

## METHODOLOGICAL APPROACHES TO HEALTH SYSTEMS GOVERNANCE RESEARCH

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### ABSTRACT

**Background:** Governance in health is a process whereby important decisions are made and determining who is accountable. Good health system governance (HSG) can ensure optimal functioning of the health system influenced by transparent rules and governed by effective oversight. Assessment of governance can influence the health outcome of the population when subsequent improvement is made for better policy input. The aim of this review is to understand the methodological research approaches used in the assessment of HSG.

**Methodology:** A review was directed from a collection of articles obtained from Pubmed, ScienceDirect and CINAHL databases that summarises relevant prior publication on methodological approaches that have been used in HSG research describing study design, methods of data collection and analysis. Only original articles of the past ten years (2009 to 2019) published in English language is included. Data was extracted base on a pre-constructed matrix.

**Results and Discussion:** Findings revealed different research methods for the qualitative, quantitative and mixed-methods design. Similarities between the three are in terms of how research questions direct the choice of study design and the use of a governance framework or recommendation of indicators to guide the study. There were differences in terms of the nature of study, the methods used, and type of information gathered. Each study design has its own strengths and limitations. Lessons learned include research going beyond descriptions, tailoring approaches to fit study objectives, the importance of communicating findings and being clear in giving recommendations for policymaking.

**Conclusion:** The qualitative design is contextual yet difficult to generalize, the quantitative design is generalizable yet very explicit to certain indicators specified while the mixed methods design is comprehensive but requires more resources to carry out.

**Keywords:** health system governance, assessment, methodological approaches, research design

## 1.0 Introduction

The topic of governance has been discussed in various disciplines such as political science, social science, economics, including health. At the root of it, governance is concerned with matters of how different actors in the world function and operate, and to comprehend reasons for their decisions in the context they are in. Governance was brought into the global development agenda in 1989 by the World Bank in a landmark report on sustainable growth in sub-Saharan Africa which played a vital role in introducing the concept of 'good governance' (World Bank, 1989). From then on, the concept of governance has evolved and is continuously evolving to be understood as how it is today. The application of governance may be slightly different according to different areas of focus. This review particularly focuses on the discussion of governance in the health sector, rather than the general concept of governance.

### 1.1 The Concept of Governance in Health Sector

With regards to the health sector, applying the definition by the United Nations Development Programme (UNDP) in its 1997 policy paper, governance can be understood as “*the exercise of economic, political and administrative authority*” to manage country’s health affairs at all levels which includes “*the mechanisms, processes and institutions*” where citizens’ voice are heard to ensure rights, obligation and differences are met and mediated. (UNDP, 1997). Thus, governance in health is a process whereby important decisions are made by organizations or societies in relation to health, while determining who is involved in the process and who is accountable.

There are four main scope, sometimes overlapping, where the concept of governance is particularly relevant and often applied that is global, national, institutional or the community (Institute on Governance, 2003). When discussing about governance in health sector, the scope of discussion is usually made explicit, so that the outcome of the discussion is clear. For example, governance of the health system of a country may refer to the scope of national health governance as compared to governance of a hospital or a district health office which is more of institutional governance.

To further understand governance in health sector, it is crucial to understand the differences between what constitute corporate governance, clinical governance and health system governance. Notwithstanding the application of other theories, corporate governance adopted from private sector corporations has been majorly influenced by the agency theory that holds the assumption that principals (i.e board directors) are in control and capable of providing consistent direction over time to agents (Gauld, 2007). Therefore, governance from this perspective is more about monitoring and control in an organisation to achieve its objectives. On the other hand, clinical governance focuses on leadership directed towards meeting clinical needs and the range of processes for ensuring quality of care, while aspects such as financial considerations and rationing are frequently overlooked (Maxwell & Carswell, 2011). There have been debates on the inadequacies of clinical governance as compared to the general concept of corporate governance due to its narrower focus on patient care (Jones, 1999). Consequently, the more recent approach to look at governance in the health sector is taking a ‘systems’ perspective to study governance broadly across levels of the health system,

which henceforth will be considered as health system governance (HSG). Discussions from literature revealed some overlap between so-called corporate governance and health system governance in that they share the ‘institutionalized’ approach, however, the emphasis in health system governance is on stakeholders instead of shareholders, where profit is not the focus, decision-making is more diffused and is accompanied by varied goals (Bennington, 2010).

