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Accountability in the public health care systems: A developing economy perspective

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Abstract: The purpose of this paper is to report the results of the study carried out to examine the effects of hospital board governance and managerial competencies on accountability in the health care systems in Uganda. This study is cross–sectional and correlational. This study utilizes multiple regression models based on a sample of 52 government hospitals. The study's unit of inquiry is hospital directors and accountants. The correlation results indicate a significant positive relationship between managerial competencies and accountability. The study further finds that board governance is not significantly correlated with accountability of government hospitals. In terms of hospital governance dimensions; board composition is positively and significantly related with accountability unlike board structure and board independence. The measurements used in all the predictor variables may not perfectly represent all the dimensions although they have been defined as precisely as possible by drawing upon relevant literature. Therefore, further research on other factors that explain the variance in accountability in the health sector is needed. Whereas

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PUBLIC INTEREST STATEMENT

Accountability of the health care systems has been questionable in developing countries especially in sub Saharan Africa and India in the recent past. The accountability failures in emerging economies are partly due to the failure by the public hospital leaders to account for the funds that are given to them and this has affected service delivery in various hospitals and health centers. Thus, in public interest, this study attempts to promote proper accountability through recommending a careful system of recruiting hospital managers to be put in place. The study further recommends a revision of the mode of appointment of hospital boards who are able to monitor the activities of hospital managers. The paper makes significant contribution to the existing body of literature by showing that managerial competencies are critical for improving accountability of health care systems in Uganda. Specifically, when managerial competencies are improved, efficient delivery of health care services will be realized in Uganda.

hitherto, corporate governance and managerial competencies had been viewed as possible explanations of accountability in the public healthcare systems, this study only confirms managerial competencies to be a significant predictor of accountability in the public healthcare systems unlike board governance.

Subjects: Accounting Education; Financial Accounting; Government & Non-Profit Accounting

Keywords: accountability; Uganda; public sector; hospitals; board governance; managerial competencies

1. Introduction

The aim of this paper is to examine the relationship between hospital board governance, managerial competencies and accountability in the health sector of a developing country where minimum attention is received. Accountability has become an essential aspect in the health sector globally. Accountability in the health sector is very critical since every human being must access health services and in turn pay taxes which implies that, health care managers must demonstrate a strong sense of accountability (Nurunnabi & Islam, 2012). In their study of accountability in Bangladeshi privatized health care sector, Nurunnabi and Islam (2012), found out that accountability mainly depends on government initiatives and effectively implementing existing laws. This implies that since hospital governing boards are appointed by central government and managers are appointed by the boards, then both the managers and the hospital board must be accountable for their actions. The capability of any government to provide a good standard of health care is considered as one of the most vital fundamentals contributing to a country's standard of living and hospitals play a core role in the delivery of health care services (Abor, 2015). Accountability is described by Stewart (1984) as a relationship between different parties: the party that accounts and is held to account and the party that holds the other to account. Also, Barton (2006) came up with ideas that underlie accountability which are accounting for, reporting on, explaining and mitigating activities, and taking responsibility for the outcomes. Further, accountability entails the procedures and processes by which one party justifies and takes responsibility for its activities (Day & Klein, 1987; Emanuel & Emanuel, 1996; Management Advisory Board, 1993). Similarly, Lodhia and Burritt (2010) argue that citizens of a country need to be informed on how government institutions are performing since any additional funding to such institutions will impose a cost on society (citizens). Lodhia and Burritt (2010) further signpost that, state institutions must be subjected to strict scrutiny in explaining the causes and consequences of any difficulties encountered in the process of executing their mandates. Also, Dellaportas, Langton, and West (2012) indicate that charities while performing their selfless activities must provide a report to the donors justifying how the previous donated funds were spent before receiving further funds. In this study, we define accountability as the process of reporting on how appropriated funds have been utilized by those who were entrusted with such funds. Whereas the need for accountability in the health care systems is paramount, In India, 70% of the population prefer private hospitals and clinics because of their efficient service delivery and being responsible for their actions unlike the public hospitals (Jishnu, Alaka, Aakash, & Karthik, 2016). For the case of Uganda, the Uganda's Auditor General continue to lament the persistent accountability failures in the health sector since 2008 up to date for example, in the financial year 2012/2013 alone, Ushs 23.7 billion (about 6.7 million US$) was not accounted for by the ministry of health and several hospitals country wide. The reason for such accountability failures may be that those who are accountable may lack the competencies and the monitoring mechanisms to ensure proper accountability. In India, 80% of the medical doctors agree that rules and norms are frequently flouted and payments are made to avoid any disciplinary proceedings and thus accountability for the resources entrusted with the medical doctors is compromised (Jishnu et al., 2016).

