H_a): fixed effects is preferred

The result of Hausman's test (p-value of 0.0000) indicated that the null hypothesis should be rejected and we accept the alternative hypothesis, which states that fixed effects is preferred.

The fixed effects result showed that the distraction measure, which is our variable of interest, has a positive relationship with sales manipulation, but it is not statistically significant. Meanwhile, because the study is interested in the dynamic panel model, the result of the dynamic panel model – System GMM is therefore presented below:

4.8.2.2 Dynamic panel model analysis: System GMM result.

This study used generalised methods of moments, also known as system GMM, to estimate the dynamic panel data. We used the two-step system GMM because of its inherent advantages that the static models cannot handle. It can deal with endogeneity issues, tackle weak instrumental variables, and be suitable when there is a large sample, and produce more efficient and consistent parameter estimates.

Table 4.12: Effect of shareholders' distraction on sales manipulation

VARIABLES	Two-step sys-GMM
Lag Sales Manipulation	0.7954***
	(0.0982)
Distraction Measure	0.0476***
	(0.0504)
Size	-0.0080**
	(0.0034)

Leverage	-0.0454***
	(0.0152)
Book to market	0.0007
	(0.0012)
Profitability	-0.0699*
	(0.0408)
Asset Growth	-0.0383**
	(0.0158)
Momentum	-0.0176
	(0.0146)
Volatility	0.0904
	(0.0578)
Constant	0.0000
	(0.0000)
Observations	1,555
Number of id	177
Year Dummies	Yes
Arellano-Bond test for AR(2)	0.677
Hansen test	0.491
No of Instruments/Groups	34/177
F-Statistics/p-value	15.91/0.000

Source: Author computation 2021

Note: White heteroscedasticity-consistent standard errors in parentheses, *** p<0.01, ** p<0.05 and * p<0.1 are statistically significance at 1%, 5% and 10% levels respectively. The Hansen statistics p-value of 0.491 indicates that the instruments are valid, while the Arellano-Bond AR (2) p-value of 0.677 showed no 2nd order autocorrelation. The F-statistics with a p-value of 0.000 indicated that the regressors are jointly significant in explaining the dependent variable.

4.9 Analysis of finding

The finding from the two-step system GMM results in Table 4.12 indicated that the shareholders' distraction has a positive relationship with sales manipulation and is statistically significant. The result showed that the effect of shareholders' distraction

on sales manipulation with a coefficient of 0.0476 means that a unit change in shareholders' distraction will result in 0.0476 units' increase in sales manipulation, at a 1% statistically significant level on average ceteris paribus. The implication of this is that when institutional shareholders are distracted and their monitoring intensity drops, the executive managers tend to manipulate either the price discount or change the credit policy to present sales value that is misleading to stakeholders. Other variables such as size, leverage, profitability, and asset growth have a negative relationship with sales manipulation and are statistically significant. This implies that firm size, leverage, profitability, and asset growth does not affect sales manipulation.

4.10 The impact of shareholders' distraction on reduction in discretionary expenditures.

4.10.1 Data analysis and interpretation

4.10.1.1 Summary statistics

Table 4.13 summarises the attributes of the variables used in analysing the impact of distraction measures on reducing discretionary expenditure. The discretionary expenditure mean is 0.225 during the period of consideration. The standard deviation indicated that the variable is more to the maximum value as the mean's dispersion is large. The statistics also showed that the impact of distraction measure is small as the mean is closer to the minimum value. Again, the data showed mixed normality given the skewness and kurtosis result. However, they do not affect the method of data analysis.

Table 4.13: Summary Statistics

Variables	Obs	Mean	Std. Dev.	Min	Max	Skew.	Kurt.
Disexp	2626	.225	.838	0	31.577	25.083	827.199
Distraction	2282	1.370	6.540	0	3.130	47.739	2280
Size	2626	8.382	2.429	-2.042	17.937	.101	3.141
Leverage	2627	.224	.45	0	9.503	9.02	124.54
Book to market	2454	1.307	7.183	-13.943	269.47	27.199	906.77
Profitability	2628	.129	.411	-8.203	7.637	5.814	201.719
Asset growth	2626	2.976	43.158	0	1644.487	32.411	1122.138

Momentum	2896	.117	.731	-1.594	23.125	14.86	392.237
Volatility	2896	.057	.154	-.078	4.28	14.485	312.732

Source: Author's computation 2021

4.10.1.2 Correlation matrix

A correlation matrix of the model's variables is performed to ensure that multicollinearity does not occur in our estimation. It is conducted to determine the extent of the relationship between the variables and the result is displayed in Table 4.9

Table 4.14 Correlations matrix analysis

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) Dis exp	1.000								
(2) Distraction	0.006	1.000							
(3) Size	0.115	-0.007	1.000						
(4) Leverage	-0.041	0.001	-0.048	1.000					
(5) Book to market	0.038	-0.004	-0.036	0.011	1.000				
(6) Profitability	-0.181	-0.002	-0.057	0.179	-0.056	1.000			
(7) Asset growth	-0.071	-0.001	-0.104	-0.007	-0.004	-0.002	1.000		
(8) Momentum	-0.001	-0.009	-0.059	0.067	0.205	-0.079	-0.005	1.000	
(9) Volatility	0.018	-0.001	-0.147	0.050	0.159	-0.100	-0.003	0.824	1.000

Source: Author computation 2021

The correlations among the variables shown in Table 4.14 are between -0.001 to 0.205, suggesting that there is no multicollinearity problem, but volatility shows a strong correlation (0.824) with momentum, which does not affect our result. The analysis suggests that distraction measure positively correlates with discretionary expenditures, which indicates that managers can reduce discretionary expenditure to enhance earning deceitfully when a shareholder is distracted.

4.10.2 Panel data analysis

The research study used error-component models that include fixed effects and random effects to show the relationship and within-variation between the dependent and independent variables.

4.10.2.1 Fixed effects, random effects, and Hausman test regression results

Table 4.15 Effect of shareholders' distraction on discretional expenditure

VARIABLES	Model 1 fe	Model 2 re
Distraction Measure	-0.0624	-0.0782*
	(0.0433)	(0.0420)
Size	-0.0088	0.0042
	(0.0103)	(0.0061)
Leverage	0.0522***	0.0516***
	(0.0115)	(0.0110)
Book-to-Market	-0.0006	-0.0006
	(0.0006)	(0.0006)
Profitability	-0.3290***	-0.2845***
	(0.0475)	(0.0413)
Asset Growth	-0.0381***	-0.0369***
	(0.0096)	(0.0093)
Momentum	-0.0178**	-0.0192**
	(0.0084)	(0.0083)
Volatility	0.0881**	0.0966**
	(0.0428)	(0.0425)
Constant	0.2226**	0.0790
	(0.1025)	(0.0624)
Observations	1,231	1,231
R-squared	0.105	
Number of id	159	159
Year Dummies	Yes	Yes

Source: Author computation 2021

Note: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1 are 1%, 5% and 10% statistically significant level. Model 1 represents Fixed effects and Model 2 represents random effects results

Table 4.16 Hausman test result

	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	fe	re	Difference	S.E.
Variables				
Distraction	-.0623886	-.0781619	.0157732	.0116858
Size	-.0088308	.004232	-.0130628	.008338
Leverage	.052166	.0515609	.0006051	.0036249
Book to Market	-.0006171	-.0005997	-.0000174	.0001075
Profitability	-.3290208	-.2845154	-.0445054	.0239318
Asset Growth	-.0380693	-.0368746	-.0011947	.0024797
Momentum	-.0178361	-.0192019	.0013658	.0013085
Volatility	.088082	.0965752	-.0084932	.0069638
chi2(17) = (b-B)'[(V_b-V_B)^(-1)](b-B)= 31.34 Prob>chi2 = 0.0181				

Source: Author's computation 2021

The findings of the panel model are presented in Table 4.15. The results of fixed effects and random effects are reported. The study further considered the Hausman test to decide the best fit model between the two. The hypothesis states that:

- The null (H_0): Random-effects model is appropriate.
- The alternative (H_a): fixed effects is preferred

The result of Hausman's test in Table 4.16 reported a p-value of 0.0181, indicating that the null hypothesis should be rejected and we accept the alternative hypothesis, which states that fixed effects is preferred.

The fixed effects result showed that the distraction measure, which is our variable of interest, negatively relates to discretionary expenditure, but it is not statistically significant. Meanwhile, because the study is interested in the dynamic panel model, the result of the dynamic panel model – System GMM is therefore presented below:

4.10.2.2 Two system-GMM regression result

Table 4.17 Effect of shareholders' distraction on discretionary expenditures

VARIABLES	Two-step sys-GMM
LagDisexp	0.8397***
	(0.0761)
Distraction	0.0986*
	(0.0511)
Size	0.0013
	(0.0018)
Leverage	0.0018
	(0.0181)
Book to market	0.0003**
	(0.0002)
Profitability	0.0244*
	(0.0128)
Asset growth	0.0569*
	(0.0336)
Momentum	-0.0025
	(0.0064)
Volatility	0.0132
	(0.0294)
Constant	-0.0725
	(0.0479)
Observations	1,069
Number of id	155
Year Dummies	Yes

Arellano-Bond test for AR(2)	0.227
Hansen test	0.111
No of Instruments/Groups	29/155
F Statistics/p.value	11.02/0.000

Source: Author computation 2021

Note: White heteroscedasticity-consistent standard errors in parentheses, *** p<0.01, ** p<0.05 and * p<0.1 are statistically significance at 1%, 5% and 10% levels respectively. Hansen's statistics p-value of 0.111 indicates that the instruments are valid, while Arellano-Bond's AR (2) p-value of 0.227 showed no 2nd order autocorrelation. The F-statistics with a p-value of 0.000 indicated that the regressors are jointly significant in explaining the dependent variable.

4.11 Analysis of finding

The finding from the two-step system GMM results in Table 4.17 indicated that the shareholders' distraction has a positive relationship with discretionary expenditures and is statistically significant. The result showed that shareholders' distraction affects discretionary expenditures. The coefficient of 0.0986 indicates that a unit change in distraction measure will lead to 0.0986 units more in a reduction in discretionary expenditures, at a 10% statistically significant level on average ceteris paribus. The import of this is that when institutional shareholders are distracted and their monitoring intensity drops, the executive managers tend to reduce discretionary expenditures and increase earnings to the desired level at the detriment of institutional shareholders. Other variables such as book to market, profitability, and asset growth have a positive relationship with discretionary expenditures and are statistically significant, suggesting that they can stimulate manipulation of discretionary expenditure.

4.12 The effect of shareholders' distraction on overproduction

4.12.1 Data analysis and interpretation

4.12.1.1 Summary statistics

Table 4.18 summarises the attributes of the variables used in analysing the impact of distraction measures on overproduction. The overproduction mean is 0.371 during the period in consideration. The standard deviation indicated that the variable is more to the maximum value as the dispersion from the mean is large. The statistics also showed that the impact of distraction measure is small as the mean is closer to the minimum value. Again, the data showed mixed normality given the skewness and kurtosis result. However, they do not affect the method of data analysis

Table 4.18: Summary statistics

Variables	Obs	Mean	Std. Dev.	Min	Max	Skew.	Kurt.
Overproduction	2626	.371	1.515	0	45.517	19.452	469.636
Distraction	2282	1.370	6.540	0	3.130	47.739	2280
Size	2626	8.382	2.429	-2.042	17.937	.101	3.141
Leverage	2627	.224	.45	0	9.503	9.02	124.54
Book to Market	2454	1.307	7.183	-13.943	269.47	27.199	906.77
Profitability	2628	.129	.411	-8.203	7.637	5.814	201.719
Asset Growth	2626	2.976	43.158	0	1644.487	32.411	1122.138
Momentum	2896	.117	.731	-1.594	23.125	14.86	392.237
Volatility	2896	.057	.154	-.078	4.28	14.485	312.732

Source: Author's computation 2021

4.12.1.2 Correlation matrix

A correlation matrix of the model's variables is performed to ensure that multicollinearity does not occur in our estimation. It is conducted to determine the extent of the relationship between the variables and the result is shown in Table 4.19

Table 4.19 Pairwise correlations matrix analysis

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) Over Prod	1.000								
(2) Distraction	-0.001	1.000							
(3) Size	0.087	-0.007	1.000						
(4) Leverage	-0.055	0.001	-0.048	1.000					
(5) Book to market	-0.009	-0.004	-0.036	0.011	1.000				
(6) Profitability	-0.053	-0.002	-0.057	0.179	-0.056	1.000			
(7) Asset growth	0.023	-0.001	-0.104	-0.007	-0.004	-0.002	1.000		
(8) Momentum	-0.003	-0.009	-0.059	0.067	0.205	-0.079	-0.005	1.000	
(9) Volatility	-0.020	-0.001	-0.147	0.050	0.159	-0.100	-0.003	0.824	1.000

Source: Author's computation 2021

The correlations among the variables shown in Table 4.14 are in the range between -0.001 to 0.205, indicating that there is no multicollinearity problem. However, volatility showed a strong and positive correlation (0.824) with Momentum. Our result is not affected by this because the model used for analysis control for collinearity. The analysis demonstrates that the distraction measure negatively correlates with overproduction, implying that it did not influence increased production unnecessarily.

4.12.2 Panel data analysis

The research study used the error-component models that include fixed effects and random effects to demonstrate the relationship and within-variation between the dependent and independent variables.

4.12.2.1 Fixed effects, random effects and Hausman test regression results

Table 4.20 Effect of shareholders' distraction on overproduction

	Model 1	Model 2
VARIABLES	fe	re
Distraction Measure	0.1495*	0.2506***
	(0.0861)	(0.0822)
Size	0.0971***	0.0290***

VARIABLES	Model 1 fe	Model 2 re
	(0.0218)	(0.0103)
Leverage	-0.0587*	-0.0831***
	(0.0314)	(0.0295)
Book-to-market	0.0005	0.0002
	(0.0012)	(0.0012)
Profitability	0.1194	-0.0155
	(0.1037)	(0.0803)
Asset growth	0.0802***	0.0695***
	(0.0190)	(0.0184)
Momentum	0.0042	0.0134
	(0.0164)	(0.0164)
Volatility	-0.0105	-0.0592
	(0.0833)	(0.0831)
Constant	-0.9774***	-0.2883***
	(0.2179)	(0.1060)
Observations	1,089	1,089
R-squared	0.044	
Number of id	156	156
Year Dummies	Yes	Yes

Source: Author computation 2021

Note: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1 are 1%, 5% and 10% statistically significant level. Model 1 represents fixed effects and Model 2 represents random effects results

Table 4.21 Hausman test result

	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	fe	re	Difference	S.E.
Variables				
Distraction	.1494781	.2506412	-.1011631	.0305062
Size	.0970827	.0290454	.0680373	.0196919
Leverage	-.0586622	-.0831193	.024457	.0123128

Book to Market	.0005234	.0002393	.0002842	.0002736
Profitability	.1194183	-.0155169	.1349352	.0684771
Asset Growth	.0802072	.0694893	.0107179	.0060718
Momentum	.0042426	.0134473	-.0092047	.0030604
Volatility	-.0104866	-.059225	.0487384	.0165221
chi2(16) = (b-B)'[(V_b-V_B)^(-1)](b-B)= 52.71 Prob>chi2 = 0.0000				

Source: Author's computation 2021

The findings of the panel model are presented in Table 4.20. The results of fixed effects and random effects are reported. The study further considered the Hausman test to decide the best fit model between the two. The hypothesis states that:

- The null (H_0): random-effects model is appropriate.
- The alternative (H_a): fixed effects is preferred

The result of Hausman's test in Table 4.21 reported a p-value of 0.0000, indicated that the null hypothesis should be rejected and we accept the alternative hypothesis, which states that fixed effects is preferred.

