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Research Article

Meta-analysis of the administration of water services on residential consumption in the Covid-19 era

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ABSTRACT

The retrospective studies have allowed to observe the historical differences between two public water policies. The objective of this study was to establish the proportions of probability, considering a systematic review of the literature from 2010 to 2019, as well as the reports of effects on residential consumption. A documentary, retrospective and exploratory study was carried out with an intentional selection of sources indexed to international repositories. A narrower risk margin was observed in the subsidy policy compared to the forgiveness policy. The scope and limits were discussed, noting a prospective analysis to observe the paulative substitution of sub-sites by a collection system based on the historical availability of water.

Keywords: Growth; Development; Organizations; Communities; Calendar

1. INTRODUCTION

Until the advent of the pandemic, the public administration of water resources and services was studied from its isomorphic structure (Bustos et al., 2021; Carreon, 2020). Or, as a patrimonial structure of a form of State or government regime (Castanho et al., 2020; Garcia, 2020; Rivera, 2020). This distinction was unintentionally transformed by the pandemic through biosafety protocols. SARS CoV-2 and the Covid-19 disease activated public and citizen security devices that were registered by the literature as categories of a public agenda (Garcia et al., 2020; Hernandez, 2020; Sandoval, 2020). This is the case of the subsidy and the forgiveness of payments for the municipal water service (Juarez et al., 2020). Both categories explain the relationship between local authorities with respect to tariff policies given the availability of resources and social needs (Carreon et al., 2020; Limon, 2020; Molina, 2020). This relationship has developed from an increase in unit cost and a consequent decrease in consumption, but the pandemic exacerbated demand and reduced supply in the event of a health crisis (Ramaci et al., 2020; Perez, 2020).

The objective of this paper is to establish the proportion of probabilities of two public administration policies of the drinking water services reported in the literature with respect to the saving of residential water.

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In the context of the historical prevalence of two public policies in the administration of water resources and services which will be the most risky considering a systematic retrospective review regarding its effects on water saving?

The retrospective prevalence of subsidies of the unit cost of the potable water service will be in an acceptable probability proportion of the risk in terms of its negative effects (Garcia et al., 2020; Quiroz, 2020)).

2. METHOD

The following algorithmic process was carried out: A documentary study was made with a selection of sources indexed to repositories, considering the period of publication from 2010 to 2019, structured in six types of literature: A for reports of positive findings of the water policies of sub-funds on water saving; B for negative effects and C for spurious consequences, as well as D for positive effects of condoning on the use of water, E for negative effects and F for spurious effects (see Table 1).

Table 1. Descriptive sample

	A	*B*	*C*	*D*	*E*	*F*
Copernicus	17	10	5	19	8	5
Dialnet	16	7	3	15	6	4
Ebsco	14	5	2	14	5	3
Latindex	12	4	1	13	4	2
Publindex	10	3	1	10	3	1
Redalyc	8	2	0	8	2	1
Scielo	5	1	0	5	1	0
Scopus	3	0	0	3	1	0
Wos	2	0	0	2	0	0
Zenodo	1	0	0	1	0	0

Source: Elaborated with data study. A: Literature with reports of positive effects of subsidies on water saving; B: Literature with reports of negative effects of subsidies on water saving; C: Literature with reports of spurious effects of subsidies on water saving; D: Literature with reports of positive effects of forgiveness on water saving; E: Literature with reports of negative effects of forgiveness on water saving; F: Literature with reports of spurious effects of forgiveness on water saving

From the Delphi technique, expert judges in the thematic areas qualified six synthetic extracts of the types of literature in three rounds of feedback, considering: 0 for negative effects, 1 for spurious effects and 3 for positive effects (Molina et al., 2020).

The information was processed in the qualitative data analysis package version 4.0. The distributive, contingent and proportional parameters were estimated to describe the phenomenon (Sorokowski et al., 2020).

3. RESULTS

Table 2 shows the distributive and contingent values that demonstrate the independence of the categories with respect to the qualification of six representative extracts of the types of literature consulted.

