Governance in the COVID -19 era: Expectations on water services

Gobernanza en la era COVID -19: Expectativas sobre los servicios de agua

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Abstract: The system of co-management and co-administration of public services known as governance has been widely discussed in terms of its dimensions, but so far, no analysis of the process has been established. This is the case of the relationship between governance and elections. It is in the electoral contest where the conflict between the parties begins due to the preferences, intentions to vote and votes of the electorate. The rulers propose increases in rates for those who can pay them but suggest subsidies and forgiveness for vulnerable sectors. The differences between the rulers and the ruled reveal a governance expected by the parties involved. The objective of this work has been to confirm the factorial structure reported in the literature. Two studies, one exploratory and one confirmatory, were conducted during the 2021 elections in the context of the Mexico City pandemic. The factorial structure of the Expected Governance Scale of Carreón (2020) was established, establishing three factors: expected resolution, perceptions of agreements and expectations of responsibilities, although the research design limited the findings to the analysis sample, suggesting the extension of the model to other moderating factors such as leadership.

Keywords: governance, ecocity, model, complexity, agenda.
INTRODUCTION

Broadly speaking, the governance of the ecocity refers to the establishment of local sustainability indicators in which a cognition system is established, focused on co-responsibility. The concept of governance, for the purposes of this study, refers to a system of co-government of natural resources and, therefore, the co-management and co-administration of municipal services, the main characteristic being co-participation and co-responsibility between political and social actors (Brites, 2012).

In the case of the ecocity understood as indicators of self-government, self-management, self-management and self-responsibility, it is a scenario and an exclusive civil organization, the State and any other political system of government (Carreón et al., 2014).

Well, the concept of governance of the eco-city means:

1. an exacerbation of environmental problems, climatic disasters, natural catastrophes, atmospheric contingencies and ecological crises;
2. propaganda of the leadership of the State as the only management and administration alternative in the face of the effects of climate change on environmental public health;
3. self-government, self-management and self-management of the local heritage of the communities and neighborhoods surrounding the cities;
4. establishment of a common agenda on policies, programs and strategies of co-government, co-management and co-management of natural resources and public services.

Faced with the increasing effects of climate change on public health, an unprecedented system of government is necessary in which the rulers and the ruled limit themselves to an agenda, issues, discussions, consensus and co-responsibilities that overcome their differences and resolve conflicts that prevent sustainable local development (Aguilar, 2017). In such a process, negotiation, mediation, conciliation, arbitration and prosecution of responsibilities are necessary.

Therefore, the objective of this work is to contrast a model for the study of the governance of the eco-city. A documentary, cross-sectional and exploratory research was carried out with a selection of information sources indexed to national repositories such as Latindex and Redalyc, considering the publication period from 2000 to 2022, the inclusion of the keywords: "Climate change", "governance", "Ecocity". The information was processed using the Delphi technique to establish the model. Afterwards, the Expected Governance Scale of Carreón (2020) was adapted, considering the qualifications of expert judges to the reagents and the findings reviewed in literature. A preliminary study was carried out with students and a second with voters. Are there significant differences between the expected theoretical structure of governance with respect to the empirical data observed in this work?

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The premises that guide the study suggest:

a) Governance is a political system oriented towards sustainability by virtue of establishing differences, agreements and co-responsibilities between political and social actors, as well as public and private sectors;

b) The eco-city is the result of this political system of co-government, observed in cities that have implemented monitoring, assembly and co-responsibility systems such as Amsterdam, but also in Latin American cities such as São Paulo or Bogotá;

c) The governance of the eco-city begins with a conflict between the parties, as was the case in Los Angeles with the scarcity of resources and public services, as well as the increase in costs;

d) The social and political actors, public and private sectors in conflict reach agreements from the perspective of common goods, as is the case of cities that imposed eco-taxes on public services, with Sydney being the city that regulated the conservation of resources through fees;

e) Co-responsibility is achieved when the identity, reputation and corporate image of institutions in charge of mediating, conciliating or arbitrating the differences between the rulers and the ruled underlie, the city of Los Angeles being a model of sustainability;

f) Corporate governance, understood as a system of practices and guarantees such as fairness, transparency or co-responsibility precedes governance.