The fixed effects result showed that the distraction measure, which is our variable of interest, has a positive relationship with overproduction and statistically significant. Meanwhile, the study focuses on the dynamic panel model because of its advantages over the static models. The result of the dynamic panel model – two-step system-GMM is therefore presented below:

4.12.2.2 Two-step system-GMM regression result

Table 4.22 Effect of shareholders' distraction on overproduction

VARIABLES	Two-step sys-GMM
LagOverproduction	0.6296***
	(0.1227)
Distraction Measure	0.2382*

VARIABLES	Two-step sys-GMM
	(0.1251)
Size	0.0876
	(0.0837)
Leverage	0.0576**
	(0.0270)
Book to market	0.0028
	(0.0047)
Profitability	-0.0071
	(0.0677)
Momentum	0.0446*
	(0.0257)
Volatility	-0.2297*
	(0.1312)
Constant	0.0126
	(0.0213)
Observations	1,059
Number of id	153
Year Dummies	Yes
Arellano-Bond test AR (2)	0.537
Hansen test	0.283
No of Instrument/Group	52/153
F.Statistics/P-value	9.48/0.000

Source: Author computation 2021

Note: White heteroscedasticity-consistent standard errors in parentheses, *** p<0.01, ** p<0.05 and * p<0.1 are statistically significance at 1%, 5% and 10% levels respectively. Hansen statistics p-value of 0.283 indicates that the instruments are valid, while the Arellano-Bond AR (2) p-value of 0.537 shows no 2nd order autocorrelation. The F-statistics with a p-value of 0.000 indicated that the regressors are jointly significant in explaining the dependent variable.

4.13 Analysis of findings

The finding from the two-step system GMM results in Table 4.22 indicated that the shareholders' distraction has a positive relationship with overproduction and is statistically significant. The result implied that the distraction measure affects overproduction with a coefficient of 0.2382; this means that a unit change in distraction measure will result in a 0.2382 unit increase in overproduction, at a 10% statistically significant level average ceteris paribus. The implication of this is that when institutional shareholders are distracted and their monitoring intensity drops, the executive managers increase production to reduce fixed cost per unit, which ultimately decreases the cost of goods sold, thereby increasing earnings. Other variables such as Leverage and Momentum have a positive relationship with overproduction and are statistically significant, while volatility reported a negative link and is statistically significant.

4.14 The effect of shareholders' distraction on total real activities earnings management.

4.14.1 Data analysis and interpretation

4.14.1.1 Summary statistics

Table 4.23 summarises the characteristics of the variables used in analysing the impact of distraction measures on overproduction. The overproduction mean is 0.371 during the period in consideration. The standard deviation indicated that the variable is more to the maximum value as the dispersion from the mean is large. The statistics also showed that the impact of distraction measure is small as the mean is closer to the minimum value. Again, the data showed mixed normality given the skewness and kurtosis result. However, they do not affect the method of data analysis

Table 4.23 Summary statistics

Variables	Obs	Mean	Std. Dev.	Min	Max	Skew.	Kurt.
Total Real	2626	.902	4.129	0	135.15	22.376	600.356
Distraction	2282	1.370	6.540	0	3.130	47.739	2280

Size	2626	8.382	2.429	-2.042	17.937	.101	3.141
Leverage	2627	.224	.45	0	9.503	9.02	124.54
Book to Market	2454	1.307	7.183	-13.943	269.47	27.199	906.77
Profitability	2628	.129	.411	-8.203	7.637	5.814	201.719
Asset Growth	2626	2.976	43.158	0	1644.487	32.411	1122.138
Momentum	2896	.117	.731	-1.594	23.125	14.86	392.237
Volatility	2896	.057	.154	-.078	4.28	14.485	312.732

Source: Author's computation 2021

4.14.1.2 Correlation Matrix

A correlation matrix of the model's variables is performed to ensure that multicollinearity does not occur in our estimation. It is conducted to determine the extent of the relationship between the variables and the result is shown in Table 4.24

Table 4.24 Pairwise Correlations matrix analysis

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) Total REM	1.000								
(2) Distraction	0.010	1.000							
(3) Size	0.022	0.008	1.000						
(4) Leverage	-0.090	0.009	-0.048	1.000					
(5) Book to market	0.007	0.008	-0.036	0.011	1.000				
(6) Profitability	-0.157	-0.006	-0.057	0.179	-0.056	1.000			
(7) Asset growth	-0.149	-0.002	-0.104	-0.007	-0.004	-0.002	1.000		
(8) Momentum	0.015	0.036	-0.059	0.067	0.205	-0.079	-0.005	1.000	
(9) Volatility	0.026	0.039	-0.147	0.050	0.159	-0.100	-0.003	0.824	1.000

Source: Author's computation 2021

As shown in Table 4.14, the correlations among the variables are between -0.002 to 0.205, suggesting no multicollinearity problem, but the 0.824 correlation coefficient confirms a strong and positive correlation between volatility and momentum. This did not affect our result and the model used for our analysis control for collinearity. The analysis demonstrates that distraction measure positively correlates with total real activities earnings management, indicating that shareholders' distraction can stimulate executives into real activities earnings management.

4.14.2 Panel data analysis

To demonstrate the relationship and within-variation between the dependent variable and the independent variables, the research study used the error-component models, which include fixed effects and random effects

4.14.2.1 Fixed effects, random effects and Hausman test regression results

Table 4.25 Effect of shareholders' distraction on real earnings management

VARIABLES	Model 1 fe	Model 2 re
Distraction	0.0000	0.0000
	(0.0000)	(0.0000)
Size	0.0565***	0.0237***
	(0.0094)	(0.0059)
Leverage	0.0691***	0.0428***
	(0.0138)	(0.0135)
Book-to-Market	0.0025**	0.0022**
	(0.0010)	(0.0010)
Profitability	-0.0216	-0.0426**
	(0.0187)	(0.0184)
Asset Growth	-0.0217**	-0.0307***
	(0.0095)	(0.0094)
Momentum	-0.0375***	-0.0320***
	(0.0118)	(0.0120)
Volatility	0.2411***	0.2265***
	(0.0595)	(0.0599)
Constant	-0.5135***	-0.1839***
	(0.0937)	(0.0606)
Observations	1,894	1,894
R-squared	0.061	
Number of id	179	179

Source: Author computation 2021

Note: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1 are 1%, 5% and 10% statistically significant level. Model 1 represents fixed effects and Model 2 represents random effects results

Table 4.26 Hausman test result

	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	fe	re	Difference	S.E.
Variables				
Distraction	1.43e-14	1.64e-14	-2.07e-15	1.02e-14
Size	.0564777	.0236888	.0327888	.0076096
Leverage	.0691404	.0427562	.0263843	.0038315
Book to Market	.0024801	.0022287	.0002515	.0001834
Profitability	-.0215611	-.0426134	.0210523	.0050744
Asset Growth	-.0216697	-.0307038	.0090341	.002468
Momentum	-.0374793	-.0319883	-.005491	.0017358
Volatility	.2410995	.2264829	.0146166	.0102017
chi2(20) = (b-B)'[(V_b-V_B)^(-1)](b-B)=	95.59	Prob>chi2 =	0.0000	

Source: Author's computation 2021

The findings of the panel model are presented in Table 4.25. The results of fixed effects and random effects are reported. The study further considered the Hausman test to decide the best fit model between the two. The hypothesis states that:

- The null (H_0): Random-effects model is appropriate.
- The alternative (H_a): Fixed effects is preferred

The result of Hausman's test in Table 4.26 reported a p-value of 0.0000, indicated that the null hypothesis should be rejected and we accept the alternative hypothesis, which states that fixed effects is preferred.

The fixed effects result showed that the distraction measure, which is our variable of interest, has a weak positive relationship with total real activities earnings and is not statistically significant. Meanwhile, the study focuses on the dynamic panel model because of its advantages over the static models. The static models do not correct serial correlation, cross-sectional dependence, and heterogeneity. The result of the dynamic panel model – two system-GMM is presented below:

4.14.2.2 Two system-GMM regression result

Table 4.27 Effect of shareholders' distraction on real earnings management

VARIABLES	Two-step sys-GMM
Lag Total REM	0.2527**
	(0.1025)
Distraction Measure	0.1087*
	(0.0601)
Size	0.0102*
	(0.0054)
Leverage	-0.0684
	(0.1109)
Book to Market	0.0007
	(0.0010)
Profitability	-0.1285**
	(0.0561)
Asset Growth	0.0079
	(0.0139)
Momentum	-0.0188
	(0.0122)
Volatility	0.1230*
	(0.0667)
Constant	0.0000
	(0.0000)
Observations	1,393

Number of id	173
Year Dummies	Yes
Arellano-Bond test for AR (2)	0.405
Hansen test	0.149
Instruments/Groups	50/173
F-Statistics/p-value	4.18/0.000

Source: Author Computation 2021

Note: White heteroscedasticity-consistent standard errors in parentheses, *** p<0.01, ** p<0.05 and * p<0.1 are statistically significance at 1%, 5% and 10% levels respectively. Hansen statistics p-value of 0.149 indicates that the instruments are valid, while the Arellano-Bond AR (2) p-value of 0.405 shows no 2nd order autocorrelation. The F-statistics with a p-value of 0.000 indicated that the regressors are jointly significant in explaining the dependent variable.

4.15 Analysis of findings

The findings from the two-step system GMM result in Table 4.27 indicated that the shareholders' distraction has a positive relationship with total real activities earnings management and is statistically significant. The result shows that distraction measure affects total real activities earnings with a coefficient of 0.1087; this means that a unit change in distraction measure results in 0.1087 units increases in total real activities earnings at a 10% statistically significant level ceteris paribus. The implication of this is that when institutional shareholders are distracted and their monitoring intensity drops, the executive managers manipulate total real earnings to achieve the desired earnings that may not benefit firms and the institutional shareholders in the long run. Other variables such as size and momentum have a positive relationship with total real activities earnings and are statistically significant, while profitability reported a negative link and statistically significant.

4.16 Discussion of findings

Real activities earnings management is the deviation from usual operational practices motivated by corporate executives yearning to deceive institutional shareholders into believing that the reported earnings came from normal operation processes (Franceschetti, 2018). It involved expenditure on research and development, price discounts, credit policy changes, and discretionary expenditure reduction. From the findings, limited control by the institutional shareholders occasioned by distraction provides an avenue for the corporate executives to engage in real earnings management for personal benefits. This finding reflects the involvement of CEOs of firms (Steinhoff International, Tongaat Hullett, and EOH Holdings) implicated in accounting scandals. They overstated revenues, uncontrolled acquisitions sprees, tax fraud, hiding losses by setting up off-balance companies, and obtaining forex without approval. All these lead to reporting earnings that are misleading and affect firm performance.

4.17 Conclusion on the impact of institutional limited attention on earnings management

This chapter examines how institutional shareholders' limited attention impacts corporate executive decisions on earnings management. There are two types of earnings management: discretionary accruals earnings and real activities earnings management. This section of the chapter investigates the relationship between institutional shareholder monitoring intensity and total real activities earnings, the combination of sales manipulation, reduction in discretionary expenditures, and overproduction. Our primary assumption is that institutional shareholders are subject to limited attention. These limitations prevent them from maintaining the same monitoring intensity for all the companies they invest in simultaneously. At a particular time, institutional shareholders become distracted because their attention is shifted to an unrelated company in their portfolio, thereby weakening their control intensity. Following Kempf et al. (2017), we use the firm-level proxy for distraction measure to capture when institutional shareholders suffer shocks in unrelated companies in their portfolios.

The study finds strong evidence that corporate executives can exploit institutional shareholders' distraction to manipulate real earnings management components and the total real activities earnings management to optimise personal benefits. The study documents a statistically significant effect on each element (sales manipulation, overproduction, and reduction in discretionary expenditure) and the total real activities earnings (sum of the components). Because of the diagnostic test conducted concerning the estimating technique used in the study, we confirmed the robustness of our result. Furthermore, the hypothesis examined in this chapter that shareholder's distraction has a significant positive effect on earnings management was proven. The findings that showed that shareholders' distraction positively influences earnings management are supported theoretically and empirically from related studies conducted by other researchers. We indicate that this is a causal effect since the distraction measure captures the shift in the institutional shareholders' attention occasioned by shocks in an unrelated company.

Prior research studies document the shapes and implications of earnings management. It particularly discloses that the manipulation of both the discretionary accruals and real activities earnings would have negative consequences regarding the creation of firm value in the future (Bhojraj et al., 2009; Cohen and Zarowin, 2010; Gunny, 2010; Kim and Sohn, 2013; Kothari et al., 2016; Li, 2010; Mizik and Jacobson, 2007; Teoh et al., 1998). The adequate monitoring of the institutional shareholders can ensure the report of high-quality earnings, which ultimately enhances firm value in the long run (Hsu and Koh, 2005; Velury and Jenkins, 2006). Therefore, our results indicate that understanding how corporate executives react to temporarily loosed monitoring intensity may considerably enhance corporate governance mechanism for firm value creation.

4.18 Chapter summary

This chapter addressed the relationship between institutional shareholders' limited attention and earnings management. The relationship between institutional shareholders and earnings management types - discretionary accruals and real activities earnings- was presented. Equally, the link between each component of real activities earnings (sales manipulation, reduction in discretionary expenditure, and

overproduction) and overproduction and institutional shareholders' limited attention were reported. A discussion on the relationship between the total real earnings, the combination of sales manipulation, reduction in discretionary expenditure, and overproduction and institutional shareholders' weakening monitoring control caused by distraction concluded the chapter. The chapter is a continuation of examining the connection between limited institutional shareholders' attention and corporate decisions. The next chapter will explore the relationship between limited institutional shareholders' engagement and corporate executive remuneration.

