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Article

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ACCOUNTING, CORPORATE GOVERNANCE & BUSINESS ETHICS | RESEARCH ARTICLE

Comparison of going concern models with and without corporate governance

Paul Hammond¹, Mustapha Osman Opoku², Paul Adjei Kwakwa^{1*} and Daniel Berko¹

Abstract: This study examines the effectiveness of going-concern prediction models by comparing models that incorporate corporate governance variables with models based solely on financial ratios. The aim was to compare the predictive power of going-concern models that combine corporate governance variables and corporate reporting ratios with models that used only financial ratios. Utilising secondary data obtained from published annual financial statements from 15 Ghanaian, 10 Nigerian, and 10 South African banks, we developed two logistic models: one comprising financial variables alone and another integrating both financial and corporate governance variables. The findings demonstrate that models incorporating corporate governance outperform those relying solely on financial ratios. Among the financial ratios, working capital to total assets and retained earnings to net profit emerged as significant predictors of going concern. Additionally, two corporate governance variables, namely board size and board independence, displayed contrasting relationships with the going concern. Board independence exhibited a direct relationship, while board size demonstrated an inverse association. This research contributes to the existing body of knowledge by providing stakeholders in financial institutions with robust models for measuring and predicting the firms' going-concern position. We recommend incorporating corporate governance variables alongside financial ratios in the development of going-concern models to enhance their predictive capabilities.

Subjects: Economics; Finance; Business, Management and Accounting

Keywords: board independence; board size; corporate governance; financial ratios; going concern; logistic regression

1. Introduction

The assessment of a company's going-concern status is a critical aspect of financial analysis and decision-making (Kaczmarczyk, 2018). It involves evaluating the company's ability to continue its operations in the foreseeable future and ensuring that it can meet its financial obligations and sustain its business activities. Stakeholders, including investors, creditors, auditors, and regulators rely on accurate going concern assessments to make informed judgements about organisations' financial health and sustainability. Traditionally, going-concern evaluations have primarily focused on quantitative measures and financial indicators. Predictive models, such as the Altman Z-score,

Ohlson O-score, logit, probit, time series, survival analysis, decision trees, neural networks, and genetic algorithms (Carson et al., 2013; Geiger et al., 2019; Shi & Li, 2019), have been developed to assess a company's financial health and predict the likelihood of bankruptcy or financial distress. These models rely on various financial ratios, including profitability, liquidity, solvency, and cash flow indicators, to determine the company's ability to meet its financial obligations (Agarwal & Tafler, 2008; Bauer & Agarwal, 2014).

While these traditional going-concern models have shown some success in predicting financial distress, they often overlook the influence of non-financial factors on a company's going-concern status. One crucial aspect that has gained increasing recognition is the role of corporate governance practises in shaping a company's long-term viability. Corporate governance encompasses a set of mechanisms, structures, and processes that aim to a various stakeholders' interests and ensure organisations' accountability and integrations (Yusuf et al., 2022). Effective corporate governance practices contribute to better decision-making, risk management, and long-term value creation. Key components of corporate governance include board independence, the presence of audit committees, internal control systems, and the quality of financial disclosures. These factors play a crucial role in reducing agency problems, enhancing transparency, and promoting the reliability of financial reporting.

Numerous studies have highlighted the importance of considering corporate governance factors in going-concern assessments (Mahrani & Soewarno, 2018; Xiaolu et al., 2016). The work of Muda et al. (2018) revealed that the future development of companies is positively influenced by efficient corporate governance since good governance is an integral part of good corporate governance. Therefore, corporate governance can exert some influence on the financial performance of companies that can be linked to their going-concern status. For instance, research has demonstrated that a higher degree of board independence is associated with improved financial reporting quality, reduced agency problems, and better management monitoring. According to research by Uang et al. (2006), strong corporate governance systems and a good reputation for auditors force directors to be more forthright in their going-concern disclosures. Similarly, the presence of effective audit committees has been found to enhance the reliability of financial disclosures and reduce the likelihood of financial distress. Furthermore, robust internal control systems are crucial in identifying and mitigating risks that may impact a company's going-concern status.

Due to its importance, some studies such as Uang et al. (2006), Zureigat (2015), Alhossini et al. (2021); Ren and Zhu (2020) and Effiong et al. (2018) have considered the impact of corporate governance on going concern. For instance, Effiong et al. (2018) used board size, board composition, board meetings, and board tenure as independent variables to assess the effect of corporate governance on the going concern of non-financial institutions. Despite the growing recognition of the importance of going-concern status, there remain significant research gaps in the existing literature. While some existing studies have combined corporate reporting and corporate governance variables in assessing the level of going concern, studies that compare going-concern models with and without the incorporation of corporate governance factors are scarce. Such analysis is needed to reveal the robustness of models that include corporate governance variables or otherwise, as argued in the literature. Moreover, in the case of Africa going concern assessment that includes corporate governance variables for African countries is scarce (Claessens & Yurtoglu, 2013; Jacoby et al., 2019). Including corporate governance variables in going concern models for financial institutions in African countries is very crucial since the continent's financial sector is comparatively weaker than those from the developed countries that seem to have benefitted from strong corporate governance (Claessens & Yurtoglu, 2013; Jacoby et al., 2019). Besides, the enforcement of corporate governance for financial institutions in Africa is relatively lower (see further information at the background in section 2). Corporate governance components such as independence of the board, board size, and gender parity (Ben Fatma & Chouaibi, 2021; Gurol & Lagasio, 2022; Nguyen et al., 2020) are some of the governance factors that are identified to be of

concern to the financial sector. As a result, the going concern for financial institutions in the region may be impaired with this level of corporate governance.

Hence, this study addresses the gap in the literature by developing going concern models with and without corporate governance mechanisms in financial institutions for African countries. This gap was identified in the systematic review by Lu et al. (2022) as they cited the absence of cross-country, mixed-methods, and qualitative investigations. Financial institutions were used for the study because they are vulnerable to changes in economic status. A little shaking in the economy can trigger financial crises for financial institutions. Furthermore, having a strong financial sector has been mentioned as necessary for transforming the economic growth and development of economies including African countries. A number of crises in the sector over the years have made going concern an important matter for stakeholders.

The primary objective of this study is to investigate and compare the impact of incorporating corporate governance factors into going-concern assessments for financial institutions in Africa. Specifically the study seeks to:

- a. estimate the effect of corporate governance variables on going-concern.
- b. examine the predictability of going concern model with and without corporate governance variables.

By achieving the above objectives the study contributes to the literature in many ways. First, it provides insights into the effectiveness of traditional going concern models and the importance of considering corporate governance practices in evaluating a company's financial sustainability. By incorporating corporate governance factors into the evaluation process, we seek to enhance the accuracy and reliability of going-concern assessments and provide valuable insights for stakeholders. Thus, secondly, the research will contribute to both theoretical advancements in corporate governance and practical implications for stakeholders involved in decision-making, financial reporting, and risk management. Third, the work provides evidence from Africa where research on corporate governance and going concern has received little attention yet it is worth considering. The fourth contribution comes in the way of the data used. Recent data (2011–2020) of financial institutions from three African countries which offer 350 firm-year observations, with 35 observations per year over a 10-year period are employed in this study. This makes it one of the few studies in Africa to have used such large data.

The subsequent sections of this research are as follows: section 2 is on the background of the study; section 3 presents the theoretical review and framework; section 4 is on the empirical literature and development of hypotheses; section 5 outlines the research methodology; section 6 presents and discusses the results; and section 7 concludes with recommendations, limitations, and suggestions for future studies.

2. Background

While studies on going concern have become popular in recent times, there are many reasons for further studies to be carried out, especially with a focus on financial institutions in Africa. Focusing on financial institutions within the African continent is significant in many ways. The sector has been recognized as one key component needed to achieve higher economic growth and development in Africa (Hammond et al., 2022). By serving as intermediaries, financial sector increases savings and investment through which higher growth can be realized. The relatively lower savings rate which should propel investment and growth in Africa as compared with other developing countries (World Bank, 2023) can partly attribute to the weak financial sector on the continent. Having a mechanism that will ensure the financial sector on the continent is solid becomes worthy of investigating.

Also, many of the sustainable development Goals (SDGs) in Africa would not be achieved without vibrant financial sector (UN, 2023). For instance, elimination of poverty (SDG 1), reducing inequality (SDG 10), increasing access to clean energy (SDG 7), and promoting cleaner production and consumption (SDG 12) hinges on a strong financial sector that will support households and firms toward the attainment of the above goals. A strong financial sector will be able to support firms with cheaper access to credit to execute many projects in line with the above mentioned SDGs. The United Nations has admitted financing gap could derail meeting the SDGs. The UN has reported that while 5 to 7 trillion USD is needed annually to meet the goal globally, by 2030 developing countries will need 2.5 trillion USD annually to successfully implement the goals (UN, 2023).

In addition, African leaders have resolved to promote trading activities on the continent which has led to the establishment of African Continental Free Trade Agreement (AfCFTA). One can clearly figure out the crucial rule expected to be played by financial institutions on the continent. This is expected to be seen in the area of financing infrastructural projects to support movement of goods and services as well as to support swift transactions. Furthermore, local firms would need financial support to expand their production, enhance the quality of the product, advertise their products, and export their product as well.

Moreover, due to globalization, events that occur in one economy have been noted to have exerted some effects on other countries. A recent example is the COVID-19 pandemic which originated from China but till date the world seems to be struggling with its effect. Prior to COVID-19 there was the 2008/2009 financial crisis. This event also had its own negative consequences on many sectors of developing countries including those in Africa (Aryeetey & Ackah, 2011; Simatele, 2014; Van Rensburg et al., 2022). The above throws light on the need to have a robust financial sector in Africa that should be able to withstand some external shocks to avert any untold hardship on the households and firms. As argued that corporate governance is helpful in having a strong financial sector, it is important to ascertain this for African countries to guide policy formulation.

Finally, there have been recent cases of commercial banks, and other financial institutions becoming insolvent or failing to comply with obligations have had their licenses revoked by the regulators in Ghana,¹ Nigeria,² and South Africa.³ Reports attribute weak corporate governance issues as part of the reasons. As leading performing economies in Africa, Ghana's, South Africa's and Nigeria's situations reiterate the need to pay attention to corporate governance issues on the continent if a vibrant financial sector is to be seen. Despite the above issues raised, not much studies have focused on financial institutions on the continent. Moreover, those that compare the predictability of the models by including corporate governance variables are scarce.

3. Theoretical review and framework

This paper is underpinned by two theories: stakeholder theory and information asymmetry.

3.1. Stakeholder theory

Freeman (2001) formulated stakeholder theory that centres on the principle of management being accountable to a diverse range of stakeholders with varying interests. This theory explores the dynamic interaction between an organisation and its stakeholders (Freudenreich et al., 2020; Hörisch et al., 2020). According to this perspective, managers in organisations are responsible for serving multiple stakeholder groups. For instance, in financial institutions, stakeholders encompass investors, depositors, government regulators, and employees, among others. Financial institutions bear the responsibility of providing these stakeholders with accurate, reliable information while acting in their best interests. It implies that financial institutions have to prioritise the security of depositors' funds to cater to their interests, or they ought to focus on ensuring a safe and healthy workplace for employees. Similarly, investors rely on the information provided by these institutions to make informed investment decisions. It is crucial for financial institutions to uphold the

confidence and trust of their investors by delivering accurate and reliable information regarding the company's performance.

