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Report for Hivos

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Abstract

This study addresses the question to what extent independent media contributes to government accountability, in particular the social accountability of governments in service delivery. It does so by analysing the effect of the production and use of independent media on service delivery in health care and education, and on democracy, in developing countries. The study finds that press freedom has an effect on democracy but not on service delivery, whereas civic activism, a measure for the use of independent media, has an effect on service delivery, but not on democracy.

For information about this report, please contact the lead author: staveren@iss.nl. It will also be published as an ISD Working Paper on the Indices of Social Development website: www.IndSocDev.org

PRODUCTION AND USE OF INDEPENDENT MEDIA: ROAD TO GOVERNMENT ACCOUNTABILITY

Content

1.   Introduction

This report is the result of a study for the Dutch development NGO Hivos about the relationship between the production and use of independent media on the one hand and government accountability on the other hand. The background to this study is the question whether support for independent media contributes to more accountability of governments, and if so, through what mechanisms and how strong this relationship is. When the media is independently organized, does this put pressure on governments to deliver on democracy and health care for example? And, how does this happen? Does civil society make use of the media? How can we measure that? And how does the combination of free press and civic use of it lead to pressure on government? Through its social expenditures? A better rule of law? More effectiveness in policy making?

These are typical questions that cannot be answered at the individual country level, because there are so many factors at play in this relationship. First, how would independent media affect accountability - what are the channels? Second, are these channels one-way or are there feedback-effects, from more accountability to more, or perhaps less, independent media? Think about Italy under the presidency of Silvio Berlusconi, who largely monopolised newspapers, radio and TV stations, and at the same time followed populist policies of quick service delivery when this contributed to more political support. Or think about Venezuela under Hugo Chavez, whose populist government used oil revenue to address short-term demands from the poor, without necessarily addressing underlying structural issues in an effective way. Third, if we know the main channels: what is the effect relative to other variables, which matter too? Such as level of economic development of a country or the extent of social spending? Here, China serves as an example. Despite limited democracy and constraints on civic activism, the country is relatively successful in service delivery for the poor, largely due to high economic growth.

1.1 Quantitative versus qualitative analysis

Qualitative research, at the level of a country, or even a smaller unit of analysis, such as a media independence support project, cannot distinguish between all these effects. For example, it cannot exclude the level of economic development from the analysis and it cannot abstract from the existing rule of law, whether weak or strong. So, highly independent media may be observed with high levels of democracy or health outcomes, but isn't this sometimes more due to a country's relatively high level of GDP per capita as compared to its neighbouring countries? Or because of a stronger rule of law? Or higher health care expenditures by the government despite a lack of press freedom? Qualitative studies generally cannot answer these questions of influencing factors, and therefore can only answer the issue of causality in a limited, localized way.

Comparative case studies can address these problems to some extent. For example by comparing three or four countries with low levels of economic development with three or four countries with high levels of economic development. But the sample size will be too small to be able to draw any generalizable conclusions on the effect of independent media on government accountability.

The advantage of using a quantitative approach instead is that the analysis can distinguish between the role of independent media, its use by civil society, and its direct and indirect correlations with government accountability. Plus econometric tools to help address the direction of causality. The advantage of testing a relationship quantitatively at the cross-country level is that this reveals statistical relationships due to the large number of countries involved. These can be tested in terms of signs (positive or negative relationship?), size (how strong is the relationship?) and statistical significance (what is the probability of a parameter to be true?). Moreover, it can control for the role of other factors such as economic growth, the relative size of social expenditures, and the rule of law. Finally, some econometric tools can be used to help assess causality, going beyond correlations. These tools help, although never perfectly, to assess the direction of causality: from independent media and its use to

government accountability? Or the other way around? Hence, the findings will be generalizable for the country group and time-period involved. In our case these are almost all developing countries over the period 1990-2010.

But quantitative analysis has its own weaknesses. These vary from problems of measurement at the cross-country level and data limitations, to the fact that causality can never be established with full certainty. Moreover, not everything that matters can be measured. Hence, this study should be considered not as a stand-alone result, but should be interpreted alongside other analyses of media independence and government accountability, both qualitative and quantitative.

1.2 Indices of Social Development

ISS has a unique database, Indices of Social Development[1]. The ISD database is explained in a recent article by Foa et. al (2013). The database contains six indices, including one on the use that civic actors make of the media: Civic Activism Index (CA). This index was used in an earlier study by ISS on government accountability for the Dutch Ministry of Foreign Affairs, IOB department, on the effects of development aid on civil society and government accountability in terms of poverty reduction, human rights and democracy (van Staveren and Webbink, 2012). This study for Hivos can be considered as a follow-up of that study.

Next to ISD data, the study will make use of three other databases: for development indicators, governance indicators, and press freedom.

The question, which this study addresses, is the following: what is the relationship between the production and use of independent media on the one hand and government social accountability on the other hand, for developing countries?

2. Independent media and government accountability: a literature review

This literature review will briefly discuss three related strands of literature:
- Press freedom and independent media
- Civic activism and the media
- Government accountability

2.1 Press freedom and independent media

The media are an important means for democratic control and for civic activism to hold governments accountable for service delivery. But it does not always seem to perform this role due to a variety of limitations (Myers, 2012). With less censorship, less economic interests in the media by the ruling powers, and more legal protection of free press, the media is more likely to be able to perform its informative and questioning roles in society. So, what matters is media independence: legally, politically, and economically. Independent media concerns the production of information, and is therefore at the beginning of the chain of effects of government accountability.

Empirical research into independent media uses either the Press Freedom Index put together by Freedom House, or the Press Freedom Index developed by journalists themselves through Reporters without Borders. A more recent index is the Media Sustainability Index by IREX. The IREX started in

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[1] www.IndSocDev.org

2000 covering only European countries. It extended its measurement to the Middle East and North Africa in 2005 and to Africa in 2007, and covers 80 countries today. But not in Asia and Latin America. The Media Sustainability Index measures, like the two press freedom indices, media independence. But it covers it slightly more broadly[2]. It includes an indicator on whether the public media reflects the views across the political spectrum, are nonpartisan, and serve the public interest; and an indicator on whether a broad spectrum of social interests are reflected and represented in the media, including minority-language information sources. But the large majority of indicators overlap with or are identical to those in the two press freedom indices. And none of the three independent media indicators includes investigative journalism or other indicators of the depth of independent media.

Two studies, which have compared the two press freedom indices contradict each other in their findings about their similarity. They both compared the indices indirectly, by comparing their explanatory power in regression analyses with democracy and related variables. Norris (2006) concludes that they work out quite similarly in econometric analyses, whereas Tran et al (2011) find the results in regression analyses to be very different. But a recent and more thorough and direct analysis of the two measures of press freedom confirms Norris: the two measures are found to be quite similar, over time and even across differences in country choices. Using correlation coefficients on each of the indicators making up each press freedom index, Becker and Vlad (2011, p. 38) conclude that: "The Freedom House measure and the Reporters without Borders measure are highly correlated. At present there is little to distinguish them." The average correlation (measured as r) between the two for the period 2002-2008 is 0.83. Hence, 70 per cent (measured as r^2) of the variation in the one can be explained by the other. This is, statistically seen, quite high.

For the present study, the measure by IREX would have a slight preference over the other two measures on substantive grounds, because it is a little bit broader than the other two, although this difference is very small (see also Becker and Vlad, 2011). But its country coverage is very narrow (Europe, Middle East and Africa) and it covers only a few recent years for these countries. Hence, it cannot be used for a cross-country analysis for Africa, Asia and Latin America. The Press Freedom Index by Reporters without Borders is not much different from the one produced by Freedom House, while it covers slightly less countries and significantly less years. Hence, the present study opts for the Freedom House variable because it is available for more countries and years and anyway quite similar to the one produced by Reporters without Borders.

