

DECENTRALISATION AND CORRUPTION: EVIDENCE FROM DRINKING WATER SECTOR

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SUMMARY

This article presents empirical findings regarding the relationship between decentralisation of provision of water supply and corruption in provision of services. The current policy advice from the international agencies of aiming for decentralisation as an end in itself is questioned. The conventional wisdom that decentralisation brings management closer to the service recipients and is therefore likely to reduce corruption is also disputed. Drawing on a large database from two large Indian states of Madhya Pradesh and Chhattisgarh, the interaction between various actors is analysed. We find that the level of corruption in water supply agencies run by local governments is higher than that in the agencies run by the regional government. Copyright © 2008 John Wiley & Sons, Ltd.

KEY WORDS—decentralisation; corruption; water supply; drinking water

INTRODUCTION

Most developing countries do not fare well in the Transparency International's Corruption Perception Index. Comparison of the data compiled for 2004, 2005 and 2006 shows that the developing countries are not closing the gap with the developed countries (Transparency International, 2005, 2006, 2007). Considering that a lot of public investment has gone into the water sector in these countries, especially in India, it is not surprising that water sector too is beset by corruption.

The term corruption in this article refers to misconduct involving the use of public office for private gain (Transparency International, 2004). According to the Swedish Water House, the Stockholm Institute and the Water Integrity Network, the water sector is characterised by a number of factors that increase the likelihood of corruption (Stålgren, 2006). These include:

- Large-scale construction and monopolies.
- High level of public sector involvement.
- Technical complexity, which decreases public transparency and leads to an asymmetry of information.
- High demand for water services, which reinforces the power position of suppliers and encourages bribery.
- A high frequency of inter-relations between suppliers and consumers, which fosters an atmosphere of discretionary action.

These factors affect the rich and poor countries alike and the rich countries are not free of corruption in the water sector. In France, Lyonnaise des Eaux was prosecuted for paying bribe to the Mayor of Grenoble to get water contract while two Generale des Eaux executives admitted making illegal payments to elected officials on the island of La Reunion in return for a water deal. Consultants employed by five multinational companies, Siemens, Pirelli, BICC, Marubeni and Tomen, were convicted of paying bribes for utilities contracts in Singapore. In the case of

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developing countries, corruption is not confined to high-level dealings, it is pervasive and the consumers are caught in the web of corruption directly.

Recent studies have found correlation between corruption in the water sector with corruption perception index (positive), progress in water reforms (negative) and level of service (negative); but the results are fragile (Kenny, 2006).

While the agreement on ethical values associated with outcomes is considered as one of the factors on which the improved water supplies depend (Berg, 2007), these values usually refer to sharing of water. Corruption in water sector is one of the least confronted challenges at present.

Though emerging 'good enough governance' stream in governance literature (Grindle, 2007) shows some tolerance for corruption, the international agencies have graduated from skirting the issue to describing corruption as 'a cancer that eats into social and economic fabric of development' (Bitarabeh, 2003). The prescription has always been the same: liberalise, globalise, privatise and decentralise (World Bank, 1997, 2007a). It has even been argued that decentralisation will create clean clusters and islands of integrity in corrupt surroundings (Elshorst and O'Leary, 2005).

TOWARDS DECENTRALISATION

The political rationale for decentralisation is the desire to move decision-making closer to the people. There is strong correlation between democracy and decentralisation but the direction of causality is difficult to establish. Often, like democracy and human rights, decentralisation is promoted as an end in itself. The economic rationale for decentralisation is based on gains in allocative efficiency as also production efficiency. The allocative efficiency argument is that the efficient level of output of a local public good (that for which the sum of residents' marginal benefits equal marginal cost) is likely to vary across jurisdictions as a result of both differences in preferences and cost differentials (Oates, 1999). Because individuals allocate themselves to their preferred local jurisdiction,¹ efficiency is likely to increase due to competition among sub national governments. The production and supply efficiency argument has an intuitive appeal. Because local governments are closer to the people, they have better information about preferences of the local population and are able to respond to the variations in demands for goods and services (Musgrave, 1959).²

The human rights groups seem to be adopting an ambivalent attitude in the matter. Like most non-government organisations (NGO's), they prefer decentralisation to the local level, but blame the state government for neglect whenever there is an outbreak of any water borne disease (MPHRC, 2007).

