

Meta-Analysis of Randomized Bivariate Effects of Governance on Common Resource Management

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Abstract

In the context of sustainable development, governance of water resources turns out to be a management model that would include factors relating to beliefs, attitudes, values, norms, perceptions, skills, knowledge, decisions and actions-oriented water availability and consumption 200 standard liters per day. However, studies on the psychology of sustainability warn that availability is not only mediated cognitive dimensions but are also determined by the relationship between local authorities and users of municipal services. In this sense, the present work is proposed to specify the relationship between cognitive factors to establish a model for the study of policies tandem as an effect of the surrounding information in the media about drought, natural disasters, environmental disasters or water conflicts. To this end, a review was conducted in databases with registration ISBN and DOI considering the above constructs. Referring to the state of knowledge, the model specification was discussed.

Keywords: Metanalysis; Governance; Model; Repository; Agenda.

1. Introduction

From an economic perspective, Sustainable Development of water in Mexico City by a system of rates that have been adjusted as water availability has increased from 300 liters per day per person with a unit cost of, 025 pesos in 1950 is indicated 120 liters per day per capita in 2,000 when it reached an average of 50 pesos per volume of bi-monthly consumption. However, the collection system has been questioned by the psychosocial approach which series of conflicts for water service and rates (Sandoval *et al.*, 2018).

From the perspective of psychology of sustainability, the media by emphasizing the conflicts between local authorities and users of public drinking water influence public opinion. In this sense, systems theories, technological, informational and communicational have advanced the hypothesis of setting the agenda from the analysis of the frame of the facts to reveal as producers of information to the media, as mediator to the opinion citizen and targeted policy initiatives law (Martínez *et al.*, 2018c).

This work presents the picture of water availability in reference to human consumption to contrast the against psychosocial approach to highlight conflicts arising from supply policy and the local collection, conceptualize and discuss its impact on public opinion and in the lifestyles of users. Once the axes of debate and analysis thereupon established the reflective relations favorable to the sustainability of water resources and services specified behavior. If the media presented the conflict as central themes of the hydric problems, they blame the authorities for inefficiency rates and expose closures avenues, boycotts facilities or kidnappings of pipes as evidence of governability that inhibit the development local sustainable (Rincon *et al.*, 2018).

Based on the methodology developed by Cheung (2015b), it was carried out the conceptualization of the role of the media contributes to the discussion about the role of the media, authorities and users as actors-oriented water sustainability in the demarcation agenda. The methodology used for documentary research is to search for information in diverse scientific databases as Copernicus, Dialnet, Ebsco, Latindex, Pubindex, Redalyc, Scielo, Scopus, WoS and Zenodo from keywords, Sustainable Development, Local Development, conflict, water resources availability and rates, governance that were published from 2010 to 2019.

2. Literature Review

2.1. Theory of Governance of Commons Resources

Water is considered as a resource; it has been administered by degree of availability and supply. Thus, water resources to be assumed as a public good pose environmental contingency arising from climate change that will

transform the provisions of users; if they are well regarded private resources, then the system of tariffs, subsidies and grants central highlights public policy. Finally, if they are considered common property, then both aspects, fees and contingencies delineate the supply of communities, and not from the equitable distribution, but from participation, lead generation, capacity and accountability (Morales and García, 2019).

However, water resources are assumed to be private tend to accentuate the economic asymmetries between indigenous peoples and residential cities, excluding migrant sectors. If they are considered public goods, then will generate an imbalance between supplies and demand will force the state to subsidize those who cannot afford the value of water. Therefore, if you are assumed to be common property, then the moral system of trust, empathy, commitment and solidarity move the unit price value of water (Sandoval *et al.*, 2019a).

It is necessary to raise water resources, according to the theoretical, conceptual and empirical frameworks are social and political resources. This is because a resource management involves consensus for the common good, collective health or local sustainable development. In this sense, water is no longer just a resource that can be private, public or common, but rather under the capabilities of generations in the future depend on a minimum availability of water is therefore a resource socio-political, a management tool that vulnerable, marginalized or excluded sectors are requested to negotiate with the authorities in order to ensure the needs of their descendants (Bustos *et al.*, 2019a).

