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Good governance and multidimensional poverty: A comparative analysis of 71 countries

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Economic and Social Research Council, Grant/ Award Number: ES/N01457X/1 In 2015, the international community committed to "reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions." According to international development agencies, good governance is crucial to achieving this. We examine the relationship between good governance and multidimensional poverty using hierarchical models and survey data for 71 countries. Our results suggest there is a direct effect of good governance on multidimensional poverty and that good governance is associated with reduced horizontal inequalities. However, we find evidence of a beneficial effect of good governance for middle-income countries but not for lowincome countries. Thus, while our results suggest that good governance can play a role in reducing multidimensional poverty, they also suggest that governance reforms alone might not yield the desired effect for all countries.

1 | INTRODUCTION

With target 1.2 of the Sustainable Development Goals, the international community committed to "reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions" by 2030 (United Nations, 2015, p. 18). The formulation of this target took an explicit multidimensional view of poverty, which is now frequently seen as an important complement to traditional poverty measures based on income or consumption. At the same time, major international development agencies and institutions have repeatedly argued that good governance is essential for the successful reduction of poverty (DFID, 2006; United Nations, 1998). Trust in the beneficial effects of good governance for development is so high that, in 2012, Official Development Assistance to support governance and peace in developing countries was higher than for any other sector (OECD, 2014). The implicit assumption behind this good governance agenda is that more effectively

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run countries, those that more strictly follow certain rules of good governance, are able to develop faster and use available resources more efficiently to help the most vulnerable in the society (Dellepiane-Avellaneda, 2010; Holmberg, Rothstein, & Nasiritousi, 2009).

Different studies have documented the relationship between good governance and a variety of development outcomes (e.g., Farag et al., 2013; Halleröd, Rothstein, Daoud, & Nandy, 2013; Holmberg et al., 2009; Kaufmann, Kraay, & Zoido-Lobatón, 1999; Lin, Chien, Chen, & Chan, 2014; Rajkumar & Swaroop, 2008; Sacks & Levi, 2010). Chong and Calderón (2000) as well as Henderson, Hulme, Jalilian, and Phillips (2003) focus specifically on the association between good governance and monetary poverty. However, little work has been done to empirically link and analyze the relationship between good governance and multidimensional poverty. To the best of our knowledge, the only exceptions are Björn Halleröd et al. (2013) and Adel Daoud, Halleröd, and Guha-Sapir (2016), who focus on child poverty. Thus, we have little to no specific knowledge regarding the association between good governance and general multidimensional poverty. This article aims to close this gap by examining the relationship between good governance and one measure of multidimensional poverty, the global Multidimensional Poverty Index (global MPI) (Alkire & Santos, 2014). We focus on three questions. First, is there a direct relationship between good governance and multidimensional poverty? Second, does good governance have an impact on inequalities across groups? And, third, does the relationship between governance and multidimensional poverty vary across low- and middle-income countries?

We analyze the association between the global MPI and good governance using micro- and macrodata from 71 low- and middle-income countries. Using multilevel probit models, we find that our main measure of good governance is associated with lower levels of poverty. We also find that the inequality between urban and rural areas, understood as the difference in the probability of being poor, is smaller for countries with higher levels of governance, thus indicating that better governance might help reduce horizontal inequalities. However, when allowing for effect heterogeneity between middle- and low-income countries, we find that both effects seem to be driven by the beneficial effect of good governance for middle-income countries. Thus, while good governance seems to have a positive effect on multidimensional poverty in middle-income countries, our data do not support the same conclusion for low-income countries. These findings reinforce the skepticism of some that good governance alone might not help countries that are stuck in poverty traps (Sachs et al., 2004).

The article is organized as follows. First, we discuss some of the theoretical arguments of why good governance might be relevant in reducing poverty, review some of the empirical evidence, and introduce our research questions. Subsequently, we describe the data, variables, and our empirical strategy. We then report our findings as well as results for the robustness tests. The final section concludes the article.

2 | BACKGROUND AND RESEARCH QUESTIONS

While the importance of good governance for development is often postulated, the theoretical and empirical debate has not been conclusive (e.g., Holmberg et al., 2009). A contributing factor might be that there seems to be no generally accepted definition (e.g., Gisselquist, 2012).² Thus different authors refer to different concepts and hence potentially very different causal mechanisms when arguing for the importance of good governance. A brief and nonexhaustive overview of some arguments found in the literature is presented below.

One general intuitive argument is that increased efficiency and accountability of public institutions leads indirectly to better development outcomes and poverty reduction (Earle & Scott, 2010;

UNDP, 2003; World Bank, 2008). The delivery of public services and the provision of social safety nets are two main responsibilities of public administration. Thus, improvements in the efficiency and accountability of public institutions should lead to improvements in the coverage and quality of service delivery (Earle & Scott, 2010), which in turn should improve the lives of poor people, who are less likely to be able to fall back on privately provided alternatives to the public service infrastructure (Klugman, 2002). Another mechanism, listed by Earle and Scott (2010, p. 33), is that "a more efficient and accountable public administration creates an environment that is more conducive for private sector development, which will ultimately lead to economic growth."

