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Article

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ACCOUNTING, CORPORATE GOVERNANCE & BUSINESS ETHICS | RESEARCH ARTICLE

Does corporate governance moderate the relationship between internal control system effectiveness and SMEs financial performance in Ghana?

Alhassan Musah^{1*}, Abigail Padi¹, Bismark Okyere¹, Deodat E. Adenutsi¹ and Charles Ayariga¹

Abstract: The study examined the effect of the major component of an internal control system according to the COSO framework on the financial performance of SMEs registered with the Association of Ghana Industries (AGI) in Ghana. The study further examined the moderating role of corporate governance practice on the relationship between the components of the internal control system and the financial performance of SMEs registered with AGI. The study surveyed 300 SMEs registered with AGI in Ghana using a questionnaire as the main instrument of data collection. The data were analysed using Pearson correlation analysis and hierarchical regression analysis to achieve the above-stated objectives. The results of the study showed that all the five major components of the internal control system (control environment, control activities, risk assessment, information, and communication and monitoring) have a positive and significant relationship with the financial performance of SMEs registered with AGI. The study further revealed that effective corporate governance practice moderates the relationship between all five components of the internal control system and the financial performance of SMEs registered with AGI in Ghana. The interaction between the independent variables and financial performance is stronger with the introduction of corporate governance practices.

Subjects: Finance; Business, Management and Accounting; Industry & Industrial Studies

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Keywords: Internal control systems; SMEs; financial performance; corporate governance; Ghana

1. Introduction

The importance of internal control systems to business organizations and even non-profits have been duly acknowledged in literature (Adegboyegun et al., 2020; GamageLow & Keving, 2018; Vu & Nga, 2022). It has been documented in the literature that an effective internal control system safeguards the assets and other important resources of the organization as well as helps the entity realize its objective relating to providing reliable financial information (Alfartoosi & Jusoh, 2021; Hoai et al., 2022). Some researchers argue that the survival of an entity is largely dependent on the quality of the internal control system put in place by the management of the organization and its effectiveness (Adegboyegun et al., 2020; Chalmers et al., 2019; Tetteh et al., 2022). Internal control system helps conduct the core business of an entity in an orderly manner and helps the organization to comply with laws and policies affecting their sector (GamageLow & Keving, 2018; Lawson et al., 2017; Vu & Nga, 2022). It sets out the structure and systems for the effective and efficient conduct of the business operations and encapsulates the ethical values of the organization, their structural integrity and a framework that ensures accountability of employees and management (Chalmers et al., 2019; Francis & Imiete, 2018). The value of the internal control system is enormous for all kinds of organizations small or big, profit or non-profit organizations but perhaps may be more important to small and medium-scale enterprises (SMEs) in Ghana and many developing countries because of the importance of SMEs in these economies.

The significance of internal control systems was revealed when it was found that significant business scandals in the United States, like Enron and WorldCom, were mostly caused by flaws in internal control systems (Abbott et al., 2016; Peterson, 2018). Due to these incidents, the Sarbanes Oxley Act of 2002 was passed in the United States of America, with internal control systems constituting a significant portion of the statute. After the act was passed, numerous studies started to concentrate on the effectiveness of firms' internal control systems, according to Hermanson et al. (2012). As a result, research on internal control systems rose dramatically.

The separation of ownership and management necessitates that there exist enough mechanisms to check management and other senior employees of the firm, in addition to corporate scandals that have forced the design and continuous improvement of internal control systems in organizations (Musah et al., 2021; Vu & Nga, 2022). Due to this, the majority of businesses have been forced to spend money on systems that will enhance their internal control systems. A company's internal audit department's primary duty is to make sure that the appropriate internal control systems are in place and are operating efficiently (Chang et al., 2019). To ensure effective internal control systems, the internal audit unit's independence, expertise, and capacities are crucial (Musah, 2018b). Not only do internal control systems improve corporate governance in firms, but they also help external auditors with their audit and assurance work (Chang et al., 2019). Most modern internal control systems are integrated with information technology, which COSO lists as one of the framework's components (Hoai et al., 2022; Vu & Nga, 2022). The Sarbanes Oxley Act of 2002 was enacted by nations like the United States to govern internal control systems due to the significance of internal control systems to enterprises. There does not seem to be a regulation in Ghana requiring businesses to create and operate effective internal control systems within their businesses.

Two perspectives on internal control systems have been presented in the literature. First, several studies have examined the efficiency of internal control systems to identify areas for strengthening businesses' control systems (Agyei-Mensah, 2016a; Guo & Eschenbrenner, 2018; Lawson et al., 2017; Onumah et al., 2012; Peterson, 2018). The second body of research focuses on how internal control systems affect audit effectiveness, such as by lowering corruption, increasing internal audit effectiveness, raising the calibre of financial reporting, etc (Hunton et al, 2011 Badara & Saidin,

2013; Almici, 2015; Chang et al., 2019). The majority of the research shares the trait of being carried out in developed and Western economies. Recent studies have shifted from the above strands of literature to focus on the effect of internal control systems on firm performance (Adegboyegun et al., 2020; GamagelLow & Keving, 2018; Hoai et al., 2022; Tetteh et al., 2022; Vu & Nga, 2022; Zhou et al., 2016). The majority of these studies focused on developed and emerging economies with less empirical evidence on the subject matter in the Ghanaian context. Secondly, the few studies on the subject matter in Ghana and other parts of Africa have focused on listed entities and public institutions (e.g. Agyei-Mensah, 2016b; Onumah et al., 2012; Tetteh et al., 2022) with less evidence on SMEs despite the important role SMEs play in many economies including Ghana. Meanwhile, the need for an effective internal control system is more pronounced for SMEs than public entities (Adegboyegun et al., 2020).