Therefore, environmental scenarios of socio-political resources warn that water availability and management agreed depends on the effects of climate change on environmental public health, quality of life and social welfare. Thus, to the extent that the shortage of water resources is accentuated, and the water is reduced to a minimum, the excluded adopt styles of austere life that prevent contingencies shortages and conflicts over water management, the increase fares or around government discretion grant or remission of fees (Valdés *et al.*, 2019).

In the case of health scenarios, water resources assumed as social and political, are instruments of social pressure for implementation of prevention and health promotion programs, and although behaviors associated with health risks involving consumption basins are also generated polluted water bodies overexploited or illegal connections. In the area of conflict, marginalized groups are accused by political actors to participate depending on the supply and demand of local water. It is a tandem system in which the volume of water distribution is under civil participation in the elections, promoting political party or candidate for popular post. In this sense, water is a socio-political resource, a management tool, conflict, consensus, management and social responsibility, but as a management tool endogenous development encourages social and political competition is supporting candidates who offer regularize tandem system rather than to manage water in a way that ensures sustainability and not the conflict between the marginalized sectors (Aldana *et al.*, 2019).

Global and local water issues involved share the imbalance per capita consumption and availability. In this asymmetrical relationship, the charging system restores balance, but as the differences between those who pay with subsidies and those who can afford its excessive cost intensifies. However, the distance between availability and consumption warns that in developed countries the per capita volume is oriented to residential and industrial use, while most of the demand is oriented to agriculture in emerging countries.⁹ Referring to Brazil, Spain and the United States, Mexico increased water volume used for agriculture, but residential use is second only to Brazil. Regarding the volume of water for industry, Mexico occupies the last place, but unlike the US where it is recycled, its intensive use has no treatment.¹⁰ regarding the analysis by country, Mexico has greater volume availability among selected countries of the OECD but ranks seventh in terms of per capita water consumption. Compared to Denmark that is in the past availability and consumption sites, Mexico has a gap between the availability and consumption as overexploited aquifers and does not follow the policy of sustainability of Denmark (García, 2019).

The imbalance between the available volume and water consumption has generated a collection system in Mexico that varies depending on the region, although the degree of population density, the problem is concentrated in the capital of Mexico. Indeed, local water problems can be inferred from the substantial increase in the collection of water services. Over a period of 15 years, the unit price of water increased by 400% implying the exclusion of sectors that earn less than \$2 a day and facing the loss of purchasing power of wages was devalued by 200%. In short, local water problems is to 1) imbalance between availability and consumption indicated by overexploitation of aquifers and 2) the exponential increase in tariffs and subsidies that exacerbate the differences between sectors. However, both aspects are linked to public policy in tandem, grants and remissions that are implemented as welfare programs to reduce conflicts between rulers and ruled (Sandoval *et al.*, 2019b).

2.2. Studies of Governance Commons Resources

The sociopolitical resources: studies have focused on its conceptualization, training, activation, accessibility, structure, function prediction, change, inoculation, identity and ambivalence. The social and political resources have been defined from emotional and rational dimensions. Both dimensions are the result of experiences and expectations. This implies its structure: one dimensional or multidimensional that is set to exogenous and endogenous factors. That is, when activated socio-political resources decisions and behaviors cause a peripheral, emotional, spontaneous, Heuristic and ambivalent process. In contrast, when the social and political resources transmit the effects of values and beliefs about the intentions and actions, they are endogenous mediators of a central process, rational, deliberate, planned and systematic. The formation of social and political resources starts from four basic psychological processes 1) extraversion, 2) neuroticism, 3) psychologist and 4) emotionality that would indicate levels of anxiety about shortages and water shortages. Once activated these symptoms would be anticipated psychosocial scenarios (Carreon *et al.*, 2019).

If the social and political resources generate states of anxiety and emotion that decentralize the problem of scarcity and shortages of water of individuals and their rational economic processes, then psychosocial factors be located conflicts over water management at the conformists versus innovative groups. These are groups that stick their expectations to public policies versus dissident group's tandem programs, payment systems, subsidies or remissions. Such differences are based on the sense of belonging those natural resources in general and water resources in particular generated in a local setting of sustainable development (Sánchez *et al.*, 2019).

