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Construction statistics review for Kenya.

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ABSTRACT: Construction is a strategic industry in the developing economies like Kenya. In order for construction to ably perform this role, there is need to provide information on its various economic aspects including raw materials, products, processes, finance, and labour. Construction statistics of Kenya have been evaluated in order to ascertain their adequacy in terms of scope, portrait, reliability and responsiveness in their coverage of the construction industry. Official statistics published in the annual Statistical Abstract were reviewed according to these adequacy criteria. The findings are that: the scope of construction statistics is narrowly defined making the statistical portrait of the sector to be incomplete; the statistics are also unreliable in terms of quality and unresponsive to economical challenges of inflation, structural adjustment policies and the decline of public sector's role in the construction industry. A participatory statistical governance framework is recommended in order to improve the scope of statistics and alleviate the attendant problems like incomplete portrait that come with the narrow scope.

Keywords: construction industry, national statistics, Kenya.

Introduction

Governments all over the world are involved in the collection of economic statistics, which among other things indicate the state of their economy in an annual time series. These indicators are commonly known as official statistics. Construction is one of the industries of strategic economic importance and governments are obliged to take the industry's statistics seriously. The United States government, for example, carries out a national census for the industry from time to time (United States Census Bureau 1996).

There has been a consistent scholarly concern with construction statistics. This has resulted into some impressive reviews of construction statistics in certain Anglo-Saxon countries conducted with a view to improving them. For instance Gill (1933) carried out a review of the construction statistics of the US. He was called upon to do this because "public officials, as well as private industry, must depend on available

evidence for their opinions, and the validity of these opinions will depend upon the completeness and accuracy of the existing statistical data" (Gill 1933: 31). He felt that there was "lack of specific and accurate information available in this country [USA] on the subjects of construction and employment in construction" (Gill 1933: 31). Gill's argument about inadequate data and need for adequate data lays the foundation for any reviews of construction statistics.

Available literature confirms that the key concerns of construction statistics reviews are mainly with their adequacy. The question of adequacy can be split into two: i) scope, and ii) quality that can engender reliability. Apart from these, construction economists readily single out the uniqueness of linkages between construction and the economy; see for example Briscoe (1988) and Hillebrandt (2000). But these linkages can only be portrayed out empirically by construction statistics. The portrait of the role of construction in the economy is therefore a significant responsibility of construction statistics upon which they can be evaluated.

Besides, there is the novel issue of responsiveness that rarely catch the eyes of reviewers but which is equally significant given that official statistics may be conceived of in research parlance as statistical towers of longitudinal construction. If time changes, do construction statistics change with time to maintain relevance? Responsiveness of construction statistics in the light of transforming economic conditions is therefore another important attribute of construction statistics that may be used to evaluate them.

This review proposes to use these four main criteria (namely, scope, portrait, reliability and responsiveness) for evaluating construction statistics in Kenya. The purpose here is no different but to appraise the adequacy of the statistics and make recommendations for their improvement. Secondly, this would form an interesting contribution from a developing country situation that would be useful for comparative purposes.

Constructing construction statistics

Statistics refer to a collection of selected numerical facts about the state of certain sectors—either individually or collectively—of society. Statistics are usually prepared by national or supranational institutions and presented for a particular time frame and for a particular geo-political reference. The geopolitical reference may be local, regional, national, continental, or global. The sectors may include manufacturing, mining, public finance etceteras. When prepared at national levels by public agencies they are usually released or referred to as official statistics. Construction statistics therefore refer to a collection of selected numerical facts that seek to portray certain conditions or attributes of the construction industry. Statistics are therefore not a mere collection of numbers; they must be purposeful numbers that lead to a particular meaning. Construction statistics of Kenya refers to selected collections of numerical facts about the construction industry in the nation of Kenya.

Construction as a sector of society is characterized by the economic activity of building and civil engineering works (Wells 1985, Bon and Crosthwaite 2000). It is a sector of strategic economic importance especially for developing economies. This is because of its macroeconomic contributions to gross domestic product (GDP), gross fixed capital formation, employment, and inter-sector linkages (United Nations Centre for Human Settlements 1984). The construction sector also makes significant contribution to other sectors of the economy. For one, it produces capital facilities and assets required to support production in other sectors (United Nations Centre for Human Settlements 1984).. Secondly, it creates significant demand for intermediate input in the name of products from other sectors. This demand spans almost all the sectors including agriculture/forestry, manufacturing, transportation, mining, and services etceteras.

