

**MODERATING EFFECT OF INSTITUTIONAL SIZE: EMPIRICAL EVIDENCE
FROM KENYAN PUBLIC HEALTH SECTOR**

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ABSTRACT; *This research paper aims to establish if institutional size moderates the relationship between corporate governance and health workforce performance in the Kenyan public health sector. A cross-sectional descriptive survey was used to collect data from 365 respondents from top management, middle management, officers (supervisors) and lower cadre employees. A survey questionnaire was used for quantitative data collection and moderated multiple regression analysis was used to test the hypothesis. The results show that institutional size (number of employees) did not significantly moderate the relationship between corporate governance and health workforce performance. From the findings, regardless of their sizes, all institutions require common management skills since organizations are usually managed in a way that suits their size. Therefore, those responsible for institutional corporate governance should not base decisions of management systems on the size of their institutions. Using statistical methods, this paper significantly contributes to the dearth literature on the effect of institutional size in the relationship between corporate governance and health workforce performance in Kenyan public health sector.*

KEYWORDS: Institutional Size, Corporate Governance, Health Workforce Performance

INTRODUCTION

The dimensions of the human resources crisis in health have been reported in stark terms in publications and studies by the Joint Learning Initiative (JLI, 2005) and the World Health Organization (WHO, 2006a) amongst other studies and reports. When examining health care systems in a global context, many general human resource issues and questions arise. Some of the issues of greatest relevance include the size, composition and distribution of the health care workforce, workforce training issues, the migration of health workers, the level of economic development in a particular country and socio-demographic, geographical and cultural factors (Zurn, Dal Poz, Stilwell, & Adams, 2004).

Chen et al. (2004) state that the major challenges to building an effective health-care workforce in developing countries (like Kenya) include; low numbers of trained health workers, difficulties in recruiting, retaining, and managing health workers and poor health-worker performance. African countries have a very low density health workforce compounded by poor skill mix and inadequate investment and trained healthcare staff continue to migrate from Africa to more developed countries in search of better working environment (Chen et al., 2004). It is too simplistic and misleading to define or try to resolve the crisis in human resources for health in Africa by looking only at overall numbers and density of workers because the poor performance of health services

in African countries is often exacerbated by shortages of drugs and other essential supplies, broken equipment, and poor logistical support from mainly the Government of the day (Habte, Dussault & Dovlo, 2004).

Like many other sub-Saharan African countries, the geographical distribution of skilled human resources for health (HRH) in Kenya is heavily skewed towards urban areas. It is not surprising to see that 42 percent of doctors and 30 percent of nurses of the total public sector staff are located in Nairobi City and the Rift Valley counties while in rural areas, such as the Western counties, there are only 7 percent of doctors and 11 percent of nurses out of the total public sector staff (Republic of Kenya (ROK), 2006). The ROK (2006) report further points out that there exists a human resource (HR) gap and hence substantial annual growth rates across all staff categories are needed to meet the future requirements.

Today, the health workforce performance is a binding constraint for accelerated progress towards achieving health related Millennium Development Goals (MDGs) / Sustainable Development Goals (SDGs) in most poor countries like Kenya and therefore improvement of the health workforce performance are critical to the achievement of the health related MDGs / SDGs (World Health Organization (WHO), 2003). While many countries' workforce is in critical condition, improvements in quality, productivity and deployment of the workforce could significantly improve service delivery and thus accelerate progress towards the MDGs / SDGs. But if the workforce crisis is not seriously tackled, the consequences will be grave. Additional funds raised for the scaling up of priority interventions will not be disbursed, significant health improvements will remain out of reach, and governments and donors will not be able to translate their commitment to the MDGs / SDGs into reality (WHO, 2003).

LITERATURE/THEORETICAL UNDERPINNING

It is widely recognized that corporate governance is significant in many countries (Denis and McConell, 2003) and studies have shown a correlation between the governance systems and firm performance (Gompers, Ishii, & Metrick, 2003). Corporate governance involves regulatory and market mechanisms, and the roles and relationships between a company's management, its board, its shareholders and other stakeholders, and the goals for which the corporation is governed (Organization for Economic Co-operation and Development (OECD), 2004; Tricker and Adrian, 2009). It is about promoting corporate fairness, transparency and accountability, holding management accountable to boards and boards accountable to the owners and other stakeholders (Denis and McConnell, 2002). It is widely acclaimed that good corporate governance enhances a firm's performance (Chung, Wright, & Kedia, 2003).