### **1.2 Health System Governance**

A system is defined as parts of a complex whole working together making up a functioning mechanism or an interconnecting network, thus expanding from that as defined by the World Health Organisation (WHO), health system can be understood as all related activities whose primary purpose is to promote, restore or maintain health (WHO, 2000).

Health systems are shaped by the choices made by political actors and by how leaders and managers exercise authority. They are a product of decisions about resource allocation and rationing, how public inputs are organized, prioritised and attended to, and the signals sent to health workers about their roles, direction and performance. These features of governance, leadership and accountability are recognized to be central to the performance of health systems (WHO, 2007). Its importance has greatly increased in recent years with increasing political and leadership challenges.

The WHO has defined health system governance (HSG) as “*ensuring that strategic policy frameworks exist and are combined with effective oversight, coalition building, regulation, attention to system-design and accountability*” (WHO, 2000). Good HSG has been conceptualised as a fundamental requirement for optimal functioning of all other health system components. The WHO definition is based on political ideology; that the health system can be influenced by transparent rules and governed by effective oversight (World Health Organization, 2000). A framework for action to strengthen health systems and a handbook of indicators were subsequently published by the WHO to measure and monitor the six building blocks of health systems, one of them being governance (WHO, 2007, 2010).

### **1.3 Assessment of Health System Governance**

There is increasing attention given to understanding governance nowadays as it has bearing on a multitude of issues in the health system. It has been shown that poor governance of the health system is ultimately linked to poor health outcomes of the population (The National Academies of Sciences Engineering Medicine, 2018). This occurs as a result of inadequate transparency, chronic underfunding for health and inefficient regulatory oversight which reduces the quality of healthcare delivery. Therefore, information regarding the health systems’ strengths and weaknesses that of governance is key for the improvement of health policy formulation and implementation. Assessment of HSG is crucial to give input for health policy and capacity building.

Governance varies across contexts and cultures, and the way countries work to improve their HSG may be different (United Nations Development Programme, 2014). However, there is a common global consensus on what have been generally accepted as good governance principles. Multiple principles of good governance have been proposed those ranging from six

to twelve principles. However, the most commonly quoted and represents other overlapping principles are the nine principles introduced by the UNDP (Rahman & Hd, 2016; Siddiqi et al., 2009; UNDP, 1997). From the nine principles, accountability is a key principle underpinning many aspects of governance both vertically, from government to people, and horizontally between parts of the system.

To assess governance, there are many assessment frameworks available that can be and have been applied to look into a country's HSG (Pyone, Smith, & Van Den Broek, 2017). What is notable from these frameworks is two main approach consideration that can be seen from several of them despite having variations, that is assessing governance institutionally base on the principles of good governance or systematic assessment of governance according to the WHO health system building blocks (Mikkelsen-Lopez, Wyss, & De Savigny, 2011; Siddiqi et al., 2009; World Health Organization, 2007). Some of the frameworks have been applied in combination to study HSG in a country.

#### ***1.4 Methodological Approach of Assessing Health System Governance***

In conducting a HSG study, the methodological approach chosen is closely linked to the objectives of the research. For HSG studies, as it involves a 'systems thinking' the research has been coined as 'health system analysis' by the World Bank (Berman & Bitran, 2011). What it implies is that it takes a view of a whole health system, so that a general set of elements would be included in a comprehensive analysis of the whole health system like a national health system. Consequently, it could also be applied to more segmented analysis such as that of a "subsystem," for example, focusing on a type of service delivery (e.g. hospitals) or a particular health problem category (e.g. mental health). As the focus is governance, therefore the 'health system analysis' is particularly focused on the aspect of governance of the health system.

The methodological approach for HSG research can be broadly categorized into three – qualitative research design, quantitative research design and mixed methods research design, which utilize different ways of data collection methods as subsequently be elaborated.

##### ***1.4.1 Qualitative Research Design***

Since the attention for HSG studies are still developing, there are still few standardized, quantitative indicators to measure governance in the health sector particularly (USAID, 2012). Hence, there is a slight predominance of the qualitative approach for HSG research. Qualitative research design is commonly applied to HSG due to its complexity (Zattoni, Douglas, & Judge, 2013). It provides a better understanding of the mechanisms, processes and actors involved in governance paying attention to the context of the system.