SMEs constitute about 90% of private sector business in Ghana and are the major source of employment and economic growth in Ghana (Musah, 2017; Musah et al., 2018a; Padi et al., 2022). This means that the SME sector is the engine of growth and job creation in Ghana and hence the need to ensure that entities in that sector experience continuous growth. Apart from their importance to the Ghanaian economy, SMEs in Ghana are fraught with several challenges poor keeping practices (Musah, 2017), weak governance framework (Abor and Biekpe, 2007; Asunka, 2017; Padi & Musah, 2022) and lack of access to credit (Domeher, 2012; Abor and Quartey, 2010). Good internal control systems can help to improve these weaknesses in the SME sector in Ghana. Moreover, a good corporate governance structure will help to improve the quality and effectiveness of SMEs' internal control system (Musah, 2018b) thereby improving their growth and profitability potential. For instance, the internal audit department which is responsible for a firm's internal control systems needs to be independent and that requires a good corporate governance structure that includes an audit committee of the board of directors (Musah, 2018b). Even though recent studies have examined internal control systems' impact on firm profitability (Adegboyegun et al., 2020; GamagelLow & Keving, 2018; Tetteh et al., 2022; Vu & Nga, 2022), none of these studies examined the moderating role of corporate governance in strengthening the effect of internal control system effectiveness on SMEs performance. Meanwhile, research has shown that there is an inseparable relationship between corporate governance and internal control systems (Hazzaa et al., 2022). The above evidence implies that there cannot be an effective internal control system without accompanying good corporate governance. This study addresses these gaps in the literature by examining the effect of internal control systems on SMEs' financial performance and how corporate governance moderates the relationship between the two variables.

The study makes a significant contribution to the literature on the internal control system and SMEs in Ghana as well as policy-making on SMEs as well as stakeholders in the sector. The study extends previous studies on internal control systems in Ghana and many parts of the world that have focused on public entities to the SME sector in Ghana. Second, the study fills the gap in the role of effective internal control systems in developing economies. Third, there is limited or no evidence of previous studies examining the moderating role of corporate governance on the relationship between internal control system effectiveness and SME financial performance in Ghana. The results of the study will help managers of SMEs place a higher premium on corporate governance and internal control systems in their organizations. Finally, the results are useful to the government and policymakers in crafting corporate governance and internal control systems for SMEs in Ghana.

2. Literature review

2.1. Theoretical review- agency theory

The separation of ownership and management, as well as the reality that management interests differ from those of shareholders (owners), gave rise to the agency thesis (Jensen & Meckling, 1976; Musah et al., 2022; Tetteh et al., 2022). According to the idea, management, who are agents, have interests that are different from those of shareholders. As a result, there is a need for a mechanism

that can balance management's (agents') and shareholders' interests (principals). There are a variety of control techniques that can be used to achieve this alignment, including internal control systems and corporate governance (Tetteh et al., 2022). In essence, management tries to reassure shareholders that they are acting in their best interest by designing and putting into practice internal controls that are in line with the agency theory argument (Adegboyegun et al., 2020; GamageLow & Keving, 2018; Zhou et al., 2016). Shareholders intend to put in place the board of directors and important committees of the board like the audit committee the guarantee the independence of the internal audit function to ensure compliance with the internal control systems (Musah, 2018b; Tetteh et al., 2022). This explains why the internal audit function, which is in charge of reviewing and monitoring internal control systems, requires independence in reporting and, as a result, does not report to the CEO but rather to the audit committee of the board of directors (Abbott et al., 2016; Chalmers et al., 2019; Peterson, 2018). It might therefore be claimed that, like audit and corporate governance structure costs, the cost of creating and executing internal control systems in a company is a component of agency cost (Agyei-Mensah, 2016b). According to Adegboyegun et al. (2020), the goal of the design and implementation of internal control systems is to lessen agency loss and aid management in pursuing the organization's main goal.

According to Adegboyegun et al. (2020), a system of control must be put in place to balance management interest with that of shareholders to minimise agency loss. Agency theory has been used as the theoretical foundation for internal audit and management audit investigations. For instance, Tetteh et al. (2022) used the agency theory to evaluate the success of internal control systems on the financial performance of listed entities on the Ghana stock exchange using information technology as a moderating variable. Guo and Eschenbrenner (2018) used agency theory to clarify how management control systems are implemented in an organization. El-Mahdy and Park (2014) and Agyei-Mensah (2016b) stated that an internal control system helps eliminate information asymmetry, increase the quality and reliability of the information, and assist agents to align their interests with those of the principal. According to Chang et al. (2019), internal control system contributes to maximizing shareholder wealth by lowering agency costs. Therefore, this study uses agency theory as support for a business building and executing successful internal control systems. Internal controls become one of the tools used in this situation to monitor managerial behaviour and make sure they are working toward the company's ultimate vision (Guo & Eschenbrenner, 2018; Onumah et al., 2012). Therefore, the cost of the internal audit function may be included in the cost of the agency. Agency theory will require a lean board size, with more independent directors and the right competencies to help hold management accountable (Abbott et al., 2016; Musah et al., 2022). An audit committee of the board of directors will also be an additional control mechanism to help reduce the agency's problem.