Stakeholder theory is based on the fundamental belief that values play a crucial role in business transactions. As stated by Jones et al. (2017), managers are expected to have a comprehensive understanding of the value they generate and the interconnections between key actors within the organisation. Additionally, Freeman et al. (2004) emphasised the importance of managers being transparent about their approach to conducting business, especially regarding the types of relationships they seek to establish. They also emphasised the need for executives to foster strong connections with stakeholders in order to accomplish desired objectives.

In the traditional perspective known as the shareholder view, the shareholders are considered the owners of the company, and the organisation has a legal obligation to prioritise its interests and enhance its value. According to Jones et al. (2017) stakeholder theory, however, presents an alternative viewpoint by asserting that various other parties are involved in a company's operations. These stakeholders include workers, investors, suppliers, government agencies, customers, trade unions, trade associations, political groups, financiers, and communities (Freeman et al., 2004). In some cases, even competitors can be considered stakeholders, as their actions can impact the company and other stakeholders. According to stakeholder theory, companies are responsible for considering the welfare of not only their shareholders but also their employees, customers, and the broader community. The theory advocates taking the interests of stakeholders into account when making decisions that affect the company's performance and long-term sustainability.

According to Mitchell and Cohen (2006), the primary objective of stakeholder theory is to expand the perception of management's role and responsibilities beyond solely pursuing profit maximisation. It aims to incorporate the interests and rights of non-shareholder groups into management considerations. In this framework, management is accountable to the firm's stakeholders and must undertake actions and provide information that is deemed important by those stakeholders. Hence, managers should prioritise the needs of all stakeholders and strive to integrate the interests of various stakeholder groups without favouring any specific group. The goal is to optimise the well-being of all stakeholders (Freeman, 2022).

It becomes crucial for them to prioritise meeting the requirements and addressing the concerns of their stakeholders, particularly by providing reliable financial information. Financial organisations that prioritise stakeholders and maintain high-quality financial reporting, along with positive going concern assessments from auditors, are more likely to inspire confidence among stakeholders. Based on the objectives of the study, this theory is crucial since the success of the financial institutions matters to the stakeholders. Accordingly, going concern of financial institutions is expected to be realized when managers act in the interest of the stakeholders. One of the surest ways of doing so is to incorporate corporate governance into the management of financial institutions.

3.2. Information asymmetry

The concept of information asymmetry emerged from economics. The concept of information asymmetry was crystallised through the work of important contributors such as Akerlof (1970), Stiglitz (2002), and Morelli (1999). In order to gain a larger perspective on the theory, the review investigated how the notion of information asymmetry evolved throughout the course of time in the initial body of research, giving special attention to its definitions, explanations, conceptual features, applications, antecedents, and solutions. This allowed for the theory to be viewed from a more comprehensive angle. It was inevitable that information asymmetries would arise whenever a party to a transaction had access to private or sensitive information about the transaction. This information could be confidential, legitimately protected, redundant for reporting, or derived from specialised resources (Krishnamurthy et al., 2022) or specialised knowledge (Chirico et al.,

2020). Alternatively, this information could be derived from specialised knowledge (Chirico et al., 2020). There are information inequalities between people who hold specific knowledge and others who, if they had it, may be able to make more informed decisions. This is because certain information is confidential, and Herzum et al. (2022) point out that this is the case because certain information is kept private. The regular operations of the organisation can be adversely affected by private information. According to Chirico et al. (2020), there may be an information gap between the company's headquarters and its specialised subsidiaries since local managers may have access to specific information that is inaccessible to their superiors. Similarly, Cirik and Makadok (2021) highlight that information asymmetry theories are predicated on inequalities in the capacity to appraise the value of inputs or outputs. It is possible that some market participants have more precise knowledge than others regarding the value-in-use of the goods, services, or resources that are being traded on the market. It is interesting to note that private knowledge has been identified as a source of benefits in terms of acquisition as well as advantages in terms of competition (Chirico et al., 2020; Cirik & Makadok, 2021). Information asymmetry has been identified as a primary factor in the superior performance of some businesses compared to others on numerous occasions (Kumar, 2019). According to Dattée et al. (2018), this perspective provides organisations with a deeper understanding of their resources than their rivals do, which enables them to more clearly pinpoint the foundation upon which their competitive advantage is based.

Managers might be motivated to reveal, distort, or conceal information by a number of different incentives that are available to them. Managers who may have personal financial interests related to the company's success may be driven to release positive information or conceal negative information to impact stock prices, executive remuneration, or bonuses. This may be the case because managers may have personal financial interests tied to the firm's performance. In addition, managers may feel pressured to offer a favourable image of both their own performance and the success of the company in order to improve their chances of advancing their careers or maintaining their current jobs. Because of this, people may be tempted to manipulate information or conceal facts that are not to their advantage. There is also the possibility that managers are worried about protecting either their own reputations or the reputations of the organisation. They might choose which information to disclose in order to mould public perception or sidestep potentially damaging exposure.

According to Mweta and Mungai (2018), there are two methods of monitoring that are used to lessen the impact of agency concerns and protect shareholders. These methods include corporate governance and voluntary disclosures. Corporate governance rules are put in place to protect the interests of a company's shareholders by providing oversight for managerial decision-making and ensuring that business activities are carried out successfully. Companies with poor financial performance and inadequate corporate governance controls are more likely to employ impression management. According to Melloni et al. (2016), corporations that face a greater likelihood of insolvency also have a greater propensity to conceal information from investors by providing only restricted disclosures. Disclosures made by companies are a tool that investors can use to keep an eye on the decisions made by management. According to De Villiers and Hsiao (2017), the problem of information asymmetry can be solved through the use of both information generated by intermediaries like financial analysts and media reporters and information that is disclosed on a voluntary basis. The above review clearly shows how this theory is also fit to form a base for this study. The relation between this theory and the work is that it emphasizes the need to have strong corporate governance in order to reduce information asymmetry. Through this the performance of financial institutions is expected to be enhanced thereby improving the going concern.

3.3. Going concern concept

According to Enkhbold (2019) and Pendse (2019), in the history of business organisation, the earliest types of businesses were ventures created to carry out a single, specific transaction. The business is disbanded once the task is accomplished, and the proceeds are shared among the contributors. After the completion of the predetermined goal, these ventures were not supposed to

continue to exist. Going concern was not important to the parties to the business because they were only concerned with the profits for that specific period of time and had no regard for the company's continued existence. Other types of commercial organisations, such as proprietorships, partnerships, and corporations, were created with the goal of having a long-term life later in the history of business (Pendse, 2019). They were created with no specified lifespan and were intended to follow one another indefinitely. These types of businesses were interested in going into business since they were interested in the continuation of business activities. The idea of a going concern was present even before generally accepted accounting standards were introduced. The phrase "perpetual existence" for registered corporations was first used by the early scholar Dicksee (1892) to explain the costs associated with permanent assets. According to Paton (1922), one of the key principles of entity theory that should guide how financial results are reported is the continuity of the entity. One of the important acknowledged core notions in the theory and practise of accounting is the going concern concept (Gkouma et al., 2018).

The going concern notion, which is regarded as a key tenet in accounting methods, has drawn a lot of attention due to the various disputes and controversies around its definition and practical use. Despite differences in opinion, the fundamental concept of a going concern is that unless there is unquestionable evidence to the contrary, an entity can be assumed to continue operating for the foreseeable future without any intention to close down (Gkouma et al., 2018; Wójcik-Jurkiewicz & Karczewska, 2019; Zéman & Lentner, 2018).

According to Squire (2021), the idea of a "going concern" presupposes the continuation of the entity, implying that the company has the capability and intention to continue in operation and succession. It, therefore, thrives on the assumption that no plans exist to drastically reduce the scope of activity or put an end to operations. The business organisation accepts the quality of continuity. A timeline is a different way to look at the idea of a going concern. Although continuity is assumed, the company may continue to operate for some time to come (Lamprecht & Van Wyk, 2020; Wójcik-Jurkiewicz & Karczewska, 2019), despite the state of going concern not being regarded as permanent. The promise is that the organisation would not go out of business or drastically scale back its operations for at least the upcoming accounting year (Jan, 2021; Lombardi, 2021). Additionally, the "totality" concept is the current focus (Jackson, 2020). The idea is applicable to the entire company, not just a branch, division, or part of it. When determining whether or not an entity is still a going concern, the collapse or discontinuation of a product line that might not have an impact on its survival is ignored. As confirmed by Abbott et al. (2022), the closing of a segment, branch, or production line does not necessarily impair an organisation's ability to continue operating unless that segment is the backbone of the firm's ability to continue operating as a whole.

Undoubtedly, unless there is knowledge to the contrary, the going-concern concept of an entity is assumed to hold (Jan, 2021; Wójcik-Jurkiewicz & Karczewska, 2019). This demonstrates that there may be certain circumstances in which the going-concern concept may not apply and the firm cannot be deemed to still be a going concern. In light of this, one of the key queries investors have is, "What circumstances constitute information to the contrary, and how can they be identified?" Situations that may cast material doubt about the continuity of the entity may include contingent liabilities, the recoverability of a specific asset, involuntary conversions and related problems, and continued operating losses and associated difficulties (Lessambo, 2018; Satria, 2020). This may be the result of a significant debt load, contractual or legal obligations, a lack of market, or a shift in the organisation's target market's preferences (Xu et al., 2018). Some of these situations are rather evident and can be recognised without any special knowledge. For instance, a company that is going through a liquidation or receivership procedure is a blatant sign that it is not a going concern.

Other circumstances that lead to business failure might require specialised knowledge to identify. Some entities may exhibit signs of going concern but fail to survive in the ensuing year.

Others may show the problem of continuity; however, they can operate with varying degrees of survival and success (Ismail et al., 2021). This makes the prediction of the going-concern status of the entity uncertain. Although some of the conditions that give rise to contrary information may be predicted with certainty, it is extremely difficult to propose definite guidelines as to how these instances should be examined.

3.4. Corporate governance

Corporate governance is a combination of internal and external procedures aimed primarily at developing an effective governance structure and forming a balance of power among shareholders, directors, and management to better safeguard investors' interests (Chen et al., 2020). In general, corporate governance refers to the method and system of relationships that control and create suitable incentives among an organisation's interested stakeholders so that the company can ideally fulfil its goals (Yusuf et al., 2022). Components of corporate governance include board independence, board size, CEO duality, board gender diversity, and board meetings. Researchers have indicated that improves firm's performance through quality reporting, better decision-making, compliance with regulations, and improves internal control (Mahrani & Soewarno, 2018; Xiaolu et al., 2016, 2016). According to Mahrani and Soewarno (2018), excellent corporate governance ensures the efficient operation of the accountability system and enhances the reliability and quality of corporate information.