Empirical research using the Freedom House Press Freedom Index (PF) has demonstrated the importance of the free press for government accountability. In particular, studies by Pippa Norris (2006; 2010) have shown the importance of this production dimension of independent media. In her 2006 study, she distinguished between three roles of the media: watch-dog, civic forum, and agenda-setter. Interestingly, these roles are very similar to the roles recognized in the literature on civil society, as the key roles that civic activism plays in holding governments accountable. This suggests that civic activism and press freedom are complementary, and mutually related: they feed into each other. In her 2010 edited volume, Norris, together with Odugbemi, has made a slight change in this threefold: now the media is seen as watchdog, agenda setter and gatekeeper. The gate keeper role is defined as guarding pluralism in the polity and society: "the news media should ideally serve as the classical agora by bringing together a plurality of diverse interests, voices, and viewpoints to debate issues of public concern" (Odugbemi and Norris, 2010: 390). In fact, the description of gatekeeper as creating an agora seems very close to what four years earlier was named civic forum.

The results of the empirical analysis in Norris (2006) show that press freedom is positively associated with greater political stability, rule of law, government efficiency in the policy process, regulatory quality, and low corruption. However, the study did not analyze the impact of press freedom on service delivery. Moreover, the regressions were only cross-country (hence, for a single year), without time-lags, and do not use controls for formal institutions and social expenditures. This leads to problems of endogeneity (reverse causality) and over-estimation of effects. For example, when the level of GDP per capita is ignored, regression results tend to over-estimate the effect of the explanatory variable, as

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[2] http://www.irex.org/resource/media-sustainability-index-msi-methodology

if economic development does not matter. But we know from the literature that GDP does matter: more highly developed countries tend to have more press freedom. So, part of the effect measured by Norris may well be due to economic development rather than to press freedom alone.

Norris (2006) also finds a positive association with democracy. But in the volume she edited on press freedom, Sheila Coronal (2010) notes that even in democracies the watchdog function of the media is repressed by governments, and journalist are killed: She remarks that in democracies like the Philippines, Mexico and Colombia, "journalist casualty rates are among the highest in the world" (p. 117). Moreover, she notes that "the impact of watchdog journalism is often diminished by the inertia of governments, the unwillingness of elites to take actions, the weight of bureaucratic cultures that are resistant to change, a law-enforcement system, that is incapable of punishing wrongdoing, and an apathetic and cynical public" (p. 128).

Tran et al. (2011) found a positive association between the Freedom House Press Freedom Index and human development, measured with the Human Development Index of the UNDP. The sample size, however, is small, with only 65 countries in a hierarchical regression analysis. Interestingly, they found endogeneity effects: press freedom seems to both influence human development and is in turn influenced by human development.

Becker and Vlad (2011) summarize in a detailed overview of the effects of independent media on development the empirical literature and conclude that press freedom correlates negatively with corruption, as expected, and positively with various development outcomes.

2.2 Civic activism and the media

Studies on independent media recognize that an independent production of media is not in itself a sufficient indicator of information use. For example, Price (2011, p. 12) states, that "even a media system that is diverse and pluralistic may not achieve the goals of 'voice'". Price also recognizes that none of the three measures of independent media referred to above addresses 'voice'. They measure the *production* of information, not how civil society *makes use* of it. And as Norris made clear, one of the three roles of independent media is the creation of a civic forum - this is precisely the space, which civil society is likely to fill.

For this reason, we will add a measure of voice to the measure of press freedom. In this way, we will have complementary measures for independent media, namely (1) for the *production* of independent media and (2) for the *use* that civil society makes of the media that is available to them.

The civic voice dimension of independent media concerns the monitoring and agenda setting roles of civil society vis-à-vis government. These roles of civil society have been referred to by Glasius (2010) as a mix of social capital, citizens active in public affairs, non-violent action, fostering public debate and counter hegemony. Fowler and Biekart (2008) therefore refer to these roles as the dynamic and agency dimensions of civil society, labeled as civic-driven change. Civic-driven change is in their view a combination of three dimensions: civic agency, collective action, and empowerment. This change, or at least this demand for change, by civil society, is the complement of the representative democratic checks and balances of governments. Together, they press for government accountability. But where the polity is weak or divided, politics corrupted, or democracy absent, civic activism becomes more important in holding governments accountable. So, we need to make a crucial distinction in government accountability: between political accountability, through the polity and its formal channels of representation on the one hand, and social accountability, through civil society and its informal channels of participation and voice. More on this below, in the section on government accountability. Now, we focus on the role of civil society as active user of the media. How well does civil society play its function of civic-driven change?

The empirical literature is rather silent on the effectiveness of civic activism in holding governments

accountable. An empirical study by Williamson (2009) has assessed the relative effectiveness of the informal institutions of civil society (pro-social norms, trust, cooperation, demonstration, etc.) vis-à-vis the formal institutions of the state, such as the rule of law. She finds that "countries that have stronger informal institutions, regardless of the strength of formal institutions, achieve higher levels of economic development than those countries with lower informal institutional scores" (Williamson 2009: 377). A recent UNDP report on inequality notes about the role of civil society, that "coordinated mobilization is indispensable for people who wish to pursue a common interest and (…) claim specific policies" (UNDP, 2013: 263). These findings suggest that civic activism can positively contribute to the social accountability of government.

A recent OECD overview study of social capital distinguishes four channels through which civic activism impacts upon wellbeing, through: (1) fostering trust and cooperative norms, (2) improving the performance of formal institutions, (3) having a direct impact on individual well-being, and (4) building networks and civic skills (Scrivens and Smith, 2013). Of these four, channels two and three are the two, which are most likely to represent social accountability. In other words, these two channels are most likely to contribute to adequate service delivery by governments.

The empirical quantitative literature connecting civil society directly to social accountability is very thin due to a lack of adequate data for voice. The Worldwide Governance Indicators include an index called Voice and Accountability. This index, however, focuses more on political accountability than on social accountability and it includes press freedom[3]. And it is constructed on the basis of expert opinions only: it lacks objective measures and attitudinal measures of the population. According to the Worldwide Governance Indicator explanation of Voice and Accountability (VA), it "captures perceptions of the extent to which a country's citizens are able to participate in selecting their government as well as freedom of expression, freedom of association, and a free media." As a consequence, this measure is not an adequate complementary measure to press freedom: it already includes press freedom (both the Freedom House index and the Reporters without Borders index). And its focus on *political* accountability, with perceptions about the functioning of institutions of the state, makes it inadequate to measure voice for *social* accountability purposes.

The ISD Civic Activism Index (CA) makes it possible to measure how civil society makes use of the media. It does not measure NGO density in a country and NGO activity, which is done with a different measure in the ISD set, namely Clubs and Associations. CA measures the pressure, which civil society puts on the government, businesses, and dominant institutions, such as religion. It measures the use that people in general and civic agents in particular make of the media.

The Civic Activism Index was used in a recent ISS study for the evaluation unit of the Dutch Ministry of Foreign Affairs (IOB) on the role of civil society in development (van Staveren and Webbink, 2012). The analysis covered both political accountability (democracy and human rights) and social accountability (poverty reduction), and included several control variables and used data for many developing countries for a twenty-year period in a panel analysis. The study found that an increase in civic activism of 10% is associated with a statistically significant 4% poverty reduction (van Staveren and Webbink, 2012). This suggests a considerable positive impact of the use of independent media on holding the government accountable for service delivery.