In particular, the qualitative case study design has been broadly and productively used in governance research usually guided by any particular governance assessment framework (Stewart, 2012). Case study can be in the form of a single case study, multiple case studies or comparative studies between two cases from two countries for example. As a health system is a complex entity to analyse and describe, what works in one country may not work in another hence attention to culture and context is crucial and case study design allows for this to happen (Healy, Tang, Patcharanarumol, & Annear, 2018). The methods of data collection

vary depending on the purpose of the study but what is commonly used are in-depth interviews of relevant stakeholders, sometimes focused group discussions and if required, together with content analysis of policy documents. In some cases, the study may only utilise one form of data collection method accordingly.

#### ***1.4.2 Quantitative Research Design***

The application of quantitative research design in studying HSG goes back to the research questions being asked. To measure governance objectively for health in particular, different list of governance indicators exists, among others is the WHO health system governance indicators where two types of indicators, the rule-based and outcome-based, have been proposed for measuring governance (World Health Organization, 2010). Rule-based indicators measure the availability of appropriate policies, strategies and organized approaches for HSG. On the other hand, outcome-based indicators measure the outcome of rule and procedure implementation for example data on absenteeism of workers of drug accessibility. Indicators measured should be relevant to a country. However, studying one indicator may not be enough to explain governance entirely.

In addition, despite being more objective quantitative methods are conducted to a lesser degree due to challenges of governance indicators data reliability or if available may be hard to obtain at the country level (Rohova, Atanasova, Dimova, Koeva, & Koeva, 2017). Studies that measures quantitative governance indicators usually utilizes publicly available data or commonly conduct cross-sectional surveys to get primary data for analysis (Healy et al., 2018). However, the assessment can be misleading for policy responses in the absence of reliable data, interconnected quantifiable indicators and comprehensive analysis.

#### ***1.4.3 Mixed Methods Research Design***

In general, the numbers of HSG studies using mixed methods research design is still not significant although it is gaining momentum in recent years. When a phenomenon is complex such as governance, the use of mixed methods allows for a deeper understanding than the use of either a quantitative or qualitative approach alone (Ridde & Olivier De Sardan, 2015).

HSG studies can be carried using any of the three main types of mixed methods research design base on what the research question seeks to answer (Creswell & Clark, 2017). The first is the convergent design where qualitative and quantitative data are collected and interpreted separately, and then findings are merged to get an overall understanding of HSG (Atela, Bakibinga, Ettarh, Kyobutungi, & Cohn, 2015). The second is exploratory sequential design where qualitative data are used to inform the development of a quantitative tool which will be used to generalize findings of research for example validation of a national governance measurement tool (Mutale, Mwanamwenge, Balabanova, Spicer, & Ayles, 2013). And thirdly, is the explanatory sequential design where quantitative data is collected first and qualitative data subsequently collected to explore further on the issue identified initially (Gupta et al., 2017). Methods used in any of these studies commonly follows the qualitative or quantitative data collection method accordingly.

This paper aims to explain the different kinds of methodological approaches that can be used to answer HSG research questions and to understand the characteristics of studies that uses the different methodologies while identifying its strengths and weaknesses.

## 2.0 Materials and Methods

A review was conducted from a collection of articles obtained from online databases that are from Pubmed, ScienceDirect and CINAHL. This literature review provides a summary of what is believed to be the most relevant prior publications that gives a broad picture of the methodological approaches that have been used in HSG research, involving the study design, methods of data collection and analysis used.

The keywords used for the search terms include HSG, methodological approaches, qualitative, quantitative, and mixed methods research design. Only original articles of the past ten years (2009 to 2019) published in English language is included. Required information was extracted from reviewed articles in terms of the author name, year of the study, study design, focus area of study, methodological approaches and key findings of research.

## 3.0 Results & Discussion

The required information about methodological approaches were obtained and summarized into the table 1. Discussions were based on the three different methodological approaches to HSG research.