4. Empirical literature review and hypothesis development

Studies demonstrate that corporate governance influences both the reporting quality and the survival of organisations (Mahrani & Soewarno, 2018; Xiaolu et al., 2016). A study by Xiaolu et al. (2016) indicated that effective corporate governance helps the authenticity of accountability mechanisms, the quality of financial information, the dependability, and the integrity of the capital market, consequently increasing investor confidence. Muda et al. (2018) reported that the transition to efficient corporate governance had a positive impact on reporting quality and investor confidence, as well as influencing the future development of companies. They also indicated that, as a result of good internal control, companies with good corporate governance tend to publish their financial statements quickly. Thus, corporate governance has an effect on the financial system, which is reflected in a company's position as a going concern. In the subsequent paragraphs, a review of how some components of corporate governance affect firm performance is done followed by hypotheses statements.

4.1. Non-executive board members and going concern

Board members that include non-executive directors help to improve the independence of the board (Fariha et al., 2022). It helps to intensify the monitoring and protection of stakeholders' interest (Mura, 2007; Young, 2000). Previous works like Ramadan and Hassan (2022) and Fariha et al. (2022) reported mixed results of non-executive board members effect on the performance of firms. For instance, Fariha et al. (2022) found that the presence of non-executive reduces firms return on assets and Tobin's Q but increases stock Return. Ramadan and Hassan (2022) also found that non-executive board members reduces asset utilization of firms but has not significant effect on other performance indicators including Tobin's Q. Garg (2007) and Jaafar et al. (2021) also found that there is no significant effect of board independence on firm performance. However, Beasley (1996) obtained a positive effect of non- and true financial statements. In this study based on the happenings in Africa it is hypothesized that:

H₀: Non-executive board members improves going concern

4.2. Females board members and going concern

The presence of females as board members increases the effectiveness of corporate governance (Lee & Thong, 2023). This is because females have been argued by Bernardi and Arnold (1997) and

Cumming et al. (2015) to be more law and regulatory compliant and sensitive to ethical issues (Lee & Thong, 2023). In contrast, Wang et al. (2019) indicated increasing diversity by increasing females on the board composition can lead to communication problems and conflicts which may hamper the performance of firms. The works of Lee and Thong (2023), Gordini and Rancati (2017) and Ramadan and Hassan (2022) found female board members positively affect performances of firms. Based on the above it is hypothesized that:

H₆: Female Board members increase going concern

4.3. Board members and going concern

The literature has indicated diverse opinions on the effect of board members on firm performance. For instance, Goodstein et al., (1995) and Badu and Appiah (2017) have documented that large board members offer a diversity of opinions and help to monitor managers to enhance firms' performance. On the other hand, Yermack (1996) as the number of members increases problems arises in the area of coordination, communication, and decision-making which can negatively affect firms value. Empirically, Korir and Cheruiyot (2017) and Connelly and Limpaphayom (2004) reported that board size has an insignificant effect on firm performance in Kenya. However, Badu and Nyarko Assabil (2022) Kyereboah-Coleman and Biekpe (2006b, b) and Isshaq et al. (2009) have found board size to positively affect firm performances. On the other hand, Eisenberg et al. (1998), Guest (2009) and Jackling and Johl (2009) found that board size reduces firm performance. From the above empirical studies and situations on the continent, it is hypothesized that:

H₇: Board members enhance going concern status

4.4. Models of going concern

Bankruptcy prediction models such as the Zmijewski, Ohlson, and Altman models are commonly used by auditors to assess a company's ability to continue as a going concern (Abbaskhani et al., 2023; Grice & Dugan, 2003; Sun, 2007). The Zmijewski model, developed in 1984, uses a set of financial ratios based on a company's profitability, liquidity, leverage, and activity to predict the likelihood of bankruptcy (Zmijewski, 1984). The Ohlson model, developed in 1980, uses accounting data and the company's stock price to predict the likelihood of bankruptcy (Ohlson, 1980). The Altman model, developed in 1968, uses a combination of financial ratios to predict the likelihood of bankruptcy (Altman, 1968). In addition to these models, other bankruptcy prediction models have been developed, including neural networks, support vector machines (SVM), random forests, and logit models (Alareeni, 2019; Begum, 2022). These models can be useful tools for auditors to assess a company's going concern status. However, it is important to note that no model is perfect, and auditors must also consider other factors when making their assessments.

Recent studies have suggested that corporate governance variables, such as the audit committee, institutional ownership, dividend policy, ownership structure, and board characteristics, should also be considered in going concern prediction models (Chen et al., 2020; Liang et al., 2020). Liang et al. (2020) used 40 financial ratios and 21 corporate governance indicators to develop a bankruptcy model which proved to be very efficient. Chen et al. (2020) also constructed a financial distress prediction model that includes both traditional financial variables and important corporate governance variables. The empirical results from both studies indicated that combining financial and corporate governance variables leads to the best prediction accuracy. They, therefore, argued incorporating these variables may improve the accuracy of the prediction models and help auditors make more informed assessments of a company's going concern status. Thus, it is hypothesized that:

H₈: Corporate governance indicators improve going concern model

5. Research design

5.1. Data collection

The research employed secondary data. The information was gleaned from the financial statements of South African, Ghanaian, and Nigerian financial institutions as posted on their corporate websites. The participating banks were chosen using the purposive sampling technique. Based on the availability of a complete dataset, the banks were chosen. The selected samples for the study comprise 15 banks from Ghana, 10 banks from Nigeria, and 10 banks from South Africa. The financial statements used in the study cover a 10-year period from 2011 to 2020. There were 350 firm-year observations, with 35 observations per year over a ten (10) year period.

The data for the study had financial ratios and corporate governance variables. The going concern variable is a dummy variable where one (1) represents going concern and zero (0) for distressed observation. The going concern was represented by z-scores calculated by the formula by E. Altman et al. (1995) as:

$$Z'' = 3.25 + 6.56WCTA + 3.26RETA + 6.72EBTA + 1.05VETL. \quad (1)$$

where:

- Z'' is z-score representing the going concern;
- WCTA is defined as the net working capital divided by total assets;
- RETA is the retained earnings divided by total assets;
- EBTA is earnings before interest and taxes divided by total assets; and
- VETL is the market value of equity over the book value of debts.

The independent variables used in the logistic regression analysis are:

- | | |
|--------------|---|
| • NON_EXEC | Number of Non-executive board members |
| • FEMALE | Number of Female Board members |
| • Board_size | Number of Board members |
| • NPM | Net Profit Margin |
| • RETA | Retained Earnings divided by Total Assets |
| • EBTA | Earnings before Tax divided by Total Assets |
| • CACL | Current Assets divided by Current Liabilities |
| • WCTA | Working Capital divided by Total Assets |
| • TATL | Total Assets divided by Total Liabilities |
| • EQ_DBT | Equity divided by Long-term Debts |
| • RENP | Retained Earnings divided by Net Profit |

5.2. Data analysis

The study modified logit model by Ohlson (1980) which involves a complex formula that is converted back and forth from the logistic equation to the Ordinary Least Square (OLS)-type equation. The logistic formulas are expressed in terms of the probability that $Y=1$, which is referred to as p . The probability that Y is 0 is $(1 - p)$. The equation is:

$$\text{Logit}(Y_i) = \ln(\text{odds}) = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_n x_n + u_i \quad (2)$$

In this equation, Y_i is the probability being going concern, x_1, x_2, \dots, x_n are the financial ratios and corporate governance issues for the firm, $\beta_0, \beta_1, \beta_2, \dots, \beta_n$ are the coefficients of the explanatory variables, μ_i is the error term, and the odds refers to the odds of Y being equal to 1. The odds are calculated as:

$$\text{Odds} = \frac{p}{(1-p)} \quad (3)$$

The above can be rewritten in terms of probability p as:

$$p = \frac{\text{odds}}{(1 + \text{odds})} \quad (4)$$

The exponent of each side of the equation transformed (1) to:

$$e^{\ln(\text{odds})} = \text{odds} = e^{B_0 + B_1 X_1 + B_2 X_2 + \dots + B_n X_n + U_i} \quad (5)$$

By substituting Equation 5 in (3) gives:

$$\frac{\text{odds}}{1 + \text{odds}} = \frac{e^{B_0 + B_1 X_1 + B_2 X_2 + \dots + B_n X_n + U_i}}{1 + e^{B_0 + B_1 X_1 + B_2 X_2 + \dots + B_n X_n + U_i}} \quad (6)$$

Simplified to:

$$p = \frac{e^{B_0 + B_1 X_1 + B_2 X_2 + \dots + B_n X_n + U_i}}{1 + e^{B_0 + B_1 X_1 + B_2 X_2 + \dots + B_n X_n + U_i}} = \frac{1}{1 + e^{-z}} \quad (7)$$

Thus, the model adopted for the study was:

$$p(Y) = \frac{1}{1 + e^{-z}} \quad (8)$$

$$\text{Where } z = \alpha + \beta_1 \sum_n \text{Fin.Ratios} + \beta_2 \sum_n \text{Corp.Gov} + \varepsilon$$

where

- α is the intercept
- β_1 - β_2 are the coefficients of the explanatory variables.
- Fin.Ratios represent accounting ratios computed from the financial statements.
- Corp.Gov represents corporate governance variables.
- ε is the error term (stochastic disturbance term)

This equation yields p , the probability of belonging to a group ($Y = 1$) rather than the log of the odds of the same. The logit model score is between 0 and 1. Thus, if the resultant probability from the model is greater than 0.5, that observation will be classified as going concern; however, if the score is less than 0.5, it will be deemed as going concern doubt (distressed).

5.3. Assumptions of logistic regression model

A logistic regression model is used to estimate the probability of occurrence of an event by fitting data to a logistic curve. The primary assumptions underlying the logistic regression for predicting the probability of outcomes are:

- The dependent variable is required to be binary for binary logistic regression and ordinal for ordinal logistic regression.
- The observations are required to be independent of each other. This implies that the observations should not come from repeated measurements or matched data. Therefore, the errors should not be correlated but independent.
- There should be little or no multicollinearity among the independent variables. This implies that the independent variable should not be too highly correlated with each other.
- There should be a linear relationship between any continuous independent variables and the logit transformation of the dependent variable. Even though the analysis does not demand the dependent and independent variables to be related linearly, it requires that the independent variables are linearly related to the log odds.

If any of these assumptions are violated, it affects the prediction of the logistic regression model.

5.4. Binary dependent variable

The dependent variable for the study is measured on the dichotomous scale as going-concern and distressed. Altman's formula ($Z'' = 3.25 + 6.56WCTA + 3.26RETA + 6.72EBTA + 1.05VETL$) was used to compute the Z-Scores of the financial institutions for each year. After the computation, the results were grouped into two:

- if Z'' - score is higher than or equal to 2.6, it is deemed to be safe and classified as going-concern;
- if Z'' - score is below 2.6, it is considered to be not to be safe and classified as distress.