3. Hypothesis development

3.1. Control environment and SMEs performance

The control environment is one of the major components of a good internal control system according to the framework for a good internal control system by the Committee for Sponsoring Organization (COSO, 2013). The control environment set the tone for the efficient and effective workings of the other components (Chalmers et al., 2019; Peterson, 2018). The agency theory requires that the right control environment that is needed to align the interest of management and shareholders is developed for every entity (Chen et al., 2020). Several studies have tried to link a good control environment with firm performance but have provided mixed results (Tetteh et al., 2022; Chiu & Wang, 2019; Chen et al., 2020; Muraleetharan, 2013). For instance, Tetteh et al. (2022) in their study about listed firms in Ghana and found a positive association between control environment and financial performance. On the other hand, Muraleetharan (2013) found an insignificant association between the control environment and financial performance. Adegboyegun et al. (2020) found that a good control environment will translate into the improved financial performance of SMEs in Ondo State. Similarly, GamageLow and Keving (2018) reported a positive and statistically significant relationship between the control environment and the

financial performance of banks in Sri Lanka. The above evidence points to the fact that a good control environment demonstrates management commitment to ethical business conduct which will translate into good employee behaviour and improved firm performance (Bruwer et al., 2018; Tetteh et al., 2022; Vu & Nga, 2022). Based on the above evidence and arguments above, the study hypothesizes that;

H1: There is a positive and significant association between a good control environment and SMEs financial performance.

4. Control activities and SMEs performance

Control activities are the specific processes, systems, and actions that assist in carrying out management directions (Adegboyegun et al., 2020; Tetteh et al., 2022). All operational components of the organization, including all levels and functions, are impacted by these control actions (Vu & Nga, 2022). How to control operations are carried out is determined by the systematic documenting of procedural rules and regulations in this area, which also helps auditors evaluate the firm's control environment and activities (Agyei-Mensah, 2016a; Chalmers et al., 2019; Guo & Eschenbrenner, 2018). Control activities in the internal control systems make sure that all necessary actions are taken to reduce risk and assist the company in achieving its goals (Guo & Eschenbrenner, 2018). Some studies have found a positive and significant association between control activities and the financial performance of entities (Adegboyegun et al., 2020; Bruwer et al., 2018; Tetteh et al., 2022; Vu & Nga, 2022). For instance, Tetteh et al. (2022) in their study found a significant positive association between control activities and the financial performance of listed firms in Ghana. A good control activity will include performance reviews that allow budgeted performance to be compared with actual performance so that variances can be detected and remedial actions taken (Tetteh et al., 2022). From the above discussions, it can be hypothesized that;

H2: There is a positive and significant association between good control activities and SMEs financial performance

5. Risk assessment and SMEs performance

The methods and procedures created by management and the organization to address the numerous risks that jeopardize the achievement of the organizational objectives are known as risk assessment (Chen et al., 2020; Tetteh et al., 2022; Vu & Nga, 2022). Risk assessment aids the organization in prioritizing particular goals that have a significant impact on the company's control systems (Agyei-Mensah, 2016a; Hamdan, 2019; Peterson, 2018). Risk assessment, according to Chen et al. (2020), aids in the discovery of pertinent risks that may have an impact on the accomplishment of management goals. According to Chiu and Wang (2019), risk assessment refers to the actions an organization takes to recognize and evaluate pertinent risks that have an impact on the creation and presentation of financial statements following the true and fair doctrine and applicable accounting standards. By identifying potential threats to the integrity of the financial reporting system, risk assessment enables management to take preventative measures (Onumah et al., 2012). In reality, it works more as a preventive measure than a control method. As part of internal control systems, risk assessment employs a variety of methods relevant to the sector and the business' operational systems to help identify potential risks and assist management in addressing them (Bruwer et al., 2018; Chen et al., 2020, 2020). Businesses must continually enhance their risk assessment methods so they can find new and developing risks that could potentially hinder their capacity to reach their desired objectives and aims. Previous studies argue that profits are the reward of risk-taking and risk assessment is geared towards mitigating the negative consequence of unnecessary risk but not avoiding risk (Hamdan, 2019; Tetteh et al., 2022). Few studies have reported a positive and significant association between

risk assessment and firm profit (Adegboyegun et al., 2020; Tetteh et al., 2022). Based on the above evidence, the study hypothesizes that;

H3: There is a positive and significant association between risk assessment and the financial performance of SMEs in Ghana.

6. Information and communication and SMEs' financial performance

Information and communication refer to the procedures used to locate, collect, and appropriately transmit pertinent information within the parameters established by management to fulfil the organization's financial reporting purpose (Adegboyegun et al., 2020; Frazer, 2020; Badara and Saidin, 2013). Sharing pertinent information with all significant organizational departments is another aspect of effective communication (Hamdan, 2019). The internal control systems information and communication component are successful if it can provide timely relevant and accurate information to the numerous stakeholders who require it (Bruwer et al., 2018; Chen et al., 2020). The organization's information and communication system handle data that is generated or required both internally and outside and moves both horizontally and vertically. As it has the potential to affect working relationships inside the organization, the information and communication component is crucial and effective if the process permeates all elements of the organization's activities (Peterson, 2018; Vu & Nga, 2022). Their analysis provided compelling evidence in favour of technology's inclusion in the internal control system framework's information component. The few empirical studies linking information and communication as a component of internal control systems reported a positive and statistically significant association between the two variables (Tetteh et al., 2022; Adegboyegun et al., 2020). Besides, information and communication can be used to reduce information asymmetry and enhance the monitoring of management in line with the agency theory. Based on the above findings, the study hypothesizes that;