Chapter 5

5.1 Institutional shareholders' monitoring intensity and Executive remuneration in South Africa.

5.1.1 Introduction

This chapter presents the relationship between loosening institutional shareholders' monitoring intensity and executive remuneration. Executive remuneration is one of the corporate decisions that require institutional shareholders' input that will align such

choices to the improvement of the firm's value in the future. This study examines the link between a temporary shift in institutional shareholders' monitoring of the corporate executives and the executives' corporate decisions during the period. According to the agency theory, executives have the propensity to make personal benefits detrimental to the firm's value. In the previous chapter, the relationship between the monitoring intensity and earnings management, which is one of the corporate decisions, is examined. In this chapter, this study will determine the effect of a drop in institutional

shareholders' monitoring intensity caused by distraction events of an unrelated firm on the executives' remuneration.

5.1.2 Brief literature review

The extant literature of Devers et al. (2007) and Van Essen et al. (2012) Van Essen et al. (2012) underlines whether executive remuneration about the firm's financial viability could be justified. Following agency theory, Jensen and Meckling (1976), corporate executives are self-serving and, in most cases, act at the detriment of shareholders' interest (Sheikh et al., 2018). Additionally, many researchers have investigated the connection between executive remuneration and firm values and they concluded that it leads to the abatement of agency problems (Hall and Liebman, 1998; Kaplan, 1994; Murphy, 1999; Tulepova, 2017; Zhou, 2000). Other studies documented that executive remuneration has no sufficient effects on firm performance (Conyon et al., 1995;

Conyon and Peck, 1998; Gregg et al., 1993; Tulepova, 2017). For example, Tulepova (2017) concluded that executive remuneration is still high despite the poor firm performance. This becomes part of the reason why executive remuneration remains debatable (Croci et al., 2012). Since the evidence from the literature still show that executive remuneration does not either reduce or eliminate agency problems; it did not serve as an incentive for them to pursue long-run shareholders' interest, the institutional shareholders must intensify their monitoring responsibility to restrain the executive opportunism and align their interest with that of shareholder (Ozkan, 2007; Sheikh et al., 2018; Tulepova, 2017).

Institutional shareholders should monitor the corporate executive manager in ensuring that they take decisions that could enhance the organisation's growth and benefit the shareholders (Cheung et al., 2021; Jabeen and Ali, 2017; Stein and Zhao, 2016), because of executive managers' opportunistic tendencies to make decisions in their interest; their remunerations are among such choices. Holderness (2003); Ozkan (2007); Shleifer and Vishny (1986a) advocate institutional shareholders' proactiveness actions to ensure firm performance. Monies invested by the institutional shareholders belong to other people, which is supposed to serve as an incentive to engage in effective monitoring and control (Ozkan, 2007). Again, the institutional shareholders will receive more(returns on investment) than the investment cost when they amplify their monitoring role (Shleifer and Vishny, 1986a). Moreover, considering the implication of institutional shareholders' inaction regarding remuneration decisions, which disrupts employees' lives and their dependents and future loss of dividends and capital gain, the institutional shareholders have a responsibility to ensure just decision in this respect (Viviers, 2015b).

Effective monitoring impedes managers' unethical behaviour, consequently improving the organisation's value (Bharath et al., 2013; Cheung et al., 2021; Edmans and Manso, 2010; Jabeen and Ali, 2017), but, despite enough capacity – the skills, resources and more substantial incentives that the institutional shareholder has, studies show that limited attention hinders their monitoring intensity (Cheung et al., 2021; Fich et al., 2015; Kempf et al., 2017; Ward et al., 2017).

The recent literature on limited attention indicates that institutional shareholders' monitoring intensity is subjected to attention restraints occasioned by scarcity in supply (Cheung et al., 2021; Garel et al., 2018; Kempf et al., 2017). Institutional shareholder

holds several stocks in their portfolio and they do not apportion their monitoring attention equally to all the stocks (Kempf et al., 2017). In essence, attention-grabbing events influence their focus on a particular stock at a given time (Garel et al., 2018; Kempf et al., 2017). Attention-grabbing events include extreme industry returns (both positive and negative), trading volume, and news as motivated by Barber and Odean (2008). Once they are distracted by any of these events, their monitoring intensity on other stocks drops and the executive managers manipulate decisions in their favour. For instance, Stein and Zhao (2016) reported a positive and statistically significant relationship between board distraction and total compensation. Likewise, Kempf et al. (2017) established that managers' probability of receiving their lucky grant (stock options) increases by 32% when shareholders' were distracted. Alluding to these facts was Steinhoff's international scandal in South Africa where the CEO paid himself Euro 2.1 million without supervisory board approval (PWC, 2017) as the lack of effective corporate governance monitoring resulted in the eventual Steinhoff's scandal of 2017 (Rossouw and Styan (2019).

Institutional shareholders are inactive regarding their monitoring responsibility once they are distracted, thereby aggravating executive managers' tendencies to influence decisions in their favour at the expense of the institutional shareholders. Related studies founded mainly in the developed economies have shown that loosening institutional shareholders' monitoring intensity affects corporate decisions such as M&A, dividend cuts, lucky option grants, board governance, and earnings management (Cheung et al., 2021; Garel et al., 2018; Kempf et al., 2017; Liu et al., 2017). There is scarce literature on the impact of institutional shareholders' limited attention on total executive remuneration, especially in an emerging market like South Africa, which reported being one of the countries with enormous pay disparities (Viviers, 2015a). The compensation of CEOs of firms listed on the JSE is 53 times more than that of an average worker in their firms (Bronkhorst, 2014; Viviers, 2015a). South African executives believed they have the right to substantial remuneration packages. For instance, the CEO of a major company in South Africa distributed R76.4million to 12 executives as share options when the minimum wage is less than R12.500 per year (Viviers, 2015b). Therefore, influential institutional shareholders' monitoring becomes inevitable in corporate governance. Del Guercio and Tran (2012)

stated that significant shareholders' monitoring had strengthened corporate policies, especially in executive remuneration, and this role, Viviers (2015a) posits, is lacking in South Africa institutional shareholders. The author adds that very limited South African institutional shareholders engage with executives on matters that have to do with corporate wrongdoing.

Institutional shareholders account for the large majority of investors on the JSE (Zhang, 2016) and they mostly include pension and provident funds, collective investment schemes(CIS), and insurance companies (Nhlapo and Gumata, 2011; Sibanda and Holden, 2014). The size and significance of institutional shareholders have grown over time. This category of investors constitutes about 60 to 80% of asset managers' records in South Africa (Bhikha, 2014). The assets under management (AUM) had grown from $168.9 billion in December 2018 to $173.5 billion in November 2019 (Refinitiv, 2019). Viviers (2015a) reports that minimal South African shareholders monitor the executive on corporate misconduct matters. This lack of monitoring perhaps would have been responsible for the wage gap in South Africa. The report shows that the top seven CEOs received compensation 300 times what the average worker gets (Viviers, 2015a). The wage disparity has a significant impact on socio-economic growth (Viviers, 2015a). Concerning executive remuneration, institutional shareholders' activeness is the most effective way of advocating change in corporate policies to include executive pay (Del Guercio and Tran, 2012; Viviers, 2015a). But Viviers (2015a) documents that South Africa's institutional shareholders are renowned for not asking questions and voting at AGMs. Stein and Zhao (2016), Yermack (2006), and Bebchuk and Fried (2006) reiterate the non-alignment of executive and shareholders' interest and that the executive always desires to obtain excess remuneration when monitoring by the board is weak. The code for responsible investing in South Africa was developed and entrenched in the King Report lll as part of sound corporate governance to ensure that institutional shareholders take responsibility in monitoring corporate executive decisions. King IV principle 17 reinforced the institutional shareholder's role in ensuring that profitable investment is initiated and practiced by their investee companies to strengthen good governance and value creation (Harber, 2017; IoDSA, 2016). They should pursue and enforce high-yielding investments that guarantee long-term and lasting returns. Their act or failure to act will either strengthen or weaken good governance (IoDSA, 2016)

The preceding narrative underscores the investigation of the impact of institutional shareholders monitoring intensity on executive remuneration for South African listed firms. This study contributes to the literature in the following ways. First, while institutional investors have been widely investigated in the literature, their attention's temporary distraction has not been explored. Distraction events are not a permanent phenomenon; consequently, managers provide opportunities to optimise their corporate decision. The temporary variation in the institutional shareholder's attention can affect monitoring intensity. The determination of its impact on the corporate executive remuneration in JSE listed companies is the best of the authors' knowledge not covered in the extant literature. Secondly, this study filled the institutional shareholder's gap with limited attention occasioned by distraction by investigating the connection between the distraction measure and total executive remuneration. Finally, the lack of literature in institutional shareholder distraction study in the emerging markets, especially in South Africa, is addressed by this study.

5.1.3 Hypothesis and the empirical approach

This empirical approach's fundamental idea is to follow Kempf et al. (2017) firm-level proxy identification construct that identifies temporary shifts in institutional shareholders' attention. From the thought examination described above, we detect times where institutional shareholders shift attention to company one and in consequence, the monitoring intensity decreases in company two. This explains looser monitoring pressure confronting the manager, which induces maximisation of corporate decisions for personal benefits. This assertion will always be valid provided that a decrease in attention by one institutional shareholder cannot be immediately and liberally substituted by other institutional shareholders or the board of directors. We, therefore, summarise our hypothesis as follows:

H_0: There is no statistically significant relationship between shareholders' distraction and CEO remuneration.

H_1: There is a statistically significant relationship between shareholders' distraction and CEO remuneration.

5.2 Data and econometric model

The study concentrated on public companies listed on the JSE, South Africa, covering 2004 to 2019. From the 358 public companies currently listed and classified in the 11-industrial grouping, data for 177 companies were available for this study. 181 companies were discarded due to either being delisted, merged, or no data available on institutional shareholders, which is the variable of interest. The total number of delisted companies between 2009 and 2019 is 242 (Lazanakis, 2020). Total company-year observations were 2896 unbalanced panel data. Because of data's non-availability for specific variables for a minimum of 3 successive years, the study dropped 1122 observations, bringing the final company-year observation to 1774 from 177 companies. The data are from companies' annual reports sourced from the S&P Capital IQ database.

5.2.1 Fixed linear model for executive remuneration

Our empirical analyses' prime goal is to examine the effect of institutional shareholders' inattentiveness occasioned by distraction on executive compensation. Motivated by the extant literature (Gallego and Larrain, 2012; Raithatha and Komera, 2016; Sheikh et al., 2018; Sun et al., 2013; Wang and Xiao, 2011), the generic linear CEO remuneration equation is stated as

$$\ln(ExcRem)_{it} = \alpha_0 + \beta_1 Dt_{it} + \beta_2 Y_{it} + yZ_{it} + W_t + \epsilon_{it} \quad (5.1)$$

where Ln(ExeRem) is the natural log of executive remuneration; in South Africa, CEO pay includes salary, bonuses, director's fee, restricted stock awards, long-term incentive plan, and other compensations. These are captured in the accounting head's total cash and non-cash remunerations. The addition of both cash and non-cash remunerations is used for this study. The distraction measure, Dt_{it} indicates that institutional shareholders' relaxed monitoring control and decision on executive remuneration taken against institutional shareholders' interest is as measured in chapter 3. It is expected to be positively related to executive remuneration (Kempf et al., 2017). Y_{it} represents one of the measures for performance (ROA) which will be

considered as one of the control variables. Z_{it} represents a vector of firm-specific variables that influence executive remuneration. W_t is the time dummies and ϵ is the error term. Firm-specific variables considered as motivated by Sheikh et al. (2018) include firm size(FSize), firm risk(FRisk), growth opportunities(GOpp), and firm age(FAge). Firm size is measured as a logarithm of total assets and broadly considered as a determinant of CEO remuneration.

Many studies confirm that firm size is related positively to executive remuneration (Devers et al., 2007; Gallego and Larrain, 2012; Sheikh et al., 2018). We measured firm risk with the standard deviation of the monthly stock returns for the year. A higher-risk company requires superior managerial skills with commensurate remunerations (Conyon and He, 2012; Sheikh et al., 2018). The market-to-book ratio measures growth opportunities. A firm with growth potential is expected to employ sound executives to optimise the shareholders' benefit. Therefore, it is expected to positively affect executive remunerations (Conyon and He, 2012; Sheikh et al., 2018). Moreover, firm age is measured by the natural log of (1 plus some years the company has been listed on JSE from the start of the year) (Ward et al., 2018), and study reports that aged companies will develop efficient remuneration negotiations (Conyon and He, 2012; Sheikh et al., 2018). Other control variables include return on asset (ROA), returns to the shareholder (annual stock returns), and leverage (Jaiswall and Bhattacharyya, 2016; Raithatha and Komera, 2016).

5.2.2 Executive remuneration persistence and dynamic panel model

Bender (2003) and Raithatha and Komera (2016) state that part of the remuneration committee's consideration in deciding the current year's pay is the last year's remuneration. So, the previous remuneration as one of the independent variables will make our estimation equation dynamic. Equally, it can be argued that the firm's performance can be affected by past executive remuneration (Raithatha and Komera, 2016). Conyon and He (2012) reiterate that learning is a crucial factor influencing a firm's wage dynamics. The initial wage decision is usually based on the expected performance, while after gradual observation and understanding by the employer, subsequent wage decisions will be based on real performance. This dynamism results in the final executive remuneration being subjected to the distraction measure to

determine its effect. Therefore, to investigate the impact of shareholder's distraction on CEO remuneration, the study extend equation (3) by including the lagged executive remuneration as one of the explanatory variables.

$$\ln(ExcRem)_{it} = \alpha_0 + \delta \ln(ExcRem)_{it-1} + \beta_1 Dt_{it} + \beta_2 Y_{it} + \beta_3 Y_{it-1} + yZ_{it} + W_t + \epsilon_{it} \quad (5.2)$$

5.2.3 Estimating technique and summary procedures for panel data analysis

Panel data models are comprised of static panel models and dynamic panel models (Bai, 2009). The extant literature identifies the two static panels as the within-group panel fixed effects, its extension-least-square dummy variable (LSDV), and random effects (Hedges and Vevea, 1998; Rowland and Torres, 2004).

Fixed effects has been widely used in the literature. This alludes to the fact that it produces a consistent estimator, which means that values about the various sample mean are differenced (Blundell et al., 2001). Andrews et al. (2006) and Kezdi and Sevak (2004) state that when fixed effects and LSDV cross-sectional variation adopt dummy variables, they operate efficiently. However, when dummy variables become too much, the required degree of freedom will be high and the estimation result could be affected.