**Table 1** Summary table of articles reviewed.

Author, Year	Aim of Study	Focus Area	Research design	Methodology		Key Findings
				Data Collection Method	Analysis	
(Ogbuabor & Onwujekwe, 2018)	To evaluate governance requirements to scale up strategic purchasing in free healthcare policies in Nigeria and other similar low-resource settings	Strategic purchasing for a free maternal and child healthcare programme	Qualitative case study	Semi-structured interviews: 44 key health system actors from the Ministry of Health and two health districts.	Data collection: guided by Siddiqi et. al. governance framework.  Data analysis: framework analysis approach	Supportive governance practices and weak governance practices purchasing were identified.  Appropriate governance model for strengthening strategic purchasing in the FMCHP is necessary to overcome weak governance.
(McCollum, Limato, Otiso, Theobald, & Taegtmeier, 2018)	To examine governance across health systems levels for community health services in two countries at different stages in the devolution journey for healthcare	Community Health Services of two countries	Qualitative multiple cases study (Comparative analysis)	In-depth Interviews (IDI) and focus group discussions (FGDs) across multiple levels of the health system in: - one district in Indonesia through 80 IDIs and 6 FGDs - ten counties in Kenya through 269 IDIs and 14 FGDs	Data collection: digitally recorded, transcribed & coded  Data analysis: thematic analysis approach (inductive and deductive)  Inter-country analysis workshop: critical analysis of similarities and differences between contexts	Both Indonesia and Kenya experienced similar challenges to ensure good governance for health. In both contexts, the impact of governance mechanisms has been undermined by multiple factors. As a result, health services priorities in both contexts are often curative rather than preventive.
(Yuan, Jian, He, Wang, & Balabanova, 2017)	To identify the governance policies and practices that have shaped these two initiatives, to assess the extent to which these governance practices conformed to the criteria for good governance and to identify lessons	Rural health insurance system:	Qualitative case study (Content analysis)	Specific databases were searched for publications and policy documents according to specified criteria relevant to the development of two rural health insurance policies in China. Exactly 92 documents on two specific insurance schemes included.	Data extraction: guided by WHO's governance framework for functions of health system and Siddiqi's framework for assessing health system governance.  Data analysis: framework analysis approach	A series of governance practices in China were supportive of progress but this were not seen in all governance domains. Health systems governance may be critical in enabling the development and operation of such rural health insurance schemes. Strengthening specific practices in each governance domain could inform the adaptation of schemes to other settings.
(Abdulmalik, Kola, & Gureje, 2016)	To evaluate the mental HSG of Nigeria with a view to understanding the challenges, opportunities and strategies to strengthen	Integrated primary mental health care	Multi-method qualitative case study	A situational analysis of the health policy and legal environment in the country was performed. Then, IDIs of key informants were conducted at national, state and district levels guided by	Interviews were transcribed and analysed using a combination of inductive and deductive coding. The final coded transcripts were analysed using framework analysis approach.	Key health sector documents, except for the revised mental health policy, reveal a complete exclusion of mental health in the existing policy, legislative and institutional framework for HSG. Pragmatic strategies for mental health system strengthening that include a consideration of existing

Author, Year	Aim of Study	Focus Area	Research design	Methodology		Key Findings
				Data Collection Method	Analysis	
				the Siddiqi's governance framework.		challenges and opportunities within the system were identified towards strengthening the mental health system of Nigeria.
(Hone, Rasella, Barreto, Atun, & Majeed, 2017)	To investigate whether expansion of the Brazilian Estratégia de Saúde da Família (ESF; family health strategy), reduced amenable mortality and whether associations varied by municipal health system governance.	Community-based primary care program	Quantitative (secondary data)	Annual data obtained for 2000-2012 on: mortality, ESF coverage, public health expenditure, socioeconomic characteristic, & population.  Public administration survey data obtained from 2001-2002: information about services, policies, and infrastructure provided in municipalities.  Health system governance indicators used: according to key dimensions of the WHO's definition of governance.	Annual municipality ESF coverage: calculated as the presence of one ESF team per 3,450 individuals. Amenable & Nonamenable Mortality were defined.  Municipal health governance: measured from public administration survey, and resulting scores were used in interactions.  Fixed-effects longitudinal regression models used: to identify relationship between ESF coverage and amenable mortality rates in 1,622 municipalities in Brazil .	Factors associated with a higher health governance score: demographic and development factors (population size and education). Increasing ESF coverage from 0 percent to 100 percent was associated with a reduction of 6.8 percent in rates of amenable mortality, compared with no increase in ESF coverage.  Municipalities with highest governance scores: 11% reduction; lowest scores: 4.3% reduction.  Findings suggest that strengthening local health governance may be vital for improving health services effectiveness and health outcomes in decentralized health systems.
(Abimbola et al., 2015)	To examine transaction costs and their implications for health system governance of three designated secondary health centres for TB care in Ebonyi State, Nigeria	Secondary health TB centre	Quantitative (cross-sectional study)	Cross-sectional survey of 452 pulmonary TB patients sampled from three rural secondary care facilities to assess the costs of TB care pathway to patients.	The normality of direct cost data distribution was assessed using visual graphs. The pathway of patients seeking health services from various providers until they reached an NTP provider was constructed using a flow diagram. Regression models were constructed with the number of pre-NTP visits and transaction costs as outcome variables.	Inappropriate consultations with qualified providers (QP) were 33%; 57% with informal providers and 10% traditional providers (TP; 10%). A total of 62% of transaction costs were incurred during the first visit to an inappropriate provider and the mean transaction costs incurred was highest with QPs (US\$30.20). The concept of transaction costs presents insights into the study of health system governance in LMICs, as it considers implications of weak health system governance. High transaction costs can be attributed to a