Thus, the sense of community generates stereotypes from which are expected to settle conflicts over management of groundwater, distribution through pipes or central supply outlets. The categorization not only distinguishes the groups, but also justifies such differences regarding fees for use of natural resources and public services. However, the sense of belonging to an environment and attachment to a place of origin is guided by symbols, meanings and senses that in a historical context highlighting its importance in endogenous development. The sense of belonging is often symbolized by the natural resources that allow the progress of a group in a given space. The social categorization points out the ownership and management of the resources emanating from the spaces considered as symbols of the community. In both cases, a sense of belonging and categorization, there is a relationship linking the core with peripheral representations of water, their uses and customs (Bustos *et al.*, 2019b)

In both processes, core and peripheral representation, sociopolitical processes that transform resources in general and water in particular symbols of power and influence between conflicts of groups seeking management or self-management they are revealed. Sociopolitical resources that begin as indicators of anxiety and psychological emotionalism, passing through psychosocial processes of belonging, categorization, representation and identity, but take a socio-political sense by way habitus, field and capital legitimizing reproduction social domination. The identity that is the culmination of psychosocial factors is a conglomeration of decisions and choices not always rational and more emotional in which the individual in need of water is decanted by the action of a group with respect to water supply. Thus, the water socio-political identity refers to the actors of cooperation and solidarity among groups suffering the tandem versus groups that have a regular supply of water. However, psychosocial processes do not explain how the differences between groups legitimize and spread among group members through membership. The habitus explains the transfer of concrete actions water saving, optimization and reuse legitimizing shortages and tandem in the excluded sectors (Espinoza *et al.*, 2019).

However, the habitus is generated in spaces or areas of power and influence. In this sense, those who organize themselves to manage a water body learn to negotiate with other groups the distribution of water from aquifers rights. In the process of formation of habitus in contexts austerity capital are essential for strengthening frugal lifestyles, but also legitimize the policy of local sourcing. Collaborative management networks, hoarding and distribution of water in a locality involve skills and abilities that are generated from the rectory of the state in opportunities of water extraction and social responsibility expected to consider water resources as socio-political factors of local development. However, psychological, psychosocial and sociopolitical scenarios are insufficient to understand the consensual management of water resources in government and forms of authoritarian and democratic state regimes (Rincon *et al.*, 2019).

2.3. Models of Governance Commons Resources

In the context of the social and political resources, exalts an internal process of governance known as governance, unlike the guidance of the State in the administration of public resources and services, is the emergence of civil proposals, debates and consensus of responsibility Social. The theory of governance of socio - political resources not only lies in the equitable relationship between authorities and citizens, but also involves the emergence of austere lifestyles that indicate the response of civil society to government administration. This process has evolved during three political, authoritarian and democratic scenarios Governance of socio-political resources in terms of political systems, is growing in the authoritarian and totalitarian regimes because these freedoms are subject to the guidance of the State, guarantor of territorial security and resources. In authoritarian and totalitarian systems, water is part of a territory and as such is protected by the absolutist state, but unlike traditional, transitional or democratic regimes, communities develop a sense of belonging or social representation that legitimizes water distribution in communities regardless of their identities (Hernandez *et al.*, 2018).

However, coercive systems of freedom exacerbate civil proposals in this regard is that authoritarianism and totalitarianism generate governance, but especially conducive to communities to build a sense of belonging to the environment, since the loss of steering increases ethnocentrism communities. In the Praetorian or civil courts, they are authoritarian governance systems that accentuate stereotypes towards authorities and legitimate differences between sectors with respect to the asymmetric distribution of resources. But the sense of community, coupled with the social representation of abundance or scarcity of water are factors of dissent that are reduced to a minimum after they have been legitimized the asymmetries between groups with regular and irregular supply. Therefore, the choice of a group involves water management. Feat civil participation from those who support or dissent natural resource managers, who manage the supply, those controlling the reuse or treatment of wastewater and those who encourage local development (Villegas *et al.*, 2018).

In these scenarios, governance emerges as a way to legitimize management differences over water use rights management and waste management. It is a political system in which the players resolve their differences, establish agreements and rules issued consumption. Unlike authoritarian regimes in democratic systems and water management involves establishing an agenda from the information dissemination of conflicts among vulnerable, marginalized and excluded groups. Thus, in parliamentary democracies water is a central theme, as tariffs, subsidies

and grants are scattered among those who represent the communities, but in the presidential system, the power of initiative and veto, regulates water conflicts and disputes between users of drinking water (Valdés *et al.*, 2018).

