

# Evaluation of Chinese Aid Projects' Effect on The Regional Economy of Sudan

## Abstract

This paper holistically evaluates the effect of Chinese aid on Sudan's local economic activity and living conditions, and it also looks at mechanisms of the impact through, for example, basic infrastructure and violence. To achieve this, we utilized a Difference-in-Differences (DID) empirical strategy, geographically connecting geospatial-temporal data on Chinese aid projects in Sudan from 2001-2021 with repeated cross-sectional data for 3881 individuals in Afrobarometer surveys and data on nighttime light intensity collected by satellites. By comparing the economic situations or activity of individuals/regions around the currently progressing project location—at the time of the survey—as opposed to future project sites, we account for the endogenous selection of project locations.

Previous studies indicate that Chinese aid has mixed effects on recipient countries, possibly partly due to its implementation's superseding economic impacts, such as leading to more corruption or a change of political opinion. Sudan was chosen precisely because not many other countries or institutions have provided aid, which helps isolate its unique effects. Previous studies tend to focus on objective indicators of economic situations such as using nighttime light intensity data or GDP per capita, conducting multi-regional analysis with broad control variables and mechanisms analysis. Our research contributes to the existing literature, by focusing on the effects of Chinese aid implementation on individuals' subjective evaluations of their economic situations, and directly comparing it to objective indicators. These indicators include the existence of basic infrastructure, such as electricity grids, water pipelines, and road conditions in the vicinity of the interviewees, as well as the average nighttime light intensity in the areas they inhabit. We also explore the region-specific influence of "violence" on the aid-economic situation relationship.

Upon empirical analysis, we found that economic activity neither increased nor decreased as a result of Chinese aid project implementation, while living conditions seem to deteriorate significantly. As for the specific mechanisms of decreasing living conditions, results suggest basic infrastructures, such as electricity grid and employment, or regional factors, such as violence, not to be significantly affected by Chinese aid. These results suggest a need for more micro-analysis into the specific components of living conditions.

With these results, we observe that China possibly strategically targets locations for aid project implementation depending on levels of economic activities and the development of different types of infrastructure. The results of a decrease in expected living conditions we attribute to a possible aggravation in working conditions, based on previous studies showing Chinese aid to lower labor union participation. Also, we highlight the need for governments to consider subjective indicators of economic conditions in coordination with objective indicators when constructing and evaluating foreign aid projects, as individual responses show a different economic situation from that of objective indicators.