THE PRIVATIZATION OF STATE WATER SUPPLY AND SANITATION COMPANIES: AN ANALYSIS BASED ON THE EXPERIENCE OF THE STATE OF MINAS GERAIS[1]

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The context and the study at hand

The Brazilian state water supply and sanitation companies were first established during the mid-1960s and within a few years they had become the main organizations supplying water and sanitation services in the country, given that they enjoyed considerable public investment, secured as loans from a number of different funding institutions (Ogera; Philippi Jr, 2005).

However, by the 1980s, this model was in crisis, especially after the dissolution of the *Banco Nacional de Habitação* [National Housing Bank], the sector's main funding source. This was a period of economic turmoil in Brazil with funding diminishing at the same time as the grace periods of loans contracted were coming to an end and costs were increasing due to debt service charges.

These problems were only partly resolved during the 1990s when the federal government, under President Fernando Henrique Cardoso, made efforts to increase the profitability of these companies so as to make them more attractive for the adoption of neo-liberal and privatization policies (Turolla, 2002; Arantes, 2007; Rezende; Heller, 2008).

However, actions undertaken which envisaged selling the companies were undermined by the resistance of opposition parties and the unpopularity of this measure among the public. Proposals for privatization only went ahead in some states in the South and South-eastern regions, despite the fact that decision-makers resorted to a less controversial strategy: offering shares on the stock market (IPO).

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Politicians and state company administrators from the Brazilian states of Minas Gerais, Paraná, Santa Catarina and São Paulo resorted to technical discourses to justify the public offering of shares on the market. Some of the main arguments deployed were greater levels of capitalization and improved professionalism, planning, transparency, network coverage and quality of service provision.

However, not all specialists in the field agree with these justifications. There is a clear division in the literature between those who argue that water supply and sewage services are essentially private activities and should therefore be organized according to market criteria and those who emphasize the fact that they are basic rights and thus should be subjected to the interests of society.

Amongst authors who are in favour of the participation of the private sector in this field are Vargas e Lima (2004) who compared three water and sanitation systems in Brazilian municipalities. According to them, this type of model is a means to leverage funds. In one case, funds were used to develop a sewage treatment plant, while the other cases concentrated on an expansion of water supply services in the municipalities involved.

Clarke, Menard and Zuluaga (2002) identified a different benefit in the improvement in the well-being of the population in Guinea after the water supply system was privatized. They did, however, recognize that a number of problems remained such as difficulties in measuring consumption, poor coverage, low tariff collection rates, high tariffs and a weak institutional environment.

Fujiwara (2005), on the other hand, reported that the privatization of water supply and sewage services in a number of municipalities in Brazil led to a reduction in child mortality caused by parasitic and infectious diseases, an outcome of the improvement in the quality of water supplied to lower-income populations. This seems to contradict the argument that the profits of privatization are usually absorbed by the companies themselves or transferred to the elites.

These findings are not shared by others, in particular Bayliss (2002), Justo (2004), Hall and Lobina (2002; 2007), Oliveira (2007), Castro (2007; 2008a; 2008b), and Rezende e Heller (2008). They observed that outcomes did not meet expectations in most national and international experiences of private sector involvement in the sector, although they do accept that there were certain improvements with regard to some economic or operational indicators.

According to this group of experts, most of the investments made by private groups were underpinned by government subsidies, while water supply was prioritized to the detriment of sewage services. Moreover, tariffs were increased to finance operations and other expenditures, with the burden falling on the poorer sectors of the population, aggravating social and regional inequalities which should be combated.

Other problems in the private management of water and sewage services relate to the lack of competition, the difficulty in revoking unsatisfactory agreements, a lack of transparency from a user's perspective and the consolidation of the interests of the dominant elites, as well as cases of corruption and greater insecurity in terms of labour relations (Hall, 2001; Bayliss, 2002; Hall; Lobina, 2002; Heller; Castro, 2007).

Furthermore, private companies have not always managed to meet the targets of concession-granting authorities, given that user needs often conflict with the market principles of efficiency and feasibility. According to Melo e Jorge Neto (2007) only systems in large and populous municipalities which have already been developed proved to be economically attractive to private groups, in detriment to all others.

This led World Bank specialists to review their historical discourse in favour of privatization of water supply and sewage services. In the first place, they admitted that results obtained were ambiguous, with both positive and negative effects. Subsequently, they defended the central role of governments, given that the private sector had not managed to service poorer sectors of the population (Richard; Triche, 1994; World Bank, 2003).