H4: There is a positive and statistically significant association between information communication and SMEs financial performance in Ghana

7. Monitoring and SMEs performance

According to research, creating and implementing internal controls on its own won't guarantee their efficacy unless the control process is successfully monitored regularly to make sure it is operating as intended (Onumah et al., 2012; Zhou et al., 2016). This indicates that monitoring is a crucial element of the internal control system framework. Monitoring aids in evaluating the standard of the implemented control mechanisms and their efficiency in addressing the identified risk (Chen et al., 2020; Tetteh et al., 2022). According to Adegboyegun et al. (2020), monitoring refers to the actions taken to evaluate the system's effectiveness over time. The paper goes on to say that, given the complexity of contemporary corporate processes, monitoring is crucial. Additionally, monitoring guarantees that the other elements are operating efficiently at all organizational levels (Bruwer et al., 2018; Dowdell et al., 2020). It is critical to stress that no matter how well an internal control system is created and put into use, it can only offer a believable assurance that the goals will be met if it is monitored and reviewed periodically (Chen et al., 2020; Dowdell et al., 2020; Tetteh et al., 2022). This claim is supported by the possibility of limitations, including human mistakes, poor judgment, and system failure due to probable insider collaboration by employees of the company (Tetteh et al., 2022; Wali & Masmoudi, 2020). This means that companies must weigh the costs and advantages of a given control mechanism to avoid using it excessively and incurring excessive costs without receiving sufficient benefits (Adegboyegun et al., 2020; Dowdell et al., 2020). In almost all firms, a good internal control system increases the effectiveness of internal audits (Chen et al., 2020; Tetteh et al., 2022). It raises stakeholder trust in the organization's management and enhances the quality of governance. This should intend to

translate into the improved financial performance of the organization. Based on the above arguments, the study hypothesizes that;

H5: There is a positive and significant association between monitoring as a component of internal control systems and SMEs' financial performance.

8. The moderator- corporate governance

Good corporate governance provides the structures, rules, procedures, and systems that define the rights and responsibilities of stakeholders in the organization (Musah et al., 2022). The above perspective on corporate governance shows that there is a link between effective corporate governance and a good internal control system. The quality of an organization's internal control systems depends largely on the effectiveness of its corporate governance structures (Hazzaa et al., 2022). For instance, good corporate governance practice will ensure an independent audit committee with the right expertise that will help strengthen the independence of the internal audit function that is responsible for the entity's internal control systems (Li et al., 2020; Musah et al., 2018a). The board of directors, therefore, is critical to the well functioning of an entity's internal control systems (Hazzaa et al., 2022). The composition of the board and its structure is critical to the performance of its functions (Al-Zwyalif, 2015). The audit committee of the board provides a link between the entity's internal control structure and the general corporate governance framework of the company (Gal & Akisik, 2020; Hazzaa et al., 2022). The internal audit unit's job is to ensure that the company is fairly running its business, complying with all applicable rules and regulations, and maintaining adequate safeguards against employee fraud and conflict of interest. They, however, must report on this to the audit committee for the necessary action and advice. The work of the internal audit unit provides the relevant information that helps the board to carry out its monitoring role effectively (Arslan et al., 2019; Aureli et al., 2020; Hazzaa et al., 2022). An effective corporate governance structure is necessary if the internal audit unit can carry out its responsibility effectively without interference from the management who they work with (Hazzaa et al., 2022). This means that for internal control systems to be effective across all levels of the organization, there must be an effective corporate governance structure and an independent audit committee of the board with the right expertise on audit, financial reporting issues, and general business operations. Based on the above arguments, it can be deduced that corporate governance strengthens the effectiveness of internal control systems which should translate into improved financial performance among SMEs in Ghana. Based on the above arguments, the following hypotheses were tested.

H6a: Corporate governance moderates the relationship between control environment and financial performance of SMEs in Ghana

H6b: Corporate governance moderates the relationship between internal control activities and financial performance of SMEs in Ghana

H6c: Corporate governance moderates the relationship between risk assessment and financial performance of SMEs in Ghana

H6d: Corporate governance moderates the relationship between information and communication and financial performance of SMEs in Ghana

H6e: Corporate governance moderates the relationship between monitoring and financial performance of SMEs in Ghana