Construction statistics would give vital insight into the contribution of construction to economic development. In spite of the importance of construction, its statistics is usually of questionable quality even in developed countries. In the UK, for example, there had been a long debate on the inadequacy of construction statistics between government agencies in charge of statistics, i.e. Department of Environment (DoE) and the National Economic Development Office (NEDO) on the one hand, and user's of construction statistics on the other (Cannon 1994). Earlier on, Fleming (1986) had

pointed out the shortcomings of the UK's construction statistics. The Pearce Report of 2003 has contributed to this debate in a way. Chapter 3 of the report considers measures of the construction industry in the UK (Pearce 2003). In this instance, the report principally raised the problem of definition conceived in terms of 'broad' and 'narrow' classifications that in turn vary the comprehension and the measures, indicators, or statistics of the industry. This has partly led to Briscoe's work that is based on the reliance of Pearce's work on official construction statistics of the UK (Briscoe 2006). According to Pearce (2003), the narrow scope refer to the on-site construction activities involving the assembly and repair of buildings while the broad scope include the supply chain for construction materials, products and assemblies, and professional services.

In the US, the review of construction statistics has been taking place for a long time. For example, in 1970, the US President underscored the fact that statistical shortcomings had handicapped the development of effective policies to combat construction inflation and to meet future construction needs (Swerdloff 1971). The president therefore asked the Cabinet Committee on Construction for recommendations on improving the statistical information on construction. The US is a nation that takes seriously the collection of economic statistics. Title 13 of the United States Code (sections 131, 191 and 225) directs the Census Bureau to take the economic census every 5 years ending with 2 and 7 (United States of America 1995). The Economic Census consist of Census of Construction Industries among others (United States Census Bureau 2000a) Therefore the US has been conducting a quinquennial census of construction industries since 1967 (United States Census Bureau 2000b). The US recognizes that the construction industry continually undergoes change and that it is important for the national statistical agency to provide users of construction statistics a forum to discuss statistical programmes vis a vis their needs. In this respect, the Census Bureau organized a Construction Statistics Data Users Conference, held on October 28, 1997, at the Embassy Suites Hotel in Washington, DC.

It is in the spirit of the concerns and endeavours of the UK and US that it becomes worthwhile to review the construction statistics of Kenya in order to gauge their adequacy as indicators of economic significance of the sector. Secondly, it would be

useful to know whether the statistics give a clear and economically useful indication of the state of the sector.

Materials and methods

The review involved a survey of official data sources for construction statistics i.e. the statistical products in Kenya. Three regular sources were identified. These are:

i)   Statistical Abstract

ii)   Economic Survey

iii)   Population census reports

Population reports are released decennially after a census has been conducted. Some statistics touching on construction can be found in the Population and Housing Census reports that basically deal with social statistics. The 'Population' aspect deals with demographic issues while the 'Housing' describes the qualities of houses as products of construction. These have been classified and exhaustively discussed as housing statistics in K'Akumu (2006). Therefore this review is about the statistics presented by the first two products.

The two constitute the main consideration of economic statistics in Kenya. Economic Survey is a review of the leading economic indicators that emphasizes current statistics intended to report the current national economic performance (Central Bureau of Statistics 2005a). But Economic Survey itself is not a statistical product per se. As the name suggests, it is a survey of the current economic situation obtaining in the country. It does not intend to present data as raw material for further analysis or interpretation but itself uses current data to review the economic situation. In this respect, it presents data to support observations it is making about the economy. The only statistical value of it in this case, is that it uses very up to date data; before the data is officially released by the CBS in the Statistical Abstract. For that matter, the Statistical Abstract usually trails the data reviewed in the Economic Survey by one year. Every year a Statistical Abstract is released for the previous year while an Economic Survey is released for the subject year. For example, for the year 2006, the publications are: *Economic Survey 2006* (Central Bureau of Statistics 2006a) and *Statistical Abstract 2005* (Central Bureau of Statistics 2006b). Since Economic

Survey is not a data source but rather a data user, it better be left out. This leaves only the Statistical Abstract for analytical considerations in this review.