Certain elements of these intuitive arguments are articulated in more detail in the literature that follows the tradition of Max Weber. Here it is argued that certain structural features of bureaucratic institutions play an important role in facilitating an environment that stimulates growth and reduces poverty (Evans & Rauch, 1999; Henderson et al., 2003; Rauch & Evans, 2000). Some of these features, as discussed by Evans and Rauch (1999), include meritocratic recruitment processes, options for long-term career planning, as well as competitive salaries as part of progression within an institution. According to this study, meritocratic recruitment processes, as opposed to cronyism or patronage, ensure that the office holders have a certain level of qualification, are more likely to develop a higher level of commitment to the goals of the institution, are more motivated, and are less likely to engage in corrupt practices. Similarly, providing the option of long-term careers increases corporate coherence, ties among employees, and retention of competent and trained staff. More importantly, the long-term socialization within the organization creates an "esprit de corps," fostering norms of impartial and noncorrupt behavior (Dahlström, Lapuente, & Teorell, 2012). Competitive salaries are expected to reduce corruption as well. If these arguments are accepted, one can find different potential causal mechanisms linking bureaucracy to economic growth. If it is true that these features lead to a more competent, purposive, and coherent bureaucracy, one can expect that such a bureaucracy is also more likely to follow long-term aims and thus more likely to spend money on infrastructure projects instead of consumption, which then facilitates growth (Evans & Rauch, 1999). Similarly, lower levels of corruption are equivalent to a reduced implicit tax on the private sector and thus also contribute to a growth-friendly environment.⁴

Comprehensive literature that focuses on the effects of corrupt practices can also be found. The argument here is that curbing corruption has a general impact on growth by increasing the economy's efficiency but also has a more specific impact on the poor, who, it is argued, are disproportionately affected by it (Chetwynd, Chetwynd, & Spector, 2003; Klugman, 2002; Shepherd, 2000). Multiple authors have focused on the harmful effects of corruption, notably on loss of government revenue (Fjeldstad & Tungodden, 2003), costs to businesses (Caiden, Dwivedi, & Jabbra, 2001), distortion of standards of merit and erosion of respect for rule of law (Hamir, 1999), lower quality of infrastructure (Schloss, 1998; Tanzi & Davoodi, 1998), and distortion of markets (Mensah, 1999). More specifically related to poverty, some authors argue that corruption diverts public funds away from the poor (Klugman, 2002; Sacks & Levi, 2010). For instance, a corrupt government is more likely to overspend on defense and infrastructure projects that offer high private payoffs, to the detriment of pro-poor expenditures, such as those on primary education and health care (Klugman, 2002). Corruption also impairs service delivery (Cockcroft et al., 2008). This tends to particularly affect poor people who cannot afford private alternatives to public services like education, health, and security, and for whom bribes represent a higher share of their income (Klugman, 2002).

A further argument, cited by Chong and Calderón (2000), suggests that bad governance fosters unequal power relations. Biased institutions can enable a small elite to secure the most gains from economic growth by manipulating contract enforcements and property rights, as well as through discrimination (Chong & Calderón, 2000; Klitgaard, 1991). Thus, improvements in the quality of

institutions "may reduce the power of special interest groups or minority elite that control the economy, and thus help lower uncertainty and improve the delivery of public services and allocation in both the marginal urban and rural areas" (Chong & Calderón, 2000, p. 133), where poor people usually live.

On the other side of the debate, some critics recognize the importance of good governance but question the type of reforms required to promote growth and poverty reduction. Merilee Grindle (2004) argues that "good governance is deeply problematic as a guide to development" (p. 525) and poverty reduction. According to her, the list of governance reforms is too long and without much guidance on how to set priorities or sequence the interventions. Thus, the implementation of such an agenda can be overwhelmingly demanding, especially for the poorest countries that also tend to have the weakest institutions and limited resources. Similarly, Mushtaq Khan (2007, 2009) argues that the achievement of good governance objectives will probably be compromised by the country's fiscal and structural constraints and, hence, the pursuit of such an agenda may divert efforts from other policies that are more effective in promoting growth and reducing poverty. Sachs et al. (2004) also question the importance of governance in reducing poverty at the early stages of development, arguing that governance reforms alone are insufficient to overcome the poverty trap some countries face.

Various empirical studies have looked at the relationship between good governance and different development outcomes. Although those are not strictly comparable due to varying definitions and indicators, we summarize some exemplary findings. Good governance was found to be associated with lower levels of infant mortality and higher levels of adult literacy, income per capita, and food security (Kaufmann et al., 1999; Lin et al., 2014; Sacks & Levi, 2010). Others found lower levels of malnourishment, improved access to safe water and health care for children, better overall life expectancy, and water quality in countries with better governance (Halleröd et al., 2013; Holmberg et al., 2009). A few studies looked at the moderating effect of good governance and found improved efficacy in public health expenditures and spending on primary education in countries with better governance (Farag et al., 2013; Rajkumar & Swaroop, 2008). Chong and Calderón (2000) found that incidence as well as intensity of poverty is associated with the quality of bureaucracy. Similarly, Henderson et al. (2003) found that more competent and effective public bureaucracies reduce poverty faster. Finally, Daoud et al. (2016) found that more effective governance is associated with lower levels of multidimensional child poverty.