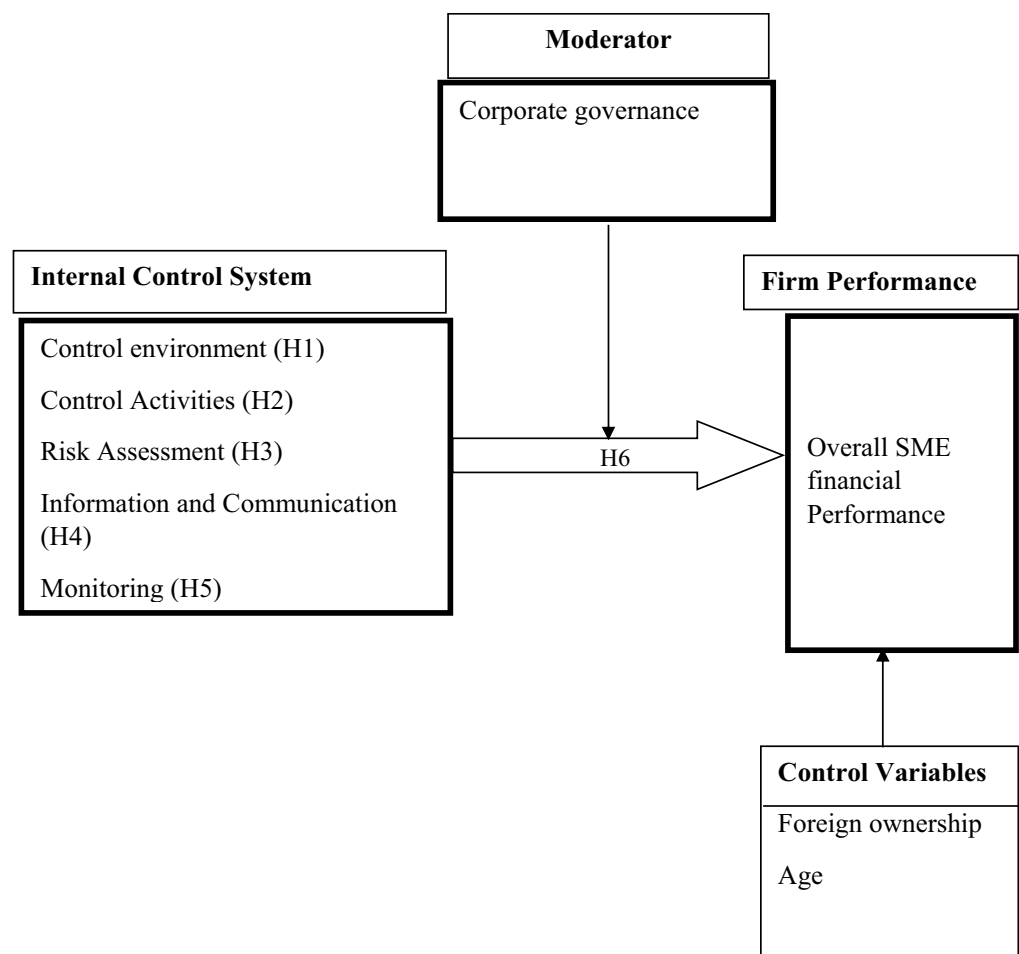
9. Conceptual framework

The main argument behind the conceptual framework for effective internal control system based on the five major components of the internal control system presented by COSO (2013) is that, it will translate into improved firm performance by SMEs. A good internal control system will help control the opportunistic behaviour of management and ensure the safety of the resources and enhanced financial reporting quality which is consistent with the agency theory. The extent to which an entity can ensure an effective internal control system depends on the effectiveness of its corporate governance structures and systems. The main agency responsible for the effectiveness of the internal control system is the internal audit unit and they must be guaranteed some independence and authority to carry their mandate without fear which can only happen with a strong corporate governance structure (GamageLow & Keving, 2018). Their study further found evidence that corporate governance practice enhances the effectiveness of internal control systems in organizations. This study contends good corporate governance practice enhances the effectiveness of all the individual components of an internal control system and hence moderates the relationship between the components of the internal control system and SMEs performance. The framework also contends that the age of the firm and foreign ownership influence SMEs' performance in Ghana. The summary of the above argument is presented in Figure 1 below.

10. Research methodology

The study adopted the positivist paradigm that is consistent with the research objectives since the study relied on statistical tools and numerical data to test the hypothesis, which is consistent with the objectivist ontological stance. In line with the ontology of the study, the adopted quantitative

Figure 1. Conceptual framework.



research design. The approach to data collection was that of a survey as the study gathered information about SMEs' internal control systems and financial performance from a key person in the organization with the requisite knowledge and information. The study adopted a combination of purposive sampling and snowballing sampling techniques. The population of the study include all the 1200 business registered with the Association of Ghana Industries (AGI). The SMEs registered under AGI are either into manufacturing or provide services to manufacturing businesses. In all, 300 SMEs were sampled over 8 months for the data collection. The study sampled one respondent from each entity to provide information about the effectiveness of their internal control system and how that affects the entity's financial performance. Overall, 300 responses were used to present the analysis for the study. The study targeted key persons in the selected SMEs such as the head of the internal audit unit, the director of finance and the chief executive officers. Heads of the internal audit were the main target respondents and, in their absence, any of the above-mentioned persons were deemed to have reasonable knowledge of the subject matter based on the position they occupy in the organization.

11. Data collection instrument

The instrument for data collection was the questionnaire which was designed with largely closed-ended questions. The questionnaire is broken into eight parts. The first part of the questionnaire focused on questions about the characteristics of the entity such as its age and ownership among others. The next five sections contained a statement that examined the effectiveness of the five components of the internal control framework as proposed by COSO (2013) which includes the control environment, control activities, risk assessment, information and communication and monitoring. The questions of these five areas were designed on a 5-scale Likert test where 1 represents strongly disagree and 5 represents strongly agree. Respondents were asked to indicate the extent to which a particular statement about how the component of the internal control system enumerated above works in their organization. The seventh section of the questionnaire contained questions on good corporate governance practices and how they apply to the particular entity. These questions were also ranked on a 5-scale Likert test consistent with the earlier questions on the internal control systems. The questions focused on the board structure, its composition, its independence and important committee like the audit committee of the board and its composition. The last part of the questionnaire contained questions on the measurement of SMEs' performance which has a combination of an increase in sales, increase in profits, increase in firm size and efficiency. These questions were also ranked on a 5-scale Likert test consistent with the earlier questions on the internal control systems. The questions on the effectiveness of the internal control system were based on the COSO (2013) framework for the internal control system and adapted from the study of Guo and Eschenbrenner (2018) and Hoai et al. (2022). The questions on good corporate governance practices for SMEs in Ghana were adapted from the study of Padi and Musah (2022) and Abor and Biekpe (2007).