The accountability failures in emerging economies may be partly due to the failure by the public hospital leaders to account for the funds that are given to them (Ringold, Holla, & Srinivasan, 2012). The Uganda's Auditor General (AG) attributes these accountability failures in the health sector to weak managerial competencies, internal audit, and board governance (Auditor General's report, 2013). Brennan and Solomon (2008) explains accountability in terms of governance matters like boards of directors' performance and composition, institutional investors, internal audit and external audit. In this research, we adopt managerial competencies in addition to hospital board governance as explanatory variables for accountability and use agency and stewardship theory to explain the relationship between the study variables. Board governance exists to resolve the conflict of interest between managers and shareholders which is purely a principal-agent problem arising out of separation of ownership and control (Bushman & Smith, 2003). Board governance has varying significance on accountability in an organization (Dellaportas et al., 2012; Nurunnabi & Islam, 2012; Romano, Bhagat, & Bolton, 2008; Sueyoshi, Goto, & Omi, 2010) and this can be through effective board structures (Osborne, 2010), independence of the board (Wu & Li, 2015) and Chief Executive Officer (CEO) power (Guo, Smallman, & Radford, 2013). Managerial competencies according to Karmen, Mirko, Borut, and Annmarie (2014) involves action competencies (professionalism, knowledge, ability), leadership competencies and, social and personal competencies (personal traits).

Presently, studies linking hospital board governance, managerial competencies, and accountability in the health care sector in emerging economies especially in the African context are rare. The majority of empirical studies have examined board governance with firm performance (see Dunne, 2013; Nkundabanyanga, 2016; Nkundabanyanga, Ntayi, Ahiauzu, & Sejjaaka, 2014). Still, studies linking managerial competencies and accountability cannot be found. Scanty researches available relate managerial competencies with organizational structures (see Karmen et al., 2014). This study is thus motivated by the need to provide the link between hospital board governance, managerial competencies, and accountability in the health sector since existing literature has neglected this important area. To the best of the researchers' knowledge, this research is the first of its kind in a developing economy perspective to provide evidence on the link between hospital board governance, managerial competencies, and accountability. Second, the research is driven by the need to recommend policy for the improvement of accountability in the health care sector in emerging economies.

The rest of the paper is organized as follows: Section 2 is informing literature. This section describes the theoretical background to explore the relationship between hospital board governance, managerial competencies, and accountability. In this section also, the hypotheses to be tested are developed and stated. Section 3 describes the methodology used in the study to generate the present results. This section specifies the design and methods used in data management including factorability, reliability, and validity. Section 4 is results and Section 5 is discussion and Section 6 is summary and conclusion.

2. Literature review and hypothesis development

2.1. The theoretical framework

In this study, we employ agency theory and stewardship theory to explain the relationship between hospital governing boards, managerial competencies, and accountability in the public health care systems. Agency theory is suited for this study as it lessens the entire organization to a level of only two participants—the managers and shareholders. In this study, we refer to the mangers as agents and shareholders(tax payers) as principals. Secondly, agency theory is easily conceptualized (Daily, Dalton, & Canella, 2003; Nkundabanyanga et al., 2014). This theory suggests that managers have selfish interests aiming at increasing their earnings using means such as making provisions as per IAS 37 which are totally different from those of shareholders and the implication of this is that managers have the capacity to manipulate financial statements and falsify other accounting records to satisfy their interests (Kaawaase, Assad, Kitindi, & Nkundabanyanga, 2016). Therefore, hospital directors become accountable to government and donors. This study considers Government as a

representation of the tax payers who in the same way are resource providers. Government establishes boards to monitor management's mode of operation. Stewardship theory is considered a supplement to the agency theory. In this theory, managers are not individualistic and are motivated by performance of their institutions. Managers are stewards of shareholders and will aim to maximize shareholders wealth at all costs (Davis, Schoorman, & Donaldson, 1997). The perceptions surrounding stewardship theories mean that directors of hospitals should be aware of the various user needs of the hospital's financial statements to the extent that shareholders need a return on their investments. In the next paragraphs, we employ a multi theoretical approach in providing a meaningful path for improving accountability.

