

Culture in sustainable infrastructure: the polycentric cultural framework model



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The state of infrastructure and services is widely perceived as a measure of development and a major catalyst for growth in both developed and developing economies. However, financing, maintaining and replicating existing infrastructures in areas of need have been mostly ineffective. In view of the widespread failures and poor state of infrastructure and services, there is a need to review current delivery and procurement frameworks. Given that sustainable infrastructure is also an essential prerequisite for sustainable development, this paper presents a polycentric cultural framework for infrastructure and service delivery; a framework which emphasises the integration of infrastructure users, communities, public and private sectors throughout the process of conceptualisation to actual delivery of infrastructure, by taking the recipients' culture, beliefs and values into account. The framework also emphasises the use of systemic referendum among stakeholders by way of the traditional consultative processes and the collaborative consensus paradigm to achieve an effective and sustainable delivery of infrastructure and services.

1. Introduction

The main objective of this paper is to present and pioneer an alternative framework for infrastructure and service delivery that could generally be applicable to the developed and developing economies. This is very important in view of the fact that recent studies have confirmed that human culture is a vital factor in the delivery of sustainable infrastructure and services, and also in the assessment of living conditions. The framework to be presented here is called the polycentric cultural framework (PCF) for infrastructure and service delivery. This is a direct response to the call for an alternative framework that could potentially merge either the public and community-user provision (here referred to as PUCUP), the private and community-user provision (PCUP), or the public-private and community-user provisions (PPCUP) in the delivery of sustainable infrastructure and its services (Omoregie and Ehiorobo, 2011) (see Figure 1). In this paper, the PPCUP framework will be the basis for the PCF model.

Ostrom *et al.* (1993) viewed infrastructure provision as 'decisions made through collective choice mechanisms during the process of acquiring goods, works and services'. This provision covers: the types of goods, works and services to be provided; the quantity supplied, their quality, stability and maintenance; the arrangements for their production and financing; and monitoring the performance of those who produce them. Thus, it covers the process of conceptualisation, planning and construction and, by implication, the whole life cycle of the intended infrastructure. Therefore, infrastructure provision is a much broader concept than

procurement itself; it actually encompasses procurement (the process of acquiring goods, works and services).

According to the United Nations Commission on International Trade Law Uncitral (www.lexmercatoria.org), procurement is the process used for the acquisition of goods, works and related services (i.e. transport, insurance, installation, training, maintenance and other similar services) required in the execution of a project, excluding consultancy services. A clear understanding of the meaning of works, goods and services relative to infrastructure procurement is also essential.

Uncitral defined a 'good' as an object of any kind or description either in solid, liquid or gaseous form, including raw materials, products, equipment, electricity and services required to supply the goods, so long as the value of such incidental services does not exceed the value of the goods. 'Works' refers to all construction, reconstruction, demolition, repair or renovation of buildings, structures, site preparation, excavation, erection, building, installation of equipment or materials, decoration and finishing, as well as services incidental to construction such as drilling, mapping, satellite photography, seismic investigations and similar services provided pursuant to the procurement contract, so long as the value of these services does not exceed that of the construction itself. Services are also defined by the World Bank Group (2003) and African Development Bank (1997a) as any object of procurement other than goods or works. It is also appropriate at this stage to provide a brief

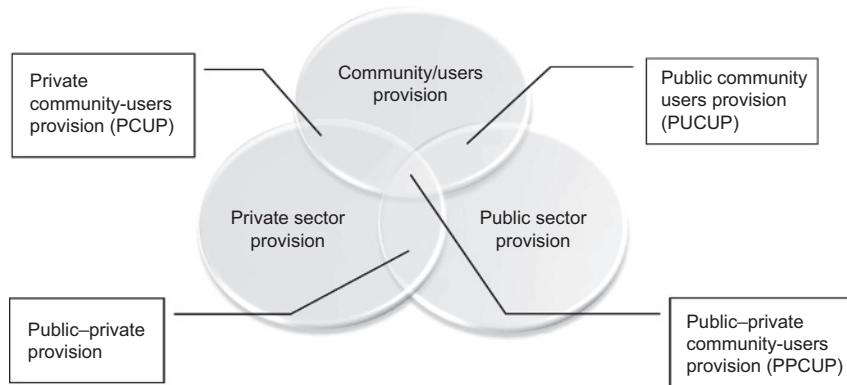


Figure 1. Stakeholders' provision structure

overview of the only widely accepted multi-lateral international best practice for procurement.

