

# Institutional Arrangements for Providing HIV and AIDS Services in Uganda: A Transaction Cost Economics Analysis

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**ABSTRACT:** Transaction cost economics (TCE) theory predicts that features of institutional arrangements determine the intensity of their governance instruments. Consequently, institutional features link to transaction costs, but the linkages have received little attention in the public health literature. This study sought to address this gap. It examined the governance features of institutional arrangements and their transaction cost implications for providing HIV prevention and social support services in Uganda. The analysis was based on 4 proposed TCE governance instruments: administrative controls, adaptation, incentives and contract laws. These governance instruments were assessed in 3 modes of delivery (institutional arrangements) for HIV and AIDS Services in Uganda: Contracting-Out – the case of DREAMS (Determined, Resilient, Empowered, AIDS-free, Mentored and Safe); a Public-Non-Governmental Organisation (NGO) partnership – the case of the CHAI (Community-led HIV/AIDS Initiative); and direct Public Sector Delivery. These assessed delivery modes follow Williamson's TCE framework of 3 institutional arrangements to deliver goods and services, notably market, hybrid (partnership) and internal (hierarchy) delivery, with related governance features. Within this framework, the discriminating alignment hypothesis guided the analysis. According to the hypothesis, the delivery modes of goods and services result in smaller transaction costs when their governance features are as predicted by TCE. The hypothesis was assessed by analysing, with qualitative methods, the differences in HIV and AIDS services characteristics across the 3 arrangements and their differences with theory prediction, and hence the difference in transaction cost implications. The study found that the delivery arrangements that minimised cost are those whose HIV and AIDS services were aligned with the TCE theory prediction. The aligned 'public-NGO partnership' arrangement (CHAI) had fewer sources of transactional costs than the misaligned arrangements – 'contracting-out' (DREAMS) and 'public sector'. The analysis revealed that the DREAMS and public sector delivery models suffered some flaws in efficiencies. DREAMS had high administrative controls, high-powered tangible incentive intensity and intensive monitoring mechanisms for performance adaptation due to the lack of 'trust' on the part of the financing agency, contrary to the TCE prediction. In contrast with the TCE prediction, low administrative controls in the public sector arose from the failure to invest in performance monitoring systems. The high-powered incentive intensity and low administrative controls observed in the CHAI arrangement primarily stemmed from the reliance on informal institutions (trust, social expectations and reputation) rather than principal-agent arms-length sanctions. These results suggest that the level of transaction costs is associated with features of institutional arrangements. The valuable insights from TCE could contribute to policymaking during the design of institutional arrangements to efficiently deliver HIV and AIDS services.

**KEYWORDS:** HIV and AIDS, transaction cost economics, institutional arrangements, governance, Uganda

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## Background

The transaction cost economics (TCE) theory states that specific governance features must follow delivery modes of goods and services to yield lower transaction costs. The theory has not however been sufficiently subjected to empirical investigation, especially in HIV and AIDS-related studies. Yet, as international funding to fight this epidemic declines, there is a need to identify service delivery arrangements with the lowest costs.<sup>1,2</sup> There is compelling evidence that the features of institutional arrangements, that is, the way services are organised, have economic consequences in terms of transacting costs arising from addressing information asymmetry (bounded rationality) and opportunistic behaviour or 'self-seeking behaviour with guile'.<sup>3,4</sup> Further evidence demonstrates that

exchange relationships during service delivery have political costs in terms of loss of power and control arising from regulating actors' powers and choices and restricting some actions while facilitating others – all of which work to affect the costs of transacting.<sup>5</sup> These arguments are based on the notion that an institutional arrangement's cost to deliver services depends on its governance processes.<sup>6</sup>

Institutional arrangements are the systems and instruments shaping actors' actions in delivering goods and services.<sup>6</sup> The literature demonstrates that the features of institutional arrangements determine the nature and intensity of their governance instruments and the magnitude of the transaction costs.<sup>7</sup> Although there is some evidence in this regard<sup>3,4,8,9,10</sup>, the features of delivery modes and their costs implications as



per TCE theory prediction have not been sufficiently analysed in public health research, especially with regard to HIV and AIDS services.

The TCE offers an interdisciplinary framework that defines the choice of alternative institutional arrangements based on their cost implications.<sup>4</sup> Despite its importance and extensive use to determine efficient service delivery arrangements in several disciplines,<sup>11–13</sup> it has received little attention in public health economic analyses. Instead, analyses have largely focused on production costs, such as personnel, supplies and logistics. These analyses do not provide a comprehensive picture of the costs that arise from the complex interactions of various institutions and actors, particularly in HIV and AIDS programming. For instance, de la Sierra and Mutakumura<sup>14</sup> found that monitoring and performance enforcement costs were the key determinants of the overall programme cost. There is limited knowledge on how the different HIV and AIDS service delivery arrangements in Uganda manifest costs in terms of TCE. This study contributed to filling this gap by examining the influence of features of institutional arrangements on the transaction costs of delivery of HIV and AIDS services based on the TCE constructs.

Transaction costs are the costs of governing an exchange or system.<sup>8</sup> The TCE theory follows an efficiency path that focuses on the net benefits of using a given institutional arrangement over others. It emerged from Coase's<sup>15</sup> publication, *The Nature of the Firm*. Coase argued that organising activities or transactions involves certain costs – transaction costs. About half a century later, Williamson<sup>16</sup> published a range of works to develop Coase's hypothesis further. Williamson sought to identify economic efficiencies in managing transactions in service delivery. His work marked the beginning of what is known today as New Institutional Economics,<sup>17</sup> from which the TCE framework is derived.<sup>16</sup> Williamson differentiates transaction costs from production costs in this framework. He describes how the former are affected by an organisation's service delivery or structure. The TCE theory selectively combines various theories, that is, law, organisation, political science, social science, and economic theories, explaining how institutions' nature affects costs.<sup>18</sup> Williamson posits that the most favourable institutional arrangement is the one with the lowest transaction costs (governance costs), measured using 3 TCE dimensions: *asset specificity* – the degree to which service requires a specialised investment; *service measurability* – the degree of ease with which the principal(s) of service can specify, monitor and predict the actions of implementers; and *opportunism* – self-seeking behaviour with guile<sup>10,19,20</sup>. Difficulty in service measurability and widespread opportunism increases uncertainty and compels the principal to utilise safeguards to minimise potential risks.<sup>3</sup> Several actions of safeguards are key sources of transaction costs.<sup>4,13,19</sup>

According to TCE, services can be delivered through markets (contracting out), hybrids (partnerships) or hierarchies (in-house delivery).<sup>21,22</sup> The optimum arrangement out of the 3 results in the lowest transaction costs.<sup>7</sup> Williamson's<sup>16</sup> TCE theory posits that when a given transaction is characterised by a high degree of certainty and low asset specificity, the contracting-out governance form is appropriate and efficient due to its flexibility to shift to another implementer at a low cost. When asset specificity, service measurability difficulty, and opportunism increase, the most effective governance model would be a hybrid one, that is, partnerships/collaborations between the government and private organisations or NGOs/community-based organisations (CBOs). When transactions are characterised by high asset specificity, high uncertainty (measurability difficulty and a high degree of opportunism), and high recurrence (transaction frequency), a direct public provision (internalisation) governance arrangement is the most efficient. Institutional economists consider asset specificity as the major transaction attribute that significantly influences transaction costs and the choice between alternative institutional arrangements.<sup>18,23</sup> For instance, when a service provider invests heavily (idiosyncratic asset specificity) in assets such as human capital and/or equipment, they are 'locked' into providing that service because the assets are meant for it (Vilasuso and Minkler, 2001).<sup>24</sup> As assets become more specific, shifting them to another use is costly.<sup>20</sup> Conversely, non-specific assets (such as vehicles or community mobilisation skills) can be moved to other uses with minimal or no cost implications.