2.1.1. Agency theory

This theory can be traced right from 1960s to early 1970s. The theory gained pace when economists explored risk sharing among individuals or groups (see Arrow, 1971). The risk sharing literature in agency theory was broadened to include the agency problem which is to the effect that managers have selfish interests and will exploit all possible avenues to satisfy their selfish interests (see Jensen & Meckling, 1976). The agency costs incurred are the costs of hiring the boards to monitor what managers are doing. The agency problem came from the principal- agent relationship where the agent acts on behalf of the principal and all the actions of the agent are actions of the principal (Eisenhardt, 1989). According to this theory, tax payers and donors hire agents through government to perform work and in this case shareholders (tax payers) and donors become principals (Nkundabanyanga et al., 2014). When the interests of the shareholders are not aligned to those of agents, the resources under the control of directors/managers are not put to proper use and in turn, accountability for such resources becomes questionable. Therefore, governing boards who represent the interests of shareholders are put in place to check what hospital directors do. The hospital directors must also be competent enough to prepare financial statements in time with the appropriate disclosures that comply with accounting standards and thus accountability is portrayed.

2.1.2. Stewardship theory

The origin of stewardship can be traced in psychology and sociology and was designed for researchers to examine situations where managers as stewards of shareholders act in the best interests of their principals (Davis et al., 1997). Stewardship theory argues that employees of a given institution or organization should be facilitated to perform their duties and as such, they are provided with resources who accountability is strongly required by those resource providers (Kolk, 2016). Tax payers and donors provide resources to managers of organizations with the expectation that the resources will be put to proper use. One way of ensuring resources have been put to proper use is with timely financial reporting (Minja, 2013; Nyamori, 2009; Stewart, 1984). The next way of ensuring accountability for the resources given to stewards is fiscal compliance, that is to say, complying with those guidelines provided by the resource providers on how such resources should be utilized (Bracci, 2014; Nurunnabi & Islam, 2012; Prakash, 2015).

Therefore, agency and stewardship theories are appropriate to the study of accountability especially in the health sector. The health sectors in emerging economies are constrained with quality human capital at both the board and managerial level. Having considered the various theories underpinning health sector accountability, it is now suitable to gain an understanding of what other researchers have found in the area of board governance, managerial competencies and their effect on accountability, and how the existing literature has led to the development of hypotheses to guide this current study.

2.2. Hospital board governance and accountability in the health sector

Board governance concept is derived from governance (Nkundabanyanga, 2016). Board of directors offer direction to those who manage an enterprise (Beaver, Davies, & Joyce, 2007; Nkundabanyanga, 2016). As such, we define board governance as board composition, board structure, and board independence and this is contrary to Nkundabanyanga, Ahiauzu, Sejjaaka, and Ntayi (2013) who defined board governance as process factors, essentially qualitative in nature, employed to provide direction

of the firm by the board and explains process factors as controlling and organization of their meetings, the activities of the board and making communication effective. Hospital boards according to Abor (2015) serve as an important element of health care governance, and they play a vital role in the health care delivery system. The hospital board is accountable for the overall performance of the hospital and contributes in modeling the health facility they represent and their functions include fundraising, establishing operating procedures, enlisting the support of others, budgeting and fiscal control and balancing the organization with differing viewpoints (Abor, 2015; Fenn, 1971). A study by Okpara (2011) indicates that Board governance is related to firm performance. Hospital boards act as policy-makers, focusing on inaugurating the mission and a strategic direction for the hospital; others assume the role of boundary spanners, aiming on building and maintaining relations with key external stakeholders and financing; while others dedicate much of their time and attention to overseeing the performance of the hospital and its management team (Widmer, 1993). Crow and Lockhart (2016) found out that there is a positive relationship between boards and business performance. Further, Nkundabanyanga, Tauringana, and Muhwezi (2015) in their study on performance of secondary schools in Uganda found out that board role performance, finance committee role performance, frequency of meeting and finance expertise of hospital governing boards have a significant positive effect on perceived performance of secondary schools.