International best practice for procurement as spelled out by the 'Uncitral model law' (UN, 1994) on procurement of goods, works and services serves as a model for the evaluation and modernisation of procurement laws and practices, and the setting out of procurement legislation where none exists within member countries of the United Nations. This model legislation on procurement by Uncitral was a direct response to outdated and inadequate legislation governing procurement in member countries, which has resulted in inefficiency, ineffectiveness, abuse and the failure to obtain value in return for the expenditure of public funds. Thus, the reform of the procedure and practices of the public procurement system is the foundation for the application of the 'model law' (see the yearbook of the Uncitral, UN (1994)).

However, the inadvertent disregard for maintenance and procurement procedures and best practice for procurement has been identified as one of the root causes of corruption, infrastructure delay, cost escalation and failures in developing countries (see <http://www.bpp.gov.ng/dyncnt/fileviewer.php?udsec=docs&fid=Mjk%3D&ft=&tr=DD>; Omoriegbe and Radford, 2006; Omoriegbe *et al.*, 2005). This apparent disregard ignores basic institutional and international principles or policies that underpin the procurement of works and services. These basic principles as cited in the yearbook of the Uncitral (UN, 1994), the World Bank Group (2003) and the African Development Bank (1997b) include in summary:

- economy and efficiency in the procurement of works, goods and services
- transparency, accountability, responsibility and objectivity
- equal opportunity aimed at maximising competition
- encouraging indigenous participation.

2. Methodology

The methodological approach employed here was centred on secondary research: the critical review of existing infrastructure and service provision models. It involves a critical appraisal of the Uncitral, which is the basis for international best practice for procurement; and a brief overview of the Nigerian procurement system. The methodology also includes the experience gathered during a primary data collection survey conducted in Nigeria and concluded in December 2005 to investigate the state and failures of infrastructure. The experience gathered during the data collection process can be found in the Appendix section of this paper, as this is not directly employed in the analysis.

3. Procurement systems in Nigeria

The modes of procurement commonly used in Nigeria are competitive tendering and selective tendering (Aniekwu and Ogunje, 2002; Esenwa, 2004; Mansfield *et al.*, 1994). The World Bank's country procurement assessment report (CPAR) for Nigeria (World Bank, 2000), as cited in Ekpenkhio (2003), identified these gaps in the country's procurement system. As a way of tackling the problems identified from the study, the following recommendations were made in the CPAR:

- the need for a procurement law based on Uncitral
- the need to establish the Public Procurement Commission (PPC) to serve as the regulatory and oversight body on public sector procurement
- the need for revision of some key areas of financial regulations in order to make them more transparent
- the streamlining of tender boards and the strengthening of their functional authority and powers to award contracts
- a critical need to rebuild procurement and financial management capacity in the public sector
- a comprehensive review of the businesses related to export,

import and transit regulations, procedures and practices, including the automated system for customs data (ASYCUDA).

4. Uncitral

Although the Uncitral model law on procurement of goods, construction and services is an internationally recognised model or template for procurement procedures, particularly in developing economies and multilateral development banks, there are similar and in some cases enhanced legal frameworks in regional trade arrangements. Examples are the EU agreement on public procurement directives and World Trade Organization (WTO) government procurement agreement (GPA). Despite the fact that these arrangements are plurilateral (non-multilateral instruments), they are binding on member states within the EU and WTO.

These legal frameworks for procurement procedures outside the model law are required in order to cater for apparent limitations and to bridge regional divides in the application dynamics of the model law. Notable are the recommendations by the International Chamber of Commerce (ICC) for a revised model law for 'cross-border bidding on a non-discriminatory basis', electronic procurement to enhance economy, procedural efficiency, transparency, broader supplier market, possibilities for better monitoring and more public confidence in the procurement process (http://www.iccwbo.org/uploadedFiles/ICC/policy/commercial_law/pages/Final_Comments_Uncitral_Model_Law).

As cited in <http://adbprocurementforum.net/?p=54>, Uncitral has initiated reform to its model law since 2004 in view of the huge changes and challenges in the 'business environment' for procurement. Further areas identified for amendments in the revised model law include: suppliers' lists; framework agreements; procurement of services; alternative methods of procurement, evaluation and comparison of tenders; the use of procurement to promote industrial, social and environmental policies; abnormally low tenders; remedies and enforcement; community participation in procurement; simplification and standardisation of the model law; and legalisation of documents and conflicts of interest.

5. Appraisal of key infrastructure delivery frameworks

5.1 The public ownership and public operation framework

In this option, government department and public enterprises are the most common medium for infrastructure ownership and operation. Public enterprise is subdivided into four parts: traditional public enterprise, corporate and commercial public enterprise, public enterprise with service contracts and public enterprise with management contracts (World Bank, 1994). Notable achievements from this framework have been centred

on commercial principles and regulations which give managers control over operations and freedom from political interference, while the manager's accountability is often spelt out in the performance agreements or the management contracts (Fischer *et al.*, 2003; IMF, 2005). Thus, subject to similar constraints as private enterprise, successful public delivery emerges through competition created by private firms in the infrastructure market. Successes have been achieved under this pattern by, for example, the water supply authorities in Togo and Botswana, highway authorities in Ghana and Sierra Leone and the restructured road agency in Tanzania (World Bank, 1994).

