

Methodological Proposal for Analyzing the Development of Information Policies to Promote the Society of Information and Knowledge in Mexico.

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Abstract. The aim of this article is to present the methodological proposal to analyze the information policies intended to promote the society of information and knowledge in Mexico.

A comparative study with the purpose of identifying the following is proposed:

- 1) Type of policies designed in each entity and scope regarding the concepts of society of information and society of knowledge.
- 2) Factors prevailing in the development of information policies.
- 3) Type of information policies common in Mexican institutions.
- 4) Agreement with information policies proposed by the Federal Government.

The relevance of applying the qualitative comparative analysis (QCA) proposed by Charles Ragin is considered.

Keywords. Mexico, Information policies, Society of knowledge, Method of Qualitative and Comparative Analysis

1. Introduction

First I want to thank the organizing committee of the Qualitative and Quantitative Methods in Libraries International Conference for the invitation to be here today, and especially the project PAPIIT "Best practices in access to government information" for supporting the development of my research in a progress and to present you today a methodological proposal to analyze it.

To contextualize the importance of the information policies analysis in Mexico I will begin with the concepts of "information society" and "knowledge society" that have generated in recent times, to define the evolution of the relations between the information technologies and the use that man makes of

these tools for the access, use, transmission and analysis of the information, and the application of this to affect in their environment.

In this respect, the UNESCO in its annual report "Towards Knowledge Societies" of 2005 states that:

"... The global information society (commonly referred as the "information society") will have a true meaning only if it becomes a measure to serve a higher and desirable purpose, the construction of knowledge societies that are source of development for everybody, and especially for the least developed countries. To achieve it, two challenges put by the information revolution are particularly important: the access to information for everybody and the future of freedom of conscience. " (UNESCO, 2005, p 29.)

So, we can say that the information society has as a principle to establish better measures and channels for performing the access and exchange of information using the TIC.

Meanwhile, the knowledge society, seeks to develop each individual through the full development of their human rights, including the information access, opening the possibility of having the information to generate new knowledge, that may serve for their individual and community development, that will only be possible by reducing the digital divides emerged in the digital activity, whose components referred by CEPAL are:

- ❖ Infrastructure, generic services (horizontal Sectors)
- ❖ Application areas in society (vertical Sectors)
- ❖ Regulatory frameworks, financing, human capital (diagonal Areas)

Therefore, for the development of information policies the interactions that occur between all components to avoid focusing on just one aspect such as Internet connectivity should be analyzed.

In this sense, with regard to the vertiginous changing of the TIC as information access tools, and this as supply through new knowledge is generated for each individual to achieve their environment influence, the development of policy in this area has been a topic of particular importance among governments, civil society, the private sector and international organizations.

Particularly in Mexico, in the federal government, we can set that in 1977 the 6th article of the Constitution of the United States of Mexico provides that the state must ensure to Mexican society the information access.

However, the biggest boom of changes about information access and the use of the TIC has been in the last decade, with the definition of legal-publication of the Federal Law of Transparency and Access to Public Government Information and its Regulation (2003), and in 2012 the Federal Law of Archives, the service design -Mexico National System (2005) – development and technology exchange-Special Program of Science, Technology and Innovation 2008 - .

Additionally, the reform of the Internal Regulations of the Ministry of Communications and Transport of 2009 makes up as Administrative Unit the Coordination of the Information and Knowledge Society, noting among other functions to coordinate the actions relating to the exchange and development of technology and services, for which, in 2010 and commissioned by the President

of the Republic, was in charge of the definition of a Digital Agenda, by means of it intends to integrate an action plan related to the expansion of the technological infrastructure, the access to Internet, the design, services, the definition of legal frameworks and the transformation of government institutions and the TIC literacy for all.

In this context, it can be inferred that if the Federal Government has made clear its interest in promoting the information and knowledge society in Mexico with greater emphasis in 2009, the state governments have been included in its government development plans, information policies matching with them.

However, it is important to say that the make-up of the Mexican State allows each entity to develop the opportune and pertinent programs, plans and projects to their development, that have to keep relation to the actions of the Federal Government, which are the guide for the national development.