GOVERNANCE THEORY

The theoretical frameworks that explain the governance of the eco-city are:

1. The Theory of Capacities proposed by Sen (2000);
2. The Theory of Habitus proposed by Bourdieau (2007) and

The city as a scene of symbols, senses and meanings around which the asymmetries between public policies and urban lifestyles are represented. The city is a scenario of resources that increase capacities, but also increase responsibilities (Bourdieu, 2002).

Studies relating to real estate services; spatial and technological data indicate that the size of the dwellings and the technology of their facilities, as the former are increasingly smaller and the latter more automated, facilitate river catchment and recycling, but inhibit the storage and reuse of water (Melgarejo & Lopez, 2016). The provision capacity seems to encourage the irresponsibility of water waste.

The Theory of Capabilities implies an interrelation between resources, services, scenarios, abilities, knowledge and responsibilities that would make necessary a governance system from which the balance between the mentioned factors is regulated by the State, supervised by the citizens and financed by the public market (Gissi & Soto, 2010).

However, from a developmentalist political framework in which freedoms give way to capabilities and responsibilities. This process seems to be inhibited given the scarcity of natural resources in cities. In other words, the availability of resources, being an objective fact rather than a subjective one, influences the lifestyles of users who inhabit cities (Guillén, 2010).

Such a phenomenon of scarcity activates public policies that seek to supply resources to one social sector to the detriment of another. In response to exclusion or marginalization from public services, the segregated population builds habitus intuit, adopts lifestyles from which they will symbolically and actively confront the authorities. Protests, closures, rallies, demonstrations, marches, physical or verbal confrontations are the result of the scarcity of resources, public policies and lifestyles or habitus of the citizenry (Lefèbvre, 1974).
Studies on lifestyles in cities such as Los Angeles or Sydney in terms of scarcity, saving and reuse of water show that the availability of less than 50 liters per person per day increases austerity, but increases clashes with local authorities; kidnapping of pipes, closure of avenues, boycotts of networks and clandestine takeovers. Citizens segregated from water spaces and public services develop skills and strategies to manifest the situation in which they find themselves, express their indignation and appropriate the spaces (Malmod, 2011).

In the framework of water conflicts between authorities and users, the Habitus Theory posits that the lifestyles of citizens in a situation of scarcity are a consequence of public policies. The city is a field of interrelation between capitals and socially constituted habits. In this way, economic and political capitals are confronted with natural and citizen capitals. In other words, the market and the State demand aquifers that supply industry and private and public services in the city, but the availability of water, through the recharge of aquifers, is increasingly lower than international standards or records. Such a scenario explains the emergence of habitus or lifestyles in vulnerable, marginalized or excluded sectors (Iglesias, 2010).

However, the Habitus Theory maintains that lifestyles are conjunctural, emergent and inherent to a group or social agent. In other words, in a situation of scarcity and lack, austerity underlies and in the same way it disappears in a situation of water sustainability in which the recharge of aquifers would guarantee the human and local development of the demarcations of a city. Such an approach is insufficient if it is necessary to understand the historical process that led cities to concentrate resources, services, lifestyles, and capabilities (Loyola & Rivas, 2010).

The Theory of Spatiality understands the city as a symbolic scenario in which production relations materialize. The city concentrated asymmetric economic relations between the classes that own the means of production and the workforce (Marx, 2014). In this sense, the city is a scene of industrial production rather than of services, since the asymmetric relations between the bourgeoisie and the proletariat prevail over other asymmetric relations. Consciousness of the space is no longer necessary to appropriate the factory, but rather the city that houses it. The right to the city would be the extension of the right to a symmetric production relationship (Sen, 2011).

If the workforce only appropriates the means of production, the spaces would only be an accessory to the class struggle and not a constitutive element of the differences between these classes (Santamaría, 2012).

The Theory of Capacities explains the redistribution of resources and its impact on human, local and sustainable development. The differences between individuals (sex, age, abilities, education, location) determine the freedoms that individuals need to develop sustainably. In this sense, capacities are knowledge and experiences derived from the interrelation between individual characteristics, resources and spaces. As resources are scarce, capacities are decimated and spaces are scenarios of conflict since the State limits freedoms to ensure a proportional distribution of resources. In the case of water, capacities play a fundamental role since the daily use of water implies the development of lifestyles or habitus that can help counteract the situation of scarcity and scarcity (Molini & Salgado, 2010).