Sartawi, Hindawi, Bsoul, and Ali (2014) defined board composition as board size, board ownership concentration, institutional ownership, foreign ownership, member's age and gender. Sartawi et al. (2014) found out that board size is positively and significantly associated with voluntary disclosure and this implies that as the number of board members are increased, disclosure is also improved in a positive direction. Board composition is the percentage of outsiders on the hospital board according to Abor (2015). The issue is whether to rely on more outside or 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 consequence on innovative efforts and firm performance. Interestingly, Mwesigwa, Nasiima, and Suubi (2014) found out that board independence is positively associated with performance of commercial banks. Tauringana and Mangena (2014) studied board structure in terms of board size, proportion of non-executive directors and audit committee independence and his regression results indicate that board size is negatively associated with supplementary narrative comments while audit committee independence is positively associated with supplementary narrative comments. The expectation is that effective board governance contributes significantly to accountability. Based on the discussion on the importance of board governance in influencing performance, it is hypothesized that:

H1: Hospital board governance is positively related with accountability in the health sector

H1(a): Board composition is positively associated with accountability in the health sector

H1(b): Board independence is associated with accountability in the health sector

H1(c): Board structure is negatively associated with accountability in the health sector

2.3. Managerial competencies and accountability in the public health care sector

The constant that defines a company's success is the knowledge and skills of employees (Karmen et al. (2014). These are dependent upon the knowledge and abilities of managers that can obstruct or promote their development, thus, managerial competencies are becoming a critical factor to the presence of a company (Alldredge & Nilan, 2000). A skill is the ability to perform efficiently and effectively according to standards appropriate to a task at hand (Kagaari & Munene, 2007). Similarly, Martina et al. (2012) defined Managerial competencies as personal-oriented and task-oriented skills that are associated with effective management and leadership. Veres, Locklear, and Sims (1990), also note that within the worker-oriented approaches, competency is primarily constituted by attributes possessed by workers, typically represented as knowledge, skills, abilities and personal

traits required for effective work performance. All these attributes are expected to influence the accountability of a hospital. This is in agreement with Keel (2006), where competency is defined as a set of behaviors that encompasses skills, knowledge, abilities, and personal attributes that, taken together, are critical for successful work accomplishment.

Diane, Parente, Stephan, and Brown (2012), posited that managerial competencies provide a sound basis for an improved accountability. In addition, Martina et al. (2012) indicates that the dynamic business environment requires managerial competencies to achieve strategic organizational goals since skills are observed as a significant tool for achieving accountability. Karmen et al. (2014) found thatw managerial competencies are associated with organizational structures and studied these structures in terms of market performance (customer satisfaction, product quality, innovativeness, and market share), process oriented, and project structures. There is a relationship between academic qualifications and quality management but this does not mean that once a graduate is employed, then he or she is a better manager (Kilcourse, 1994). The author goes ahead to assert that training and development are more critical but also working in teams and groups is more critical. The foregoing discussion makes the researchers to believe that managerial competencies have an impact on accountability and thus;

H2: Managerial competencies is positively associated with accountability in the health sector.

3. Methodology

3.1. Design, population, and sample

This study's research design is cross-sectional and correlational. The study's population was 60 Government hospitals (Referral hospitals and Health centre IVs) in the Eastern region of Uganda (Ministry of Health, 2012). A sample of 52 Government Hospitals was generated using Krejcie and Morgan table (1970) of which usable questionnaires were received from 41 entities representing a response rate of 79%. The high response rate can be explained by the data collection instrument used (questionnaire) and the several callbacks on the respondents made by the researchers. Further, the respondents were given ample time to complete the questionnaire. We employ stratified sampling of Referral Hospitals and Health centre IVs and there after a simple random sampling to pick hospitals from each stratum. The study used data collected from top hospital management and specifically the Hospital directors and Accountants.

3.2. Measures and the questionnaire

A Likert scale questionnaire designed on 5 points ranging from strongly disagree to neutral to strongly agree was utilized to measure the opinion or attitude of a respondent to obtain self-reported information. Questionnaires may contain both close ended questions and open ended questions. This study utilizes a questionnaire with close ended questions since it is aimed at calculating the mean ratings of the extent of agreement with the statements given. However, questionnaires with open ended questions enable the respondent to freely express his or her understanding of the subject matter. The questionnaire is adopted for this study because it is suitable for collecting data from many respondents within a short period of time. The questionnaire design is based on our review of relevant literature regarding hospital board governance, managerial competencies, and accountability in the health sector. The item scales for board governance were developed after reviewing the works of Abor (2015) whose study was on both government, non-governmental organizations and private hospitals in Ghana. The author operationalized board governance using board size, board composition, board participation by medical staff, board structure, and board diversity. We adopt board composition, board structure, and board independence as suitable measures for hospital board governance. The study further utilizes the managerial competencies measures adopted by Karmen et al. (2014). These measures include professionalism, knowledge, ability, and personal traits. The dependent variable for this study is accountability which was operationalized by Nyamori (2009) in his study on Kenya's constituent development Fund using annual reports (financial reports) and visibility of activities. The works of Bracci (2014), Mwesigwa et al.