One of the mechanisms governments used to intervene was regulation, but in many cases, the institutions created for this purpose were not sufficiently independent. Furthermore, the difficulties in applying sanctions led to inefficient management, negatively affecting services (Perosa, 2002). This led Castro and Heller (2013) to argue that even in places where regulatory action was efficient, outcomes were far below expectations.

In developed countries the State has always been the main agent, not only in terms of control and monitoring activities, but also in terms of implementing, improving and managing water and sanitation services, although in contexts very different from the Brazilian situation (Heller; Castro, 2007; Castro, 2008a). Nevertheless, Hall (2001) lists successful experiences in developing countries where public companies have presented good efficiency indicators while also prioritizing the welfare of the population.

Unfortunately, good examples and lessons from history are frequently ignored, leading to mistakes being repeated. In general, Castro (2008a; 2008b) argues that this is common in Latin America where privatizations - in many different forms and strategies - were over-hastily implemented in order to satisfy the interests of large corporations, usually culminating in poor results.

Furthermore, there is insufficient information to further elucidate the phenomenon of IPOs in state companies in Brazil. These processes are relatively recent and the data available is restricted to official statistics and material published by the companies themselves. Studies published in recent years have focused on the financial aspects of operations, whilst other important variables have not been sufficiently examined.

Brazilian authors who have addressed this specific aspect of privatization have usually concentrated on foreign experiences. Nascimento e Queiroz (2000), for example, report on cases in Latin America and England. Amparo e Calmon (2000) analyze the British case, but identified problems in reproducing it in Brazil. Ohira e Turolla (2005) studied governance and regulation in capital markets, arguing that this model should be applied to Brazilian companies.

Given the lack of specific studies on public company IPOs in Brazil and the consequences on services provided, this research was conducted so as to be able to discuss this issue in more detail. This involved critically assessing indicators obtained after the introduction of the new management model. This research particularly focused on the experience of the state of Minas Gerais in 2006.

It is hoped that the findings and conclusions presented provide concrete information to enhance the ongoing debate on improving public policies and the management of the water and sanitation sector in Brazil, and in this way contribute to improving the quality of water supply and sanitation systems as well as universalizing their access, a long-held objective.

Methodology

Preliminary research using important secondary sources has contributed to understanding the process of the IPO in the *Companhia de Saneamento de Minas Gerais* - COPASA - and its consequences, according to the objectives of the study. State legislation and decrees were analyzed in addition to annual reports, financial statements and other official documents made available by the Company.

Subsequently, the study analyzed service provision changes observed from 2000 to 2010 in the localities served by the company. These changes were examined in terms of whether they were more aligned with the interests of the market or the needs of the population and whether COPASA succeeded in fulfilling its social role. Furthermore, the study examined if these changes were the result of the company being traded on the stock market.

The aspects selected for analysis were based on the discourse of specialists both for and against the privatization of the sector. They describe characteristics which are generally positively or negatively impacted by private participation, according to the perspective of authors mentioned in the literature review: coverage, universality and service provision quality, as well as customer satisfaction.

Given that the time period made available by COPASA (2003 to 2012) was short, data from its annual reports and financial statements were processed and assessed using descriptive and exploratory methods. Relevant indicator figures and averages were listed in tables enabling a prompt visualization of the company's evolution during this time period.

Information from the National Survey of Basic Sanitation (PNSB) from 2000 and 2008 was used to assess water supply and sewage services coverage in Brazil. Examination showed that data did not follow a normal distribution pattern. For this reason the non-parametric Wilcoxon test (1945) was applied to the paired samples. Results were described in box-plot graphs.

Indicators relating to the state of Minas Gerais were developed from data from PNSB, 2000 and 2008, and from the 2000 and 2010 demographic census. The tables enabled the comparison of averages from the beginning and end of the first decade of 21st century respectively, observed in the group of municipalities served exclusively by COPASA (67 and 128) and organizations linked to municipalities (346 and 284).

In order to analyze how each variable progressed, based on the management model of the organization responsible, samples were reduced so that only those municipalities which were managed throughout the whole period of analysis by COPASA (64) or municipal organizations (256) were examined. Therefore, localities which were served by both the Company and local government together within the timeframe studied were

excluded from the research.

First, the differences in the indicators of each municipality between the two periods studied were calculated. Once the normality tests was completed, the Mann-Whitney U test (1947) was applied to the independent samples in order to assess whether changes observed diverged significantly, according to the management model adopted. Results were also presented using box-plot graphs.