The Habitus Theory explains the discrepancies between local water supply policies and self-management actions, closure of floods, intervention of networks, sequestration of pipes and boycotts of the system are the result of transformations of resources and spaces to which a sector of citizens do not have access. If capabilities and habitus are indicators of conflicts between citizen expectations and public decisions, then the reappropriation of spaces for debate on the right to the city, its resources, and water supply and distribution systems is essential (Scallop, 2012).

The Theory of Spatialities introduced the category of power to explain the differences between the relations of symbolic and material production. The city stands as a symbol of power that homogenizes production relations because its material conditions are already spatially pre-established. That is, spatial relationships are power relationships, but not communicative or discursive relationships, but material ones, although their
fetishization makes them appear as tangible objects, but only at the discursive level, such relationships could be transmuted (Pallares, 2012).

The fetishism of space as a commodity undermines the principle according to which the material conditions of existence determine the ideological superstructure. This is so because the exaltation of objects is inherent in the value of their use. The space, real or symbolic, would have a use value, but not an exchange value, although what is interesting about its fetishization is that it indicates the degree of alignment of the capitalist production relations over any other type of relations in which the spaces were not they. they are transformed into merchandise (Verissimo, 2012).

In a certain way, capacities and habitus would precede alignment and would be marked by their degree of fetishistic representation of space. If capabilities and habitus are skills confined to resources and spaces, then alignment would be the result of resource scarcity and asymmetric resource distribution. The scarcity of water fetishized in scarcity would mean the emergence of saving skills or dosing habitus, but such a process would inhibit the representation of conflict and social change. That is, scarcity, shortages, confrontation or boycott indicate a conflict since it is resolved through the supply of pipes, the distribution of pitchers, the regular supply of water or the granting of vouchers for the purchase of water. The contradictions between public policies and lifestyles, derived from the demand of the pharmaceutical market, soft drinks or beer, are reduced to distribution relations rather than to production or allocation of spaces (Brites, 2012).

The fetishization of space prevents us from observing the differences between social relations and their stratifications based on mechanisms of spatial and economic segregation. Therefore, it is necessary to consider the Theory of Spatiality's as a sociohistorical complement to the categories of habitus and capabilities that are ahistorical, considering them to be emergent or underlying the absence of freedoms or the generation of abstract conflicts between structure (public policies) and agency (Urquieta & Campillo, 2012).

The Theory of Capacities, the Theory of Habitus and the Theory of Spatiality's make it possible to approximate the governance systems of natural resources, mainly water resources, to the lifestyles of users in reference to public water supply policies and irregular supply. In this sense, the reconceptualization of local governance systems will allow greater equity between sectors through a normative legal framework of the right to the city in general, natural resources and public services at the local level and water comfort in particular (Paniagua, 2012).

However, given the urgency of a fairer political system around the citizenship of cities, eco-city projects are multidimensional and, in this diversity, their complexity lies.

GOVERNANCE STUDIES

The conceptual frameworks that explain the governance of the ecocity are: a) freedom, b) fields, c) capacities, d) capitals and e) responsibility. Those of freedoms, capacity and responsibilities of Sen (1989) inscribed in developmentalist humanism are proposed; habitus, capitals and fields by Bourdieu (2011) related to structuralist constructivism and spatialities by Lefebvre (1980) alluding to Marxist urbanism.

These authors propose universal elements around the city and the inclusion of sustainability:

- Freedoms, capacities and responsibilities for the reappropriation of the city (spaces and water resources).
- Habitus, capitals and fields where conflicts are generated by the redistribution of resources and spaces in the city (aquifers, networks and pipes).
- Spatialities for the governance of the local resources of the city (awareness for the equitable distribution of water).
Governance and the eco-city would have a more social composition. The proximity of the concepts to everyday styles will allow us to discuss the importance of the political system of governance in reference to the economic system of the eco-city. In this sense, it is necessary to open the debate on social inclusion through the right to the city, mainly to natural resources and fundamentally to water resources as elements of sustainable local development (Brites, 2012).

The concept of eco-city is multidimensional. It has been understood as an economic, political and social system to reduce the ecological footprint of previous generations in reference to the capabilities of previous generations, a space limited to one million inhabitants, whose activities are agriculture and industry based on the availability of water, although a conflict scenario, recycling is considered its main development tool (Nacif et al., 2011).