The Statistical Abstract is intended to be the single source of statistics covering a series of years (Central Bureau of Statistics 2005b). The statistics published in this digest are collected directly by the statistics bureau itself, or by other government departments or other organizations (Central Bureau of Statistics 2005b). Statistical Abstract has been released in Kenya on a yearly basis since colonial times. Of all the releases, it is the most current one that was picked for review but in some cases references are made to the past ones.

The construction statistics presented in the Statistical Abstract 2005 was then subjected to the criteria of evaluation involving: scope, portrait, reliability and responsiveness attributes as detailed in the next four sections. In limited cases, tabular extracts have been given as examples of statistics being reviewed. It is important to note, however, that the objective of this exercise is not to analyse and interpret construction statistics; rather , it is purely an endeavour to appraise the adequacy of the statistics.

Scope of construction statistics

The first question this analysis sets out to answer is whether construction statistics capture the scope of the industry. It is only by doing this that the statistics would achieve a complete account of the state of the industry. Defining the scope of the construction industry has been one of the greatest challenges for construction statistics and for that matter construction studies. This is already acknowledged by Bon and Crosthwaite (2000) and Pearce (2003) among others. The definition typically varies as to narrow and broad scope as illustrated by Briscoe (2006) with the UK case. In terms of the narrow definition in the UK classification, construction statistics tend to exclude activities that involve mining, manufacturing and marketing of construction materials and components; and also that involve professional consultancy in the construction sector (Bon and Crosthwaite 2000, Briscoe 2006).

It is important to note that Kenya is a former British colony and the narrow definition that afflicts the UK construction statistics is not unexpected there. The Statistics Act

that forms the legal basis on which official statistics are collected is itself a colonial relic that came into use in 1961 subject to minor revisions in 1972 and 1982 (Kenya 1982). Also, the entire practice of collecting and publishing official statistics is a colonial bequest. The first Statistical Abstract was published in 1958 (Central Bureau of Statistics 1958). Kenya got independence from British rule in 1963.

[Table 1 about here]

Table 1 gives the outline of Chapters of statistical reporting from which we can see that construction does not feature as a sector. But the core construction statistics are found in some topics under Industrial Production i.e. Building and National Housing Corporation, see Table 2 for details. Other construction data are scattered in other topics or chapters. For example, data on the topic of road transport under the Chapter of Transport and Communications include tables reporting on: road networks 2000-2004 and; roads completed, started and in progress (See Central Bureau of Statistics (2006b: 191-2). This is data on construction input and output. The rest of the Chapter reports on volume of infrastructure services and revenue and expenditure of organisations within the sector.

[Table 2 about here]

Apart from roads, we are not given construction inputs and outputs for the infrastructure sector like for electricity, water etc that form an integral part of the construction industry. The finance sector, whether private (Financial Statistics) or public (Public Finance), do not report on construction. The Chapter on National Accounts does not give specific reports on construction but the sub-topics on Gross Fixed Capital Formation (GFCF) are useful in measuring the role of construction in capital formation.

Overall, the gamut of construction statistics available including overt and covert topics can be charted as follow:
i)   National income statistics detailing aspects of GDP and GFCF
ii)   Price/cost statistics detailing building cost index, civil works cost index, and overall construction cost index

iii)   Quantity statistics detailing quantities of cement, see Table 3.

iv)   Product statistics detailing reported completion of privately owned buildings, public housing construction, units and value of buildings completed, completion of non-residential buildings, National Housing Corporation and, road statistics

v)   Process statistics detailing number of plans approved for Nairobi and

vi)   Public expenditure statistics detailing public expenditure for roads only, see Table 4.

[Table 3 about here]

Within this micro scale, the scope of quantity statistics is also narrow. For example, statistics are given only for cement (Table 3) compared to the long list of construction materials considered under price/cost indexes. We need to see more quantity statistics for many other materials. It is important to note that sand quantities are presented under mining and quarrying and not under construction. This is symptomatic of the narrow scope of the construction statistics. Secondly, Table 4 on public expenditure on roads should tell us whether the figures tabulated are in current or constant prices since without that information the significance of the figures is not clear.