Quantitative methods were further complemented by semi-structured interviews conducted with fifteen specialists, managers and technicians involved in the management of state policies and the administration/operation of water and sanitation services in the state of Minas Gerais. Participants were selected during the documental research phase or were indicated by other agents already consulted, based on the positions they occupied or still occupy within the different organisms linked to the sector, as can be seen in Table 1.

Table 1: Semi-structured Interview Participants

Organization	Acronym	Number of interviewees
Regulatory Agency	ARSAE	03
Belo Horizonte Municipal Government	CMBH	01
Minas Gerais Sanitation Company	COPASA	04
Belo Horizonte Municipal Council for Sanitation	COMUSA	01
João Pinheiro Foundation	FJP	02
Belo Horizonte Municipal Environment Department	SMMA	01
The State of Minas Gerais Engineers' Union	SENGE	01
Workers' Union	SINDÁGUA	01
Federal University of Minas Gerais	UFMG	01
Total	**-**	**15**

Source: the authors

Interviews were interactive, enabling complex topics to be addressed and explored in depth in order to understand the relations between agents and the local reality, as well as the meanings attributed to events, situations or people linked to the interviewees' day-to-day lives (Minayo, 2006; Gaskell, 2007).

A semi-structured framework facilitated the investigation of basic issues, enabling their extrapolation. Additional questions emerged from the answers given by participants who were also free to pursue a line of thought, in contrast to what would have occurred in standardized interviews or questionnaires (Flick, 2004).

Interviews were recorded and carefully transcribed. Content analysis methods were used to identify the ideas most frequent brought up (Bardin, 2004; Vergara, 2004; Deusdará, 2005; Bauer, 2007). Discourse analysis enabled the association of opinions and the circumstances in which they were expressed (Machado; Jacks, 2001; Rocha; Deusdará, 2005).

During the discussion of results, representative passages reported by interviewees were highlighted and used together with numerical data to illustrate, complement, analyze further, qualify and validate the reflections proposed given that indicators available could only indirectly delineate and reflect the aspects addressed.

For ethical reasons and so that subjects were at ease to talk about particular topics, anonymity was preserved. In this work, respondents are only identified by using the acronym of the organization to which they belonged or were associated. When organizations were represented by more than one individual, in order to distinguish between them each respondent received a number indicating the order in which they gave their interviews [ACRONYM - NUM.].

Advancements and perspectives in COPASA's management: for what reason and for whom?

COPASA's IPO on the São Paulo Stock Exchange represented an intensification of the business and market model which had steered the Company since it was established in 1973, at that point with a management model proposed by the military government and consolidated by PLANASA, the National Water Supply and Sanitation Plan.

A clear confirmation of this approach was the expansion in the number of municipalities served by the Company from 2006 onward, a sign that COPASA was actively working to expand its markets. An analysis of Tables 2 and 3 reveals that the growth in sanitation services was greater than in water supply services. This is expected given growth in demand and the insufficient capacity of local operators to invest in the former.

However, the difference in the coverage of the two services remains substantial, due to the policy adopted by the Company up to that point. This situation is difficult to solve according to a Regulatory Agency specialist, given that "*there is little incentive for sanitation services, returns are low (...) and costs are higher. New concessions could reduce the company's profit. This is why there is this disparity*" [ARSAE-03].

TABLE 2 - Water Supply Services

INDICATORS	YEAR									
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
N. Mun. Concessions	595	595	608	610	611	611	612	615	620	625
Population served (millions)	10.60	10.85	11.13	11.50	11.98	12.40	12.75	13.15	13.61	14.06
N. water savings (millions)	2.76	2.83	2.92	3.03	3.17	3.27	4.11	4.25	4.40	4.57
Extension water network (Km)	35,577	36,491	37,377	38,359	39,698	40,716	41,618	43,544	43,906	44,864

Source: COPASA (2014).

TABLE 3 - Sewage Services

INDICATORS	YEAR									
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
N. Mun. Concessions	140	153	169	180	184	198	199	213	225	277
Population served (millions)	4.93	5.35	5.59	5.79	6.24	6.79	7.53	7.75	8.27	8.78
N. sewage savings (millions)	1.15	1.27	1.32	1.39	1.51	1.62	2.41	2.53	2.70	2.89
Extension sewer network (Km)	10,375	11,343	11,698	12,563	13,223	14,725	15,327	16,314	18,105	20,093

Source: COPASA (2014).