Thus, the dependent variable for the study is binomial, going-concern and distressed. As indicated in Table 1, 34 observations were classified as distressed and the remaining as going concern based on the computed z score and our contextual definition of going concern. All banks with going concern status were labelled as 1 and 0 for distressed banks.

5.5. Multicollinearity test

To test for the presence of multicollinearity of the independent variables, correlation coefficients were obtained among the independent variables. From the correlation matrix in Table 2, none of Pearson's coefficients of correlation is up to 0.7, indicating that there was no strong correlation among the independent variables.

Moreover, multicollinearity was checked with the help of tolerance and variance inflation factor (VIF). The tolerance denotes the percentage of variance in a given predictor that cannot be explained by the other independent variables, whilst VIF represents the reciprocal of the tolerance (Senaviratna & Cooray, 2019). While Myers et al. (2005) suggested that tolerance below 0.1 and VIF above 2.5 indicate collinearity problems, Menard (2002) advocated that tolerance below 0.2 and VIF exceeding 10 show problems of collinearity. In Table 3 the values from tolerance and VIF met the cutoff point of no multicollinearity.

Additionally, the eigenvalues for the scaled, uncentred cross-product matrix, condition indices, and the variance proportions for each predictor were also used to identify multicollinearity. If any eigenvalue is larger than others, then the regression parameters can be greatly affected by small changes in the explanatory variables or outcome. The fitted model was likely to remain unchanged by small changes in the measured variables if the eigenvalues are fairly similar. If one or more of the eigenvalues are small (close to zero) and the corresponding condition number is large, then we have an indication of multicollinearity. The informal rule is that if the condition index is 15, there is a concern for multicollinearity, and if it is greater than 30, multicollinearity is a very serious concern (Senaviratna & Cooray, 2019). As it can be seen from Table 4, all the condition indexes are below 15, confirming the independence of the explanatory variables.

5.6. Test for independent errors

The test for independence of the error terms was done using ZRESID and ZPRED to estimate the Durbin-Watson coefficient. The Durbin-Watson value ranges from 0 to 4. The value of 2 represents uncorrelated observations, while 0–1.5 indicates a positive correlation and 2.5–4 shows a negative

Table 1. Classification of dependent variable

Status	Frequency	Percent
Going Concern	34	9.7
Distressed	316	9.3
Total	350	100

Table 2. Correlation matrix

	NON_EXEC	FEMALE	Board_size	NPM	RETA	EBTA	CACL	WCTA	TATL	EQ_DBT	REN
NON_EXEC	1										
FEMALE	.206**	1									
Board_size	.620**	.412**	1								
NPM	-.033	.086	-.054	1							
RETA	.167**	.014	.016	.201**	1						
EBTA	-.015	-.033	-.111*	.484**	.366**	1					
CACL	.140**	.019	.183**	-.111*	.124*	.126*	1				
WCTA	.049	-.012	.086	.011	.247**	.076	.239**	1			
TATL	.065	.040	.086	-.055	-.082	-.037	.175**	.186**	1		
EQ_DBT	-.217**	-.173**	-.156**	-.034	-.090	.117*	-.072	-.100	-.173**	1	
REN	.142**	.037	-.010	.060	.598**	.073	.001	-.160**	-.031	-.205**	1

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Table 3. Collinearity statistics

Variable	Collinearity Statistics	
	Tolerance	VIF
NON_EXEC	0.568	1.762
FEMALE	0.795	1.257
Board_size	0.499	2.005
NPM	0.713	1.403
RETA	0.415	2.407
EBTA	0.616	1.624
CACL	0.844	1.184
WCTA	0.703	1.422
TATL	0.894	1.119
EQ_DBT	0.838	1.193
RENP	0.486	2.058

correlation. The farther it moves away from 2, in both directions, the stronger the correlation. The Durbin-Watson obtained from the analysis was 1.788 which is closer to 2, indicating a very weak correlation. The scatterplot for the ZRESID and ZPRED in Figure 1 also shows that the error terms are not strongly correlated.

5.7. Linearity of independent and logit transformation

The linear relationship between any continuous independent variables and the logit transformation of the dependent variable was assessed through the Box-Tidwell test (Li et al., 2001). The logs were computed by finding the natural log of each continuous independent variable and multiple by itself. Where there were negative numbers or zero, the variables were transformed by adding one to the absolute of the number plus the minimum number initially before the Box-Tidwell test was applied (Shrestha, 2019). The new variables (LNs) were added to the independent variables in the binomial logistics function. If the p-value of the transformed variable is significant ($p < 0.05$), then the assumption is violated (Shrestha, 2019). From Table 5 the log of variables (Non-Executive members (NON-EXEC), Number of female board members (FEMALE), Board size, WCTA, TATL, and RENP met the assumption.

6. Empirical results and discussion

6.1. Descriptive statistics

The descriptive statistics of the variables used in the analysis are provided in Tables 6. The table indicates that there are some institutions without non-executive representative and the maximum number of non-executive in a board was 16. The largest of board has 24 members with maximum female reps of 8. Each board has at least one female representative on the board.

6.2. Logistic regression models

The study aims at determining going concern with the incorporation of corporate governance and corporate reporting variables. Hence, two models were developed in order to compare the predictive capacities. Accordingly, the logistic analysis started with the model with only financial ratios (Model A). The corporate governance variables were then added to the financial ratios to develop another logistic regression model (Model B).

The development of the logistic regression model began by setting the going concern as a dependent variable. All the financial ratios/variables were placed in the independent variable slot. Strangely, the p-values of the explanatory indicated that their contributions were not

Table 4. Collinearity diagnostics												
	Eigenvalue	Condition Index	Variance Proportions									
			(Constant)	NON_EXEC	FEMALE	Board_size	NPM	RETA	EBTA	CACL	WCTA	TATL
1	5.618	1.000	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.01
2	1.698	1.819	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.01	0.01	0.00
3	1.281	2.094	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.22	0.07
4	0.942	2.443	0.00	0.00	0.00	0.00	0.01	0.03	0.03	0.00	0.09	0.12
5	0.737	2.760	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.56	0.13	0.01
6	0.584	3.102	0.00	0.00	0.00	0.00	0.03	0.01	0.01	0.10	0.01	0.55
7	0.491	3.383	0.00	0.02	0.02	0.01	0.12	0.01	0.15	0.05	0.13	0.16
8	0.248	4.761	0.00	0.01	0.00	0.00	0.40	0.38	0.10	0.05	0.24	0.03
9	0.190	5.438	0.00	0.00	0.00	0.00	0.33	0.44	0.64	0.05	0.18	0.04
10	0.124	6.731	0.00	0.26	0.63	0.01	0.04	0.01	0.01	0.00	0.00	0.00
11	0.055	10.074	0.67	0.37	0.27	0.02	0.02	0.01	0.02	0.00	0.00	0.01
12	0.031	13.359	0.33	0.34	0.07	0.97	0.00	0.00	0.03	0.01	0.01	0.00

Figure 1. Scatterplot for error terms.

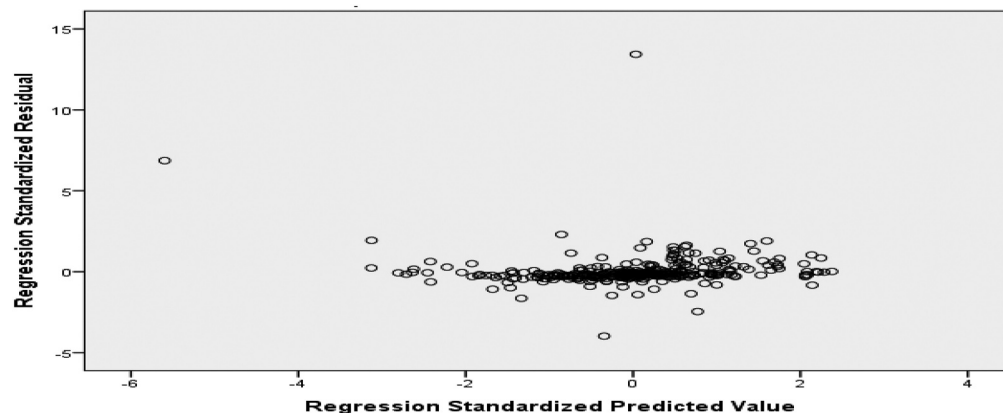


Table 5. Box–Tidwell test

Variables	β	S.E.	Wald	df	Sig.	Exp(β)
NON_EXEC	.902	.935	.931	1	0.335	2.465
FEMALE	-.886	1.592	.310	1	0.578	.412
Board_size	.174	1.042	.028	1	0.868	1.189
WCTA	204.908	62.933	10.601	1	0.001	9.7E88
RENP	.054	.020	7.613	1	0.006	1.056
TATL	5.545	3.186	3.030	1	0.082	255.965
LN_WCTA	272.418	93.554	8.479	1	0.004	2.0E118
LN_TATL	-1.316	.810	2.641	1	0.104	.268
LN_NONEX	-1.937	3.061	.400	1	0.527	.144
LN_FEMALE	1.026	2.154	.227	1	0.634	2.791
LN_BSIZE	-4.320	5.881	.540	1	0.463	.013
Constant	-566.404	206.401	7.531	1	0.006	.000

Table 6. Descriptive statistics

Variable	N	Minimum	Maximum	Mean	Std. Deviation
NON_EXEC	350	0.00	16.00	6.91	3.011
FEMALE	350	1.00	8.00	2.93	1.287
Board_size	350	5.00	24.00	12.41	3.878
NPM	350	-0.22	1.31	0.20	.190
RETA	350	-2.17	0.53	0.02	.222
EBTA	350	-0.11	0.15	0.03	.031
CACL	350	0.06	79.59	1.75	5.199
WCTA	350	-1.52	0.71	-0.07	.226
TATL	350	-0.18	7.76	0.27	.463
EQ_DBT	350	-0.10	10.38	0.59	1.252
RENP	350	-267.85	77.40	-1.17	26.620

significant. This implied that not all the financial ratios are predictors of going concern. To remedy the situation, forward logistic regression was adopted at this stage to select the variables that predict going concern. The system operates in a certain order. It starts with the constant and then adds the variables one after the other until the optimal variables are selected (Poche'moret, 2021; Sperandei, 2014). Four different models were formed but the best model contained three accounting ratios, namely WCTA, RENP, and TATL. This formed the Model A. The Model B was created by the insertion of three corporate governance variables. The variables incorporated were NON_EXEC, FEMALE, and Board_size in addition to WCTA, RENP, and TATL to form the Model B. The resultant logistic regression model and the results are displayed in Tables 7–10.

Table 7 tests the overall model fitness as well as the coefficients and odds ratios. The overall model is statistically significant, $\chi^2(3)=151.944$, $p<0.01$ for Model A and $\chi^2(6)=159.281$, $p<0.01$ for Model B. A model is deemed to be fit if the Chi-square is significant. Therefore, since the p-value was less than 0.05 for both models, the two models are considered suitable for predicting going concern.