[Table 4 about here]

Portrait of construction statistics

The next question that this analysis would pose is whether construction statistics in Kenya are aptly portraying construction as a key aspect of economic development and as a complete and unique sector. We have noted that construction statistics are part and parcel of economic statistics. Economic statistics generally tell us things about the economy; so to what extent does construction statistics tell us something about the Kenyan economy?

Macro studies have relied on official statistics to portray the socio-economic importance of construction. Pearce (2003) has used construction statistics in the UK to assess the social value of construction. This, in a way, constitutes an assessment of the contribution of construction to socio-economic development. Earlier on, Fleming (1986) had relied on the same official statistics to draw conclusions on the economic characteristics of the construction industry. Briscoe (1988), on the other hand, relied

on the UK construction statistics as empirical demonstration of the theoretical relationships between construction and the economy. An essential aspect of construction statistics therefore is its portrait of construction as a key element of economic activity.

Comparative studies in construction economics have also relied on construction statistics to make conclusions on the role of construction in economic growth/development at international levels. Bon and Crosthwaite (2000), following the work of Turin (1978) have come to the conclusion that construction trends (interpretable through construction statistics) can be used as a measure of general levels of economic development of countries ranging from pre-industrial, industrial, to post-industrial stages.

The role of construction in economic development remains a pet topic for construction economists even at national levels. Recent empirical studies that have been done for industrialising and newly industrialised economies include: Trinidad and Tobago; Lewis (2004), Hosein and Lewis (2005) and Ramsaran and Hosein (2006) and for Hong Kong; Tse and Ganesan (1997) and Yiu *et al.* (2004).

For Kenya, the portrait of the economic significance of construction is effectively done under the national income statistics. Tabulations are rendered for: Gross Domestic Product (GDP) by activity; Percentage contribution to GDP by activity and; GDP by activity at constant prices. Contributions to GDP per sector are indicated so that construction can compare with the rest. For example, the statistics indicate that the percentage contribution of construction to GDP is low (at 3.6) compared to sectors like agriculture and forestry (23.7), among others for the 2004 accounts, Table 5. There are also statistics on percentage changes in contribution to GDP, and annual production accounts by industry where construction's contributions can be singled out.

[Table 5 about here]

GFCF is given in two instances i) as monetary value of expenditure at current prices and ii) as percentage share of expenditure at current prices. The latter is derived from values of the former by expressing them in terms of percentages. The statistics in either case indicate that construction related expenditures are the leading factors in

fixed capital formation confirming construction as the most important sector in capital investment. In 2004, for example, buildings and structures contributed Kenya Shilling 107.5 billion of the total 208.2 billion. This worked out to 51.6 percent contribution to GFCF as shown in Table 6. Also the statistics indicate a steady rise in the percentage contribution of construction to GFCF following a slump of 46.4 in the year 2001 to a peak of 51.6 in the year 2004.

[Table 6 about here]

Whereas portrait for national income accounting is well done, there are some areas of micro portraits of individual products that may need polishing. For instance, statistics are presented for reported completion of new non-residential buildings for private ownership. This is a tabular analysis of costs by towns i.e. Nairobi, Mombasa, Thika, Nakuru, Eldoret, Kitale, Kisumu, and sector of ownership i.e. manufacturing, building and construction, transport, storage and communications, wholesale and retail trade, services, and financial institutions. But the information is not updated as can be seen in the 1998-2003 statistics in which the tabulation is left blank in most cases. The indication is that figures are not available (Central Bureau of Statistics 2006b:144-145).

There are also statistics for the number of public building plans approved by the City Council of Nairobi. Data is tabulated on an annual basis by different categories. Categorization is in terms of use or ownership. Use is the broad category in terms of residential or non-residential. Under each category there are sub-categorization in terms of ownership whether central government, the city council itself, or other statutory bodies. This is repeated for cost estimates. As in the case of private buildings, costs are given as annual aggregates. This statistical tabulation, unlike the one on private buildings, is characterized by lack of data hence cases of blank entries are substantial as seen in the 1996—2004 tabulations (Central Bureau of Statistics 2006b:147). One other concern is that in both cases, consideration is only given to statistics for Nairobi while there is no apparent reason why other towns should not be considered.