There is still space for growth, but as foreseen by Melo e Jorge Neto (2007), the Company is not interested in small municipalities. One of the managers consulted explained that "*there are problems of scale and return; they cannot cope with COPASA's costs. This*

blocks their development in terms of water and sewage, although there are resources available for investing in this field" [FJP-01].

Economic feasibility criteria also affect whether the Company operates in poorer areas. An interviewee who was very knowledgeable in the field recognized that COPASA does take on the responsibility for operating in deficient regions, "*with a social focus*", but "*it is essential that, overall, returns are equal or greater to capital costs, taking into account the long-term sustainability of the Company*" [COPASA-03].

Rural sanitation actions "*are not a priority for the Company*" - this cannot be attributed to IPO, given that "*with the exception of some short periods, there have been few resources [available] for this purpose*" [CMBH]. Despite developing sanitation models or building cisterns in partnership with non-governmental organizations and with the financial support of state and federal programs, interviewees do not perceive a consolidated policy in this area due to the poor prospective of profits.

It is also important to consider that data in Tables 2 and 3 only reflect the level of penetration of the Company in Minas Gerais and do not faithfully or accurately portray the degree of coverage in water supply and sanitation services, as even in areas where COPASA is present there may be individual solutions or systems controlled by associations, independent organizations or municipal companies.

Tables 4 and 5 better illustrate the evolution of indicators in the state, though they do not take into account the management model adopted in each municipality. This information cannot be used to differentiate or analyze the quality of services provided - an appropriate service provision is not only dependent on infrastructure, but on other socio-economic and cultural aspects, on quality and on the solution employed, in accordance with the conceptualization used by Plansab (2011).

TABLE 4 - Degree of Water Supply Service Coverage in Minas Gerais

INDICATOR	YEAR	
	2000	2008
Proportion of municipalities served by the general water network (%)	100	100

Source: IBGE (2012a).

TABLE 5 - Degree of Sanitation Service Coverage in Minas Gerais

INDICATOR	YEAR	
	2000	2008
Proportion of municipalities with some sort of sewage service (%)	88.75	91.56

Source: IBGE[4] (2012a).

Table 5 shows the growth in the number of municipalities receiving some sort of sanitation service. Progress can be justified by the initial precariousness of the situation, given that historically speaking the emphasis has always been on water supply. However,

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based only on this information, it is not possible to attribute these advances exclusively to COPASA and even less to the change in the Company's management model.

IBGE data points to improvements in these indicators in other Brazilian states. The Wilcoxon (1945) test, when applied to paired samples, revealed a significant difference in the coverage of water and sanitation services between 2000 and 2008 in the country as a whole. This is clearly seen in Figures 1 and 2.

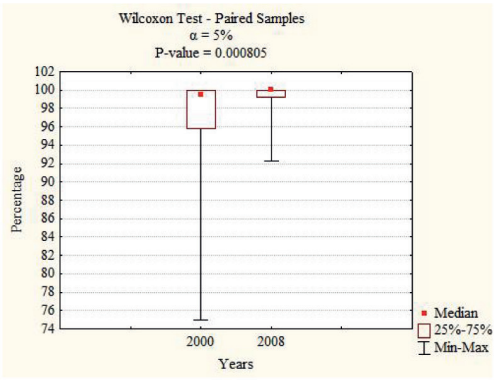

FIGURE 1 - Average of Municipalities per State with a General Water Network. Source: IBGE (2012a).

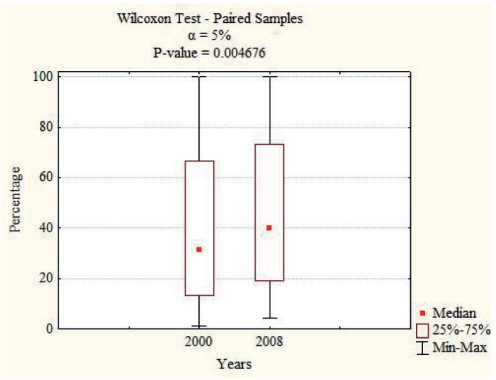

FIGURE 2 - Average number of Municipalities per State with Sanitation Services. Source: IBGE (2012a).

This information shows that the evolving scenario cannot be credited to the Minas Gerais Company IPO, but is the result of a number of factors which have also been present in other Brazilian states, such as an increase in available resources and the consolidation of a federal policy for the sector. As one of the specialists consulted summarized, "*improvement was due to a favourable conjuncture, although there have been instances of localized progress*" [COMUSA].