As part of the transformation of the state and bureaucracy, emergencies pose citizen participation governance is an administrative system in which two actors deprived rulers and ruled according to degree of conformity or innovation. In the first case, management is determined by domination and social control over political power spread over civilian areas (Martínez *et al.*, 2018a).

In this sense, the consensus is established from the coercion of collective action and social mobilization exposed in the media as obstacles to the construction of public peace, agreements and conventions that underpin structural reforms. By contrast, governance established by way of innovation suggests the participation of citizens as key player in both the execution and design of social and environmental policies and programs. In this process, the influence is the instrument by which the topics for discussion are established, agreements are conceived and opportunities, abilities and civil responsibilities around the design of strategies for inclusion and right to resources and services are geared urban (Martínez *et al.*, 2018b).

In the case of the governance of water resources and services, the conflicts generated by the imbalance between availability and consumption are considered scenarios of scarcity and shortages compared to that municipal policies establish systems of tandem and collection in order to reduce the differences between rulers and ruled. However, according to the degree of supply and cost of the unit price of water, water conflicts acquire an unequal dimension that can scale to a conflict of equitable order when authorities and users agree deprivation or compromising the ability of future generations. Rather, the distributive inequality can be lessened through conflicts involving the social deterrence around the breach of regulations between users sharing resources, or subsidies to persuade the most radical rule out violent acts such as avenues closures, kidnappings of pipes or boycotts hydraulic installations (Sanchez *et al.*, 2018a).

Thus, the tariff increase does not necessarily correspond to the actual cost of water services, but rather derived from deterrence strategies consumption, but are also tools subsidy the more radical sectors identified as its capacity for mobilization and confrontation with the authorities. Related subsidies, waivers are an instrument that enables the public peace and subsequent renegotiation with those vulnerable, marginalized or excluded sectors that spend up to 20% of their income for water. Result of unequal conflict monopolies supply units known as pipes exacerbate the differences between those who have a regular supply and pay a slightly higher price and those under a regime of tandem and are exposed to the disproportionate increase in the unit price. In this scenario, lifestyles are more coercive because there is a double post tandem exclusion policy is known as hoarding water in areas of high marginality. In contrast, governance that would be born from conflict and agreements sample management capabilities, consumption and water treatment waste while there are mechanisms for citizen participation and negotiation with local authorities regarding the cost of service and recycling (García *et al.*, 2018).

These styles of consensual life in which users pay more than representing the service price, but are assured of a regular supply, although this administrative modality can lead to monopolies organized sectors on peripheral areas suffer the water shortages. Regarding the dimension on deterrence as a means of water governance it would be indicated by the domination of managers to ensure the supply and maintenance of drinking water from exponentially increase tariffs or groups, delete subsidies or remissions. It is a scenario in which the media set the topics for discussion and legitimize tariff policies to public opinion. Even in this model of governance establishing a public agenda is preponderant factor for the exclusion of opinions in favor of cooperatives (Amemiya *et al.*, 2018).

The dimension on persuasion involves the promotion of civic values that guide environmental water saving, but without questioning the asymmetries between the consumption of agribusiness and residences. This is a precautionary strategy of natural disasters brought about by drought or floods in social instability and subsequent competition for water resources. Persuasions styles are to promote pro-life water conservation, although the rates are increased, generate inflation in the local economy. However, water management is inherent violence involving disagreements, lack of agreements, ambivalence and hostility as preponderant factors in relations between users and local authorities. The invisible violence involving xenophobic speeches about vulnerable minorities, marginalized or excluded seems to encourage subsidy policies to prevent demonstrations or violent actions, but also legitimize subsidies or remissions that the authorities can target as recruitment of militants (Sanchez *et al.*, 2018b). In contrast, violence by consensus implies not only the participation of all sectors, but also the exercise of majority power against the customs of migrant communities.²⁶ This is a scenario in which the tariffs regulate the differences between residential, natives or migrant sectors from considering establishing a unit price per capita income, or the degree of human development. But the hostile violence on water supply and policies tandem is oriented towards those groups that close avenues, confronted with authorities involved hijack pipes or municipal supply. It is a policy of frontal combat crime that appropriates facilities under the emblem of the rights to the city and free water, but established trade networks of water in areas with lower availability and supply encouraging these users allocate up to 20% of their income on water. Finally, management of water resources would have an ambivalent dimension in those areas and sectors due to supply shortages and low cost of service. Indeed, his ambivalence is that the quantity and quality of water corresponds to its low cost and consumption, and therefore colonies living under constant stress because the state does not increase them the cost and improves their service.²⁷ In short, governance of water resources is made up of four dimensions as relations between sectors and level of supply and unit price of water supply and treatment. Each dimension is

considering a management conflict and foreseeable levels of violence by scarcity and cost (García, 2018).