The fixed effect equation is given below:

$$Y_{it} = X_{it}\beta + \pi_i + \mu_{it} \quad (5.3)$$

In equation (5.3), the intercept is missing, Y_{it} is the vector of earnings management($EarnMgt_{it}$), π_i is the unobserved firm-specific effects, X_{it} is the independent variables (Dt_{it} + $Size_{it}$ + $Leverage_{it}$ + $Market - to - Book_{it}$ + ROA_{it} + $Return\ to\ Shareholder_{it}$ + Age_{it} + $Firm\ risk_{it}$) and β is the vector of the estimated parameter for the independent variables. μ_{it} is the error term.

The LSDV equation is as stated below:

$$Y_{it} = \sum_{j=2}^{4} Dj + X_{it}\beta + \pi_i + \mu_{it} \quad (5.4)$$

In equation (5.4). D_j depict the dummy variables for the N-1 cross-section of firms. Equation (5.4) is different from equation (5.3) because of the addition of dummy variables to equation (5.4). This means all the firms now have a dummy with the reference firm's exemption, which is usually the first firm. However, Gujarati (2009b) stated that once dummy variables become too large, multicollinearity is anticipated and can cause the explanatory variables to correlate, resulting in bias and inconsistent estimator.

Furthermore, Nerlove and Balestra (1996) introduced random fixed effects seeking to control omitted variables in the fixed-effects model. The random-effects equation is stated below:

$$Y_{it} = \propto + X_{it}\beta + \pi_i + \mu_{it} \quad (5.5)$$

where Y_{it} is the vector of earnings management($EarnMgt_{it}$), $\propto$ is the constant, X_{it} is the independent variables (Dt_{it} + $Size_{it}$ + $Leverage_{it}$ + $Market - to - Book_{it}$ + ROA_{it} + $Return\ to\ Shareholder_{it}$ + Age_{it} + $Firm\ risk_{it}$) and β is the vector of the estimated parameter for the independent variables. μ_{it} is the between-entity error while π_i is the within-entity error.

To decide which model is appropriate for estimating between the fixed effects model and random effects model, the Hausman (1978) test is applied (Mutl and Pfaffermayr, 2011).

In this study, the dynamic panel data method used by Arellano and Bond (1991); (Eigner and Kunst, 2009) is examined. This method is generally referred to as the generalised method of moments (GMM). This estimating technique improves estimator efficiency.

The GMM equation is stated below:

$$Y_{it} = \beta_1 X_{it} + \beta_2 Z_{it} + \in_{it} \quad (5.6)$$

where Y_{it} is the vector of Earnings Management($EarnMgt_{it}$), X_{it} is the exogenous independent variables, Z_{it} are the vector of predetermined independent variables which include lag(s) of Y, β_1 for *i*=1,2 are parameter estimates for the independent variables and $\in_{it} = \pi_i + \mu_{it}$ is the error term.

Furthermore, to address the problem of weak instrumental variables, Blundell and Bond (1998); Blundell et al. (2001) introduced System-GMM. Also, System-GMM incorporates time-invariant explanatory variables that are not available in Difference-GMM. Besides lagged levels applied by Arellano-Bond, System-GMM utilises more restraints by using adjusted instruments with lagged differences. Moreover, Sys-GMM ensures orthogonality by properly differencing variables and their applicability. Besides, Sys-GMM is preferred because of the broad range of sample sizes in our model. Our estimated equation comprises both endogenous and lagged endogenous explanatory variables. Consequently, there is a correlation between the lagged endogenous variable and the error terms in the differenced equation through simultaneous terms in period *t*. However, there was no unobserved firm fixed effects correlated with the explanatory variables.

The GMM model that depicts the relationship between executive remuneration, distraction measure, and other control variables is stated below:

$$Y_{it} = \beta_1 + ZY_{it-1} + \beta_2 K_{2it} + \beta_3 K_{3it} \dots \dots \beta_8 K_{8it} + \mu_{it} \quad (5.7)$$

Equation (5.7) is the modified dynamic panel data which includes the lagged dependent variable. By differencing equation (5.7), equation (5.8) is obtained as follows:

$$\Delta Y_{it} = \beta_1 + Z\Delta Y_{it-1} + \beta_2 \Delta K_{2it} + \beta_3 \Delta K_{3it} \dots \dots \beta_8 \Delta K_{8it} + \Delta\varphi_{it} \quad (5.8)$$

To avoid the likely correlation between Y_{it-1} and φ_{it}, an instrumental variable is used. Then by matrix transposition of the regressors, instrumental variable W' is obtained. Equation (4.12) is multiplied in vector form by W' resulting in equation (5.9).

$$W\Delta Y_{it}\ W'\Delta Y_{it} = \beta_1 + W'(\Delta Y_{it-1})p + W'(K_{it})\beta + W'\Delta\varphi_{it} \quad (5.9)$$

Because of the dynamism of the equation, the study estimate model (5.9) by employing an instrumental variable (IV) technique and GMM estimator. Two-step system GMM estimators motivated by Blundell and Bond (1998) and Roodman (2009) is used for efficiency. System-GMM estimator, employing instrumental variables will effectively resolve the endogeneity problem and remove firm fixed effects (Raithatha and Komera, 2016) and (Wooldridge, 2002) and take care of omitted variable bias. It also lessens the impact of highly persistent corporate governance variables, thus enhancing the estimation power (Nguyen et al., 2015; Sheikh et al., 2018). It transforms the instruments to make them uncorrelated (exogeneous) with the fixed effects. Also, it uses orthogonal deviations – instead of subtracting the previous observation from the contemporary one, it removes the average of all the future available observations of a variable. No matter how many gaps, it is computable for all observations except each individual's last, thereby minimising data loss. (Arellano and Bover, 1995; Blundell and Bond, 1998). Moreover, GMM is most suitable for large cross-sectional (N) and short time series (T), the study's data characteristics. We equally carried out the over-identification test as motivated by Sargan (1958) and Hansen (1982) as well as Arellano and Bond (1991) autocorrelation test to determine the suitability and validity of the instrumental variables. (Blundell and Bond, 1998).

5.2.4 GMM long-run coefficients

The study considered the long-run effect of significant variables either at 1%, 5%, or 10% level in the short run on the dependent variable (executive remuneration). Equation 5.10 was estimated.

$$\beta_k \div [1 - \Phi] \quad 5.10$$

Where β_k is the coefficient of the significant regressor(s) and φ is the lagged dependent variable.

5.3 Data Analysis and Discussion of Findings.

5.3.1 Panel root analysis

To understand our panel data's makeup before performing the analysis, we conducted the panel root analysis. The main reason for testing for unit root is to confirm the stationarity of variables. Engle and Granger (1987) stated that a linear combination of non-stationary variables might affect the variables' stationarity. This study's three methods to conduct the panel root test are the ADF-Fisher chi-square, Im, Pesaran and Shin (IPS) test, and Levin, Lin and Chu. These three methods are reliable, consistent and suitable in determining variables' stationarity (Im et al., 2003; Maddala and Wu, 1999). The unit root test result showed that all the model variables were stationary at level- integration order zero (I (0)). Table 5.1 displays details of the unit root test:

Table 5.1 Unit root results of the variables

Variables	Levin, Lin and Shu		Im Pesaran & Shin		ADF- Fisher chi-square	
	P-Value	Integration Order	P-Value	Integration Order	P-Value	Integration Order
Executive remuneration	0,0000	I (0)	0,0000	I (0)	0,0000	I (0)
Distraction	0,0000	I (0)	0,0000	I (0)	0,0000	I (0)
Leverage	0,0000	I (0)	0,0000	I (0)	0,0000	I (0)
Market to book ratio	0,0000	I (0)	0,0000	I (0)	0,0000	I (0)
Size	0,0000	I (0)	0,0000	I (0)	0,0000	I (0)
Age	0,0000	I (0)	0,0000	I (0)	0,0000	I (0)
Return on asset	0,0000	I (0)	0,0000	I (0)	0,0000	I (0)
Return to shareholder	0,0000	I (0)	0,0000	I (0)	0,0000	I (0)
Firm risk	0,0000	I (0)	0,0000	I (0)	0,0000	I (0)

Source: Author's computation 2021

5.3.2 Summary statistics of shareholders' distraction effect on executive remuneration.

Table 5.2 summarises the traits of the sample firms as it relates to the variables used. The executive remuneration averaged 15.41 during the periods under review. The

standard deviation indicated that the variable is midway the maximum and the minimum value as the dispersion from the mean is minimal. Although the data showed that some directors earn up to 24.06, the majority earn within the range of 14.17 to 16.65. The distraction measure, which is the variable of interest, averaged 2164. It shows that it is closer to the minimum value than the maximum, indicating that its effect on executive remuneration in JSE listed firms is small. Firm size with a mean of 8.382 and closer to the maximum value indicates a more considerable impact on executive remuneration. Overall, the data showed mixed normality, given the skewness and kurtosis results. This data structure, therefore, influenced the choice of the method of data analysis.

Table 5.2 Summary statistics

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	N	sum	mean	sd	min	max	kurtosis	skewness
Executive remuneration	2,425	37,372	15.41	1.243	9.160	24.06	7.138	0.337
Distraction measure	2,890	6,253	2,164	1,163	0	6,253	2,888	53.73
Firm risk	2,896	275.2	0.0950	0.155	0	4.320	309.9	14.41
Mkt to book ratio	2,594	21,867	8.430	127.2	-3.750	5,187	1,124	30.68
Returns on assets	2,626	1,154	0.440	7.666	-1.937	300.2	1,107	32.07
Size	2,627	22,020	8.382	2.429	-2.042	17.94	3.141	0.101
Returns to shareholder	2,453	31,261	12.74	479.9	0	23,632	2,395	48.69
Age	2,896	2,696	0.931	0.470	0	1.602	2.690	-1.022
Leverage	2,704	587.2	0.217	0.445	0	9.503	126.9	9.095

Source: Author's computation 2021

5.3.3 Correlation matrix

Table 5.3 shows the correlation matrix analysis. We transformed the executive remuneration and firm size before analyses. The data are free of multicollinearity as the absolute value of the correlation coefficients between the regressors is less than 0.70. We also confirmed this further by a variance inflation factor (VIF), which is all less than the limit of 10.

Table 5.3 Correlations matrix analysis

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) Ln remuneration	1.000								
(2) Returns	0.011	1.000							
	(0.599)								
(3) Firm risk	-0.010	-0.001	1.000						
	(0.622)	(0.954)							
(4) Mkt to book ratio	0.002	0.000	0.051	1.000					
	(0.939)	(0.994)	(0.008)						
(5) Return on asset	0.019	-0.001	-0.009	-0.002	1.000				
	(0.332)	(0.971)	(0.646)	(0.906)					
(6) Size	-0.046*	-0.003	-0.076	-0.032	-0.036	1.000			
	(0.021)	(0.873)	(0.000)	(0.096)	(0.065)				
(7) Distraction	-0.001	-0.001	-0.001	-0.001	0.031	-0.014	1.000		
	(0.972)	(0.981)	(0.960)	(0.958)	(0.117)	(0.488)			
(8) Age	-0.015	-0.029	0.142	0.003	-0.043	0.309	0.004	1.000	
	(0.444)	(0.159)	(0.000)	(0.882)	(0.024)	(0.000)	(0.821)		
(9) Leverage	0.000	0.002	0.053	0.112	0.010	-0.011	-0.003	0.024	1.000
	(0.982)	(0.938)	(0.006)	(0.000)	(0.597)	(0.564)	(0.888)	(0.219)	

Source: Author's computation 2021

5.3.4 Panel estimation analysis

The research study justifies panel data analysis because it can tackle the problem of unobserved heterogeneity. We at first estimated the static model equation(5.1) using fixed and random effects estimating techniques.

5.3.4.1 Regression results of fixed and random effects.

Table 4 shows the empirical results for fixed and random effects. Executive remuneration is the dependent variable.

Table 5.4 Effect of shareholders' distraction on executive remuneration

	Model 1	Model 2
VARIABLES	FE	RE

Distraction Measure	0.1393	0.1591
	(0.7186)	(0.4544)
Firm Risk	0.0192	0.0151
	(0.1508)	(0.1398)
Market to book	-0.0004	-0.0004
	(0.0014)	(0.0012)
ROA	-0.6738**	-0.6442**
	(0.3251)	(0.2995)
Size	0.0604	0.0607
	(0.0567)	(0.0518)
Return to Shareholder	-0.0369	-0.0363
	(0.0315)	(0.0296)
Age	1.0898	1.0109
	(1.7649)	(1.6262)
Leverage	0.0892	0.0872
	(0.0943)	(0.0883)
Constant	-0.0884	-0.0813
	(0.1444)	(0.1332)
Observations	1,305	1,305
R-squared	0.024	
Number of id	161	161
Year Dummies	Yes	Yes

Source: Author Computation 2021

Note: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1 are 1%, 5% and 10% statistically significant level. Model 1 represents fixed effects and Model 2 represents random effects results

5.3.4.2 Hausman test result

This section shows the Hausman test regression result. This test is performed to confirm if there is a significant difference between fixed and random effects. The hypothesis states

The null (H_0): Random-effects model is appropriate.

The alternative (H_a): Fixed effects is preferred.

Table 5.5 Hausman test result

	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	fe	re	Difference	S.E.
Variables				
Distraction	.1393391	.1590529	-.0197139	.5004578
Firm Risk	.0192064	.0151305	.0040759	.023858
Market to book	-.0004349	-.0003543	-.0000806	.0006395
ROA	-.6737773	-.6441769	-.0296004	.06193
Size	.0603836	.0606562	-.0002726	.0123208
Return to Shareholder	-.0369112	-.0362622	-.0006489	.0023365
Age	1.089849	1.010924	.0789243	.3338828
Leverage	.0892448	.0871612	.0020836	.0081837
chi2(17) = (b-B)'[(V_b-V_B)^(-1)](b-B)= 0.72Prob>chi2 = 1.0000				

Source: Author's computation 2021

The findings of the panel model are presented in Table 5.4. The results of fixed effects and random effects are reported. The study further considered the Hausman test to determine the best fit model between the two. The result of Hausman's test (p-value of 1.0000) showed that the null hypothesis should be accepted and we reject the alternative hypothesis, which states that fixed effects is preferred.

The random-effects result showed that the distraction measure effect on executive remuneration is positive but not significant. Return on assets (ROA) reported a negative relationship with executive remuneration and statistically significant. Random effects is one of the estimating techniques for static models. However, due to the inability of both fixed and random effects to address finite bias, it makes the result is unreliable (Baltagi, 2008; Raithatha and Komera, 2016). Therefore, to effectively

remove the firms' fixed effects and tackle endogeneity, we used system-GMM to estimate equation (5.2).

