

ERSA Research Brief

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Does Infrastructure Really Explain Economic Growth in Sub-Saharan Africa?

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Given the well-known public infrastructure deficit in Sub-Saharan African (SSA) countries, it's speculated constraint on economic growth and development, and the many programs (especially at the regional level) that have been put forth in attempts to address these, we set out to explore the true nature of the relation between economic/public infrastructure and economic growth in more comprehensive ways than have hitherto been done. We mapped, at both the aggregate as well as individual infrastructure scopes, the evolution of public infrastructure in SSA; and confirmed the extent to which the region substantially lags behind most other developing regions in public infrastructure endowments. The preliminary outcome of our detailed mapping amply made a compelling case for further investigation of the relation between infrastructure and economic growth and development in SSA.

We, therefore, provide what, in our view, is a much more comprehensive analysis of the infrastructure—growth nexus to date. Taking a research methodology tack that would be most useful at informing and guiding cross-country regional effort at reversing public infrastructure deficit for the purpose of enabling economic growth; we constructed two multi-dimensional indexes reflective of the access to and quality of public infrastructure endowments in SSA countries. More specifically, we examined: (1) the effects of infrastructure access and quality on economic growth and development, respectively; (2) the effects of increments in infrastructure access and quality on economic growth; and (3) the intermediating effects of these infrastructure measures on 'most pertinent' drivers of economic growth; with these baseline model tests followed by a series of relevant robustness checks.

Our results show that rather than the sheer stock/access to or quality of infrastructure being relevant for economic growth in an environment characterized by low basic infrastructure endowments, such as Sub-Saharan Africa, it is the spending on infrastructure and increments in the access to infrastructure that influence economic growth. Interestingly, these significant associations, especially those of infrastructure spending, are more important for lesser developed economies of the region than for the relatively more advanced economies, which commonly have better than near-zero infrastructure stock. In addition to these robust direct links between the target variables, we find that infrastructure access also relates strongly to economic growth indirectly via export diversification (trade competitiveness); and infrastructure quality also indirectly influences economic growth via cross-border capital flows and export diversification, both of which are fairly established drivers of economic growth.

Among factors that have been documented in the literature as relevant growth antecedents, which served as control variables in our model specifications, we found human capital and institutions to have featured consistently and mostly significantly positively in the majority of our model estimation results. Conversely and with lesser statistically significant coefficients, financial development featured negatively in many of the same model estimations.

The overarching policy upshot of our findings is that efforts aimed at having the reversal of Africa's pervasive infrastructure deficit enable economic growth and development, must be carefully nuanced. Priority should be placed on reversing the palpable deficit in many of the region's basic infrastructure endowments that are essential for fostering efficient production activities, which in turn enables economic growth. Our results suggest that current endowments are insufficient to meaningfully impact macroeconomic economic activity. Therefore, emphasis on quality of current infrastructure stock appears not to be that critical; unless, of course, it is in regards of a SSA country like South Africa which uncharacteristically possesses infrastructure endowment level that has reached or surpassed an implied threshold level necessary for enabling incremental aggregate economic activity.

This last observation flags an important area for a follow-up research on the topic of our study. It would be useful to ascertain whether or not a threshold level of infrastructure endowment is necessary before infrastructure could fulfill its touted huge promise of enabling economic growth and/or development. This quest is even much more relevant given the near-zero level of endowment of almost all forms of public infrastructure of SSA, relative to other regions, which we documented in the background to our analysis (section 1). Similarly, in the light of existing findings of country-specific studies which suggest that certain individual infrastructure, such as electricity and ICT, have significant effects on the economy, it would be a worthwhile exercise to ascertain whether some public infrastructure are more important than others, particularly in the SSA kind of environment. This quest will certainly be achievable as better quality individual infrastructure data become available.