(2014), Nurunnabi and Islam (2012) were also reviewed and their measures of accountability were used with modification to suit the health sector environment. This study thus employs financial reporting and disclosure and fiscal compliance as appropriate measures for accountability in the health sector.

3.3. Tests of factorability, validity, and reliability

We use factor analysis based on principal components, content validity index and Cronbach's (1951) α to examine the validity and reliability of the scales as measures of the study constructs. To establish convergent validity, the principal components for each variable is extracted by running principal component analysis using varimax rotation method and factor loadings below 0.5 coefficients are suppressed to avoid extracting factors with fragile loadings. Before executing the principal component analysis for our scales, we assess the suitability of the data for factor analysis based on sample size adequacy, the Keiser-Meyer-Olkin (KMO) and Bartlett tests. The KMO and Bartlett's (1954) test of sampling adequacy is computed to ensure that factor analysis yields different and reliable factors (Kaiser, 1974). Field (2009) explains that KMO and Bartlett tests values range from 0 to 1. The following criteria is used to assess and describe the sampling adequacy. Below 0.5 = unacceptable, 0.5 to 0.7 = Mediocre, 0.7 to 0.8 = Good, 0.8 to 0.9 = Great and above 0.9 = Superb (Field, 2009; Hutcheson & Sofroniou, 1999; Kaiser, 1974).

The results show that the KMO values for the predictor and outcomes variables are all above 0.5 which is acceptable. The KMO values for hospital board governance, managerial competencies and accountability are 0.624, 0.630, and 0.771. Bartlett's test of sphericity in all scales also reached statistical significance that is to say significant value was 0.000 for each scale. Field (2009) defines content validity as evidence that the content of a test corresponds to the content of the construct it was designed to cover. This study's overall content validity index is 0.8. For reliability, the Cronbach's reliability index for hospital board governance, managerial competencies, and accountability was 0.669, 0.759, and 0.903, respectively. Field (2009) explains that a Cronbach's α values of 0.7 to 0.8 is acceptable and Cronbach's α values substantially lower than 0.7 indicate an unreliable scale. Kline (1999) notes that although the generally accepted value of 0.8 is appropriate for cognitive tests such as intelligence tests, for ability tests a cut-off point of 0.7 is more suitable. He goes on to say that when dealing with psychological constructs values below even 0.7 can, realistically, be expected because of the diversity of the constructs being measured.

3.4. Model and definition of variables

Ordinary least squares (OLS) multiple regression model was used in investigating the effects of hospital board governance and managerial competencies on accountability. The preference for OLS is dictated by the nature of the outcome variable. Namely, given that the dependent variable is not a binary indicator i.e. not taking on values of 0 and 1, applying the ordinary least squares estimator would not produce biased estimates. Therefore, we did not need to use a discrete choice model, either probit or logit (logistic). Two main regression models were estimated. In the first model, the study focused on board governance and the effects of board governance constructs. The idea is to find out whether board independence, board structure and board composition have an effect on accountability. In the second model, we introduce the second study variable which is managerial competencies. Explicitly, the following regression models were tested:

$$ACC = \beta_0 + \beta_1 IND + \beta_2 STR + \beta_3 COMP + \beta_4 GOV + \varepsilon j \quad (1)$$

$$ACC = \beta_0 + \beta_1 IND + \beta_2 STR + \beta_3 COMP + \beta_4 GOV + \beta_5 MC + \varepsilon j \quad (2)$$

ACC which stands for Accountability is the dependent variable and it is measured using two indicators. These are: financial reporting and disclosure, and fiscal compliance. Financial reporting and disclosure is defined as the perceived financial reporting and disclosure of government hospitals on a five-point Likert scale. Fiscal compliance is defined as how the hospital directors and accountants perceive to follow the guidelines set by the ministry of finance on a five-point Likert scale.

