The effects of healthcare governance and ownership structure on the performance of hospitals in Ghana

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Abstract

Purpose – The purpose of this study is to examine the effects of health-care governance and ownership structure on the performance of hospitals in Ghana.

Design/methodology/approach – The study uses multiple regression models based on a sample of 132 hospitals in Ghana.

Findings – The results of the study indicate that hospitals with a governing board perform better than those without a governing board. The results of this study also suggest that board characteristics and ownership structure are important in explaining the performance of hospitals in Ghana. The results further indicate that mission-based and private hospitals with effective board governance structures exhibit better performance than public hospitals.

Originality/value – This study makes a number of new and meaningful contributions to the extant literature and the findings support managerialism, stakeholder and resource dependency theories. The findings also have important implications for the effective governance of hospitals.

Keywords Performance, Hospital, Ownership structure, Health-care governance

Paper type Research paper

1. Introduction

The capacity of any government to provide good standard of health care is considered as one of the most important elements contributing to a country’s standard of living, and hospitals play a major role in the delivery of health care. However, in recent times, health-care institutions seem to be confronted with major challenges, including crisis in health service delivery, difficulty in dealing with the pressures and numerous paradoxes by health-care organizations (Troyer et al., 2004). The need to improve quality of care and patient safety, in the midst of declining revenues and rising expenses, increasing service demand due to strained capacity, a rising uninsured population, an aging population using more health-care resources and more competition between hospitals and physicians, to name a few, make the issues of health care diverse and complex (Savage et al., 1997). The intensity of these issues raises greater concern than ever before and contributes to a loss of public and other stakeholder trust in health-care institutions.
Storey and Buchanan (2008) argue that progress in health care compared with certain other sectors is slow and mistakes continue to occur. The governing board of a health-care organization is ultimately accountable for maintaining the public’s trust. Hospital boards, management and clinical leadership are expected to communicate a clear sense of urgency for change to strengthen the connection between hospitals and their communities, as suggested by Suchman (1995). This is necessary to ensure the success of the organization and to address the challenge of transforming health care to overcome the numerous obstacles confronting hospitals and health-care systems today. It is the responsibility of the board to ensure a higher standard of performance and accountability by engaging in practices that foster exceptional governance (Health Research and Educational Trust, 2007). This is because there is increasing recent evidence that suggests good governance is linked to performance (Ntim and Soobaroyen, 2013; Kumar and Zattoni, 2013), though previous studies have suggested otherwise (see Hermalin and Weisbach, 1991; Sing and Davidson, 2003).

Despite the numerous challenges facing the health-care sector, few studies exist on the effect of health-care governance on hospital performance. The few studies that exist have also mainly focused on a small number of developed countries (see Boeker and Goodstein, 1991; Molinari et al., 1993, 1995; McDonagh, 2006; Culica and Prezio, 2009). However, political and administrative reforms in many developing countries directly shape what is to be referred to as good governance or best practice. Hence, using findings from such studies (in developed countries) may suggest imposing a false one best way model on all countries (Andrews, 2010). Thus, there is a gap in knowledge with regards to how health-care governance might influence the performance of hospitals from the perspective of developing countries, and Africa in particular. There are several issues confronting the health system of developing African countries, including shortage of appropriately trained and motivated health workers, marginalization of African traditional medicine in national health systems and inadequate community involvement and empowerment. Other problems include paucity and inadequate use of available evidence and information to guide action, including the use of information and communications technology, effective co-ordination with other sectors and harmony with partners not yet attained, lack of optimal inter-sectoral action and coordination, among others (Africa Health Strategy, 2007 Index). Also, hospitals in some developed countries like the USA are mostly based on managed care contracts, multi-hospital system and are run on corporate lines; therefore, their measures of performance are mainly based on profitability (Molinari et al., 1995; Goes and Park, 1997). This is often not the case in most developing countries, especially in Africa, where performance is looked at in terms occupancy, discharge and efficiency.

This study focuses on one important African country, Ghana, as it provides an interesting setting to investigate the issue of health-care governance and performance of hospitals. The provision of quality health care in Ghana has received a lot of support and attention from both governmental and non-governmental agencies, resulting in Ghana’s health sector being seen as one of the best performing health sectors in the West African sub-region (Abekah-Nkrumah et al., 2009). However, there are still agitations within Ghana concerning the performance of the sector considering the massive inflow of resources into the sector. For instance, Bruno et al. (2010) suggested that the effectiveness of human resource management policies and strategies is rather weak, resulting in a number of weaknesses that limit their potential to inform decisions of policymakers or health service managers. Another performance area of concern is the slow rate of maternal mortality.
reduction of 3.3 per cent compared to 5.5 per cent annual rate required to attain the Millennium Development Goals 5 target of 185/100,000 by 2015 (World Bank, 1993). It is also believed that a good amount of health spending is wasted due to inefficiencies and poor investment. Various media reports on fraudulent activities, various acts of conflict of interest by governing board members and the numerous challenges facing the health sector in Ghana make it important to find out how accountable leadership has been in the governance and management of the country’s hospitals. As the media offers important insights into public thinking (Davies and Shields, 1999), it can be argued that these media anecdotes and reports re-emphasize both the importance and urgency needed in tackling the challenges of governance in the health-care sector in Ghana.

In addition to these, the performance of health facilities has rather been observed as being unbalanced (Abekah-Nkrumah et al., 2009). It is possible that the performance issue at the health facility level is partly due to a governance challenge, hence, the need for this study. This study examines the effects of health-care governance and ownership structure on the performance of hospitals in Ghana. The study is an important area worth investigating, considering that health-care governance and ownership structures and for that matter performance measures of hospitals in developed countries may differ from those of developing countries like Ghana.

This study contributes to the extant literature in a number of respects. First, this study adds to the advancement of the health-care governance research agenda by looking at the issue of hospital governance and performance from the perspective of an African country. Previous studies have tended to focus on developed countries with different governance systems. Second, this study examines the characteristics of hospital boards across various ownership forms. This facilitates easy comparison of the characteristics of boards of the various forms of hospitals, which is ignored in prior studies. Third, the present study focuses on both hospitals with boards and those without boards to ascertain whether or not the presence of a hospital board affects performance. Prior studies focused on only hospitals with boards by just looking at the effects of board characteristics on hospital performance. Fourth, this current study includes ownership structure as a determinant of hospital performance and also shows how different ownership structures together with the effects of the characteristics of hospital boards on performance. To the best of the researcher’s knowledge, this is the first study that considers the interaction effects of the characteristics of hospital boards and ownership structure affects on performance. Fifth, this current study considers non-profit measures of performance, considering the fact that hospitals in developing countries are not purely profit making as pertains in some developed countries.

The rest of the paper is structured as follows: the next section reviews existing literature in relation to health-care governance. Section 3 describes the methodology used for this study. Section 4 discusses the empirical findings. Finally, Section 5 concludes the study with some policy implications.

2. Literature review
2.1 Theoretical foundation
Health-care governance is regarded as the process of steering the overall functioning and effective performance of a hospital by defining the hospital’s mission, setting its objectives, supporting and monitoring their realization at the operational level (Flynn, 2002). It includes the responsibility and accountability for the overall operation of the health
facility. More specifically, health-care governance has been conceived of as a shared process of top-level organizational leadership, policy-making and decision-making of the board, chief executive officer (CEO), senior management and clinical leaders. It is an interdependent partnership of leaders and though the hospital board has the ultimate accountability, the CEO, senior management and clinical leaders are involved in top-level functions (Bader, 1993; Bennington, 2010; Alexander et al., 2003). Bader (1993) suggested the need of having all perspectives in the hospital involved to make governance in a hospital setting work effectively.

According to Eeckloo et al. (2004), most hospitals have their own governing boards and a professional team of executive managers, and together they constitute the “axis of hospital governance”; they argue that the purpose of the health-care governance is to enable a more integrated approach of supporting and supervising all hospital activities, including clinical performance. Flynn (2002) and Eeckloo et al. (2004) define healthcare governance as the process of steering the overall functioning and effective performance of a hospital by defining [its] mission, setting objectives and […] [having them realized] at the operational level. This supports the position of Taylor (2000) that one of the key elements needed to achieve excellence in hospital governance is having a clear mission and an achievement-orientated culture in which to realize it. However, there are continued reports of poor performance, sometimes with tragic consequences that cause widespread public concern (Davies and Shields, 1999). A number of governance theories exist that explain the governance systems and structures of organizations. We discuss the various governance theories that are relevant in explaining health-care governance and these are managerialism, stakeholder theory and resource dependency theory.

2.1.1 Managerialism theory. The managerialist perspective believes that having top-level management being part of the governing board enhances board decision-making and effectiveness. This perspective argues that informational advantages necessary to keep boards informed and capable of making sound decisions is provided when there is insider board participation (Molinari et al., 1995). Molinari et al. (1995) continued to argue that boards need the knowledge and information of top-level insiders who are involved in the day-to-day running of the firm to guide board members in operational decision-making and governance activities. Thus, insiders’ knowledge and experience will afford the board the ability to monitor and govern the firm more effectively (Baysinger and Hoskisson, 1990).