The regressions of civic activism on democracy and human rights showed no statistically significant associations. Hence, it seems that the use that people make of the media does not affect political accountability. Probably there are other factors that are more relevant for political accountability, in particular formal institutions of the state and the use that parliamentarians make of the media. In the IOB study, the most relevant factors that were found to matter for political accountability were indeed rule of law and also education.

The strong and statistically significant association of civic activism with poverty reduction in the IOB study indicates that the use that civil society makes of the media does have an effect on development

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[3] http://info.worldbank.org/governance/wgi/pdf/va.pdf

outcomes. In this study, we will use more detailed measures for development outcomes, going beyond the simple poverty head-count indicator of 1.25 dollar-a-day. We expect that our choice of two key development outcome areas, health and education, will also have positive associations with civic activism as well as with press freedom.

2.3 Government accountability

Government accountability is a broad notion. It sometimes even includes good governance, on the *how* of governance, rather than on *what* it delivers. In this study we focus on social accountability, by elaborating service delivery. Next to this, we will also analyze political accountability, measured as the extent of democracy. Whereas in the IOB study, we only used Civic Activism as the explanatory variable (showing no statistically significant effect), here we will also use Press Freedom as explanatory variable for political democracy.

Social accountability is concerned with the extent to which governments deliver what people demand (and pay for with their taxes), in particular on universal public goods such as health care and education. We use the definition of service-delivery focused government accountability in line with Khemani (2005: 186), who gives three criteria. A public agency is accountable for service delivery if it (1) assumes and is assigned responsibility, (2) has some minimum resources and capacity, and (3) undertakes appropriate actions towards service delivery, given resource and capacity constraints. For this understanding of government accountability, Shah (2008) has argued that citizen-centric governance is the most effective approach to enforce service delivery. This government accountability model for service delivery implies, according to Shah, responsiveness, fairness, responsibility, and judicial accountability. This would result, among others, in public services consistent with citizen preferences, improvements in economic and social outcomes and quality of life, improvements in quantity, quality and access of public services, including for the poor, minorities and disadvantaged groups, and better and cheaper services.

A literature review by IDS on accountability and service delivery makes also a distinction between social and political accountability. It recognizes that social accountability of government is through "a continuous relationship of citizen's demands through street protests and mobilizations, public naming and shaming, signing of petitions, etc." (Mejis Acosta, 2010: 13) Social accountability is particularly focused on service delivery, according to IDS: "The core feature of social accountability mechanisms is to exert direct political influence on government officials to extract increased – and effective – government action in the short run. Through social accountability mechanisms, citizens have organized to demand service provision from government officials in charge of specific sectors (health, water, sanitation), sometimes even bypassing some elected bodies (national legislatures, city councils)" (idem).

The IDS desk review of sixteen case studies is qualitative but interestingly, it uses rather similar criteria for social accountability as the quantitative analysis of this study, namely:
- Demand for social accountability (production and use of independent media)
- Responsiveness in service delivery (social expenditures)
- Standards for service delivery (health and educational outcomes)
- Enforceability (rule of law, government effectiveness)

On the basis of the qualitative desk review, the IDS report suggests "a positive association between effective accountability and the adequate provision of government service." (idem: 28) But the report admits that it cannot say anything about causality. This is precisely what our quantitative study, with its control variables and endogeneity checks, will address, to the extent possible.

Relying on the conceptualizations by Khemani and Shah, we focus government accountability on service delivery, and in particular of basic social services, namely health care and education, and measure this with outcome indicators. Not input indicators (such as budget) or output indicators (such

as number of patients treated) but indicators, which reflect the extent to which services do what citizens' expect from them. In particular, improved outcomes and quality of life, and access and better services for socially excluded or disadvantaged groups. Of course, as Khemani states, this should take into account the limitations of resources and capacities. That is why in our empirical analysis, we use control variables for these two constraints: the level of economic development of a country, measured as GDP per capita (resource constraint), and the share of social expenditures out of GDP (capacity constraint).

2.4 Conclusions

- No studies have used variables for both the production of independent media and the use that civil society makes of it. They have used only press freedom or only civic activism. Hence, they have either measured the production of independent media without also measuring the use of it, or they have measured the use that civil society makes of the media, without measuring the extent of independent production of the media.

- Press freedom and civic activism have each independently shown to be positively correlated with government accountability. But there exists no study, which systematically distinguishes between political and social accountability and between the indirect effect on accountability mechanisms (such as corruption or social expenditures of the government) and the direct effect on accountability delivery (such as improved health care outcomes).

The value added of this study is that it will address both gaps in the literature. It will measure the production *and* the use of independent media, and it will measure the effect on the *mechanisms* of social accountability and the effect on social accountability *delivery* and on political accountability *delivery*. Moreover, it will use more advanced econometric techniques in order to help assessing causality.

3. Data and methods

The sample that we have selected consists of all low income and medium income countries in the period 1990-2010. Depending on which variables are used in the various regression analyses, there will be more or less missing data. The time period is divided in 5-year periods, with data for 1990, 1995, 2000, 2005, and 2010.

In order to explain variation between countries and years in government social accountability delivery, we have taken a two-step approach. First, we analyse the indirect effect of the production and use of independent media on intermediary variables. Second, we analyse the direct effect of the production and use of independent media on service delivery. In this way, we establish two sets of effects of independent media: the indirect effect on social accountability mechanisms, and the direct effect on social accountability delivery, plus a direct effect on political accountability.

3.1 Production and use of independent media variables

The Press Freedom Index (PF) developed by Freedom House that we use measures media independence of print, broadcast, and internet media. It consists of 109 indicators in three areas[4]: legal environment (laws, regulations, guarantees, and independence of the judiciary bodies), political environment (political control such as censorship, news diversity, intimidation and violence against journalists), and economic environment (transparency and concentration of ownership of media

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[4] http://www.freedomhouse.org/report/freedom-press-2012/methodology#.U4MMHy80zeY

sources, selective withholding of advertising or subsidies, and bribery).

As argued in section 2, this measure is very similar to those produced by Reporters without Borders and by IREX. None of these three includes indicators of investigative journalism or other measures of the depth of journalistic contents (only to a very small extent by IREX). The Freedom House measure is therefore chosen because it includes data for much more countries and much more years.

The Civic Activism Index (CA) measures **citizen's use of the media (listening to radio and TV news, reading newspapers and using internet to learn about political developments) and support for and participation in civic activities such as in demonstrations and petitions, as well as the strength of civil society (based on Civicus ratings)**[5]. **Civic activism refers to the social norms, organisations, and practices, which facilitate greater citizen involvement in public policies and decisions. The** ISD measure of the strength of civic activism uses 33 indicators on the extent of engagement in civic activities such as signing petitions or joining peaceful demonstrations, studies of the organisation and effectiveness of civil society, access to sources of media information, levels of civic awareness and information on political matters and concerns, and the extent to which civil society organisations are connected to broader, international networks of civic activity.

We have also used the variable Voice and Accountability Index (VA), although our assessment of the underlying indicators has shown that it is not a very suitable variable for the research question at hand. Because it includes press freedom and it focuses on political accountability. We only include it to show how it functions in the regressions, as compared to the Civic Activism Index. For an explanation of the Voice and Accountability Index, see section 2 above.

3.2 Indirect effects: social accountability mechanisms

First, we analyse the relationship between the independent media variables on the one hand and social accountability mechanisms on the other hand. So, we study how the production and use of independent media affect mechanisms of social accountability. The social accountability mechanisms include the rule of law, social expenditures, and government effectiveness. The literature refers to all these variables, even though they have often not been tested.