In model 1, *IND* stands for board independence and is defined as the proportion of independent directors on the board. STR stands for board structure and it is defined by average score of questions on board size, presence of audit and finance committees on a five-point Likert scale. *COMP* connotes board composition which is defined as the proportion of non-executive directors on the board. B_0 is the constant in the equation and εj is the error term. GOV is hospital board governance which is the average score of questions on board independence, board structure and board composition on a five-point Likert scale. In the second model, MC which stands for managerial competencies is introduced and is defined as the average score of questions on professionalism, knowledge, ability, and personal traits on a five-point Likert scale.

4. Results

4.1. Descriptive statistics

Table 1 presents the descriptive summary statistics of variables used in the study for all the hospitals. The statistics indicate that the mean rating of the statements put to the respondents meant to measure perceived accountability is 4.1006 out of a maximum of 5. The standard deviation for accountability is 0.3798. This suggests that the government hospitals are satisfied with their accountability. The minimum score of 3.23 and a maximum of 4.76 out of 5 suggest that there are variations in perception of accountability in the health sector. The mean values for the independent variables (Hospital Board Governance and Managerial Competencies) are 3.4125 and 4.0518 with standard deviations of 0.3209 and 0.3028, respectively. As standard deviations relative to mean values are small, the calculated means highly represent the observed data (Field, 2009; Nkundabanyanga et al., 2015; Saunders, Lewis, & Thornhill, 2007).

4.1.1. Correlation results

In Table 2, we provide the Pearson product–moment correlation matrix (Zero order) among the study variables. The correlations reveal that managerial competencies is positively associated with accountability and surprisingly, hospital board governance has a weak relationship with accountability. The significant positive correlations between managerial competencies and accountability indicate that *H2: (Managerial competencies is positively associated with accountability)* is supported implying that when professionalism, knowledge of the subject matter, ability to perform duties assigned and personal traits are improved, accountability is also improved in the same direction. *H1: (Hospital Board Governance is associated with accountability)* is not supported. In terms of hospital board governance dimensions, board composition is significantly and positively associated with accountability and thus *H1(a)* is supported while board structure and board independence are

Table 1. Descriptive statistics

	N	Min	Max	Mean	Std. dev.
Board governance	41	2.68	4.03	3.4125	0.32094
Board composition	41	2.75	5.00	4.0732	0.51915
Board structure	41	3.17	4.50	3.9106	0.36723
Board independence	41	1.00	3.60	2.2537	0.64579
Managerial competencies	41	3.38	4.67	4.0518	0.30288
Professionalism	41	3.33	5.00	4.3780	0.41168
Knowledge	41	2.00	5.00	4.3211	0.55826
Ability	41	1.50	5.00	3.8415	0.65134
Personal traits	41	2.33	4.67	3.6667	0.50415
Accountability	41	3.23	4.76	4.1006	0.37980
Financial reporting & disclosure	41	2.88	4.75	4.0915	0.40265
Fiscal compliance	41	2.39	4.89	4.1098	0.51016

Source: Primary data.

Table 2. Zero order

	1	2	3	4	5	6	7	8	9	10	11	12
Board composition (1)	1											
Board structure (2)	0.232	1										
Board independence (3)	0.113	−0.123	1									
Board governance (4)	0.703**	0.424**	0.685**	1								
Professionalism (5)	0.369*	0.307	−0.180	0.196	1							
Knowledge (6)	0.244	0.313*	−0.011	0.244	0.522**	1						
Ability (7)	0.031	0.322*	0.117	0.218	0.237	0.080	1					
Personal traits (8)	−0.008	0.536**	0.131	0.288	−0.007	−0.044	−0.136	1				
Managerial competencies (9)	0.251	0.645**	0.051	0.416**	0.705**	0.663**	0.598**	0.320*	1			
Financial reporting & disclosure (10)	0.100	0.013	0.060	0.009	0.283	0.263	0.375*	0.096	0.459**	1		
Fiscal compliance (11)	0.326**	0.010	0.007	0.176	0.028	0.015	0.035	0.242	0.098	0.376*	1	
Accountability (12)	0.272*	0.014	0.027	0.123	0.169	0.149	0.175	0.214	0.309**	0.783**	0.871**	1

Source: Primary data.