Author, Year	Aim of Study	Focus Area	Research design	Methodology		Key Findings
				Data Collection Method	Analysis	
(Barnett et al., 2009)	To understand the implementation of new modes and mechanisms of governance under New Zealand health system reforms and to assess these in the context of international trends	National health system reform	Mixed methods	<p>Data were collected from five key groups that specifically addressed the implementation of governance.</p> <p>Three data collection strategies were used: semi-structured survey interviews with DHB leaders (chairs and CEOs); key informant interviews with government level informants and with non-government health sector organisations; a postal survey of DHB members.</p> <p>Data were collected over two time periods (2001/2002; 2003/2004).</p>	<p>Interviews: taped, transcribed with member checks, then analysed using pre-determined &amp; emergent themes. Separate analyses were reported.</p> <p>Survey responses: analysed, statistical significance assessed using two-tailed t-tests, Mann Whitney U tests and Kruskal Wallis tests. Relevant 'Free text' responses were categorised thematically and reported.</p> <p>Analysis integrated findings from qualitative &amp; quantitative methods under themes related to modes and mechanisms of governance.</p>	<p>failure of health system governance.</p> <p>A hierarchical mode of governance was implemented with mechanisms to ensure political accountability. Over the implementation period the scope of decision-making at different levels required clarification and mechanisms for accountability required adjustment.</p> <p>The successful implementation of a mix of health system governance modes in New Zealand during reform of 2001 – 2004 was characterised by clear government policy, flexibility of approach and the appearance of an unintended network.</p>
(Atela et al., 2015)	To explore the extent to which local populations were aware of the accountability mechanism and the extent to which it influenced their experiences when visiting a health centre.	Local community's perception on HSG of health centres	Mixed Methods	<p>Quantitative: Household survey was conducted in 2011 among 1,024 respondents (36 % male, 64 % female) aged 17 years and above stratified by health facility catchment area, situated in a division in Kericho District.</p> <p>Qualitative: Sixteen FGDs were conducted with health facility users in the four health facility catchment areas.</p>	<p>Quantitative data were analysed through frequency distributions and cross-tabulations.</p> <p>Qualitative data were analysed using a thematic approach following a path of familiarisation with the data, construction of a preliminary coding scheme, followed by manual qualitative content analysis and interpretation using a method adopted from Graneheim and Lundman.</p>	<p>The majority (65 %) of household survey respondents had seen their local facility service charter, 84 % of whom had read and found the information on the charter to be useful or very useful. But, several challenges were also cited.</p> <p>Improving the compliance of health facilities in districts across Kenya with regard to the implementation of the facility service charter is critical for accountability and community satisfaction with service delivery.</p>

### 3.1 Studies Related to the Qualitative Research Design

Review of articles revealed several HSG studies using the qualitative research design methodology. All of these studies took the qualitative case study design approach with slight variations in conduct, two single case study design using different data collection method, one multiple case studies comparative analysis, and one multi-method qualitative case study. Out of these four studies, only one looked at governance of the whole national health system comparing it between two countries, while three other studies looked at a smaller segment of the health system bounded as a 'subsystem' which are on the maternal and child healthcare programme, the rural health insurance system and integrated primary mental health care.