There has also been an attempt to provide statistics of number of units and value of buildings completed in main towns by cost category. The cost categorization is in the interval of Kenya Shilling 20 million ranging from 0-300 million. The details are to

be given for residential and non-residential in terms of units and values and whether these have been realized by the public or private sector. However this still needs a lot of tidying up, as the tabulations are virtually blank, with scanty entries as can be seen in the current presentation (Central Bureau of Statistics 2006b:141).

Reliability of construction statistics

The third question this review seeks to answer is whether the construction statistics of Kenya are reliable. This question has been tackled by other reviewers of construction statistics for other countries; see for example Gill (1933), Cannon (1994) and Briscoe (2006). To answer this question for a country like Kenya, it is better we first consider the situation of economic statistics for developing countries in general.

Economics statistics which construction statistics form part of are generally considered unreliable for developing countries. Wu (2003), for example, has put a caveat on the Chinese economic statistics on the grounds that their quality has been compromised through political doctoring of figures. Wu's is, in a way, the repeat of a warning that had been issued by Orleans three decades earlier (Orleans 1974). But apart from the problem of political interference as identified by Wu, there are also technical problems concerning statistical systems in general, and especially pertaining to Africa.

The technical problems involve inadequacy of resources and lack of net-working of available resources. For instance, Kiregyera and Banda looked at the challenges facing the statistical system of Zambia and found out that: "The CSO [Central Statistics Office] has had no permanent field organisation to handle data collection and such things as recruitment, training, and supervision of a cadre of permanent field staff, collection of data, and scheduling of work" (Kiregyera and Banda (1986:36). African systems therefore have serious problems of inadequacy in terms of personnel organisation and equipment that render the reliability of their data questionable.

Woodward (1985 and 1994) has also looked at the training needs and practice for official statisticians in Zimbabwe and found out that there is lack of personnel development in this area due to lack of coordination especially between CSO and the training institutions. Ntozi (1992) also reached the same conclusion for Africa in

general. Given this kind of handicapped logistical background, such institutions may not be expected to produce any better statistics.

Nevertheless, construction statistics is also a unique aspect of economic statistics. This uniqueness makes it difficult to produce reliable statistics even in the developed world. Greene and Strassman (1971) have pointed out the footloose nature of the industry as the culprit in the developing world. For the UK, Briscoe (2006) has noted that there is high turnover involving various entries and exits of actors such that it is difficult to maintain a register or database. Notably, construction sites are temporary locations whereas there are a number of small firms that may not appear in the register but operate in the sector. Since operations of these actors may not be captured in the statistics, it renders them unreliable as true representation of the state of the construction industry (Briscoe 2006).

The unreliability of construction statistics for Kenya is demonstrated by pre-start data on plan approvals. Statistics are available on the number of plans approved for the construction of private buildings by the City Council of Nairobi. These are given on an annual basis and are categorized according to residential and non-residential buildings. As Palmer (1966) noted, the approval statistics provide an earlier indicator of future building plans. However, for Nairobi the aggregations are such that no trend can be projected as the data is not broken down to spatial categories. Otherwise we could easily tell which areas of the city are growing and which ones are decaying. This information would be useful for spatial planning and management of the city.

Secondly, dis-aggregation is only done in terms of residential and non-residential. It would be useful to do further dis-aggregation in terms of structure type and size of accommodation such as flats, maisonettes, one-two-three bedrooms etcetera. In this way we would be able to see at a glance what type of market the private sector is contributing or not contributing to. These statistics may also not be reliable due to the corruption involved in the sections of City Hall that deal with plan approvals. A number of plans are approved irregularly while so many private buildings are also constructed within the city without requisite plan approvals. Wells (2001: 272) observed that: 'Many buildings, large as well as small, are now constructed without permits. One implication of this development is that official published data on

construction output are increasingly unreliable. Official data in Kenya seriously underestimate the volume of construction activity'.