Moreover, the study used the GMM long-run coefficient techniques to estimate the variables that were statistically significant in the short run. It is the results of the GMM (short and long run) the study interpreted. Wind-Meijer-corrected SEs for GMM was reported. The serial correlation tests AR (2) and Hansen statistics were also reported. The Hansen statistics p-value of 0.208 validates the instruments used, while the AR (2) p-value of 0.117 confirmed that the model did not suffer second-order autocorrelation. The F-statistic p-value of 0.000 validates that the regressors are jointly significant in explaining the dependent variable. Also, the number of instruments is 59, while the number of groups is 177.

5.4 Dynamic panel data estimation: Two-step system GMM results and GMM Long-run coefficient.

This study used generalised methods of moments, also known as System GMM, to estimate the dynamic panel data. The study used the two-step system GMM because of its intrinsic benefits. It can deal with endogeneity issues, tackles weak instrumental variables, is suitable when there is a large sample, and produces more efficient and consistent parameter estimates.

Table 5.6 Impact of shareholders' distraction on corporate executive remuneration

VARIABLES	Two-step sys GMM	GMM Long-run coefficient
Lag Log Remuneration	-0.3183***	
	(0.0438)	
Distraction Measure	0.0778**	0.0590**
	(0.0356)	(0.0272)
Firm's Risk	0.3381	
	(0.4427)	
Return on Asset	0.0002	
	(0.0007)	

Size	0.0950**	0.0721**
	(0.0479)	(0.0363)
Age	-0.8616	
	(0.6800)	
Market to book	-0.0018	
	(0.0023)	
Returns to Shareholder	0.0000***	0.0000***
	(0.0000)	(0.0000)
Leverage	-0.0099	
	(0.0336)	
Constant	-0.0241	
	(0.1462)	
Observations	1,774	
R-squared		
Number of id	177	
Year Dummies	Yes	
Instruments/Groups	59/17	
Arellano-Bond AR(2) p-value	0.117	
Hansen statistics p-value	0.208	
F-Statistic/p-value	7.94/0.000	

Source: Author Computation, 2021.

Note: White heteroscedasticity-consistent standard errors in parentheses, *** p<0.01, ** p<0.05 and * p<0.1 are statistically significance at 1%, 5% and 10% levels respectively. The Hansen statistics p-value of 0.208 indicates that the instruments are valid, while the Arellano-Bond AR (2) p-value of 0.117 showed no 2nd order autocorrelation. The F-statistics with a p-value of 0.000 indicated that the regressors are jointly significant in explaining the dependent variable.

5.5 Analysis of findings

The finding from the two-step system GMM results in Table 5.6 shows that the dynamic model – two-system GMM reported a positive relationship between shareholders' distraction and executive remuneration and statistically significant both in the short and long run. The distraction measure coefficient of 0.0778 indicates that a unit

change in distraction measure will result in an 8% increase in executive remuneration in the short run, at a 5% significant level on average ceteris paribus. Hence, distraction measures and executive remuneration exhibit an inelastic relationship. Likewise, a unit change in distraction measure will lead to a 6% increase in executive remuneration in the long run, at a 5% significant level on average ceteris paribus. However, the long-run effect (0.0590) shows a decrease in terms of its magnitude. This means distraction measure has a more considerable positive impact on executive remuneration in the short run. The implication of this is that when institutional shareholders are distracted and their monitoring intensity drops, the executives can increase their remuneration unjustifiably. This result is consistent with the agency theory and the extant literature on the effect of institutional shareholder's limited attention occasioned by distraction, Cheung et al. (2021) discovered that distracted shareholders often have little corporate cash holdings, Garel et al. (2018) found that investors' attention influences decisions on earnings management, Kempf et al. (2017) established that distraction measure associated with increases the probability of manager's receiving lucky grant. Therefore, the null hypothesis, which says that there is no statistically significant positive impact of shareholders' distraction on CEO remuneration, is rejected. At the same time, we accept the alternative hypothesis that shareholders' distraction affects executive remuneration.

Furthermore, firm size, one of the control variables, reports a positive connection with executive remuneration. The effect of firm size on executive remuneration (0.0950); a unit change in firm size relates to a 9% increase in executive remuneration in the short run, at a 5% significant level, on average holding other variables constant. Studies show that firm size is one of the determinants of executive remuneration worldwide, hence its positive relationship to executive remuneration (Devers et al., 2007; Frydman and Jenter, 2010; Sheikh et al., 2018). Regarding its long-run effect on executive remuneration (0.0721), a unit change in firm size is associated with a 7% increase in executive remuneration at a 5% significant level. It has a larger effect on executive remuneration in the short run. Returns to the shareholder (one of the proxies for firm performance) show a positive link with the executive remuneration. Still, its impact(magnitude) is relatively insignificant; it is less than 1% and statistically significant at 1%. Besides, we discovered a negative relationship between a firm's previous performances proxy by lagged executive remuneration. The lagged

executive remuneration (-0.3183) shows that a percentage change in the last remuneration is associated with a 0.32% decrease in executive remuneration at a 1% significant level. However, this is inconsistent with the study conducted in Pakistan by Sheikh et al. (2018), who found positive connectivity between lagged executive remuneration and the current compensation.

5.6 Discussion of findings

The extant literature on agency theory and executive remuneration argues that corporate executives' remuneration is not aligned with the firm's performance (Devers et al., 2007; Van Essen et al., 2012). Executives are self-centered and can behave opportunistically regarding their remuneration detriment to shareholders' interest when institutional shareholders failed to monitor the executives effectively. Our finding corroborates this assertion. The result shows that a corporate executive can manipulate their remuneration when shareholders' monitoring intensity is relaxed. Relating our finding to Steinhoff international – a company listed on the JSE and recently implicated in an accounting scandal where the chief executive office paid $2.4 million bonus to himself without board approval (Naudé et al., 2018; PKF, 2017; PWC, 2017), it indicated that a shift in shareholders attention stimulates opportunistic executive behaviour.

5.7 Conclusion on institutional shareholder’s distraction and executive remuneration

In South Africa, the institutional shareholders' level of engagement with CEOs concerning corporate decisions, especially executive remuneration, is low. Consequently, agency problems are exacerbated. Studies have shown that one reason for lack of engagement or minimum engagement on institutional shareholders is limited attention which is caused by distraction. This study examines whether shareholders’ measures positively impact corporate firms' executive remuneration decisions taken from firms listed on the JSE. The study hypothesis stated that institutional shareholders’ distraction has a significantly positive relationship with executive remuneration. We used the robust generalised method of moment (sys GMM) to achieve the study objectives. The study provides evidence from our findings

that shareholders' distraction has a significant positive impact on executive remuneration both in the short run and in the long run. Moreover, other control variables such as size and returns to shareholders significantly affect executive remuneration. The findings explain the recent accounting scandals in South African where uncontrolled CEO bonuses contributed to the scandal and ineffectual corporate governance was blamed for its cause.

Generally, the findings imply that when institutional shareholders are distracted, monitoring intensity drops and executives could fix excess remuneration for themselves. Furthermore, since the institutional shareholders' time is the issue, the study suggests that an institutional shareholder can employ research staff to look after the other stocks in the portfolio when there is a distraction. Also, they can purchase real-time access to news feeds for instantaneous awareness of developments in the firms.

5.8 Chapter summary

This chapter examined the relationship between institutional shareholders' limited attention and executive management. It reviews the literature about executive remuneration, the econometric models and the analysis, and the discussion of the findings. The chapter is a continuation of examining the relationship between limited institutional shareholders' attention and corporate decisions. The next chapter will explore the relationship between institutional limited attention and merger and acquisitions.

Chapter 6

6.1 Institutional Shareholders' Monitoring Intensity and Mergers and Acquisitions(M&A) Decision

6.1.1 Introduction

This chapter reports the relationship between institutional shareholders' monitoring intensity and M&A. Takeovers are essential sources for external growth when such growth is difficult, naturally, because of the cost involved. It is also being used to douse the tension from competing firms and enhance operations capacity—moreover, M&A increase market participation and new product launches.

Corporate acquisitions require large obligations in terms of money and cause significant changes in merged firms' operations. Bliss and Rosen (2001) and Harford and Li (2007) state that bidding company executives take advantage of acquisitions for personal benefits. Consequently, their takeover decision will be a detriment to the institutional shareholders' interest. The study anticipates that acquisitions decisions will result in a conflict of interest between executives and institutional shareholders. Therefore, mergers and acquisitions decisions become critical decision areas where institutional shareholders' influence should be felt (Chen et al., 2005). This study examines the relationship between the relaxed institutional shareholders' monitoring intensity and the corporate executives' decisions on M&A. In the previous chapter, the relationship between the monitoring intensity and executive remuneration was examined. In this chapter, this study will determine the effect of a drop in institutional shareholders' monitoring intensity caused by distraction events of an unrelated firm on M&A.

6.1.2 Brief literature review

Merger and acquisitions activities offer an intrinsic test of the effectiveness of the institutional shareholders' monitoring intensity. It happens regularly and could have a considerable impact on firm value. Research studies indicate that acquisitions may be for the right reasons, like synergistic benefits, or wrong reasons, like agency cost. The

extant literature reiterates that the performance of the bidder's company at the announcement date as well as in the long run indicates that not every takeover is worthwhile for the institutional shareholders of the bidding company (Agrawal et al., 1992; Andrade et al., 2001; Jensen and Ruback, 1983; Loughran and Vijh, 1997; Mitchell and Stafford, 2000; Qiu, 2006b). Research studies suggest that executives' personal goals motivate value-destroying acquisitions (Avery et al., 1998; Chen et al., 2005). M&A by managers are usually centered on value-destroying ones (Kempf et al., 2017). Therefore, effective monitoring of institutional shareholders will mitigate the probability of devaluing M&A (Chen et al., 2005).

6.1.3 Hypothesis and the empirical approach

This empirical approach's fundamental idea is to follow Kempf et al. (2017) firm-level proxy identification construct that identifies temporary shifts in institutional shareholders' attention. The study detects times where institutional shareholders shift attention to company one and in consequence, the monitoring intensity decreases in company two. This explains looser monitoring pressure confronting the manager, which induces maximisation of corporate decisions for personal benefits. This assertion will always be valid provided that a decrease in attention by one institutional shareholder cannot be immediately and liberally substituted by other institutional shareholders or the board of directors. We, therefore, hypothesises as follows:

H_0: There is no statistically significant relationship between shareholders' distraction and merger and acquisition decisions.

H_1: There is a statistically significant relationship between shareholders' distraction and merger and acquisition decisions.

6.2 Data sources and methodology

The research study's data are sourced from S&P Global Market Intelligence (S&P Capital IQ) database. The study collected financial information, market data, institutional shareholder and M&A data from S&P Capital IQ. Data on the Fama-French five-factor model were collected from Kenneth R. French's data library. The Fama-French five-factor data used is for emerging markets. The total number of M&A

announcements during the periods covered was 506 and all acquisitions are majority stake acquisitions. We sample all firms listed on JSE between 2004 and 2019, subject to data availability to compute the variables used.

6.2.1 Measuring merger frequency

The study estimated the relationship between the frequency of acquisitions and shareholder distraction. Takeovers are one of the considerable discretionary investments that managers can determine the timing of the deal. The announcement dates were observed and relate the transient disparity in merger activity to the transient disparity in the distraction measure. The study regressed the indicator of the acquisition announcement on shareholder distraction using the below equation adapted from Qiu (2008):

$$y_{it} = \beta_0 + \beta_1 Dt_{it} + \emptyset X_{it} + wYear_t + \mu_i + \epsilon_{it} \qquad (6.1)$$

where y_{it} is a dummy variable estimating firms' merger activity. Dummy variable equals one if there is an announcement of merger and acquisition in a given year and zero otherwise. We will consider all the majority-stake purchases between 2004 and 2019. t is the time subscript, i connotes each firm, μ connotes firm-level effect, shareholders' distraction (Dt_{it}) is the variable of interest, X_{it} is the vector of additional control variables as motivated by Kempf et al. (2016) and Malmendier and Tate (2008), including firm size, Tobin's Q, cash flow, and firm's cash holdings. $Year_{t^s}$ are year dummies and ϵ_{it} is the error-term.

6.2.2 Measuring merger performance

The extant literature confirms that institutional shareholders' monitoring intensity records a positive impact on long-run post-merger performance (Qiu, 2006b). Therefore, this study considered long-run abnormal performance measurement

models. Qiu (2006b) states that measuring long-run abnormal returns is challenging. Barber and Lyon (1997) suggest using buy-and-hold abnormal returns instead of cumulative abnormal returns because buy-and-hold abnormal returns are usually negatively biased, while cumulative abnormal returns suffer new listing bias and are usually positive biased. Kothari and Warner (1997) warn about persistent abnormal return for its incorrect specification. Fama (1998) states that formal assumptions concerning long-run abnormal returns must be founded on the mean or totals of short-run abnormal returns. Mitchell and Stafford (2000) argue that the classical computing method of long-term buy-and-hold abnormal returns and the related assumptions through booting procedure is faulty because of the non-independence of event firms' abnormal returns. After considering the inter-relationship of event firm abnormal returns, they discovered that the sample mergers, share purchases, and seasoned equity offerings did not produce abnormal returns. Brav (2000) used a Bayesian method to compute long-run abnormal returns and discovered that the three-factor model is at variance with initial public offerings' long-run performance. Since it appears none of the measures are perfect because of the mixed opinions, this study used buy-and-hold and Fama–French five-factor models for measuring long-run abnormal returns. The study follows Dutta and Control (2014) by employing a buy-and-hold abnormal returns method and Acaravci et al. (2017) using the Fama-French five-factor model.

6.2.3 Buy and hold abnormal returns (BHAR)

The buy-and-hold abnormal returns (BHAR) were computed over 12 months, including the announcement month. The model is as follows:

$$BHAR_i = \prod_{t=1}^{12}(1 + R_{it}) - \prod_{t=1}^{12}(1 + R_{bt}) \qquad (6.2)$$

where R_{it} is the monthly common stock return of the $firm_i$ while R_{bt} is the monthly equal-weighted average return of its benchmark portfolio.

6.2.4 Fama-French five-factor model (FFAR)

The Fama-French five-factor monthly abnormal return is the $\propto_i$ from the regression of the model below:

$$R_{it} - R_{ft} = \propto_i + \beta_i\left(R_{mt} - R_{ft}\right) + s_i(SMB_t) + h_i(HML_t) + r_i(RMW_t) + c_i(CMA_t) + \epsilon_{it} \quad (6.3)$$

where:

R_{it} is the return on portfolio i for period t, R_{mt} is the value-weight (VW) market portfolio return for period t, R_{ft} is the risk-free return for period t, SMB_t is diversified portfolio return of small stocks less the diversified portfolio return of big stocks for period t, HML_t is the difference between the diversified portfolios return of high and low B/M stocks for period t, RMW_t is the difference between the diversified portfolios return of stocks with robust and weak profitability for period t, CMA_t is the difference between the diversified portfolio's return of the stocks of low and high investment firms, which is referred to as conservative and aggressive for period t, ϵ_{it} is a zero-mean residual for period t.