Literature surveys on decentralisation and corruption reveal that though a lot of work has been done on these two issues; there are very few studies on explicit linkages between the two themes (Kolstad and Fjeldstad, 2006). A 4-volume tome on politics of corruption (Williams and Theobald, 2000) has one volume devoted to corruption in the developing world; yet only one article dealing with corruption linked to decentralisation (Wade, 1982) is included.

Breton (1998) argues that the competition between governments brings about revelation of households' true demand functions for publicly provided goods and services and moulding of links between quality and quantity of public goods and tax-prices leading to reduction of kickbacks that the officials may demand. On the other hand, Banfield (1975) points out that due to fewer centralised forces to enforce honesty, decentralised political systems are likely to be more corruptible. Manor (1999) argues that though the number of corrupt transactions increases in a decentralised system, it does not mean that the money diverted through corruption also increases. Crook and Manor (1998) in their insightful study of decentralisation process in the 1987–1992 period in Côte d'Ivoire, Ghana, Karnataka (India) and Bangladesh suggest that there might be an initial increase in corruption following decentralisation which should reduce fairly quickly.

¹Usually referred to as the Tiebout (1956) approach. For a dissenting view on the concept of a mobile society and people 'voting with their feet', see Hanson and Hartman (1994).

²Those who have raised doubts (Prud'homme, 1995; Tanzi, 2000) are of the view that while the provision of infrastructure could be centralised, maintenance should be decentralised because the local governments have comparative advantages in terms of information and incentive. For a dissenting view on efficiency of operations and maintenance in decentralised systems, see (Asthana, 2003).

In the New Public Management (NPM) literature, there is an ongoing debate about decentralisation. Here, some caution is called for because decentralisation has different facets. NPM-style decentralisation usually refers to deconcentration, that is, redistribution of powers of decision making in favour of lower levels of administrative machinery or delegation to a semi-autonomous agency³; while this article concerns itself with devolution, that is, transfer of powers from the regional to local governments.

Empirical articles have looked at cross-country comparisons of perceived corruption and tried to relate it to fiscal federalism. For example, Huther and Shah (1998) find a negative correlation between decentralisation and corruption. However, they have examined unconditional correlation between fiscal decentralisation and corruption. It is well known that certain variables, like income, are highly correlated to quality of governance and that richer countries are more decentralised. Hence the problem of variable bias is extreme in their analysis. Fisman and Gatti (2002) using International Risk Assessment Guide's corruption index finds that fiscal decentralisation in government expenditure is consistently associated with lower levels of perceived corruption. Their results are statistically significant, not affected by outliers and robust to a wide range of specifications.

While most studies are based on indirect measurement of corruption by capturing perception of businessmen, expatriates or public at large, this study relies on experiential measures. While previous research is confined to comparisons between national and sub national (state or local) government, the present study extends the literature by comparing two tiers of sub national governments.

THE MODEL

We seek to compare the level of corruption between the utilities run by local governments defined as decentralised agencies and those run by state (regional) governments defined as centralised. We test the hypothesis that the level of corruption is higher in case of decentralised agencies.

The principal actors in the act of corruption in the water supply sector are the customers, water supply staff, the contractors and the politicians. The contractors could deal with each other to form a cartel, but this will be possible only with the collusion of water service professionals and the politicians. This study as also others (e.g. Davis, 2004) indicates that cartelisation does exist but is not the dominant form of corruption. A cartel can be broken up by an outside contractor as also by the Government by plugging the loopholes in the Schedule of Rates. Contractors prefer to beat the system through tendering irregularities and passing on substandard work. On the one hand, corruption increases the bid price due to kickbacks; on the other it could reduce the same, as the contractors know that they can get away with substandard work. If S is the schedule of rates including contractor's profit, in a corruption free competitive environment, the bids should be clustered around S . If the bids are too high, there will be re-tendering. If a contractor has to pay a bribe B_1 to secure contract through tendering process, saves an amount A through substandard work of which she passes on B_2 as bribe to get away with it and to grease her way through passing of bills; in a competitive environment, the bids will cluster around $S + B_1 - A + B_2$. If a contractor tries to minimise B_1 , she is unlikely to get a contract and if she minimises B_2 , she may face harassment at the time of inspections and her bills may be unduly delayed. If A , quantum of the savings through substandard work is fairly large, corruption can flourish in a competitive environment. Consumers do not have direct dealings with the contractors but they must contend with the other actors. The interactions between the principal actors are given in Table 1.