This article contributes to the understanding of the importance of good governance for development by looking at three distinct, possible relationships between good governance and multidimensional poverty.

First, while there are studies that have looked at the impact of good governance on multidimensional child poverty, looking either at dimensions in aggregate or at each dimension individually (Daoud, 2015; Daoud et al., 2016; Halleröd et al., 2013), none of these studies has examined the relationship between good governance and a measure of multidimensional poverty that covers the entire population. This study is the first to use the global MPI, the only international measure of general multidimensional poverty, available for more than 100 countries and updated regularly.⁵

Second, there are two possible levels at which good governance can act as a moderating variable. Good governance can influence the effect of other country-level variables, which has previously been partially investigated by, for example, Daoud et al. (2016), Marwa Farag et al. (2013), and Rajkumar and Swaroop (2008). Another potential effect is across levels. David Brady, Fullerton, and Cross (2009), for example, show that welfare states mitigate the risk of poverty associated with individual-level characteristics. Thus, while individual traits and characteristics can determine outcomes and lead to horizontal inequalities, understood as inequalities across groups (e.g., Atkinson, 2015; Wisor, 2016), individuals do not act in a social vacuum and these varying social and political contexts

partially account for differences in horizontal inequalities. Our study is the first to explore the impact of good governance on these horizontal inequalities.

Finally, some authors (e.g., Grindle, 2004; Khan, 2007, 2009; Sachs et al., 2004) seem to suggest that the relationship between quality of governance and poverty might depend on the countries' stage of development. In other words, good governance or the implementation of government reforms might be of no use if a country's general resources are too low to effectively translate government capabilities into positive outcomes in terms of poverty levels. In order to do justice to these concerns, we investigate whether or not the effect of good governance on multidimensional poverty varies across low- and middle-income countries.

3 | DATA, VARIABLES, AND METHOD

3.1 | Data

We combine household- and country-level data. The household-level data come from nationally representative household surveys, while the Quality of Government data set (Teorell et al., 2016) is our main source of country-level indicators. We use the country-level indicators that reference the same years as the survey data we are using.

The 71 countries in our sample are selected based on three criteria: (a) the country has a global MPI estimation between 2009 and 2014, (b) the country has information for all indicators included in the global MPI or for all except child mortality, and (c) the country has information for the relevant country-level variables. The purpose of the first two criteria is to minimize the potential bias associated with comparing different periods in time and different multidimensional poverty specifications, respectively. The list of countries, years, and country-level variables can be found in Supporting Information Section S2 alongside information on the surveys.

We follow Christopher Whelan, Nolan, and Matre (2014) and perform our analysis at the household level, using both household and head of household characteristics. After excluding cases with missing values for any of the relevant variables, our effective sample size is 806,796 households.

3.2 | Indicators

3.2.1 | Multidimensional poverty

Our main dependent variable is the multidimensional poverty status of the household as measured by the global MPI (Alkire & Santos, 2014). We chose the global MPI as it is the only multidimensional poverty indicator at the household level that is regularly published for a large number of countries and comparable across countries (e.g., Alkire & Robles, 2017; UNDP, 2017). The global MPI consists of ten indicators, organized into three dimensions: health, education, and living standards. Each dimension has a weight of one-third, and the indicators within dimensions are weighted equally. In order to ensure comparability, while maximizing our sample of countries, we only use the nutrition indicator for the health dimension (see Supporting Information Section S1 for a detailed description of the indicators).

The global MPI uses a dual cutoff to determine poverty status. For each indicator, the achievement of the household is compared with the respective deprivation cutoff, and the household is classified as deprived or non-deprived. Subsequently, weights are applied to each deprivation, and the household's weighted deprivations are added together, resulting in the household's weighted deprivation score. A household is identified as multidimensionally poor if its deprivation score is equal to or above the global MPI poverty cutoff of one-third.

3.2.2 | Good governance

There is no generally accepted definition of what constitutes good governance. One of the more frequently used definitions is associated with the World Bank (Holmberg et al., 2009). According to this definition, there are three components that constitute governance: "(1) the process by which governments are selected, monitored and replaced, (2) the capacity of the government to effectively formulate and implement sound policies, and (3) the respect of citizens and the state for the institutions that govern economic and social interactions among them" (Kaufmann, Kraay, & Mastruzzi, 2010, p. 4). However, this definition has been criticized for being overly broad by covering the entire field of politics and for not being able to distinguish between good governance and liberal democracies (Holmberg et al., 2009; Rothstein & Teorell, 2008). In light of the ongoing debate, this article focuses on one narrow component of the World Bank's definition: the capacity of the government to effectively formulate and implement sound policies. This focus allows us to use one widely used indicator of good governance, government effectiveness as measured by the Worldwide Governance Indicators (Holmberg et al., 2009). For robustness checks, we look at alternative measures.

The government effectiveness indicator is constructed to capture "perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies" (Kaufmann et al., 2010, p. 4). It is a composite index that aggregates up to 48 indicators from up to 16 sources.⁶ The index score ranges approximately between -2.5 and 2.5, with higher values corresponding to better governance.