Hospital boards typically include the CEO and medical staff members. The CEO on the board is expected to provide administrative information concerning the hospital, while the medical staff members keep the board well-informed about the hospital’s service and delivery issues (Molinari et al., 1995). Medical staff representation on the board may include inside and outside physicians. Inside physician board members are physicians who are medical staff members of the particular hospital, whereas outside physician board members are physicians who are not staff members of the particular hospital. Molinari et al. (1995) suggested that medical staff members’ knowledge regarding the clinical aspects of the hospital, as well as their ability to influence the board’s decision-making through their voting privileges, is likely to lead to clinically and fiscally sound board decisions. Therefore, hospitals with medical staff participation on the board are expected to be more effective than those without medical staff participation. Also, in the case of hospital boards with medical staff participation, boards with voting medical staff participation are more effective than those without
voting medical staff representation. Thus, an effective hospital board is expected to include medical staff participation.

2.1.2 Stakeholder theory. Stakeholder theory suggests the need for organizations to satisfy all stakeholders of the organization and recognize the interest of these stakeholders and address them through appropriate strategies (Christopher, 2010). Stakeholder theory is in line with the evolution of corporate governance whereby the concept was broadened to include not just shareholders but also all stakeholders of the organization. This theory operates on the premise that managers will treat the interests of all stakeholders as if they have intrinsic value to the firm. It is also assumed that no one set of interests will dominate over another (Murphy and O’Donohoe, 2006; Jamali, 2008). Stakeholder theory suggests that the composition of the board should consider representatives of all interested parties to ensure consensus among stakeholders. The board is a mechanism for addressing conflicts and creating the necessary cohesion. The representation of all stakeholder groups on boards is, therefore, necessary for effective corporate governance (Donaldson and Preston, 1995). Luoma and Goodstein (1999) found that corporations were under increased pressure to include stakeholders such as suppliers, customers, employees and members of the public on their board of directors. They suggest that this pressure was in response to the need for corporations to deal more effectively with public and government scrutiny. They also suggest that the pressure was as a result of the adoption of statutes that gave the board the right to consider the interest of non-shareholder interests, as well as the growing size and complexity of today’s modern corporation.

The stakeholder theory provides the basis for managers to understand the various needs of the extended stakeholder base and reconcile it with the various purposes of the organization. This enables them to maximize stakeholder value. The stakeholder theory addresses and recognizes that organizations have a myriad of stakeholders and then seeks to integrate their needs through the creation of multiple objectives. There are, however, differing definitions and views on who the stakeholders really are, and also exactly which stakeholders’ interests are most important and deserve the urgent attention of managers or board (see Mitchell et al., 1997). It is argued that this theory is particularly important for developing and implementing adequate governance mechanisms and processes relative to the broader environmental influences and interdependencies of organizations with various internal and external stakeholders (Christopher, 2010). Vincent-Jones et al. (2009) suggested that public participation initiatives in health care are considered part of a new trend in democratic societies towards an increased role for citizens and service-users in public services governance. Representation of community stakeholders on boards is essential, and given the changes in the market, strategic thinking may be a critical activity. Therefore, board members are likely to support strategic activities that are compatible with their backgrounds and the interests of the populations they represent. In many communities, hospital boards are the only and most influential venue for local community leaders to affect health care decision-making (Alexander et al., 2001). Hospital board members must therefore be seen as community advocates.

2.1.3 The resource dependency theory. The resource dependency theory posits that the ability of organizations to operate under an environment of complexity associated with its wider interdependencies is directly related to the quality and effectiveness of the directors who make up the board or its “board capital” (Pfeffer, 1972; Pfeffer and
The board’s human capital resources are accrued from the collective experience and expertise of board members. It is argued that firms are better off with large boards. Each new board member brings both expertise and access to resources. Having more board members would, therefore, provide the firm with greater expertise and access to resources. These resources could include access to markets, access to new and better technologies and access to raw materials, among other things. Large boards are more likely to contain directors with greater diversity in education and industry experience. This diversity allows the board members to provide management with high-quality advice (Zahra and Pearce, 1989). According to Christopher (2010), directors must be equipped with the skills, knowledge and expertise to be able to build effective external relationships and secure adequate resources to address the interest of these multiple stakeholders and wider environmental impacts under current operating condition. Prior studies indicate a positive correlation between board capital and firm performance (Pfeffer, 1972; Boyd, 1990; Dalton et al., 1999). Others (see Johnson et al., 1996; Hillman et al., 2000; Daily et al., 2003) show that directors who bring value or resources to an organization are able to improve the effective operation of an organization; therefore, they enhance organizational performance and prospects for survival. Pfeffer and Salancik (1978) and Zahra and Pearce (1989) explained the service role of directors as enhancing the company reputation, establishing contacts with the external environment and serving as council to executives.

The resource dependence approach, developed by Pfeffer (1972) and Pfeffer and Salancik (1978), emphasizes that external directors enhance the ability of a firm to protect itself against the external environment, reduce uncertainty and/or co-opt resources that increase the firm’s ability to raise funds or increase its status and recognition. It is also argued that a board composed of influential members from the organization’s external environment performs a boundary-spanning function that absorbs uncertainty, reduces operational dependencies, exchanges information, represents the organization to external stakeholders and enhances the overall performance (Middleton, 1987). Organizations attempt to reduce the uncertainty of outside influences to ensure the availability of resources necessary for their survival and development. The board is, hence, seen as one of a number of instruments that may facilitate access to resources critical for company success. In the case of hospitals, the resource dependency theory may also explain the relevance of having medical staff on the hospital board. The hospital board typically includes medical staff members who are expected to keep the board informed about the hospital’s service and delivery issues (Medical Leadership Forum, 1992). Considering the increasingly complex environment in which organizations operate and an increasingly competitive environment, there seem to be the need for skilled directors to steer organization in the right direction. The resource dependency theory also has obvious implications for the size, diversity and composition of boards of directors and implications for the selection and profile of senior managers and the consequent governance processes in the furtherance of effective governance (Christopher, 2010). Thus, the impact of such a high-quality board of directors is an improvement in the entire efficiency of the organization, thus minimizing cost (Williamson, 1984).

In view of the complexity of the issues confronting the health-care sector, it can best be understood and adequately investigated when looked at under the lenses of
multi-theoretical stances. Having considered the various theories underpinning health-care governance, it is appropriate to appreciate what existing studies have found in the area of health-care governance and its relevance in the performance of health-care institutions, and how the extant literature has led to the formulation of hypothesis to guide this current study.

2.2 Empirical literature and hypotheses development

This section provides a framework for analyzing the effects of hospital governing boards, ownership structure and control factors on the performance of hospitals. The extant literature suggests that the performance of hospitals is influenced by the presence of hospital board. Hospital performance is also explained by hospital board characteristics, hospital ownership structure and other control variables. In the light of the above discussions, a number of specific hypotheses are formulated to test the effects of the presence of hospital board, board characteristics, ownership structure and control factors on the performance of hospitals.

2.2.1 Presence of hospital board. The presence of hospital board is very important in affecting the performance of hospitals. Hospital governance is said to be the process of steering the overall functioning and effective performance of a hospital by defining its mission, setting objectives and having them realized at the operational level (Flynn, 2002; Eeckloo et al., 2004). Hospital boards serve as an important component of health-care governance, and they play a crucial role in the health care delivery system. The hospital board is accountable for the overall performance of the hospital and also contributes in shaping the health facility they represent. Their functions include fundraising, establishing operating procedures, enlisting the support of others, budgeting and fiscal control and balancing the organization with differing viewpoints (Fenn, 1971). They act as policy-makers, focusing on establishing mission and a strategic direction for the hospital; others assume the role of boundary spanners, focusing on building and maintaining relations with key external constituencies and fundraising; while still others devote much of their time and attention to overseeing the performance of the hospital and its management team (Widmer, 1993). Based on the discussion on the importance of hospital board in influencing performance, it is hypothesized that:

H1. The presence of hospital board is related to higher performance.

2.2.2 Board size. Board size is the number of board members on the hospital board. The size of the hospital board is said to affect the performance of the hospital. Some researchers (see de Andrés-Alonso et al., 2009) believe that larger boards are capable of delivering better performance. This is believed to be accounted for by the increased range of expertise larger boards present in reaching decisions. Also, larger boards make it difficult for powerful CEOs to have their way. Zahra and Pearce (1989), for instance, argue that board size is said to be associated with a wide range of expertise on the board and the breadth of participation in decision-making. This position is based on the resource dependency theory, which seems to suggest the availability of skill, knowledge and expertise they bring to bear to build effective external relationships and secure adequate resources for the operation of the organization found within larger boards (Christopher, 2010). The stakeholder theory also points to need to consider all interested
It is, however, argued that larger boards are detrimental to performance. Lipton and Lorsch (1992), for instance, suggest that large boards tend to reduce effectiveness, thereby allowing powerful CEOs to exert some level of control. In examining whether the size and occupational configuration of hospital governing boards were related to the institutions’ efficiency and quality of care, Kaufman et al. (1979) found that larger boards were associated with higher costs. In the view of Jensen (1993), maintaining small boards can help improve their performance and that larger boards are less likely to function effectively. The argument is that larger boards are said to increase coordination costs and free-rider problems. Therefore, smaller boards are preferred. Baysinger and Butler (1985) and Kosnik (1990) explained that accountability by directors is increased with smaller boards. In examining the governance structures of health-care organizations as reported by health-care leaders, Delbecq and Gill (1988) found that large boards are not appropriate for the purpose of developing timely and strategic policies. Bader (1991) found that boards are able to function better when they have a workable board size and that the health system works best with lean governing boards having the average of seven to ten members. Gu et al. (2010) found that higher-performing hospitals tended to have smaller boards. In her study of German hospitals, Büchner (2012) observed that board size should not exceed a critical threshold because a large board may delay decisions, thus adversely affect performance. A small board size ensures that the board members focus more on their role within the hospital system, thus it is hypothesized that:

\[ H2. \] Larger Board size is associated with lower hospital performance.

