

The Impacts of Fiscal Decentralization on Health Outcomes in Bangladesh

M. Murshed

Bangladesh Institute of Development Studies (BIDS), Dhaka, Bangladesh

Keywords: *Sustainability; Health Outcomes; Policy Reforms; Bangladesh*

Introduction

In exhibiting solidarity to the universal commitment to secure sustainability in healthcare, governments across the globe have warranted policy reforms to enhance the efficiency of public healthcare service deliveries. Hence, taking the health sector development into cognizance, governments worldwide have gradually embarked on decentralization of fiscal expenditure patterns, particularly, following the anticipation of ensuring better efficacies of public healthcare investments through the empowerment of local governments (Cavalieri and Ferrante, 2016). It is hypothesized that sub-national financing of public funds, allotted for the health sector, can catalyze allocative efficiencies which, in turn, is thought to entail significant impacts on the overall health indicators within the economy (Martinez-Vazquez, Lago-Peñas and Sacchi, 2017).

However, though a plethora of studies documented in the existing public finance discourse have voiced in favor of positive health outcomes emerging from the fiscal decentralization decisions, it is yet to reach a consensus. For instance, in studies by Jin and Sun (2011) and Samadi et al. (2013), the authors found fiscal decentralization in China and Iran exerting adverse impacts on infant mortality and under-five mortality rate, respectively. Moreover, linking decentralization to poor public health care delivery, Ablo and Reinikka (1998) reported statistical evidence of decentralization decisions dampening public health investments in the local districts of Uganda. Thus, following the ambiguity in the nature of the nexus between fiscal decentralization and the health outcomes, it is pertinent to evaluate the dynamics of this correlation for crucial policy implications.

Objectives

Against this milieu, this paper focuses on evaluating the justification of fiscal decentralization with respect to enhancing health outcomes in Bangladesh. This paper specifically builds on the hypothesis that sub-national financing of public health expenses in Bangladesh could be effective in enhancing the efficacy of the associated public health service deliveries. In addition, this paper analyses whether the results are robust to the quality of democracy in Bangladesh.

Methodology

The econometric exercises considered in this paper are based on empirical models in which the key health indicators are expressed as separated functions of the fiscal decentralization indicator, controlling for the relevant macroeconomic aggregates. The functional form of these models can be given as follows:

$$Health_t = f(DECENT1_t, X_{it}) \quad (1)$$

where $Health_t$ is a set of key health indicators which include infant mortality rate, neonatal mortality rate, under-five mortality rate, maternal mortality ratio, prevalence of stunting and life expectancy at birth; $DECENT1_t$ refers to the indicator of fiscal decentralization which is captured in terms of the ratio of local government expenditure to total public expenditure in Bangladesh⁷; and X_{it} denotes a set of the control variables comprising of per capita GDP (proxy for economic growth), out-of-pocket health expenditure, and the densities of hospital beds and registered doctors (per 1000 population) in the country. For robustness check, the models are re-estimated by augmenting different indicators of democratic quality and their respective interaction terms with $DECENT_t$. Finally, for further robustness check, the aforementioned econometric analyses are repeated using the value of the local government expenditure ($DECENT2_t$) instead of it being used as a share of the total public expenditure level. Following the anticipation of the quality of democratic environment within the economy affecting the efficacy of public healthcare

⁷ Due to unavailability of data regarding local government expenditure on health, the aggregate local government expenditure is used as a proxy instead.

revenue disbursements, this paper also controls for democratic practices by augmenting model (1) as follows:

$$Health_t = f(DECENT1_t, DEMOC_t, DECENT1_t * DEMOC_t, X_{it}) \quad (2)$$

Where, $DEMOC_t$ is an aggregate indicator of democracy in the economy. This variable is an aggregate indicator of democratic practices in Bangladesh, taking into account the states of electoral, liberal, participatory, deliberative and egalitarian democratic indices. In addition, the democratic variable is interacted with the fiscal decentralization variable to account for their combined impact on the health outcomes as well. Finally, the impacts of fiscal decentralization and democratic environment on the public health investments are evaluated using the econometric model below:

$$GHEPC_t = f(DECENT1_t, DEMOC_t, DECENT1_t * DEMOC_t, X_{it}) \quad (3)$$

Where, $GHEPC_t$ is per capita government investment in the public health sector of Bangladesh. The estimates from this particular model would impose key policy implications for the government with respect to ensuring the appropriate efficacy of public healthcare deliveries in the country. Annual data from 1980 to 2018 was used from multiple sources to perform the econometric analyses. As part of the methodology, the entire dataset is initially checked for stationarity using the Augmented Dickey-Fuller, Phillip-Perron, and Kwiatkowski-Phillips-Schmidt-Shin unit root tests, and followed cointegration analyses proposed by the Bayer and Hanck. The Fully-Modified Ordinary Least Squares (FMOLS) and the Dynamic Ordinary Least Squares (DOLS) estimators are tapped for regression purposes while the Toda and Yamamoto test for non-causality is used to deduce the causal linkages between the relevant variables considered in this paper.