3.2.3 | Level of economic development

As a measure of the level of economic development, we use the natural logarithm of the gross domestic Product (GDP) per capita at constant 2005 US dollars, obtained from the World Development Indicators database (World Bank, 2015). When exploring whether the relationship between governance and multidimensional poverty depends on the stage of development of the country, we group the countries in our sample using the World Bank's income categories: low income and middle income (e.g., Fantom & Serajuddin, 2016).⁷

3.2.4 | Household characteristics

We include in our models household characteristics that are believed to be correlated with poverty status, in order to investigate whether quality of governance moderates the association between those variables and poverty. More specifically, we include the gender and age group of the household head (Dreze & Srinivasan, 1997; Rahman, 2013); the household size and the number of children under five years old living in the household (Lipton & Ravallion, 1995; Meng, Gregory, & Wan, 2007); the years of schooling of the household head (Bilenkisi, Gungor, & Tapsin, 2015); and a variable that identifies the households located in urban areas (Aliber, 2003).

3.3 | Modeling strategy

We have a hierarchical data structure, where n households, denoted by i, are nested within c countries, denoted by j. In addition, our main research interest is to explain the variation in the poverty status by taking into account information at the lowest and the highest level of our data. Consequently, we use multilevel probit regression for the analysis (e.g., Snijders & Bosker, 2011).

We use a hybrid (Allison, 2009) or within-between specification (Bell & Jones, 2015). In linear models, this allows to exploit the advantages of a fixed effects regression model while still being able to use country-level characteristics as explanatory variables. Using such an approach, we can

disentangle the within-group from the between-group effect for the household-level variables (Snijders & Bosker, 2011). In practice, this is achieved by including group-mean-centered variables $\begin{pmatrix} x_{ij}^w \end{pmatrix}$ and group means (\bar{x}_j) in the model, which will lead to within estimates for the household level indicators that are similar to those resulting from a model including country fixed effects (e.g., Allison, 2009; Schunk & Perales, 2017; Townsend, Buckley, Harada, & Scott, 2013). For the application of this approach to nonlinear models, additional assumptions should be tested (Schunk & Perales, 2017). As there was no evidence for a violation, we fit different multilevel varying-intercept, varying-slope probit regression models of the following general form:

$$Pr(y_{ij} = poor) = \Phi \left[\alpha_j + \delta_j x_{ij}^w + \sum_{k=1}^K \beta_k z_{kij}^w \right]$$
 (1)

where $\Phi()$ corresponds to the standard normal cumulative distribution function, x to the household-level characteristic with a random slope, and z_k to the K household-level variables without random slopes. The country-level intercepts (α_j) are modeled using government effectiveness (GE), GDP per capita, and the country mean of household characteristic x (\bar{x}_j) as country-level explanatory variables, while the random slopes (δ_j) of x are a function of government effectiveness. The level-2 equations for random intercept (α_i) and random slope (δ_i) for the full model are given by:

$$\alpha_j = \gamma_{00} + \gamma_{01}GE_j + \gamma_{02}GDP_j + \gamma_{03}\bar{x}_j + \zeta_{\alpha j}$$
(2)

$$\delta_i = \gamma_{10} + \gamma_{11} G E_i + \zeta_{\delta i}. \tag{3}$$

 ζ_{α} and ζ_{δ} are the level-2 disturbances. For the models with cross-level interaction effects, we allow a correlation between the random intercept and the random slope $(\rho(\alpha_i, \delta_i))$.¹⁰

For the analysis of the direct effect of good governance, a random intercept model is estimated. To analyze the effect of good governance on horizontal inequalities, defined here as the differences in the risk of poverty associated with certain household characteristics, we run three models for each of the household-level characteristics separately. The first adds the country-level mean of the household-level variable to the model. The second additionally allows for a random slope for the household characteristic. The final model includes a cross-level interaction effect between the household characteristic and good governance, resulting in the full expression given by Equations 1, 2, and 3.

4 | EMPIRICAL FINDINGS

Summary statistics of the household- and country-level variables as well as missing data information can be found in Supporting Information Sections S3 and S5. Figure 1 shows the association between the multidimensional headcount ratio and government effectiveness.¹¹

4.1 | The direct effect of good governance

Table 1 reports the results for the multilevel probit models. Model 1 is the empty model. Results show that a substantial share of the variance in the poverty status, 47%, is between countries. Model 2 includes the household-level characteristics. All are statistically significant at the 5% level except one. It additionally includes year dummies, which are found to be statistically significant neither on their own nor as a group.

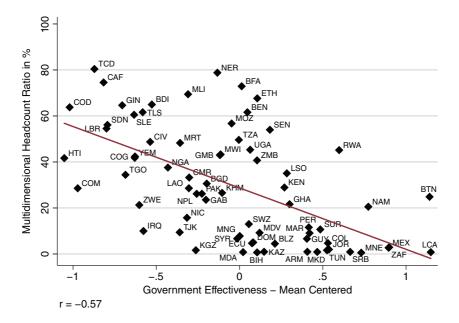


FIGURE 1 Association between the multidimensional headcount ratio and government effectiveness for the 71 countries in the sample

Model 3 includes the government effectiveness indicator. The variable is statistically significant and negative, implying that higher levels of good governance are associated with lower levels of multidimensional poverty. If we use this model to predict the probability of being multidimensionally poor for an otherwise average household living in a country with a level of government effectiveness that is equal to the 10th percentile of the countries in our sample, we get a value of 43%. This probability decreases to 6% for an otherwise average household living in a country with a level of government effectiveness that is equal to the 90th percentile.