The concept of eco-city is related to others of a socio-historical nature. Together with the categories of freedoms, capacities, responsibilities, habitus, capitals, fields and spatialities, the concepts of governance, segregation, sustainability, centrality, inclusion, periphery and surplus value will allow us to conceptualize the problem of scarcity, bureaucracy and lack. In this sense, studies on sustainability and eco-city projects seem to demonstrate the viability of terms based on heterogeneous indicators (Nozica, 2011).

Latin American studies on scarcity, marketing and public policies on water resources in cities have used various instruments to measure indicators of local water sustainability. The management of water resources; the ethnic appropriation of urban space; population density as a factor of residential sustainability; national identity as an argument for the design of buildings; the rearrangement from spatial inclusion and exclusion, bi-oceanic peri-urban tourism policies; the perception of peri-urban risk; The segregation of public squares and the representation of the city according to social strata are examples of the empirical relevance of studying scarcity, mercantilism and public policies around water resources in Mexico City (Santamaría, 2012).

Empirical studies on sustainability and eco-city have incorporated the symbolic and representational dimension of those who consume resources and therefore evaluate public services (Gallardo Hernández, 2020). In this way, studies have focused on the impact of public policies on the lifestyles of indigenous peoples, communities, neighborhoods and peri-urban localities in reference to centrality and territorial ordering (Anguiano de Miguel, 2016). In this process, qualitative studies have replaced the quantification of spaces, instruments such as plans, records and maps have been replaced by in-depth interviews. The investigation of spatial relations and natural resources have now incorporated representations of public services as a fundamental element of the governance system through the establishment of tariffs for municipal services (Orostegui & Matos, 2009).

The relationships of appropriation, transformation and distribution of resources and spaces in its development process, propitiated the differentiation of social classes. As the differences became more acute, the segregation of the spaces protected their own and transforming differences while at the same time enhancing the differences in the distribution of resources, mainly water. This process confronted public policies against lifestyles that favored market demands (Iglesias, 2010).

Faced with the situation of scarcity and shortages generated by public policies that were adjusted to market demands, the marginalized, excluded and vulnerable sectors developed skills, knowledge and strategies to appropriate spaces (aquifers, equipment, networks) to supply themselves and confront the authorities for the regularization of the Service. In this framework, the transformation of water resources was delegated to the federal government and the collection of the service to the local government. In this
sense, the scarcity of water and the increase in tariffs oriented the water conflicts towards the forgiveness of debts, the implementation of meters, the repair of visible leaks, the protection of facilities, the control of demonstrations and agreements between authorities with representatives of users. On the other hand, aquifer concessions, river recycling and capture technology, investment in infrastructure, detection of imperceptible leaks, contamination and overexploitation of aquifers, water crops, and real estate deregulation were ignored as problematic... that impede the sustainability of the city (Loyola & Rivas, 2010).

Within the framework of eco-city projects and the evaluation of their governance systems, mainly public policies on natural resources, fundamentally water resources, the Human Development Index aims to observe, measure, and compare freedoms, capacities, and responsibilities, but in the best-case scenario only records the amount of public goods that would demonstrate local sustainability. Therefore, an index is required that describes sustainability with an emphasis on water resources, referring to their availability, extraction, distribution, consumption, reuse, recycling, and tariff as constitutive elements of a local governance system (Malmod, 2011).

Bustos et al. (2018) established two dimensions related to corporate responsibility: image and prestige as concomitant factors to a second-order factor: responsible reputation. Two dimensions of sustainability governance related to risk aversion and propensity and consensus establish a second-order factorial structure with perceived negotiation. The dimensions related to agreements between political and social actors around the issue of water. These are the provisions favorable to the stewardship of the State, citizen participation, and co-management.

**ECO-CITY GOVERNANCE MODEL**

A model is a representation of the themes, the axes, the trajectories, and the interrelationships between the factors used in the agenda of the reviewed literature.

The governance of the eco-city is indicated by the opportunities for ecological freedom that state institutions must guarantee for civil society to develop fields of state participation in which agreements will be established (Wickson, 2015). In this process, the capacities for negotiation and agreement are those indicated for the establishment of co-government, provided that said consensus is observed within a framework of social capital of responsibility.