With an adequate rule of law in place, a country is more likely to be able to deliver services effectively. Rule of Law "captures perceptions of the extent to which agents have confidence in and abide by the rules of society, in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence"[6]. It is a comprehensive index of formal institutions representing the effectiveness of government to protect citizen's rights. The Rule of Law index (RL) is part of the Worldwide Governance Indicators of the World Bank.

The higher the share of government expenditures on health care or education, the more resources available for social service delivery. We therefore use the share of GDP spent by government on health care and on education. Together, we sometimes refer to these variables as the social expenditure variables. The data for Expenditures on Health (EXPH) and Expenditures on Education (EXPE) are provided by World Bank's World Development Indicators[7].

Government Effectiveness is an intermediary variable, which makes part of the Worldwide Governance Indicators, just like Rule of Law and Voice and Accountability. According to the database, the Government Effectiveness Index (GE) "captures 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

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[5] http://www.indsocdev.org/civic-activism.html
[6] http://info.worldbank.org/governance/wgi/index.aspx#home
[7] http://data.worldbank.org/data-catalog/world-development-indicators

policies"[8]. Its indicators are all subjective measures (perceptions) and often refer to the government as bureaucracy and the extent to which it hinders the freedom of business operations. They also include perceptions about the coverage of public services, a set of output variables, not outcome or impact variables, of service delivery.

3.3 Control variables

Control variables are expected, on the basis of the literature, to also have an influence on the outcome variables of health and education. The most important one is the level of economic development of a country, measured as GDP per capita (GDP). The richer a country, the more likely it is that the government will have the capacity for adequate service delivery. The intermediary variables discussed above function as control variables in the second part of the analysis, in which all variables are included: direct and indirect effects on service delivery.

3.4 Social accountability delivery variables and political accountability variable

The government social accountability data are the outcome measures of public service delivery. They measure the extent to which people's wellbeing has improved. We have selected two areas of wellbeing: health and education, with four variables in each area. The health outcome variables that we use are: infant mortality, under five mortality, immunization DPT and immunization measles. The educational outcome variables that we use are: pupil/teacher ratio primary education, pupil/teacher ratio secondary education, primary completion rate, and primary gross enrolment rate. The data are all from the World Development Indicators.

For political accountability, we use, as in the IOB study, the extent of democracy as the outcome variable. We follow the literature by using the Polity IV measure of democracy for this.[9] This is a measure of institutionalized democracy consisting of three dimensions: institutions and processed for elections, institutionalized constraints on executive power, and guarantee of civil liberties to all. It measures these three dimensions through eleven indicators, which together result in a score between -0.1 and + 0.1. This is a twenty-one point scale.

3.5 Three equations

The research question, the literature review, and our selection of variables lead to the following three equations that we estimate with panel regression analysis:

(1) $SAM = x_1PF + x_2CA + x_3VA + x_4C*$
(2) $SAD = y_1PF + y_2CA + y_3GDP + y_4EXP + y_5RL + y_6GE + y_7C*$
(3) $PAD = z_1PF + z_2CA + z_3GDP + z_4RL + z_5GE + z_6C*$

SAM = Social Accountability Mechanisms = four intermediary variables: EXPH, EXPE, RL, and GE.

SAD = Social Accountability Delivery = four health outcome indicators and four education outcome indicators: IMR, U5MR, ID, IM, PCR, PTP, PTS, PGER

PAD = Political Accountability Delivery = one outcome indicator, namely democracy: DEM

PF = Press Freedom

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[8] http://info.worldbank.org/governance/wgi/index.aspx#doc
[9] http://www.systemicpeace.org/inscrdata.html

CA = Civic Activism
VA = Voice and Accountability
GDP = logarithm of Gross Domestic Product per capita
EXP = EXPH or EXPE = share of public health or education expenditures out of GDP
RL = Rule of Law Index
GE = Government Effectiveness
IMR = Infant Mortality Rate
U5MR = Under-5 Mortality Rate
ID = Immunization Rate DTP
IM = Immunization Rate Measles
PCR = Primary Completion Rate
PTP = Pupil-Teacher ratio Primary
PTS = Pupil-Teacher ration Secondary
PGER = Primary Gross Enrolment Rate
DEM = Democracy
C* = constant term

Finally, x, y, and z are parameters, which we will estimate. They measure the size and sign (positive or negative) for each variable association.

3.6 Data sources and scales

The sources of the data are all online and can be found at: World Bank's World Development Indicators (GDP, EXP, and eight SAD variables), Indices of Social Development (CA), Freedom House (PF), the World Bank's Worldwide Governance Indicators (RL, VA, GE), and the Polity IV project (DEM).

The original data for all the variables have different scales. We have transformed almost all scales into index numbers between 0,00 and 1,00. This means, that the interpretation of the parameters is in terms of percentage points change: the scale is similar to that of percentages. For example, we may see that 10 percentage points increase in press freedom is associated with 4 percentage point increase in social expenditures. This would mean that, for example, for Bolivia, an increase in the press freedom score from 0,43 to 0,53 (a 10 percentage point increase) is associated with an increase in the social expenditures from 0,16 to 0,20 (a 4 percentage point increase), that is, from 16% of GDP to 20% of GDP.

This measure is not the case for the GDP variable, which is measured on a logarithmic scale. In our dataset, this runs from about 4 to about 10. But the interpretation of change along a logarithmic scale is as a percentage. So, for example, for Bolivia a 1% increase in GDP per capita may be associated with a 3% increase in the immunization rate. Also the two child mortality rates are not in percentages. They are measured as absolute deaths per 1000 live born. Finally, democracy is measured on a twenty-one point scale, between -0.1 and +0.1.

We describe the measurement of each variable in detail. The Press Freedom Index is measured negatively. PF of 0 means full press freedom and 1 means no press freedom at all. The other variables are measured positively. So, for example, a Civic Activism score of 0 means no civic activism and 1 a very high level of civic activism. Similarly for Voice and Accountability.

GDP per capita is measured in dollars, and varies from a few hundred per year to several thousand dollars per year. In line with econometric practice, we have normalized the income data by taking the logarithm: lnGDP pc. The share of health expenditures and education expenditures are percentages of GDP. Rule of Law (RL) is measured in rank percentiles between 0 and 1, with 1 the highest level of rule of law. GE is measured between 0 and with 1 being the highest score.

Infant mortality rate (IMR) is measured as deaths of children under one year per 1,000 live births, and

then turned into ratios between 0 and 1. Under five mortality (U5MR) is similarly measured as deaths of children under five year per 1,000 live births. The two immunization rates (ID and IM) are percentages of children between 12 and 23 months old. The pupil/teacher variables (PTP and PTS) are measured as the ratio of pupils per teacher. The primary school completion rate (PCR) is measured as the percentage of children of the relevant age group who have completed primary school. The primary gross enrolment rate (PGER) is measured as the percentage of children in the relevant age group enrolled in primary school.

Table 1 Descriptive statistics					
Variable	Obs	Mean	Std.Dev.	Min	Max
Civic Activism Index (CA)	606	0,46	0,07	0,13	0,77
Government Effectiveness (GE)	518	0,35	0,21	0,00	0,84
Press Freedom Index (PF)	631	0,55	0,23	0,08	1,00
Rule of Law Index (RL)	533	0,35	0,21	0,00	0,86
Voice and Accountability Index (VA)	533	0,37	0,23	0,00	0,90
Log of GDP pc (GDP)	638	7,05	1,11	4,17	9,67
Public Spending in Education (EXPE)	375	0,04	0,02	0,01	0,15
Health Expenditure (EXPH)	516	0,03	0,02	0,00	0,19
Infant Mortality Rate	665	50.95	33.62	4.7	165.2
Under-5 Mortality Rate	665	74.49	58.75	6	326.1
Immunization DPT	654	0,79	0,20	0,00	0,99
Immunization Measles	643	0,78	0,20	0,00	0,99
Pupil-teacher Ratio, primary	514	0,32	0,14	0,08	0,90
Pupil-teacher Ratio, secondary	291	0,21	0,08	0,07	0,54
School Enrolment, primary	527	0,98	0,22	0,21	1,61
Primary Completion Rate	438	0,55	0,15	0,20	0,83
Democracy	569	0,01	0,06	-0.1	0.10

All data is summarized in table 1. The columns show the number of observations, the mean of each value, standard deviation, and the minimum and maximum values for each variable.