Levels of corruption are measured in terms of seven variables—proportion of people who paid a bribe during the last one year for matters relating to water bills, repairs and new connections, the amount paid in each of these three circumstances and the proportion of contractors who paid a bribe for work relating to the utility. A simple χ^2 Test was used to indicate whether the differences in levels of corruption are statistically significant.

To get more accurate results, we need to control other variables that may have influenced the level of corruption. These variables could be of two types—consumer characteristics (education and income) and the utility characteristics (whether it is run by local or regional government and how old and big the water supply scheme is).

³For an overview, see Polidano (1999). Davis (2004) and McCourt (2005) give examples from South Asia where re-centralisation was resorted to reduce corruption. For an examination of potential for rent-seeking behaviour in NPM style semi-autonomous agencies, see Caulfield (2002).

Table 1. Rent seeking in water sector

	Customers	Water supply staff	Contractors
Water supply staff	Speed money for new connections and repairs to existing connections. Falsifying records for lower bills and concealment of illegal connections		
Contractors		Contract kickbacks and concealment of sub-standard work	Collusion in contract bids
Politicians	Money or promise of support for prevention of disconnection		Tendering kickbacks

In case of contractors, the relevant characteristic is whether the contractor is big or small, while the three utility characteristics will remain the same. Thus the dependent variables are proportions of the bribe payers under different circumstances and amounts of bribe. The independent variables are Education (average years of education of the head of the household), income (average annual income of the households in thousand US\$), size of contractor (log of annual turnover in thousand US\$), age of utility (in years), size of utility (log of total water supply by the utility per day⁴) and decentralisation (a dummy variable with a value of 1 for utilities run by local governments and 0 for utilities run by regional governments).

We assume that the seven dependent variables are continuous and therefore a simple linear multivariate regression will give the coefficients and their level of significance. We would expect a positive sign to the coefficient of the decentralisation variable. It is not possible to make predict signs of other variables *ex ante*.

Viewed from the point of view of the individuals, four of these variables can also be modelled as limited dependent variables (pay bribe = 1; do not pay = 0) because disaggregated household and contractor data are available. The conditional logit model has four cases of bribery, three cases in respect of consumers relating to bills, repairs and new connections and one in respect of contractors as dichotomous dependent variables and household/contractor characteristics and utility characteristics as two sets of independent variables. However, the results of logistic regression can be used only to legitimate the results as the coefficients obtained cannot quantify the predicted effect of change in independent variable on dependent variable.

DATA AND METHODOLOGY

The area of study covers the rural and semi-urban areas of two large Indian states, Madhya Pradesh and Chhattisgarh, which cover the whole of central India. These states together cover an area of 440,000 km² and a population of 76 million. Per capita income (US\$ 422; PPP\$ 2100) is lower than the Indian average (US\$ 620; PPP\$ 3100) and South Asian average (US\$ 590; PPP\$ 2830). Eighty-six per cent of the population is below the international poverty line of two dollars a day, compared to 87% for India and 86% for South Asia. Forty-four per cent of the population of these states is below one dollar a day, compared to 35.3% for India and 53.2% for South Asia. As per 2001 census, the literacy (64%) was only slightly lower than that of India as a whole (65%) and about the same as that of South Asia. If we leave out some small outlier states of India and metropolitan cities with high levels of human development, the demographic and socio-economic profile of the area of study is similar to the rest of South Asia (CMIE, 2007; World Bank, 2007b). In general, small villages and remote habitats are served by hand pumps whereas larger villages, usually with a compact population of 2000 are covered through piped water schemes. Towns of all sizes have piped water supply schemes.

⁴Whether the logarithm of total water supply by the utility will be a better explanatory variable than the total water supply was determined on tests proposed by Bera and Jarque (1982) and MacKinnon *et al.* (1983), often called MWD test. Similar tests determined that in respect of the contractors the logarithm of the annual turnover will be the appropriate explanatory variable.