Table 8 is the Hosmer–Lemeshow tests which examine the null hypotheses that predictions made by the models fit perfectly with the observed group memberships. A chi-square statistic is computed by comparing the observed frequencies with those expected under the linear model (Yu et al., 2017). A non-significant chi-square indicates that the data fit the model well since a non-significant Hosmer–Lemeshow chi-square is desirable for a good model. The Hosmer–Lemeshow's chi-square for the Model A and B is ($\chi^2(8)=1.971$, $p=0.982$) and ($\chi^2(8)=3.158$, $p=0.924$) respectively indicating good model fit.

The logistic regression characteristics of both models are shown in Table 9. Beginning with Model A, the odds of going concern of financial institutions significantly increases with an increase in WCTA ($\beta = 28.626$, $p < 0.001$) and RENP ($\beta = 0.046$, $p < 0.005$). The odds of a financial institution of being going concern increase more than 2.7 times with a unit increase in WCTA. And a unit rise in RENP contributes to 1.047 odds of being going concern. However, TATL has a negative relationship with going concern of financial institutions. The effect of TATL is not significant ($\beta = -0.512$, $p > 0.05$). Thus, the financial ratios that are statistically significant and can predict going concern of financial institutions according to Model A are WCTA and RENP.

In Model B, the odds of going concern of financial institutions significantly increase with the increase in NON-EXEC ($\beta = 0.459$, $p = 0.039$) in addition to WCTA ($\beta = 41.843$, $p < 0.001$) and RENP. ($\beta = 0.058$, $p < 0.005$) which were found significant when financial ratios were considered in isolation. The FEMALE contributes positively but is insignificant ($\beta = 0.02$, $p = 0.961$). The odds of a financial institution of being going concern increase more than 1.49 times with a unit increase in WCTA. NON-EXEC adds 1.583 to the odds of going concern of financial institutions. And a unit rise in RENP contributes to 1.016 odds of being going concern. On the other hand, Board-size has an adverse

Table 7. Omnibus tests of model coefficients

	Chi-square	df	Sig.
Model A	151.944	3	0.000
Model B	159.281	6	0.000

Table 8. Hosmer and Lemeshow's test

	Chi-square	df	Sig.
Model A	1.971	8	0.982
Model B	3.158	8	0.924

Table 9. Logistics regression

Variable	Model A			Model B		
	β	Exp(β)	Sig.	β	Sig.	Exp(β)
WCTA	28.626	2.70E+12	0.000	41.843	0.000	1.49E+18
RENP	0.046	1.047	0.002	0.058	0.001	1.06
TATL	-0.512	0.599	0.290	-0.681	0.232	0.506
NON_EXEC	-	-	-	0.459	0.039	1.583
FEMALE	-	-	-	0.02	0.961	1.021
Board_size	-	-	-	-0.661	0.004	0.516
Constant	10.252	28349.9	0.000	19.056	0.000	1.89E+08

Dependent variable: Dummy (Going concern = 1; distressed = 0).

Table 10. Model Robustness

Models	Cox & Snell R^2	Nagelkerke R^2	-2 Log likelihood
Model A	0.386	0.82	52.187
Model B	0.407	0.863	40.291

effect on the going concern of financial entities. An increase in the number of board members reduces the going concern status of the institutions. Also, it can be seen from the table that the odds of being going concern decreases by 0.516 with a unit increase in board size since its coefficient is negative. Hence, financial ratios (WCTA and RENP) and corporate governance variables (NON-EXEC and Board-size) are statistically significant variables in predicting going concern of financial institutions.

Table 10 displays Cox & Snell R Square and Nagelkerke R Square for assessing the model fit of the logistic regression. These indicators show the degree of change accounted for the predictors in the models. For an ideal model, the Cox & Snell R Square, and Nagelkerke R Square are expected to be greater than 0.2. The Model A produced Cox & Snell $R^2 = 0.386$ and Nagelkerke $R^2 = 0.82$. This means the model explained between 38.6% and 82% by Cox & Snell R^2 and Nagelkerke R^2 , respectively, of the variance in going concern status. The Model B, on the other hand, displays Cox & Snell $R^2 = 0.407$ and Nagelkerke $R^2 = 0.863$. This implies that between 40.7% and 86.3% of change in going concern are accounted for by the predictors in the Model B.

Both models proved to be appropriate as all the indicators met the threshold of Chi-square criterion p-value < 0.05 ; Cox & Snell R Square and Nagelkerke R Square > 0.2 ; Hosmer-Lemeshow's chi-square p-value > 0.05 . However, a comparison of the values of the Cox & Snell R^2 and Nagelkerke R^2 shows that Model B is superior to Model A. Moreover, the -2 Log likelihood of Model A and B are 52.187 and 40.291, respectively. Model B is deemed to be better than Model A because a model with large -2 Log-likelihoods indicate a poorly fitting model.

Finally, the models were assessed based on their ability to classify the observations correctly. The results are displayed in Table 11.

The Model A was able to classify 96.3% of all cases correctly. Specifically, it classified 76.5% of going concern correctly, while the model predicts correctly 98.4% distressed as such. The Model B, on average, classified 98% of all cases correctly, 2.7% more than the prediction accuracy of the model without corporate governance. Specifically, it classifies 8.8% of going concern correctly better than the model that excludes corporate governance, while the model predicts correctly almost 100% (99.4%) of distressed observations as distressed.

Table 11. Classification observations									
Model A					Model B				
Observed	Predicted Going Concern	Predicted Distressed	Predicted Percentage Correct	Observed	Predicted Going Concern	Predicted Distressed	Predicted Percentage Correct		
Going Concern	26	8	76.5	Going Concern	29	5	85.3		
Distressed	5	311	98.4	Distressed	2	314	99.4		
Overall Percentage			96.3	Overall Percentage			98.0		

In a nutshell, both models were statistically significant and appropriate as they have Cox & Snell R Square and Nagelkerke R Square greater 20% and non-significant Hosmer–Lemeshow values. Nonetheless, the inclusion of corporate governance variables improved the prediction capability of the model by 2.7% which shows that corporate governance variables are good indicators to determine the going concern of financial institutions. Stakeholders including investors can, therefore, make an investment decision about the sustainability of financial institutions by observing and evaluating the pertaining corporate governance in operation.

6.3. Discussion of results

H_a: Non-executive board members improve going concern

The results confirm the hypothesis that non-executive board members improve going concern. This confirmation implies that the presence of non-executive board members in financial institutions improves their going concern status as suggested by stakeholder theory. The result indicated that the odds of financial institutions continuing their operations without facing bankruptcy or financial distress significantly increase with an increase in non-executive directors. Beasley (1996) obtained a positive effect of non-executive directors on financial statements. This finding suggests that non-executive directors on the selected banks in Africa contribute to the accuracy and reliability of financial reporting, which can indirectly support the going concern status of financial institutions. This result implies that the inclusion of non-executive directors on the board of financial institutions in Africa has a positive impact on their ability to sustain their operations and navigate potential challenges. The presence of non-executive directors brings several potential benefits that contribute to the improved going concern status.

First, non-executive directors provide independent oversight and bring diverse perspectives to board discussions. Their presence helps ensure that decision-making processes are not dominated by executive management, allowing for more balanced and objective considerations. By offering different viewpoints and experiences, non-executive directors can identify potential risks, challenge assumptions, and promote strategic thinking.

Second, non-executive directors can enhance corporate governance practices within financial institutions. They play a crucial role in monitoring the actions of executive management, ensuring compliance with regulations, and promoting ethical behaviour. Their independence from day-to-day operations enables them to critically evaluate the institution's financial health, risk management practices, and overall governance structure. Finally, non-executive directors can bring specialized expertise and industry knowledge to the board. Their experience and background may include financial, legal, or regulatory expertise that can assist in identifying and addressing potential risks or opportunities. By leveraging their skills, non-executive directors can provide valuable insights and guidance to the institution's management team. The above brings to the fore that the inclusion of non-executive board members on the management of banks in Africa has improved the independence of the board, thereby improving going concern. Thus, without the presence of such non-executive members many of the board members in the selected banks might have acted in their selfish interest to badly affect the performance of the banks. The results are in line with previous studies like Fariha et al. (2022), Ramadan and Hassan (2022) and Beasley (1996).

H_b: Female Board members increase going concern

The second hypothesis suggests that the presence of female board members in financial institutions has a positive impact on their going concern status. Gordini and Rancati (2017) and Ramadan and Hassan (2022) found that female board members positively affect firm performance. Lee and Thong (2023) explained that the presence of females as board members increases the

effectiveness of corporate governance. According to Bernardi and Arnold (1997) and Cumming et al. (2015) females are more law and regulatory-compliant and sensitive to ethical issues, suggesting that their presence on boards can contribute to improved governance practices. These align with the potential benefits of gender diversity, including diverse perspectives, improved decision-making, and better risk management. They also support the notion that female board members can bring unique perspectives and values to decision-making processes, which may indirectly impact the going concern status of financial institutions by promoting ethical behaviour and compliance. While these findings align with the hypothesis on the positive impact of female board members on going concern, that is not confirmed in this study.

The result in this study indicates that while female board members contribute positively, their impact on going concern is statistically insignificant. This result implies that while the inclusion of female board members may have some positive effects on the going concern status of financial institutions, these effects are not strong enough to be considered statistically significant. In other words, the presence of female board members alone does not have a substantial impact on the ability of financial institutions to sustain their operations and avoid financial distress or bankruptcy. This may be so in this study because the number of females is not enough to trigger positive effects. For many banks in Africa males dominate the board members and as such their views may overshadow that of the females and the expected outcome would not be achieved (Cumming et al., 2015)

H_c: Board members enhance going concern status

The results show that an increase in the number of board members reduces the going concern status, as evidenced by the negative coefficient. This result implies that a larger board size may have a detrimental impact on the ability of financial institutions to sustain their operations and avoid financial distress or bankruptcy. While having a diverse and knowledgeable board is generally beneficial, there may be a point at which an excessively large board becomes less effective in providing effective oversight and decision-making (Yermack 1996). The rejection of the third hypothesis in this study contradicts the results of A. E. Badu and Nyarko Assabil (2022), Kyereboah-Coleman and Biekpe (2006b, 2006a), and Isshaq et al. (2009) who found a positive effect of board size on firm performance. However, it agreed with Eisenberg et al. (1998), Guest (2009), and Jackling and Johl (2009) found that board size reduces firm performance and invariably the ability of the firm to survive for the foreseeable future

While this may seem contrary to the stakeholder theory and the opinion that corporate governance can address the issue of asymmetry information, a plausible reason may be that larger board size for the selected banks introduces challenges such as difficulties in communication, coordination, and decision-making processes (Yermack 1996). This may lead to longer discussions, slower decision-making, and potential conflicts or divisions among board members. These factors can impede the ability of the board to respond quickly and effectively to emerging risks or changing market conditions, which are critical for maintaining going concern status. It is based on this that it may be ideal to examine the optimal board size for financial institutions that could contribute positively to enhancing going concern status.