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

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

Table 3. Multiple regression model

Model		Unstandardized coefficients		Standardized coefficients	t	Sig.	Collinearity statistics	
		B	Std. error	β			Tolerance	VIF
1	(Constant)	3.704	0.900		4.117	0.000		
	Board independence	−0.074	0.117	−0.125	−0.631	0.532	0.599	1.668
	Board structure	0.030	0.170	0.029	0.177	0.860	0.872	1.147
	Board composition	0.281	0.123	0.385	2.292	0.028	0.840	1.190
	Board governance	0.453	0.279	0.340	1.624	0.113	0.539	1.854
2	(Constant)	3.274	0.862		3.798	0.000		
	Board independence	−0.012	0.113	−0.020	−0.106	0.916	0.569	1.758
	Board structure	0.278	0.204	0.268	1.362	0.182	0.536	1.865
	Board composition	0.265	0.115	0.362	2.298	0.028	0.837	1.194
	Board governance	0.062	0.307	0.046	0.202	0.841	0.392	2.553
	Managerial competencies	0.691	0.284	0.551	2.434	0.020	0.406	2.464

Notes: $R = 0.521$, R^2=0.271, Adjusted $R^2 = 0.217$, df1 = 5, df2 = 35, f statistic = 2.604, Durbin Watson = 2.34.

Source: Primary data.

positively associated with accountability though not significant. The insignificance of hospital board governance can be explained by the hospital governance system in Uganda. For example, a number of stakeholders supervise hospital operations directly including the permanent secretary in the Ministry of Health, the district health inspectors, the District Chief Administrative Officers and the politicians which makes it hard for the hospital administrators to feel the impact of hospital boards regarding accountability.

4.1.2. Regression results

Table 3 presents the multiple regression results. The regression analysis was carried out to establish the degree of influence of the predictor variables on to the criterion variable. Overall, hospital board governance including hospital board governance dimensions and managerial competencies explain about 22% of the variance in accountability (Adjusted $R^2 = 0.217$). Managerial competencies has more predictive potential of accountability than hospital board governance. There is a shrinkage of 0.054 (0.271 − 0.217) from R^2 to Adjusted R^2 and this means that if the model were derived from the population rather than a sample, it would account for approximately 5.4% less variance in the outcome. Field (2009) defines R^2 as a measure of how much of the variability in the outcome is accounted for by the predictors. The Adjusted R^2 provides an idea of how well the model generalizes the study variables and every researcher would wish R^2 values to be the same as those of Adjusted R^2.

Two regression models were run. In model 1, hospital board governance and hospital board governance dimensions were tested to confirm their strength of the relationship in respect to accountability. Board composition is a significant predictor of accountability unlike board structure and board independence. Hospital board governance is not significant as well. Hospital board governance together with the hospital board governance dimensions predict only 5.3% of the variance in accountability. In model 2, managerial competencies is introduced and it strongly predicts accountability.

We also test multicollinearity using tolerance statistics and Variance Inflation Factor (VIF). Tolerance statistics measure multicollinearity and are simply the reciprocal of VIF (1/VIF). Field (2009)

recommended that tolerance values below 0.1 indicate a serious multicollinearity problem and tolerance values below 0.2 indicate a potential problem. VIF is another measure of multicollinearity and it indicates whether a predictor has a strong linear relationship with other predictor(s). Myers (1990) suggests that a value of 10 is a good value at which to worry. For this study, the VIF values are all below 10 and the tolerance statistics are above 0.2. Therefore, there were no multicollinearity problems in our data. The Durbin Watson which tests for serial correlations between errors in the regression models is 2.34. The test statistic (Durbin Watson) can vary between 0 and 4 with a value of 2 meaning that the residuals are uncorrelated. A value greater than 2 indicates a negative correlation between adjacent residuals, whereas a value below 2 indicates a positive correlation (Field, 2009).

5. Discussion

Results show that the relationship between managerial competencies and accountability is significant unlike the hospital board governance and accountability. The significant relationship between managerial competencies and accountability implies that in the health sector, there is need to step up professionalism, knowledge of the subject matter, ability to perform the assigned duties and responsibilities as well as personal traits of the hospital managers. Remember, this study was prompted by the poor governance and inadequate managerial competencies in various rural and urban public hospitals as evidenced in the Uganda AG's report (2013). This situation has led to a high level of stock-outs for essential medicines in health facilities, affected service delivery in health facilities and placed the lives and livelihoods of billions of people at risk.