3.7 Methods

The methods used are described below for the two steps of the analysis. But before that, we did a causality check between press freedom and civic activism. We tested the assumption that the two selected measures for independent media are complementary rather than substitutes. We tested this in two ways. We did a bivariate regression analysis between the variables PF and CA, with a constant. The next step was a causality test, to find out whether it is likely that a change in one of these variables may be related to a change in the other one in the previous period. We used a Granger causality test, which looks for an association in changes of two variables over time: do changes in the one variable precede changes in the other variable? This is a time-consistent causality test.

Next, we did multivariate panel regression analysis to address our research question, using the two equations formulated above. Multivariate means that we included all relevant variables at the same time. Panel analysis means that we combined both countries and years together in a single, combined data set. In other words, we combine cross-country data with time-series data for the five available years. The reason for doing so is that a panel increases the number of observations, which leads to more reliable results. For example, we include for Bolivia five data points: Bolivia 1990, Bolivia 1995, Bolivia 2000, Bolivia 2005, and Bolivia 2010. If for a country data is missing for two years, the panel data still includes the country for the remaining three years of data. Moreover, panel estimations allow for two types of controls for endogeneity, the statistical term for reverse causality. Of course, we do not want that our results can equally be interpreted as governance accountability explaining independent media.

The two ways in which we have controlled for endogeneity are as follows. First, we have used country fixed effects estimations. This means that we control for time-independent effects per country. We are not interested in differences between countries as such but in the variation across the whole dataset, of country-year combinations. Second, we have done the same regression analysis with a one period time-lag for the explanatory variables, PF and CA. This means that we have used PF and CA data of the previous five-year period to explain the variation in the service delivery outcome variables. If the results are similar to those of the regressions without time-lags, it is likely that the direction of causality is from the production and use of independent media to government accountability and not the other way around, because of the time-consistency built-in in a time-lag estimation.

Finally, we like to draw the attention to the weaknesses of our analysis. First, the service delivery variables, as outcome variables, not only refer to government efforts but also include efforts of the private sector and communities to deliver better health and educational outcomes. Second, for various variables, there is missing data for individual country-year combinations. We have been able to address this partially by using data for the years close to the selected years. This is justifiable, because also the CA index is constructed with data for the two years below and above the selected year. For example, where data was missing for a variable for 2005, but available for one of the years 2003, 3004, 2006, or 2007, we included the observations for the closest available year of these four alternative years for the 2005 data. Third, although we did causality checks between PF and CA and for PF and CA vis-a-vis the service delivery variables, the results can never provide a hundred per cent reliability of the direction of causality. But, compared to the empirical literature discussed above, our estimations address the endogeneity issue more extensively, in three complementary ways. We did this through a Granger-causality test for the independent media variables, we used a fixed effects estimation, and we did a robustness check with time-lagged variables for independent media.

4. 4. Results

4.1 The relationship between the production and use of independent media

The result of the bi-variate regression analysis between press freedom (PF) and civic activism (CA) shows that there is no statistically significant relationship between the two variables, in neither direction. This result is sufficient to support our assumption, that press freedom and civic activism are complementary variables, rather than causally related or substitutes. The simple correlation between the two variables is quite small (-0.32): they clearly measure different things. The sign is negative, because, remember, press freedom is measured negatively: the higher the score, the less press freedom in a country. So, together they seem an adequate and relatively complete measure for the production and use of independent media.

Although not necessary anymore, we did an additional causality test, using the Granger causality test. Here we found that CA seems to weakly causally influence PF, in a statistically significant way, but not the other way around. Perhaps that a more active civil society more strongly demands press freedom as compared to a more passive civil society. But we should not rely too much on this result, because the effect is small and the bi-variate regression analysis showed that the relationship between the two variables is not only weak but also statistically insignificant.

Our conclusion from this preliminary step in the quantitative analysis is that our assumption that press freedom and civic activism are complementary measures of independent media is not contradicted by the statistical results. We have therefore used in the rest of the study not just one of these variables but both PF and CA as explanatory variables, next to each other: PF as an index for the production of independent media and CA as an index for the use of independent media.

We also checked for the correlations between Voice and Accountability on the one hand and our two independent media variables. As expected, the correlation is relatively high between VA and PF (-0.62), because PF is included in VA. And it is quite low between VA and CA (0.32). Moreover, the

Granger Causality test has shown no causal relationship between VA on the one hand and PF and CA on the other hand. But since part of VA is a substitute for PF, we cannot use these variables together, because then we would estimate the same thing twice. We therefore have decided not to use VA anymore in the remainder of the analysis.

4.2 Correlations: scatterplots

Before going into the multivariate regressions, let us start with the more intuitive statistical relationships with the help of scatterplots. The diagrams below show every time the statistical relationship between two variables. We have only included those plots, which reveal clear patterns between variables. The first series of diagrams show correlations between the two independent media variables on the one hand and social accountability mechanisms on the other hand. The second series of diagrams shows correlations between the two independent media variables on the one hand and social accountability delivery on the other hand.