H_d: Corporate governance indicators improve going concern model

The result of the study supports the hypothesis that corporate governance indicators improve the going concern prediction model for financial institutions. This finding is consistent with previous studies that have emphasized the importance of incorporating corporate governance variables in prediction models to enhance their accuracy and reliability. Liang et al. (2020) and Chen et al.

(2020) conducted studies that included corporate governance variables in their bankruptcy and financial distress prediction models. Both studies found that combining financial and corporate governance variables led to improved prediction accuracy. These findings align with the result of the current study, suggesting that the inclusion of corporate governance variables enhances the prediction capability of the going concern model for financial institutions. By incorporating governance variables, the prediction model becomes more accurate and reliable in assessing the likelihood of financial distress or bankruptcy. The improvement in the prediction capability of the model with corporate governance signifies the added value of corporate governance indicators. The corporate governance variables provide insights into the quality of a financial institution's governance practices, which can significantly impact its long-term viability and sustainability. These indicators assess the effectiveness of internal controls, risk management practices, and the overall accountability of the board and management. Moreover, corporate governance indicators provide a comprehensive perspective on the institution's transparency, compliance with regulations, and ethical standards. These factors are critical in maintaining the trust of stakeholders and ensuring the institution operates with integrity, which directly impacts its ability to continue as a going concern.

7. Conclusion and recommendations

The study set out to compare the efficacy of going-concern predicting models with the incorporation of corporate governance variables with models that have only financial ratios. Two logistic models were developed. The determinants of going concern in the model with only financial variables were working capital to total assets and retained earnings to net profit ratios. Managing working capital leads to the proper utilisation of resources. Therefore, managers of financial institutions should maintain adequate working capital for smooth operations. When the working capital is adequate, the survival of the financial institution is assured because depositors will not be disappointed or tossed when they want to withdraw their money. On the contrary, if the institutions face the challenge of meeting withdrawal needs, it sends a signal to other stakeholders of an imminent collapse of the business that would trigger panic withdrawals.

Furthermore, the proportion of profit retained is a good indication of the viability of the institution. Investors are rational beings who want to increase their wealth. Therefore, they would like profit to be retained for re-investment as opposed to being declared as a dividend if the entity has a prospect of earning more in the foreseeable future. On the other hand, investors will insist on a full dividend payout if the business has a problem going forward. The finding that the going concern status moves in the same direction as the retained earnings to net profit are in line with investment principles.

The two corporate governance variables that were significant had opposite relationships with the going concern. While an increase in the board size negatively affects the going concern status, an increased number of non-executive members positively influences the going concern position. The function of the board is to provide advice, guidance, and ability; authenticity and reputation; a channel for discussing data with outer associations; and special access to assurance or provision from significant factors outside the organisations (Aslam & Haron, 2020). The finding disagrees with the assumption that a larger board size offers better service to the firm, as it will result in a higher capability of monitoring the top management in their decision-making process, resource allocation, and distribution of profits (Grassa & Matoussi, 2014). It rather supports Haris et al.'s (2019) argument that the fewer the board members, the better the communication and coordination of the firms' activities. A larger board size increases the expenditure on the board, thereby influencing adversely the profitability and liquidity of the institutions. Moreover, large board sizes are contested on the grounds that they create a problem with regard to coordination and correspondence as it takes a longer time to make decisions (Haris et al., 2019).

The contrary is that as the number of non-executive members on the board increases, the independence of the board improves, resulting in enhanced going-concern status. Non-executive

directors add value to the organisation by offering varied, rich experience and in-depth knowledge, which are valuable assets to the organisation (Khan et al., 2017). This finding conforms to many studies that have found a direct relationship between board independence and an organisation's performance. There is always an expectation, which is consistent with the study's finding, that the higher the number of non-executive members, the better they will manage the institution to avoid financial distress. In a nutshell, a financial institution with fewer board members but a higher percentage of non-executive members has a higher probability of being a going concern. There are reduced communication channels and coordination with fewer board members. Also, the opportunity for group coalitions resulting in conflicts among the board members is kept to a minimum, and consensus can be easily reached on smaller boards.

Finally, the model with only financial ratios was able to predict 96.3% of the observations correctly. The other model that had an infusion of corporate governance variables had a 98% accuracy rate. Both models showed a high level of acceptability in terms of model fit. This means that either model can be employed to ascertain the status of financial institutions. However, the model with the incorporation of governance issues had better predictions than the other. Thus, the model with corporate governance should be preferred over the model without corporate governance.

The finding implies that when developing a model for predicting going concern, corporate governance issues must be incorporated to improve its accuracy. Stakeholders should consider the governance practises of financial institutions in their financial and investment decisions. Besides, non-financial variables should be considered alongside the financial variables to enhance the predictive power of the model. The findings imply that policymakers must incorporate governance indicators in the assessment of the performance of financial institutions. The instruments that regulators use to evaluate operations should incorporate corporate governance mechanisms as well. Regulators should also place greater emphasis on strengthening their monitoring and evaluation role of the corporate governance practices of financial institutions. This may involve conducting regular assessments of governance structures, risk management frameworks, and internal control systems. By ensuring that financial institutions adhere to robust governance standards, regulators can mitigate the risks of financial distress and promote the long-term viability of these institutions. Furthermore, they should encourage financial institutions to provide comprehensive and transparent information regarding their corporate governance practices. This includes disclosing the composition and qualifications of the board of directors, the presence of independent directors, and the establishment of effective governance committees such as audit committees. Improved disclosure can facilitate better assessments of the institution's going concern status by investors, creditors, and regulators. Lastly, financial institutions should strive to achieve an optimal board composition that balances expertise, diversity, and independence. This includes appointing board members with relevant industry knowledge, financial expertise, and diverse backgrounds. By ensuring a mix of executive and non-executive directors, financial institutions can benefit from independent oversight and diverse perspectives, which can contribute to improved decision-making and risk management.

The study focused solely on board characteristics as corporate governance variables. Future research could explore the impact of additional governance factors such as executive compensation, and the presence of audit committees. Investigating a broader range of corporate governance variables would provide a more comprehensive understanding of their influence on the going-concern status of financial institutions. Moreover, the study specifically focused on financial institutions. It would be interesting to replicate this research in other industries and contexts to determine if the integration of corporate governance variables into going concern are consistent across different sectors. Examining industries with unique characteristics or regulatory frameworks may reveal additional insights and help identify industry-specific governance practices that contribute to financial stability. Moreover, based on the nature of the dependent variable, the analysis limited itself to logit regression. Future studies can consider using other estimation techniques based on different measurements of performance to unravel findings for further discussion. Also,

the effects of other indicators of corporate governance should be explored in future studies to ascertain how that improves going concern models. Regarding the effect of board size since a negative effect was reported as against others that had positive effect, future studies are encouraged to examine the optimal board size for financial institutions that could contribute positively to enhancing going concern status.

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Notes

1. <https://www.ghanaweb.com/GhanaHomePage/business/BoG-kills-16-banks-to-strengthen-Ghana-s-banking-sector-712875>
2. <https://www.mynigeria.com/NigeriaHomePage/business/List-of-46-failed-Nigerian-banks-and-dates-of-closure-647528>
3. <https://businesstech.co.za/news/banking/231009/all-the-south-african-banks-that-have-failed-in-the-past-30-years/>

References

- Abbaskhani, H., Pakmaram, A., Rezaei, N., & Bahri Sales, J. (2023). Predicting going concern of companies using the tone of auditor reporting. *Journal of Mathematics and Modeling in Finance*, 2(2), 181–194.
- Abbott, L. J., Boland, C., Buslepp, W., & McCarthy, S. (2022). US Audit partner identification and auditor reporting. *Journal of Accounting and Public Policy*, 41(1), 106862. <https://doi.org/10.1016/j.jaccpubpol.2021.106862>
- Agarwal, V., & Taffler, R. (2008). Comparing the performance of market-based and accounting-based bankruptcy prediction models. *Journal of Banking & Finance*, 32(8), 1541–1551. <https://doi.org/10.1016/j.jbankfin.2007.07.014>
- Akerlof, G. A. (1970). The market for 'lemons': Quality uncertainty and the market mechanism. *Market Failure or Success*, 66(3), 488. <https://doi.org/10.2307/1879431>
- Alareeni, B. (2019). A review of auditors' GCOs, statistical prediction models and artificial intelligence technology. *International Journal of Business Ethics and Governance*, 2(1), 19–31. <https://doi.org/10.51325/ijbeg.v2i1.30>
- Alhossini, M. A., Ntim, C. G., & Zalata, A. M. Corporate board committees and corporate outcomes: An international systematic literature review and agenda for future research. (2021). *The International Journal of Accounting*, 56(1), 2150001. <https://doi.org/10.1142/S1094406021500013>
- Altman, E. I. (1968). Financial ratios, discriminant analysis and the prediction of corporate bankruptcy. *The Journal of Finance*, 23(4), 589–609. <https://doi.org/10.1111/j.1540-6261.1968.tb00843.x>
- Altman, E., Hartzell, J., & Peck, M. (1995). *Emerging markets corporate bonds: A scoring system*. Wiley and Sons.
- Aryeetey, E., & Ackah, C. (2011). The global financial crisis and African economies: Impact and transmission channels. *African Development Review*, 23(4), 407–420. <https://doi.org/10.1111/j.1467-8268.2011.00295.x>
- Aslam, E., & Haron, R. (2021). Corporate governance and banking performance: The mediating role of intellectual capital among OIC countries. *Corporate Governance the International Journal of Business in Society*, 21(1), 111–136. <https://doi.org/10.1108/CG-08-2020-0312>
- Badu, E. A., & Appiah, K. O. (2017). The impact of corporate board size on firm performance: Evidence from Ghana and Nigeria. *Research in Business and Management*, 4(2), 1–12. <https://doi.org/10.5296/rbm.v4i2.11721>
- Badu, A. E., & Nyarko Assabil, E. (2022). Board composition and value relevance of Ghanaian firms: A seemingly unrelated regression approach. *Journal of Economic and Administrative Sciences*, 38(4), 529–543. <https://doi.org/10.1108/JEAS-09-2020-0163>
- Bauer, J., & Agarwal, V. (2014). Are hazard models superior to traditional bankruptcy prediction approaches? A comprehensive test. *Journal of Banking & Finance*, 40, 432–442. <https://doi.org/10.1016/j.jbankfin.2013.12.013>
- Beasley, M. S. (1996). An empirical analysis of the relation between the board of director composition and financial statement fraud. *The Accounting Review*, 71, 443–465. <https://www.jstor.org/stable/248566>
- Begum, S. (2022). A detailed study for bankruptcy prediction by machine learning technique. In *Intelligent sustainable systems: Selected papers of WorldS4 2021* (Vol. 2, pp. 201–213). Springer Nature Singapore. https://doi.org/10.1007/978-981-16-6369-7_18
- Ben Fatma, H., & Chouaibi, J. (2021). Corporate governance and CSR disclosure: Evidence from European financial institutions. *International Journal of Disclosure & Governance*, 18(4), 346–361. <https://doi.org/10.1057/s41310-021-00117-1>
- Bernardi, R. A., & Arnold, D. F. (1997). An examination of moral development within public accounting by gender, staff level, and firm. *Contemporary Accounting Research*, 14(4), 653–668. <https://doi.org/10.1111/j.1911-3846.1997.tb00545.x>
- Carson, E., Fargher, N. L., Geiger, M. A., Lennox, C. S., Raghunandan, K., & Willekens, M. (2013). Audit reporting for going-concern uncertainty: A research synthesis. *Auditing: A Journal of Practice & Theory*, 32 (Supplement 1), 353–384. <https://doi.org/10.2308/ajpt-50324>
- Chen, C. C., Chen, C. D., & Lien, D. (2020). Financial distress prediction model: The effects of corporate governance indicators. *Journal of Forecasting*, 39(8), 1238–1252. <https://doi.org/10.1002/for.2684>