12. Data analysis

The study analysed data collected from the administration of the questionnaire using the Pearson correlation matrix and the hierarchical multiple regression analysis approaches to realize the objectives of the study using SPSS version 21. The study used the Cronbach alpha test to determine the reliability of the questionnaire. The study employed the reliability and validity test on all the statements that define the five major components of the effective internal control system, good corporate governance practice and firm performance of SMEs in Ghana. The results of the Cronbach alpha test for the validity and reliability of the data collection instrument are presented below in Table 1.

The results of the Cronbach alpha test above show that the research instrument was reliable in line with Nunnally (1978).

13. Analysis and discussion of findings

The study sampled more internal auditors (52.67%) because they have direct responsibility for ensuring that internal control systems instituted by management are working as expected and

Table 1. Validity and reliability test results

Construct	No. of items	Cronbach alpha
Control environment	7	0.852
Control activities	5	0.758
Risk assessment	5	0.797
Information and communication	5	0.763
Monitoring	5	0.789
Corporate governance practice	10	0.795
SMEs performance	6	0.889

also monitor and review the control system and report any weaknesses to the Board of Directors through the audit committee for action. Other important persons who were sampled for the study include the Head of Finance and Accountants and a few Chief Executive Officers (CEOs). The profile of the respondents shows that they have reasonable knowledge of the subject matter and know the control systems in the organization. In terms of the experience of the respondents, the results from Table 2 show that majority had between 5 and 10 years of experience which is reasonable and allows them to have reasonable knowledge of the internal control systems in the organization. Finally, the sample cut across various industrial sectors but the majority of companies were manufacturing because the Association of Ghana Industries was set up to promote local manufacturing even though other sectors are allowed to be members.

14. Correlation analysis

The study used Pearson correlation analysis to estimate the relationship between the variables of the internal control system and corporate governance and the financial performance of SMEs. The study also included the mean score of the variables and the standard deviation in the analysis

Table 2. Sample description

Variable	Frequency	Percentage (%)
Role in Organization		
Internal Auditors	158	52.67
Head of Finance	86	28.67
Managing Director/CEO	20	6.67
Accountants	36	12
Years of Experience		
Below 5 years	96	32
Between 5 and 10 years	154	51.33
Above 10 years	50	16.67
Industry/Sector		
Manufacturing business	164	54.67
Financial Service	8	2.67
Media and Advertising	8	2.67
Automobile and Transport	7	2.33
Hospitality and Tourism	7	2.33
IT Companies	10	3.33
Oil and Gas	4	1.33
Others	92	30.67

Source: Field Data, 2022

before the conduct of the regression analysis. The correlation results were also used to determine the presence of multicollinearity among the independent variables. The summary of the above results is presented in Table 3 below.

(CE = Control Environment, CA = Control Activities, RA = Risk Assessment, I&C = Information and Communication, M = Monitoring, CG = Corporate Governance, and control variables of age of the firm, FOWN which represent foreign ownership coded as 1 if the firm is foreign-owned and 0 if it is Ghanaian-owned and FP = Financial Performance)

The first two columns show the mean score for the variables used for the study. The mean scores for all five components of the internal control system had a means score above 3 which suggest that the sampled SMEs have instituted effective internal control system to protect their assets and guarantee the integrity of their financial reporting system. The corporate governance mean score of 3.896 suggests that on average the firms have a good governance system in place that will ensure that the internal control systems work effectively. Also, the descriptive statistics show that the average age of SMEs sampled for the study is 12 years which implies that these firms have been operating for a long time which explains why they have an effective internal control system as well as a good governance system.

Concerning the correlation, the result from Table 3 shows that there is a strong positive correlation between a good and effective control environment and the financial performance of SMEs in Ghana. The relationship between a good control environment and financial performance is also statistically significant at a 5% significance level. The results of the correlation analysis in Table 3 also showed a strong positive correlation between effective control activities and the financial performance of SMEs. The strong direct relationship between control activities and the financial performance of SMEs was also statistically significant at a 5% significance level. The correlation analysis further revealed that risk assessment, information and communication and monitoring have a strong direct relationship with SMEs' financial performance. The positive relationship between these components of an internal control system and the financial performance of SMEs is also statistically significant at a 1% significance level. The control variables also have a direct correlation with firm performance among SMEs under AGI in Ghana. The correlation analysis also showed no evidence of multicollinearity since none of the correlation coefficients between the independent variables was even close to 0.7.

15. Regression analysis

The study adopted the four-step regression method proposed by Baron and Kenny (1986) to test the moderating effect. In the first step in the regression process, the study estimates the relationship between the control variables and uses the independent variables of the components of an internal control system and corporate governance as control variables. In the second stage, the study estimates the relationship between the component of an internal control system and the financial performance of SMEs while controlling for corporate governance and the control variable. In the third stage, we estimate the relationship between the moderating variable (corporate governance) and the dependent variable. The final step involved incorporating the moderating variable into the model that tests the relationship between independent variables and the dependent variable and controlling for the control variable of age and foreign ownership. The results of the regression analysis are presented in Table 4 below.

The results of the first regression analysis in Table 4 showed that there is a positive and statistically significant association between the age of the SME and its financial performance. The result further showed that foreign ownership is positively associated with the improved financial performance of SMEs registered with AGI in Ghana. Both positive association results are statistically significant at a 5% significance level which implies that both age and foreign ownership are significant determinants of the financial performance of SMEs registered with AGI in Ghana.