<u>Series 1: Independent media and social accountability mechanisms</u>
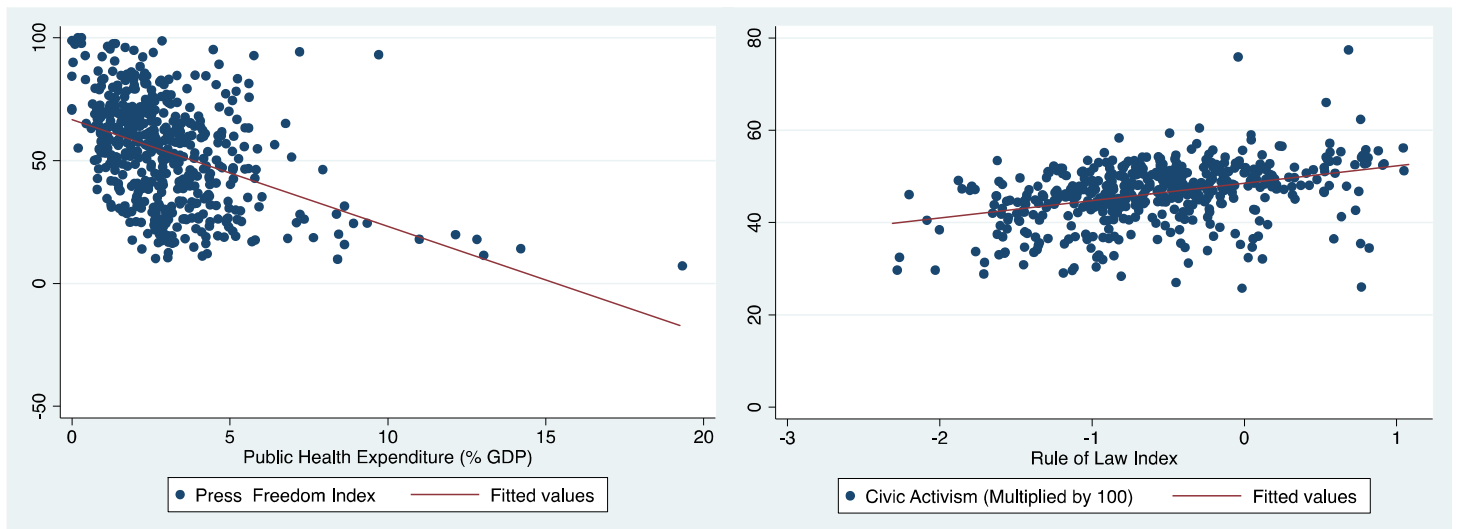
<u>Series 2: Independent media and social accountability delivery</u>
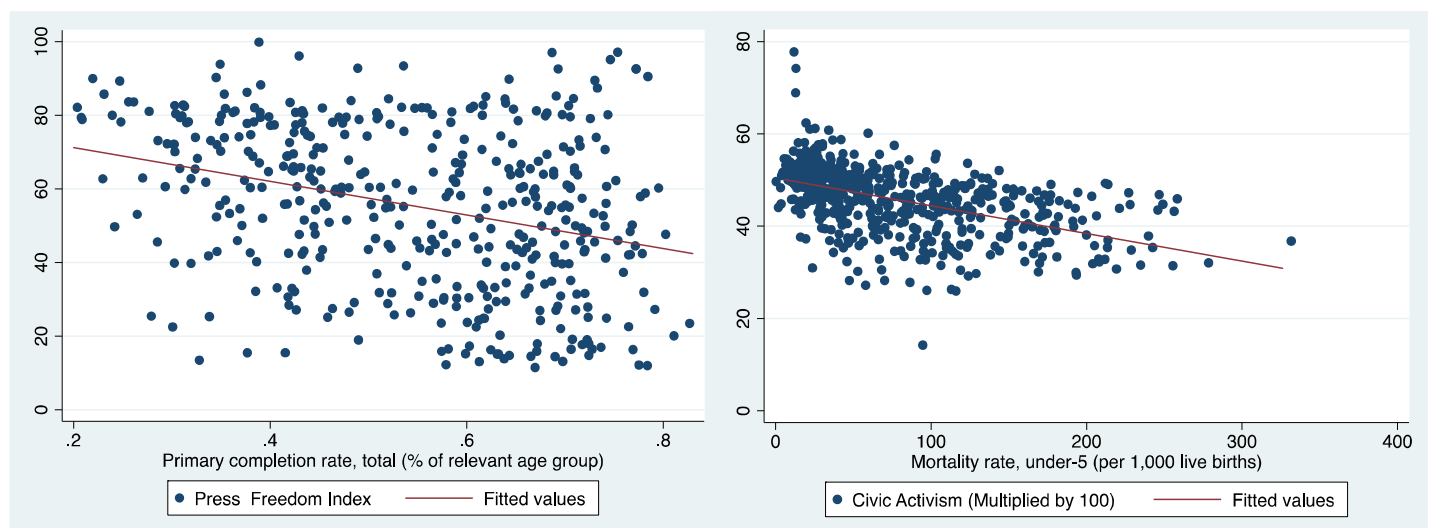
The scatter plots and the regression lines, expressing the best-fit relationship between the two variables, all show clear relationships in the expected direction. The higher the press freedom score (which means that there is very low press freedom), the lower health expenditures as share of GDP. The more civic activism, the stronger the rule of law by government. The higher the press freedom score, the more kids finish primary school. And, finally, the more civic activism, the less children under five die.

But bi-variate correlations are a very crude method to measure statistical relationships. Because they do not control for the influence of other variables, which may be equally important or even more influential. That is why we need to do multivariate regression analysis. This allows for estimating the simultaneous influence of all relevant factors. Which factors are most relevant? Which factors become irrelevant or even have a reverse influence when other factors are taken into account? And what is their probability of being estimated correctly (statistical significance)?

4.3 Direct effects: independent media and social accountability mechanisms

Table 2 shows the results of the estimation of the first equation: the effects of the production and use of independent media on social accountability mechanisms. The first column shows the two independent media variables PF (Press Freedom) and CA (Civic Activism), with in addition Voice and Accountability (VA), just for comparison. The fourth variable is a constant term. N refers to the sample size: the number of observations included in the estimation (which depends on data availability for each variable). Each model estimates the parameters of the relationships of independent media with a social accountability mechanism. The four mechanisms and their respective models are:

(1) public expenditures on health care (EXPH)
(2) public expenditures on education (EXPE)
(3) rule of law (RL)
(4) government effectiveness (GE)

The four models show the parameter sizes, their sign (positive or negative), and the level of statistical significance (denoted by *) of the parameter estimations, for each social accountability mechanism[10]. The absence of a * after a parameter value means that there is a probability larger than 10 per cent that the parameter value estimated is wrong. We will therefore ignore those results, and only explain the parameters that are statistically significant.

All the models are quite weak, as shown by the low values of R square. These range from 0.01 to 0.20, implying that the three explanatory variables together explain only 1% (in model 2) to 20% (in model 3) of the variation in the dependent variables. This is a limited model fit, and it implies that the social accountability mechanisms are only to a limited extent influenced by independent media.

Table 2 Regression results of three independent media on social accountability mechanisms				
	(1)	(2)	(3)	(4)
	EXPH	EXPE	RL	GE
PF	-0.006	0.010	-0.056	-0.029
CA	0.036***	0.006	-0.173**	-0.092
VA	0.004	0.016	0.411***	0.380***
C*	0.013	0.030**	0.298***	0.273***

[10] The more *, the higher the statistical significance: *** means that the probability of being wrong is less than 1%; ** means that the probability of being wrong is less than 5%; * means that the probability of being wrong is less than 10%.

N	471	317	478	472
R-sq	0.04	0.01	0.20	0.13
Note: p-values in parentheses: * p<0.10, ** p<0.05, *** p<0.01				

The statistically significant results of table 2 can be interpreted as follows. Civic Activism shows a positive correlation with health expenditures but a negative correlation with Rule of Law. The first is expected, the second not. Perhaps an active civil society may upset the rule of law?

Voice and Accountability shows expected positive correlations with Rule of Law and Government Effectiveness. But, as indicated above, VA includes PF, which leads to double measurement. Table 3 shows the same results but now dropping VA. The results presented in table 3 show that without the overlapping variable of VA, the results for PF and CA are in general a bit stronger and more often statistically significant, but the model fit remains low (between 0% and 7%).

Table 3 Regression results of two independent media on social accountability mechanisms				
	(1)	(2)	(3)	(4)
	EXPH	EXPE	RL	GE
PF	-0.008	0.004	-0.226***	-0.190***
CA	0.037***	0.013	-0.145	-0.044
C*	0.016***	0.035***	0.526***	0.474***
N	471	353	478	472
R-sq	0.04	0.00	0.07	0.04
Note: p-values in parentheses: * p<0.10, ** p<0.05 *** p<0.01				

The results of table 3 are as follows:
- Press freedom (PF) is correlated with more rule of law (RL) and more government effectiveness (GE)
- 10 percentage point less PF is associated with 2 percentage point (0.023) reduction of RL
- 10 percentage point less PF is associated with 2 percentage point (0.019) reduction in GE
- Civic activism (CA) is correlated with increased health expenditures
- 10 percentage point improvement in CA is associated with 0.4 percentage point (0.004) increase in health expenditures, for example, from 5,6% of GDP to 6,0% of GDP

We did a causality test relying on time-consistency of variation. For this we use the time-lagged values (one five-year period) for the explanatory variables (PF and CA). Table 4 shows the results. The model fit, measured with R square, is more or less the same as before, between 1% and 8%.