- Chirico, F., Criaco, G., Baù, M., Naldi, L., Gomez-Mejia, L. R., & Kotlar, J. (2020). To patent or not to patent: That is the question. Intellectual property protection in family firms. *Entrepreneurship Theory and Practice*, 44(2), 339–367. <https://doi.org/10.1177/1042258718806251>
- Cirik, K., & Makadok, R. (2021). First-mover advantages versus first-mover benefits: What's the difference and why does it matter? *Academy of Management Review*. <https://doi.org/10.5465/amr.2017.0499>
- Claessens, S., & Yurtoglu, B. B. (2013). Corporate governance in emerging markets: A survey. *Emerging Markets Review*, 15, 1–33. <https://doi.org/10.1016/j.ememar.2012.03.002>
- Connelly, J. T., & Limpaphayom, P. (2004). Environmental reporting and firm performance: Evidence from Thailand. *The Journal of Corporate Citizenship*, 2004(13), 137–149. <https://doi.org/10.9774/GLEAF.4700.2004.sp.000015>
- Cumming, D., Leung, T. Y., & Rui, O. (2015). Gender diversity and securities fraud. *Academy of Management Journal*, 58(5), 1572–1593. <https://doi.org/10.5465/amj.2013.0750>
- Dattée, B., Alexy, O., & Autio, E. (2018). Maneuvering in poor visibility: How firms play the ecosystem game when uncertainty is high. *Academy of Management Journal*, 61(2), 466–498. <https://doi.org/10.5465/amj.2015.0869>
- De Villiers, C., & Hsiao, P.-C. K. (2017). Why organizations voluntarily report—agency theory. *Sustainability accounting and integrated reporting*, 49–56. <https://doi.org/10.4324/9781315108032-5>
- Dicksee, L. (1892). *Auditing: A practical manual for auditors*. VIII-305. Gee & Co. Pub.
- Effiong, S. A., Inyang, W. S., Nabi, F. M., Dada, E., & Adejone, A. O. (2018). Effect of corporate governance on the going concern status of listed non-financial companies in the Nigerian stock exchange market. *The Nation*, 6(1), 1–14. 2360-7459.
- Eisenberg, T., Sundgren, S., & Wells, M. T. (1998). Larger board size and decreasing firm value in small firms. *Journal of Financial Economics*, 48(1), 35–54. [https://doi.org/10.1016/S0304-405X\(98\)00003-8](https://doi.org/10.1016/S0304-405X(98)00003-8)
- Enkhbold, E. (2019). The role of the ortoq in the Mongol Empire in forming business partnerships. *Central Asian Survey*, 38(4), 531–547. <https://doi.org/10.1080/02634937.2019.1652799>
- Fariha, R., Hossain, M. M., & Ghosh, R. (2022). Board characteristics, audit committee attributes and firm performance: Empirical evidence from emerging economy. *Asian Journal of Accounting Research*, 7(1), 84–96. <https://doi.org/10.1108/AJAR-11-2020-0115>
- Freeman, R. E. (2001). A stakeholder theory of the modern corporation. *Perspectives in Business Ethics* Sie, 3(144), 38–48.
- Freeman, R. E. (2022). Excerpt from managing for stakeholders. *Ethics of Data and Analytics* 212–216.
- Freeman, R. E., Wicks, A. C., & Parmar, B. (2004). Stakeholder theory and “the corporate objective revisited”. *Organization Science*, 15(3), 364–369. <https://doi.org/10.1287/orsc.1040.0066>
- Freudenreich, B., Lüdeke-Freund, F., & Schaltegger, S. (2020). A stakeholder theory perspective on business models: Value creation for sustainability. *Journal of Business Ethics*, 166(1), 3–18. <https://doi.org/10.1007/s10551-019-04112-z>
- Garg, A. K. (2007). Influence of board size and independence on firm performance: A study of Indian companies. *Vikalpa*, 32(3), 39–60.
- Geiger, M. A., Gold, A., & Wallage, P. (2019). A Synthesis of research on auditor reporting on going-concern uncertainty: An update and extension. FAR Report.
- Gkouma, O., Filos, J., & Chytis, E. (2018). Financial crisis and corporate failure: The going concern assumption findings from Athens stock exchange. *Journal of Risk & Control*, 5(1), 141–170.
- Goodstein, J., Gautam, K., & Boeker, W. (1994). The effects of board size and diversity on strategic change. *Strategic Management Journal*, 15(3), 241–250. <https://doi.org/10.1002/smj.4250150305>
- Gordini, N., & Rancati, E. (2017). Gender diversity in the Italian boardroom and firm financial performance. *Management Research Review*, 40(1), 75–94. <https://doi.org/10.1108/MRR-02-2016-0039>
- Grassa, R., & Matoussi, H. (2014). Corporate governance of Islamic banks: A comparative study between GCC and Southeast Asia countries. *International Journal of Islamic & Middle Eastern Finance & Management*, 7(3), 346–362. <https://doi.org/10.1108/IMEFM-01-2013-0001>
- Grice, J. S., Jr., & Dugan, M. T. (2003). Re-estimations of the Zmijewski and Ohlson bankruptcy prediction models. *Advances in Accounting*, 20, 77–93. [https://doi.org/10.1016/S0882-6110\(03\)20004-3](https://doi.org/10.1016/S0882-6110(03)20004-3)
- Guest, P. M. (2009). The impact of board size on firm performance: Evidence from the UK. *European Journal of Finance*, 15(4), 385–404. <https://doi.org/10.1080/13518470802466121>
- Gürol, B., & Lagasio, V. (2022). Women board members' impact on ESG disclosure with environment and social dimensions: Evidence from the European banking sector. *Social Responsibility Journal*, 19(1), 211–228. <https://doi.org/10.1108/SRJ-08-2020-0308>
- Hammond, P., Opoku, M. O., & Kwakwa, P. A. (2022). Relationship among corporate reporting, corporate governance, going concern and investor confidence: Evidence from listed banks in sub Saharan Africa. *Cogent Business & Management*, 9(1), 2152157.
- Haris, M., Yao, H., Tariq, G., Javadi, H. M., & Ain, Q. U. (2019). Corporate governance, political connections, and bank performance. *International Journal of Financial Studies*, 7(4), 62. <https://doi.org/10.3390/ijfs7040062>
- Herzum, J., Sievert, M., & Helmig, B. (2022). Effects of Corporate Environmental Activities on Evaluators' Propriety Beliefs. *Proceedings of the Academy of Management Proceedings*, (1), 14530. Briarcliff Manor, NY 10510: Academy of Management. <https://doi.org/10.5465/AMBPP.2022.162>
- Hörisch, J., Schaltegger, S., & Freeman, R. E. (2020). Integrating stakeholder theory and sustainability accounting: A conceptual synthesis. *Journal of Cleaner Production*, 275, 124097. <https://doi.org/10.1016/j.jclepro.2020.124097>
- Ismail, S. A. A., Mahmood, S. M., & Hussein, A. I. (2021). The impact of the agency costs on the going concern under the auditor industry specialization: An empirical study on private banks in Iraq. *Academy of Entrepreneurship Journal*, 27, 1–11.
- Isshaq, Z., Bokpin, G. A., & Mensah Onumah, J. (2009). Corporate governance, ownership structure, cash holdings, and firm value on the Ghana stock exchange. *The Journal of Risk Finance*, 10(5), 488–499. <https://doi.org/10.1108/15265940911001394>
- Jaafar, M. N., Muhamat, A. A., Shahar, W. S., & Saddam, S. Z. (2021). Characteristic of board directors and financial performance: Evidence from