The spaces of ecological freedom are state instances in which the institutions will establish the mechanisms and agreements for the inclusion of citizen proposals, but otherwise, it will be the civil organizations that must negotiate these spaces with the institutions.

The fields of state participation imply the opening of the government to the citizen initiative, at least in what refers to the public agenda (Soto-Vasquez et al., 2021). In this sense, the institutions open their spaces to civil organizations and these conform to the guidelines of the State, mainly in terms of evaluation, accreditation, and certification.

Therefore, the negotiation and coordination capacities are the first area of interaction between the governors and the governed (Martinez & Espejel, 2015). This is because the preamble to a national agreement is the discussion of the asymmetries between the actors, but this process is based on institutional and organizational criteria, as well as on the observation of international organizations.

Finally, the next natural step in the process in question is the social capital of responsibility, which refers to the merger of state institutions and civil organizations, an indicator par excellence of co-government or governance (Hudson & Florez, 2021). In the case of the eco-city, such a hybrid would be aimed at preserving the nature and quality of public services.
METHOD

Two exploratory studies and one confirmatory study of the factorial structure were carried out with an intentional selection of 135 students (M = 22.1 age SD = 1.3 years and M = 7,452.12 USD SD = 234.35 USD monthly income), and 105 users (M = 27.4 SD = 4.5 and M = 9,834.23 USD and SD = 245.46 USD monthly income) of municipal water services, considering their participation in the electoral training system and the 2018 federal elections.

In both phases, the Expected Governance Key (EGE-27) was used, which includes reagents alluding to three factors; perception of state negotiations ("The State will manage the rates for water services with international creditors"); expected consensus ("The State will subsidize water rates in vulnerable sectors") and co-responsibility expectations ("The State will collaborate with international organizations in the microfinance of water services"). Each item is answered with one of five options ranging from 0 = "unlikely" to 5 = "quite likely".

The surveys of the first study were carried out in the facilities of the Autonomous University of the State of Mexico and in the second study they were applied in Mexico City during the federal elections of 2021 before and after the votes, prior written guarantee of anonymity, confidentiality and respect for their militancy, preference or political affiliation, as well as the non-linkage of the results of the study with the sociopolitical status of the respondents.

The statistical analysis package for social sciences, version 15.0, was used for information processing; normality, adequacy, sphericity, reliability, validity, fit and residual.

RESULTS

Table 1 shows the normal distribution parameters that suggest the multivariate analysis of the relationship structures between variables (see table 1).

In a second study, with the purpose of confirming the factorial structure established in the first investigation, the relationship between the variables was estimated (see Table 2).

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Prepared with data study;
M = Mean, SD = Standard Deviation,
F1 = Perceived negotiations,
F2 = Expected agreements,
F3 = Shared responsibilities; * p < .01; ** p < .001; *** p < .0001
### TABLE 1
Instrument descriptions

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<td>.769</td>
<td>.593</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Prepared with data study;  
R = Reactive, M = Mean, SD = Standard Deviation, B = Bias, K = Kurtosis, A = Alpha excluded with data study.  
Method: Main Roads,
Rotation: Varimax.

Adequacy and Sphericity \( \chi^2 = 14.23 \) (24df) \( p < .05; \) KMO = .762

F1 = Perceived negotiations (14% of the total variance explained and alpha = .782),
F2 = Agreements expected (11% of the total variance explained and alpha = .760),
F3 = Shared responsibilities (7% of the total explained variance and alpha = .765).

All items are answered with one of five options on a scale ranging from 0 = “unlikely” to 5 = “quite likely”

To observe the appearance of a second-order factor with respect to the three first-order factors, a structural model was estimated (see Figure 1).

Fit parameters and residuals \( \chi^2 = 32.12 \) (23df) \( p > .05; \) CFI = .990; GFI = .997; RMSEA = .0007 suggest the non-rejection of the null hypothesis regarding significant differences between the theoretical relationships with respect to the empirical relationships.

