Health Outcomes of Institutional Quality: A Cross Country Analysis

Presenter

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Introduction

- For many developing countries population health is one of the most important determinants of economic growth.
- It is known that good health is key to have better quality of education, skills and productivity.
- Health issue has become crucial because of its critical input into economic growth and long term economic development (Smith 1999).
- Now the question is that why are some societies have good health than others? Is it because they are wealthier and can afford good nutrition and health care than others?

Introduction

***** Institutions

- North (1990) define institutions as "Institutions are the rules of the game or humanly devised constraints that structure economic, political and social interactions". These are the set of formal rules and informal norms that together makes the human interaction and social behavior.
- Institutions are of two types political and economic institutions. Economic institutions enhance the economic growth through accelerating the investment in human as well as physical capital through establishment of property rights. Political institutions determine the limitations and authority in the political field. Strong political and economic institutions lead to higher economic growth (Sarwar et al 2013).

Introduction

- Institutional quality is not associated only with economic development but also linked with health of population and plays critical role in determining the human capital of an economy.
- ➢ Intuitional quality varies in its form. Moreover, it is observed that study related to the institutional quality impact on health is missing in the literature.

Objective of the Study

• To see that how institutional quality influence health status through corruption, democracy, law and order and bureaucratic quality?



Literature Review

Health Status and Institutional Quality

Author	year	Findings
Wagstaff	2004	There is no significant impact of public spending on health
Lewis	(2006)	Public health expenditure has positive impact on health status in the presence of good governance
Yaqub, Ojapinwa et al	(2012)	Low infant mortality rate and high life expectancy is possible by good quality of governance
Makuta and O'Hare	(2015)	Improvement in quality of governance increase the positive impact of public spending on health.

Literature Review

- Majority of previous studies focus on governance quality, and found that strong governance quality will
 improve the health status by redistribution policy through democracy and investment in infrastructure
 such as buildings of hospitals etc. (<u>Govindaraj and Rannan-Eliya 1994</u>; <u>Filmer and Pritchett</u>, <u>1999</u>;
 <u>Acemoglu, et al. 2005</u>; <u>Besley and Kudamatsu 2006</u>; Rajkumar and Swaroop 2008, Yaqub, Ojapinwa et
 al. 2012, <u>Lin, Chien et al. 2014</u>Lin, Chien et al. 2014, Makuta and O'Hare 2015).
- Public health expenditure has positive impact on health status in the presence of good governance (Lewis 2006, Rajkumar and Swaroop 2008).
- Quality of institution in this study is measured by using different indicators such as control of corruption, law and order, bureaucratic quality, government effectiveness and democracy.



Channels; Democracy and Health Outcomes



Model Specification

Methodology

To examine the role of institutional quality in determining health status first we run the OLS. According to Asafu adjaye (2004) health of an individual depends previous level of income therefore, we have taken lag of GDP per capita

 $Health_{it} = \alpha_0 + \alpha_1 lagdpc + \alpha_2 inst_{it} + \alpha_3 x_{it} + \varepsilon_{it}$

- Where x_{it} is vector of control variables. That includes GDP per capita, Public expenditure, agriculture value added, primary care physicians.
 - $Health_{it} = \alpha_0 + \alpha_1 lagdpc + \alpha_2 gs_{it} + \alpha_3 x_{it} + \varepsilon_{it}$

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$$Health_{it} = \alpha_0 + \alpha_1 lagdpc + \alpha_2 dem_{it} + \alpha_3 x_{it} + \varepsilon_i$$

 $Health_{it} = \alpha_0 + \alpha_1 lagdpc + \alpha_2 law_{it} + \alpha_3 x_{it} + \varepsilon_{it}$

 $Health_{it} = \alpha_0 + \alpha_1 lagdpc + \alpha_2 bq_{it} + \alpha_3 x_{it} + \varepsilon_{it}$

Data

Time Period: 1984 to 2012 (**29 years**) The time period of our sample is selected on the basis of data availability of International Country Risk Guide (ICRG).

Countries : 105

05 years averages are used changes in institutional variables are very slow over time.

06 observations per country after taking averages

Variables Description

Health Outcomes

Health outcomes is measured by using two reliable and widely available measurements i.e. life expectancy and infant mortality rate (Beckfield 2004, Ram 2006, Babones 2008, Hu, van Lenthe et al. 2015, Nadpara and Samanta 2015).

1. Life Expectancy at Birth

Life expectancy at birth shows the years that newborn baby will live (Robert and House 1994)

2. Infant Mortality Rate

it is the number of deaths in first year of life per 1000 live births.