Model 4 includes the log of GDP per capita alongside government effectiveness. Both variables are still statistically significant, though only at the 10% level for government effectiveness. Higher levels in both variables are associated with lower probabilities of being multidimensionally poor. When we introduce GDP per capita into the model, the effect of government effectiveness is reduced. We now find that, for a comparison that is otherwise similar to the above, the probability of being poor in a country with a highly ineffective government is 28%, while the probability of being poor is 18% in a country with a very effective government. Thus, despite the decrease in the effect size, good governance is still statistically significant and substantially related to the overall likelihood of being poor.

4.2 | Good governance and horizontal inequalities

Next we report the results for the analysis of horizontal inequalities using random slope models. Models 5 to 7 in Table 1 show results for the urban indicator. All other household characteristics have significant random slopes as well. However, living in urban areas is the only household characteristic for which the cross-level interaction effect indicates that good governance can explain the variation in the effect across countries. Thus, we focus our discussion on this variable only.

Model 5 adds the country-specific share of people living in urban areas to the model. Having both the group mean of the variable and the group-mean-centered variable allows us to distinguish

TABLE 1 Random intercept and random intercept, random slope probit models

1		1 /	1 1				
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
	β (s.e.)						
HH-level variables							
Head male		0.08^{**}	0.08^{**}	0.08^{**}	0.08^{**}	0.07^{**}	0.07^{**}
		(0.03)	(0.03)	(0.03)	(0.00)	(0.00)	(0.00)
Head aged btw. 30 and 64		-0.03^{*}	-0.03^{*}	-0.03^{*}	-0.03**	-0.03**	-0.03**
		(0.02)	(0.02)	(0.02)	(0.01)	(0.01)	(0.01)
Head above 64		-0.05	-0.05	-0.05	-0.05**	-0.05**	-0.05**
		(0.04)	(0.04)	(0.04)	(0.01)	(0.01)	(0.01)
Household size		-0.06^{**}	-0.06**	-0.06**	-0.06^{**}	-0.06^{**}	-0.06**
		(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.00)
# children <5 years old		0.38**	0.38**	0.38**	0.38**	0.38**	0.38**
		(0.02)	(0.02)	(0.02)	(0.00)	(0.00)	(0.00)
Education		-0.13**	-0.13**	-0.13**	-0.13**	-0.13**	-0.13**
		(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.00)
Urban		-0.67**	-0.67**	-0.67**	-0.67**	-0.60**	-0.59**
		(0.04)	(0.04)	(0.04)	(0.00)	(0.05)	(0.05)
Country-level variables							
Gov. effectiveness			-1.33**	-0.36^{\dagger}	-0.39^*	-0.45**	-0.70**
			(0.17)	(0.21)	(0.19)	(0.14)	(0.18)
Log GDP				-0.79**	-0.53**	-0.30**	-0.30**
				(0.12)	(0.12)	(0.10)	(0.10)
Urban share					-2.68**	-2.19**	-2.20**
					(0.75)	(0.55)	(0.55)
Cross-level interaction							
Urban × Gov. effectiveness							0.21*
							(0.09)
Constant	-0.77**	-1.08**	-1.02**	-1.05**	-1.51**	-1.08**	-1.10**
	(0.11)	(0.38)	(0.29)	(0.24)	(0.31)	(0.24)	(0.24)
Variance components							
σ_a^2	0.90**	1.26**	0.79**	0.46**	0.39**	0.15**	0.14**
	(0.11)	(0.16)	(0.12)	(0.08)	(0.07)	(0.03)	(0.02)
σ_δ^2						0.43**	0.41**
						(0.08)	(0.08)
$\rho(\alpha, \delta)$						-0.19**	-0.17**
						(0.04)	(0.04)
Year fixed effects	No	Yes	Yes	Yes	Yes	Yes	Yes
N households	806,796	806,796	806,796	806,796	806,796	806,796	806,796
N countries	71	71	71	71	71	71	71
		/ 1	, ı	/ 1	/ 1		
		0.56	0.44	0.31	0.28	0.30	0.20
ICC AIC	0.47 690,052.2	0.56 534,394.2	0.44 534,363.1	0.31 534,326.4	0.28 534,316.7	0.30 529,634.6	0.29 529,631.2

Note. White heteroskedasticity-corrected standard errors in parentheses; reference category for age = below 30; household-level variables are group-mean-centered; country-level variables are centered at the grand mean. $^{\dagger}p < 0.1, ^{*}p < 0.05, ^{**}p < 0.01$ (two-tailed tests).