A single case study by Ogbuabor and Onwujekwe (2018) in Nigeria, aimed to evaluate governance requirements to scale up strategic purchasing in free healthcare policies of the family, maternal and child healthcare programme (FMHCP) (Ogbuabor & Onwujekwe, 2018). Semi-structured interviews of 44 key health system actors were conducted. Interviewees were selected from the Ministry of Health and two health districts where interviews were guided by the 10-governance-principle Siddiqi's framework. Data were then analysed using the framework analysis approach which allows systematic categorizing and organizing of data using matrices to facilitate generation of descriptions, categories, themes and explanations (Gale, Heath, Cameron, Rashid, & Redwood, 2013). The study identified both supportive and weak governance practices for strategic purchasing and recommended an appropriate governance model to strengthen purchasing for the FMHCP.

In comparison, the study to identify governance policies and practices that shaped two rural health insurance initiatives in China and assess the extent to which these governance practices conformed to good governance is also a single case study design but collected data via content analysis of relevant document policies (Yuan et al., 2017). This study looked at 92 identified publications and policy documents relevant to the Cooperative Medical Scheme (CMS) and New Rural Cooperative Medical Scheme (NCMS). Like the study in Nigeria, data extraction was also guided by Siddiqi's framework for assessing HSG in combination with WHO's governance framework for health system functions and utilises the framework analysis approach. Findings revealed supportive governance practices but were not present in all governance domains. Recommendations included strengthening specific practices in each domain to improve implementation and inform adaptation of schemes to other settings.

Another study in Nigeria was a multi-method case study design evaluating the mental HSG to understand challenges, opportunities and strengths of integrated primary mental health care (Abdulmalik et al., 2016). Initially a situational analysis of the health policy and legal environment in the country was performed followed by in-depth interviews of key informants at national, state and district levels guided by the Siddiqi's governance framework. Data analysis also uses the framework analysis approach. Key health sector documents reveal a complete exclusion of mental health in the existing policy, legislative and institutional framework for HSG. Pragmatic strategies were recommended for mental health system strengthening considering existing challenges and opportunities within the system.

McCollum et al. (2018) examine governance across health systems levels for community health services in two countries at different stages in the devolution journey for healthcare

(McCollum et al., 2018). This study was a comparative (multiple) case studies. In-depth interview and focused group discussions were conducted across multiple levels of the health system in one district in Indonesia and ten counties in Kenya. Data was digitally recorded, transcribed and coded and subsequently analysed inductively and deductively using the thematic analysis approach. An inter-country analysis workshop was done to critically analyse similarities and differences between both country contexts. In both contexts, the impact of governance mechanisms has been undermined by multiple factors resulting in a more curative rather than preventive health services priorities.

### ***3.2 Studies Related to the Quantitative Research Design***

The two HSG quantitative studies reviewed was conducted in two different segments of the health system, one in Brazil looking at a family health community-based primary care program and the other in Nigeria looking at secondary health centres for Tuberculosis care (Abimbola et al., 2015; Hone et al., 2017). Data sources were also different where the study in Brazil utilises secondary data that is publicly available while the study in Nigeria conducted a primary cross-sectional survey. There were similarities in analysis where both studies used regression models construction, but there were some differences on the type of regression models used.

The study by Hone et al. (2017) investigated whether variations in amenable mortality reduction from the expansion of the Brazilian Estratégia de Saúde da Família (ESF; family health strategy) is associated with municipal HSG. Measurement of the municipal's HSG of the ESF were based on WHO governance indicators with data from public administration survey and resulting scores were used in interactions. Annual municipality ESF coverage were calculated as the presence of one ESF team per 3,450 individuals. Fixed-effects longitudinal regression models were used to identify relationship between ESF coverage and amenable mortality rates in 1622 municipalities in Brazil. Increasing ESF coverage from 0 percent to 100 percent was associated with a reduction of 6.8 percent in rates of amenable mortality, compared with no increase in ESF coverage. Demographic and development factors (population size and education) were identified as factors associated with a higher health governance score. Findings suggest that strengthening local health governance may be vital for improving health services effectiveness and health outcomes in decentralized health systems.

Another study was conducted in Nigeria by Abimbola et al. (2015) to examine transaction costs and their implications for HSG of three designated secondary health centres for TB care in Ebonyi State. A cross-sectional survey of 452 pulmonary TB patients sampled from three rural secondary care facilities was conducted to assess the costs of TB care pathway to patients. The normality of direct cost data distribution was assessed using visual graphs with the pathway of patients seeking health services from various providers until they reached a provider was constructed using a flow diagram. Regression models were constructed with the number of pre-visits and transaction costs as outcome variables. A total of 62% of transaction costs were incurred during the first visit to an inappropriate provider and the mean transaction costs incurred was highest with a qualified provider (US\$30.20). The concept of transaction costs presents insights into the study of HSG in LMICs, as it considers implications of weak HSG. High transaction costs can be attributed to a failure of HSG.