Table 2. Samples sizes

Sample	Total	Decentralised	Centralised
Water utilities	200	149	51
Households	6000	4470	1530
Repairs	1620	1221	399
New connections	593	439	154
Contractors	508	398	110

Unlike most countries of Sub-Saharan Africa, India's water programme is not aid dependent. Sixty per cent of the amount spent on new projects comes from the sub-national governments, 35% from the federal governments and only 5% from external agencies. Thus, policy making in water sector has always been autonomous. Federal government's consistent advice to the state governments has been to hand over water supply schemes to the local bodies. While the state governments have agreed with this suggestion in principle, the transfer is as yet incomplete. Presently, some of the schemes are operated by the state governments and others by local governments.

The data are obtained from a large survey which also covers issues other than corruption and decentralisation. For the stratified two stage random sampling, the first stage units are the water supply schemes in small towns and large villages and the second stage units are the households. The sampling frame was the 2001 census list of small towns and villages of population above 2000. After obtaining relevant information from the Public Health Engineering Departments of the two state governments, the villages which did not have a functioning piped water supply scheme were left out. From the pruned list, 200 small towns and villages were selected.

The investigators listed the houses in the same order as that of 2001 census. Where such listings were not available, listings were started from the northwestern corner of the habitation. From this list, households without water connection were deleted. Thereafter, from each scheme, 30 households were selected. Details of the sample are given in Table 2.

First, we focused our attention on the consumers: have they paid a bribe during the last one year in a matter relating to the water bill, be it for showing lower consumption or for avoiding being charged for higher than actual consumption. Next we considered two smaller samples—those consumers who needed repairs during the last 1-year and those that needed new connections.

All the contractors concerned with these schemes were interviewed. They were asked whether they have paid a bribe to any official or politician during the last one year for any purpose relating to the utility. Interviews were also conducted with 'key informants' viz. NGO staff, union representatives and elected officials. Data collection was achieved through semi-structured interviews based on pretested flexible questionnaire. While a questionnaire and an interview not specifically related to corruption could lose focus, the advantage was that since the questions relating to corruption came at the end, the investigator had a better chance of developing a rapport with the interviewee.

Measurement of perception of corruption could lead to over-reporting because persons not directly involved assume everyone in the system to be corrupt and single out honest individuals as exceptions. This study is based on the experiential measure of corruption rather than perception. It is often assumed that the experiential method leads to under-reporting because not just the persons engaged in corruption, even the sufferers of a corrupt system decline to report. This study is neither an exposé of corruption nor an attempt to measure corruption accurately, but a comparison of corruption between two systems. The respondents were not asked whether they would have preferred the water supply scheme to be transferred from the state (regional) government to the local government or vice versa or how much would they be willing to pay for better or additional services.⁵ The status of the utility was a given and the respondents were asked a host of questions relating to various matters including corruption. Thus, underreporting, if any, is unlikely to influence the results significantly.

⁵Biases common to the contingent valuation approach are the 'hypothetical bias' originating from the hypothetical nature of the question, the 'starting point bias' occurring when options are given to the respondent sequentially, the 'strategic bias' whereby the respondent tries to manipulate the results of the survey to her advantage and the 'compliance bias', whereby the respondent prefers to state what she assumes the interviewer will prefer to hear.

RESULTS AND ANALYSIS

Overall, as many as 51% respondents had paid bribes in case of decentralised agencies and 41% in case of centralised agencies. The difference is statistically significant. There is a caveat here. Many respondents said that it was not a bribe. They gave 'tips' so that the bills are not inflated. Since it was very difficult to segregate the two types of payment and often the purpose of the payment was to secure both objectives, a combined figure⁶ is reported in Table 3. The amounts involved in this type of transaction are very small and there were no complaints of extortion. The difference between the amount paid in case of the decentralised agencies and the centralised agencies is small but statistically significant.

Next sample was smaller, as we considered only those consumers who needed repairs during the last one year. Of these, 39% respondents had paid bribes in case of decentralised agencies and 41% in case of centralised agencies. There is a small but statistically significant difference in the proportion of transactions which involved speed money and the difference in the amounts involved in the transaction.

The third sample was still smaller, though large enough for meaningful testing—households that needed new connections. Only a small number paid bribes though the average amounts paid were larger. This is explained by the fact that the water supply agencies are under intense pressure to regularise illegal connections. In areas where the number of illegal connections is large, when the water supply workers are under pressure to meet targets, instead of the applicants requesting expeditious connection, often the consumers have to be persuaded to get legal connections. Even so, the difference between decentralised agencies and centralised agencies persists in a similar manner as in other forms of illegal payments.