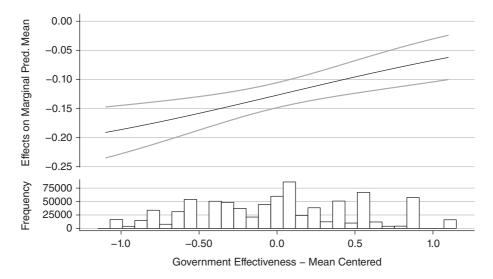


FIGURE 2 Average marginal effects of living in urban areas over different levels of government effectiveness and their 95% confidence intervals

between within-group and between-group effects (Snijders & Bosker, 2011). In model 6, with the random slope, the coefficient of the country's urban share is negative and statistically significant, suggesting that, controlling for everything else in the model, households in countries with a larger share of people living in urban areas have lower likelihoods of being poor. The coefficient for the household-level variable still has the same interpretation, and households in urban areas are less likely to be poor.

Model 7 includes the cross-level interaction effect, which is statistically significant and positive. This indicates that as government effectiveness increases, the advantage of living in urban areas decreases. Figure 2 shows the corresponding average marginal effects of living in an urban area for different values of government effectiveness. Based on this model, in a country with a level of government effectiveness equal to the 10th percentile of the countries in our sample, the probability of being poor for an otherwise average household is 36.1 percentage points lower in urban areas than in rural areas (12.4% vs. 48.5%). This difference decreases to 15.9 percentage points (4.2% vs. 20.1%) in a country with a level of government effectiveness equal to the 90th percentile (Supporting Information Section S4 shows the marginal predicted means for this and the main other models over the entire range of government effectiveness).

4.3 | Good governance across low- and middle-income countries

Figure 3 shows that government effectiveness is negatively correlated with the incidence of multidimensional poverty in middle-income countries, but has no correlation with multidimensional poverty in low-income countries. In order to test this difference, we rerun the main models, allowing the effect of good governance to vary between low- and middle-income countries. Table 2 presents the results for this analysis.

Model 8 is a random intercept model including the same independent variables as model 4 in Table 1, plus an indicator variable for middle-income countries as well as an interaction between the indicator and government effectiveness.

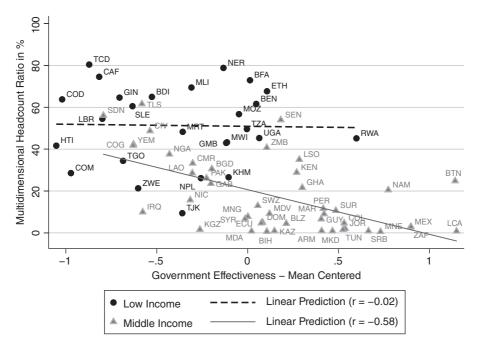


FIGURE 3 Association between the multidimensional headcount ratio and government effectiveness separated by low- and middle-income countries

Figure 4 plots the marginal predicted means and average marginal effects of government effectiveness by income groups for this model. The graph in the lower panel shows that the average marginal effect of government effectiveness is not statistically different from zero in low-income countries, while in middle-income countries, it is negative and statistically significant. The graph in the upper panel suggests, first, that in low-income countries, the probability of being multidimensionally poor is practically the same, regardless of the level of government effectiveness, while in middle-income countries this probability tends to be lower in countries with higher levels of government effectiveness. Second, the graph suggests that while for lower levels of government effectiveness the probability of being poor in a low-income country is not statistically different from the probability of being poor in a middle-income country, for higher levels of government effectiveness this probability is lower in middle-income countries. According to this model, the probability of being poor for an otherwise average household in a middle-income country with a level of government effectiveness equal to the 10th percentile of the countries in our sample is 27.6%. A similar household in a low-income country with the same level of government effectiveness faces a probability of being poor of 32.7%. While the predicted probability of being poor for an otherwise similar household decreases to 11.3% in a middle-income country with a level of government effectiveness equal to the 90th percentile, the predicted probability for the same household in a low-income country remains high with 35.8%. These findings suggest that the direct effect of governance identified earlier might be mainly driven by the experience of households in middleincome countries.

Model 9 includes the middle-income variable; a two-way interaction between middle-income and government effectiveness; a two-way interaction between middle-income and urban areas; and a three-way interaction between middle-income, urban areas, and government effectiveness. The three-way interaction term is positive and statistically significant. Figure 5 displays the average marginal

TABLE 2 Effect heterogeneity across low- and middle-income countries

	Model 8	Model 9
	β (s.e.)	β (s.e.)
HH-level variables		
Head male	0.08**	0.07*
	(0.03)	(0.03)
Head aged btw. 30 and 64	-0.03*	-0.03*
	(0.02)	(0.02)
Head above 64	-0.05	-0.05
	(0.04)	(0.04)
Household size	-0.06**	-0.06**
	(0.01)	(0.01)
# children <5 years old	0.38**	0.38**
	(0.02)	(0.02)
Education	-0.13**	-0.13**
	(0.01)	(0.01)
Urban	-0.67**	-0.86**
	(0.04)	(0.09)
Country-level variables		
Gov. effectiveness	0.09	-0.10
	(0.22)	(0.25)
Log GDP	-0.55**	-0.18
	(0.17)	(0.12)
Urban share		-1.98**
		(0.43)
Middle income	-0.65*	-0.81**
	(0.31)	(0.25)
Middle income × Gov. eff.	-0.75*	-0.67*
	(0.33)	(0.29)
Cross-level interaction		
Urban × Gov. effectiveness		-0.14
		(0.13)
Middle income × urban		0.36**
		(0.11)
Middle income \times urban \times Gov. eff.		0.31^{\dagger}
		(0.17)
Constant	-0.39	-0.35
	(0.39)	(0.31)
Variance components		
σ_{lpha}^2	0.42**	0.37**
	(0.07)	(0.06)
σ_δ^2		0.12**
		(0.02)
(6)		-0.15**
$\rho(\alpha, \delta)$		0.10