In this context, it has not been possible to find a document that integrates the sort of information policies that have been developed by state governments, and to establish the type of information and / or the knowledge society that are proposed to promote; it is also necessary to identify the factors involved in the definition of the existing type or types in each state, as the state government interest is reflected in the inclusion of actions from its state development plan.

By the above, it is proposed to make a comparative study using the Qualitative and Quantitative Analysis (QCA) proposed by Charles Ragin.

This method has its origin in comparative social science, with a particular focus on the qualitative aspects of social processes.

The procedure, allows identifying:

- 1) Causal necessary conditions,
- 2) Causal sufficient conditions,
- 3) Identify together with causal necessary and sufficient conditions of a social fact.

In the Figure 1 you can see the graphic that include the steps used by the method proposal for Ragin.

Ragin sets up that both the cause and context are inextricably related, therefore, when we look for the causality of a social fact, is pretend to determine on the one hand, the combinations or causal pathways that lead to the same result (equifinality), and investigate all the cases that share the same set of causal combinations that run into or not in the same result.

The QCA also allows to use standardized techniques for comparative studies using Boolean logic basis, and sais that the first step in Boolean analysis of cases, is to define the causal conditions, which is achieved through extensive knowledge of each cases to study. You can also set a number of variables exceeds the number of cases, which form an important aspect of comparative studies.

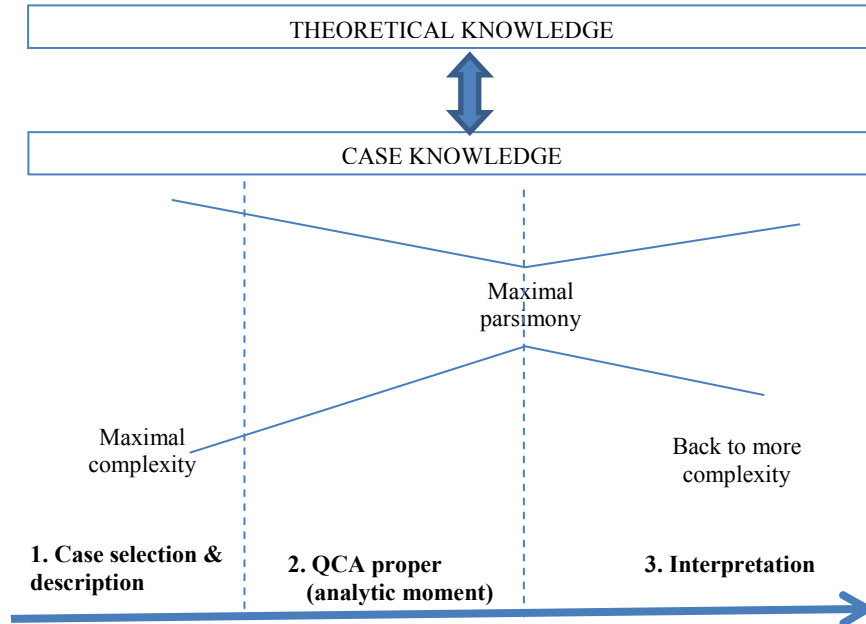


Figure 1. QCA and the funnel of complexity. Take from Rihoux and Lobe (2008, p. 229)

The method offers the advantage that once established the causal conditions that underlie a fact, they can be analyzed systematically as a whole.

The second step is to develop a truth table with the data obtained from each case and assign a binary value on each valuation of each causal condition.

An important aspect is that the QCA allows us to analyze the hypothesis set-theoretical relations (set of hypotheses such as "if ... then ...").

A comparative study of information policies developed in Mexico, using the QCA method proposed by Ragin will allow not only a description of each one of the cases studied, but to identify the type of information policy that are developed in each state, so we can establish the necessary and sufficient causal conditions in which they are developed.

Additionally, it will be possible to see if there is an information policy type that predominates, and identify whether information policies developed in each state, are linked to those raised at the federal level.

To verify the appropriateness of applying the QCA in the information policy analysis, a pilot program was designed, selecting five states (Sonora, Nuevo Leon, Colima, Queretaro and Campeche), taking as initial criteria, have developed their state development plan in 2009 and 2010, which could suppose that they retake the policies proposed by the federal government.

In the first phase, for the analysis of the information policies developed in the states, there were used as source document the state development plans, they were checked the legal frameworks of each entity and the memories of the governorship elections in the state.