Table 2. Descriptive data

E	M	S	W	K	A	C1			C2		
						X^2	df	p	X^2	df	p
R1											
e1	,782	,145	,154	,121	,154						
e2	,763	,130	,107	,134	,129	15,32	14	<,05			
e3	,702	,187	,111	,140	,104						
e4	,673	,154	,186	,182	,123						
e5	,692	,132	,107	,154	,154						
e6	,761	,136	,132	,127	,105						
R2											
e1	,540	,108	,154	,136	,154	17,21	14	<,05			
e2	,654	,175	,182	,141	,131	16,32	14	<,05			
e3	,693	,149	,136	,103	,105						
e4	,602	,146	,108	,193	,106				16,21	15	<,05
e5	,761	,129	,154	,125	,138						
e6	,439	,141	,132	,135	,154						
R3											
e1	,650	,123	,105	,145	,196	12,14	15	<,05			
e2	,783	,108	,183	,184	,158	16,21	14	<,05			
e3	,671	,174	,154	,130	,136	10,21	15	<,05			
e4	,540	,130	,128	,153	,128				16,21	13	<,05
e5	,672	,127	,154	,123	,104				10,21	14	<,05
e6	,518	,137	,143	,146	,143						

E = Synthetic extract of the type of literature: e1: Literature with reports of positive effects of subsidies on water saving; e2: Literature with reports of negative effects of subsidies on water saving; e3: Literature with reports of spurious effects of subsidies on water saving; e4: Literature with reports of positive effects of forgiveness on water saving; e5: Literature with reports of negative effects of forgiveness on water saving; e6: Literature with reports of spurious effects of forgiveness on water saving; M = Mean, S = Standard Deviation, W = Sweetness, K = Kurtosis, A = Asymmetry: C = Analysis unit category; C1 = Subsidies, C2 = Condonations.
Source: Elaborated with data study

In order to establish the proportions of probability between the types of literature, we proceeded to estimate the structure of relationships (see Table 3).

Table 3. Proportion of probabilities

E	M	S	e1	e2	e3	e4	e5	e6
e1	24,31	10,13						
e2	20,31	15,21	,23 (,10 ,46)					
e3	20,35	10,25	,43 (,15 ,60)	,36 (,17 ,45)				
e4	21,34	11,45	,32 (,27 ,59)	,43 (,29 ,78)	,44 (,20 ,78)			
e5	28,41	15,26	,54 (,13 ,56)	,23 (,32 ,60)	,26 (,15 ,50)	,36 (,24 ,60)		
e6	20,31	12,36	,32 (,29 ,54)	,34 (,20 ,64)	,55 (,20, 76)	,55 (,24 ,69)	,46 (,28 ,56)	

E = Synthetic extract of the type of literature: e1: Literature with reports of positive effects of subsidies on water saving; e2: Literature with reports of negative effects of subsidies on water saving; e3: Literature with reports of spurious effects of subsidies on water saving; e4: Literature with reports of positive effects of forgiveness on water saving; e5: Literature with reports of negative effects of forgiveness on water saving; e6: Literature with reports of spurious effects of forgiveness on water saving; M = Mean, S = Standard Deviation, C = Analysis unit category; C1 = Subsidies, C2 = Condonations.
Source: Elaboration with data study

The structure of proportions shows a prevalence of the six synthetic extracts that allow to infer relations between the categories and the extracts (see Fig. 1).