Results and Discussion

The regression results broadly point towards fiscal decentralization being an effective means to improving most of the health indicators in Bangladesh. According to the FMOLS estimates, a 1% increase in the local government expenditure share of total public spending volume in Bangladesh reduces the infant mortality, neonatal mortality and under-five mortality rates on average by 0.08%, 0.14%, 0.10% respectively while enhancing the life expectancy at birth by almost 0.3%, *ceteris paribus*. The estimates from the DOLS estimator also corroborate to the signs of the estimated coefficients predicted using the

FMOLS estimator. These imply that subnational financing of public health investment projects, especially within the rural areas of Bangladesh, is pertinent in enhancing the quality of the aforementioned health indicators. In contrast, no statistical evidence is found to explain the impact of fiscal decentralization measures on the prevalence of stunting in children and maternal mortality ratios in the country.

The results are also found to be robust across an alternative measurement of fiscal decentralization in the country. The corresponding regression estimates denote that a 1% rise in the public revenue allocations to local governments, on average, is accompanied by 0.04%, 0.11% and 0.06% declines in the infant mortality, neonatal mortality and under-five mortality rates, respectively, and improves the life expectancy at birth by 0.02%, *ceteris paribus*. Similar results are found in the context of the prevalence of stunting and maternal mortality ratio as perceived from the statistical insignificance of the corresponding coefficient estimates.

However, on controlling for the quality of democracy in the economy, the signs of the health indicator coefficients get reversed implicating towards the effectiveness of such decentralization decisions being largely reliant on sound democratic environments. This implies that sound democratic environments tend to harness the positive impacts of fiscal decentralization measures with respect to ensuring development of the health indicators in Bangladesh. It is evident from the estimated coefficients that fiscal decentralization stimulates greater public investments in the health sector which can effectively explain the positive impacts of sub-national public health financing on the health indicators in Bangladesh. However, upon controlling for the quality of democracy, it is found that in the presence of inefficient democratic environments, the efficacy of fiscal decentralization with respect to the betterment of the health indicators tend to be adversely affected.

The results from the Toda and Yamamoto causality analyses exhibit unidirectional causalities stemming from fiscal decentralization to infant mortality, neonatal mortality and under-five mortality rates, without feedback. In contrast, reverse causalities were found to run from the prevalence of stunting and life expectancy at birth to fiscal decentralization which can explain the statistical insignificant relationships found between these variables. The causality estimates provide further support in favor of the

regression estimates to voice in favor of fiscal decentralization being conducive to improvement in the majority of the health indicators considered in this paper.

Conclusion

In line with results of the econometric exercise, it can be concluded that fiscal decentralization in Bangladesh is effective in improving the overall health sector to a large extent. However, the efficacies of such decentralization decisions are broadly reliant on mint democratic practices within the economy. Hence, it is ideal for the government to promote proper democratic environments in order to improve the efficiency of fiscal decentralization decisions with respect to the development of public health outcomes in Bangladesh. A major issue of subnational public financing in Bangladesh is the fact that most of the funds allotted to the local government are conditioned on being invested for infrastructural development purposes, with nominal emphasis on investment in the health sectors. Thus, it is ideal for the government to channel the local government funds towards the health sector keeping the development of the public health sector into consideration.

References

- Cavaliere, M. and Ferrante, L. (2016). Does fiscal decentralization improve health outcomes? Evidence from infant mortality in Italy. *Social Science & Medicine*, 164, pp.74-88.
- Jin, Y. and Sun, R. (2011). Does fiscal decentralization improve healthcare outcomes? empirical evidence from china. *Public Finance and Management*, 11(3), p.234.
- Martinez-Vazquez, J., Lago-Peñas, S. and Sacchi, A. (2017). The impact of fiscal decentralization: A survey. *Journal of Economic Surveys*, 31(4), pp.1095-1129.