Table 4 Time-lag estimations of social accountability mechanisms				
	(1)	(2)	(3)	(4)
	EXPH	EXPE	RL	GE
PF	-0.002	-0.006	-0.054*	-0.058*
CA	0.000***	0.000	-0.001	-0.002
C*	0.011	0.039***	0.430***	0.463***
N	450	307	457	453
R-sq	0.03	0.01	0.01	0.01
Note: p-values in parentheses: * p<0.05, ** p<0.01, *** p<0.001				

When we compare the time-lagged estimations (table 4) with the non-time-lagged estimations (table 3), we see that in 7 out of 8 cases the sign of the parameter is the same. But we see lower parameter sizes and weaker statistical significance. CA of five years back has clearly no effect at all: its effects

are probably more immediate, putting pressure on governments to act *now*. The time-lagged results suggests that there may not be a strong causality from the production and use of independent media variables to the social accountability mechanisms, in any case not of civic activism. This was, of course, already clear from the low model fit scores (measured as R-squared) in table 3.

The overall conclusion from the estimations of the direct effects of the production and use of independent media is that these correlations and their likely causality are rather weak. But it is clear that press freedom and civic activism can be considered as complementary variables, measuring, respectively, the production of independent media and the use that civil society makes of it. The Worldwide Governance variable of voice and accountability has overlaps with press freedom and therefore shows artificially high results, which need to be dropped.

4.4 Indirect effects (1): independent media and service delivery

Table 5 shows the results of the estimations of the second equation: the results of the effects of independent media and other relevant factors on social accountability delivery[11]. It estimates four models with health service delivery outcomes. The estimations include the two variables for independent media (PF and CA), the control variable for level of economic development (GDP), and three social accountability mechanisms (EXPH, RL, GE). The model fit is much better than was the case for the intermediary variables. R square ranges now from 23% to 55% explanation of the variation in the dependent variables.

Table 5 Health service delivery outcomes of social accountability				
	(1)	(2)	(3)	(4)
	Infant Mortality Rate (1000 live births)	Under-5 Mortality Rate (1000 live births)	Immunization DPT	Immunization Measles
PF	-11.03	-22.36	-0.042	-0.026
CA	-88.98***	-171.4***	0.614***	0.411***
GDP	-12.28***	-171.4***	0.067***	0.080***
RL	-14.94*	-30.05*	-0.021	-0.031
EXPH	-203.3***	-400.7***	1.300*	0.994
GE	9.37	11.96	-0.017	0.058
C*	190.1***	305.2***	0.042	0.019
N	457	457	457	457
R-sq	0.55	0.47	0.23	0.24
Note: p-values in parentheses: * p<0.10, ** p<0.05, *** p<0.01				

The results of table 5 can be interpreted as follows. First, we see that one of the two independent media variables, PF, has no statistically significant association at all with any of the four health service delivery outcomes (and unexpected signs). To the contrary, CA has strong correlations and the expected signs, with every health outcome variable: the parameter values are large and the statistical significance is high (***). This suggests that for health service delivery, not press freedom but civic activism is the key independent media variable.

Second, we see that of the other variables, the control variables, GE has no statistically significant association in any model. Why not? There may be two reasons. A first reason may be, as we have seen in section 2, that government effectiveness is a rather neoliberal measure, focusing on

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[11] Although our hypothesis did not include it, we also run regressions with an additional variable for governance, namely the ISD index for Interpersonal Safety and Trust. And we also used an additional control variable, namely the Gender Equality Index from ISD. We have not included these results, due to a lack of theoretical support. Both showed some statistically significant results, but with unexpected signs, which we cannot explain.

bureaucracy, outputs rather than outcomes, and constraints for businesses. This is not very likely to help improve health care service delivery. A second reason may be that rule of law is a better indicator of the effectiveness of governments to ensure adequate service delivery. The results indeed indicate that RL is associated with less children dying, although not with immunization.

Third, the results also show that money matters. The level of GDP per capita has the expected associations, which are statistically significant in all models, but stronger for child death rates than for immunizations. Richer countries have lower child mortality rates. The share of government expenditures on health care matters in three of the four models, with high parameter values for child mortality. So, more public spending on health care seems to improve health care outcomes.

As before, we have tested for causality using fixed effects estimations and adding a time-lag estimation. The result of the time-lag estimations can be found in the annex, table A1. Comparison with table 5 shows that the model fit is more or less the same and also that the parameter signs and values are quite similar. Hence, we have no indication of reversed causality. It is quite likely that causality runs from independent media, income and expenditures, and rule of law, to health care service delivery and not the other way around.

This leads to the following table in which we summarize the statistically significant parameters as effects of the independent variables on the dependent variables. The numbers indicate the percentage point change in the health care delivery outcome (which ranges from 1 to 100 per cent), from a ten percentage point change in the associated independent variable. For GDP we use a 1% GDP per capita growth rate. The results will be explained below.

Table 6 Summary results of a 0.10 increase in independent variables				
Model:	0.10 more CA	1% more GDP	0.10 more RL	0.10 more EXPH
(1)Infant mortality	- 8.9	- 12.3	- 1.5	- 20.3
(2)Under-5 mortality	- 17.1	- 171	- 3.0	- 40.1
(3) Immunization DTP	+ 0.06	+ 0.07		+ 0.13
(4)Immunization measles	+ 0.04	+ 0.08		

The summary results of table 6 indicate that the biggest effect on health outcomes comes from an increase in the health budget. The effect of economic growth is also large: the table shows the effect of a one per cent increase in GDP per capita, but annual per capita economic growth was around 3% for developing countries. Finally, the effect of civic activism is not small either in particular for the two child mortality outcomes (8.9 and 17.1 lower child mortality).

The last set of results from equation two concern the service delivery outcome variables for education. Table 7 shows the regression results. The structure of the models is the same as in table 5, the health service delivery models. The R squared shows a varied model fit, from a moderate 18% to a high of 80% explanation of the variation in the dependent variables.

Table 7 Education service delivery outcomes of social accountability				
	(1)	(2)	(3)	(4)
Variables	Primary Completion Rate	Pupil-teacher Ratio, primary	Pupil-teacher Ratio, secondary	Primary Gross Enrolment Rate
PF	0.049**	0.017	-0.023	-0.079
CA	0.188***	0.002	0.462***	0.551**
GDP	0.054***	-0.039***	-0.007	0.036**
RL	0.029	0.037	0.052	-0.105
EXPE	0.210	-0.129	0.385	2.523***
GE	0.009	0.124**	0.092*	0.210*

_cons	0.032	0.530***	-0.026	0.390***
N	239	277	168	278
R-sq	0.80	0.23	0.23	0.18
Note: p-values in parentheses: * p<0.10, ** p<0.05, *** p<0.01				

From table 7, we find the following results. First, we find that of the two independent media variables, again CA gives more statistically significant results than PF, which now has one result with statistical significance. But this result of PF has an unexpected sign: the primary completion rate increases with less press freedom. We cannot explain this result. CA is positively correlated with the primary completion rate, and almost four times stronger than PF. In addition, more CA is positively associated with a higher primary school enrolment rate. But the sign of the parameter of CA for pupil-teacher ratio in secondary education is unexpected. We have no explanation for this, except the possibility that classes may get fuller with more civic-driven change. More civic engagement may induce parents more to send their children to school, even without an expansion of school-capacity.