Another phenomenon shown in Table 6 was the growth in COPASA operations between 2000 and 2010 in municipalities which were previously served by local operators. Even if it is not possible to relate this scenario to the new management model, it is clear the Company has moved in this direction by establishing "*targets that need to be reached by local managers, so that they do not miss out on additional bonuses which are a variable portion of their salaries*" [COPASA-02], as one of the company's managers reveals.

TABLE 6 - Expansion in Universal Service Provision by COPASA in Minas Gerais

INDICATORS	YEAR	
	2000	2010
Proportion of municipalities served by COPASA water supply + sewage services	7.85%	15.01%
Proportion of municipalities served by OTHER OPERATORS water supply and sewage services	40.68%	33.29%
Proportion of municipalities served by COPASA / OTHER OPERATOR	51.47%	51.70%

Source: IBGE (2012b; 2012c).

When municipalities exclusively served by COPASA are separately analyzed (Table 7), a slight setback can be observed with regard to the percentage of households accessing water supply services between 2000 and 2008. Whereas there is a modest increase both in terms of sewage networks and the use of septic tanks - the consequence of initiating operations in districts and localities where conditions had been previously precarious.

TABLE 7 - Forms of Water Supply and Sanitation Services in Minas Gerais

INDICATOR	MUNICIPALITIES FULLY SERVED BY COPASA		MUNICIPALITIES SERVED BY OTHER OPERATORS	
	2000	2010	2000	2010
General water grid (% households)	77.02	76.84	64.95	72.71
Well or water source in property (% households)	18.94	12.58	29.65	16.52
With bathroom or WC (% households)	92.53	97.31	90.31	98.27
Sanitation or rainwater networks(% households)	55.02	59.18	46.53	58.44
Septic tanks (% households)	2.72	4.77	2.96	4.42
Rudimentary tanks (% households)	26.60	26.32	22.06	20.59
Trench (% households)	1.61	1.52	2.94	2.34
River or lake (% households)	5.15	4.64	13.45	11.19
No bathroom or WC (% households)	8.02	2.69	9.69	1.73

Source: IBGE (2012b; 2012c).

Table 7 also shows that COPASA average figures are better than that of operators using other management models for almost all indicators, both in 2000 and 2010. There are exceptions with regard to aspects of sewage services which have historically been sidelined due to its high implementation costs. This discrepancy persisted after the IPO.

This observation is in line with the perception of one of the specialists consulted in the research. In his view the situation is "*really much better*" in localities served by the Company, "*in particular with regard to water supply services, [which receives more investment]. In relation to sewage, the opposite is the case: in places where the Company operates, the service tends to be worse*" [FJP-02], when compared with municipalities where the Company does not operate.

Statistical tests comparing the evolution during this 10-year period in households serviced by COPASA and by local companies showed that, in many cases, there was no difference between management models. In other cases, the progress made by municipal and independent companies was significantly greater compared with that made under COPASA.

Specialists believe that this is in line with the current policy of the Federal Government which "*prioritizes low-cost funding to small municipalities and to companies that are not so well structured*" to the detriment of "*more efficient companies*" [UFMG]. For example, Figure 3 shows the increase in households with water supplied by the general network. In terms of this indicator, the performance of localities served exclusively by COPASA was significantly poorer than that of other areas.

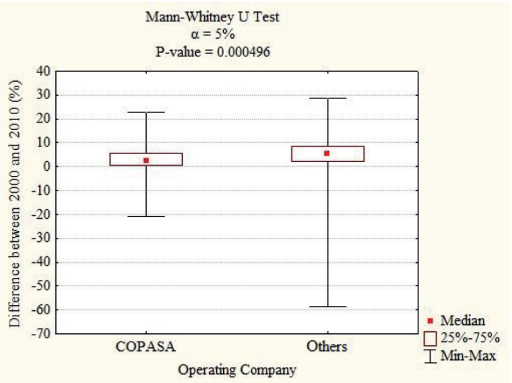

FIGURE 3 -Evolution of Households served by the General Network for Water supply Source: IBGE (2012b; 2012c).

This point, in particular, differs from findings by Vargas and Lima (2004). In contrast to the phenomenon highlighted in their study, private participation in the control of the Minas Gerais Company did not necessarily result in an increase in investments for carrying out works to expand the supply network in municipalities served by the company.

Even when using different graphs, it is not possible to statistically argue that in municipalities served by COPASA there were fewer developments in comparison to other municipalities, both in regards to the percentage of households with bathrooms or WCs (Figure 4) and the proportion of households connected to the general sewage or rainwater network (Figure 5) when using a degree of reliability of 95%.