Source

World Development Index (WDI) 2015

Variables Description

✓ Institutional Quality

•Political risk index from International Country Risk Guide (ICRG) is used as institutional quality which includes 12 weighted variables covering both social and political properties.

•The ICRG index ranges from 0 (the lowest level of institutional quality) to 100 (the highest level of institutional quality)

• 12 sub-indices of institutional quality

Government stability, Corruption, Law and Order, Democratic Accountability, Bureaucracy Quality (Chong and Calderon 2000, Hasan, Mitra et al. 2006, Chong and Gradstein 2007, Tebaldi and Mohan 2010, Perera and Lee 2013)

Control variables

GDP per capita	Lag of GDP per capital is taken as a measure previous income of individual, as health of an individual depends upon his previous income
Population density	it is expected that population density have positive impact on population's health ($\underline{\text{Drabo}}$ 2010).
Agriculture value added	improved agriculture performance is necessary for the achievement of Health goals
Primary care physicians	Population with high primary care physicians will have better health status than low primary care, for that we are using physician per 1000 inhabitant

Econometric Strategy

- **Dynamic panel data** has required following approaches.
- The panel data must have large N and small T.
- Linear functional relationship.
- One left hand side variable depends on its own past realization.
- Right hand side variable that are not strictly exogenous correlated with past and possibly current realization of error.
- > Dynamic panel data is estimated by **Generalized Method of Moment (GMM)**.

OLS regression of Life Expectancy and Institutions									
	(1)	(2)	(3)	(4)	(5)	(6)			
VARIABLES	Life Exp	Life Exp	Life Exp	Life Exp	Life Exp	Life Exp			
L.GDP per capita	5.45e-05*	8.84e-05***	0.000104***	6.23e-05**	1.24e-05	7.48e-05**			
	(3.16e-05)	(3.20e-05)	(2.57e-05)	(2.75e-05)	(3.11e-05)	(2.93e-05)			
Institutions	1.318***								
	(0.503)								
Corruption		0.276							
		(0.346)							
Govt Stability			-0.264						
			(0.183)						
Democracy				1.026***					
				(0.269)					
Bureaucracy					<mark>2.135***</mark>				
					(0.434)				
Law & Order						0.609**			
Physician	Yes	Yes	Yes	Yes	Yes	Yes			
Pop. Density	Yes	Yes	Yes	Yes	Yes	Yes			
Agri Value Ad	Yes	Yes	Yes	Yes	Yes	Yes			
Constant	61.87***	66.42***	69.32***	63.07***	62.29***	65.36***			
	(2.212)	(1.314)	(1.706)	(1.381)	(1.309)	(1.255)			
Observations	416	416	416	416	416	416			
R-squared	0.663	0.658	0.659	0.669	0.677	0.661			

OLS Regression of Infant Mortality and Institutions										
		(1)	(2)	(3)	(4)	(5)	(6)			
	VARIABLES	Inf Mortality								
	L.GDP per capita	0.000298***	-2.66e-05	-3.20e-05	0.000166*	0.000214**	0.000160*			
		(9.93e-05)	(0.000103)	(8.28e-05)	(8.69e-05)	(0.000101)	(9.30e-05)			
	Institutions	-8.878***								
		(1.579)								
	Corruption		-0.116							
			(1.119)							
	Govt Stability			-1.074*						
				(0.591)						
	Democracy				-4.943***					
					(0.850)					
	Bureaucracy					-5.795***				
						(1.416)				
	Law & Order						-4.068***			
							(0.952)			
	Physician	Yes	Yes	Yes	Yes	Yes	Yes			
	Pop. Density	Yes	Yes	Yes	Yes	Yes	Yes			
	Agri Value Ad	Yes	Yes	Yes	Yes	Yes	Yes			
	Constant	66.29***	30.66***	38.94***	50.29***	43.68***	42.69***			
		(6.944)	(4.250)	(5.504)	(4.365)	(4.266)	(3.988)			
	Observations	416	416	416	416	416	416			
	R-squared	0.698	0.675	0.677	0.699	0.687	0.688			