DISCUSSION

The contribution of this study to the theoretical and conceptual frameworks lies in the establishment of a model of expected governance. In relation to the capabilities theory of Sen (1989) where management skills related to entrepreneurship and innovation stand out, this paper suggests that governance is a system that incorporates negotiations, agreements and commitments that allow social actors and political actors to achieve a common future for public services in the face of the pandemic. In this sense, Bourdieu’s theory of habitus (2002) warns that the differences between the governors and the governed can lead to a negotiation...
that reorients the asymmetries towards consensus. In the present work, the habitus and the capacities configure a budding structure as they are reflected in the conflicts, consensuses and shared responsibilities. The habitus, fields and capitals suppose an emancipation of the governed with respect to their rulers, but the expected governance model proposes an agreement between the parties.

Unlike capabilities, habitus, capitals, and fields oriented toward civil self-management, Lefebvre’s (1974) theory of spatialities suggests the defetishization of public services. That is to say, before any negotiation, agreement or co-responsibility between government and civil society, it is necessary for both political and social actors to reach an awareness of the spaces as part of a symbolic capitalism that prevents self-management and co-governance of resources that are private, public or common.

In contrast, the observed governance model incorporates spatialities as part of the conflicts between the actors, but necessarily these differences will allow consensus and shared responsibilities to be reached. Co-government does not imply a de-fetishization of public resources and services such as water, but it does suggest a new perspective on the problems of scarcity, waste, unhealthiness and famine.

The contribution of this work to the state of the question lies in the complexity of a model for the study of the governance of the eco-city, but by circumscribing the literature to national repositories and the Delphi technique for information processing, these limit the scope from the model to a local context. Therefore, the search for information in international repositories is recommended to process the data with data mining and generate a comprehensive model in which the eco neighborhood and ecovillage models are recovered, as well as their corresponding theoretical, conceptual and empirical frameworks.

In this paper, state bargaining expectations have been highlighted as a first-order factor that would explain 14% of the total percentage of variance. In this study, the dimension of consensus expectations was established to account for state management vis-à-vis international financial institutions, which would explain state management of public water services. In this research, the factor of shared responsibility was established to explain the incidence of citizen participation in the sectoral water policy and agenda.

Lines of research around the perception of governance and its dimensions of expectations of conflict resolution, expected agreements and co-responsibility regarding factors such as the provisions of the government and leadership system, will allow explaining the differences and similarities between political and social actors, as well as as well as between the public and private sectors.

CONCLUSION

The objective of this work was to confirm the expected governance factorial structure in the face of contingencies, risks and potential threats of scarcity, scarcity, unhealthiness and high cost of water resources and services, although the research design limits the findings to the study. scenario, suggesting the extension of the model to other scenarios of building an agenda with local political depth. The relationship between conflict negotiation, agreements and co-responsibilities will allow progress towards the establishment of a responsible government in situations of potential risk to local public health.

The expected governance model suggests that the conflicts between the rulers and the ruled over the rates of water services are reoriented towards agreements and co-responsibility. The corporate governance that consists of the establishment of identities or differences between the parties, reputation or possibilities of agreements and image or social responsibility precedes the expected governance between the parties.

The governance model recovers the Sustainable Development Goals (SDG) in relation to comprehensive water management. The sustainable use of water is a right that this paper has weighed as a result of conflicts, agreements and co-responsibilities between the parties. The right to the city and water services suggests their conservation from the inclusion of users in public policies. In this sense, this paper warns that access to resources is conditioned by a rate system according to co-responsibility. The government can increase unit
costs, but from the availability of resources. Civil society and sectors in conflict can manage compensation, subsidies, forgiveness, although taking into account their history of consumption.

Urban planning of water policies can be enriched with the governance model. The institutions in charge of developing and implementing water policies, such as the Decentralized Organization for Drinking Water, Sewerage and Sanitation (ODAPAS) and the Metropolitan Intermunicipal Organization for Drinking Water, Sewerage, Sanitation and Related Services (INTERAPAS) aspire to coupling. While ODAPAS generates a regional policy, INTERAPAS generates local water management policies. The coupling between ODAPAS and INTERAPAS guarantees comprehensive water management. In this coupling process, the expected governance model provides a diagnosis of the relationships between public water administration and users. The evaluation of regional or local policies can be carried out from the governance model established in this work. Even in the face of risk events such as the pandemic, the governance model will make it possible to explain and anticipate contingent scenarios.

REFERENCES


6/06/henri-lefebvre-la-produccion-del-espacio.pdf