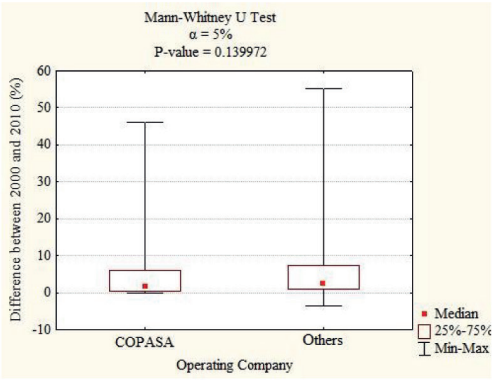

FIGURE 4 - Evolution of Households with a Bathroom or WC. Source: IBGE (2012b; 2012c).

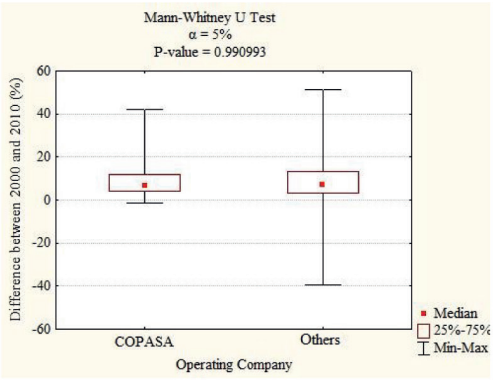

FIGURE 5 - Evolution of Households linked to the General Sewage or Rainwater Network. Source: IBGE (2012b; 2012c).

Finally, we can see a sustained reduction in the percentage of households with no bathroom or WC throughout the first decade of the 21st century. However, progress in the municipalities served by COPASA was significantly lower than in municipalities where it did not operate, as can be observed in Figure 6.

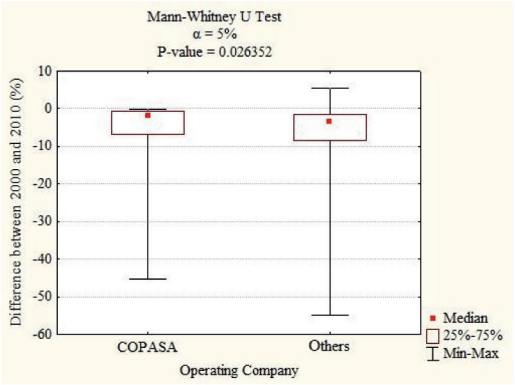

FIGURE 6 - Evolution of Households with no Bathroom or WC. Source: IBGE (2012b; 2012c).

In terms of the consequences of COPASA's IPO on the quality of services provided, it is difficult to make an accurate assessment due to the lack of comparable parameters, in face of the difference between PNSB protocols in 2000 and 2008, particularly in relation to sewage services. In addition, there is lack of information regarding regularity, intermittences, interruptions and rationing in water supply.

Agents interviewed did not identify changes in these factors over the last decade. In general, interruptions are scheduled so that maintenance works can be carried out. From the statements of the interviewees, there seems to be no preference shown for areas with greater purchasing power. "It *is not possible to be selective; it would be difficult to do this. [Furthermore], the system is very integrated*" [UFMG]. Seasonal climatic factors also caused problems, but in no way different to what had previously occurred.

Although it did not specifically address this topic, the data in Table 6 indirectly point to a gradual improvement in water and sanitation services during the period considered by this study, as a result of the growth in the use of processes, technologies and solutions which are increasingly more efficient in water catchment and in the final disposal of effluents.

Table 8 shows the increase in the volume of water treated, although there was also an increase of operations using simple, less costly, non-conventional methods. It can also be seen that COPASA presented higher average values for all the related indicators, when compared with operators using other management models.

Table 8 also showed more advances in systems controlled by organizations linked to local governments. However, this information needs to be put into perspective, given the situation of these municipalities was far worse. Furthermore, a large percentage of the water was only treated by chlorination or received another type of disinfection process. A comparison of this evolution can be observed in Figures 7 and 8.