In contrast, it is argued that successes from this approach on many occasions are short-lived due to political and social interference; especially in sub-Saharan Africa (Nwoye, 2002; World Bank, 1994). Moreover, Ostrom (1996) also criticises this model by arguing that centralisation of infrastructure and service delivery at the national level has actually kept municipalities and citizens from access to decision-making responsibilities and resources. Ostrom observes that citizens were themselves helpless to do anything about their squalid conditions although they possessed skills and time that could have been applied to the solution of the problems they faced.

However, it is apparent that 100% public sector ownership of assets means that the huge burden of maintenance, operation, financing, policy making, planning and risk taking would be expected to be carried by the public sector alone. Public provision of social and physical infrastructure has choked the abilities of several governments in developing economies. For example, it can be argued that the governments within sub-Saharan Africa have more to do than they can handle, as they are in charge of education, defence, telecommunications, power supply, water supply, sanitation and drainage and irrigation schemes, with the onus of maintenance and operations resting solely on their shoulders.

5.2 The public ownership and private operation framework

This option is characteristically put into practice through lease and concession contracts by assigning full operation and maintenance, along with commercial risk and the responsibility of new investment in publicly owned infrastructure facilities, to the private sector. Thus, only through concession can the private operator typically assume all commercial risk of operation and shares in investment risk. Lease and concessions are working well for water supply in Guinea and port facilities in Ghana, and Nigeria is about to apply this option to electric power supply (<http://www.everything-nigeria.com/bbe/blue.htm>; World Bank, 1994). Moreover, leases and concessions evidently consent to private sector management and financing without necessarily dismantling existing organisations or

immediately crafting an exclusively new regulatory framework. This system of concession is another form of partnership popularly referred to as public-private partnership (PPP).

This is a partnership between the public and private sectors for the purpose of design, planning, financing, construction, ownership and operation of projects which would be regarded conventionally as falling within the responsibility of the public sector (Akintoye *et al.*, 2006). PPP involves the sharing of responsibility between government and the private sector. For example design, construction, operation, maintenance, finance and risk management skills are provided by the private sector, while the government is responsible for strategic planning and industry structure, obtaining permits, customer interface issues, regulation, community service obligations and sometimes payment on behalf of the service users (<http://www.aph.gov.au/library>). Examples of this partnership are found in the BOT/BOOT/BOO arrangements described below.

In brief, a build-operate-transfer (BOT) arrangement is one where a private sector consortium puts up sufficient funds and builds an infrastructure – such as power supply – whose output is later sold to a publicly owned infrastructure company of the same type in the host country for a franchised period of between 10 and 30 years, before transfer to the host government for a token (David and Fernando, 1995; Haley, 1992). Nevertheless, a slightly different explanation of BOT arrangement is given by Tam (1999) and McCarthy and Tiong (1991): the arrangement grants the franchisee (project sponsor) the sole right to generate revenue from the infrastructure for a specified period, having already been responsible for financing, construction and operation of the facility. After the concession period, the infrastructure is transferred at no cost to the franchiser, which is usually the government. Similarly, build-own-operate-transfer (BOOT) arrangements involve a private developer financing, building, owning and operating a facility for a specified contract period. At the end of this period, the facility is given back to the government (<http://www.aph.gov.au/library>; World Bank, 1994). The build-own-operate (BOO) arrangement is different from the BOT/BOOT arrangement because the ownership of infrastructure remains in perpetuity with the private developer (David and Fernando, 1995). This arrangement subjects the developer to regulatory constraints on operations and pricing, and significant financial incentives for capital investment are derived from long-term right of operation of the facility.

The notable advantages of BOT/BOOT/BOO arrangements from studies conducted by Tam (1995, 1999) and David and Fernando (1995) show that the host government need not spend public funds but still could excel in the provision of public facilities for its citizens, while the franchisee makes huge profits from a successful BOT/BOO/BOOT project. This

arrangement is fast becoming the most suitable interface for mobilising private capital from the developed and developing countries; while selling production output to a local monopoly purchaser.

However, research has revealed that the requirements for effective and efficient delivery using BOT or BOO approaches are: an experienced, equitable and simple governing body and structure; honest and incorruptible political regime; an intact contractual agreement; a structured set of BOT regulations and legal system; a large and reliable consortium; an experienced construction organisation; and last (and most important), no political intervention (David and Fernando, 1995; Tam, 1999). These factors are not easily achieved, judging by the current situation in developed and developing economies, most especially sub-Saharan Africa. Thus, the success of these approaches in the long term appears questionable.