2.2.3 Board composition. Board composition is the percentage of outsiders on the hospital board. The issue is whether to rely on more outside (or more inside directors). The argument in support of having inside directors is that they are familiar with activities of the organization and serve as monitors to top management. Jermias (2007) suggested that board independence has a negative effect on innovative efforts and performance. His finding agrees with the theory of managerialism, which posits that inside directors are able to motivate managers better than outside directors to undertake profitable projects because they have superior access to firms’ specific information. Others such as Delbecq and Gill (1988) and Molinari et al. (1993) argue that having a high proportion of directors with business-related occupations enables the board to receive up-to-date operational information and financial and strategic expertise.

Other studies (see Jensen, 1993; Yermack, 1996), however, seem to suggest that outside directors are rather active in influencing performance. Having a high proportion of non-executive directors is likely to increase the independence of the board, and this provides a better forum for decision-making. It is also believed that board monitoring quality will be stronger with more external or non-executive directors. Fama and Jensen (1983) suggested that board members especially outside directors have the incentive to develop reputations as experts in corporate decision-making, and this aspiration commits them into making quality decisions. Generally, the board is said to be more independent when it has a higher percentage of outside directors. Some researchers have pointed to the important role of outside directors in monitoring and advising, both of which have the tendency of enhancing performance (Byrd and Hickman, 1992; Brickley...
et al., 1994). Baysinger and Hoskisson (1990), and Gautam and Goodstein (1996) explained that outside directors are necessary to adequately monitor top management’s performance. Dalton et al. (1999) argue that the independence of directors is an essential requirement for board effectiveness. Others such as Conger et al. (2001) and Ibrahim et al. (2007) showed that inside directors’ work for the CEO, and thus are reluctant to oppose and challenge strategic proposals of the CEO. This has the tendency of adversely affecting performance. On the other hand, increasing the number of outside directors on the board results in enhanced board effectiveness and better performance of the organization they govern. Board composition enhances board monitoring and effectiveness, which could lead to improved performance; therefore, it is hypothesized that:

**H3.** A board composed of a higher proportion of outsiders is related to higher performance.

### 2.2.4 Board participation by medical staff

The participation by medical staff on the hospital board is also important in influencing performance. From the theoretical viewpoints of managerialism and resource dependency, hospitals benefit from involving inside or outside physicians in their governance structures. Apart from technical/operational knowledge of the hospital, medical staff can also serve as patient referral links. Equally so, outside physician board members inform board members about patient care issues and practices. Both theories provide reasonable explanations underlying the enhanced hospital performance of boards with inside or outside physician participation (Molinari et al., 1995). It is argued that participation of medical staff on the board is important in reducing potential conflict between the goals of the system and those of the medical groups and this may align the interests of the organization and affiliated physicians. Also, having medical staff being represented on the board enables members gain necessary information about the internal efficiency of the hospital (Young et al., 1992; Alexander et al., 1995). Medical personnel are usually interested in delivering quality health care and, therefore, their presence on the hospital board should enhance quality health care (Gardner, 1992; Gautam and Goodstein, 1996). Ibrahim et al. (2007) also argued that board members with health care background are more interested in the immediate need to deliver quality services. Shortell and LoGerfo (1981) found that medical staff board participation improves hospital quality outcomes such as surgical mortality rates.

Prior studies have shown that hospitals with medical staff participation on the hospital board tend to exhibit better performance (see Molinari et al., 1993; Molinari et al., 1995; Goes and Zhan, 1995; Prybil, 2006; Gu et al., 2010). Goes and Zhan (1995) also observed an improvement in hospital performance when physicians are members of the board of directors of the hospital. In a study of hospitals in California by Molinari et al. (1993), they find that medical staff board participation has a significantly greater influence on hospital performance. They also indicated that medical personnel on the board were given voting privileges that had greater influence on the performance of the hospital as compared to non-voting medical participation. In their other study, Molinari et al. (1995) found that participation of physicians on the hospital board has a significantly positive effect on hospital operating margin. They explain that physician involvement in hospital governance results in positive benefits to the hospital. Prybil (2006) also found that high-performing hospitals had a greater proportion of medical
staff voting members. Gu et al. (2010) confirmed in their study that hospitals that have greater percentage of physicians on the hospital board tend to show higher performance. Therefore, it is hypothesized that:

\[ H4. \] A board consisting of a higher proportion of medical staff is associated with higher hospital performance.

2.2.5 Board leadership structure. Board leadership structure also influences hospital performance. The board leadership structure or CEO duality is looked at in terms of the position of the CEO on the hospital board. The hospital board typology may be such that the CEO also serves as the chairman of the board or it may be such that two different persons occupy the positions of CEO and board chair. McDonagh (2006) explained that the CEO plays a unique role, as he represents both management and governance, which makes the issue of leading the board even more critical. They suggest that the CEO’s important role helps in attaining good board performance. Orlikoff (2005) argues that the CEO has a greater responsibility on his shoulders in ensuring a cordial relationship with the board considering the challenges health-care boards face currently. Orlikoff describes the board as a very complicated one in the sense that the CEO plays a dual role: both leading and reporting to the board. The board is composed of many unique individuals; some boards interact as partners and leaders, while others as followers. This variation and complexity requires skilled leadership to bring about the board’s effectiveness. This is supported by the managerialism theory, which recognizes the role of the CEO in the daily running of the hospital and the need to be part of the hospital board. This is important for the board to receive regular updates on operational and administrative issues to be able to take well-informed decisions. The question, therefore, is whether the CEO should equally serve as the board chair or the positions of CEO and chairperson are decoupled. The extant literature recommends a board leadership structure where two different people perform the roles of the CEO and board chairman and this has the tendency of enhancing board effectiveness, while CEO board duality adversely affects performance. Therefore, it is hypothesized that:

\[ H5. \] Board leadership structure adversely affects hospital performance.

2.2.6 Board diversity. Board diversity has been identified as an important determinant of performance with a number of studies, suggesting that it can improve governance, performance and disclosure (Carter et al., 2003; Barako and Brown, 2008). Board diversity is broadly defined to include the various attributes that may be represented among directors in the boardroom in relation to board decision-making (see Van der Walt and Ingleby, 2003). They grouped these attributes as those that are directly observable (age, gender, ethnicity and nationality) and those that are less visible (religion, education and occupation) (see Mahadeo et al., 2012). In this study, board diversity is defined as the proportion of women on a hospital’s board. Available literature suggests that firms would benefit by engaging women on their boards of directors (Burke, 1994; Burke, 1997). Pearce and Zahra (1991), for instance, note that a representation of diverse interests, including the number of female and minority members, was an important characteristic of an effective board. According to Bilimoria (2000), having women on boards is desirable business practice because it is likely to improve the reputation on the firm, the strategic direction (by better understanding women’s issues that may impact on such direction) and also contribute positively to the
firm’s female employees. Siciliano (1996) reported that boards with increased gender diversity are more likely to enjoy high levels of social agency mission achievement. Burke (1997) found a significantly positive relationship between the number of females on boards and revenue and profit margins. Singh et al. (2001) also found that boards with female directors could be associated with higher revenue and profitability. This position is supported by another study by Carter et al. (2003), who found a positive relationship between board diversity and firm value.

The importance of having women on hospital boards has gained so much recognition in recent times. Most hospital boards normally would like to employ the most talented, dedicated and accomplished people, and increasingly these people are found to be women and people of color with different perspectives, experiences, social network relationships and problem-solving approaches. This increases the diversity of their boards and, hence, hospital governance (and for that matter, hospital management), which many recognize as not only a moral or social issue but also a question of effectiveness and competitiveness (Galindo, 2006). Elstad and Ladegard (2010) argue that the higher the proportion of females on the board, the greater the level of perceived influence, perceived social interaction outside the boardroom and, to some degree, perceived information sharing. It is expected that boards of diverse gender background may benefit from the experiences and perspectives women bring to bear in board boardroom discussions and subsequently improve performance. Thus, it is hypothesized that:

\[ H_6 \] Board diversity on the basis of the proportion of female representation is associated with hospital higher performance.

2.2.7 Frequency of board meetings. The frequency of board meetings has been identified as an important determinant of performance. Board meetings are useful for the board to receive important information that helps it evaluate the performance of the firm through these meetings. A board’s authority is exhibited in the number of times it meets (Eeckloo et al., 2004). This means a board cannot be called a board with the mandate to make decisions and take action, when it is not meeting. In differentiating between good and great boards, it was concluded that exceptional boards make meetings matter (BoardSource, 2005). It stands to reason that frequent board meetings are important to ensure the board’s effectiveness. Previous studies have found a positive relationship between number of board meetings and performance. For instance, Lipton and Lorsch (1992) found that most directors face the problem of lack of time to carry out their duties, and that board meeting time is an important resource in improving the effectiveness of a board. This position is supported by Vafeas (1999), who also suggested that frequent meeting is an important dimension of an effective board as operating performance of firms improves following years of increased board meetings. However, Culica and Prezio (2009) found that boards that met less than six times a year had higher marginal profit on average over three years than hospitals whose boards met more than 12 times every year. This means meeting between 7-12 times was associated with lower financial performance than having six or less meetings, but still significantly higher than the hospitals whose boards met more than once per month. Thus, holding a board meeting almost every month or more often was not a good method to increase performance. This finding could be explained by the reason that having meetings spaced out allowed for
more time to get information in advance and prepare for meetings to improve organizational performance. It is, therefore, hypothesized that:

H7. The frequency of board meetings is associated with higher hospital performance.