TABLE 8 - Volume of Water by Treatment Type in Minas Gerais

INDICATOR	MUNICIPALITIES FULLY SERVED BY COPASA		MUNICIPALITIES SERVED BY OTHER OPERATORS	
	2000	2008	2000	2008
Total volume of treated water (%)	91.87	92.17	50.06	73.73
Volume of water conventionally treated (%)	89.46	73.70	39.29	50.44
Volume of water treated by a non-conventional method (%)	1.77	4.65	4.37	0.85
Volume of water treated by simple disinfection (%)	0.64	13.82	6.40	22.44
Volume of untreated water (%)	8.13	7.83	49.94	26.27

Source: IBGE (2012a).

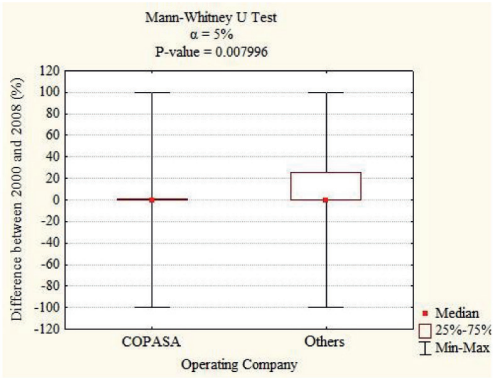

FIGURE 7 - Evolution of the Total Volume of Treated Water Source: IBGE (2012a).

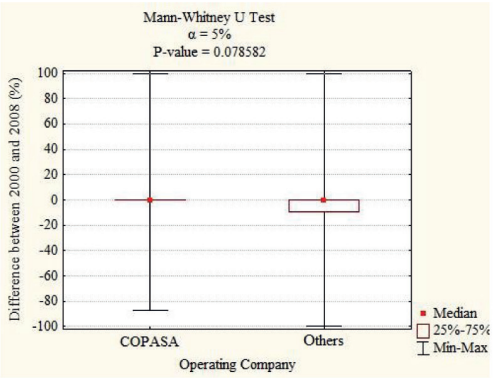

FIGURE 8 - Evolution of the Total Volume of Untreated Water Source: IBGE (2012a).

One of the respondents states that, in general terms, COPASA meets the water quality standards established by legislation. However, in contrast to what was observed by Fujiwara (2005), this does not mean that poorer users are totally satisfied: "*They strictly work within set standards. (...) This means that the service is very expensive. (...) There is no malleability in terms of price, it is very expensive. And the population is not always willing to pay for the service*" [FJP-01].

Generally speaking, "*the Company repasses its costs to society; the users pay*" [CMBH]. For purposes of comparison, Tables 9 and 10 shows that accumulated inflation indices, in the years immediately before price readjustments, were almost always lower than the values unilaterally established by COPASA. This situation only changed after 2009 with the creation of the Regulatory Agency.

TABLE 9 - Average Annual Tariff Readjustment

AVERAGE VALUE	YEAR									
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
(%)	31.01	14.28	24.15	9.50	6.72	9.47	0.00	3.96	7.02	4.34

Source: COPASA (2014).

TABLE 10 - Accumulated Variation of Official Inflation Indices

ACCUMMULATED VARIATION (%)	YEAR									
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
INPC[1] Belo Horizonte	13.95	12.09	8.5	5.35	4.56	7.07	4.92	3.86	5.74	6.15
IPCA[2] Belo Horizonte	11.58	11.18	8.93	6.24	4.96	5.86	5.34	4.67	5.84	6.79

Source: Banco Central do Brasil (2014).
1 National Consumer Price Index [INPC] /IBGE.
2 Extended National Consumer Price Index [INPC] /IBGE.

Criticisms not only concern the disproportionate increase in the Company's prices. According to the specialists consulted, "*the improvement in management which occurred due to the IPO has not been felt in terms of service provision, an area which still falls short of expectations*" [COPASA-01]. The implementation of new control instruments was not fully reflected in an improvement in the well-being of the population, as Clark, Menard and Zuluaga expected (2002).

Growing dissatisfaction is implicit in the data provided by the Company on the continuous increase in the number of user complaints recorded by Customer Services and consumer protection organizations. Court actions relate to the most problematic cases, and there was a drop in the number of cases solved, as can be observed in Tables 11 and 12.

TABLE 11 - Total Number of User Complaints

SITE	YEAR									
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
In-house	700,000	670,791	620,583	761,351	760,590	770,041	777,705	794,373	820,284	878,398
Procon	1000	368	405	287	287	583	152	524	217	232
Court Cases	800	1,598	2,044	2,059	2,087	2,534	2,922	3,578	3,651	1,245

Source: COPASA (2014).

TABLE 12 - N. Complaints Addressed or Resolved

SITE	YEAR									
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
In-house	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Procon	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Court Cases	90%	90%	80%	60%	60%	60%	60%	60%	30%	47%

Source: COPASA (2014).