Table 3. Descriptive statistics and Pearson correlation analysis

	Mean	SD	1	2	3	4	5	6	7	8	9
1. CE	4.229	0.750	1.000								
2. CA	4.117	0.320	0.356	1.000							
3. RA	4.249	0.230	0.2145	0.174	1.000						
4. I & C	4.186	0.621	0.186	0.372	0.282	1.000					
5. M	4.344	0.481	0.225	0.406 ^b	0.196	0.098	1.000				
6. CG	3.896	0.243	0.456 ^b	0.431 ^b	0.307	0.169	0.403	1.000			
7. Age	12.458	0.198	0.196	0.104	0.289	0.274	0.327	0.384	1.000		
8. FOWN	0.357	0.857	0.416 ^b	0.393 ^b	0.203	0.209	0.353	0.493 ^b	0.286	1.000	
9. FP	0.411	0.207	0.578 ^b	0.546 ^b	0.764 ^a	0.875 ^a	0.706 ^a	0.897 ^a	0.484 ^b	0.515 ^b	1.000

^ameans the correlation is significant at a 0.01 significance level

^bmeans the correlation is significant at a 0.05 significance level

The second regression focused on the influence of the major independent variables (components of internal control systems) on the financial performance of the SMEs registered with AGI. The study found a significant positive association between a good control environment and the financial performance of SMEs registered with AGI ($\beta = .130, p < .05$). The study further found that effective control activities are positively associated with the financial performance of SMEs registered with AGI in Ghana and statistically significant as well ($\beta = .142, p < .05$). In addition to the above, the second regression result also revealed a positive coefficient between risk assessment and financial performance of SMEs registered with AGI in Ghana and the relationship is statistically significant as well ($\beta = .208, p < .05$). Also, the regression result showed a significant positive relationship between effective information and communication and the financial performance of SMEs registered by AGI in Ghana ($\beta = .098, p < .1$). Finally, the regression results showed a positive coefficient between effective monitoring and financial performance of SMEs registered with AGI in Ghana and the positive coefficient is statistically significant as well ($\beta = .095, p < .1$). The overall result of the second regression analysis shows that effective internal control system will translate into improved financial performance of SMEs registered with AGI in Ghana. Also, all five components of the internal control system contribute about 53% of the changes in the financial performance of SMEs registered with AGI in Ghana.

The third regression estimated the relationship between corporate governance practice and the financial performance of SMEs registered with AGI in Ghana. The result of the regression analysis showed that there is a positive coefficient between corporate governance practice and the

Table 4. Hierarchical regression results

		Model 1	Model 2	Model 3	Model 4
		Beta	Beta	Beta	Beta
Step1	Control variables	0.191**			
	Age	0.105**			
	Foreign ownership				
Step2	Independent variables				
	Control environment		0.130**		
	Control activities		0.142**		
	Risk assessment		0.208**		
	Information and communication		0.098*		
	Monitoring		0.095*		
Step 3	Moderating variable				
	Corporate governance practice			0.502***	
Step 4	CE *CG				0.513***
	CA*CG				0.485***
	RA*CG				0.548***
	I&C*CG				0.517***
	M*CG				0.515***
	R-square	0.490	0.557	0.385	0.720
	Adjusted R2	0.483	0.531	0.326	0.695

* $p < .05$, ** $p < .01$, *** $p < .001$

financial performance of SMEs registered with AGI in Ghana. The positive association between the two variables is statistically significant at a 1% significance level ($\beta = .502$, $p < .01$). The above result is consistent with the expectations of the agency theory and also consistent with the findings of Padi and Musah (2022) who found that effective corporate governance improves the financial performance of SMEs in Ghana.

The final regression analysis in model 4 of Table 4 focused on the moderating effect of corporate governance practices on the relationship between the five components of an internal control system and the financial performance of SMEs registered with AGI in Ghana. The result shows that the moderating role of corporate governance on the relationship between control environment and financial performance is positive and statistically significant ($\beta = .513$, $p < .01$). The study also found that the moderating effect of corporate governance on the relationship between control activities and financial performance of SMEs registered with AGI is positive and statistically significant as well ($\beta = .485$, $p < .01$). The regression analysis further revealed that the moderating role of corporate governance on risk assessment and financial performance is positive and significant ($\beta = .548$, $p < .01$). In addition to the above, the result of the analysis showed that the moderating role of corporate governance on information and communication and financial performance is positive and also statistically significant ($\beta = .517$, $p < .01$). Finally, the regression result in model 4 revealed that the moderating role of corporate governance on monitoring and financial performance of SMEs registered with AGI is positive and statistically significant ($\beta = .515$, $p < .01$). The effect of the results of the 4th model is that good corporate governance moderates the relationship between all the five component of internal control system and financial performance of SMEs registered with AGI in Ghana.

16. Discussion of findings

The result of the hierarchical regression analysis showed that the findings of the study support the conceptual framework proposed for the study and also consistent with the expectations of the agency theory. The result in effect also confirms all hypotheses proposed for the study. The result shows that the effective internal control system enhances the financial performance of SMEs registered with AGI in Ghana. The study also showed that good corporate governance practices moderate the relationship between an effective internal control system and the financial performance of SMEs registered with AGI in Ghana.