The fourth sample related to the contractors. The amount of bribery in this case was not recorded as the respondents were reluctant to spell it out. The details of all comparisons are in Table 3. These comparisons do not support the view that decentralised systems of public service should have lower levels of corruption.

To control for other variables hypothesised to affect the level of corruption, we perform simple linear multivariate regression with the proportion of customers, in the area served by each utility who paid a bribe during the last one year as the dependent variable. The sample size is 200 (total number of utilities). The results are shown in the second column of Table 4 as Regression (1). Next we perform similar regressions in respect of variables at S. Nos. 2–7 in Table 3; these results are reported as regression nos. (2)–(7), respectively in Table 4.

Results of Regression (1) show that the coefficients of educational level have negative signs and those of income level have positive signs. The coefficient of the decentralisation variable has a positive sign. After controlling for

Table 3. Types of corruption

S. no.	Type of corruption	Decentralised	Centralised	Difference
1	Manipulating bills	0.51	0.41	0.10***
2	Average payment per transaction	US\$ 0.45	US\$ 0.46	-0.01**
3	Expediting repairs	0.39	0.30	0.09***
4	Average payment per transaction	US\$ 1.90	US\$ 1.92	-0.02**
5	Expediting new connections	0.15	0.10	0.05***
6	Average payment per transaction	US\$ 22.98	US\$ 23.50	-0.52**
7	Kickbacks from contractors	0.75	0.73	0.02**

**Significance at the 5% level.

***Significance at the 1% level.

⁶Some authors (e.g. Foellmi and Oechslin, 2007) distinguish between collusive and non-collusive corruption, that is, 'corruption with theft' and 'corruption without theft' in the terminology of Shleifer and Vishny (1993). We find that in our context, it is very difficult to make this distinction. The respondent customers mentioned that bribe lowers the bill through falsification (collusive); but non-payment may mean risk of inflated bill or disconnection on a flimsy ground (non-collusive). Similarly, payment of bribe would mean acceptance of sub-standard work (corruption with theft); but non-payment could mean delayed payment for satisfactory work (corruption without theft). Therefore, we have included all types of bribery as corruption and not distinguished between the types of corruption.

Table 4. Determinants of corruption

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Education	-0.02*	0.00	-0.02*	0.00	-0.03**	0.00	
Income	0.03	1.01**	0.03*	2.12**	0.04**	6.67**	
Size (contractor)							0.08*
Age (utility)	-0.01	0.00	-0.02	0.00	-0.03*	0.00	0.02*
Size (utility)	0.00	0.04	0.00	0.05	0.00	0.07	0.01*
Decentralisation	0.09***	0.01*	0.08***	0.02*	0.05**	0.49*	0.03*

*Significance at the 10% level.

**Significance at the 5% level.

***Significance at the 1% level.

other factors, proportion of people who paid bribe during the last one year in the matters relating to bills is nine percentage points higher in case of decentralised utilities as compared to the proportion in case of centralised utilities.⁷ This result is fairly close to that reported in Table 3 in which other factors were not controlled. In other six cases too the results in Table 4 are close to the results reported in Table 3.⁸

DISCUSSION AND CONCLUDING OBSERVATIONS

The developing countries are in general more centralised than most industrialised countries were at a similar stage of development. As a consequence of disastrous results of centralised economic planning, the reformers have turned to decentralisation to induce broader participation in democratic governance. International aid agencies seem to believe that decentralisation is desirable not only for promotion of democracy but also for efficiency and honesty (Romeo, 2003; Fritzen, 2007). The German aid agency KfW withdrew the second stage of their rural piped water supply project from the state of Madhya Pradesh in India because decentralisation was incomplete. KfW's view was that, as in Germany, the responsibility for provision of public services should lie with the lowest level of government unless there are problems relating to externality, chargeability or technicity.

The legitimate question relating to policy implication is whether decentralisation can lead to greater transparency or are we merely decentralising corruption. Cynics could argue that decentralisation of corruption can have beneficial redistributive effects; but the quantum of corruption at different levels of government must not be ignored while pushing for decentralisation.