Statistics are also given on the estimated costs of the buildings as approved. The costs are again categorized according to residential and non-residential buildings and given in annual aggregates. Again the statistics are unreliable to the extent that the plans may not be a good basis for cost estimation as many private builders alter their plans after approval. The costs are also a little meaningless on the basis of the presumption that once a building is approved, it is as good as built and so the costs are actually incurred. Palmer (1966) compared the statistics of plan approvals against those of commencement and found a big discrepancy leading to his conclusion that the securing of a building permit is not necessarily followed by a building project. Otherwise the statistics are well tabulated and are complete unlike most construction statistics tabulations with blank entries.

Responsiveness of construction statistics
The last question this review seeks to tackle is whether construction statistics in Kenya are responsive to structural changes. Official statistics reflect socio-economic conditions of a country at a particular point in time usually in yearly calibrations. But socio-economic conditions are never constant.

Construction statistics have been clearly identified as part of economic statistics. Economic organisation on the other hand is charted on the path of change and or development so that countries change from LDCs to NICs to AICs (Bon and Crosthwaite 2000). These changes entail fundamental structural transformation that must modify construction statistics and that the statistics must be rearranged to capture and reflect as the correct state of affairs.

Another important aspect of construction statistics in general is their ability to adapt to and live up to these changes. For a developing country like Kenya, these changes are expected to occur in the normal development projection. But at times changes are externally induced like the structural adjustment policies (SAPs) that have introduced radical changes in the economic organisation of the country. Other attendant

endogenous changes like rising rate of inflation also need to be taken account of. Wells (2001), for instance, has identified a structural shift from formal to informal building processes in Kenya that so far construction statistics are unable to capture.

The general notion one gets at a glance on construction statistics in Kenya is the lack of responsiveness. This can be seen in many areas as in the case of cost indices. Three main cost indexes are provided: building cost index, civil works cost index, and overall construction cost index. The cost indexes are given on a quarterly basis for the months of: March, June, September, and December. Actual prices are collected at the end of each calendar month (Central Bureau of Statistics 2005b). The main problem with the indexes is that they are referred to 1972 as the base year. This is a long time frame that is not appropriate. The basic principle for choosing the base year in construction of an index is that the base year should be a recent year when there had been no unusual occurrences (Fleming and Tysoe 1991). 1972 is more than three decades back during which major disturbances like the oil crisis and SAPs have rocked the Kenyan economy.

Unresponsiveness can also be observed in statistics presented on houses built by the public sector. This is an attempt to give data on institutional housing and pool housing for public servants in terms of units built, aggregate cost, and unit costs per financial year. The statistical tabulation mainly has dash entries meaning that the government is no longer constructing such houses. This follows a major shift to neo-liberal policy orientation of the government of Kenya which has left housing sector to other non-public actors yet the statistical structure is still presenting schedules for public actors with nothing to report on them. The space should actually be dedicated to non-public actors who have taken over.

For NHC, there is also statistical tabulation of number of houses complete by cost bracket (Kenya Shilling) i.e. up-to 29,999, 30,000—59,999, and 60,000 and over. There is a similar tabulation for Nairobi apart from the one of Kenya as a whole. But most of the entries are blank because the categorizations are meaningless. All buildings in Kenya to date are obviously costing over 60,000 any way; courtesy of cumulative inflation.

Toward improvement of construction statistics

From the review we can see that the scope of construction statistics is generally not well defined at the macro economic level which is consistent with results of other reviews. For Kenya, the input output statistics for infrastructure construction is not covered whereas this forms a substantial aspect of construction activity for a developing country. Also, construction is not given a distinct treatment as a sector thereby veiling or scattering its statistics and losing its portrait. Scope is also lacking at micro level where quantities are concerned. Quantities are necessary as indicators of demand for certain building materials that can guide investors and suppliers and also policy makers especially in the realm of environmental management since over exploitation of certain building materials may have negative impact on the environment. It has also been noted that for the quantities presented the statistics are inadequate because the figures are incomplete.

The portrait of construction in national income statistics is notably complete and sufficient. But at micro level the portrait is incomplete or insufficient for statistics on completion of non-residential buildings and the number of building plans approved. The case of unreliability of construction statistics is represented in terms of statistics on the number of building plans approved as already discussed. Lastly, the case of luck of responsiveness in statistics is well elaborated by out-dated cost indexes and blank tables reporting on public sector contribution to housing and the meaningless cost bandings that are long overtaken by inflationary trends. There is need for some upgrading of statistical bases and structures in order to portray current state of affairs.