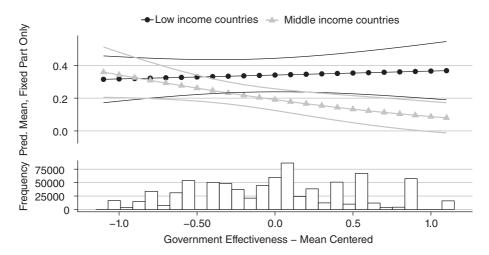
(Continues)

TABLE 2 (Continued)

	Model 8	Model 9
Year fixed effects	Yes	Yes
N households	806,796	806,796
N countries	71	71
ICC	0.30	0.27
AIC	534,325.0	529,625.4
Log pseudolikelihood	-267,144.5	-264,788.7

Note. White heteroskedasticity-corrected standard errors in parentheses; reference category for age = below 30; household-level variables are group-mean-centered; country-level variables are centered at the grand mean. $^{\dagger}p < 0.1, ^{*}p < 0.05, ^{**}p < 0.01$ (two-tailed tests).

(a) Marginal predicted means and their 95% confidence intervals over values of government effectiveness and separated by low and middle income countries



(b) Average marginal effects of government effectiveness and their 95% confidence intervals separated by low and middle income countries

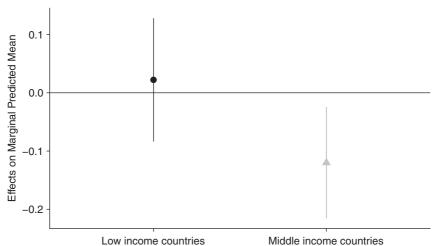


FIGURE 4 Marginal predicted means over different levels of government effectiveness and average marginal effects of government effectiveness by income groups

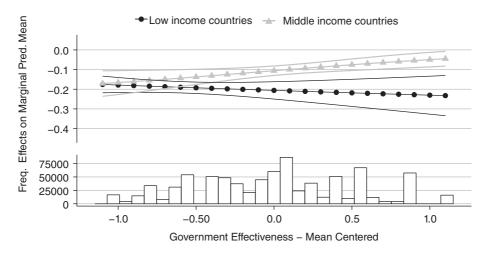


FIGURE 5 Average marginal effects and their 95% confidence intervals of living in urban areas over government effectiveness, separated by low- and middle-income countries

effects of living in urban areas over government effectiveness, separated by low- and middle-income countries, and their respective confidence intervals. In low-income countries, the negative effect of living in urban areas on the probability of being poor is more or less the same across different levels of government effectiveness. On the other hand, in middle-income countries the negative effect of living in urban areas on the probability of being poor is closer to zero in countries with higher levels of government effectiveness. Based on this model, in a country with a level of government effectiveness equal to the 10th percentile of the countries in our sample, the difference in the likelihood of being poor between urban and rural areas is 40.2 percentage points in low-income countries and 30.3 percentage points in middle-income countries. In a country with a level of government effectiveness equal to the 90th percentile of our sample, these differences are 42.3 percentage points in low-income countries and 10.6 percentage points in middle-income countries. The previously observed reduction in the gap between urban and rural households is mainly driven by a substantive decrease in the probability of being poor for rural households in middle-income countries. These results suggest that the effect of quality of governance on the reduction of horizontal inequality across locations could be exclusive to middle-income countries.

4.4 | Robustness

Results for different robustness checks can be found in Supporting Information Sections S5–S8. We repeat the main models with interactions by income groups separately for different scenarios. To assess the impact of the choice of governance indicator, we estimate the main models using three alternative measures: the rule of law from the Worldwide Governance Indicators (Kaufmann et al., 2010, p. 4); the mean of three political risk components, namely corruption, law and order, and bureaucracy quality, of the International Country Risk Guide (ICRG) rating (Teorell et al., 2016; The PRS Group, 2016); and the corruption perception index by Transparency International (2015). While we do not find a significant positive effect for either low- or middle-income countries in case of the corruption indicator, we find the same substantive results for the rule of law and ICRG indicators. To assess the impact of individual countries on the results (Van der Meer, Te Grotenhuis, & Pelzer, 2010) we use a two-step approach (e.g., Jusko & Shively, 2005). To gain an understanding of the impact of missing data, we exclude countries with large shares of missing values. To assess whether

one influential indicator drives our results, we adjust the MPI by excluding the indicator with the highest average relative contribution to the overall poverty level across all countries, nutrition. None of the changes impacts the separation of the effect of government effectiveness by income categories and none of the main conclusions are altered, despite marginal changes in the significance levels.

5 | DISCUSSION AND CONCLUSION

This is the first study to look into the relationship between good governance and multidimensional poverty as measured by the global MPI, combining micro- and macrodata from 71 countries. While the nature of the study implies that our results are correlational, the main findings suggest a number of policy implications that challenge the universal applicability of governance reforms for poverty reductions.