### 2.2.8 Hospital ownership structure.

The strategic focus of the hospital will have implications for performance. For-profits organizations have well-defined control rights, and they have strong incentive to invest in innovations, but they may over-emphasize cost control at the expense of non-contractible quality (Hart, 1995). For-profit organizations are presumably the most market-oriented providers and would have higher incentives to introduce new services and technologies that attract more consumers (Banaszak-Holl et al., 1996). Government-owned providers lack clear control rights to implement changes on the other hand, and this constraint softens incentives for innovations. Not-for-profit firms have an objective function of maximizing quality, quantity and/or prestige (Newhouse, 1970), as well as maximizing net revenue (Lakdawalla and Philipson, 1998), helping to fulfill demand for local public goods (Weisbrod, 1998), meet unmet need in the community (Frank and Salkever, 1991), or maximizing the well-being of specific important constituencies, such as the medical staff (Pauly and Michael Redisch, 1973) or consumers (Ben-Ner and Benedetto Gui, 1993).

Private hospitals have greater strategic flexibility, higher environmental sensitivity and higher demand for promoting market status (Goes and Park, 1997). Private hospitals do not have financial support from the government; hence, they have higher residual claimants to provide incentives for profit and further development (Kimberly and Evanisko, 1981; Young et al., 2001). Public hospitals, on the other hand, have the financial support of the government and have to take numerous policy-related responsibilities into consideration. Therefore, they tend to adopt a conservative and stable policy (Milgrom and Roberts, 1992). Price (1992) suggested that a high level of bureaucracy and lack of rapid reaction to market conditions lowers public hospitals’ innovation in health care. Rajshkha et al. (1991) suggested that private hospitals are wholly responsible for organizational performance in a competitive environment; hence; they adopt or extend new medical technology proactively. Molinari et al. (1995) found that, for-profit chains had higher margins only for 1985. The steep recession for California hospitals during the latter 1980s are negatively impacting margins for all ownership hospital types. Barros (2003) compared two hospitals and found that private hospital performed better than the public hospital. Weng et al. (2011) also found that private hospitals perform better than public hospitals. In this study, hospital ownership is defined in terms of not-for-profit hospitals (mission-based) hospitals, for-profit (private hospitals) and public hospitals. It is hypothesized that:

H8. Not-for-profit (mission) and for-profit (private) hospitals perform better than public hospitals.

### 2.2.9 Interaction effects of hospital board characteristics and ownership.

Interaction effect looks at the effect of a combination of related features (independent variables). It is the combined effect of two treatment variables coupled with the individual main effects (Hair et al., 2009). This means that the impact of the independent variables on the dependent variable is moderated by a third variable (the product term of the independent variables) (see Jaccard and Turrisi, 2003). It is clear from the extant
literature that board characteristics and ownership structure are important in influencing the performance of hospitals. Though prior studies consider board characteristics and ownership structure as separate independent factors affecting performance, intuitively, it is expected that interacting these variables may have more significant effect on performance. The effects of board characteristics on hospital performance may be different under various ownership forms. In this study, board characteristics include board size, board composition, board participation by medical staff, board leadership structure, board diversity and frequency of board meetings. Ownership structure in this study is a categorical variable, which consists of public hospitals, mission-based (not-for-profit) hospitals and private (for-profit) hospitals where public hospitals is considered the reference point. Therefore, using public hospitals as the reference point, it is hypothesized that:

H9. The interactions of mission-based and private hospitals with board characteristics yield better hospital performance than public hospitals.

2.3 Multi-theoretical framework for health-care governance, ownership and performance

Following the discussion of the extant literature, this study pulls together the issues raised in a multi-theoretical framework, as illustrated in Figure 1, to guide the empirical investigation. The constructed framework shows the relevant theoretical stances in explaining the governance of organizations, especially hospitals. Managerialism theory, stakeholder theory and resource dependency theory tend to provide better explanation to the effects of hospital governance and ownership structure on performance and, therefore, this study focuses on these three theoretical perspectives.

Managerialism theory argues for the need to have top-level management as part of the board, as that enhances board decision-making and effectiveness. This theory argues that because management is involved in the daily operation of the organization, they are capable of providing adequate and useful information to guide the board in its...
work. Hospital boards should typically include the CEO and inside medical staff members who are expected to provide administrative information concerning the hospital and also keep the board well-informed about issues regarding the hospital’s service delivery (Molinari et al., 1995). Stakeholder theory suggests a good representation of all the stakeholders of organization on the board to ensure its effective functioning and the composition of the board should consider representatives of all interested parties to ensure consensus among stakeholders. The theory indicates that representation of all stakeholder groups on boards is, therefore, necessary for effective governance of the organization. Hospitals are likely to have board with representations from several stakeholder groups (Eeckloo et al., 2004; Christopher, 2010). Resource dependency theory also suggests the relevance of board members in terms of the skill, knowledge and expertise they bring to bear to build effective external relationships and secure adequate resources for the operation of the organization and to address the interest of the multiple stakeholders. One way to attain this is by having outside board members. The theory suggests the need for a wider board because each board member brings expertise and access to resources. Also, larger boards tend to have directors with greater diversity in experience and management could benefit from such diversity in the form of quality advice. Hospitals tend to have board members from diverse background and expertise. Proponents of the resource dependence theory argue that external directors enhance the ability of an organization to protect itself against the external environment, reduce uncertainty or co-opt resources that increase the organization’s ability to raise funds or increase its status and recognition (see Pfeffer, 1972; Pfeffer and Salancik, 1978; Middleton, 1987).

The extant literature also indicates that the performance of hospitals is explained by their governing board characteristics (i.e. board size, board composition, board participation by medical staff, board leadership structure, board diversity and frequency of board meetings), their ownership structure and standard control factors (i.e. age, size and location). These board characteristics flow from the relevant theoretical stances. Board size is related to the stakeholder theory and resource dependency theory, which suggest the need for large board size to enhance performance. However, recent thinking is leaning towards small boards because they are said to be more efficient than larger ones. Smaller hospital boards tend to focus more on their role within the system and recent empirical studies support the view that higher performing hospitals have smaller board size (Gu et al., 2010; Büchner, 2012). Board composition is explained by the managerialism theory, and resource dependency theory. Managerialism proposes that inside directors are in a better position than outside directors to motivate managers to enhance performance. Inside management tend to have better insights about the operation of the hospital and, therefore, are in a better position to drive performance. The resource dependence theory supports this by arguing that external directors enhance the ability of an organization to protect itself against the external environment, reduce uncertainty or attract more resources and thereby increases its performance. Board participation by medical staff is linked to both the managerialism and resource dependency theory. Hospitals are said to benefit from involving inside or outside physicians, as this leads to enhanced performance. Apart from the operational knowledge they bring to bear, medical staff can refer their private practice patients to the hospital, thereby serving as patient referral links. Also, outside physician board
members help to keep hospital boards informed regarding developments in patient care and practices.

The literature suggests that a board leadership structure, where the CEO also acts as chairperson may lead to conflict of interest among the leadership. Therefore, a board where the CEO's role is separated from that of the board chairperson is preferred. Stakeholder theory argues that CEO duality hinders the overall stakeholder orientation of board members. Therefore, separating the role of the CEO and board chair may lead to improvement in the board’s monitoring and control, and thus enhance performance. Board diversity may also flow from the resource dependency theory based on the experiences and perspectives women bring to bear in boardroom discussions. Diversity on the hospital board is important to increase effectiveness and competitiveness as suggested that having a diverse board with female representation result in improved performance. Diversity in terms of gender could also indicate the hospital’s way of reflecting its consumers/patients and the community it serves and this can be explained by the stakeholder theory. Hospital boards are said to recruit the most talented, dedicated and accomplished people, and, increasingly, those people tend to be women with different perspectives, experiences, social network relationships and problem-solving approaches. Frequency of board meetings is also identified as an important board characteristic because it ensures that the board receives relevant information on the hospital to enable it to make useful decisions that will enhance performance. Frequency of board meetings can be explained by the resource dependency theory, in the sense that by having relevant information on regular basis, board members are better informed to contribute positively to the operations of the hospital and also assist in providing relevant resources to the hospital.

It is crucial, therefore, to note that although individual theories have generally been useful in explaining some motivations for corporate governance practices and structures, they have been limited in their individual ability to fully explain the various motivations influencing different governance structures (see Christopher, 2010; Chen and Roberts, 2010; Ntim and Soobaroyen, 2012). This study examines how the hospital board characteristics affect performance, and given that the various hospitals board characteristics are explained by managerialism theory, stakeholder theory and resource dependency theory, it is appropriate to adopt a multi-theoretical approach. From the discussion on how the different theoretical stances underpin the relevance of the various hospital board characteristics, it is shown that no one individual theory adequately explains the hospital governance characteristics. Considering the limitations with each of these theoretical stances, adopting a multi-theoretical framework is useful, as illustrated in prior studies (see Christopher, 2010; Chen and Roberts, 2010; Ntim and Soobaroyen, 2012). Using a multi-theoretical framework is even more relevant for understanding the governance structures of hospitals, considering the complexities of issues in health-care governance. Therefore, this study adopts a combined or multi-theoretical framework as it provides a stronger basis for explaining the effects of health-care governance and ownership structure on the performance of hospitals within the Ghanaian context.