The governance of water services involves the analysis of factors that reveal self- managed collective actions in situations of uncertainty or risk, but especially to prominent differences between the quantity, quality and price of

water. Self- management is not only the result of a shortage but is the product of citizen initiative through its mechanisms of influence generates supply options that allow you to anticipate adverse environmental or administrative scenarios (scenario 1). Unlike the state of knowledge where self-management is measured by the degree of reaction in the specification of this model it arises rather than being weighted by their degree of anticipation. Thus, the dosage of water is a result of the advance of the reaction rather than to drought or flood. These strategies derived from styles of preventive life rather than reactive, opportunities rather than threats, capabilities more rules and responsibilities rather than conventions (hypothesis 2), but a degree of meaning dosage is necessarily linked with a certain level of reuse because in a system austerity it is more than a reaction identity (Carreon, 2019).

Thus, austerity encourages reuse because once that has been optimized water use, the next logical action is to extend its use to show future generations that is not enough to care for her or save her, but we must also enter into the daily dynamics as a factor of entrepreneurial identity (hypothesis 3 and 4). In these communities, the water to be considered as part of a cultural heritage does not have a cycle that defines it, but if symbols and meanings with a sense of belonging and rootedness to the environment. It is the ancestral cooperative that communities adopt as livelihood to incommensurability and unpredictability of natural disasters and environmental catastrophes (scenarios 5 and 6). In this sense, innovation is a course of action given the magnitude of the environment. Water governance in communities consist of the study and promotion of new ideas as a hallmark of the community to changes in the environment. Once the entrepreneurship and innovation are established, the following process is related to the lies in predictive identity of the relationship between resources and communities with the aim of a appropriation of nature, not as resources, but as heritage of the environment, species and groups that inhabit it (hypothesis 7 and 8). The governance of water resources and services is actually a management system knowledge and rationales that allow the replacement of the domination of nature by a sense of belonging, the exploitation of its resources for their conservation, but above all, replacing consumer lifestyles by an ideology of coexistence between resources and species.

3. Method

Cheung (2008) suggests that univariate meta-analyzes for the study of the effects of a dependent variable on an independent variable can be carried out following the technique of structural equation modeling, considering studies as subjects. In this way, the studies published 2010 to 2019 in the literature that correspond to positive and significant relationships (type A literature), positive but spurious relationships (type B literature), null, unreported and unreported relationships were reviewed, but theoretically possible (type C literature) and negative relationships (type D literature) between governance systems (co-government between political and social actors, public and private sectors).

Table-1. Descriptive of the study sample

<i>Year</i>	<i>Study</i>	<i>Literature</i>	<i>M</i>	<i>N</i>	<i>n1</i>	<i>n2</i>
2010	Carreon et al.,	A	24,35	230	120	110
2011	Morales et al.,	B	21,34	150	70	80
2012	Limon et al.,	A	20,45	210	100	110
2013	Sandoval et al.,	A	26,57	240	120	120
2014	Amemiya et al.,	A	21,24	150	75	75
2015	Hernández et al.,	C	22,47	140	70	70
2016	Rivera et al.,	B	20,48	230	120	110
2017	Aguilar et al.,	A	24,31	150	75	75

Y = Year, S = Study, L = Literature Type, M = Mean age of the sample, N = Sample Size, n1 = Sample size of the forts group (control), n2 = Sample size of the second group (experimental).

Source: Elaborated with data study

Pro-meta version 3.0 software was used for information processing, considering the year of publication, type of literature, multivariable kurtosis distribution, beta weights and total variance explained to establish the effects of governance systems on the management of the common resources in the period from 2010 to 2019 and in the context of the center of Mexico that make up the entities of Hidalgo, Morelos, State of Mexico, Mexico City, Puebla, Tlaxcala and Querétaro.