In HIV and AIDS services, the TCE based arrangements can also be reflected in 3 common arrangements: in-house delivery, outsourcing (markets) and partnerships (a hybrid of in-house and outsourcing). In Uganda, it is worth noting that the government bears the ultimate responsibility for delivering such services. Thus, in the context of TCE theory, it plays the role of an in-house deliverer of services. The government also can use the other 2 types of delivery: outsourcing and partnerships.

Given the non-explicit, non-monetary character of transaction costs, the costs of institutional arrangements are not measured by the price factor criterion.<sup>25</sup> By its very nature, the TCE theory describes the behavioural economics of actors' actions that enable the prediction of efficiency outcomes. Institutional economists (Bachev and Terziev, 2018)<sup>26</sup> posit that an analysis of production costs, such as personnel, supplies and logistics costs, does not capture the costs and inconveniences that arise from the complex exchanges among actors (transaction/governance costs) and the related opportunistic behaviours. Analysing production costs and transaction costs, and characteristics yields the overall total cost of the service.<sup>13</sup>

The TCE theoretical proposition guided this study on the characteristics of HIV and AIDS services institutional features in Uganda and their impact on transaction costs. This could

inform policymakers in designing more efficient arrangements. More specifically, the study examined the features of dominant institutional arrangements for providing HIV and AIDS services in Uganda and their relative degree of efficiency based on TCE constructs. The analysis was guided by the 4 features that distinguish institutional arrangements proposed by TCE: administrative controls, adaptation, incentives and contract laws. Empirical evidence was collected from 3 case studies depicting the 3 proposed TCE service delivery models. These case studies were public delivery – representing multi-sectoral public sector delivery; the contracting-out case of DREAMS (Determined, Resilient, Empowered, AIDS-free, Mentored and Safe); and a partnership – the CHAI (Community-led HIV/AIDS Initiative). These service delivery arrangements depict the TCE framework of make, buy or partner. Based on TCE's 'natural order' of institutional arrangements, the cost implications were analysed.

This article is organised as follows: Section 2 presents an overview of institutional arrangements for providing HIV and AIDS services in Uganda. Section 3 presents the TCE theoretical framework to analyse institutional arrangements, and section 4 discusses the methodology employed. The fifth section presents the study's findings, while section 6 discusses the findings. The article ends with a conclusion in section 7.

### **Institutional Framework for HIV and AIDS Services Delivery in Uganda**

Since the HIV and AIDS epidemic outbreak in the early 1980s, Uganda has utilised a range of institutional arrangements to control the spread of HIV and mitigate its impacts. Both government and non-government entities have been delivering HIV and AIDS services. These modes of delivery were embedded in both written and unwritten policies/institutions that provided multi-sectoral and multi-stakeholder responses. The written policies constituted the traditional government (public sector)-led health policy model, extensively cited in several government documents. Unwritten policies were derived from the innovative responses to the epidemic by non-state actors, including local and international NGOs, the private sector, faith-based organisations (FBOs), international development agencies (donors), CBOs, households, etc.

#### *Direct public sector HIV and AIDS service delivery institutional arrangement*

One of the Government of Uganda's initial responses to HIV and AIDS was the establishment of the National Committee for Prevention of AIDS (NCPA) in 1986 within the office of the President.<sup>27-29</sup> In October 1986, the NCPA was transformed into the National AIDS Control Programme (ACP), situated within the Ministry of Health.<sup>29,30</sup> The ACP's responsibilities largely entail epidemiological surveillance, health promotion, developing strategies for care and treatment, scaling up

HIV testing, screening, and syndromic management of HIV/sexually transmitted infections (STIs). The Ministry of Health led the public sector HIV and AIDS response in the epidemic's early years.

The failure of initial efforts to reduce the spread of the epidemic led stakeholders to observe that the ACP was not sufficient to address its multi-sectoral drivers and impact.<sup>28,31</sup> A supra government body – the Uganda AIDS Commission (UAC), was established by an Act of Parliament (Cap 208) in 1992 to spearhead the multi-sectoral response<sup>32,33</sup>. The Commission was placed under the Office of the President's political supervision to coordinate, monitor and mobilise all stakeholders in the national response. Since its establishment, it has strongly advocated for a multi-sectoral approach and led the development and implementation of 6 national frameworks for HIV and AIDS services. This HIV and AIDS programming approach means engaging different sectors beyond the health sector. The 2011 HIV and AIDS Policy currently directs and guides all public sector entities – ministries, departments and agencies – in developing and implementing sector-specific HIV, and AIDS plans coordinated by the UAC.

#### *HIV and AIDS service delivery through non-governmental actors*

The largest portion of HIV and AIDS services in Uganda is implemented by non-governmental actors ranging from CBOs to self-help community groups, professional associations, FBOs, the private sector and large local and international NGOs<sup>34,35</sup>. Dominant activities include health promotion, disseminating information, care, treatment and social support services to people affected by HIV and AIDS, and advocacy for quality services.<sup>36</sup>

Non-governmental organisations have been close allies of government entities and major international AIDS development partners since the epidemic emerged. Their involvement in Uganda's HIV and AIDS response includes partnerships/collaborations, alliances and competitive contracting out of their services. In most partnerships/collaborations, the government signs a memorandum of understanding (MOU) or an agreement with the implementing NGO and funders (where applicable), spelling out the responsibilities governing their relationship. Contracting out services entails competitive bidding, selection and appointing viable NGOs to deliver services.<sup>36,37</sup>

Competitive contracting is the governance model that is preferred by external funding agencies (donors) as a tool to increase coverage of quality services and to improve NGOs and (the private sector's) efficiency.<sup>36,38,39</sup> Non-governmental organisations' extensive activities across Africa are linked to the structural adjustment programmes of the 1980s that promoted a shift in service provision from states, which were

**Table 1.** The TCE's prediction of distinctive features of institutional arrangements.

INSTRUMENTS	INSTITUTIONAL ARRANGEMENTS		
	CONTRACTING OUT (MARKET-LIKE <sup>7</sup> )	PUBLIC-NGO PARTNERSHIP (HYBRIDS)	HIERARCHY
1. <i>Administrative controls</i>	0	+	++
2. <i>Adaptation:</i>			
Autonomous adaptation	++	+	0
Cooperative adaptation	0	++	++
3. <i>Incentive intensity:</i>			
Tangible incentives (monetary)	++	+	0
4. <i>Contract law regime:</i>			
Settlement of disputes (legal)	++	0	0
Contract enforcement	++	+	0

Source. Adapted from Chaddad<sup>43</sup>(p.450) quoting Williamson, 1999: 314)<sup>44</sup>; where, ++ = *very strong*; + = *semi-strong*; 0 = *weak/low*.

perceived to be inefficient, bureaucratic, and corrupt, to the private sector.<sup>40,41</sup>

### Analysing the Features of Institutional Arrangements: The TCE Framework

Williamson<sup>18</sup> proposes 4 categories of instruments (safeguards) that characterise the features of institutional arrangements: administrative controls, adaptation, incentive intensity and contract law regimes. Safeguards are the security or governing measures instituted to enforce performance.<sup>42</sup> They can take the form of fines, supervision, extensive reporting, or a decrease/increase in incentives or private ordering.<sup>7</sup> The TCE's classification of the governance instruments is founded on the notion that the existence of 'opportunism' and 'bounded rationality' causes several transactional challenges that necessitate the introduction of protective safeguards to ensure compliance and enforce performance.<sup>13</sup> Williamson further categorises these instruments on a range of weak-strong, which he describes as the 'natural order' of institutional arrangements (see Table 1).