5.3 The private ownership and private operation framework

This option is known for its simplicity and tendency to flourish in a more competitive climate. Success stories have been recorded from most developed and developing countries. For example, developing countries that have allowed telephone services and electricity to be competitively provided with little or no economic regulation beyond that applied to all firms, have achieved remarkable success (World Bank, 1994).

However, considerable constraints to this model are prevalent in the developing world, most especially in sub-Saharan Africa. These include, among others: inappropriate competitive climate or restructuring for business; practical and statutory barriers to private entry; and regulatory involvement that is incapable of protecting the public interest when competitive discipline is insufficient (World Bank, 1994, 2002, 2004).

5.4 Bottom-up participatory stakeholder framework

Schubeler (1996) and Ogu (2000) have stressed that this 'bottom-up' participatory stakeholder partnership represents the strategy capable of enlisting the financial, material resources and expertise of various sectors of the urban community towards the improvement of the urban environmental infrastructure.

In addition, international organisations such as the United Nations Development Programme (UNDP), the United Nations Centre for Human Settlement (UNCHS) and UN-Habitat/UNEP (United Nations Environment Programme) have subsequently initiated strategies to evolve a participatory approach to development and management of the urban environment (Ogu, 2000; UNCH, 2003; UNDP, 1999). One of these strategies is the sustainable city programme (SCP), which aims to provide municipal authorities and city stakeholders in the public, private and community sub-sector with an

improved capacity for building in the urban environment and for planning and management.

For example, the sustainable Ibadan City project (SIP) from SCP took a systematic approach to the mobilisation of a cross-section of institutions, community, public and private agencies, non-government organisations (NGOs), professionals and business groups and multilateral organisations in Ibadan. Mobilisation activities were initiated to ensure that these groups or institutions participated in the identification and prioritisation of environmental problems, formulation of environmental improvement and development and execution of such strategies. It also provided an avenue for the building of partnerships (Ogu, 2000). Thus, the project promoted public and private sector partnership approaches to the planning and management of the environment, emphasising the involvement of communities in planning and management of their environment, including the identification of environmental problems and the choice and strategy for environmental development (Ogu and Ogbuozobe, 2001). In spite of some excellent studies carried out on the relevance and types of institutions that underpin effective infrastructure and service delivery, as discussed above, there are alternative arguments which include an additional cultural element. For example, Van der Vaeren (2004) differs completely from the standpoint that the setting up and managing of the right public institutions is the sole key to infrastructure development. He argues that cultural factors are as important as institutional ones – sometimes even more important. Furthermore, he maintains that the efficiency of public institutions is dependent on or determined by its association with existing culture, because these institutions are run by people even more than by law or regulation. Furthermore, in sub-Saharan Africa, researchers have shown that the non-inclusion of cultural factors remains a major impediment to development, although existing practice appears effective by western standards.

5.5 Community and users' framework

This preference appears most relevant for the delivery of municipal and local services that provide small-scale infrastructure, such as village feeder roads, water supply, sanitation and small-scale power generation off the national grid (World Bank, 1994). When those who contribute towards the cost are basically the primary beneficiaries, effective and efficient service is guaranteed. World Bank supported projects have shown that community self-help schemes should be selected, designed and implemented locally without outside imposition. Several authorities have supported this proposition.

This community demand-driven approach with variable levels of service has been successfully practised in South Africa (Abbott, 1996). In this model the emphasis is on developing the community in its widest sense rather than focusing on capacity

building. The central issue is the community's right to choose, and this right is not governed solely by the criterion of affordability alone (Abbott, 1996; World Bank, 1994, 2002). In this model, services are designed to meet specific needs and are not related to a structural hierarchy of incremental improvements with long-term implications (Abbott, 1996). Therefore, a deeper appreciation of societal reality and the recognition that it is quite easy to induce societal change by working through institutional forms like the community is very important. This could be realised by using provisions with which the majority of the people are familiar and to which they can relate. Mabogunje (1994) in his proposal on institutional reforms for infrastructure provision in urban regeneration has given birth to several institutional concepts for infrastructure provision. Chief among these is the co-production concept by Ostrom (1996).

The co-production concept implies that citizens can play an active role in producing public goods and services of consequence to them (Ostrom, 1996). The co-production model was developed to describe the potential relationships that could exist between regular producers and clients who want to be transformed by the service into safer, better educated, or healthier persons. The realisation is that the production of a service, as opposed to a good, is difficult without the active participation of those supposedly receiving the service (Ostrom, 1996).