### **3.3 Studies Related to the Mixed Methods Research Design**

Review of articles revealed two published mixed methods research on HSG. The two articles presented portrayed governance from two different perspectives, one from the policymaker as a part of a national health system reform initiative in New Zealand and the other from the local community's perspective on HSG of community health centres.

A national health system governance study in New Zealand was performed to understand the implementation of new modes and mechanisms of governance under New Zealand health system reforms and to assess these in the context of international trends (Barnett et al., 2009). Data were collected from five key groups that specifically addressed the implementation of governance; government level informants, local District Health Board (DHB) members, DHB chairs, DHB CEOs and non-government health organisations (NGHO). The research did not include the views of the public. Three data collection strategies were used: (1) semi-structured survey interviews with DHB leaders; (2) key informant interviews with government level informants and with NGHOs; and (3) a postal survey of DHB members. Interviews were taped, transcribed with member checks, then analysed using pre-determined and emergent themes and reported separately. Survey data was analysed, and statistical significance assessed, while 'free text' responses were categorised thematically and reported. Integrated analysis from qualitative & quantitative methods were elicited under themes related to modes and mechanisms of governance. Findings revealed the successful implementation of a mix of HSG modes in New Zealand during their reform period of 2001 to 2004 characterised by clear government policy, flexibility of approach and the appearance of an unintended network. Over the implementation period the scope of decision-making at different levels required clarification and mechanisms for accountability required adjustment.

On the other hand, a study on the local community's perception of HSG was conducted in Kenya to explore the extent to which local populations were aware of the accountability mechanism and the extent to which it influenced their experiences when visiting a health centre (Atela et al., 2015). A cross-sectional quantitative household survey was conducted in 2011 among 1,024 respondents (64% female, 36% male) aged 17 years and above by health facility catchment area, in a division in Kericho District. Sixteen qualitative focused group discussions were conducted with health facility users in the four health facility catchment areas. Quantitative data were analysed through frequency distributions and cross-tabulations while qualitative data were analysed using a thematic approach following a path of familiarisation with the data, construction of a preliminary coding scheme, followed by manual qualitative content analysis and interpretation using a method adopted from Graneheim and Lundman. Service charters were found to be useful by 84% of the community that had read the charters, but challenges were also presented. It was recommended that it is critical to improve the compliance of health facilities in districts across Kenya in implementing the facility service charter to increase accountability and community satisfaction with service delivery.

### 3.4 Comparisons between Quantitative, Qualitative and Mixed Methods Research Design

From the reviewed articles, a broad similarity can be seen from the point where each study methodologies are driven by the purpose or objectives of the research according to the focus area. The other major similarity is mainly on the overall theme of the research that is on governance of a particular system, service or program at various levels of the health system. Majority of studies are guided by a particular governance framework or set of indicators such as the Siddiqi governance framework which covers the principles of good governance or a more general framework such as the WHO framework of health systems functions with governance indicators (Siddiqi et al., 2009; World Health Organization, 2007, 2010). Comparisons between the methodological approaches are presented as in Table 2.

**Table 2** Similarities between qualitative, quantitative and mixed methods research design for HSG research.

Similarities			
	Qualitative Studies	Quantitative Studies	Mixed Methods Studies
Research questions	All research methodologies are directed by research questions asked by the researcher which will give input to the purpose or objective of research on health system governance.		
Guide on governance elements	Majority studies are guided by a governance framework or a guideline on governance indicators depending on the study design.		
Differences			
	Qualitative Studies	Quantitative Studies	Mixed Methods Studies
Nature of Study	Subjective and contextual	Objective and generalizable	Multi-perspective
Methods	In-depth interview, focused group discussion	Secondary data, surveys, statistical significance in analysis	Both qualitative and quantitative methods
Outcome	Understand contextual factors such as governance strengths and weaknesses	Establish a relationship between determinants identified and health system governance	Comprehensive understanding of governance
Strength	Provides rich data on governance according to context, useful for policymakers and stakeholders	Findings can be used to compare with other similar settings	Inform and explain inputs from different governance domains
Limitation	Poor generalizability, difficult to use findings for comparison	Findings may not be comprehensive due to specific research objectives; indicator data may be hard to obtain	Requires more resources to conduct i.e. time and capacity