The 'natural order' of institutional arrangements is described in relation to the intensity of the safeguards required to achieve the expected goals. The TCE predicts that the 'natural order' principally starts with market-based governance arrangements with low governance controls and ends with an internal service delivery model with strong controls.<sup>7</sup>

#### *Administrative controls*

Administrative controls are governance instruments and work practices to monitor and supervise the set goals.<sup>45</sup> They entail establishing systems and mechanisms that deter or prevent any potential hazards that would affect operations and hinder the attainment of desired goals such as standard operating procedures, social coordination, skilled staff responsible for

monitoring compliance, auditing performance, organisational structures, planning and control systems, and systems/technology for controlling staff.<sup>43</sup> These tasks directly increase administrative costs. As illustrated in Table 1 below, the TCE theory characterises the *market* (in this case, contracting out) institutional arrangement as having low administrative controls. In contrast, partnerships and public delivery arrangements have moderate and strong administrative controls.

#### *Adaptation*

Institutional arrangements employ different approaches to enforce performance. The TCE posits 2 autonomous and cooperative adaptations.<sup>7</sup> According to Williamson,<sup>18</sup> cooperative adaptation employs 'conscious, deliberate, purposeful' approaches to enforcement, entailing a series of negotiations. In contrast, autonomous adaptation entails a spontaneous response to changes in the environment.

The literature shows that the more an institutional arrangement relies on cooperative adaptation, the higher the costs of information gathering and negotiations.<sup>4</sup> Conversely, the higher the level of autonomous adaptation, the more likely the arrangement can minimise transaction costs. The TCE theory predicts high cooperative and low autonomous adaptation for public delivery arrangements, low cooperative and high autonomous adaptation for contracting-out, and high cooperative and moderate autonomous adaptation for partnership arrangements.

#### *Incentives*

Incentive intensity refers to how a party consistently assigns the net gains of the expected efforts from a transaction.<sup>46</sup> Monetary (tangible) or non-monetary (intangible) incentives

can be offered to enhance performance adaptation. High-powered incentives are strongly associated with performance promotion.<sup>47,48</sup> However, if tangible rather than intangible incentives drive actors, this may give rise to transaction costs of performance enforcement. The TCE characterises the contracting out the arrangement as having high tangible incentive intensity, while public sector delivery has low incentive intensity and partnership arrangements moderate incentive intensity.

### *Contract law regimes*

The TCE theory defines contract law as the settlement of disputes among the actors involved in a transaction.<sup>18</sup> It classifies contract law regimes into classical, neoclassical, and forbearance contract law. In classical contract law, disputes are settled by the courts (legal rules), while *market* arrangements are settled by means of classical contract law.

In neoclassical contract law, disputes are resolved through negotiations, and the parties enter into flexible/relational agreements, which may be adjusted in the future should the need arise.<sup>43</sup> The TCE states that this approach is used to settle disputes between partnership and public delivery arrangements. In forbearance contract law, disputes are settled internally. According to the TCE, this is also suitable for public delivery, given its hierarchical authority. The form of governance safeguards introduced will significantly influence the transaction costs of an institutional arrangement (Maekelburger et al., 2012).<sup>49</sup>

While TCE prediction can be useful in setting up or selecting a governance arrangement to minimise costs, it is not clear whether the theoretical prediction of the theory is useful in guiding countries' delivery of HIV and AIDS services. The current study fills this knowledge gap by applying the TCE theoretical proposition to characterise features of HIV and AIDS services institutional arrangements and their implied transaction costs. As noted earlier, there is insufficient research on the application of TCE theory to deliver HIV and AIDS services.

## **Methods**

### *Design*

A comparative analysis of 3 dominant institutional arrangements for HIV and AIDS services delivery was done. These arrangements were public sector delivery, contracting out to NGOs, and a public-NGO partnership. A case study design was adopted to examine the features of the arrangements based on the 4 proposed TCE factors that characterise the 3 delivery models: administrative controls, incentive intensity, adaptation and contract laws.

The Higher Degrees Ethics Committee of the University of KwaZulu-Natal approved the study. Further approval of the study was received from The Institutional Review Board (IRB)

of the AIDS Support Organisation (TASO); and the Uganda National Council of Science and Technology (UNCST).

### *Study setting*

The study was conducted in 3 districts of Uganda: Rakai, Lira and Mukono. These were purposively selected based on the criterion that they were home to all the case studies under investigation. In addition, adult HIV prevalence in these districts was higher than the national rate of 6.2% at the study, with Rakai at 13.7% and 7% for Mukono and Lira, respectively.<sup>50</sup>

### *Sample and sampling procedure*

The study explored the delivery of HIV prevention services related to behavioural change communication, social support and protection and did not cover the delivery of HIV treatment services. It focused on the CHAI programme for partnerships, DREAMS for contracting out, and the public sector multi-sectoral HIV and AIDS response for internal delivery institutional arrangements. The CHAI was a community-driven initiative implemented in 30 districts as part of the larger Uganda AIDS Control Programme funded by the World Bank to prevent HIV infections and mitigate the epidemic's impacts. It aimed to reduce HIV prevalence and mitigate its effects by enhancing community competence to identify, plan, undertake and manage prevention interventions (UAC, 2007).<sup>51</sup> A document review showed that governance of the CHAI project took the form of a partnership arrangement between the Government of Uganda and NGOs in which districts (as part of government) entered into a memorandum of understanding (MOU) with the CHAI to deliver services. The partnership entailed a community contribution of 5% of the project budget. DREAMS is one of Uganda's largest comprehensive HIV prevention programmes. Funded by the US President's *Emergency Plan for AIDS Relief* (PEPFAR), it operates in 13 districts in Uganda, with plans to expand to more districts. DREAMS aims to reduce rates of HIV transmission among highly vulnerable adolescents, girls, and young women, by addressing vulnerabilities that drive infection among these populations (PEPFAR, 2015).<sup>52</sup> The programme focuses on health initiatives for economic empowerment, education and reducing structural inequalities. Governance of the DREAMS project entailed contracting management agents and NGOs through competitive bids to manage and deliver services, respectively.