In terms of hospital ownership structure, it is expected (as shown in Figure 1) that the different ownership forms may exhibit variations in performance, given the differences in the hospitals’ objectives and mission. It is also expected that the various ownership forms can interact with hospital board characteristic to influence performance of the hospitals. With respect to the control variables, it is expected that smaller and older
hospitals may perform better than their larger and younger counterparts. Also, hospitals located in the urban centers are more likely to perform better than those located outside the urban communities. The literature points to the fact that, the performance of hospital could be influenced by the adoption of good hospital governance structures. It may also depend on the hospitals’ ownership structure and other control factors.

3. Methodology

3.1 Sample

The study targeted 200 hospitals, of which responses were received from 132 hospitals, made up of 65 public, 31 not-for-profit (mission-based) and 36 for-profit (private) hospitals. The 132 hospitals represent 66 per cent response rate. The resulting response rate was quite high for a survey of this type, considering that empirical studies involving surveys have been known to generate far lesser percentage response rates. The hospitals used in this study included those with hospital board structures and those without hospital board structures. The rationale for including hospitals with a board structure and those without a board structure is to ascertain whether or not the presence of hospital board structures has an effect on performance. Data on the health-care governance were obtained from top management of the hospitals. The study relied on primary data obtained through questionnaire administration and this was followed up with personal or telephone interviews. Pre-testing exercise of the questionnaires was carried out to inform the shaping of the final survey tools. The use of the survey strategy is due to the large sample size involved and this is built on the basic positivist assumption that suggests that regularities can be verified by an adequate experimental research program or falsified. Also, using a survey strategy gives the researcher more control over the research process and when sampling is used, it is possible to generate findings that are representative of the whole population (Saunders et al., 2007). The composition of the overall sample of hospitals is indicated in Table I. Public hospitals represent 49.2 per cent of the total sample of hospitals. Not-for-profit or mission-based hospitals account for 23.5 per cent of the sample, while for-profit private hospitals represent 27.3 per cent of the sample of hospitals used in this study.

<table>
<thead>
<tr>
<th>Hospital type</th>
<th>Frequency</th>
<th>(%)</th>
<th>Cumulative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public hospitals</td>
<td>65</td>
<td>49.2</td>
<td>49.2</td>
</tr>
<tr>
<td>Not-for-profit hospitals</td>
<td>31</td>
<td>23.5</td>
<td>72.7</td>
</tr>
<tr>
<td>For-profit hospitals</td>
<td>36</td>
<td>27.3</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>132</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Table I. Composition of the sample of hospitals
to define whether or not a particular hospital has a board in place. The first model is, therefore, stated succinctly as:

\[ \text{Perf} = \alpha + \beta_1(\text{HospBoardPresence}) + \delta_2(\text{OWN}) + \omega_3(\text{Control}) + \varepsilon \] (1)

In the second model, the study limited the sample to only hospitals with board structures in determining how hospital board characteristics, ownership structure and control factors affect hospital performance. Hospital board characteristics include board size, board composition, board participation by medical staff, board leadership structure, board diversity and frequency of board meetings. This model is also stated as follows:

\[ \text{Perf} = \alpha + \beta_1(\text{HBC}) + \delta_2(\text{OWN}) + \omega_3(\text{Control}) + \varepsilon \] (2)

A third model is also estimated to examine the interaction effects of hospital board characteristics and ownership structure on performance. The model is given as follows:

\[ \text{Perf} = \alpha + \beta_1(\text{HBC}) + \delta_2(\text{OWN}) + \theta_4(\text{HBC} \times \text{OWN}) + \omega_3(\text{Control}) + \varepsilon \] (3)

Perf is the dependent variable and it is measured using three indicators. These are: occupancy, discharge and efficiency. Occupancy is defined as the ratio of average daily census to statistical beds. Discharge is the ratio of inpatients discharged to total number of inpatients. Efficiency is defined as the ratio of total expenses to statistical beds.

In Model 1, HospBoardPresence is defined as a dummy variable, taking the value of 1 where the hospital has a board in place and 0 where the hospital has no board. HBC in Model 2 is the hospital board characteristics and these include board size, board composition, board participation by medical staff, board leadership structure and duality, board diversity, frequency of board meetings and hospital ownership structure. Board size is defined as the number of board members. Board composition is defined as the proportion of non-executive directors on the board. Board participation by medical staff is the proportion of medical staff on the board. Board leadership structure and duality is a dummy = 1 if the CEO is the board chair and 0 if otherwise. Board diversity is defined as the proportion of females on the board. Frequency of board meetings is the number of board meetings in the year. OWN is defined as a categorical variable = 1 if public hospital, 2 if not-for-profit hospital and 3 if for-profit hospital. In Model 3, HBC × OWN represents the interaction term. \( \alpha \) is the constant in the equation, and \( \varepsilon \) is the error term. The control variables include variables that might affect hospital performance. These include, size of hospital, age of the hospital and location of the hospital. Size of the hospital is defined in terms of number of hospital beds. Age of the hospital is defined as the number of years in existence. Location is a dummy and it is defined as 1 if the hospital is located in a national capital and 0 if it is located outside a regional capital.

4. Empirical results

4.1 Descriptive statistics

Table II presents the descriptive summary statistics of variables used in the study for all the hospitals. It shows the mean values for the overall sample. The mean occupancy ratio is 0.53, suggesting that on the average 53 per cent of the hospital beds are occupied daily. The minimum and maximum occupancy are given as 0.01 and 5.30, respectively. The mean discharge is 0.94, indicating that on the average the hospitals discharge 94 per
cent of inpatients. The minimum and maximum are also shown as 0.18 and 1.65, respectively. Given the large values of the efficiency, the values were logged with a mean efficiency of 9.42. The minimum and maximum efficiency are also shown as 3.91 and maximum 19.93, respectively. In examining the characteristics of hospital boards, the results show that 69 per cent of the hospitals sampled have hospital board structures in place. The remaining 31 per cent of the hospitals do not have a hospital board. Clearly, the majority of hospitals in Ghana have a governing board. With respect to those with a hospital board, the mean board size is 6, with a maximum board size of 25. The mean value of six falls short of what is recommended by Bader (1991), who suggested that in health systems with several boards, the system works best with lean governing boards having the average of seven to ten members. The mean board composition is 0.51, indicating that outside board members represent 51 per cent of the total board membership. This means the boards are made up of majority of outside members. The mean medical staff representation on board is 0.38, meaning that medical staff represents 38 per cent of the board. The mean board leadership structure of 0.45 indicates that 45 per cent of the hospitals have the CEO also serving as the chairman of the hospital board. This also means that, on the average, 55 per cent of the hospitals have separated the roles of the CEO and the board chair. Board diversity is 0.37, signaling that females represent 37 per cent of the hospital board members. In terms of frequency of board meetings, the mean is 5 with minimum and maximum of 1 and 48, respectively. This means that, on average, board meetings are held five times in a year. The mean hospital size is 102.70, indicating an average number of hospital beds of approximately 103, with a minimum of 3 and a maximum of 1,800. The average age of the hospitals is approximately 38 years. The minimum and maximum ages are 1 and 129 years. Location with a mean of 0.63 suggests that 63 per cent of the hospitals in the sample are located in the national capital (Accra), while the remaining 46.90 per cent are based in other parts of the country or outside Accra.

To address the problem of non-normality of the data, a log transformation of some of the variables (occupancy, efficiency, frequency of board meetings and hospital size) is applied.
Occupancy is defined as the ratio of average daily census to statistical beds. Discharge is the ratio of inpatients discharged to the total number of inpatients. Efficiency is defined as the ratio of total expenses to statistical beds. Hospital board is a dummy variable and is defined as 1 where the hospital has a board in place and 0 where the hospital has no board. Board size is defined as the number of board members. Board composition is defined as the proportion of outside board members on the board. Board participation by medical staff is the proportion of medical staff on the board. Board leadership structure is a dummy = 1 if the CEO is the board chair and 0 otherwise. Board diversity is defined as the proportion of females on the board. Frequency of board meetings is the number of board meetings in the year. Hospital size is defined as the number of hospital beds. Hospital age is defined as the number of years the hospital has been in existence. Location is a dummy variable = 1 if the hospital is located in the national capital and 0 if it is located outside the national capital.

4.2 Correlation analysis
A correlation analysis is performed to evaluate the extent of multi-collinearity among the independent variables. Table III presents the correlation matrix constructed by showing the association between the variables. In all, the degree of the correlation coefficients suggests that multi-collinearity do not pose a potential problem in the regression models. Therefore, the entire hospital board characteristic, ownership structure and the control variables can be captured in the same model. The hospital board dummy is also captured in a separate model investigating the presence of hospital board and ownership structure on hospital performance.

4.3 Regression results
This section presents and discusses the regression results. The first part looks at the effects of the presence of hospital board and ownership structure on the performance of hospitals. The second part examines the effects of hospital board characteristics and ownership structure on the performance of hospitals. In the third part, the hospital board characteristics are interacted with the ownership forms to ascertain the effects on performance. The variance inflation factor (VIF), which is a more formal method to determine the presence of multi-collinearity among the independent variables, is also used. The results, as shown in all the regression tables, indicate that the VIF for the independent variables are less than 10. This suggests that multi-collinearity is not a problem and, therefore, all the hospital board characteristics, ownership structure and the control variables can be included in the same regression model.