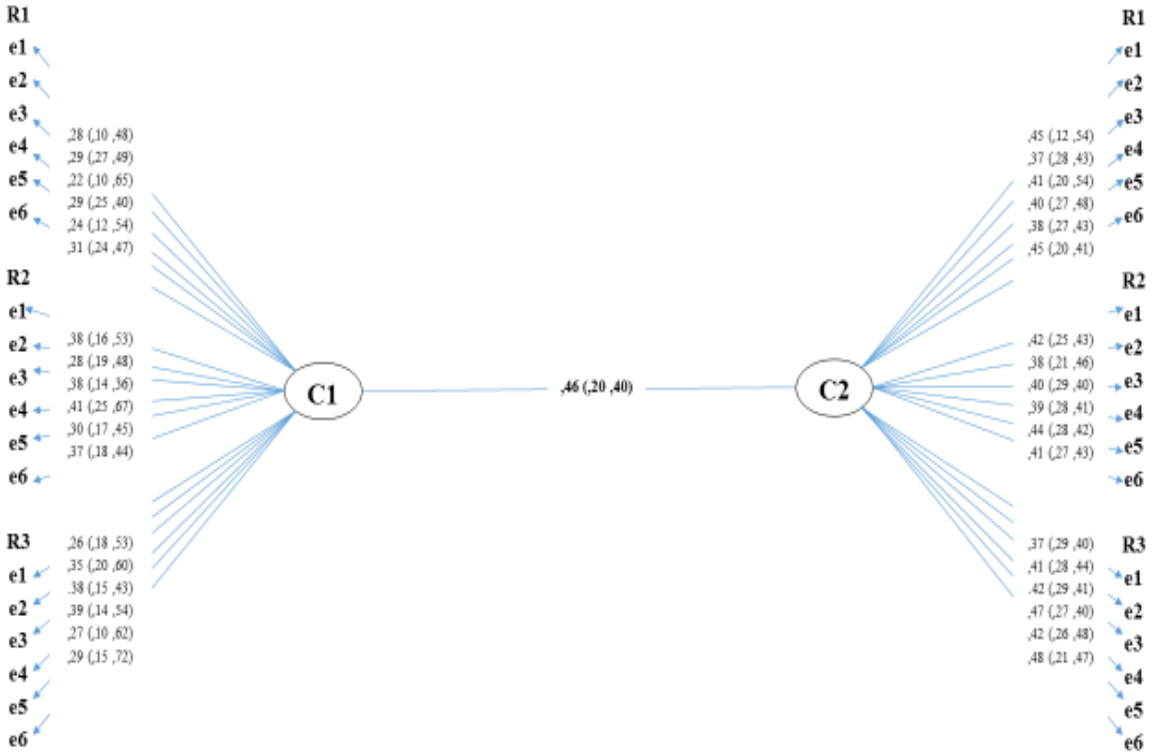

Fig. 1. Structural model

E = Synthetic extract of the type of literature: e1: Literature with reports of positive effects of subsidies on water saving; e2: Literature with reports of negative effects of subsidies on water saving; e3: Literature with reports of spurious effects of subsidies on water saving; e4: Literature with reports of positive effects of forgiveness on water saving; e5: Literature with reports of negative effects of forgiveness on water saving; e6: Literature with reports of spurious effects of forgiveness on water saving; C = Analysis unit category; C1 = Subsidies, C2 = Condonations.

Source: Elaborated with data study

The trajectory structure of dependency relationships reveals a tendency to risk in the first category of sub-funds with respect to the second category of forgiveness. That is, water policies, according to the reports and typologies of the literature consulted, are more effective in terms of subsidies.

4. DISCUSSION

The contribution of the present work to the state of the matter lies in the establishment of an acceptable risk in terms of the policy of subsidizing the drinking water service, although the design of the research limits the findings to the sample, suggesting the extension of the work towards the revision of differential rates policies by socioeconomic sectors.

The literature consulted has shown the prevalence of two public policies for the administration of water resources and services derived from supply and demand, but in the present work it has been shown that the sub district would have a higher probability ratio of risk acceptance with respect to the forgiveness, although the differential increase in rates has also supported a collection system linked to the expense of those who can afford the service (Amemiya, 2020; Anguiano, 2020; Bustos, 2020).

A prospective meta-analysis will make it possible to warn of the probable risk scenarios of substitution of the subsidy by rates according to the availability of water resources, social needs and expectations, as well as institutional and organizational capacities.

5. CONCLUSION

The objective of this study was to establish the margin of proportion of retrospective probabilities between subduction and forgiveness policies with respect to residential water saving reported in the literature consulted, but the research design limited the findings to the sample, suggesting a prospective meta-analysis to establish the substitution of both policies for a system of differential charging of tariffs according to water availability and local capacities.

Reference:

Amemiya, M. (2020). Metanálisis retrospectivo de los efectos aleatorios y homogéneos de la validez de la escala de percepción de riesgo. *American Journal of Applied Scientific Research, 10 (4),* 25-35

Anguiano, F. (2020). Metaanálisis de los efectos del emprendimiento en el desarrollo local: implicaciones para la pandemia de coronavirus Covid-19. *Revista Internacional de Investigación en Ingeniería y Ciencia, 8 (9),* 40-47

Bustos, J. M., Juárez, M., García, C., Sandoval, F. R. y Amemiya, M. (2020). Determinantes psicosociales de la reactivación del turismo. *Turismo y Desarrollo Social, 29 (13),* 1-23 https://www.eumed.net/es/revistas/turydes/vol-13-no-29-diciembre-dezembro-2020/reactivacion-turismo-covid19