With assistance from the District HIV and AIDS Focal Person and DREAMS Project Coordinator, convenience sampling was used to identify functional NGOs implementing CHAI and DREAMS projects in each district. For the public sector, the study drew different categories of respondents from the national and sub-national (district) levels of implementation. The inclusion criteria required that respondents had relevant contextual information on the phenomenon under

**Table 2.** Characteristics of the respondents interviewed.

LEVEL	ORGANISATION	TYPE OF ACTORS	NO. INTERVIEWED	YEARS OF EXPERIENCE IN THE HIV SECTOR	GENDER: M(F)
National level	Ministry of Health	Technical Officers	3	(15-19)	2 (1)
	Uganda AIDS Commission	Directors, Heads of Departments	3	(12-23)	3 (0)
	Donors/funders	HIV Programme specialists	3	(17-23)	2 (1)
Sub-national level	Rakai District	Heads of Departments, HIV Focal Point Persons	2	(15-23)	1 (1)
		District Political leaders	2	(5)	2 (0)
	Mukono District	Head of Department	1	(16)	1 (0)
		District Political leaders	2	(5-7)	1 (1)
	Lira District	Heads of Departments, HIV Focal Point Persons	2	(15)	2 (0)
		District Political leaders	3	(5-22)	2 (1)
	DREAMS Management Agencies	Programme Technical Officers	6	(6-17)	5 (1)
	DREAMS Implementing Partners (NGOs)	Heads of organisations	7	(12-21)	4 (3)
	CHAI Implementing CBOs/NGOs	Heads of organisations	9	(29-35)	4 (5)
<b>Total</b>				<b>43</b>	<b>29 (14)</b>

investigation and were directly involved in HIV and AIDS policy and programming at national and district levels.

The sample size and categories of respondents are summarised in Table 2. Since the study used in-depth interviews, key informants were sought to provide the required information through probing until a point of saturation was reached.

#### *Data collection*

Data were collected from October to December 2020 after the government relaxed the national lock-down rules imposed in response to the COVID-19 pandemic. Primary data was collected using key informant interviews and focus group discussions (FGDs). An interview guide with questions designed for the different categories of participants at national and district levels was used to obtain information on the functioning and set-up of the different institutional arrangements. The guide also asked questions relating to transactions between actors during service delivery. For the interviews and FGDs, the researcher made physical contact with respondents. For far distant respondents, telephonic contact was used to explain the study's objectives and obtain consent. Follow-up probes were conducted with each participant to understand the phenomenon better. The planned questions in the interview guide and unplanned questions were posed to all 43 participants. All interviews were recorded and transcribed.

Nine FGDs were conducted with key, knowledgeable HIV and AIDS actors at the district level that was not directly involved in service delivery. The aim was to obtain their opinions/perspectives on how well the 3 HIV and AIDS service delivery mechanisms performed concerning societal responsiveness. The discussions also focused on the strengths, weaknesses, opportunities and threats of the different arrangements and the implications of transaction costs. Participants in the FGDs included executive members of the district forum of people living with HIV and members of the district DREAMS steering committee and District AIDS Committees. Before conducting the FGDs, the researchers contacted the District HIV Focal persons to mobilise the participants. The researcher moderated the discussion while the research assistant took notes. The discussions were audio-recorded to increase the reliability of the information (Table 3).

Secondary data was collected through a documentary review to augment the data from the key informant interviews and FGDs. The review focused on the set-up of institutional structures and successes and challenges. Documents reviewed included current and previous National HIV and AIDS Strategic Plans; HIV and AIDS policy, Multi-Sectoral HIV and AIDS Mainstreaming guidelines, PEPFAR Country Operation Plans, the DREAMS and the CHAIs strategies, and other related HIV and AIDS guidelines. District HIV and AIDS strategic plans, CHAI Proposals by CBOs, and

**Table 3.** Summary and characteristics of study participants for FGDs.

DISTRICT	GROUP CATEGORY	SIZE	GROUP CHARACTERISTICS
Lira	Members of the District AIDS Committee	9	Gender: 6 male, 3 female
			Average years of experience in HIV work: 12 years
	Members of the District DREAMS Steering Committee	6	Gender: 5 male, 1 female
			Average years of experience in HIV work: 6 years
Mukono	Executive members of the district forum of people living with HIV	8	Gender: 6 male, 2 female
			Average years of experience in HIV work: 17 years
	Members of the District AIDS Committee	7	Gender: 5 male, 2 female
			Average years of experience in HIV work: 13 years
Rakai	Members of the District DREAMS Steering Committee	7	Gender: 4 male, 3 female
			Average years of experience in HIV work: 8 years
	Executive members of the district forum of people living with HIV	10	Gender: 7 male, 3 female
			Average years of experience in HIV work: 22 years
Rakai	Members of the District AIDS Committee	8	Gender: 5 male, 3 female
			Average years of experience in HIV work: 13 years
	Members of the District DREAMS Steering Committee	6	Gender: 4 male, 2 female
			Average years of experience in HIV work: 9 years
Executive members of the district forum of people living with HIV	9	Gender: 6 male, 3 female	
		Average years of experience in HIV work: 19 years	

DREAMS operational guidelines and implementation plans were also reviewed.

### Data analysis

Since the data were transcribed and reviewed after each field interview, themes and patterns were identified as we collected data. The researchers aligned the emerging themes with the 4 constructs of the TCE framework. The analysis was based on the weak-strong continuum of Williamson's, 1998, p. 37)<sup>53</sup> 'natural order' of institutional arrangements – the TCE *discriminating alignment hypothesis*. According to the hypothesis, transactions that differ in their characteristics should be aligned with institutional arrangements that differ in costs and competencies to minimise transaction costs. A summary was generated of the findings for each case study following a similar format to enable a comparison of the cases. The summaries were aligned to the TCE predictions and analysed to account for the distinctive features (set-up) of the different institutional arrangements and their implications for the intensity of transaction costs.

### Results

Table 4 summarises the study's findings based on the TCE constructs of administrative controls, adaptation, incentives and contract laws.

### Features of public delivery institutional arrangements

*Administrative controls.* The National Strategic Plan (NSP) for HIV and AIDS 2020/2021-2024/2025 mandates government entities to undertake quarterly supervision and monitoring.<sup>54</sup> The key informants reported that accounting officers in all public entities must compile quality, comprehensive reports to account for their performance in implementing HIV and AIDS interventions. However, the study revealed low administrative controls in the direct public sector HIV services delivery mode, which manifested weak enforcement mechanisms and the absence of a central/unified reporting system. Monitoring and supervision activities under this mode were minimal due to inadequate investment by the government. Consequently, collecting information for generating national annual reports became costly and time-consuming. The government had to procure consultants annually and convene several stakeholders' meetings for such reports.