In spite of the generally accepted notion that effective corporate governance enhances firm performance, other studies have reported negative relationship between corporate governance and firm performance (Hutchinson, 2002) or have not found any relationship (Park and Shin, 2003; Prevost, Rao, & Hossain, 2002; Singh and Davidson, 2003; Young, 2003). To address the inconsistencies, some scholars have argued that the problem lies in the use of either publicly available data or survey data as these sources are generally restricted in scope (Kyereboah-

Coleman, 2007). He further argues that external governance factors also play a role in supporting good corporate governance. The external environment includes both the takeover mechanisms and the laws and regulations that enforce the rights of shareholders and other stakeholders, such as creditors, and a good external environment also includes appropriate oversight by government or other regulatory bodies.

Although many studies have acknowledged the significant effect of corporate governance on a firm's performance, studies which examine the moderating effects of institutional size on the relationship between corporate governance and health workforce performance are still dearth. Thus, this study fills in the literature gap by specifically examining the effect of institutional size (large vs. small institution) as a moderating variable in the relationship between corporate governance and health workforce performance.

Conceptual model and hypothesis

A conceptual model was developed based on literature review (Denis and McConnell, 2002; World Health Report, 2006; Sazali, Haslinda, Jegak & Raduan 2009). As shown in figure 1, the conceptual model consists of three basic components, namely: the independent variable – corporate governance (corporate fairness, corporate transparency and corporate accountability), the dependent variable – health workforce performance (availability, competence, responsiveness and productivity) and the moderating variable – institutional size (number of employees). Based on figure 1, a hypothesis has been articulated in an attempt to gain a greater understanding of the relationship between corporate governance and health workforce performance being moderated by institutional size. The following hypothesis will be tested in this study:

H₀: Institutional size does not moderate the relationship between corporate governance and health workforce performance