The "β_i, s_i, h_i, r_i, c_i" (beta coefficients) in the above equation typify sensitivity coefficients that indicate the slope of the multiple regressions made between $R_i - R_f$, $R_m - R_f$, SMB, HML, RMW and CMA.

6.2.5 Effect of shareholders' distraction on merger performance.

To determine the effect of shareholder distraction on merger performance, following Meo et al. (2018), equation 6.4 was used:

$$Merger\ Performance_i = \beta_0 + \beta_1 Dt_{it} + \emptyset X_{it} + wYear_i + \mu_i + \epsilon_{it} \quad (6.4)$$

Where merger performance is proxied by BHAR and abnormal returns (FFAR) computed using the Fama-French five-factor model. Distraction measure (Dt) is as

measured in Chapter 1. X_{it} is the vector of control variables as motivated by Kempf et al. (2016) and Moeller et al. (2004), including firm size, Tobin's Q, cash flow, and firm's cash holdings. $Year_t{}^s$ are the year dummies and ϵ_{it} is the error-term.

6.2.6 Estimating technique and summary procedures for panel data analysis

6.2.7 Estimating technique for binary outcome equation (Merger Frequency)

Equation (6.1) will be estimated using the pooled logit model and fixed effect IV Model. The pooled logit contains industry and year dummies as controls. The IV models took care of the firm-level unobserved heterogeneity associated with M&A decisions and used both the cross-sectional and time-series dimensions of the data. The unobserved firm-level heterogeneity will be included in the firm-level fixed effect.

Logit Model is given below:

$$F(X'\beta) = \Lambda(X'\beta) = \frac{\mathrm{e}X'\beta}{1+\mathrm{e}X'} = \frac{exp(X'\beta)}{1+exp(X'\beta)} \qquad (6.5)$$

The fixed effect is discussed under 6.5.2

6.2.8 Estimating techniques for equation (6.4) (Merger Performance)

Panel data models are comprised of static panel models and dynamic panel models (Bai, 2009). The extant literature identifies the two static panels as the within-group panel fixed effects, its extension-least square dummy variable (LSDV), and random effects (Hedges and Vevea, 1998; Rowland and Torres, 2004).

Fixed effects has been widely used in the literature. This alludes to the fact that it produces a consistent estimator, which means that values about the various sample mean are differenced (Blundell et al., 2001). Andrews et al. (2006); Kezdi and Sevak (2004) stated that when fixed effects and LSDV cross-sectional variation adopt dummy variables, they operate efficiently. However, when dummy variables become too

much, the required degree of freedom will be high and the estimation result could be affected.

The fixed effect equation is given below:

$$Y_{it} = X_{it}\beta + \pi_i + \mu_{it} \quad (6.6)$$

In equation (5.3), the intercept is missing, Y_{it} is the vector of Merger Performance ($Abnormal\ Returns_{it}$), π_i is the unobserved firm-specific effects, X_{it} is the independent variables (Dt_{it} + $Size_{it}$ + $Cashflow_{it}$ + $Cash\ holding_{it}$ + $TobinQ_{it}$) and β is the vector of the estimated parameter for the independent variables. μ_{it} is the error term.

The LSDV equation is as stated below:

$$Y_{it} = \sum_{j=2}^{4} Dj + X_{it}\beta + \pi_i + \mu_{it} \quad (6.7)$$

In equation (6.7). D_j depicts the dummy variables for the N-1 cross-section of firms. Equation (6.7) is different from equation (6.6) because of the addition of dummy variables to equation (6.7). This means all the firms now have a dummy with the reference firm's exemption, which is usually the first firm. However, Gujarati (2009b) states that once dummy variables become too large, multicollinearity is anticipated and can cause the explanatory variables to correlate, resulting in bias and inconsistent estimator.

Furthermore, Nerlove and Balestra (1996) introduced random fixed effects seeking to control omitted variables in the fixed-effects model. The random-effects equation is stated below:

$$Y_{it} = \propto + X_{it}\beta + \pi_i + \mu_{it} \quad (6.8)$$

where Y_{it} is the vector of merger performance($Abnormal\ Returns_{it}$), $\propto$ is the constant, X_{it} is the independent variables (Dt_{it} + $Size_{it}$ + $Cashflow_{it}$ + $Cash\ holding_{it}$ +

$TobinQ_{it}$) and β is the vector of the estimated parameter for the independent variables. μ_{it} is the between-entity error while π_i is the within-entity error.

To decide which model is appropriate for estimating between the fixed effects model and random-effects model, the Hausman (1978) test is applied (Mutl and Pfaffermayr, 2011).

In this study, the dynamic panel data method used by Arellano and Bond (1991); (Eigner and Kunst, 2009) is examined. This method is generally referred to as the generalised method of moments (GMM). This estimating technique improves estimator efficiency.

The GMM equation is stated below:

$$Y_{it} = \beta_1 X_{it} + \beta_2 Z_{it} + \in_{it} \quad (6.9)$$

where Y_{it} is the vector of merger performance($Abnormal\ Returns_{it}$), X_{it} is the exogenous independent variables, Z_{it} is the vector of predetermined independent variables which include lag(s) of Y, β_1 for *i*=1,2 are parameter estimates for the independent variables and $\in_{it} = \pi_i + \mu_{it}$ is the error term.

Furthermore, to address the problem of weak instrumental variables, Blundell and Bond (1998) and Blundell et al. (2001) introduced System-GMM. Also, System-GMM incorporates time-invariant explanatory variables that are not available in Difference-GMM. Besides lagged levels applied by Arellano-Bond, System-GMM utilises more restraints by using adjusted instruments with lagged differences. Moreover, Sys-GMM ensures orthogonality by properly differencing variables and their applicability. Besides, Sys-GMM is preferred because of the broad range of sample size in our model. Our estimated equation comprises both endogenous and lagged endogenous explanatory variables. Consequently, there is a correlation between the lagged endogenous variable and the error terms in the differenced equation through simultaneous terms in period *t*. However, there were no unobserved firm fixed effects that are correlated with the explanatory variables.

The GMM model that depicts the relationship between merger performance, distraction measure, and other control variables is stated below:

$$Y_{it} = \beta_1 + ZY_{it-1} + \beta_2 K_{2it} + \beta_3 K_{3it} \ldots\ldots \beta_8 K_{8it} + \mu_{it} \quad (6.10)$$

Equation (6.10) is the modified dynamic panel data that includes the lagged dependent variable. By differencing equation (6.10), equation (6.11) is obtained as follows:

$$\Delta Y_{it} = \beta_1 + Z\Delta Y_{it-1} + \beta_2 \Delta K_{2it} + \beta_3 \Delta K_{3it} \ldots\ldots \beta_8 \Delta K_{8it} + \Delta\varphi_{it} \quad (6.11)$$

To avoid the likely correlation between Y_{it-1} and φ_{it}, an instrumental variable is used. Then by matrix transposition of the regressors, instrumental variable W' is obtained. Equation (6.11) is multiplied in vector form by W' resulting in equation (6.12).

$$W\Delta Y_{it}\, W'\Delta Y_{it} = \beta_1 + W'(\Delta Y_{it-1})p + W'(K_{it})\beta + W'\Delta\varphi_{it} \quad (6.12)$$

Because of the dynamism of our equation, the study estimate model (6.12) by employing an instrumental variable (IV) technique and a Generalised Method of Moments (GMM) estimator. The study used two-step system-GMM estimators motivated by Blundell and Bond (1998) and Roodman (2009) for efficiency. System-GMM estimator, employing instrumental variables will effectively resolve the endogeneity problem and remove firm fixed effects (Raithatha and Komera, 2016; Wooldridge, 2002), and take care of omitted variable bias. It also lessens the impact of highly persistent corporate governance variables, thus enhancing the estimation power (Nguyen et al., 2015; Sheikh et al., 2018). It transforms the instruments to make them uncorrelated (exogeneous) with the fixed effects. Also, it uses orthogonal deviations–instead of subtracting the previous observation from the contemporaneous one, it removes the average of all the future available observations of a variable. No matter how many gaps, it is computable for all observations except each individual's last, thereby minimising data loss (Arellano and Bover, 1995; Blundell and Bond, 1998). Moreover, GMM is most suitable for large cross-sectional (N) and short time series (T), the study's data characteristics. We equally carried out the over-identification test as motivated by Sargan (1958) and Hansen (1982) and Arellano and Bond (1991) autocorrelation test to determine the suitability and validity of the instrumental variables. (Blundell and Bond, 1998).

6.3 Data Analysis and Discussion of Findings.

6.3.1 Merger frequency

6.3.2 Results of the pooled logit regression with fixed effects

Table 6.1 Effect of shareholders' distraction on merger frequency

	Model
VARIABLES	Pooled Logit with Fixed Effects
Distraction Measure	2.0985**
	(1.0048)
TobinQ	0.1381***
	(0.0476)
Cashflow	-0.1537
	(0.1949)
Cash Holding	-0.3908
	(0.4398)
Firm Size	-0.2322*
	(0.1346)
Observations	982
Number of id	111
Year dummies	Yes
Industry dummies	Yes
LR chi2(15)/P.value	27.09/0.028

Note: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1 are 1%, 5% and 10% statistically significant level. The 'LR chi2' is from a likelihood ratio chi-square test, intended to test a model including the full set of regressors is a significant improvement in fit over the null (intercept-only) model. In effect, it can be considered as an all-inclusive test of the null hypothesis that the regression slopes for all the predictors in the model are equal to zero (Pituch and Stevens, 2016). The result shown here indicates that the model fits the data significantly better than the null model, $X^2(15)=27.09$, $p<0.05$.

6.3.3 Analysis of findings

The finding from the pooled logit fixed effects indicated that an increase in distraction measure (our variable of interest) increases the likelihood of M&A announcement. In other words, when distraction measure rises, it makes M&A announcement more or less likely. The control variable, TobinQ, has a positive effect on M&A announcements. This means an increase in TobinQ will increase the likelihood of an M&A announcement. In contrast, firm size with negative relationships shows that an increase in firm size will decrease the possibility of an M&A announcement.

6.3.4 Conclusion on the effect of institutional shareholders' distraction on merger frequency

This chapter examines how institutional shareholders' attention influences corporate executive decisions on mergers and acquisition announcements. Our main conjecture is that institutional shareholders are subject to limited attention. These limitations prevent them from maintaining the same monitoring intensity for all the companies they invest in concurrently. At some point, institutional shareholders become distracted because their attention is shifted to an unrelated company in their portfolio, thereby weakening their control intensity. Following Kempf et al. (2017), we use the firm-level proxy for distraction measure to capture when institutional shareholders suffer shocks in unrelated companies in their portfolios.

The study finds strong evidence that there is a probability that corporate executives can engage in more M&A announcements when the monitoring intensity of institutional shareholders is relaxed.

6.4 Merger Performance.

6.4.1 Panel root analysis

To understand panel data characteristics before computing the analysis, the study conducted the panel root analysis. The main reason for testing for unit root is to confirm the stationarity of variables. Engle and Granger (1987) state that a linear combination

of non-stationary variables might affect the variables' stationarity. This study's three methods to conduct the panel root test are the ADF - Fisher chi-square, Im, Pesaran, and Shin (IPS) test, and Levin, Lin and Chu. These three methods are reliable, consistent and suitable in determining variables' stationarity (Im et al., 2003; Maddala and Wu, 1999). The unit root test result showed that all the model variables were stationary at level- integration order zero (I (0)). Table 6.2 displays details of the unit root test:

Table 6.2 The series unit root test results

Variables	Levin, Lin and Shu		Im Pesaran & Shin		ADF- Fisher chi-square	
	P-Value	Integration Order	P-Value	Integration Order	P-Value	Integration Order
BHAR Returns	0,0000	I (0)	0,0000	I (0)	0,0000	I (0)
Dt	0,0000	I (0)	0,0000	I (0)	0,0000	I (0)
Cashflow	0,0000	I (0)	0,0000	I (0)	0,0000	I (0)
Cash Holding	0,0000	I (0)	0,0000	I (0)	0,0000	I (0)
Size	0,0000	I (0)	0,0000	I (0)	0,0000	I (0)
TOBINQ	0,0000	I (0)	0,0000	I (0)	0,0000	I (0)

Source: Author's computation 2021

6.4.2 Summary Statistics: BHAR and FFAR abnormal returns.

Table 6.3 outline the traits of the sample firms as it relates to the variables used. The mean for both the buy and hold abnormal returns and returns (BHAR) from Fama-French five-factor model (FFAR) are 0.0118 and 0.000110, respectively, during the periods under review. The standard deviation showed that the variables are closer to the maximum value as the mean's dispersion is large. The distraction measure, which is the variable of interest, averaged 1,552. It shows that it is closer to the minimum value than the maximum, indicating that its effect on both BHAR and FFAR in JSE listed firms is small. Other variables such as ROA, Book to market, and TobinQ demonstrated minimum impact on abnormal returns. Simultaneously, size with a mean of 8.443 and closer to the maximum value indicates a more considerable effect on merger performance.

Table 6.3 Summary statistics

VARIABLES	(1) N	(2) sum	(3) mean	(4) sd	(5) min	(6) max
BHAR	2,176	25.69	0.0118	0.0541	-0.133	1.026
FFAR	2,496	0.275	0.000110	1.141	-2.601	2.713
Distraction	2,015	3,127	1,552	6,965	1,200	3,127
Cashflow	2,201	1,101	0.500	8.371	-1.937	300.2
Size	2,250	18,997	8.443	2.496	-2.042	17.94
Cash Holding	2,140	2,807	1.312	7.474	-13.94	269.5
TobinQ	2,141	21,126	9.867	139.9	-3.750	5,187

Source: Author's computation, 2021

6.4.3 Correlation matrix

To ensure that the issue of multicollinearity does not occur in our estimation, the correlation analysis is carried out to determine the extent of association among the variables and the result is displayed in Table 6.4

Table 6.4 Pairwise correlation matrix analysis

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) BHAR	1.000						
(2) FFAR	-0.068	1.000					
(3) Distraction	-0.010	-0.009	1.000				
(4) Cashflow	-0.011	-0.021	-0.001	1.000			
(5) Size	-0.079	0.061	-0.008	-0.050	1.000		
(6) Cash holding	0.265	-0.005	-0.004	-0.006	-0.032	1.000	
(7) TobinQ	0.052	0.025	0.000	-0.003	-0.050	-0.011	1.000

Source: Author's computation, 2021

As shown in Table 6.4, the correlations among the variables range between -0.001 and 0.265, indicating that multicollinearity will hardly be a concern. Again, it shows that distraction measure (Dt) negatively correlates with merger performance (BHAR and

FFAR). This implies that when institutional shareholders are distracted, executives have the tendencies to engage in devaluing acquisitions.