*“... Support supervision is inadequate and erratic. Monitoring visits take place largely when donor funding becomes available”. KII-17, Male (40 years)*

*“Every year we hire consultants to collect information from actors countrywide to compile the annual report. This is because it is very difficult to obtain HIV information. . . it is not everywhere. And we also*

**Table 4.** Features of institutional arrangements for HIV and AIDS service delivery in Uganda.

INSTRUMENTS	INSTITUTIONAL ARRANGEMENTS FINDINGS(EXPECTATION)		
	DREAMS	CHAI	PUBLIC DELIVERY
Administrative controls	++(0)	+(+)	0(++)
Adaptation			
Autonomous adaptation	++(++)	++(+)	0(0)
Cooperative adaptation	++(0)	++(++)	++(++)
Incentives			
Tangible incentives (monetary)	++(++)	0(+)	0(0)
Intangible incentives (non-monetary)	+(++)	++(+)	0(0)
Contract law regime			
Settlement of disputes (legal law)	0(++)	0(0)	0(0)
Contract enforcement	++(++)	+(+)	0(0)

Source: Study Data; ++ represents very strong; + semi-strong; 0 low/weak.  
Note: the score in braced are expected scores as per TCE prediction.

*call self-coordinating entities to present their reports. . .these are then incorporated in the overall annual report. . .”* KII-05, Male (51 years)

In summary, low administrative controls manifested in inadequate monitoring and supervision, poor reporting systems and weak enforcement mechanisms in the direct public delivery. The finding contrasts with the TCE theory, which predicts high administrative controls in the internal mode of delivery. It follows that low administrative controls in the internal (hierarchy), the public sector in this study, increase sources of transaction costs

*Adaptation.* The key informant interviews and document review findings show that the public delivery arrangements entailed high cooperative and low autonomous adaptation to performance. Cooperative adaptation was facilitated by establishing several coordination committees at the national and decentralised levels with varied oversight functions. However, participants noted that because the HIV and AIDS committees were informal and lacked legal status, cooperative adaptation objectives for performance were not always achieved:

*“Several committees have been established to provide oversight. We have the self-coordinating entities, the country coordinating mechanism to oversee operations of the Global Fund. We also have national technical working groups for each thematic area of the national HIV strategic plan. . .and the district AIDS committee to coordinate the decentralised response . . . but all these have no legal backing. . .”* KII-06, Male (44 years)

Autonomous adaptation in public HIV and AIDS service delivery arrangements was subject to the inclusion of these services in ministerial policy statements and the creation of activity

vote output codes (charts of accounts approved by Parliament to cater to government ministries’ activities and programmes departments and agencies). However, specific vote output codes were not created for HIV and AIDS services in non-health ministries, departments, and agencies. There was no evidence of a robust mechanism to enforce and track performance. Participants observed that this increased the cost of reporting:

*“A large proportion of HIV activities in non-health ministries and departments are indicated under the cross-cutting activities in the national budget. But without a voted output and no robust mechanism to track and enforce performance, such activities are not routinely implemented. . .and no reports are made. . .”* KII-04, Male (43 years)

High cooperative adaptation and low autonomous adaptation in public sector delivery were consistent with the TCE prediction.

*Incentives.* Tangible incentives in the form of high salaries were not considered a major governance instrument for performance enforcement in the public sector institutional arrangements. However, 3 approaches were used to stimulate performance, namely, ongoing discussion of key tasks with actors, benchmarking visits to other countries, and budget performance (a good burn or absorption rate) which stimulates performance because it determines the next budgetary allocation:

*“We largely rely on regular engagement meetings and workshops to trigger performance. . .”* KII-06, Male (44 years)

*“When absorption of funds is low, then the next disbursement of funds will reduce to match the absorption rate. . .so the staff is forced to perform and utilise funds. . .”* KII-09, Male (49 years)



The prevalence of low tangible (non-monetary) incentives for public sector delivery of services is consistent with the TCE prediction.

*Contract law regime.* Settlement of disputes in public sector delivery was primarily managed internally through hierarchical authority and command. Several key informants reported that apart from a few court cases – mainly related to mismanagement of the Global Fund to fight HIV, TB and Malaria, there was no evidence of legal redress to manage HIV and AIDS-related disputes. Some respondents were of the view that political influence was brought to bear to prevent such matters from ending up in court:

*“Delivery [of] HIV and AIDS services through the public sector has been tainted by mismanagement of funds, yet many of the culprits are not taken to court. . . many of the culprits are set free largely because of their connection with those high in political office, I remember this happened with the Global Fund thefts. . .”* KII-07, Male (44 years)

This finding is consistent with the TCE prediction.

#### *Features of the CHAI institutional arrangements (public-NGO partnership)*

*Administrative control.* The study revealed moderate administrative controls in the CHAI manifested in relational and mutual interactions between the parties. There was minimal supervision by government officials (the principal). Instead, the government relied on community monitoring structures and systems to administer the programme:

*“The mutual interactions between the government officials and the community groups created a sense of trust in the systems. This led to collective responsibility towards achieving the project’s goals and reduction of instituting robust monitoring mechanisms”. . .* KII-35, Male (50 years)

*“The beneficiaries and community members informally and routinely provided feedback on the services to the Sub County officials because of the self-driven collective responsibility to monitor the programme for its success. . .”* KII-39, Male (60 years)

This result is consistent with the prediction of the TCE. It confirms the TCE proposition that moderate administration controls in partnerships facilitate mutual interaction and information sharing in ways that are likely to minimise transaction costs.

*Adaptation.* The findings revealed high cooperative adaptation and high autonomous adaptation in the CHAI. High cooperative adaptation was manifested in the multi-levelled coordination structures established to provide guidance and oversight at national and decentralised levels. Uniquely, autonomous adaptation was manifested in common interests towards mutual goals, social accountability and community expectations:

*“Multi-sectoral committees were constituted at national, district, Sub County and parish level to provide guidance and oversight of the project activities. . .”* KII-41, Male (57 years)

*“The community groups through their networks easily mobilised and coordinated themselves to different engagements of the project. . . and because they belonged to the same community, it was easy to coordinate and communicate among themselves and so, decisions were made explicitly”.* KII-35, Male (50 years)

*“The actors involved in CHAI had common interests and collective benefits as seen from their collective efforts. The relational and mutual exchanges facilitated information sharing between actors and rallied the parties involved towards achieving a common goal”.* KII-37, Female (55 years)

In summary, high autonomous adaptation in a partnership is inconsistent with the prediction of the TCE theory.

*Incentives.* High-powered non-monetary incentives characterised the CHAI governance instruments. These arose from the community’s social values and intrinsic expectations rather than being principal-agent arms-length sanctions and monetary rewards. Three forms of intangible incentives were identified: social accountability, social belonging and reputation:

*‘. . . we belong to this community, so we served our people. This meant we had to serve diligently because the community had a lot of belief in us. . .’* KII-38, Female (47 years)

*“Most of the group members that implemented the CHAI were influential people in this community, and so while implementing CHAI they ensured that they upheld their reputation to members of the community, who were personally known to them. . .”* KII-39, Female (60 years)

The result is in line with the TCE’s reasoning. Non-monetary incentives in partnerships, social responsibility and reputation promote relational exchange, improve information sharing, and build mutual trust among actors.

*Contract law regime.* The settlement of disputes in the CHAI was amicably managed through mutual discussions and negotiations. There was no evidence of the use of legal systems to settle disputes. Informal rules and norms such as trust and reputation were the main instruments:

*“. . . we solved misunderstandings through negotiations and mutual understanding. . . it was easier to handle disputes through negotiations as opposed to going through prolonged, frustrating legal procedures. . .”* KII-40, Male (46 years)

The findings on the settlement of disputes through non-legal procedures such as negotiations in CHAI is consistent with the TCE’s prediction.