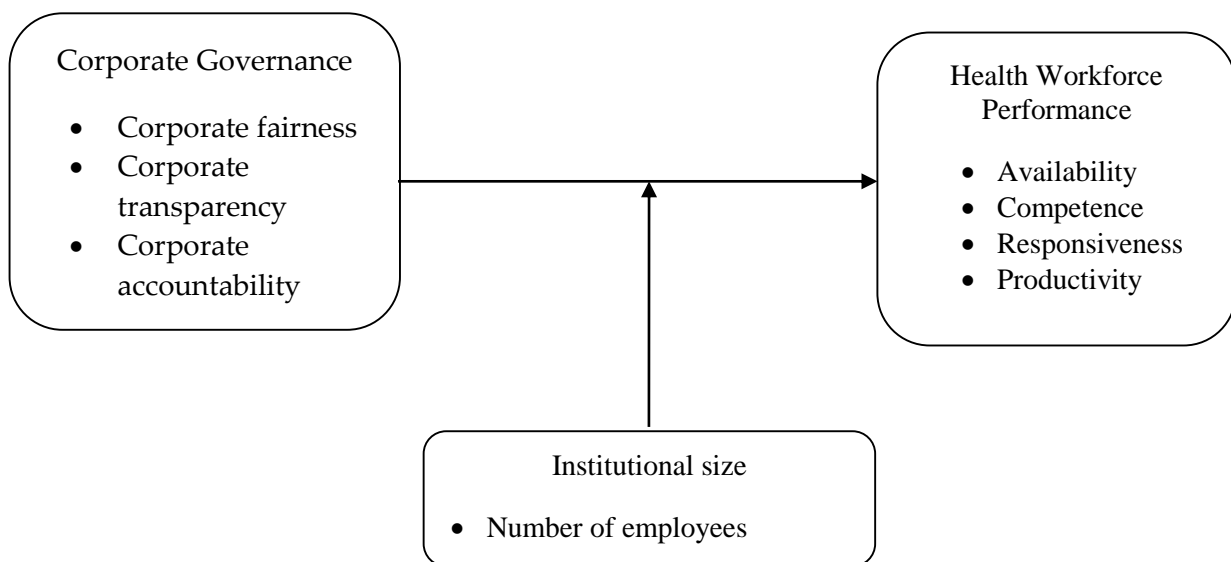


Figure 1. Conceptual model

METHODOLOGY

A modified five point Likert scale was used to measure interval data where ‘one point’ score meant that the respondent strongly disagrees with the question statement and a five point score meant that the respondent strongly agrees with the question statements (Kothari, 2004). The collected data was entered into the Statistical Package for Social Sciences (SPSS) for windows version 17 because of its ability to analyze data easily and accurately. The survey questionnaires were distributed to the top management, middle management, officers (supervisors) and lower cadre employees of both Moi Teaching and Referral Hospital (MTRH) and Kenyatta National Hospital (KNH).

Samples

The survey questionnaire was distributed to 365 randomly sampled employees of the two public referral hospitals in Kenya. A total of 353 out of 365 self administered questionnaires were filled and returned yielding a response rate of 96.7% as shown in table 1.

Table 1. Response Rate

Name of institution	Population	Sample size	Questionnaires returned	Response rate per institution (%)	Overall Response rate (%)
MTRH	3121	152	151	99.3	96.7%
KNH	4421	213	202	94.8	
Total	7542	365	353		

Institutional size (moderating variable)

From past research institutional size was measured by number of employees based on dummy coding system: 1 = Large Institution (KNH with 4421 employees) and 0 = Small Institution (MTRH with 3121 employees), (Sazali et al., 2009; Tsang, Tri, & Erramilli, 2004; Dhanaraj, Lyles, Steensma, & Tihanyi, 2004),

Validity

To determine validity of the survey questionnaire, both content validity and criterion validity were determined. A variable was considered to have content validity if there is general agreement from the literature that it has measurement items that cover all aspects of the variable being measured. Since selection of the initial variables was based on extensive review of national and international theoretical and empirical literature, it was considered to have content validity.

Criterion validity, also known as predictive validity or external validity is concerned with the extent to which a particular variable predicts or relates to other variables (Feng, Terziovski, & Samson, 2007). The Pearson Product Moment Correlation (PPMC) was used to describe the strength and direction of the linear relationship between the independent sub-variables and the

dependent variable in the study. As shown in table 2, all the sub-variables were positively correlated with the dependent variable and therefore were considered to have criterion validity (Kothari, 2004).

Table 2. Correlations between Corporate Governance sub-variables and Health Workforce Performance

	Health Workforce Performance
Corporate Transparency	0.80
Corporate Fairness	0.78
Corporate Accountability	0.74

RESULTS / FINDINGS

Collected data were subjected to two types of analyses (factor analysis and linear regression analysis). Principal Factor Analysis was conducted to determine if all factors / questionnaire items had significant factor loadings. Hair, Black, Babin, Anderson, & Tatham (2005) suggest that items / questions which have loadings above 0.5 are considered to be significant. As shown in table 3 and 4, items that had factor loadings less than 0.5 were expunged with an exception of a factor loading of 0.511 of an item under factor 1 of the dependent variable that made its reliability questionable (George and Mallery, 2003). Aamidi (2002) suggests that the acceptable value ranges from 0.7 to 0.9 and therefore the item was expunged to improve reliability.

Reliability entails reproducibility or stability of the data, the extent to which a questionnaire, test, observation or any measurement procedure produces the same results on repeated trials. It is the stability or consistency of scores over time or across raters (Miller, 2009). George and Mallery (2003) provide rules of thumb to determine the level of acceptability of a Cronbach's alpha (α) value. From the reliability results shown in table 3 and 4, all factors after factor analysis had α -values greater than 0.7 and therefore were considered acceptable (Aamidi, 2002).