4.3.1 The presence of hospital board, ownership structure and performance. Table IV presents the regression results on the effects of the presence of hospital board and ownership structure on performance. The results indicate that the presence of hospital board has statistically significant negative effect on occupancy but positive effects on discharge rate. This means hospitals that have a governing board in place have lower occupancy and higher discharge compared to those without a board. The findings here support the important role hospitals boards play in ensuring better performance. According to Flynn (2002) and Eeckloo et al. (2004), healthcare governance as the process of steering the overall functioning and effective performance of a hospital by defining [its] mission, setting objectives and [...] [having them realized] at the operational level.
### Table III: Correlation Matrix

<table>
<thead>
<tr>
<th></th>
<th>Hospital board</th>
<th>Board size</th>
<th>Board composition</th>
<th>Medical staff on board</th>
<th>Board leadership structure</th>
<th>Board diversity</th>
<th>Frequency of board meetings</th>
<th>Ownership structure</th>
<th>Hospital size (log)</th>
<th>Hospital age</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital board</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Board size</td>
<td>0.5706*</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Board composition</td>
<td>0.000*</td>
<td>-0.0283</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical staff on board</td>
<td>0.000*</td>
<td>-0.2297*</td>
<td>-0.3627*</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Board leadership structure</td>
<td>0.000*</td>
<td>-0.2666*</td>
<td>-0.3093*</td>
<td>0.4597*</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Board diversity</td>
<td>0.000*</td>
<td>-0.2314*</td>
<td>-0.0171</td>
<td>0.2542*</td>
<td>0.4502*</td>
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<td></td>
</tr>
<tr>
<td>Frequency of board meetings</td>
<td>0.000*</td>
<td>-0.0433</td>
<td>-0.3449*</td>
<td>0.2325*</td>
<td>0.1913*</td>
<td>0.0165</td>
<td>1.0000</td>
<td></td>
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</tr>
<tr>
<td>Ownership structure</td>
<td>0.2999*</td>
<td>-0.1814*</td>
<td>0.2217*</td>
<td>-0.0135</td>
<td>0.2113*</td>
<td>0.1762*</td>
<td>-0.0936*</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospital size</td>
<td>-0.0098</td>
<td>0.2287*</td>
<td>-0.1012*</td>
<td>-0.0736</td>
<td>-0.1779*</td>
<td>-0.0437</td>
<td>0.1407*</td>
<td>-0.2787*</td>
<td>1.0000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospital age</td>
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<td>-0.2701*</td>
<td>-0.0427</td>
<td>0.0039</td>
<td>0.1328*</td>
<td>0.1125*</td>
<td>-0.4097*</td>
<td>0.3464*</td>
<td>1.0000</td>
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</tr>
<tr>
<td>Location</td>
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<td>-0.1201*</td>
<td>-0.0033</td>
<td>0.2166*</td>
<td>0.1186*</td>
<td>0.1247*</td>
<td>0.0681</td>
<td>0.3018*</td>
<td>-0.1557*</td>
<td>-0.2459*</td>
<td>1.0000</td>
</tr>
</tbody>
</table>

**Notes:** *significant at 1, 5 or 10%. Hospital board is a dummy variable and is defined as 1 where the hospital has a board in place and 0 where the hospital has no board. Board size is defined as the number of board members. Board composition is defined as the proportion of non-executive directors on the board. Board participation by medical staff is the proportion of medical staff on the board. Board leadership structure is a dummy = 1 if the CEO is the board chair and 0 if otherwise. Board diversity is defined as the proportion of females on the board. Frequency of board meetings is the number of board meetings in the year. Hospital ownership structure is defined as a categorical variable = 1 if public hospital, 2 if not-for-profit hospital and 3 if for-profit hospital. Hospital size is defined as the number of hospital beds. Hospital age is defined as the number of years the hospital has been in existence. Location is a dummy variable = 1 if the hospital is located in the national capital and 0 if it is located outside the national capital.
In terms of the control variables, the results of this study reveal that hospital size has a significantly positive effect on occupancy but has a negative effect on discharge rate. The positive relationship between hospital size and occupancy rate indicates that larger hospitals exhibit higher occupancy rate. In terms of discharge rate, the results suggest that larger hospitals have lower discharge rate. It stands to reason that larger hospitals may perform poorly, as shown in the higher occupancy rate and lower discharge rate. Bigger hospitals might also perform poorly because of the inability of management in these hospitals to properly coordinate various activities geared towards ensuring good quality of care. Thus oversight duties are compromised in such hospitals, resulting in their abysmal performance. In other words, smaller hospitals on the other hand could be said to be better performing in terms of occupancy rate, and discharge rate. They may be in the position to provide individualized care resulting in higher discharge and better performance. The results on the effect of hospital size on performance are partly consistent with \( H9 \). This is in tandem with the position of Alexander and Lee (2006) that smaller hospitals tend to have smaller boards, which are said to be more effective and efficient in their decision-making and strategic planning and this eventually leads to better performance of these hospitals.

Hospital age exhibits a statistically significantly negative effect on efficiency. This means older hospitals exhibit lower expenses to statistical beds ratio (i.e. higher efficiency). The better performance with respect to efficiency on the part of older hospitals could be attributed to the fact that older hospitals may be experienced and well-resourced. Therefore, based on the learning curve, they may be capable of operating at lower costs or they may be more efficient than their younger counterparts. This finding confirms the results of Kimberly and Evanisko (1981) that age is
significantly associated with the level of hospital technological innovation and this has the tendency of increasing performance.

With respect to location, the results of this study indicate that location has statistically significant positive effects on occupancy rate and discharge rate. The positive effects of location on occupancy rate and discharge rate suggest that hospitals located in the national capital (Accra) are associated with higher occupancy rate and higher discharge rate. The high occupancy rate may be due to the huge number of patients in hospitals located in Accra. Considering the high population in Accra, most hospitals in Accra tend to experience high attendance and full occupancy of the available beds. Also, given the high number of patients hospitals located in Accra have to grapple with, they may have to discharge these patients faster to give room to newly admitted patients. It also stands to reason that bigger hospitals are located in Accra and these tend to be characterized by high occupancy rate. In the same vein, most private hospitals are located within the national capital and these hospitals are characterized by higher discharge rate. This may be due to the relatively small size of the population of patients outside the capital compared to the population of patients in the capital city. A lower patient – medical staff ratio facilitates individualized care, thus, the delivery of better quality health care.

4.3.2 Hospital board characteristics, ownership structure and performance. With respect to the effects of board characteristics and ownership structure, the results as shown on Table V indicate that board size has a positive effect on occupancy rate, suggesting that larger boards may have difficulty in taking quicker decisions to ensure better services that will reduce the number of patients occupying hospital beds in a day. On the other hand, hospitals with smaller boards are able to take faster decisions to improve the quality of care, thus exhibiting lower occupancy. This might be due to the fact that smaller boards have the ability to easily reach a consensus during strategic planning and critical decision-making process. The findings in terms of board size support $H2$ and are consistent with the position of Lipton and Lorsch (1992), who argued that large boards tend to reduce effectiveness, thereby making it easier for the CEO to control. On the other hand, smaller boards are generally said to be more effective than larger boards. The findings are also in tandem with the findings of previous empirical works (see Bader, 1991; Gu et al., 2010). For instance, Bader (1991) intimates that a small number of governing boards within a health system would ensure that boards focus more on their role within the system. Gu et al. (2010) also found that higher performing hospitals tended to have smaller boards.

The regression results reveal a statistically significant positive relationship between board composition and discharge rate, but a negative relationship between board composition and efficiency. This indicates that hospitals with greater proportion of outside board members exhibit higher discharge and lower expenses to statistical beds ratio. The extant literature suggests that the independence of the board is enhanced with greater percentage of outside or external members. It is expected that independent boards can bring their experience to bear on the operations of the hospital in guiding hospital management to be cost efficient, as shown in the findings of this study. Therefore, hospital boards with greater percentage of outside board members tend to have effective internal control systems that translate into cost efficiency. The high level of efficiency brought to bear by outside board members may translate into better health care for patients and therefore lead to a high discharge rate. The findings with respect to the effect of board composition are in tandem with $H3$ that board composition is related
to higher performance. Also, the results generally agree with the findings of Byrd and Hickman (1992) and Brickley et al. (1994).

Medical staff representation on the board shows significantly negative effect on occupancy rate, but signals a positive effect on efficiency. The results show that, greater representation of medical staff on the hospital board bring about lower occupancy. In other words, hospital boards with a high proportion of medical staff tend to entertain low occupancy rate. The results also suggest that greater percentage of medical staff on the hospital board is associated with higher expenses to statistical beds ratio. This means that hospitals with greater representation of medical staff on the board appear to operate at higher cost, but ensure the delivery of better services to reduce occupancy rates in the hospital.