First, although a direct effect of good governance for the entire sample is found, when separating the analysis by low- and middle-income countries, we find that this effect is mainly driven by middle-income countries. While better governance is associated with less multidimensional poverty in middle-income countries, poverty rates remain stable across levels of governance for low-income countries. These findings challenge naive calls for governance reforms in low-income countries where such calls could divert resources from other important reforms without leading to the desired reduction in poverty levels. This suggests a nuanced approach is needed when advocating governance policies to abolish multidimensional poverty. There are at least two possible, and related, explanations for this. First, if there is some complementarity between governance reforms, there might be a minimum level of quality of governance that countries need to achieve in order to enjoy the poverty reduction benefits associated with good governance. Building and consolidating good governance takes time and resources. Low-income countries tend to be in the earlier stage of this process and, hence, potentially not yet in the position to reap the benefits of good governance. This explanation is in line with the ideas that low-income countries are stuck in poverty traps that prevent them from benefiting from governance reforms (Sachs et al., 2004), and that the good governance agenda might simply be overwhelming for low-income countries (Grindle, 2004). A second explanation is that the relationship between good governance and poverty reduction is to a certain extent conditional on other structural factors that are still missing in low-income countries (similarly to the argument presented by Khan, 2009). Further research is needed to examine the empirical support for each of these explanations and to pinpoint more specific policy implications. In the first scenario, it is important to examine the impact of different sequences of reforms to identify the ones that might provide the conditions for governance reforms to reach their full potential. In the second scenario, understanding the channels by which governance impacts on poverty will identify specific structural factors that are required to link better governance to poverty reduction.

The second main finding implies that good governance can play a role in the reduction of horizontal inequalities. Results show that households in rural areas are at greater risk of being multidimensionally poor, but the extent of this disadvantage decreases with increasing levels of government effectiveness. One possible explanation is that more efficient governments are more successful at providing basic services and access to public goods to those farther away from large cities, thereby improving well-being in rural areas and increasing social equity. However, as above, separating the effect by low and middle-income countries reveals that the improvements in rural living standards are mainly found for households in middle-income countries. The risk of poverty for rural households in low-income countries remains largely stable across levels of governance. This also highlights that looking only at direct effects ignores other potential impacts of good governance and future research

should address this further. It is important to examine how governance mitigates the risk of being poor associated with certain household characteristics, similar to the sociological literature on the effect of the institutional context, like the welfare state, on poverty and health inequalities (e.g., Brady et al., 2009; Gkiouleka, Huijts, Beckfield, and Bambra, 2018). Particularly with respect to the inequalities between urban and rural areas, future research should ideally explore the possibility of a more fine-grained analysis by region. As one can expect considerable within-country variation for quality of governance (e.g., Fukuyama, 2013; Gingerich, 2013), such an analysis would further improve our understanding of the potential role of governance in increasing social equity.

In conclusion, our research provides support for the idea that good governance can play a role in reducing total poverty levels and increasing social equity, but mostly in middle-income countries. This brings into question the received wisdom that governance reforms are key to reducing poverty in the poorest countries, which are the focus of the international development community. Therefore, focusing on governance reforms, without consideration for additional structural conditions that enable the efficacy of those reforms, might not produce the intended results in terms of poverty reduction.

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ENDNOTES

¹We use the term "effect" in a technical sense and not as a causal term.

³Some warn that the direction of causality is not as straightforward as it might seem (e.g., Goldsmith, 2007; Kurtz & Schrank, 2007).

⁴More recently, Dahlström et al. (2012) show that a meritocratic recruitment process does indeed have a significant effect on the levels of corruption, while career stability does not.

⁵We use multidimensional poverty and global MPI interchangeably in this article. However, we are fully aware of the different ways to measure multidimensional poverty (e.g., Gordon et al., 2003; de Neubourg, Chai, de Milliano, Plavgo, & Wei, 2010) and the controversy surrounding aggregate measures of multidimensional poverty (Ravallion, 2011).

⁶The full list of indicators and sources can be found at http://info.worldbank.org/governance/wgi/\#doc, last accessed on May 26, 2017.

⁷Data were downloaded from https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups, last accessed May 26, 2017.

⁸Each group-mean-centered variable is defined as $x_{ij}^w = x_{ij} - \bar{x}_j$, where *j* refers to country *j*. The group mean \bar{x}_j is the average of variable *x* in country *j*. Using this approach does not exclude the possibility of bias in the household-level coefficients by omitted household-level variables nor the possibility of confounding of the macro-effect by unmeasured macro-level variables.

⁹The nonlinear hybrid model assumes that the random-effects depend only on the mean value of the level-1 variable of interest. They recommend including polynomial functions of the group means and testing their coefficients. Non-significant coefficients can be interpreted as some evidence that the assumption is not violated.

²Also, as Fukuyama (2016) shows, there are at least three meanings for the term "governance."

¹⁰We use Laplace approximation to estimate the models.

¹¹All statistical analyses were done using Stata 14 (StataCorp, 2015). Some graphs were drawn in R (R Core Team, 2018).

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SUPPORTING INFORMATION

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