In addition to the issue of costs, the overall rise in dissatisfaction may also relate to "*the contracting out of the Company's activities and the high turnover of staff*" in key positions. Investigations with the Company's staff show that, "*the poor skills of technical staff, the lack of appropriate equipment and a reduced commitment on the part of contracted companies*" lead to "*longer waiting times*" [SENGE] for service provision and a need for repairs to recently carried out services.

Conclusions

The research showed that, generally speaking, the case of COPASA is similar to other experiences of private management in water supply and sanitation services, as reported in both the national and international literature. This is because despite different strategies most of the results achieved since the consolidation of this process have not met the expectations of decision-makers.

Furthermore, the evolution of some indicators was significantly lower than in service providers employing other types of management, due to the precarious conditions under which the latter group previously operated, and because of programs specifically aimed at these companies, in particular access to public funding without liability.

The progress made specifically by COPASA during this period was also observed in municipalities across all Brazilian states, including those served by public organizations. This suggests that the advances made cannot be directly attributed to changes in the management model, but involve other important factors, such as the consolidation of a national policy for the sector.

After 2006, measures adopted by COPASA have invariably been in line with market rules and guidelines. Although still controlled by the government, COPASA chose to disregard its inherent public characteristics and its fundamental role as a state instrument in facilitating sanitation policies aimed at universalizing and improving the quality of services provided.

Despite the results in Minas Gerais, it is essential to continue to study the privatization of sanitation services and more specifically the use of IPOs for state companies. Indeed, this needs to be further explored in other research. An analysis of the Paraná, Santa Catarina and São Paulo experiences, for example, may bring new and relevant factors to the debate.

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THE PRIVATIZATION OF STATE WATER SUPPLY AND SANITATION COMPANIES: AN ANALYSIS BASED ON THE EXPERIENCE OF THE STATE OF MINAS GERAIS

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***Abstract*:** This article assesses the outcome of the initial public offering (IPO) of the Minas Gerais Sanitation Company [Companhia de Saneamento de Minas Gerais] in relation to its water supply and sewage services. Exploratory and inferential statistical methods are used to analyze indicators based on official data. Information obtained through semi-structured interviews with managers, experts and specialists on this topic is also considered. The study concludes that the experience under analysis is similar to other cases reported in the national and international literature. Results obtained by the Company did not justify a change in the management model. Although the Company is still under public control, the changes observed during this period are more in line with the interests of the market and are often in opposition to the needs of the population.

***Key Words*:** Privatization; Management; Water; Sanitation.

***Resumo*:** O artigo avalia as consequências da oferta pública de ações da Companhia de Saneamento de Minas Gerais para os serviços de abastecimento de água e esgotamento sanitário ofertados por ela. Recorre a métodos estatísticos exploratórios e inferenciais para a análise de indicadores reunidos junto a bases de dados oficiais. Complementa as reflexões com informações obtidas por meio de entrevistas semiestruturadas realizadas com gestores, técnicos e especialistas ligados ao tema. Conclui que a experiência estudada assemelha-se aos casos reportados na literatura nacional e internacional. Os resultados obtidos pela Empresa não justificaram a alteração do modelo de gestão. Embora a Companhia ainda seja controlada pelo poder público, as mudanças observadas durante o período considerado estão mais alinhadas aos interesses do mercado e, frequentemente, opõem-se às necessidades da população.

***Palavras-chave*:** Privatização; Gestão; Saneamento.

Resumen: El trabajo evalúa las consecuencias de la oferta pública de acciones de la Compañía de Saneamiento de Minas Gerais para los servicios de provisión de agua potable y eliminación de aguas residuales ofrecidos por ella. Utiliza métodos estadísticos exploratorios y inferenciales para el análisis de los indicadores recogidos en las bases de datos oficiales. Complementa las reflexiones con la información obtenida con la ayuda de entrevistas semi-estructuradas con gerentes, técnicos y especialistas relacionados con el tema. Concluye que la experiencia se asemeja a los casos reportados en la literatura nacional y internacional. Los resultados obtenidos por la Compañía no justificaron el cambio del modelo de gestión. Aunque la Compañía sigue estando controlada por el gobierno, las modificaciones observadas durante el período considerado son más alineadas con los intereses del mercado y, con frecuencia, se oponen a las necesidades de la población.

Palabras clave: Privatización; Gestión; Agua; Saneamiento.