Bustos, J.M. (2020). Una revisión de los hallazgos sobre el desarrollo local. *Eureka, 17 (1),* 141-161

Carreón, J. (2020). Estructura reflexiva de las intenciones de voto a favor de la mitigación pandémica. *American Journal of Applied Scientific Research, 6 (5),* 1-7

Carreon, J., Bustos, J. M., Bermúdez, G., Espinoza, F. y García, C. (2020). Actitudes hacia la pandemia ocasionada por el coronavirus SARS CoV-2 y la Covid-19. *Invurnus, 15 (2),* 12-16

Castanho, R. A., Couto, G., Pimentel, P., Sousa, Á., Carvalho, C., Batista, M. G. (2020). The Impact of SARS-CoV-2 Outbreak on the Accommodation Selection of Azorean Tourists. A Study Based on the Assessment of the Azores Population's Attitudes. *Sustainability* 12, (23): 1-14. https://doi.org/10.3390/su12239990

García, C. (2020). Especificación de un modelo para el estudio de la salud laboral. *Global Journal of Management & Business Research, 1 (1),* 1-6

Garcia, C., Carreón, O. I. & Espinoza, F. (2021). Index of framing of social entrepreneurship in the confinement caused by the coronavirus SARS CoV-2 and the disease Cvid-19. *Journal of Geography Environmental and Earth Science International, 10 (1),* 1-12

García, C., Juárez, M., Bustos, J. M., Sandoval, F. R. y Quiroz, C. Y. (2020). Specification a model for study of perception risk. *Gestao, Educacao e Tecnologia Ambiental, 24 (43),* 1-8 https://doi.org/10.5902/2236117045266

Hernández, J. (2020). Especificación de un modelo de intervención social contra la Covid-19. *Biomedical of Scientific & Technical Research, 26 83),* 62-65

Juárez, M., Bustos, J. M., Carreón, J. y García, C. (2020). La percepción de riesgo en estudiantes universitarios ante la propagación del coronavirus SARS CoV-2 y la enfermedad Covid-19. *Revista de Psicología, 8 (17),* 94-107

Limón, G.A. (2020). Especificación de un modelo de necesidad de información sobre el coronavirus COVID-19. *Revista Internacional de Estudios de Ciencias Sociales, 8 (6),* 1-5

Molina, H. D., García, M., García, M. L., Carreón, J. y García, C. (2020). Una aproximación estadística al comportamiento del brote de Covid en la China continental. *Tepexi, 7 (4),* 3-16

Molina, H.D. (2020). Representaciones socioambientales periurbanas. *Kulxulkab, 26 854),* 5-12 http://revistas.ujat.mx/index.php/kuxulkab/article/view/3029

Pérez, G. (2020). Actitudes hacia la propagación de los medios del coronavirus COVID-19. *Revista Internacional de Invenciones de Humanidades y Ciencias Sociales, 9 (8),* 20-25

Quiroz, C.Y. (2020). Modelo exploratorio de estructura factorial de la percepción de la movilidad de ciclovías. *Propuesta y representaciones, 8 (1),* 1-14

Ramaci, T., Barattucci, M., Ledda, C., Rapisarda, V. (2020). Social Stigma during COVID-19 and its Impact on HCWs Outcomes" *Sustainability 12* (9), 1-13 https://doi.org/10.3390/su12093834

Rivera, B.L. (2020). Algoritmo estructural exploratorio del factor de riesgo percibido. *Revista Internacional de Invenciones de Humanidades y Ciencias Sociales, 10 (8),* 26-30

Sandoval, F.R. (2020). Expectativas laborales en la fase de eventos de riesgo y efectos sociales colaterales. *Revista Internacional de Humanidades, Ciencias Sociales y Educación, 12 (1),* 1-14

Sorokowski, P., Groyecka, A., Kowal, M., Sorokowska, A., Białek, M., Lebuda, I., Dobrowolska, M., Zdybek, P. y Karwowski, M. (2020). Can Information about Pandemics Increase Negative Attitudes toward Foreign Groups? A Case of COVID-19 Outbreak. *Sustainability, 12 (12)*: 1-10. https://doi.org/10.3390/su12124912