However, it has been suggested that the community-user framework alone is inadequate in view of the fact that its capacity for mobilisation of financial resources, enabling technology and high-level technical support and training is quite incomplete.

6. Comments

From the literature review undertaken, it is evident that most delivery frameworks and procurement strategies strive for fairness and an enhanced competitive environment. It is important to state that this is the preferred system in the western world. The competitive system creates incentive mechanisms to spur private contractors in the provision of infrastructure and services. Ideally, to realise this objective, there has to be an equal playing field and equal capacity-building potentials. However, these conditions do not exist in reality. For example, in many developing economies, the average contractor lacks the public or governmental support necessary to consolidate their capital base; financial, material, human and technological development for medium- to large-scale projects. This situation poses severe difficulties for contractors from smaller developing countries with little or no capacity to compete favourably with international contractors, even in their home countries. Thus, it could be argued that competitive frameworks limit capacity building in

developing economies with obvious implications on national or public interest. While it is arguable that such frameworks were non-existent in earlier developmental stages of first world countries (the same countries now advocating competitive frameworks to the third world), evidence abounds on collaborative partnerships in their environments. These facts are well known and they constrain efforts to galvanise support and appreciation for the competitive paradigm in the developing world; just as some are finding it difficult to appreciate global warming, climate change and even the sustainable development paradigm. The argument is that these are the ideological tools of the west or the first world countries to impede the growth of the third world (<http://www.menominee.edu/sdi/whatis.htm>). Therefore, 'cross-border bidding on a non-discriminatory basis' cannot be convincing in the current world order and thus is difficult to sell as an idea. To some it is false procurement, unrealistic and unsustainable, especially for developing economies. Nevertheless, it is generally acceptable that the sole criterion for business is to make profit. So, reconciling profit with local demand or community preferences is arguably the dilemma of contemporary societies; both in the developed and developing world. Furthermore, as competition becomes the dominant and 'almost a sole criterion of service provision' only a few exercise the competitive advantage at the expense of the vast majority. In the UK for instance, it is well known that the competitive paradigm was brought to the fore and strengthened during the Margaret Thatcher period, when private provision was dominant.

In contrast to the competitive paradigm, in traditional African communities for example, collaborative partnerships, based on consensus, have been in existence for a very long time. Thus, the concept of individualism or singularity is alien to the traditional African system. In this system, 'whatever happens to the individual is believed to happen to the whole group and whatever happens to the whole group happens to the individual. Therefore the individual can only say: 'I am because we are and since we are therefore I am' (Mbiti, 1990). In the African view, individualism is the genesis of competition.

However, it is true that developed and developing countries require effective and efficient procurement systems. Procurement in most cases accounts for a high percentage of total expenditure in developing countries; for example 40% in Malawi and 70% in Uganda; while the global average ranges from 12 to 20% (Development Assistance Committee, 2005). In recent years, however, the drive to reform the procurement system has increased, partly because of requirements set by the World Bank and other donor organisations as prerequisite for development support. In addition, the inefficiencies of the unreformed public procurement systems have become obvious, particularly when some developing economies still retain the

majority of the procurement system that differed little from what was in place during colonial times. Therefore, these current procurement frameworks are non-interactive and have not evolved sufficiently with the beneficiaries.

So, sustainable and synergistic procurement strategies must evolve from the people for whom the project is intended. This is confirmed by Kumaraswamy (1994) as cited in McDermott (1999) and Rowlinson and McDermott (1999). Therefore, superimposing procurement strategies or mechanisms on developed and developing economies is inappropriate. Every instance of infrastructure and service delivery must bear in mind the uniqueness of its intended users. Rowlinson and Root (1997) have emphasised cultural uniqueness in the analysis of procurement systems. For further information on cultural relevance see the author's experience during the fieldwork exercise in the Appendix to this paper.

7. Recommendation: the polycentric cultural framework (PCF)

The community-users composition concept is vital to the PCF proposal. This concept comprises traditional institutions, the elders, youth, women and NGOs. The community-user composition indicates the interrelationships among these stakeholders. The stakeholders are all directly coordinated by traditional institutions with the assistance of the public sector, which is also charged with the responsibility of defining cultural norms, beliefs and values. However, the traditional institutions (as custodians of culture and traditions, traditional institutions still play a critical role in the politics of the present day because they form an enduring part of people's heritage) are closely linked with the grassroots and so have an intimate understanding of people's problems. On the issue of chiefs, constitutions and policies in Nigeria for example, Agbese (2004) viewed the traditional institution as more accessible to the ordinary people and more relevant to their daily lives, particularly to those in rural areas. Thus the traditional institutions are often used for mobilising citizens and for dissemination of government policies and views. Lawal (1989) as cited in Agbese (2004) observed that whenever policy makers are unable to carry the people along with them in their programmes and fear the consequences of failure, the help of traditional institutions is usually sought. Miles (1993) and Ayeni (1985) as cited in Agbese (2004) maintain that the traditional institutions could encourage community solidarity and provide administrative capacities in situations where central government is ineffective, or even where it is disintegrating. They see traditional custodians as ombudsmen for communities, which gives them a means by which to voice concerns about state bureaucracy. The community-user composition would be responsible for conceptualising the project, organisation of systemic referendum and procurement monitoring (see Figure 2 for the community-user composition