### *Contracting out HIV and AIDS service delivery to NGOs: The case of DREAMS*

**Administrative controls.** A documentary review of the PEPFAR Country Operation Plan (COP) and DREAMS' implementation strategy revealed that the programme is embedded within the United States of America's Global Health Initiative Strategy.<sup>55</sup> Its governance arrangement is derived from the 13-programme area system developed by the Global AIDS Coordinator's Office. The interviews with key informants revealed that the funding agent (PEPFAR) considered 3 factors when contracting international experts and local NGOs to manage and implement DREAMS. These were the efficiency of already-established NGOs; the fact that the funding agency required swift achievement of targets; and low levels of trust in public sector systems. The study identified high-powered administrative controls in the DREAMS governance structure, manifested in routine (quarterly) Data Quality Assessments, support supervisions, spot checks by monitoring and evaluation teams, and the establishment of sophisticated performance tracking systems (the Uganda DREAMS Tracking System), with a specialised agent, Monitoring and Evaluation Technical Support (METS), contracted to track performance. High controls resulted from low 'trust' due to endemic corruption in the HIV and AIDS sub-sector and funders' pressure on contracted management agencies to meet targets within tight timelines:

*"By design, funders required agencies to provide routine technical support as needed through frequent supervision and monitoring visits as routine as weekly, monthly, and quarterly to meet targets. . ."* KII-33, Male (40 years)

*"DREAMS uses technical experts to monitor and track its performance. . .we establish robust tracking systems to ensure fidelity of the programme and adherence to the quality standards of DREAMS implementation as required by the funder. . ."* KII-32, Female (40 years)

In contrast to the TCE prediction of low administrative controls, the high administrative controls in the DREAMS (contracting out) delivery model is influenced by donor preferences and manifested in intensive information gathering, laborious monitoring and supervision, and extensive reporting requirements in such an arrangement.

**Adaptation.** The study revealed high coordination and high autonomous adaptation instruments in the DREAMS governance structure, manifested in multi-layered coordination committees at national, district and community levels. The committees comprise technocrats, management agencies, technical teams from the donor, service beneficiaries, and community peer teams:

*". . .different teams are established along key themes of DREAMS. . . each of these teams closely follows up the implementation of the respective thematic areas. . ."* KII-27, Male (42 years)

Automation of deliverables was derived from the 'statement of work', which stipulates and specifies the roles, expectations and penalties for noncompliance:

*"If the performance is not satisfactory and not compliant with the contract's specifications, the management agent can terminate or modify the contract of the implementing partner"* KII-34, Female (38 years)

In brief, high cooperative adaptation in DREAMS contradicts the TCE prediction of low cooperative adaptation for governance arrangements, likely increasing management costs in a 'market-like' arrangement.

**Incentives.** The study revealed that the DREAMS governance instrument was largely defined by high-powered, tangible incentives in the form of sanctions and a performance-based piece-rate system in terms of staff salary payments and funds disbursements;

*"We receive funds on a quarterly basis after submission of satisfactory financial and programmatic reports. Staff are well-paid so they have to work. . .this investment compels the funders to extensively monitor the performance of implementing agencies"* KII-26, Male (39 years)

The finding of high administrative controls in DREAMS (contracting out) is contrary to the TCE prediction. High-powered tangible incentives increase the level of performance monitoring.

**Contract law regime.** Settlement of disputes is managed amicably through negotiations and discussions or revision of the scope of work instead of through the courts, contrary to the TCE prediction.

## **Discussion**

The study identified features that reflect the primary tenets of the TCE theory. In particular, they suggest that the public-NGOs partnership arrangement (based on the CHAI) was aligned to the service characteristics predicted by the TCE theory. Transactions/service characteristics were discriminatively matched with institutional arrangements based on the magnitude of service delivery costs and the capabilities of the implementers. This rendered the CHAI delivery model a comparatively lower-cost mode, suitable for delivering HIV and AIDS services in Uganda's resource-limited setting. The CHAI entailed moderate administrative controls, high cooperative adaptation, and high-powered intangible incentive intensity. These features gave rise to relational interactions, mutual trust and effective information sharing in ways likely to minimise opportunistic behaviour among actors and the associated transaction costs of monitoring, information gathering and performance enforcement.

On the other hand, the findings revealed misalignment with TCE in the public delivery and contracting out (DREAMS) arrangements. The low administrative controls in the public

delivery arrangement are contrary to the TCE prediction of high controls. As predicted by the TCE theory, weak administrative controls, low autonomous adaptation and low tangible incentives in the public delivery arrangement directly increase the transaction costs of monitoring, information gathering, and performance enforcement. Williamson<sup>17</sup> posits that weak administrative controls should be aligned with high powered tangible incentives and autonomous adaptation to achieve an economising result applicable in market-like transactions. However, this study observed one other factor that influenced the choice of low administrative control contrary to the TCE predictions: public managers' use of public values, policies and regulations to improve service delivery at minimal controls.

The high administrative controls in a market-like arrangement (ie, DREAMS) directly increase governance costs from the TCE perspective. These findings validate studies demonstrating the undesirable social and economic consequences of high-powered administrative control in a 'market' economy.<sup>56</sup> Several studies have highlighted that using high-powered administrative controls to organise services in the 'market' arrangement is costly and economically unviable.<sup>4,57</sup> Organising easy to govern services under high control mechanisms such as intensive monitoring systems would create additional costs without conferring extra transacting benefits.<sup>18</sup> For instance, in their study on feasible governance mechanisms, Rendtorff and Jagd<sup>56</sup> found that a shift from high-powered administrative controls to trust-based governance arrangements improves performance with less effort, time and resources. Therefore, arranging service delivery based on the TCE 'natural order' of institutional arrangements that align with service characteristics will likely reduce costs.<sup>20,46</sup> However, it was found that other factors influenced the nature of institutional arrangement in DREAMS, including the funder's interests and preferences, its lack of trust in public service delivery and the funder's foreign policy.

The above discussion suggests that other important factors beyond transaction costs influence the choice of institutional arrangements/service delivery models. Thus, while the TCE offers much, it should be combined with other theories when analysing service delivery models.

The observed high degree of autonomous adaptation to perform in the CHAI was incentivised by non-monetary social values and intrinsic expectations rather than the principal-agent arms-length sanctions observed in DREAMS. The findings revealed that collective community responsibility, social accountability, trust and reputation incentivised performance in this project. This was large because the implementing NGOs were answerable to the community they belonged to and their respective district local governments. A dichotomous accountability obligation evolved to the community and the principal (the district) that facilitated community monitoring and served as an alternative to formal compliance monitoring mechanisms, which are largely lacking in the public sector.

This finding validates previous evidence on the role of intangible incentives in promoting efficiency and transparency.<sup>43</sup> Awio et al's<sup>58</sup> study on the accountability practices of a community-led HIV and AIDS project found that informal monitoring systems serve as an alternative to costly formal mechanisms. According to Eijkenaar,<sup>59</sup> high-powered incentive intensity in the form of tangible rewards such as pay-for-performance, penalties, or rigid rules may improve performance, but with increased administrative costs. Eijkenaar adds that such incentives require further robust monitoring and control systems investment. This was confirmed in this study under the DREAMS arrangement.