In some earlier surveys in Africa (Khellaf, 1992 for Tunisia; Prud'homme, 1992 for Zaire), consumers have cited unhealthy relationship between the staff members with the local politicians as a major reason for higher levels of corruption in decentralised agencies. The managers under the state governments move from place to place and have less unethical relationships with the local politicians who are likely to be more subject to pressing demands from local interest groups (Kiltgaard, 1988; Rose-Ackerman, 1999).

On an analytical level, the main reason for higher level of corruption in decentralised agencies seems to be that there are fewer obstacles to corruption at the local level. Monitoring and inspections are better developed at the state level. There is a strong system of audit at the state level functioning under the Comptroller and Auditor General, who under the Indian Constitution is completely immune from political pressures. While this state level audit is not free from corruption and known for nitpicking and missing woods for trees, the systems are well developed and apolitical. At the local level, auditing systems are neither technically competent nor immune from political

⁷Correlation matrix of the independent variables and details of regression analysis for example, *t*-test values in respect of variables, coefficient of determination and its *F*-test values are available from the author. A large number of regressions on different sets of independent variables, yielded results no different from the results reported in Table 4. These detailed results are also available from the author.

⁸Since the decision to pay or not to pay a bribe is a binary choice, four logistic regressions were performed. The signs of coefficients were found to be the same as and significance levels (Wald statistic of logistic regression compared to *t*-statistic of linear regression) similar to those reported in Table 4 for linear regression. The details of these regressions are available from the author.

influence. There is no quick fix solution to these problems of governance, as capacity building and institutional development, even if seriously pursued, will take a long time.

In a free democratic society, exposure to the media could be a strong check on corruption. Since the media at the local level is underdeveloped, the pressure of the media, if it exists at all, is hardly a disincentive at the local level.

An argument often advanced in favour of decentralisation is the fact that participation by stakeholders is likely to reduce corruption. There is some evidence that participation by the beneficiaries in drinking water projects leads to better project outcomes (Isham *et al.*, 1995). However, decentralisation is not the same as participation. When social inequalities supplement economic inequalities, the process of decentralisation is political rather than participative and liable to be captured by the local elite (Platteau, 2004). The pressures of caste, tribe and local politics are too strong even for a well-meaning local government official (Prud'homme, 1995). Where government institutions are weak and patron–client relationships strong, the local corrupt elite can satisfy their clientelistic networks by manipulating devolved government resources (Manzetti and Wilson, 2007).

Free market enthusiasts believe that privatisation of water supply could end corruption (Shleifer, 1998). Privatisation can improve the situation, but only partially. When the local government selects the private provider and supervises the service, the problem of corruption will remain. In any case, due to political opposition from various quarters, privatisation of water supplies in villages or small towns is nowhere on the horizon.

The foregoing analysis does not necessarily mean that decentralisation is a wrong policy or that with more and more decentralisation to come; there will be more and more corruption. The only valid argument in favour of decentralisation, rarely advanced, is that of learning by doing (Crook and Manor, 1998). Under the guidance of the state governments and under pressure from the people and the NGOs, the local governments have to learn to be less corrupt. This would take time even if a carefully formulated strategy is put in place. At present, there is only ham-handed pressure from the metropolitan elite and the donor community for decentralisation.

Another strategy could be to sidestep centralisation decentralisation dichotomy, empower the people to band together, form NGOs and engage in provision of public services that the local governments fail to provide satisfactorily. In most developing countries no such long-term viable strategy is in place. The human rights based approach to development does not concern itself much with decentralisation. The focus is on participation, accountability and capacity building of right holders as also of duty bearers (Filmer-Wilson, 2005).

It is often assumed that the people want decentralisation while the regional level governments and bureaucrats oppose it. This view is without foundation. There has never been any referendum to determine what the people want. The decisions relating to decentralisation are taken without consulting the people, paradoxically, at the central level. If decentralisation has to be pursued as a political objective, it should be accompanied by strong measures to promote transparency.

ACKNOWLEDGEMENTS

The author is grateful to Gourisankar Ghosh, Kathleen Shordt, Sam Godfrey, Beatrice Avolio, participants of 30th WEDC International Conference, Vientiane, Laos and of Global WASH Conference, Dakar, Senegal and two anonymous referees for insightful comments, helpful suggestions and support.

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