Cheung (2009), points out that in the systematic analysis of the estimated random effects models the calculation of the confidence interval is carried out from the estimated standard errors which can be extracted by means of simulation technique and based on proportions of probability, correlations or internal consistency parameters.

In the case of fixed and random effects models, as they are related to structural equation models, they suggest the analysis of a collection of individual results that can be tested using hypothetical models of latent and observed relationships, using any size of multivariable effects, including categorical and continuous moderators (Cheung, 2010).

In the case of mixed effects models such as multilevel cross-modeling and latent growth modeling, the empirical test of the model is evaluated from the maximum likelihood estimate and the restricted or residual likelihood estimate (Cheung, 2013a)

Therefore, multivariate, fixed, random and mixed effects meta-analyzes can be translated into structural equation models to observe more than one effect size (Cheung, 2013b), although in this paper only random effects

will be observed in a Only effect size for eight major studies from 2010 to 2017 regarding the governance of common resources and their effects on local management.

However, the limits of the random effect models operate with the assumption of independent relationships between the effects of size, but recently the dependence relationship between them has been evidenced, as is the case of local or regional studies and their disadvantages in meta-analyzes. multivariate Therefore, it is necessary to carry out univariate level meta-analysis; random effects, sensitivity and accumulation (Cheung, 2014a).

In this sense, the models of meta-analytical structural equations synthesize the correlation and covariance matrices with the purpose of moving from a fixed effects model (the matrices are identical in the studies) towards a random effects model (the matrices are different in the studies) and be able to estimate the overall effect size (Cheung, 2014b).

The models of fixed, random and mixed effects are developed in three levels; univariate, multivariate and structural equation (Cheung, 2015a), although in this paper we will only work on the univariate random effects model: incidence of the governance system on the management of resources that are considered common in the prospective development of a locality.

Thus, the objective of the present study is to establish the size of the effects and their sampling variations; differences of standardized and gross means, correlation coefficients or proportions of probability (Cheung, 2018a), although the statistical properties of multivariate effect sizes and covariance sampling matrices are also increasingly required, such as standardized mean differences (multiple treatment and final effect studies) with covariance matrices and assumptions of homogeneity or heterogeneity to generalize the results to other populations and samples (Cheung, 2018c).

Therefore, the models of meta-analytical structural equations allow to establish the generalization of the results, although they must be subject to a correlation or covariance matrix (Cheung, 2018b). The present work used the emphasis of complete information proposing credible starting intervals more efficient than test statistics and adjustment pump.

4. Results

Table-2. Shows the proportions of probability that establish the ranges or thresholds of rejection and acceptance of the findings reported in the literature selected for the unilabiate meta-analysis as a random effects model

Study	ES	LL	UL	sig	V	SE	W	Res	R-Sig	N	n1	n2	nna
Carreon et al.,	,24	,10	,38	,003	,06	,18	12,81%	,49	,238	230	120	110	0
Morales et al.,	,30	,20	,49	,045	,08	,19	15,95%	,34	,439	150	70	80	0
Limon et al.,	,40	,14	,56	,028	,09	,10	14,02%	,34	,305	210	100	110	0
Sandoval et al.,	,57	,45	,61	,000	,01	,17	15,92%	,32	,498	240	120	120	0
Amemiya et al.,	,69	,40	,78	,041	,04	,14	5,97%	,40	,657	150	75	75	0
Hernández et al.,	,81	,51	,89	,089	,08	,13	9,79%	,34	,491	140	70	70	0
Rivera et al.,	,40	,23	,56	,008	,07	,15	13,82%	,36	,430	230	120	110	0
Aguilar et al.,	,82	,35	,92	,082	,06	,16	12,42%	,35	,256	150	75	75	0

ES = Erects Size, LL = Lower Limit, UL = Upper Limit, sig = significance level, SE = Standard Error, W = Weight, Res =Standardized Residual, R-Sig = Outliers Potential, N = Sample Size, n1 = Sample size of the forts group (control), n2 = Sample size of the second group (experimental), nna = not assigned sample size

Source: Elaborated with data study

The study by Aguilar et al. (2018) had the largest effect size (, 82), but its level of significance was higher than required (, 082), explaining 6% of the variance with a weight of 12.42%.