In terms of hospital board governance dimensions; only board composition is positively and significantly associated with accountability and this implies that, government need to ensure that an adequate board size and the proportion of non-executive directors is maintained. This finding is consistent with the findings of Sartawi et al. (2014) who found out that board size is positively and significantly associated with voluntary disclosure Jordanian listed firms. Board structure and board independence are not significantly associated with accountability and this contradicts the findings of earlier researchers for example Jermias (2007) found out that board independence has a negative consequence on innovative efforts and firm performance. Also, Tauringana and Mangena (2014) found out that board structure is positively associated with supplementary narrative comments.

The significance of managerial competencies in respect to accountability in the health care is in support of *H2*. The findings of the study indicate that managers act in a friendly way when dealing with Patients and managers ensure effective communication. The study findings further imply that managers have the ability to implement decisions taken by the Board and can apply their knowledge, skills, and resources to achieve the Hospital goals. The greatest amount of attention is put on those systems which control unnecessary spending and therefore, there is progress in improving the quality and accessibility of information, strong reporting and review mechanisms that create more opportunities for greater transparency and access to information and the information provided by the hospital management to its stakeholders is complete without omitting any material facts. This observation is consistent with the findings of Karmen et al. (2014) who found out that managerial competencies are positively associated with organizational structures. The findings are further consistent with King (2009), who provides a way to conceptualize the relationship between managerial competencies and accountability. By motivating the creation, dissemination, and application of knowledge, managerial competencies initiatives pay off by helping the organization embed knowledge into organizational processes so that it can continuously improve its practices and behaviors and pursue the achievement of its goals. Similarly, Mwesigwa et al. (2014) found out that there is a significant relationship between managerial competencies and accountability among commercial banks in Uganda. Professional accountability is the second mode proposed by Hupe and Hill (2007) whereby peers practice collective, albeit managerial forms of self-management and accountability while assuming control functions to preserve the profession.

Surprisingly, board governance is not associated with accountability in the health sector. This observation differs from those findings of earlier studies (see Abor, 2015; Dunne, 2013; Dellaportas

et al., 2012; Nkundabanyanga et al., 2015). Abor (2015) found out that health care governance and ownership structure are positively associated with performance of hospitals. Nkundabanyanga et al. (2015) found out that governing boards in secondary schools are associated with performance of secondary schools in Uganda. (Dunne, 2013) also found out that governance and performance reporting in Scottish charities are related. The insignificance of board governance with accountability can be explained by the health care systems in Uganda where there are a number of supervisors who overshadow the activities of the hospital boards. These supervisors include politicians and technical staff for example the permanent secretary and the commissioners in the ministry of health, the district director of health services, the District health inspector, the Chief Administrative Officer and the politicians both local and national.

6. Summary and conclusion

The objectives of this study were to: investigate the relationship between hospital board governance including hospital board governance dimensions and accountability; and investigate the relationship between managerial competencies and accountability. Board composition as a dimension of hospital board governance is significantly and positively related with accountability. The above two objectives were achieved through a questionnaire survey of 41 government hospitals and health centre IVs. Results indicate that managerial competencies is a significant predictor of accountability unlike board governance.

This paper offers important insinuations to academics and governments of emerging economies. For academics, focus should be on managerial competencies as a significant predictor for accountability than the hospital board governance. For government, focus should be directed toward improving managerial competencies in hospitals but also find means of improving the operationalization of hospital boards in order to improve accountability. In Uganda, every hospital has an accounting officer (hospital director) who is responsible to ensure that all the resources entrusted to him or her are accounted for. Hospital directors are supervised by the District Director of health services who are appointed by the government. Hospital boards are also appointed by government to check on what hospital directors do and for this case, there is a likelihood that the hospital boards may not do much to improve accountability if they believe that the District Director of Health Services is performing a supervisory role.

Despite the contributions, this study has several limitations which we discuss along with areas for further research. The data was collected from only government hospitals in Uganda and yet private hospitals also exist. There is need for further research into the private hospitals using the same study variables in Uganda and in other nations or societies. This study utilizes the quantitative approach and ignores the qualitative approach. Future studies may employ the qualitative or a mixed methods methodology to get a broader picture of the study variables by allowing the respondent to exercise a much higher degree of reasoning. Finally, the study is cross sectional and a reliance on cross sectional data remains an escalating concern. Future studies might benefit from the use of longitudinal data for investigating accountability.

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