The study also validates previous evidence that while they are important, a focus on formal institutions (written rules and regulations) alone may result in governance challenges that are likely to increase transaction costs.<sup>60</sup> It revealed that formal institutions are not necessarily more or less important than informal ones (unwritten norms and practices); rather, they complement each other in delivering HIV and AIDS services. For instance, informal institutions in the CHAI served to complement and, in some situations, substituted formal institutions in facilitating information sharing and monitoring performance. Trust and social connectedness worked as 'lubricants' for formal institutions to enforce performance and mitigate opportunism, particularly in the CHAI arrangements. These findings are consistent with previous empirical evidence that informal institutions shape the existence and performance of formal institutions, enhance efficiencies, and ensure long-term delivery of HIV and AIDS services.<sup>61,62</sup>

### Limitations of the Study

Despite the evidence supporting the empirical application of the TCE framework as a strong theoretical base to study the efficiencies of alternative institutional arrangements, its application has produced mixed results. Critics of TCE have mainly focused on its profit maximisation assumption, mode of measurement of transaction costs and behavioural assumptions (Lacity et al, 2011).<sup>63</sup> The TCE theory largely describes actors' actions/behaviour in terms of opportunism and bounded rationality, from which an opinion is formed (Foss and Weber, 2016).<sup>64</sup> In particular, the theory presents difficulties in measuring absolute (financial) transaction costs and offering statistical proof to determine the institutional set-up's influence on efficiencies. Therefore, the TCE theory is recommended to be combined with other relevant quantitative theories to trace trends in transaction costs over time and establish the empirical influence of transaction costs on the choice of an institutional arrangement in Uganda's HIV and AIDS response. While this study may have focused on HIV prevention and social support interventions, from evidence, the TCE framework can effectively be utilised to analyse other HIV treatment programmes.<sup>65</sup>

## Conclusion

Relational public-NGO partnerships have the potential to minimise the governance/transaction costs of HIV and AIDS service delivery for a sustainable response. To identify cost-minimising forms of HIV and AIDS services institutional arrangements, it is important to understand better the complex interactions between various institutions (the formal and informal rules of the game) and actors (individuals, groups or organisations) how these influence transactional costs. In particular, the study highlighted the importance of interactions between actors and informal institutions (trust, social expectations, and reputation) in enhancing information flow and stimulating self-driven performance, thus reducing the need for high-powered administrative controls and tangible incentives to enforce performance. It, therefore, demonstrates that the TCE theory can serve as an important framework to provide evidence on appropriate, cost-minimising institutional arrangements for the provision of HIV and AIDS services.

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## Author Contributions

SK conceptualized the research, collected data; conducted data analysis and produced the first draft of the manuscript and subsequent versions following the comments from the second author. JM refined and finalized the conceptualization of the research. He further reviewed and improved various versions of the manuscript until the final version.

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## REFERENCES

- Amaya AB, Caceres CF, Spicer N, Balabanova D. After the Global Fund: who can sustain the HIV/AIDS response in Peru and how? *Glob Public Health*. 2014;9:176-197.
- Burrows D, Oberth G, Parsons D, McCallum L. *Transitions From Donor Funding to Domestic Reliance for HIV Responses. Recommendations for Transitioning Countries*. APM Global Health; 2016.
- Theodore BR, Whittington J, Towle C, et al. Transaction cost analysis of in-clinic versus telehealth consultations for chronic pain: preliminary evidence for rapid and affordable access to interdisciplinary collaborative consultation. *Pain Med*. 2015;16:1045-1056.
- Rodrigues M, Tavares AF, Araújo JF. Municipal service delivery: the role of transaction costs in the choice between alternative governance mechanisms. *Local Gov Stud*. 2012;38:615-638.
- Storper M. *Keys to the City: How Economics, Institutions, Social Interaction, and Politics Shape Development*. Princeton University Press; 2013.
- Kassim Mwendah H. Do institutions matter? Explaining HIV prevalence variations across regions in Tanzania. *Int J Asian Soc Sci*. 2020;10:10-28.
- Spithoven A. Public governance of healthcare in the United States: a transaction costs economics (TCE) analysis of the 2010 reform. *J Inst Econ*. 2012;8:429-457.
- Guinness L. What can transaction costs tell us about governance in the delivery of large scale HIV prevention programmes in southern India? *Soc Sci Med*. 2011;72:1939-1947.
- McCann L. Transaction costs and environmental policy design. *Ecological Economics*. 2013;88:253-262.
- Ilukor J. 2017. *An Analysis of Institutional Arrangements for Providing Animal Health Services: A Theoretical Framework and Empirical Evidence From Kenya and Uganda*. Kommunikations-, Informations- und Medienzentrum der Universität Hohenheim; 2016.
- Alas Y, Anshari M. 2014. *Constructing Strategy of Online Learning in Higher Education: Transaction Cost Economy*. arXiv preprint arXiv:1411.4345.
- Bel G, Fageda X, Warner ME. Is private production of public services cheaper than public production? A meta-regression analysis of solid waste and water services. *J Policy Anal Manag*. 2010;29:553-577.
- Ilukor J, Birner R, Nielsen T. Addressing governance challenges in the provision of animal health services: A review of the literature and empirical application transaction cost theory. *Prev Vet Med*. 2015;122:1-13.
- de la Sierra RS, Mutakumura J-PZ. *On the Impact of States: Contract Enforceability and Ethnic Institutions in East Congo*. Working Paper; University of California, Berkeley; 2014.
- Coase RH. The nature of the firm. *Economica*. 1937;4:386-405.
- Williamson OE. Hierarchies, markets and power in the Economy: an economic perspective. *Ind Corp Change*. 1995;4:21-49.
- Eggertsson T. Quick guide to new institutional economics. *J Comp Econ*. 2013;41:1-5.
- Williamson OE. Transaction cost economics: the natural progression. *Am Econ Rev*. 2010;100:673-690.
- Marinescu C. Transaction costs and institutions' Efficiency: A Critical Approach. *Am J Econ Sociol*. 2012;71:254-276.
- Crook TR, Combs JG, Ketchen DJ, Aguinis H. Organizing around transaction costs: What have we learned and where do we go from here? *Acad Manag Perspect*. 2013;27:63-79.
- Brown TL, Potoski M. Assessing the management costs of delivering services under alternative institutional arrangements. *J Public Procure*. 2004;4:375-396.
- Williamson OE. *Contract, Governance and Transaction Cost Economics*. World Scientific; 2017.
- Coggan A, Buitelaar E, Whitten S, Bennett J. Factors that influence transaction costs in development offsets: Who bears what and why? *Ecol Econ*. 2013;88:222-231.
- Vilasuso J and Minkler A. Agency Costs, Asset Specificity, and the Capital Structure of the Firm. *Journal of Economic Behavior & Organization*. 2001;44:55-69.
- Chintagunta PK, Chu J, Cebollada J. Quantifying transaction costs in online/off-line grocery channel choice. *Mark Sci*. 2012;31:96-114.
- Bachev H and Terziev D. A study on agrarian sustainability impact of governance modes in Bulgaria. *Journal of Applied Economic Sciences*. 2018;13:227-257.
- Parkhurst JO. The response to HIV/AIDS and the construction of national legitimacy: lessons from Uganda. *Dev Change*. 2005;36:571-590.
- Muriisa RK, Rwabyoma AS. Synergy in social service provision: embeddedness and complementarity in fighting HIV/Aids in Uganda. *Africa Journal of Public Sector Development and Governance*. 2018;1:58-70.
- Brunet A. *The Role of Communities Affected by HIV/AIDS for the Protection of Children's Rights*. Université d'Ottawa/University of Ottawa; 2020.
- Kagaayi J, Serwadda D. The history of the HIV/AIDS epidemic in Africa. *Curr HIV/AIDS Rep*. 2016;13:187-193.
- Doyle S. Pandemics and soft power: HIV/AIDS and Uganda on the global stage. *J Glob Hist*. 2020;15:478-492.
- UAC. *Guidelines for Multi-Sectoral HIV and AIDS Mainstreaming in Uganda: Presidential Fast Track Initiative to Ending HIV and AIDS as a Public Health Threat by 2030*. Uganda AIDS Commission; 2018.
- Putzel J. Institutionalising an emergency response: HIV/AIDS and governance in Uganda and Senegal. *London School of Economy and Political Science*; 2003.
- Kim YM, Kalibala S, Neema S, Lukwago J, Weiss DC. Meaningful involvement of people living with HIV/AIDS in Uganda through linkages between network groups and health facilities: an evaluation study. *Psychol Health Med*. 2012;17:213-222.
- Bukenya. From social accountability to a new social contract? The role of NGOs in protecting and empowering PLHIV in Uganda. *The Journal of Development Studies*. 2016;52:1162-1176.
- Coutinho A, Roxo U, Epino H, Muganzi A, Dorward E, Pick B. The expanding role of civil society in the global HIV/AIDS response: what has the President's Emergency Program for AIDS Relief's role been? *J Acquir Immune Defic Syndr*. 2012;60:S152-S157.
- Matsubayashi T, Manabe YC, Etonu A, et al. The effects of an HIV project on HIV and non-HIV services at local government clinics in urban Kampala. *BMC Int Health Hum Rights*. 2011;11 Suppl 1:S9.