All these contribute to a general inadequacy in construction statistics and advocate serious condemnation of the institutional capacity of the statistical system. Already, the CBS itself has admitted that it lacks capacity to deal with economic statistics and the reasons have been enumerated. According to the CBS, problems include: "declining financial outlays to produce and disseminate statistics, inadequate professional staff at the senior management levels, and poor management"[2].

Other challenges that face construction statistics include the sheer conditions of economic underdevelopment. In developing economies like Kenya, data acquisition is generally problematic owing to underdeveloped economic and administrative

institutions. Much of economic statistics are obtained from administrative records. In most cases these administrative records are poorly kept, not updated or not kept at all. Networking of these records for the statistician to get accessibility to them and also to help in the quick processing of the data is also unavailable. It also happens that the market institution is not well developed so as to capture all the economic processes taking place. The existence of black markets, corruption, and the non monetary sector therefore hinder the development of reliable economic statistics.

The other challenge is the informal nature of the construction industry in the developing world especially concerning the construction of residential buildings. Construction of other buildings and civil works are generally formal in nature but not with a tinge of informality especially where labour and subcontracting is concerned (Mlinga and Wells 2002 and Wells and Wall 2001 or Wells and Wall 2003). One well known thing about informality is its lack of record keeping while it is these records that form the basis of statistics. Involvement of user organizations through the proposed participatory statistical governance system as explained after the next two paragraphs may help in reducing this problem. Already there are serious institutions like K-Rep Bank (a micro financier) that are working with the informal sector and training them on the value of record keeping and management. Such efforts may extend to informal operators in the construction sector.

Lastly, construction statistics may be inadequate simply due priorities of the government. Collection of statistics originated as a statecraft in which governments collected data for its own use. Government use therefore has priority, where statistics seem not to serve any pressing need of the government then they would have less priority. This position seems to be true for Kenya. The CBS was actually put in place in order to collect statistics that would help the Ministry of Economic Planning run its affairs. We can see that in terms of national income accounting statistics where data is required in time for annual reports etcetera, statistics are adequate and complete unlike other areas where the government seem not to have priority although the statistics still remain relevant for policy making.

It is interesting to note that CBS affairs are generally run by statisticians if not pure economists. Hillibrandt (2000) observed that mainstream economists have ignored the

field of construction economics. This is true for Kenya where mainstream economists do not care about the character and needs of the construction industry hence little for its statistics. This problem can be sorted out through capacity building by putting construction economists in charge of construction statistics production line.

The primary proposition in addressing the gaps in construction statistics is institutional capacity building and improvement in governance of the statistical system. So far a good progress has been made toward this. The CBS has come up with a strategic plan that addresses these issues (Kenya 2003). The strategic plan is embracing the concept of a statistical system; the so called national statistical system (NSS) that would incorporate the CBS and all producers of statistics. Secondly, the Bill that had intended to de-link the institution from the government has been passed into law by Parliament. The institution shall now become a parastatal. Through the help of World Bank's STATCAP Programme the institution intends to improve the quality, timeliness, relevance, and availability of statistics in Kenya[3]. The STATCAP would help in this by:

i)   Supporting improvements in policy, legislative, regulatory, and institutional framework governing the generation and dissemination of statistics.

ii)   Supporting the development of statistical infrastructure

iii)   Encouraging statistical cooperation and collaboration between the NSS, research, and academic institutions; and

iv)   Upgrading and developing statistical operations and procedures.

The institutional re-engineering will help solve the problems of government interference through selfish prioritization among others. It will also implant collaboration with construction statistics users and producers. In this case, the informal sector players must be identified as key producers of construction statistics. As things stand now there is no users' input in the compilation of the statistics. Construction statistics are compiled with the needs of the government in mind. This is the primary reason for their inadequacy. Under objective iii) collaboration with research and academic institutions would be forged in order to improve the quality and quantity of construction statistics in accordance with views expressed by critics of African statistics (e.g. Ntozi 1992, Woodward 1994, and Woodward *et al*. 1997).