Table 3. Factor analysis and reliability test results for the dependent variable

Dependent variable (Health Workforce Performance)	Factor loadings	Reliability (α)	
		Before factor analysis	After factor analysis
Factor 1: Health Workforce Availability		0.620	0.881
Consistent presence at service delivery points	0.889 (retained)		
Consistent attendance to work	0.880 (retained)		
Prompt delivery of services to customers	0.880 (retained)		
Equal distribution of health workers	0.511 (expunged)		
Factor 2: Health Workforce Competency		0.891	0.891
Timely service delivery	0.885 (retained)		

Effective service delivery	0.870 (retained)		
Provision of high quality service	0.868 (retained)		
Consistent training	0.848 (retained)		
Factor 3: Health Workforce Responsiveness		0.904	0.904
Immediate service delivery	0.904 (retained)		
Management of customers' confidentiality	0.888 (retained)		
Handling of customers' feedback	0.807 (retained)		
Improved attitudes and behaviors	0.788 (retained)		
Factor 4: Health Workforce Productivity		0.895	0.895
Increased number of customers	0.896 (retained)		
Increased clinical care time	0.872 (retained)		
Decreased service provision turnaround time	0.871 (retained)		
Efficient use of resources	0.849 (retained)		

Table 4. Factor analysis and reliability test results for the independent variable

Independent variable (corporate governance)	Factor loadings	Reliability (α)	
		Before factor analysis	After factor analysis
Factor 1: corporate fairness		0.549	0.876
Satisfactory organizational climate	0.894 (retained)		
Fair application of rules and regulations	0.885 (retained)		
Justice in the allocation of resources	0.865 (retained)		
Equitable distribution of resources	0.468 (expunged)		
Factor 2: corporate transparency		0.886	0.886
Inclusive and democratic decision making	0.875 (retained)		
Openness in organizational processes	0.871 (retained)		
Openness in service delivery	0.862 (retained)		
Customer exposure to institutional challenges	0.844 (retained)		
Factor 3: corporate accountability		0.896	0.896
Empowered internal audit units	0.893 (retained)		
Maintenance of records and reports	0.885 (retained)		
Display of service charters to customers	0.873 (retained)		
Enlightened customers on their rights	0.838 (retained)		

To test whether institutional size moderates the hypothesized relationship, moderated multiple regression (MMR) analysis (hierarchical regression model), which is an inferential procedure consisting of comparing two different least-squares regression equations, was utilized (Aguinis, 2004; Aiken and West, 1991). Using the MMR analysis, the moderating effect of the variable (interaction term) was analyzed by interpreting the R^2 change in the models obtained from the

model summaries, and the regression coefficients for the interaction term obtained from the coefficients tables.

Table 5 shows the model summary of the hypothesis that institutional size does not moderate the relationship between Corporate Governance and Health Workforce Performance. Table 5 shows that for Model 1, $R^2 = 0.739$ and $[F(2, 350) = 496.113, p = 0.000]$. This R^2 means that 73.9% of the variance in health workforce performance is explained by Corporate Governance and Institutional Size. Model 2 shows the results after the interaction term (Corporate Governance*Institutional Size) was included in the equation. Table 5 also indicates that the inclusion of the interaction term resulted in an R^2 change of 0.000, $[F(1, 349) = 0.379, p = 0.538 > 0.05]$. The results show a non-significant presence of moderating effect. The moderating effect of institutional size explains 0% variance in health workforce performance above and beyond the variance by Corporate Governance and Institutional Size. Thus, the null hypothesis was accepted and therefore Institutional Size does not moderate the relationship between Corporate Governance and Health Workforce Performance.

Table 5. Variation in the Moderated Regression Model for Corporate Governance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	0.860(a)	0.739	0.738	5.7135419	0.739	496.11	2	350	0.000
2	0.860(b)	0.740	0.737	5.7186152	0.000	0.379	1	349	0.538

Note. (a) Predictors: (Constant), Institutional Size, Corporate Governance

(b) Predictors: (Constant), Institutional Size, Corporate Governance, Corporate Governance*Institutional Size

Table 6 depicts the results of coefficients of the regression. Model 1 indicates that Corporate Governance was statistically significant ($p = 0.000 < 0.05$; Beta value = 1.266); Institutional Size was not statistically significant ($p = 0.598 > 0.05$; Beta value = - 0.328). This shows that for a 1-point increase in Corporate Governance, the health workforce performance is predicted to have a difference by 1.266, given that the Institutional Size is held constant. The regression coefficient associated with Institutional Size means that the difference in health workforce performance between a large and a small institution is - 0.328, given that Corporate Governance is held constant.