Also, National Association of Universities and Institutions of Higher Education, México has divided into six regions, northwest, northeast, west central, south central, southeast and metropolitan.

Data as differentiation, we selected five cases, which correspond to each of the areas, except the metropolitan.

Additionally, it was identified that these entities held elections for governor in exchange for 2009, for which the development of their development plans are made in the same period, giving a first approach to the development of information policies for the same period.

The causal conditions that can be identified are:

- ❖ The state development plan sets, as a part of the state development strategies, the promotion of the knowledge society.
- ❖ It is allocated a higher funding than in previous governments.
- ❖ The design of specific plans to promote the knowledge society on the basis of previously established legal frameworks.
- ❖ Development of state development plan by state in the same period 2009-2015
- ❖ Specific budget is allocated for the development of policy aimed at promoting the knowledge society
- ❖ Developed information policies
- ❖ There are policies to promote the knowledge society related to the exchange of technology and innovation.
- ❖ The need to provide training in order to use the TIC.
- ❖ The state information policies are based on federal information policies
- ❖ Associated with the political concept of information developed

The second step that is to make a truth table with the data obtained from each case and assign a binary value on each valuation of each causal condition, we shall show us how the causal conditions in each case are combined.

Causes	Sonora	Nuevo León	Colima	Querétaro	Campeche
There is a legal framework prior	0	1	0	0	0
The state information policies are based on federal information policies	0	1	0	0	0
Development of state development plan by state in the same period 2009-2015	0	1	1	1	1
Developing specific plan for the knowledge society	0	1	1	0	1
Specific budget is allocated for the development of policy aimed at promoting the knowledge society	0	1	1	0	0
Information policies for TIC	0	1	1	0	0
Information policies for developing skills to use tic	0	0	1	0	1
Information policies for service development using TIC	0	0	1	1	1

Table or value. Creation by the author

To analyze the table of values, it is possible to observe only in the case of Nuevo León there a legal framework prior to the development of the State plan of development of the same State, also noted that both state information policies are based on federal information policy, which makes that the State Government included in its development plan these policies.

However, Nuevo León conceives of the knowledge society from the aspect of technological innovation, by which their information policies focus on developing research institutes; so it is necessary to establish that the technological aspect, while allows society to have more tools, is hardly a basis to generate the information society - which is possible to be considered as a phase of the knowledge society, for which, it is necessary in addition to the society of the information and communication technologies to provide society in the development of skills for the use of these technologies and forming thereby allowing a greater capacity to access, dissemination, and analysis of information to apply them to improve the conditions of life of each individual and the community.

In the case of Colima, information policy for a knowledge society, do not start a previous legal framework, or federal information policies; However, they considered the development of skills for the use of ICT, as well as the development of ICT-based services.

Queretaro does not refer to information policies in their State plan development, however, have developed services using ICT.

Meanwhile, Campeche, coincides with the development of a State development plan which indicates a specific plan for the promotion of the knowledge society, considers the development of skills for the use of technologies, as well as services generated with these tools.

However, in a first approximation, it has been identified that there are two cases in this same group that could be analyzed together, because in the case of Nuevo Leon and Colima, even when the government is exercised by the same political party, the information policies in Nuevo Leon are focused on promoting and allocate economic resources to the development of technological innovation, supporting the design in the existing legal regulatory framework, and taking up the proposal of the Federal Government in the 2008 Science, Technology and Innovation Special Program.

Nevertheless, in the case of Colima, the design of the information policy is also established as an integral part of the state development plan, and is focused on the entirety of services, technology development and digital literacy, targeting specific financial resources for their implementation, but, unlike Nuevo Leon, there is no previous legal framework.

However, "Agenda Digital Colima", has become a benchmark for other entities of the Mexican Republic (Oaxaca, Puebla, Nayarit, Sonora and Tlaxcala) for the development of their digital agendas.

The above, may be related to the last two aspects indicated in the table, the development of skills for the use of ICT, and the design of public services, i.e., services that the Government of the State makes available to its population, to facilitate administrative procedures; points that were not considered in the

policies of Nuevo León, since as mentioned, focus mainly on development since innovation and technological development.

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378 *María de los Ángeles Medina Huerta*

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