- companies listed in FTSE Bursa Malaysia KLCI Index. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 11 (1). <https://doi.org/10.6007/IJARAFMS/v11-i1/9091>
- Jackling, B., & Johl, S. (2009). Board structure and firm performance: Evidence from India's top companies. *Corporate Governance an International Review*, 17(4), 492–509. <https://doi.org/10.1111/j.1467-8683.2009.00760.x>
- Jackson, P. T. (2020). The dangers of interpretation: CAW manning and the “going concern” of international society. *Journal of International Political Theory*, 16 (2), 133–152. <https://doi.org/10.1177/1755088220905333>
- Jacoby, G., Liu, M., Wang, Y., Wu, Z., & Zhang, Y. (2019). Corporate governance, external control, and environmental information transparency: Evidence from emerging markets. *Journal of International Financial Markets, Institutions and Money*, 58, 269–283. <https://doi.org/10.1016/j.intfin.2018.11.015>
- Jan, C.-L. (2021). Using deep learning algorithms for CPAs' going concern prediction. *Information*, 12(2), 73. <https://doi.org/10.3390/info12020073>
- Jones, T. M., Wicks, A. C., & Freeman, R. E. (2017). Stakeholder theory: The state of the art. In N. Bowie (Ed.), *The Blackwell guide to business ethics* (pp. 17–37). Wiley. doi:10.1002/9781405164771.ch1
- Kaczmarczyk, A. (2018). Business restructuring in light of the going concern principle. Research insight in the selected enterprises. *Transformations in Business & Economics*, 17(2), 466–480.
- Khan, H., Hassan, R., & Marimuthu, M. (2017). Diversity on corporate boards and firm performance: An empirical evidence from Malaysia. *American Journal of Social Sciences and Humanities*, 2(1), 1–8.
- Korir, A. C., & Cheruiyot, T. (2017). Effect of corporate governance on firm performance. *European Journal of Business and Strategic Management*, 2(1), 29–51.
- Krishnamurthy, R., Hass, G. A., Natoli, A. P., Smith, B. L., Arbis, P. A., & Gottfried, E. D. (2022). Professional practice guidelines for personality assessment. *Journal of Personality Assessment*, 104(1), 1–16. <https://doi.org/10.1080/00223891.2021.1942020>
- Kumar, S. (2019). The McKinsey 7S Model helps in Strategy implementation: A Theoretical Foundation. *Tecnia Journal of Management Studies*, 14(1), 7–12. <https://ssrn.com/abstract=3993590>
- Kyereboah-Coleman, A., & Biekpe, N. (2006a). Do boards and CEOs matter for bank performance? A comparative analysis of banks in Ghana. *Journal of Corporate Ownership and Control*, 4(1), 119–126. <https://doi.org/10.22495/cocv4i1p10>
- Kyereboah-Coleman, A., & Biekpe, N. (2006b). The relationship between board size, board composition, CEO duality and firm performance: Experience from Ghana. *Corporate Ownership and Control*, 4(2), 114–122. <https://doi.org/10.22495/cocv4i2p11>
- Lamprecht, C., & Van Wyk, H. A. (2020). Context-specific indicators to guide the judgement of a going concern for a company in business rescue. *Journal of Economic and Financial Sciences*, 13(1). <https://doi.org/10.4102/jef.v13i1.483>
- Lee, K. W., & Thong, T. Y. (2023). Board gender diversity, firm performance and corporate financial distress risk: International evidence from tourism industry. *Equality, Diversity & Inclusion: An International Journal*, 42(4), 530–550. <https://doi.org/10.1108/EDI-11-2021-0283>
- Lessambo, F. I. (2018). Subsequent Events; and Going Concern. *Auditing, Assurance Services, and Forensics*, 247–259. https://doi.org/10.1007/978-3-319-90521-1_15
- Liang, D., Tsai, C. F., Lu, H. Y. R., & Chang, L. S. (2020). Combining corporate governance indicators with stacking ensembles for financial distress prediction. *Journal of Business Research*, 120, 137–146. <https://doi.org/10.1016/j.jbusres.2020.07.052>
- Li, B., Martin, E. B., & Morris, A. J. (2001). Box-Tidwell transformation based partial least squares regression. *Computers & Chemical Engineering*, 25(9–10), 1219–1233. [https://doi.org/10.1016/S0098-1354\(01\)00696-2](https://doi.org/10.1016/S0098-1354(01)00696-2)
- Lombardi, R. (2021). The going-concern in accounting research. In *The going-concern-principle in non-financial disclosure* (pp. 1–29). Springer International Publishing. https://doi.org/10.1007/978-3-030-81127-3_1
- Lu, Y., Ntim, C. G., Zhang, Q., & Li, P. (2022). Board of directors' attributes and corporate outcomes: A systematic literature review and future research agenda. *International Review of Financial Analysis*, 84, 102424. <https://doi.org/10.1016/j.irfa.2022.102424>
- Mahrani, M., & Soewarno, N. (2018). The effect of good corporate governance mechanism and corporate social responsibility on financial performance with earnings management as mediating variable. *Asian Journal of Accounting Research*, 3(1), 41–60. <https://doi.org/10.1108/AJAR-06-2018-0008>
- Melloni, G., Stacchezzini, R., & Lai, A. (2016). The tone of business model disclosure: An impression management analysis of the integrated reports. *Journal of Management & Governance*, 20(2), 295–320. <https://doi.org/10.1007/s10997-015-9319-z>
- Menard, S. (2002). *Applied logistic regression analysis* (Vol. 106). SAGE Publications, Inc. <https://doi.org/10.4135/9781412983433>
- Mitchell, R. K., & Cohen, B. (2006). Stakeholder theory and the entrepreneurial firm. *Journal of Small Business Strategy*, 17(1), 1–16.
- Morelli, C. (1999). Information costs and information asymmetry in British food retailing. *The Service Industries Journal*, 19(3), 175–186. <https://doi.org/10.1080/026420699000000036>
- Muda, I., Maulana, W., Sakti Siregar, H., & Indra, N. (2018). The analysis of effects of good corporate governance on earnings management in Indonesia with panel data approach. *Iranian Economic Review*, 22(2), 599–625.
- Mura, R. (2007). Firm performance: Do non-executive directors have minds of their own? Evidence from UK panel data. *Financial Management*, 36(3), 81–112. <https://doi.org/10.1111/j.1755-053X.2007.tb00082.x>
- Mweta, T. M., & Mungai, E. N. (2018). Corporate governance and firms market value: A case study of insurance sector companies listed at Nairobi securities exchange. *Journal on Banking Financial Services Insurance Research*, 8(6), 18–27.
- Myers, W. R., Brennenman, W. A., & Myers, R. H. (2005). A dual-response approach to robust parameter design for a generalized linear model. *Journal of Quality Technology*, 37(2), 130–138. <https://doi.org/10.1080/00224065.2005.11980311>
- Nguyen, T. H. H., Ntim, C. G., & Malagila, J. K. (2020). Women on corporate boards and corporate financial and non-financial performance: A systematic literature review and future research agenda. *International Review of Financial Analysis*, 71, 101554. <https://doi.org/10.1016/j.irfa.2020.101554>

- Ohlson, J. A. (1980). Financial ratios and the probabilistic prediction of bankruptcy. *Journal of Accounting Research*, 18(1), 109–131. <https://doi.org/10.2307/2490395>
- Paton, W. A. (1922). *Accounting theory, with special reference to the corporate enterprise*. Ronald Press.
- Pendse, N. S. (2019). Study of corporate governance for select NSE companies and corporate valuation during the period of 2010 to 2015 Tilak Maharashtra Vidyapeeth].
- Poche'moret, R. (2021). *Analysis of the effects of adjusting for binary non-confounders in a logistic regression model: A simulation study Louisiana*. State University Health Sciences Center].
- Ramadan, M. M., & Hassan, M. K. (2022). Board gender diversity, governance and Egyptian listed firms' performance. *Journal of Accounting in Emerging Economies*, 12(2), 279–299. <https://doi.org/10.1108/JAEE-02-2021-0057>
- Ren, N., & Zhu, Y. (2020). Going-concern opinions and corporate governance. *International Journal of Banking, Accounting and Finance*, 11(2), 281–302. <https://doi.org/10.1504/IJBAF.2020.106717>
- Satria, D. N. (2020). Audit quality as a moderating effect of financial condition on going concern modified audit opinion. *International Journal of Progressive Sciences and Technologies*, 18(2), 70–74.
- Senaviratna, N., & Cooray, T. (2019). Diagnosing multicollinearity of logistic regression model. *Asian Journal of Probability and Statistics*, 5(2), 1–9. <https://doi.org/10.9734/ajpas/2019/v5i230132>
- Shi, Y., & Li, X. (2019). A bibliometric study on intelligent techniques of bankruptcy prediction for corporate firms. *Heliyon*, 5(12), e02997. <https://doi.org/10.1016/j.heliyon.2019.e02997>
- Shrestha, N. (2019). Application of binary logistic regression model to assess the likelihood of overweight. *Am J Theor Appl Stat*, 8(1), 18–25. <https://doi.org/10.11648/j.ajtas.20190801.13>
- Simatele, M. (2014). Reflections on the impact of the financial crisis on sub-Saharan Africa. *AfricaGrowth Agenda*, 2014(1), 18–24.
- Sperandei, S. (2014). Understanding logistic regression analysis. *Biochemia Medica*, 24(1), 12–18. <https://doi.org/10.11613/BM.2014.003>
- Squire, R. (2021). Why the corporation locks in financial capital but the partnership does not. *Vanderbilt Law Review*, 74(6), 1787.
- Stiglitz, J. E. (2002). Information and the change in the paradigm in economics. *American Economic Review*, 92(3), 460–501. <https://doi.org/10.1257/00028280260136363>
- Sun, L. (2007). A re-evaluation of auditors' opinions versus statistical models in bankruptcy prediction. *Review of Quantitative Finance & Accounting*, 28(1), 55–78. <https://doi.org/10.1007/s11156-006-0003-x>
- Uang, J. Y., Citron, D. B., Sudarsanam, S., & Taffler, R. J. (2006). Management going-concern disclosures: Impact of corporate governance and auditor reputation. *European Financial Management*, 12(5), 789–816. <https://doi.org/10.1111/j.1468-036X.2006.00277.x>
- UN. (2023). UN contribution to harnessing innovative finance for SDG-aligned infrastructure in Ghana. <https://ghana.un.org/en/227987-un-contribution-harnessing-innovative-finance-sdg-aligned-infrastructure-ghana>
- Van Rensburg, T. J., de Jager, S., & Makrelow, K. H. (2022). Fiscal multipliers in South Africa after the global financial crisis. *South African Journal of Economic and Management Sciences*, 25(1), 4191. <https://doi.org/10.4102/sajems.v25i1.4191>
- Wang, Y., Abbasi, K. B., & Yekini, K. (2019). Corporate governance mechanisms and firm performance: Evidence from the emerging market following the revised CG code. *Corporate Governance the International Journal of Business in Society*, 20(1), 158–174. <https://doi.org/10.1108/CG-07-2018-0244>
- Wójcik-Jurkiewicz, M., & Karczewska, M. (2019). Assessment of the going concern value of a business entity by means of selected discriminative models. *Scientific Journal of Bielsko-Biala School of Finance and Law*, 23(1), 53–60. <https://doi.org/10.5604/01.3001.0013.1644>
- World Bank (2023). World Development Indicators. Accessed from <https://databank.worldbank.org/source/world-development-indicators#>
- Xiaolu, L., Jiejie, L., & Jian, T. (2016). Study of the influence of corporate governance level on investors' confidence. *Canadian Social Science*, 12(5), 8–16.
- Xu, H., Dao, M., & Wu, J. (2018). The effect of real activities manipulation on going concern audit opinions for financially distressed companies. *Review of Accounting and Finance*, 17(4), 514–539. <https://doi.org/10.1108/RAF-09-2016-0135>
- Yermack, D. (1996). Higher market valuation of companies with a small board of directors. *Journal of Financial Economics*, 40(2), 185–211. [https://doi.org/10.1016/0304-405X\(95\)00844-5](https://doi.org/10.1016/0304-405X(95)00844-5)
- Young, S. (2000). The increasing use of non-executive directors: Its impact on UK board structure and governance arrangements. *Journal of Business Finance & Accounting*, 27(9–10), 1311–1342. <https://doi.org/10.1111/1468-5957.00358>
- Yusuf, M., Sari, L., Septiano, R., Nuryati, S., Lestari, I. D., Arief, Z., Hernawan MA, Nurhayati S, & Azizah, K. (2022). Financial ratio model and application of good corporate governance to NPL with inflation as a moderate variable. *Journal of Management Information & Decision Sciences*, 25(1), 1–12.
- Yu, W., Xu, W., & Zhu, L. (2017). A modified Hosmer–Lemeshow test for large data sets. *Communications in Statistics-Theory and Methods*, 46(23), 11813–11825. <https://doi.org/10.1080/03610926.2017.1285922>
- Zéman, Z., & Lentner, C. (2018). The changing role of going concern assumption supporting management decisions after the financial crisis. *Polish Journal of Management Studies*, 18(1), 428–441. <https://doi.org/10.17512/pjms.2018.18.1.32>
- Zmijewski, M. E. (1984). Methodological issues related to the estimation of financial distress prediction models. *Journal of Accounting Research*, 22, 59–82. <https://doi.org/10.2307/2490859>
- Zureigat, Q. M. (2015). Determinants of mandatory corporate governance: Evidence from an emerging market. *The International Journal of Business and Finance Research*, 9(3), 105–114.