6.4.4 Panel estimation analysis

The research study establishes the use of panel data analysis because it can tackle the problem of unobserved heterogeneity. The research study adopts the error-component models that include fixed effects and random effects to describe the relationship and the variation between the dependent and independent variables.

6.4.5 Regression result of fixed effects and random effects: Buy and Hold abnormal returns (BHAR) and Fama-French five-factors abnormal returns (FFAR)

Table 6.5 Distraction effect on merger performance (BHAR and FFAR): fixed and random effects.

	BHAR		FFAR	
VARIABLES	**FE**	**RE**	**FE**	**RE**
Distraction Measure	-0.0167	-0.0047	-0.0000*	-0.0000**
	(0.0310)	(0.0194)	(0.0000)	(0.0000)
Size	-0.0420*	-0.0454**	-0.0004	-0.0009
	(0.0225)	(0.0206)	(0.0018)	(0.0008)
Cashflow	-0.0099*	-0.0078	-0.0001	-0.0000
	(0.0058)	(0.0051)	(0.0002)	(0.0002)
Cash Holding	0.0019***	0.0020***	0.0006**	0.0008***
	(0.0003)	(0.0003)	(0.0003)	(0.0003)
TobinQ	0.0002**	0.0002**	-0.0000	-0.0000
	(0.0001)	(0.0001)	(0.0001)	(0.0000)
Constant	0.0286***	0.0275***	-1.2692***	-1.2638***
	(0.0058)	(0.0055)	(0.0177)	(0.0088)

Observations	1,921	1,921	1,921	1,921
R-squared	0.126		0.998	
Number of id	155	155	155	155
Year Dummies	Yes	Yes	Yes	Yes

Source: Author's computation, 2021.

Note: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1 are 1%, 5% and 10% statistically significant level. FE represents Fixed effects and RE represents Random effects.

6.4.6 Hausman test

Tables 6.6 and 6.7 show the Hausman test regression results. This test is performed to confirm if there is a significant difference between fixed and random effects. The hypothesis states that:

The null (H_0): Random-effects model is appropriate.

The alternative (H_a): fixed effects is preferred.

Table 6.6 Hausman test result: BHAR

	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	fe	re	Difference	S.E.
Variables				
Distraction	.0166652	.0046978	.0119675	.0226747
ROA	-.0420059	-.0454252	.0034193	.0067916
Size	-.0099311	-.0077589	-.0021721	.0023343
Book to market	.0019193	.0019511	-.0000318	.0000184
TobinQ	.0001604	.0001611	-7.28e-07	6.76e-06
chi2(14) = (b-B)'[(V_b-V_B)^(-1)](b-B) =			9.68 Prob>chi2 =	0.7854

Source: Author's computation, 2021

Table 6.7 Hausman test Result: FFAR

	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	fe	re	Difference	S.E.
Variables				
Distraction	3.35e-14	3.96e-14	-6.14e-15	6.09e-15
Size	-.0004008	-.0009406	.0005398	.0016241
ROA	-.0000549	-.0000423	-.0000125	.0000436
Book to Market	.0006329	.0007651	-.0001322	.0001287
TobinQ	-.0000339	-.00004	6.10e-06	.0000328
chi2(19) = (b-B)'[(V_b-V_B)^(-1)](b-B) =		15.73 Prob>chi2 =		0.6750
Source: Author's computation, 2021				

The findings of the panel model are presented in Table 6.5. The results of fixed effects and random effects are reported. The study further considered the Hausman test to determine the best fit model between the two. Hausman's test (p-value of 0.7854 and 0.6750 for BHAR and FFAR, respectively) showed that the null hypothesis should not be rejected, which means random effects are appropriate for our model.

The random-effects reported that the distraction measure effect on merger performance (BHAR) is negative but not significant. It is negative and statistically significant as it relates to merger performance (FFAR). Other control variables such as cash holding have a positive link with both merger performance (BHAR & FFAR) and statistically significant while TobinQ showed a positive relationship with merger performance (BHAR) and statistically significant, it shows otherwise with merger performance (FFAR) but not statistically significant. As we earlier stated, random effects is one of the estimating techniques for static models, which does not deal with issues of serial correlation, heteroskedasticity, endogeneity and cross-sectional dependence. Since our interest in this study is to estimate and interpret the dynamic

panel data model. Dynamic panel data models control for serial correlation, heteroskedasticity, endogeneity and cross-sectional dependence; hence, we estimate the dynamic panel data using System GMM.

6.4.7 Dynamic panel data estimation: Result of Two-step system GMM for merger performance (BHAR and FFAR)

This study used generalised methods of moments, also known as System GMM, to estimate the dynamic panel data. We used the two-step system GMM because of its intrinsic benefits. It can deal with endogeneity issues, tackle weak instrumental variables and be suitable when there is a large sample, and produce more efficient and consistent parameter estimates.

Table 6.8 Effect of shareholders' distraction on merger performance (BHAR)

	Model
VARIABLES	Two-step system GMM
Lag BHAR	-0.2537*
	(0.1366)
Distraction Measure	- 0.0162**
	(0.0919)
Size	-0.0014
	(0.0013)
Cashflow	-0.0101
	(0.0091)
Cash Holding	0.0015**
	(0.0006)
TobinQ	0.0011**
	(0.0005)
Constant	0.0460***
	(0.0163)
Observations	1,232
Number of id	151

Year Dummies	Yes
Arellano-Bond test for AR(2)	0.625
Hansen test	0.183
Instruments/Groups	31/151
F.Statistics/P.value	5.28/0.000

Source: Author computation, 2021.

Note: White heteroscedasticity-consistent standard errors in parentheses, *** p<0.01, ** p<0.05 and * p<0.1 are statistically significance at 1%, 5% and 10% levels respectively. Hansen statistics p-value of 0.183 indicates that the instruments are valid, while Arellano-Bond AR(2) p-value of 0.625 showed no 2nd order autocorrelation. The F-statistics with a p-value of 0.000 indicated that the regressors are jointly significant in explaining the dependent variable.

Table 6.9 Effect of shareholders' distraction on merger performance (FFAR)

	Model 1
VARIABLES	Two-step system GMM
Lag FFAR	0.3457**
	(0.1664)
Distraction	-0.0314**
	(0.0262)
Size	-0.0079*
	(0.0043)
Cashflow	0.0135
	(0.0177)
Cash Holding	0.0002**
	(0.0001)
TobinQ	0.0001***
	(0.0000)
	(0.3598)
Constant	-0.0681
	(0.4167)

Observations	1,232
Number of id	151
Year Dummies	Yes
Arellano-Bond test for AR(2)	0.968
Hansen test	0.213
Instruments/Groups	36/151
F.Statistics/P-value	35899.66/p-0.000

Source: Author Computation, 2021.

Note: White heteroscedasticity-consistent standard errors in parentheses, *** p<0.01, ** p<0.05 and * p<0.1 are statistically significance at 1%, 5% and 10% levels respectively. The Hansen statistics p-value of 0.213 indicates that the instruments are valid, while the Arellano-Bond AR(2) p-value of 0.968 showed no 2nd order autocorrelation. The F-statistics with a p-value of 0.000 indicated that the regressors are jointly significant in explaining the dependent variable.

6.5 Analysis of findings.

The finding from the Two-step system GMM results in Tables 6.8 and 6.9 show a negative relationship and are statistically significant for merger performance (BHAR and FFAR). This result is consistent with the study by Kempf et al. (2017) and Stein and Zhao (2016), who also report a negative relationship. It also agrees with the result obtained under the correlation matrix analysis. The result suggested that the effect of distraction measure on merger performance using BHAR as a proxy (0.0162) indicates that a unit change in distraction measure is associated with a decrease of 0.0162 units in merger performance at a 5% statistically significant level on average ceteris paribus. The implication of this is that when institutional shareholders are distracted and their monitoring intensity drops, the executive managers engage in devaluing M&A. Other variables such as TobinQ and cash holding positively correlate with merger performance and are statistically significant.

Furthermore, the distraction measure results on merger performance proxied by FFAR indicated a negative relationship and was statistically significant. It suggested that a unit change in distraction measure will lead to 0.0314 decreases in merger performance. Variables like TobinQ reported a positive link with merger performance

and were statistically significant, while firm size showed a negative relationship and was statistically significant.

6.6 Discussion of findings

M&A is supposed to impact the bidding firm's value significantly and, ultimately, yield higher returns to the institutional shareholders. Due to an agency problem, corporate executives may acquire devaluing entities to satisfy their desired personal interests. Executives take advantage of slack institutional shareholders' monitoring to engage in uncontrolled acquisitions for empire building. Our findings reflect the conduct of the CEO of Steinhoff International South Africa, who acquired companies that could not improve the firm performance. Steinhoff international is implicated in accounting scandals of high magnitude and devaluing acquisitions were among the executives' major wrong decisions. The finding provides an understanding that relaxed institutional shareholders' monitoring intensity encourages corporate executive opportunistic behaviour. Institutional shareholders' monitoring intensity must be sustained to ensure that corporate decisions align with the shareholders' interests and firm value.

6.7 Conclusion on institutional shareholders' distraction and merger performance

This chapter investigated the relationship between institutional shareholder monitoring intensity and M&A (merger frequency and merger performance). The findings indicated that shareholders' distraction significantly impacts M&A, bidding announcement frequency, and post-merger performance. The study hypothesis that shareholders' distraction has a significantly positive relationship with M&A is achieved. The employment of the more robust dynamic panel data model (Sys GMM) in our analysis established our result's robustness. Our primary assumption is that institutional shareholders are subject to limited attention. These limitations prevent them from maintaining the same monitoring intensity for all the companies they invest in concurrently. Institutional shareholders become distracted at a point in time because their attention is shifted to an unrelated company in their portfolio, thereby weakening their control intensity. Following Kempf et al. (2017), we use the firm-level proxy for

distraction measure to capture when institutional shareholders suffer shocks in unrelated companies in their portfolios.

The study finds substantial evidence that corporate executives will engage in more M&A that is devaluing for personal reasons. This finding is supported by both theoretical and empirical studies by other researchers. The finding explains the recent accounting scandals in South Africa, where the CEO engaged in an uncontrolled acquisitions spree. We indicate that this is a causal effect since the distraction measure captures the shift in the institutional shareholders' attention occasioned by shocks in an unrelated company. Overall, the findings explain that executives will act contrary to the institutional shareholders' interest when they are distracted. This understanding will engender improved corporate governance mechanisms for firm value creation.

6.8 Chapter summary

This chapter addressed the relationship between the institutional shareholders' limited attention and M&A decisions. The relationship between institutional shareholders monitoring intensity and merger frequency, together with merger performance, was presented. A discussion on the relationship between distraction measure and merger performance using BHAR as a proxy and using FFAR as a proxy was equally carried out. The chapter is a continuation of examining the connection between limited institutional shareholders' attention and corporate decisions. This next chapter is the concluding part of the study.

Chapter 7

7.1 Overall conclusion

This study aimed to produce new evidence for the relationship between institutional shareholders' monitoring intensity caused by limited attention and corporate decisions. Most prior research studies on institutional shareholders' monitoring concentrate on the several motivations arising from heterogeneity of the shareholder's characteristics, like their independence, style of investment, the magnitude of their investment, and their active participation in its operations. However, the discussion on reduced institutional shareholders' monitoring intensity occasioned by a shift in their attention due to shocks in an unrelated company within their portfolio is limited, especially in an emerging economy like South Africa.

This study examined institutional shareholders' limited attention regarding the intensity of their monitoring responsibility and corporate decisions. Corporate decisions discussed include investment inefficiency, earnings management, executive remuneration, and M&A. These decisions have a direct effect on the firm's value. Therefore, any decisions' appropriateness will enhance the firm's value and, consequently, the institutional shareholders' wealth. On the other hand, when the decision on any of these activities is wrong, firms' value decreases and institutional shareholders lose money and the economy suffers downtime. Sometimes, depending on the magnitude of the loss, it can lead to the company's collapse. Accounting scandal cases worldwide; Enron Corporation, American International Group, Satyam (all in America), and Toshiba (Japan) have a connection with unmonitored and unchallenged executive decisions. Additionally, the Steinhoff International scandal (South Africa) in 2017 resulted from unchecked executive decisions (Rossouw, 2017). Thus, these regarded shortcomings in corporate governance have resuscitated the discussion on the institutional shareholders' role in impacting corporate governance and executive behaviour (Lynn, 2013).

This thesis's empirical chapters 3 to 6 discuss the relationship between institutional shareholders' distraction and corporate decisions – investment inefficiency, earnings management, executive remuneration, and M&A. The findings validate the argument that corporate executives take advantage of a temporary shift in institutional

shareholders' attention to make decisions for personal benefits and to the detriment to both the firm's value and shareholders' wealth.

In empirical chapters 3 to 5, the study used static panel models (fixed effects within regression and random effects) and dynamic panel models (generalised system method of moments (Sys-GMM)) to conduct our estimations. Relevant diagnostics tests were performed to confirm the validity of our results. While in empirical Chapter 6, apart from the estimating techniques stated above, we employed pooled logit fixed effects to determine the relationship of institutional shareholders' distraction and merger frequency. This study's focused estimating method is Sys-GMM (dynamic panel data model) because of its advantages over static models. Sys GMM control for serial correlations, cross-sectional dependency, and heterogeneity. Therefore, the research study conclusions are based on Sys-GMM results. Apart from contributions outlined in Chapter 1, the study also contributes to literature using a robust Sys-GMM technique for our analysis. To the best of our knowledge, this study is the only one to use Sys-GMM to determine the relationship between distraction measures and corporate decisions. Other studies used static models. We focused on the firms listed on JSE and variables used in each objective in all our estimations. Distraction measure is the variable of interest across the objectives. The details of the variables used are in appendix A.

The Sys-GMM results indicate that relaxed institutional shareholders' monitoring intensity, occasioned by distraction, allows the corporate executives to make decisions in their favour, at the firm's and institutional shareholders’ expense. Therefore, understanding corporate executive reactions when institutional shareholders' attention shifts (temporarily) due to distraction from an unrelated firm within their portfolio and their monitoring intensity drops, may considerably enhance our understanding of best strategies to adopt to strengthen the corporate governance mechanism value-creation goals of the firm.