process activities). During conceptualisation, representatives are to discuss the type of infrastructure that is relevant to them and how to finance the project, bearing in mind the various stakeholders. At this stage, the design of the project and a suitable procurement procedure adaptable to the prevailing circumstances is discussed. Ownership or ownership structure, operation and maintenance of the project, bearing in mind the polycentricism of this model, are also considered. After the conceptualisation stage, selected options are further subjected to a systemic referendum. This referendum on the choice of infrastructure is an opportunity for every adult in the community, city or state in which the infrastructure would be located to have a say as to the type of infrastructure that would be provided to them (see Figure 3 for procurement: conceptualisation and systemic referendum activities). Thus, by consensus, transparency and accountability are strengthened right from the conceptualisation stage of the project, since the various representatives or leaders are directly accountable to the people. It is also the community-users composition that makes the final choice on the type of infrastructure and service to be delivered to them. This model has the potential to reduce cases of misallocated investments considerably.

In the PCF model there is room for independent monitoring and verification of the procurement, construction, maintenance and operation processes and strategies. Members of this monitoring team are to be supported by the public and private sectors. However, the influence of public and private sectors must not be allowed to exceed finance, maintenance, operations, design, construction and ownership (see Figure 4 for extent of public private participation). The monitoring team is given the responsibility of identifying and verifying areas of malpractice and of recommending ways of dealing with them.

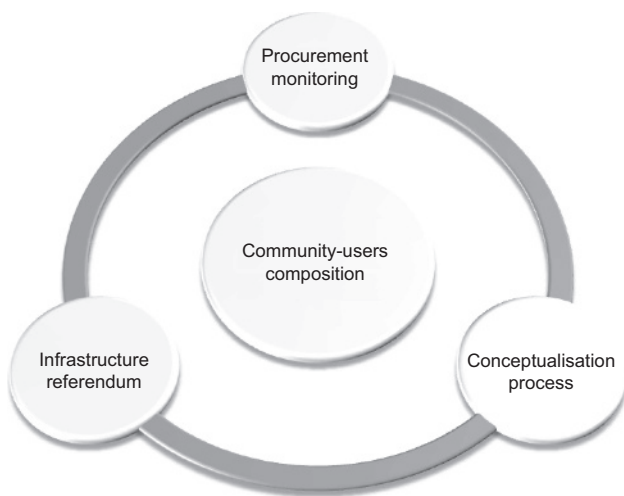


Figure 2. Community-users' composition process-activities

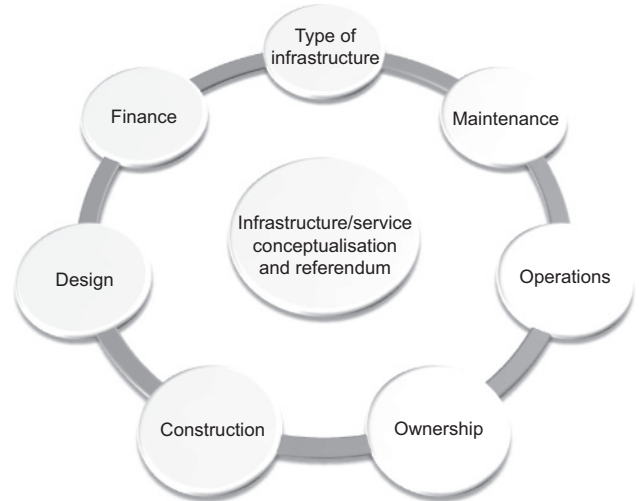


Figure 3. Infrastructure/service procurement: conceptualisation and systemic referendum activities

This type of supportive institutional arrangement could considerably reduce fraudulent acts and mass corruption currently being perpetrated (see Figure 5 for the procurement monitoring framework (PMF)). In PMF, responsibilities for construction, operations and maintenance are shared polycentrically among the community-users, the public and the private sectors. Therefore, everyone is charged with the responsibility of maintaining a project, since they have all been part of its conceptualisation, planning and financing. This addresses the problem of inadequate maintenance already identified as one