Board leadership structure reveals significantly negative relationships with discharge rate and efficiency. This means that hospital boards, which have the CEO also serving as the board chairperson, have a lower discharge rate and a lower expense ratio. It is observed that, in terms of efficiency, hospitals with CEO duality perform better, as shown in having a lower ratio of expenses to statistical beds. This finding appears to contradict $H_5$. However, with respect to discharge rate, the findings of this study seem

<table>
<thead>
<tr>
<th>Variable</th>
<th>Occupancy</th>
<th>Discharge</th>
<th>Efficiency</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board size</td>
<td>0.0150 (2.19)**</td>
<td>0.0005 (0.53)</td>
<td>0.0179 (0.31)</td>
<td>2.03</td>
</tr>
<tr>
<td>Board composition</td>
<td>−0.2286 (−0.88)</td>
<td>0.0315 (1.91)*</td>
<td>−2.6085 (−2.77)***</td>
<td>1.50</td>
</tr>
<tr>
<td>Medical staff on board</td>
<td>−1.0471 (−3.83)***</td>
<td>0.0082 (0.45)</td>
<td>3.5320 (3.43)***</td>
<td>1.70</td>
</tr>
<tr>
<td>Board leadership structure</td>
<td>0.2005 (1.19)</td>
<td>−0.0213 (−1.73)*</td>
<td>−3.6635 (−5.31)***</td>
<td>2.10</td>
</tr>
<tr>
<td>Board diversity</td>
<td>0.1367 (0.36)</td>
<td>0.0546 (2.17)**</td>
<td>−0.9685 (−0.45)</td>
<td>1.52</td>
</tr>
<tr>
<td>Frequency of board meetings</td>
<td>−0.3519 (−3.43)***</td>
<td>0.0153 (2.00)**</td>
<td>0.3507 (0.83)</td>
<td>1.32</td>
</tr>
</tbody>
</table>

**Ownership structure**

<table>
<thead>
<tr>
<th>Ownership structure</th>
<th>Occupancy</th>
<th>Discharge</th>
<th>Efficiency</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not-for-profit hospitals</td>
<td>−0.4885 (−2.63)***</td>
<td>0.014 (0.15)</td>
<td>0.9695 (1.62)</td>
<td>1.84</td>
</tr>
<tr>
<td>For-profit hospitals</td>
<td>−0.9941 (−4.69)***</td>
<td>0.0278 (2.21)***</td>
<td>−3.1794 (−2.80)***</td>
<td>2.66</td>
</tr>
<tr>
<td>Hospital size</td>
<td>0.5456 (7.97)***</td>
<td>−0.0098 (−2.47)***</td>
<td>0.1446 (0.39)</td>
<td>2.04</td>
</tr>
<tr>
<td>Hospital age</td>
<td>−0.010 (−2.87)***</td>
<td>0.0004 (1.98)***</td>
<td>−0.0093 (−0.73)</td>
<td>2.01</td>
</tr>
<tr>
<td>Location</td>
<td>0.0779 (0.55)</td>
<td>0.0156 (1.68)***</td>
<td>−0.5426 (−0.80)</td>
<td>1.46</td>
</tr>
<tr>
<td>Constant</td>
<td>0.9747 (2.14)***</td>
<td>1.0129 (30.03)***</td>
<td>9.6597 (4.33)***</td>
<td>1.28</td>
</tr>
</tbody>
</table>

| $R^2$ | 0.2707 | 0.2702 | 0.2807 |
| $F$-stat | 8.27 | 6.60 | 4.51 |
| Probability $> F$ | 0.0000 | 0.0000 | 0.0000 |

**Notes:** All regressions include a constant. $t$-values are in parentheses. ***; ** and * mean significant at 1, 5 and 10% level of significance, respectively. Board size is defined as the number of board members. Board composition is defined as the proportion of outside board members on the board. Board participation by medical staff is the proportion of medical staff on the board. Board leadership structure is a dummy = 1 if the CEO is the board chair and 0 if otherwise. Board diversity is defined as the proportion of females on the board. Frequency of board meetings is the number of board meetings in the year. Hospital ownership structure is defined as a categorical variable = 1 if public hospital (reference point), 2 if not-for-profit hospital and 3 if for-profit hospital. Hospital size is defined as the number of hospital beds. Hospital age is defined as the number of years the hospital has been in existence. Location is a dummy variable = 1 if the hospital is located in the national capital and 0 if it is located outside the national capital.
to give preference for a board typology, in which the positions of the CEO and board chair are decoupled. This indicates that hospitals, which have the roles of the CEO and the board chair performed by two different individuals, tend to exhibit higher level of discharge rate. In other words, decoupling the roles of CEO and board chair leads to better performance in terms of discharge rate. The existing literature suggests that where the CEO also acts as board chairman, leadership faces conflict of interest, thus giving preference for the system where the CEO’s role is separated from that of the board chairperson (Brickley et al., 1997). Therefore, it is expected that separating the roles of the CEO and that of the board chair will eventually strengthen the effectiveness of the hospital board. This position is consistent with the (H5). The findings on board leadership structure on discharge rate are consistent with the stakeholder theory, which suggests that duality seriously impedes the overall stakeholder orientation of board members; therefore, separating the functions of the CEO and board chair may be viewed as enhancing the board’s monitoring and control ability, and improve director’s information processing capacities (Sanders and Carpenter, 1998).

Board diversity is defined as the proportion of females represented on the hospital board. The findings of this study reveal that board diversity is significantly and positively related to discharge rate. These results suggest that hospitals with higher female representation on their board experience higher discharge rate, consistent with H6. Hospital boards with female representation tend to ensure the delivery of better quality of care, resulting in higher level of discharge. This could be explained by the fact that women are more intuitive and may bring up interesting dimensions to board discussions, thereby improving the overall decision-making in ensuring higher discharge. The finding with respect to the effect of gender board diversity is consistent with the findings of prior studies (see Singh et al., 2001; Carter et al., 2003). It also supports the view held by Elstad and Ladegard, 2010) that higher proportion of female representation on the board leads to greater level of perceived influence.

The findings of this study also show that frequency of board meetings significantly lead to better performance using occupancy, and discharge indicators. Frequency of board meetings is found to negatively affect occupancy, but positively influence discharge. The results with respect to the frequency of board meetings indicate that hospital boards that meet frequently show lower occupancy and higher discharge. This could be explained by the fact that regular board meetings affords the hospital board the opportunity to review and compare the hospital’s present medical practices with current and emerging practices. Such regular reviews are important in making the necessary changes to improve the delivery of health care. The finding on the effect of frequency of board meetings is consistent with H7. Holding frequent board meetings enables board members to be better informed to contribute to meeting the resource needs of the hospital so as to improve on the performance of the hospital. This is consistent with the position of Lipton and Lorsch (1992) and Vafeas (1999).

Consistent with the results shown in Table IV, mission-based and private hospitals exhibit lower occupancy rate compared to public hospitals. Again, compared to public hospitals, private hospitals show higher discharge rate. The regression results, as shown in Table V, indicate that mission-based hospitals also exhibit lower occupancy rate. Private hospitals are also found to be cost efficient compared to public hospitals.

The control variables generally show signs consistent with the findings on the effects of the presence of hospital board and ownership structure on the performance of
hospitals. In addition, the results, as indicated in Table V, reveal that hospital age is associated with lower occupancy and higher discharge. It is observed from the results of the first model, as shown in Table IV, that older hospitals are more experienced and are capable of providing better health service quality. Therefore, it is expected that the delivery of better health service quality will result in lower occupancy rate and higher discharge rate.

4.3.3 Interaction effects of board characteristics and ownership structure on performance. This section discusses the results on the interaction effects of board characteristics and ownership structure on the performance of hospitals. The results on the interaction between board characteristics and ownership structure on hospital performance, as indicated on Table VI, revealed interesting findings. Mission-based hospitals with larger board size exhibit lower occupancy rate, higher discharge rate and improved level of efficiency than public hospitals with smaller boards. Private hospitals with larger boards also exhibit higher discharge rate than public hospitals with smaller boards. In addition, they show lower occupancy rate than their public counterparts with smaller boards. The interaction of private hospitals and board size is, however, insignificant in explaining the level of efficiency. The interaction of board composition and ownership reveal that both mission-based and private hospitals with greater percentage of outside directors record higher discharge rate, and are more efficient than public hospitals that have greater proportion of inside board members. In the case of mission-based hospitals, the results show that those with higher proportion of external board membership record lower occupancy rate than public hospitals with many inside board members.

It is observed that mission-based hospitals with greater representation of medical staff on their hospital boards demonstrate lower occupancy rate, higher discharge rate and are more efficient than public hospitals that have fewer medical staff on their board. In terms of private hospitals, the results reveal that, those with high medical staff board participation have higher occupancy rate, lower discharge rate and are less efficient than public hospitals with lower medical staff board participation. The results indicate that boards of mission-based hospitals that have the CEO as the board chair show higher occupancy rate, and are less efficient compared with boards of public hospitals that have separate people playing the roles of board chair and CEO. Boards of private hospitals with same person serving as CEO and board chair have higher occupancy rate and lower discharge rate. They are also less efficient compared to their public hospital board counterparts with the CEO being different from the board chair. More female representation on the boards of mission-based hospitals results in a lower occupancy rate and a higher discharge rate compared to public hospitals with less female representation on their board. Frequent board meetings in both private and mission-based hospitals have been observed to result in lower occupancy and higher discharge compared to public hospitals with less frequency of board meetings. Additionally, frequent board meetings in mission-based hospitals demonstrate improved efficiency better than boards of public hospitals with less frequency of board meetings.