The results of the second regression analysis showed that the five major components of the internal control system proposed by COSO contribute 53% of the variation in the financial performance of SMEs. The result confirms the prediction of the first five hypotheses (H1 to H5) arguing that each of the major components of internal control system according to the COSO framework will translate into the improved financial performance of SMEs. Concerning H1, the study found a significant positive relationship between the control environment and the financial performance of SMEs registered with AGI in Ghana ($\beta = .130$, $p < .05$). The result is consistent with the argument of the agency theory that improved control environment will reduce management opportunistic behaviour and protect the company's resources which will translate into improved financial performance. The result is consistent with the findings of Tetteh et al. (2022) and Adegboyegun et al. (2020) who reported a positive and significant relationship between an effective control environment and the financial performance of SMEs registered with AGI in Ghana. The results imply that entities with good ethical standards, integrity, commitment to competence, good leadership philosophy etc will translate into enhanced financial performance. Concerning H2, the result of the study supports H2 which predicted a significant positive relationship between having good control activities and the financial performance of SMEs registered with AGI in Ghana. The result is consistent with previous studies that also found a positive and significant association between good control activities and the financial performance of organizations (Bruwer et al., 2018; Chen et al., 2020; Lawson et al., 2017; Park et al., 2019; Tetteh et al., 2022). The result implies that entities with well-established separation of duties, where corrective actions are taken to address weaknesses in a control system,

competent and well-trained staff to manage the financial reporting system etc will have improved the financial performance of SMEs. The regression analysis in the second model also confirmed the third hypothesis of the study which predicted that effective risk management as a component of the internal control system is positive and significantly associated with the financial performance of SMEs registered with AGI ($\beta = .208, p < .05$). The result suggests that SMEs that have effective and continuous risk assessment will translate into improved financial performance. This result is contrary to the findings of Tetteh et al. (2022) and Adegboyegun et al. (2020) who found an insignificant relationship between risk assessment and the financial performance of entities. In addition to the above, the study found that information and communication as a component of internal control are significant and positively associated with the financial performance of SMEs registered with AGI in Ghana. This result just highlights the importance of information and communication and does not only confirm H4, but the result also agrees with the results of Tetteh et al. (2022). Finally, the study found that effective monitoring is positively associated with improved financial performance and the relationship is statistically significant at a 10% significance level.

The study found that corporate governance moderates the relationship between all five components of internal control system and the financial performance of SMEs registered with AGI in Ghana. The Adjusted R² of 69.5% of the 4th model shows that good corporate governance practice improves the relationship between the internal control system and the financial performance of SMEs as compared to the internal control system alone. The regression coefficient for all the five-component improved which also confirms the 6th hypotheses of the study that predicted that corporate governance moderates the relationship between the components of internal control system and the financial performance of SMEs. The result implies that SMEs with effective corporate governance systems will enhance the effectiveness of the internal control system and thereby improve the financial performance of these entities. The result confirms the argument that SMEs with effective boards and an independent audit committee guarantee the independence of the internal audit unit and improve the relationship between the component of the internal control system and the financial performance of these entities. The result confirms the findings of Gamagelaw and Keving (2018) who found evidence that good corporate governance practices enhance the effectiveness of the internal control system even though their study did not link that to financial performance. The result is consistent with the expectations of the agency which predict a link between effective governance structures and control systems to protect their assets and also reduce management opportunistic behaviour will improve the financial performance of the organization.

17. Conclusion and recommendation

The study examined the effectiveness of the internal control system on the financial performance of SMEs registered with AGI. The study further examined the moderating effect of corporate governance on the relationship between the internal control system and the financial performance of SMEs registered with AGI. The study examined all five components of the internal control system proposed by COSO which include control environment, control activities, risk assessment, information and communication and monitoring. The study adopted the hierarchical regression model to test the moderating role of corporate governance on the relationship between effective internal control systems and the financial performance of SMEs registered with AGI. The results of the study showed that all five component of the internal control system enhances the financial performance of SMEs registered with AGI in Ghana. The study found that SMEs registered with AGI who have invested heavily to institute effective internal control systems such as creating an ethical environment, conducting business with integrity, proper segregation of duties, development of preventive and detective control measures, periodic risk assessment to identify and correct weaknesses in the control systems, monitoring the control system to ensure they are working according to plan improves the financial performance of these entities. The study further showed that corporate governance moderates the relationship between the five components of internal control and the financial performance of SMEs registered with AGI in Ghana. The results imply that SMEs must improve their corporate governance

practices to enhance the effectiveness of the internal control system which will ultimately improve the financial performance of SMEs. In effect, corporate governance strengthens the relationship between all five components of the internal control system and the financial performance of SMEs registered with AGI. SMEs registered with AGI who have complimented the instituting of effective internal control systems with good corporate governance structure enjoy the more improved financial performance. The results of the study have significant policy and research implications.

First, the study emphasises the important role corporate governance play in ensuring the effectiveness of internal control systems for SMEs. This implies that businesses that want to enjoy the full benefit of an effective internal control system must not only focus on the major component of the internal control system alone, but they must also ensure that there are accompanying corporate governance structures to complement the internal control system to ensure that it delivers the outcomes predicted by the COSO framework for internal control systems.

Second, the study supports the agency theory given the fact that effective internal control system and corporate governance structures which are geared towards reducing agency conflict and aligning the interest of management and shareholders helps to improve the financial performance of the SMEs which implies a value for money for shareholders.

Third, the result has significant policy implications as it highlights the important role that corporate governance plays in ensuring effective internal control systems and its impact on the financial performance of businesses in Ghana. The result implies that there is the need to not only pay attention to the control systems that organizations institute but the needed governance structures that support the well functioning of these control systems by policymakers in Ghana to realize the objective of improved financial performance.

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