FEM regression of 1	Life Expectancy an	nd Institutions				
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Life Exp	Life Exp	Life Exp	Life Exp	Life Exp	Life Exp
L.GDP per capita	0.000195***	0.000192***	0.000135***	0.000156***	0.000174***	0.000172***
	(4.92e-05)	(4.94e-05)	(4.91e-05)	(4.85e-05)	(4.93e-05)	(5.00e-05)
Institutions	1.171***					
	(0.261)					
Corruption			-0.938***			
			(0.205)			
Democracy				0.739***		
				(0.150)		
Bureaucracy					1.021***	
					(0.278)	
Law & Order						0.368*
Physician	Yes	Yes	Yes	Yes	Yes	Yes
Pop. Density	Yes	Yes	Yes	Yes	Yes	Yes
Agri Value Ad	Yes	Yes	Yes	Yes	Yes	Yes
Constant	57.92***	60.34***	66.29***	59.80***	60.58***	61.16***
	(1.208)	(0.841)	(1.073)	(0.854)	(0.844)	(0.956)
Observations	442	442	442	442	442	442
R-squared	0.243	0.237	0.245	0.252	0.229	0.206
Number of code	103	103	103	103	103	103

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Inf Mortality	Inf Mortality	Inf Mortality	Inf Mortality	Inf Mortality	Inf Mortality
L.GDP per capita	6.20e-05	4.40e-05	0.000524**	0.000350	0.000260	0.000236
	(0.000250)	(0.000246)	(0.000245)	(0.000245)	(0.000261)	(0.000260)
Institutions	-8.419***					
	(1.330)					
Govt Stability		-2.872***				
		(0.401)				
Corruption			7.553***			
			(1.022)			
Democracy				<mark>-5.365***</mark>		
				(0.757)		
Bureaucracy					-2.922**	
					(1.477)	
Law & Order						-2.539**
						(1.001)
Physician	Yes	Yes	Yes	Yes	Yes	Yes
Pop. Density	Yes	Yes	Yes	Yes	Yes	Yes
Constant	84.23***	69.97***	20.55***	70.76***	56.92***	60.39***
	(6.167)	(4.199)	(5.340)	(4.290)	(4.465)	(4.963)
Observations	440	440	440	440	440	440
R-squared	0.166	0.191	0.197	0.188	0.077	0.084
Number of code	102	102	102	102	102	102

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Life Exp					
L.GDP per capita	0.000163***	0.000180***	0.000174***	0.000145***	0.000147***	0.000165***
	(3.66e-05)	(3.72e-05)	(3.73e-05)	(3.65e-05)	(3.65e-05)	(3.74e-05)
Institutions	1.220***					
	(0.250)					
Govt Stability		0.279***				
		(0.0796)				
Corruption			-0.507***			
			(0.189)			
Bureaucracy				1.245***		
				(0.265)		
Democracy					0.804***	
					(0.148)	
Law & Order						0.422**
						(0.184)
Physician	Yes	Yes	Yes	Yes	Yes	Yes
Pop. Density	Yes	Yes	Yes	Yes	Yes	Yes
Constant	56.46***	59.07***	62.71***	58.82***	58.18***	59.64***
	(1.233)	(0.985)	(1.043)	(0.899)	(0.951)	(1.014)
Observations	442	442	442	442	442	442
Number of code	103	103	103	103	103	103

Table . GMM regression of Life Expectancy and Institutional Quality

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Life Exp	Life Exp	Life Exp	Life Exp	Life Exp	Life Exp
Institutions	1.739***					
	(0.588)					
L.GDP per capita	7.58e-05***	0.000153***	0.000146***	7.44e-05***	3.60e-05	0.000130***
	(2.83e-05)	(2.03e-05)	(3.00e-05)	(2.11e-05)	(2.48e-05)	(2.57e-05)
Govt. Stability		0.0671				
		(0.260)				
Corruption			0.104			
			(0.406)			
Democracy				1.723***		
				(0.406)		
Bureaucracy					2.441***	
					(0.482)	
Law & Order						0.447
						(0.376)
Physician	Yes	Yes	Yes	Yes	Yes	Yes
Pop. Density	Yes	Yes	Yes	Yes	Yes	Yes
Constant	53.32***	58.98***	59.17***	53.79***	55.69***	58.16***
	(2.223)	(2.094)	(1.124)	(1.548)	(0.955)	(1.222)
Observations	432	432	432	432	432	432
R-squared	0.593	0.577	0.578	0.598	0.620	0.580
Hansen J. Test	0.10	0.47	0.41	0.36	0.26	0.39

Findings

- Institutional variables like democracy, government stability, bureaucratic quality and law & order has significant positive impact on health status.
- Corruption in health organization result into deficiency of medicines and infrastructures that result in lowers the quality and quantity of health care services.
- Over all, If a country is able to achieve high institutional quality, health situations of its inhabitants will improve.

Policy Recommendation

To achieve better health outcomes, government must give extra attention to quality of institutions.

Thank You!