Qualitative approaches are mainly exploratory in nature to understand the current governance practices implemented, identifying the strengths and weaknesses of a particular system. It can uncover experiences of governance implementation embedded according to different context. The strength of the qualitative approach is that it allows the gathering of rich information and deeper understanding of contextual factors pertaining to governance (Zattoni et al., 2013). In areas that have no prior research on governance, it can be a baseline study of governance for a

particular health system. However, due to its subjective nature, generalisability of study findings to other settings might be difficult to perform. At the same time, governance is highly contextual and therefore appropriate engagement of stakeholders will make the findings of studies essentially useful for the country or location it was conducted in.

In contrast, quantitative studies' strengths lie in the objectivity of the research findings. As it uses the method of statistical significance to justify findings, conclusion made from such studies can be used to generalise to other similar settings and be used to compare systems' performance in terms of governance (Boyd, Gove, & Solarino, 2017). However, quantitative research has its limitations in terms of comprehensiveness of study. The quantitative research objectives are usually narrow to specific or few governance indicators as it will not be practical or feasible to study a wide range of indicators in one study. Consequently, quantitative data are dependent on the type of governance indicators used, for example the WHO governance indicators, where not all data required may be available or reliable at the country level (World Health Organization, 2010).

Finally, the mixed methods research design that combines both the qualitative and quantitative research may present the most appropriate methodological approach to study HSG (Creswell & Clark, 2017). A single research method, such as a qualitative study of a particular health system governance framework, or governance indicators, produces only a partial picture (Berman & Bitran, 2011). Applying an outline of several study approaches helps to inform and explain inputs from different governance domains, to identify differences among levels or countries, and to assess policies and programmes. Mixed methods research design may produce policy-relevant knowledge that can assist policymakers. However, the limitation of this research design is that it requires a larger resource in terms of time and capacity to conduct as it utilizes both qualitative and quantitative methods.

Indeed, research topics and methods within a field are recursive; addressing new questions may necessitate the development of new methods and measures. Consequently, the availability of investigative tools or the capacity of researches to utilise available tools often constrains the types of questions that can be asked (Hoskisson, Hitt, Wan, & Yiu, 1999). Once utilized, such new methods can be employed to reassess prior questions, due to their potential for providing new insights, either by challenging or extending prior findings.

### ***3.4 Lessons Learned from Health System Governance Research***

A significant body of HSG research work already exists, which can be examined systematically for its methods, quality, and results. Although there is a lot of comprehensive and useful work being done, there is also a lot that can be improved. Some of the key lesson learned from this review are presented in the following paragraphs.

Firstly, HSG research should go beyond simple description of health systems components to be more explanatory, analytical or predictive. These are important features for research findings to be useful for policy relevance with regards to governance.

Secondly, there are a variety of methods, drawn from a range of disciplines and using a variety of qualitative and quantitative approaches or mixed methods that are relevant for HSG research. The application of approaches should be tailored to the research objectives. Some

focus area of HSG is much better developed than others according to different methodological research approaches.

Thirdly, the process of developing, implementing, communicating, and using study results is vital for making an impact. Different approaches may be appropriate in different settings, but those conducting HSG research should pay more attention to these processes as part of good practice.

Finally, HSG research needs to be more explicit and rigorous in drawing conclusions and making recommendations for policy relevance. Vague recommendations or recommendations without enough attention to feasibility are made too often. Advice on implementation could also be improved. The evidence suggests that HSG studies are worthwhile and that they can be done better. It is believed that better HSG research will lead to better health system governance.

#### **4.0 Conclusion**

The qualitative, quantitative or mixed methods methodological approaches share similarities in terms of research questions and what guides the study. The qualitative design is contextual yet difficult to generalize, the quantitative design is generalizable yet very explicit to certain indicators specified while the mixed methods design is comprehensive but requires more resources to carry out. The conduct of a health system governance research can provide valuable evaluative insights on governance if effort is taken to ensure rigorous methodological steps follows.

#### **Declaration**

Authors declare that this manuscript has never been published in any other journal.

#### **Authors' contribution**

Author 1: Information gathering, preparation and editing of manuscript

Author 2: Final review of manuscript and final editing

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