School of the Built Environment of the University of Nairobi, for example, can be useful in the improvement of construction statistics.

Conclusion

The review constitutes an analysis of the current situation of construction statistics in Kenya. Reviews of construction statistics are generally restricted to industrialised Anglo-Saxon countries particularly the UK and the US. The Kenyan case is therefore a significant contribution from a developing world situation that has clearly benefited from developed country experience.

The review proposed four criteria of evaluation at the onset. The Kenyan construction statistics have been reviewed against these criteria and found to be limited in scope, insufficient in portrait, unreliable in terms of quality and unresponsive to economic changes, in some respects. In conclusion the statistics are inadequate and this inadequacy can be partly attributed to: weak institutional capacity, low level of economic development, informal nature of the construction industry and, nominal prioritisation of construction statistics production by the government.

Luckily, these challenges may be addressed by strengthening institutional capacity through liberalisation and effective governance of the statistical system. Currently, the construction statistics are inadequate but there is great potential for improvement through the proposed institutions of governance.

Notes

1. Includes data on cement quantities and expenditure on roads and data classified under topics on Plan approval by Nairobi city and Cost indexes (Table 2)

2. The World Bank Project Information Document Appraisal Stage Report No AB757 (2004) on the Development of a National Statistical System in Kenya available at: http://www-wds.worldbank.org/servlet/WDSContentServer/ WDSP/IB/2004/08/10/000104615_20040811091408/Rendered/PDF/PID.pdf

3. See 2

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TABLES

Table 1: Chapters of national statistics reporting for Kenya

Chapter	Topics
Constitution	
Land and climate	
Population and vital statistics	Population census Vital statistics
Migration and tourism	
National accounts	
External trade	Domestic exports Imports
Agriculture	
Forestry and fishing	
Industrial production	Manufacturing Building National Housing Corporation [unclassified][1] Mining
Fuel and power	Electricity Fuel
Financial statistics	Currency and banking Insurance Financial intermediaries
Transport and communications	Kenya Railways and Harbours Road transport Water transport Air transport Kenya Posts and Telecommunications
Education	
Public health	
Public finance	
Labour	
Retail prices and consumer expenditure	

Source: Constructed from CBS (2006b).

Table 2: Core construction topics

Topic	Table headings (sub-topic)
Building	Survey of industrial production-building and construction, 2000-2004
	Reported completion of buildings for private ownership in main towns by type of building and town, 1998-2004
	Number of units and value of buildings completed in main towns by cost category, 2003
	Number of units and value of buildings completed in main towns, 2004
	Reported completions of buildings for private ownership by town, 2003
	Reported completion of buildings for private ownership by town, 2004
	Analysis of reported new residential buildings, Nairobi, 1999-2004
	Reported completion of non-residential buildings for private ownership analysis of cost by town and sector of ownership, 1999-2004
National Housing Corporation	Number and value of houses completed by province, 2000-2004
	Number of houses completed by cost bracket, 1996-2004
	Number of houses completed in Nairobi by cost bracket, 1996-2004
Plan approval by Nairobi city	Private building plans approved by Nairobi City Council, 1996-2004
	Public building plans approved by Nairobi City Council, 1996-2004
Cost indexes	Cost index-residential buildings, 2001-2004
	Cost index-non-residential buildings, 2001-2004
	Cost index-buildings, 2001-2004
	Cost index-civil engineering, 2001-2004
	Cost index-overall construction, 2001-2004
Others [unclassified]	Cement production and consumption, 1998-2004
	Ministry of public works and housing: expenditure on roads, 1997/98-2003/2004

Source: Constructed from CBS (2006b).

Table 3:   **Gross Fixed Capital Formation at Current prices in percentage shares**

Expenditure category	2000	2001	2002	2003	2004
Buildings and structures	47.9	46.4	47.8	53.0	51.6
Transport equipments	23.4	29.6	28.2	20.7	18.3
Other machinery and equipments	28.1	23.4	23.4	25.7	29.5
Cultivated assets	0.6	0.5	0.6	0.6	0.6
Intangible assets	0.0	0.1	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0

Source: CBS (2006b) p.57