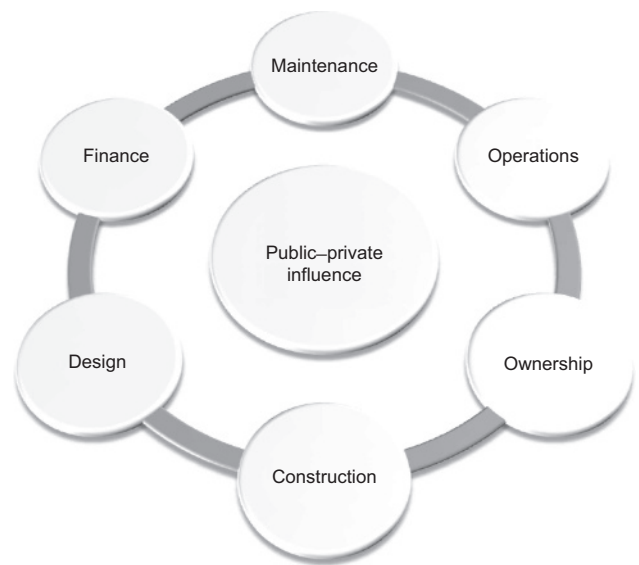


Figure 4. Extent public-private participation

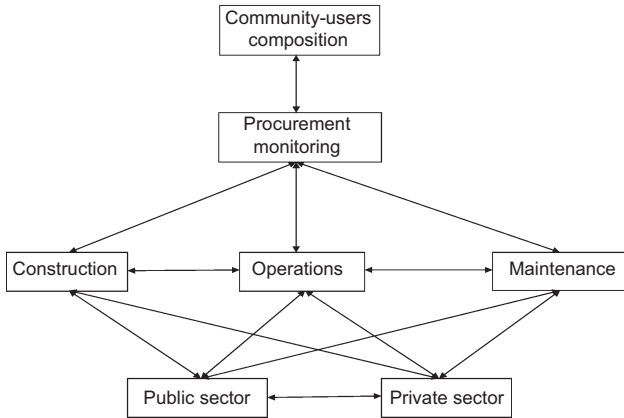


Figure 5. Procurement monitoring framework (PMF)

of the major causes of the poor state and failure of infrastructure. However, the PMF cannot work in isolation of the processes discussed and identified in Figures 2–5. A conglomeration of these processes is necessary and this conglomeration makes up the PCF, as shown in Figure 6.

8. Limitations

However, for effective applicability, this model still requires further investigation on ways to ease the bottlenecks that are likely to evolve from the various segments and interfaces in the PPCUP, as these interfaces are relatively unknown. In addition, collaborative contracting of ‘our’ in our contemporary societies is also a new paradigm that will require some time. Finally, the only identifiable limitation in the methodology is

the localised nature of field work, which is typical of all surveys and case studies.

9. Conclusion

The identification of the unique position of culture in sustainable infrastructure and service delivery also defines a unique role for the community-users structure; the community-users would after all be the best custodians of their respective cultures, beliefs and value systems. They should identify the desired type of infrastructure, quantity, quality, finance strategy, design, construction, ownership, operation and maintenance, and determine the best match between these criteria and what is available. Thus, they partake in managing its risks and opportunities and eventually become major stakeholders in the project. However, bearing the financial burdens would require support through collaborative partnership with other stakeholders like the public and private sectors. Thus, the culture of *collaboration* across stakeholders as opposed to *competition* becomes a major characteristic in the delivery of sustainable infrastructure and services. In most cases, competition restricts ideas, raises apprehensions and stagnates creativity, and in other cases stagnates intellectual harmonisation. Collaborative partnership among stakeholders could also give birth to *collaborative procurement* among contractors. In a collaborative structure, there are huge expectations for consensus building in decision making to incorporate the wishes of all parties – the strong and the weak, the majority and even the minority. Invariably, the general will of the people is reflected on what and how to provide infrastructure and services that would be of necessity to them. This presents a sharp contrast to the theory of competitive understanding and competitive perceptions, which consistently sideline the frail, the weak and