In order to know the size of the general effect of governance on the management of common goods, the general random effects model was estimated, which had a 95% confidence interval (K = 8; ES = , 57 ; LL = , 24, UL = , 68; sig = , 000; V = , 02; SE = , 13; N = 1500; n1 = 750; n2 = 750).

Regarding the degree of variation between the reported effects of the studies, we proceeded to estimate the parameters that indicate the absolute value of the true variance or heterogeneity (Q = 21.59 (2df) sig = , 003; I2 = 67.58; T2 = , 08; T = , 29).

Table-3. Sensitivity analysis random effects model

Study	K	ES	LL	UL	sig	V	SE	N	n1	n2	nna
Carreon et al.,	7	,12	,05	,19	,000	,03	,11	1270	630	640	0
Morales et al.,	7	,20	,10	,24	,000	,03	,12	1350	680	670	0
Limon et al.,	7	,30	,07	,26	,000	,03	,12	1290	650	640	0
Sandoval et al.,	7	,45	,22	,30	,000	,03	,12	1260	620	630	0
Amemiya et al.,	7	,56	,20	,35	,000	,03	,11	1350	675	675	0
Hernández et al.,	7	,70	,25	,40	,000	,03	,11	1360	680	680	0
Rivera et al.,	7	,34	,14	,25	,000	,03	,12	1270	630	640	0
Aguilar et al.,	7	,73	,17	,46	,000	,03	,11	1350	675	675	0

ES = Erects Size, LL = Lower Limit, UL = Upper Limit, sig = significance level, SE = Standard Error, N = Sample Size, n1= Sample size of the forts group (control), n2 = Sample size of the second group (experimental), nna = not assigned sample size

Source: Elaborated with data study

The sensitivity analysis shows that excluding the work of Aguilar et al. (2018) the random effects model reaches its largest effect size (, 73), considering the seven remaining studies in a sample of 1350 divided by 675 for the control group and 675 for experimental group (see Table 3).

Table-4. Cumulative analysis random effects model

Study	K	ES	LL	UL	sig	V	SE	N	n1	n2	nna
Aguilar et al.,	1	,93	,27	,96	,000	,03	,15	150	75	75	0
Amemiya et al.,	2	,76	,30	,85	,000	,03	,16	300	150	150	0
Carreon et al.,	3	,32	,15	,49	,000	,03	,14	530	270	260	0
Hernández et al.,	5	,90	,45	,99	,000	,03	,16	670	340	330	0
Limon et al.,	6	,50	,27	,66	,000	,03	,16	880	440	440	0
Morales et al.,	4	,40	,20	,54	,000	,03	,15	1,020	510	520	0
Rivera et al.,	7	,64	,24	,75	,000	,03	,14	1250	630	630	0
Sandoval et al.,	8	,65	,32	,70	,000	,03	,13	1500	750	750	0

ES = Erects Size, LL = Lower Limit, UL = Upper Limit, sig = significance level, SE = Standard Error, N = Sample Size, n1= Sample size of the forts group (control), n2 = Sample size of the second group (experimental), nna = not assigned sample size

Source: Elaborated with data study

Finally, in the cumulative analysis, considering the alphabetical order of the authors, evidence that in the random effects model the study by [Aguilar et al. \(2018\)](#) obtained the largest effect size, followed by [Hernández Valdés et al. \(2021\)](#).

5. Discussion

The theory of reasoned action argues that attitudes are mediating the effect of beliefs about the intentions and behavior. An increase in belief increases and specific provisions to decisions and deliberate actions. It is a process that usually goes in beliefs to the particular regarding intentions and actions. However, the predictive power of the general belief is bounded by the specificity and dimensionality of attitudes. Since attitudes convey the effect of beliefs, they define indicators in provisions likely to be carried out. Theory of Planned Behavior warns that the effect of beliefs on behavior is mediated by attitudes and perceptions of control. In a situation or contingent event, the perception of control increases its predictive power of intentions and behavior if interacts with specific provisions. To the extent that the perception of control decreases, their relationship with attitudes makes a spurious predictable effect on decisions. Necessarily, the deliberate and planned decision-making process and implementation of strategies requires a perception of control is with the provisions to the object.