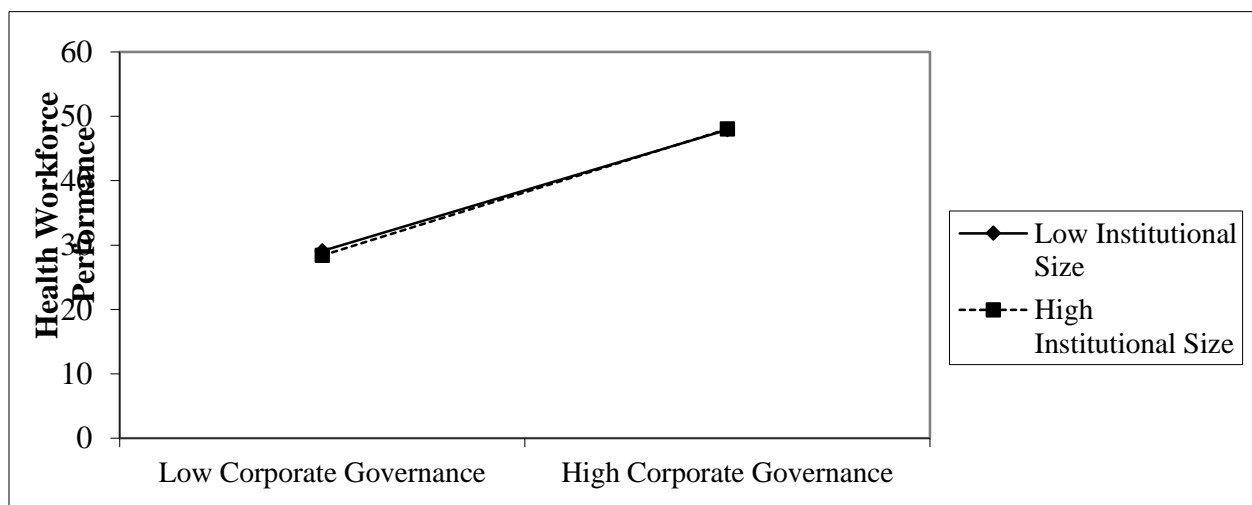
Model 2 shows the results after the interaction term (Corporate Governance*Institutional Size) was introduced in the equation. As indicated in Table 6, the inclusion of interaction term resulted in an R^2 change of 0.000, $[F(1, 349) = 0.379, p = 0.538 > 0.05]$. Corporate Governance was found to be highly significant ($p = 0.000 < 0.001$, Beta value = 1.235), Institutional Size was found not to be significant ($p = 0.459 > 0.05$, Beta value = -1.612), Corporate Governance*Institutional Size was found not to be significant ($p = 0.538 > 0.05$, Beta value = 0.051).

Table 6. Moderated Regression Model Coefficients for Corporate Governance

Model		Coefficients			
		B	Std. Error	t	Sig.
1	(Constant)	6.312	1.084	5.821	0.000
	Corporate Governance	1.266	0.041	31.207	0.000
	Institutional Size	-0.328	0.622	-0.528	0.598
2	(Constant)	7.062	1.632	4.329	0.000
	Corporate Governance	1.235	0.065	19.072	0.000
	Institutional Size	-1.612	2.175	-0.741	0.459
	Corporate Governance*Institutional Size	0.051	0.083	0.616	0.538

The result for Model 2 indicates that for a 1-point increase in Corporate Governance, the Health Workforce Performance is predicted to have a difference by 1.235, given that Institutional Size is held constant. The interpretation of the regression coefficient for the interaction term is that there was a 0.051 difference between the large and small institution for the slope of Health Workforce Performance on Corporate Governance.

From descriptive statistics, the value of the mean score for Corporate Governance is 25.4865 and for the standard deviation (SD) is 7.5950. The value 1 SD above the mean is 33.0815 and the value 1 SD below the mean is 17.8945. Thus, using the value of 1 SD above and 1 SD below the mean yields the graph shown in Figure 2. Results led to the conclusion that there was no significant moderating effect of Institutional Size. Although insignificant, Figure 2 shows that the Health Workforce Performance-Corporate Governance relationship is stronger (i.e. steeper slope) for large institution as compared to small institution.