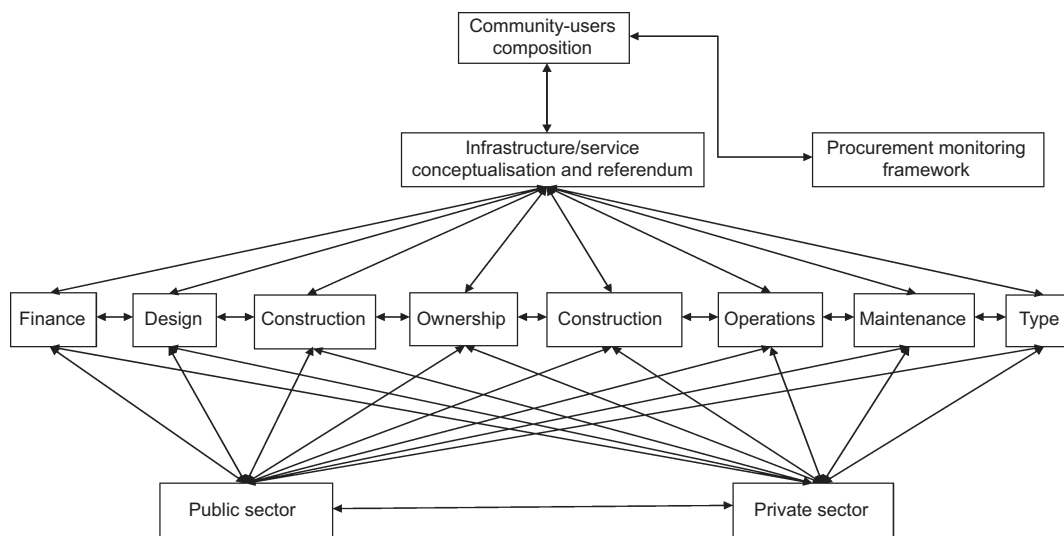


Figure 6. Polycentric cultural framework (PCF)

minorities in collective decision making. This is a situation that could easily engender dissatisfaction and disaffection within society and procurement processes. Further, a collaborative consensus paradigm guarantees more meaningful participation in collective decision making (through emphasis placed on extensive discussions and deliberations on public issues) than the orthodox contemporary Anglo-Saxon competitive structure. Thus, extensive debates and discussions usually become prerequisites for sustainable resolution and provision until consensus is realised. This process is the foundation of the PCF model. This model is particularly relevant to the developing world, most especially sub-Saharan African communities, which have traditionally subsisted for centuries on the philosophy of collaborative realities.

Appendix: Challenges encountered during field work

The first challenge encountered in this study was in the north-western geopolitical region, where prospective respondents were initially very reluctant to communicate with the research data collection team. However, this attitude was eventually overcome because some members of the team understood the people, their culture, religion and language.

Another notable experience was at St Saviours Road in Benin City, in Nigeria's South-southern zone. The team observed a scene along a failed portion of this road frequently used by taxi motorcyclists (scooter drivers). This road was in a state of utter disrepair and the team decided to photograph it before trying to find a way around it. This part of the road was seriously waterlogged and could not be traversed by four-wheeled motor vehicles. The scooter riders were making a lucrative income by transporting people across the failed section. So, some of the scooter riders objected vehemently to the photographs being taken, also demanding to know why they were being taken. They damaged one of the cameras beyond repair and seized the other. They were of the view that members of the team were journalists out to report their activities on the failed part of the road.

The seized cameras were later released after the scooter riders were convinced that the team was made up of students and that the information collected was purely for research. Some of the scooter riders confided to the team that their means of sustenance depended on failed infrastructure, such as that section of St Saviours Road, in order to survive the prevalent poverty and unemployment. It was learnt that similar activities take place in other parts of the city such as the Ugbowo, Upper Mission and Okhoro areas and the Ogida and Uselu quarters, particularly during the rainy season.

This scenario could be attributed to the severity of income disparity and unemployment in the area that forced some people

to take advantage of failed structures like the one at St Saviours Road in order to survive. It was not surprising to find the scooter drivers apparently ready to fight anyone that could compromise their only means of sustenance. This is anecdotal evidence of the degree to which failed infrastructure can affect the thinking and behaviour of the poor.

Another interesting incident during the field work occurred in Imo State in the south-eastern zone of Nigeria, where some individuals purporting to be local council personnel forbade the team from taking photographs in a certain town. Nonetheless, the level of decay of infrastructure in this part of the country was the worst experienced in the survey, at least as far as the survey team observed. There were initial difficulties in data collection in the town, as the response rate was extremely low (less than 10%). Potential respondents were very unwilling to return their questionnaires, which resulted in the extension of the team's stay there by 3 days.

However, a similar technique used by the team in Kano State in the north-western region produced the response that the team wanted and needed. It was observed that the people of this region responded quickly to anyone who could speak their language and understand their way of life. This was unlike Imo State, where even the most literate and enlightened of the people were apprehensive. While some respondents in this region demanded remuneration for the return of the questionnaire during the first data collection exercise, these same people became very accommodating during the follow-up. Their cooperation must have been due to the technique of bridging the communication gap by using their language, culture and value system. However, extreme care was taken by the team not to interfere with the responses to the questionnaire.

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