Second, rule of law shows no statistically significant associations. But government effectiveness does. This is contrary to the results for the health models. Now, GE is positively associated with primary school enrolment, but has unexpected signs for the pupil-teacher ratio. Hence, the results for government effectiveness are mixed and cannot be explained easily. Again, this may have to do with its neoliberal measurement.

Third, money matters not only for health outcomes but also for educational outcomes. The signs are all as expected. GDP maters in three of the four models, whereas educational expenditures matters in one model.

As before, we have tested for causality using fixed effects estimations and adding a time-lag estimation. The result of the time-lag estimations can be found in the annex, table A2. Comparison with table 7 shows that the model fit is more or less the same and also that the parameter signs and values are quite similar. Hence, we have no indication of reversed causality. It is quite likely that causality runs from independent media, income and expenditures, and government effectiveness, to education service delivery and not the other way around.

This leads to Table 8 in which we summarize the statistically significant parameters as effects of the independent variables on the dependent variables. As before, the numbers indicate the percentage point change in the education delivery outcome (which ranges from 1 to 100 per cent), from a ten percentage point change in the associated independent variable. For GDP we use again a 1% GDP per capita growth rate. The results will be explained below.

Table 8 Summary results of a 0.10 increase in independent variables					
Model:	0.10 more PF	0.10 more CA	1% more GDP	0.10 more EXPE	0.10 more GE
(1) Primary Completion rate	+ 0.01	+ 0.02	+ 0.05		
(2) Pupil-Teacher ratio Primary			- 0.04		0.01
(3) Pupil-Teacher ratio Secondary		+ 0.05			+ 0.01
(4) Primary Gross Enrolment Rate		+ 0.06	+ 0.04	+ 0.25	+ 0.02

The summary table indicates that the biggest size impacts on educational outcomes are from money variables: public expenditures on health and economic growth. But they impact only on some education outcome variables, and not on others. The effect of government effectiveness is very small. Our variables of concern in this study, for independent media also show relatively small effects, in particular for press freedom. Civic activism helps to modestly increase the primary completion rate (2 percentage

points) and the primary enrolment rate (6 percentage points). But the sign for the pupil-teacher ratio in secondary education is unexpected - we cannot explain this.

4.5 Indirect effects (2): independent media and democracy

The third equation estimates the effect of independent media on political accountability. It uses the extent of democracy as the measure of political accountability. Table 9 shows the results. The model fit is small to moderate, with an R squared of 0.15. The table gives in the first column the regular estimations and in the second column the time-lagged estimations for PF and CA of a 5-year period earlier. The signs remain the same between both models and the sizes of the variables are stronger in the second model, except for Government Effectiveness.

Table 9 Democracy outcome of political accountability		
	(1)	(2)
Variables	Democracy	Democracy time lags for PF and CA
PF	-0.089***	-0.049
CA	0.047	0.187***
GDP	0.008**	0.016***
RL	0.068**	0.061
GE	-0.054**	-0.029
_cons	-0.012	-0.017
N	435	421
R-sq	0.148	0.148
Note: p-values in parentheses: * p<0.10, ** p<0.05, *** p<0.01		

The interpretation of the results will focus on the first column of results, without time-lags. They show an interesting contrast with the results for social accountability. Now, for political accountability, not CA but PF is the statistically significant independent media variable. A ten percent improvement in press freedom correlates with a strengthening of democracy of 0.009 points on the democracy scale, which is an improvement in the democracy score of 5%. Furthermore, a one percent GDP growth is associated with 0.008 points on the democracy scale, quite similar to the effect of 10% more press freedom. With the average economic growth rate of 3%, the impact of GDP growth on democracy is two and a half times bigger than that of press freedom. Rule of law has a slightly lower effect than press freedom: 10% more rule of law is associated with 4% more democracy. Finally, government effectiveness has a negative sign, which we cannot explain, and a 3% parameter size. Table 10 summarizes the effects.

Table 10 Summary results of a 0.10 increase in independent variables					
Model:	0.10 more PF	0.10 more CA	1% more GDP	0.10 more RL	0.10 more GE
Democracy	+ 0.05		+0.04	+0.04	-0.03

Table 10 shows that the biggest effect of a ten percent increase in variables is from press freedom. But when economic growth is at its average of 3%, we need to multiply the GDP effect by 3, which gives 0.12. This effect, hence, is bigger than the effect of press freedom. Nevertheless, press freedom does appear to have a sizeable positive impact on the democracy score. In other words, press freedom, and not civic activism, appears to be instrumental for democracy.

5. Conclusions

The analysis of the relationship between independent media on the one hand and government accountability in service delivery on the other hand reveals several interesting points:

- Press freedom and civic activism seem adequate complementary measures for the production and use of independent media

- There is no substantive difference between the three available measures for press freedom, but the Freedom House measure has the most data

- Of the two available measures for voice, Civic Activism (Indices of Social Development) is more adequate as a measure of the use of media than Voice and Accountability (Worldwide Governance Indicators) for the analysis of independent media and government accountability, because the last one includes press freedom and has a rather neoliberal character

- Although some scatterplots suggest strong relatedness, the panel data multivariate estimations show that independent media has only limited effects on social accountability mechanisms such as rule of law, government effectiveness, and social expenditures, and only through civic activism, not press freedom

- Press freedom has almost no effect on social accountability service delivery. Civic activism does have substantive effects, both in health and in education

- Civic activism has a small and no statistically significant effect on political accountability, but press freedom does have a clear positive effect.

- In comparison to economic growth and social expenditures, independent media has smaller effects on service delivery, but a slightly bigger effect than rule of law and government effectiveness

In conclusion, the *production* of independent media (press freedom) has almost no effect on social accountability mechanisms and service delivery, whereas the *use* of independent media (civic activism) has clear effects on both. For political accountability, the results are the opposite. Press freedom, hence, the *production* of independent media, has a clear positive effect on political accountability, whereas civic activism, the *use* of independent media, does not. These results indicate that both press freedom and civic activism matter for government accountability. Press freedom seems important for democracy and civic activism seems instrumental for service delivery.

ANNEX

Table A1 Time-lag model of health service delivery outcomes of social accountability				
	(1)	(2)	(3)	(4)
	Infant Mortality Rate (1000 live births)	Under-5 Mortality Rate (1000 live births)	Immunization DPT	Immunization Measles
PF_{t-1}	10.39***	22.63***	-0.072*	-0.068*
CA_{t-1}	-36.75***	-71.15***	0.342**	0.239*
GDP	-13.66***	-20.48***	0.069***	0.080***
RL	-7.468	-14.84	0.019	-0.016
EXPH	-184.4***	-354.6***	0.007	0.472
GE	11.98	16.34	-0.051	0.015
_cons	159.8***	245.5***	0.179*	0.150*
N	440	440	440	440
R-sq	0.50	0.41	0.20	0.22
Note: p-values in parentheses: * p<0.10, ** p<0.05, *** p<0.01				

Table A2 Time-lag model of education service delivery outcomes of social accountability				
	(1)	(2)	(3)	(4)
	Primary Completion Rate	Pupil-teacher Ratio, primary	Pupil-teacher Ratio, secondary	Primary Gross Enrolment Rate
PF_{t-1}	0.007	0.031	-0.022	-0.016
CA_{t-1}	0.044	-0.130	0.181**	0.986***
GDP	0.056***	-0.035***	-0.009	0.017
RL	-0.008	0.022	0.058	-0.095
EXPE	0.196	-0.212	0.574*	2.672***
GE	0.009	0.129***	0.094*	0.271**
_cons	0.124***	0.569***	0.118*	0.261*
N	241	272	166	271
R-sq	0.79	0.27	0.13	0.26
Note: p-values in parentheses: * p<0.10, ** p<0.05, *** p<0.01				

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