7.2 Implication of findings

This thesis has significant implications for institutional holding studies. Conventionally, the prevailing view has been that institutional shareholders’ heterogeneity motivates their monitoring. Some shareholders are considered more effective monitors than

others (Bushee and Goodman, 2007; Chen et al., 2007; Schmidt and Fahlenbrach, 2017a). This thesis explains this viewpoint on institutional shareholders' monitoring. It has shown that irrespective of their heterogeneity, the time constraint is a crucial determinant of their monitoring intensity. This thesis found that when institutional shareholders' attention is interrupted by the happenings in another company within their portfolios; which are termed distraction events (extreme industry income either positive or negative as motivated by Barber and Odean (2008)), they are distracted, and this leads to the shifting of their attention. Once their attention is shifted, their monitoring intensity drops. Furthermore, this thesis tends to clarify the conflicting findings of prior studies. For instance, there is an active debate about passive investors' role in corporate governance. Some researchers indicate they are effective monitors (Appel et al., 2016), while others show otherwise (Schmidt and Fahlenbrach, 2017a). This thesis offers another perspective as it discovers that the intensity of monitoring is dependent on the distraction events they are exposed to. Passive investors seem to effectively monitor firms considered important to them, while active investors do less monitoring for unimportant firms in their portfolios.

7.2 Limitations and suggestions for further research

Notwithstanding the growing interest in institutional shareholders' monitoring effectiveness, there are still crucial issues that are yet to be extensively examined. For instance, this thesis provides strong evidence that institutional shareholders could enhance corporate governance, consequently improving shareholders' value. A typical implication of this finding is that value-improving activities should influence the firm's stock price. If trading strategies were formulated about enhancing activities, would it lead to profitable investment? The asset-pricing effects of institutional shareholders' effective monitoring would be a crucial extension to this study.

Another issue that this thesis did not answer is how the institutional shareholder's effective monitoring affects other stakeholders. There is already some research taking place in this regard. For instance, some researchers highlight steps that imply that debtholders would consider increasing equity holder interference as possibly harmful to their interest (King and Wen, 2011; Klein and Zur, 2011). Therefore, the companies

experiencing frequent shareholders' interference will bear a higher finance cost (Klein and Zur, 2011). These approaches enhance our understanding of the matter; however, the exogenous factors of institutional equity holders monitoring other interested parties have not caught researchers' attention. Would shareholder interference harm firm employees' interests? Would the institutional equity holder monitoring impact the wellbeing of the company's customers or suppliers? The answers to these questions remain discoverable in future research.

7.4 Recommendations

Since effective institutional monitoring mitigates agency problems, this thesis suggests that the period of institutional shareholder's distraction can be covered by proxy (Adhoc staff) to always ensure alignment of corporate decisions with corporate objectives of improved firm value. The attention constraints can also be mitigated by investing in computer capacities that facilitate access to real-time information channels for prompt reactions to critical corporate decisions.

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Appendix A

Table A1: Variable Descriptions

This table presents variable descriptions and related data sources. S&P Capital IQ refers to the S&P Global Market Intelligent Company. Details of companies listed on JSE based on the common stock, their financial statements, the executive's

compensation, and institutional shareholders' information (market capitalization and proportion shareholding in the respective sectors) were extracted from the S&P Capital IQ database.

Variable	Description	Source
Distraction Measure	Following Kempf et al. (2017), a firm-level proxy will be constructed for total institutional shareholder distraction. $Dt_{it} = \sum_{i \in ft-1} \sum_{IND \neq INDf} w_{ift-1} \, X \, w_{it-1}^{IND} \, X \, IS_t^{IND}$ where f_{t-1} connotes institutional shareholders' set of firms at the end of $period_{t-1}$, *IND* connotes JSE 11 industries classification and IND_f connotes $firm\, f's$ industry sector, IS_t^{IND} indicates if there is a distraction in industry *IND,* and w_{it-1}^{IND} connotes the weight of the industry sector *IND* in the institutional $shareholder_{i's}$ portfolio. The weight w_{ift-1} estimates the significance of $shareholder\, i$ in $firm\, f$ at the end of $period_{t-1}$ By intuition, $shareholder\, i$*i*s significant if 1) $firm\, f$ weight in $investor\, i's$ portfolio is higher and 2) if the proportion of $firm\, f$ shares owned by $investor\, i's$ large. Hence, we estimate $w_{i,f,t-1}$ as: $W_{ift-1} = \frac{QPFweight_{ift-1} + QPerOwn_{ift-1}}{\sum_{i \in ft-1}(QPFweight_{ift-1} + QPerOwn_{ift-1})}$	S&P Capital IQ

	Where $PFweight_{ift-1}$ is the $firm_{f's}$ market value weight in the $investor\ i's$ portfolio while $PerOwn_{ift-1}$ is the proportion ownership the $investor\ i$ has in $firm\ f$. To avoid outliers firms in $investor\ i's$ portfolio in the period t-1 are classified into quintiles based on $PFweight_{ift-1}$ and this connotes $QPFweight_{ift-1}$. Likewise, $QPerOwn_{ift-1}$ represents the quintile value of $PerOwn_{ift-1}$.	
Investment Regression Variables		
AT	Total Assets	S&P Capital IQ
I Total	Annual total investment expenditure normalized by AT: [Capital expenditure (CAPX)+ acquisition expenditure (AQC)+ R&D expenditure (XRD)- Receipts from sale of property, plant and equipment(SPPE)]/AT (Richardson, 2006; Ward et al., 2017)	S&P Capital IQ
I Maintenance	Annual required investment expenditure to maintain assets in place normalized by AT: Depreciation and amortization (DPC)/AT (Richardson, 2006; Ward et al., 2017)	S&P Capital IQ
I New	Annual investment expenditure on new projects normalized by AT: ITotal- *I* Maintenance (Richardson, 2006; Ward et al., 2017)	S&P Capital IQ
MV	Market value of equity: price(PRCC F) * common shares outstanding (CSHO) (Ward et al., 2017).	S&P Capital IQ
V/P	Growth opportunity: Assets in place/MV , where the assets in place is estimated as $(1-\alpha r)\,BV+\alpha(1+r)X-\alpha rd$, $\alpha=w/1+r-w$, $r=12\%$, $w=0.62$, BV is the book value of equity(CEQ), d is annual dividend (DVC), and X is operating income after depreciation (OIADP) (Richardson, 2006; Ward et al., 2017)	S&P Capital IQ
Leverage	Leverage ratio: the book value of total debt (long term debt(DLTT) + short term debt(DLC)) divided by the sum of the book value of total debt and Book value of Equity (Richardson, 2006; Ward et al., 2017)	S&P Capital IQ
Cash	Cash holding ratio: cash and short term investment(CHE) divided by AT at the start of year (Richardson, 2006; Ward et al., 2017)	S&P Capital IQ

Age	Firm age: the natural log of (1 + the number of years the firm has been listed on JSE as of the start of the year) (Richardson, 2006; Ward et al., 2017)	S&P Capital IQ
Size	The natural log of AT at the start of the year (Richardson, 2006; Ward et al., 2017)	S&P Capital IQ
Return	The percent change of rm market value over that prior year: MV_t/MV_{t-1} (Richardson, 2006; Ward et al., 2017)	S&P Capital IQ
MTB	Market to book ratio: market value of asset (MV +Totaldebt) dividend by AT (Stoughton et al., 2017; Ward et al., 2017)	S&P Capital IQ
Tangibility	Firm asset tangibility: Property Plant and Equipment(PPENT)/AT (Stoughton et al., 2017; Ward et al., 2017)	S&P Capital IQ
Inefinvest	Inefficient investment proxy variable: residual of the investment regression (Richardson, 2006; Stoughton et al., 2017)	S&P Capital IQ
Earnings Management Variables		
Discretionary Accruals	Discretionary accruals are the residuals of the regression of total accruals on the inverse of lagged total assets, the change in sales minus the change in receivables scaled by lagged total assets, net property, plants and equipment scaled by lagged total assets, and return on assets defined as income before extraordinary items divided by total assets. $Accruals_{it} = \beta_0 + \beta_1\left(\frac{1}{ASSETS_{it-1}}\right) + \beta_2(\Delta SALES_{it} - \Delta REC_{it}) + \beta_3 PPE_{it} + \beta_4 ROA_{it} + \epsilon_{it}$ (Garel et al., 2018; Kothari et al., 2005) Where sales, receivables, assets, net property, plants and equipment, and income before extraordinary items are computed from the firm financial statements.	S&P Capital IQ
CFO	Abnormal cash flow from operations are the residuals of the following regression: $CFO_{it} = \beta_0 + \beta_1\left(\frac{1}{ASSETS_{it-1}}\right) + \beta_2 SALES_{it} + \beta_3 \Delta SALES_{it} + \epsilon_{it}$ Where CFO is the cash flow from operation divided by lagged total assets, SALES is sales divided by lagged total assets and ΔSALES is the change in sales divided by lagged total assets. Abnormal decreases in cash flow from operations are used as a signal of sales manipulation (cash inflow per sale is lower as margins	S&P Capital IQ

	decline due to price discounts or more lenient credit terms). We multiply the residuals by -1, to obtain a positive number for an abnormal decrease in cash flow from operations (Garel et al., 2018; Roychowdhury, 2006).	
Prod	We define production costs as costs of goods sold plus inventories divided by lagged total assets. Abnormal productions costs are the residuals of the following regression: $$Prod_{it} = \beta_0 + \beta_1 \left(\frac{1}{ASSETS_{it-1}}\right) + \beta_2 SALES_{it} + \beta_3 \Delta SALES_{it} + \Delta LSALES + \epsilon_{it}$$ Where SALES is sales divided by lagged total assets, ΔSALES is the change in sales divided by lagged total assets, and ΔLSALES is the lagged change in sales divided by lagged total assets (Garel et al., 2018; Roychowdhury, 2006).	S&P Capital IQ
Disc Cost	We define discretionary expenditures as R&D plus advertising plus SG&A divided by lagged total assets. Abnormal discretionary expenditures are the residuals of the following regression: $$DiscCost_{it} = \beta_0 + \beta_1 \left(\frac{1}{ASSETS_{it-1}}\right) + \beta_2 SALES_{it} + \epsilon_{it}$$ Where SALES is sales divided by lagged total assets. Abnormal reductions in discretionary expenses are used as an attempt to reduce reported expenses to increase earnings. We multiply the residuals by -1, to obtain a positive number for an abnormal decrease in discretionary expenditures (Garel et al., 2018; Roychowdhury, 2006).	S&P Capital IQ
Total Rem	Sum of real activities manipulations that are earnings-increasing. That is sum of abnormal decreases in cash flow from operations, abnormal increases in costs of productions, and abnormal decreases in discretionary expenditures: $$Total\ REM_{it} = REMCFO_{it} + REMDisc\ Cost_{it} + REMProd_{it}$$ (Garel et al., 2018)	S&P Capital IQ
Size	Natural logarithm of total assets	S&P Capital IQ
Leverage	Total debt divided by total assets	S&P Capital IQ

Book to Market	Total assets divided by market capitalization plus total debt and minus deferred taxes (Garel et al., 2018).	S&P Capital IQ
Profitability	Profitability is defined as income before extraordinary items divided by total assets (Garel et al., 2018)	S&P Capital IQ
Asset Growth	Change in total assets divided by lagged total assets (Garel et al., 2018)	S&P Capital IQ
Momentum	Momentum is the excess of accumulated monthly returns on FTSE/JSE all share index for the last twelve months (Garel et al., 2018).	S&P Capital IQ
Volatility	Volatility is the excess of the standard deviation of daily returns over the FTSE/JSE all share index computed for the previous fiscal year (Garel et al., 2018).	S&P Capital IQ
Executive Remuneration Variables		
Ln (ExcRem)	The natural logarithm of executive compensation (Sheikh et al., 2018).	S&P Capital IQ
ROA	Ratio of income before interest and taxes to total assets.	S&P Capital IQ
Return to Shareholder	Current market price of shares plus dividend for the current year divided by the prior year market price (Sheikh et al., 2018)	S&P Capital IQ
Size	Natural logarithm of total assets.	S&P Capital IQ
Firm Risk	Standard deviation of the monthly stock returns for the fiscal year (Sheikh et al., 2018)	S&P Capital IQ
Market to Book Ratio	Market value per share divided by book value per share (Sheikh et al., 2018)	S&P Capital IQ
Age	Firm age: the natural log of (1 + the number of years the firm has been listed on JSE as of the start of the year) (Richardson, 2006; Ward et al., 2017)	S&P Capital IQ
Leverage	Total debt divided by total assets	S&P Capital IQ
Mergers and Acquisitions Variables		
Size	Natural logarithm of total assets.	S&P Capital IQ
TobinQ	Ratio of the market to the book value as of previous fiscal year end (Kempf et al., 2017)	S&P Capital IQ
Cashflow	Earnings before extraordinary items plus depreciation divided by lagged total assets (Kempf et al., 2017)	S&P Capital IQ
Cash Holdings	Cash plus receivables divided by lagged total assets (Kempf et al., 2017)	S&P Capital IQ

Appendix

Ethical Cleance Letter

UNIVERSITY OF
KWAZULU-NATAL
INYUVESI
YAKWAZULU-NATALI

8 Feb 2021

Mr Oloyede Obagbuwa (215082389)
School Of Acc Economics&Fin
Westville

Dear Mr Oloyede Obagbuwa,

Protocol reference number: 00010924
Project title: Institutional shareholders' monitoring and control over corporate decisions: Evidence from JSE listed companies.

Exemption from Ethics Review

3 Feb 2021

In response to your application received on , your school has indicated that the protocol has been granted **EXEMPTION FROM ETHICS REVIEW.**

Any alteration/s to the exempted research protocol, e.g., Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through an amendment/modification prior to its implementation. The original exemption number must be cited.

For any changes that could result in potential risk, an ethics application including the proposed amendments must be submitted to the relevant UKZN Research Ethics Committee. The original exemption number must be cited.

In case you have further queries, please quote the above reference number.

PLEASE NOTE:
Research data should be securely stored in the discipline/department for a period of 5 years.

I take this opportunity of wishing you everything of the best with your study.

Yours sincerely,

[redacted]

Prof Josue Mbonigaba
Academic Leader Research

PostalAddress: PrivateBagX54001,Durban4000
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24 April 2021

This is to confirm that I, the undersigned, have language edited the thesis of

Obagbuwa Oloyede

for the degree

Doctor of Philosophy: Finance

entitled:

Institutional Shareholders' Monitoring and Control Over Corporate Decisions:

Evidence from JSE Listed Companies

The responsibility of implementing the recommended language changes rests with the author of the document.

Yours truly,

[redacted]

Linda Scott