38. Muriisa RK, Jamil I. Addressing HIV/AIDS challenges in Uganda: does social capital generation by NGOs matter? *SAHARA-J: Journal of Social Aspects of HIV/AIDS*. 2011;8:2-12.
39. Bukenya B. Are service-delivery NGOs building state capacity in the Global South? Experiences from HIV/AIDS programmes in rural Uganda. *Dev Policy Rev*. 2018;36:O378-O399.
40. Pfeiffer J, Chapman R. Anthropological perspectives on structural adjustment and public health. *Annu Rev Anthropol*. 2010;39:149-165.
41. Zack-Williams AB. *Social Consequences of Structural Adjustment*. Structural Adjustment. Routledge; 2013:79-94.
42. Brahm F, Tarzījān J. Transactional hazards, institutional change, and capabilities: integrating the theories of the firm. *Strateg Manag J*. 2014;35:224-245.
43. Chaddad F. Advancing the theory of the cooperative organization: the cooperative as a true hybrid. *Ann Public Coop Econ*. 2012;83:445-461.
44. Williamson O. E. Public and private bureaucracies: a transaction cost economics perspectives. *The Journal of Law, Economics, and Organization*. 1999;15(1): 306-342.
45. Nickerson J, Yen CJ, Mahoney JT. *Exploring the Problem-Finding and Problem-Solving Approach for Designing Organizations*. Academy of Management Briarcliff Manor; 2012.
46. van Genugten ML. *The Art of Alignment. Transaction Cost Economics and the Provision of Public Services at the Local Level*. University of Twente; 2008.
47. Makris M, Siciliani L. *Should Incentive Schemes be High-Powered or Low-Powered in the Presence of Motivated Agents*. Mimeo; 2014.
48. Barbieri D, Salvatore D. Incentive power and authority types: towards a model of public service delivery. *Int Rev Adm Sci*. 2010;76:347-365.
49. Maekelburger, B. Schwens C and Kabst R. Asset specificity and foreign market entry mode choice of small and medium-sized enterprises: The moderating influence of knowledge safeguards and institutional safeguards. *Journal of International Business Studies*; 2012;43:458-476.
50. MOH. *Uganda Population-Based HIV Impact Assessment (UPHIA) 2016-2017*. MOH Uganda; 2017.
51. UAC. Uganda HIV/AIDS Control Project. Implementation Completion Report (ICR) of the Community-Led HIV/AIDS Initiatives (CHAI) Component. July 2001 -December 31st, 2006, Uganda AIDS Commission; 2007
52. PEPFAR . The President's Emergency Plan for AIDS Relief. PEPFAR/UGANDA DREAMS Project, PEPFAR/UGANDA; 2015.
53. Williamson OE. The institutions of governance. *The American Economic Review*. 1998;88:75-79.
54. UAC. *National HIV&AIDS Strategic Plan 2020/21-2024-25*. Uganda AIDS Commission (UAC); 2020.
55. PEPFAR. PEPFAR/Uganda Country Operational Plan (COP/ROP) 2019. Strategic direction summary. *Pepfar March*. 2019.
56. Rendtorff JD, Jagd S. Balancing trust and control in organizations: towards a process perspective. *Soc Bus Rev*. 2010;5:259-269.
57. Girth AM, Hefetz A, Johnston JM, Warner ME. Outsourcing public service delivery: management responses in noncompetitive markets. *Public Adm Rev*. 2012;72:887-900.
58. Awio G, Northcott D, Lawrence S. Social capital and accountability in grass-roots NGOs. *Account Auditing Account J*. 2011;24:63-92.
59. Eijkenaar F. Key issues in the design of pay for performance programs. *Eur J Health Econ*. 2013;14:117-131.
60. Santato S, Loch AJ, Pérez-Blanco CD, Mysiak J. Measuring the transaction costs of historical shifts to informal drought management institutions in Italy. *AGUFM*. 2020;12:1866-1673.
61. Lees S, Kielmann K, Cataldo F, Gitau-Mburu D. Understanding the linkages between informal and formal care for people living with HIV in sub-Saharan Africa. *Glob Public Health*. 2012;7:1109-1119.
62. Rodriguez-García R, Bonnel R, N'jie ND, Olivier J, Pascual FB, Wodon Q. *Analyzing Community Responses to HIV and AIDS: Operational Framework and Typology*. The World Bank; 2011.
63. Lacity MC Willcocks LP and Khan S. Beyond transaction cost economics: towards an endogenous theory of information technology outsourcing. *The Journal of Strategic Information Systems*. 2011;139-157.
64. Foss NJ and Weber L. Moving opportunism to the back seat: Bounded rationality, costly conflict, and hierarchical forms. *Academy of Management Review*. 2016;41:61-79.
65. PEPFAR. *The President's Emergency Plan for AIDS Relief. PEPFAR/UGANDA FY20Q1 (Oct-Dec 2019) Quarterly Performance of the DREAMS Project*. PEPFAR/UGANDA; 2019.