**Figure 2. Slope of Health Workforce Performance on Corporate Governance for Institutional Size**

DISCUSSION

The results of this study showed that institutional size did not significantly moderate the relationship between Corporate Governance and Health Workforce Performance. This could be because Corporate Governance in organizations of various types requires the same principles of Corporate Governance for effective governance of the institutions. The results of this study are similar to that by Al-Rawahi, Hamdi, and Bashir (2011) who found that there is no evidence to suggest that the key factors for the successful implementation of ISO 9000 differ significantly according to organization size or sector type. They further explained that one possible explanation for these results is that regardless of their operational differences, all organizations require common management skills, i.e. the ability to plan, organize, coordinate, and control. In other words, organization size may not be an issue in ISO 9000 implementation since organizations are usually managed in a way that suits their size or sector type.

Corporate governance provides the structure through which the objectives of the company are set, and the means of attaining those objectives and monitoring performance are determined. Good corporate governance should provide proper incentives for the board and management to pursue objectives that are in the interests of the company and shareholders and should facilitate effective monitoring, thereby encouraging firms to use resources more efficiently (OECD, 2004). This implies that corporate governance can have an effect on a workforce performance because the stakeholders in corporate governance are always charged with the responsibility of overseeing policy formulation and implementation that are to affect workforce performance and this includes decisions such as ISO certification to improve service delivery.

A study by Terziovski and Samson (2000) argued that their finding that larger companies tend to gain greater benefits from TQM than smaller firms due to the greater availability of resources in larger firms means that institutional size tends to impede the implementation of TQM. This is a significant implication for managers from both large and small companies that have implemented TQM, are in the process of implementing TQM or are contemplating the implementation of TQM as a business strategy.

In a study by Sazali et al. (2009) on the moderating effects of multinational companies' size in the relationship between degree of inter-firm technology transfer and local firms' performance, it was found that size of multinational companies has significantly affected the relationships between degrees of technology transfer and local firms' human resource performance; where the relationship was found stronger for large multinational companies as compared to medium/small multinational companies. However, size of multinational companies did not significantly moderate the relationship between degree of technology transfer and local firms' corporate performance.

IMPLICATION TO RESEARCH AND PRACTICE

As noted by Al-Rawahi et al. (2011), regardless of their operational differences, all organizations require common management skills like the ability to plan, organize, coordinate and control. In other words, organizational size may not play a significant role in corporate governance since organizations are usually managed in a way that suits their size or sector type.

CONCLUSION

One general important conclusion that can be drawn from this study is that effective and efficient corporate governance can be applied to all business sectors and all sizes of institutions despite most studies in this area having been conducted in the manufacturing sector. Therefore, the issue of institutional size or sector type should not be a factor in deciding upon corporate structures and benefits thereof such as workforce better performance.

FUTURE RESEARCH

This study was based on cross-sectional snapshot. A longitudinal study that will determine cause-and-effect relationship over time to support causal arguments is needed to detail the impact of corporate governance over time.

REFERENCES

- Aamidi, A. (2002) Mathematics and Statistics, Tehran University, Tehran.
- Aguinis, H. (2004) Regression analysis for categorical moderators, New York, NY: The Gilford Press.
- Aiken, L.S. and West, S.G. (1991) Multiple regression: testing and interpreting interacting, Newbury Park, CA: Sage.
- Al-Rawahi, A.M.S., Hamdi A., and Bashir, H.A. (2011) "On the implementation of ISO 9001:2000: A comparative investigation", The TQM Journal, 23 673 – 687.
- Chen, L., Evans, T., Anand, S., Boufford, J.I., Brown, H., Chowdhury, M.,... Wibulpolprasert, S. (2004) "Human resources for health: Overcoming the Crisis", Harvard University, Cambridge: MA, USA.
- Chung, K.H., Wright, P. and Kedia, B.B. (2003) "Corporate governance and market valuation of capital and R&D investment", Review of Financial Economics, 12 161-172.
- Denis, D.K. and McConnell, J.J. (2002), "International corporate governance", working paper, Krannert Graduate School of Management, Purdue University.
- Denis, D.K. and McConnel, J.J. (2003) "International corporate governance", Journal of Financial and Quantitative Analysis, 38 1-36.
- Dhanaraj, C., Lyles, M.A., Steensma, H.K. and Tihanyi, L. (2004) "Managing tacit and explicit knowledge transfer in IJVs: The role of relational embeddedness and the impact on performance", Journal of International Business Studies, 35 428-42.
- Feng, M., Terziovski, M. and Samson, D. (2007) "Relationship of ISO 9001:2000 quality system certification with operational and business performance: A survey in Australia and New Zealand-based manufacturing and service companies", Journal of Manufacturing Technology Management, 19 22-37.
- George, D. and Mallery, P. (2003) "SPSS for Windows step by step: a simple guide and reference, 11.0 update", (4th ed.), Boston: Allyn and Bacon.
- Gompers, P., Ishii, J. and Metrick, A. (2003) "Corporate governance and equity prices", The Quarterly Journal of Economics, 118 107-156.
- Habte, D., Dussault, G. and Dovlo, D. (2004) "Challenges confronting the health workforce in sub-Saharan Africa", World Hospital Health Service, 40 23-6, 40-1.