5. Conclusions and implications
Health-care governance is expected to play an important role in the overall functioning and effective performance of hospitals. However, the literature is devoid of how health-care governance influences the performance of hospitals in Africa and other
developing countries. This study examined whether the presence of a hospital board and ownership structure affect hospital performance, evaluated the effects of hospital board characteristics and ownership structure on hospital performance, and also investigated the interaction effects of hospital board characteristics and ownership on performance. The regression results show that hospitals with a board demonstrate lower occupancy, and higher discharge. In terms of the effect of board characteristics on

<table>
<thead>
<tr>
<th>Variable</th>
<th>Occupancy</th>
<th>Discharge</th>
<th>Efficiency</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board size</td>
<td>0.0169 (0.81)</td>
<td>0.0021 (1.55)</td>
<td>-0.3020 (-3.14)**</td>
<td>2.03</td>
</tr>
<tr>
<td>Board composition</td>
<td>0.0597 (0.12)</td>
<td>0.1448 (4.16)***</td>
<td>-13.1696 (-5.67)***</td>
<td>1.50</td>
</tr>
<tr>
<td>Medical staff on board</td>
<td>-2.1221 (-3.78)***</td>
<td>0.0864 (3.45)***</td>
<td>-4.9005 (-2.59)**</td>
<td>1.70</td>
</tr>
<tr>
<td>Board leadership structure</td>
<td>0.1930 (0.60)</td>
<td>-0.0304 (-1.72)*</td>
<td>-4.5682 (-2.94)**</td>
<td>2.10</td>
</tr>
<tr>
<td>Board diversity</td>
<td>1.4663 (1.67)</td>
<td>0.1012 (2.85)***</td>
<td>-1.2529 (-0.39)</td>
<td>1.52</td>
</tr>
<tr>
<td>Frequency of board meetings</td>
<td>-0.5239 (-1.73)*</td>
<td>0.0779 (5.52)***</td>
<td>5.3469 (4.62)***</td>
<td>1.32</td>
</tr>
</tbody>
</table>

**Ownership structure**

<table>
<thead>
<tr>
<th>Ownership structure</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Not-for-profit hospitals</td>
<td>-6.1448 (-5.15)***</td>
<td>0.1464 (3.14)***</td>
<td>-23.2309 (-3.72)***</td>
<td>1.84</td>
</tr>
<tr>
<td>For-profit hospitals</td>
<td>-0.4383 (-1.77)*</td>
<td>0.0638 (0.78)</td>
<td>-5.6808 (-1.72)***</td>
<td>2.66</td>
</tr>
<tr>
<td>Board size × not-for-profit</td>
<td>-0.6874 (-6.72)***</td>
<td>0.0099 (2.94)***</td>
<td>-1.1105 (-3.22)***</td>
<td></td>
</tr>
<tr>
<td>Board size × for-profit</td>
<td>-0.7748 (-2.33)**</td>
<td>0.0261 (1.69)*</td>
<td>-0.2056 (-0.48)</td>
<td></td>
</tr>
<tr>
<td>Board comp × not-for-profit</td>
<td>-5.3294 (-4.05)***</td>
<td>0.1424 (3.87)***</td>
<td>-22.5492 (-7.20)***</td>
<td></td>
</tr>
<tr>
<td>Board comp × for-profit</td>
<td>-0.6561 (-1.06)</td>
<td>0.5671 (1.70)*</td>
<td>-15.29 (-3.92)***</td>
<td></td>
</tr>
<tr>
<td>Medical board × not-for-profit</td>
<td>-16.0359 (-6.96)***</td>
<td>0.2796 (2.79)***</td>
<td>-64.8558 (-4.64)***</td>
<td></td>
</tr>
<tr>
<td>Medical board × for-profit</td>
<td>0.8149 (3.48)***</td>
<td>-0.7095 (-1.68)*</td>
<td>11.0599 (3.36)***</td>
<td></td>
</tr>
</tbody>
</table>

| Board leadership structure ×  |          |          |           |     |
| not-for-profit                | 11.6768 (5.82)*** | 0.088 (0.22) | 23.8022 (4.92)*** |          |
| Board leadership structure ×  |          |          |           |     |
| for-profit                    | 0.4193 (2.28)*** | -0.2683 (-1.83)* | 1.8362 (1.74)* |          |
| Board diversity × not-for-profit| -28.4542 (-6.46)*** | 0.1374 (1.78)* | -3.8759 (-0.86) |          |
| Board diversity × for-profit  | -0.8939 (-0.93) | 0.0286 (0.19) | 3.9256 (0.61) |          |
| Frequency × not-for-profit    | -1.4344 (-3.12)*** | 0.0721 (4.01)*** | -10.6205 (-5.64)*** |          |
| Frequency × for-profit        | -0.0998 (-3.10)*** | 0.3840 (1.88)*** | -4.1209 (-2.01)** |          |
| Hospital size                 | 1.1129 (12.24)*** | -0.0187 (-2.76)*** | 0.7833 (1.91)* | 2.04 |
| Hospital age                  | -0.0276 (-6.34)*** | 0.0096 (1.66)* | -0.0456 (-2.59)** | 2.01 |
| Location                      | -0.1126 (-0.73) | 0.0096 (0.66) | 1.0290 (1.49) | 1.46 |
| Constant                      | 2.3104 (3.39)*** | 0.9582 (20.22)*** | 12.4935 (5.27)*** |          |
| $R^2$                         | 0.5437 | 0.5525 | 0.6034 |     |
| $F$-stat                      | 10.88 | 8.21 | 7.61 |     |
| Probability > $F$             | 0.0000 | 0.0000 | 0.0000 |     |

**Notes:** All regressions include a constant; $t$-values are in parentheses. ***, ** and * mean significant at 1, 5 and 10% level of significance, respectively. Board size is defined as the number of board members. Board composition is defined as the proportion of outside board members on the board. Board participation by medical staff is the proportion of medical staff on the board. Board leadership structure is a dummy = 1 if the CEO is the board chair and 0 if otherwise. Board diversity is defined as the proportion of females on the board. Frequency of board meetings is the log of number of board meetings in the year. Hospital ownership structure is defined as a categorical variable = 1 if public hospital (reference point), 2 if not-for-profit hospital and 3 if for-profit hospital. Hospital size is defined as the log of number of hospital beds. Hospital age is defined as the number of years the hospital has been in existence. Location is a dummy variable = 1 if the hospital is located in the national capital and 0 if it is located outside the national capital.
performance, smaller boards are associated with lower occupancy. Hospitals with greater proportion of outside board members assist management to be cost efficient and improve on their operations, leading to higher discharge. The results also show that hospitals with greater representation of medical staff on the board perform better in terms of occupancy but are less cost efficient. Hospitals with CEO duality perform better in terms of efficiency. Additionally, the evidence suggests that boards with higher female representation exhibit higher discharge rate. Also, frequency of board meetings is associated with lower occupancy, and higher discharge. The results also show that mission-based and private hospitals perform better than public hospitals. Furthermore, the results of the interaction effects suggest that mission-based and private hospitals with effective board characteristics exhibit better performance than public hospitals. This study makes a number of new and meaningful contributions to the extant literature and the findings support managerialism, stakeholder and resource dependency theories.

The findings also have important implications for effective and efficient governance and management of hospitals. First, it has been established that hospitals that have a governing board in place perform better. It is, therefore, recommended that hospitals that do not have a board in place should consider composing a well-functioning board. The findings of this study have shown that the structure of the hospital boards in terms of their characteristics is important in influencing performance. This current study supports the recent call for smaller boards, as it was observed that smaller boards enhance performance. One key policy recommendation is the need to have a hospital board made up of majority independent directors. Having a governing board with majority of outsiders has been shown to be important in improving the performance of hospitals. This study argues for the need to have a good number of medical staff on the hospital board. Higher proportion of medical staff on the hospital board has been found to lead to better performance. Although the findings of this study suggest that CEO duality results in better performance in terms of efficiency, the essence of decoupling the roles of the CEO and board chairs is eminent in this study, as shown by the high discharge rate. Hospitals need to recognize the need to have the functions of the CEO and board chair performed by two separate individuals. Another policy recommendation is the need to have a good number of females on the hospital board. Females on hospitals hospital boards bring about interesting perspectives to boardroom discussion leading to better performance. The findings of this study have confirmed the notion that frequency of board meetings leads to improved performance. This study, therefore, recommends the need to hold frequent meetings at least once per quarter. This study furthers our understanding of hospital governance and ownership structure and how they influence the performance of hospitals. The findings of this study have important implication for effective and efficient governance and management of hospitals, especially in the developing countries.

5.1 Limitations of the study and future research
This study specifically focused on the importance of hospital boards by ascertaining whether or not the presence of hospital board influences hospital performance. The study also looked at how hospital board characteristics affect performance. It would be useful to include other elements of health-care governance, such as the role of top management, the quality of management and board and how these affect hospital
performance. The role of the board in terms of the appointment of hospital executives and how such executives derive their authority is also worth investigating.

This study considered structural measures of hospital boards. It would also be useful for future studies to consider process measures of board activity. These may include the number of board-initiated proposals that are introduced and adopted, hours spent on the development or evaluation of strategic plans for higher performance and the importance of board minutes.

This study limited board diversity to only gender board diversity. Future studies may consider expanding board and gender diversity to include other measures, such as age, educational and other backgrounds of board members.

Another important area that could be considered in future studies is the inclusion of other measures of performance beyond the measures used in this current study. For instance, this study did not look at performance in terms of profitability. A study on how the governance structures of private hospitals affect their profitability would be interesting to look at.

References


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Medical Leadership Forum (1992), *Challenges for Medical Leaders: A Series on Key Issues*, Medical Leadership Forum of the Governance Institute, La Jolla, CA.


**Further reading**


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