If the governance of water resources and services is management strategy according to the degrees of conflict and violence gestation from four dimensions of analysis ranging from inequality to consensus, then studies for the construction of agreements or asymmetries resolution deals with those processes inherent in management by their degree of civil participation would be close to the democratization of municipal services, but highlights the disconnect between residential areas, indigenous peoples and peri-urban migrants. Self-management is a social phenomenon that would explain collective action and social mobilization around droughts or floods that create the shortage would force the civil organization, but also an opportunity to market a staple through the hoarding of water. In this sense, the storage would be compromised because the system of tandem operates under a regular regime that is complemented by water storage rather than reuse, treatment or rainwater harvesting, indicators propensity future or behavior-oriented sustainability.

It is precisely at this stage in the system of tandem lost relevance since storage does not correspond with metered water use is a lifestyle-oriented rather than anthropocentric such as hoarding.

Meanwhile, reuse would have a link with the dosage while once used water austere, a new use of it would be an alternative to the inefficiency of the tandem but reuse rather is part of the enterprise involved marketing independent water quality and quantity.

The price of service pipes, once the water has been used and is now intended to sell as of first use, or warns that has already been treated, filtered or processed, would be related to cooperative ways pipes or water vendors are organized, although the processing involves complex processing of water user would be willing to pay to organize a collective environmental protest.

Sustainable behavior that emerges as a result of a consensual management of water resources and services has been established as a major factor in predicting scenarios of conflict and violence as levels of favorable action on the environment decrease, but anticipate scenarios of peacemaking and cooperation at a time when participation levels increase dosage or actions intensify and reuse.

However, a model of governance requires more binding dimensions that anticipate the appropriation of nature and not only its preservation for economic or political reasons, but its restoration by ideological factors with respect and permanent care to the environment and to in turn they indicate a environmental and water culture.

6. Conclusion

The theoretical and conceptual frameworks and empirical evidence warn that governance is a management system degree of conflict and levels of violence generated by the imbalance between availability and consumption system tandem and local recovery have not been able to stabilize and more well exacerbate water exclusion. In the specification of the governance model, it is proposed that the revised asymmetries indicate an appropriation of nature as cultural and purpose, but there are critical positions rather by the deregulation of municipal services.

In the review argues that human development, mainly volitional, is gestated from anthropocentric values that determine socializing with natural resources and municipal services through socio-political representations of conformity, obedience, indignation or violence. In this sense, the specification of the governance model should consider the formation of representations and habitus which could guide from childhood, care and preservation of

resources without having to use violence, but under that communities develop representations and habitus eco-peripheral local development would socialization of empathy, trust, commitment and satisfaction with the environment rather than adjusting styles anthropocentric life to levels of water availability per capita.

Meanwhile, the position about the opportunities and resources for human development, is conceived nature as a provider of tools for capacity building to encourage conservation but set expectations and development needs. In this paper rather it assumes the state as interlocutor of civil society address the shortage of resources. Local Development, unlike the Human Development depends on community values and lifestyles rather than consumption principles.

Finally, in reviewing the environmental agenda argues that schemes of cooperation between nations are determining factors for the development of technology and knowledge generation resources that translate into opportunities for choice and transgenerational action. Regulated by carbon, human activities would access agreements to reduce emissions in order to ensure the sustainability of the model, but in this paper argues that governance does not lie in public policy, but in risk management, conflicts violence and subject to the continuing shortage of natural resources. Governance is determined by the global and local situation model, although its emphasis on the local level involves guidelines for international concert without excluding future generations or other species that coexist with human groups particularly with those communities to have a significant degree of identity and influence are the subject of consensus policies, programs, models and management strategies and self-management.

The spread of the axes of discussion, agreements and responsibilities allow greater efficiency in the management of water resources and services as at least rates and the tandem will be based on the opportunities and capacities of communities rather than individuals. As the scarcity and shortages are the perceptual reach of users will intensify governance on risk reduction, conflict and violence. The study of governance dimensions is experiencing not only be related, but also anticipate scenarios of scarcity, shortage, conflict and violence to establish the axes of discussion, agreements and responsibilities among stakeholders.

The contribution of this work to the theoretical and conceptual as well as the state of knowledge frameworks lies in the specification of a model of governance shortages, uncertainty, conflict and violence. In this sense, it is proposed that water resources due to their importance for everyday life, are instruments of opportunity, ability and responsibility between authorities and users. Thus, the model specification allows the study of the phenomenon from more than economic, socio-political or psychosocial health parameters.

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