- Hair, J.F., Black, W.C., Babin, B., Anderson, R.E. and Tatham, R.L. (2005) "Multivariate Data Analysis (6th ed.)", Upper Saddle River, NJ: Prentice-Hall.
- Joint Learning Initiative (2005) "Human resources for health: Overcoming the crisis", research and Training Institute Strategic Report, Cambridge, MA: Harvard University Press.
- Kothari, C. (2004) "Research methodology, methods and techniques", New Delhi: New Age International (P) Ltd. Publishers.
- Kyereboah-Coleman, A. (2007) "Corporate governance and firm performance in Africa: a dynamic panel data analysis", 2007 proceedings in international Conference on Corporate Governance in Emerging Markets, available at www.ifc.org/.../Kyereboah-Coleman++Corporate+Governance.pdf (accessed 15th April, 2014).
- Miller, M.J. (2009) "Reliability and validity", available at: http://michaeljmillerphd.com/res500_lecturenotes/reliability_and_validity.pdf (accessed 16th April, 2014).
- Organization for Economic Co-operation and Development (2004) "Principles of corporate governance", available at <http://www.oecd.org/dataoecd> (accessed 10th March, 2014).
- Park, Y.W. and Shin, H.H. (2003) "Board Composition and Earning Management in Canada", *Journal of Corporate Finance*, 185 1-27
- Prevost, A.K., Rao, R.P. and Hossain, M., (2002) "Determinants of board composition in New Zealand: a simultaneous equation approach", *Journal of Empirical Finance*, 9 373-397.
- Republic of Kenya (2006) "The Report on Human Resource Mapping and Verification Exercise", Nairobi: Government Printers.
- Sazali, A.W., Haslinda, A., Jegak, U. and Raduan, C.R. (2009) "Moderating Effects of MNCs' Size in the Relationship between Degree of Inter-Firm Technology Transfer and Local Firms' Performance", *American Journal of Scientific Research*, 6 52-66.
- Singh, M. and Davidson III, W.N. (2003) "Agency costs, ownership structure and corporate governance mechanisms", *Journal of Banking and Finance*, 27 793-816.
- Terziovski, M. and Samson, D. (2000) "The effect of company size on the relationship between TQM strategy and organisational performance", *The TQM Magazine*, 12 144 – 149.
- Tsang E.W.K., Tri D.N. and Erramilli M.K. (2004) "Knowledge acquisition and performance of international joint ventures in the transition economy of Vietnam", *Journal of International Marketing*, 12 82–103.
- Tricker, I. and Adrian, C. (2009) *Essentials for Board Directors: An A-Z Guide*, New York: Bloomberg.
- World Health Organization (2003) "Millennium development goals progress report for Kenya", Geneva, World Health Organization, available at <http://www.who.int/whr/2003/en/> (accessed 30th January, 2014).
- World Health Organization (2006a) "World health report 2006. Working together for health", Geneva, World Health Organization", available at <http://www.who.int/whr/2006/en/> (accessed 30th January, 2014).
- World Health Report (2006) "Making the most of existing health workers", available at <http://www.who.int/whr/2006/en/> (accessed 30th January, 2014).
- Young, B., (2003) "Corporate governance and firm performance: is there a relationship?", *Ivey Business Journal Online*, pp. 1-4.
- Zurn, P., Dal Poz, M.R., Stilwell, B. and Adams, O. (2004) "Imbalance in the health workforce", *Human Resources for Health*, 2.