
Network of Water Problems in the Press of Mexico City During the COVID-19 Era

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Abstract: The pandemic led to containment and mitigation policies, as well as distancing and confinement strategies that limited the supply of water resources to social sectors. Residential areas-maintained supply, but with an increase in rates. Marginalized areas were subsidized and exempted from paying for an increasingly intermittent supply. Anti-COVID-19 policies guided water policies in two ways: The first consisted of disseminating anti-COVID-19 policies in water management agencies. Another second consisted of the autonomy of the institutions and their decoupling or concordance with anti-COVID-19 policies. In this way, the literature from 2019 to 2022 around anti-COVID-19 policies in their water dimensions, register problems of scarcity, famine and unhealthiness. The scarcity had already been observed in the marginalized sectors, the famine in the residential areas, but the unhealthiness was appreciated in the migrant communities. In fact, the type of exposure to occupational hazards determined the health status of migrants. The water problems were recorded in the circulation press to highlight the asymmetries of anti-COVID-19 policies on the public and private sectors, as well as political and social actors. The objective of the study was to reveal the network structure of relationships between nodes and edges related to press releases on water issues. A documentary, cross-sectional and retrospective study was carried out with newspapers of national circulation: El País, El Reforma, La Jornada and El Universal, considering the water problems of scarcity, unhealthiness and famine. The results show a structure of nodes where the water problems were initiated by La Jornada and ended by El Reforma. Both findings are relevant considering the ideology of the newspaper. La Jornada, a newspaper identified with the political ideology of the left, initiated the dissemination of water problems in a city administered by a government of the same ideology. El Reforma, a newspaper designated by the executive as a spokesperson for the opposition ideology, culminates the network of notes on water problems. That is to say, regardless of the type of political ideology attributed to the newspapers, the problems

of scarcity, unhealthiness and famine are spread. In relation to the state of the art where it is shown that ideology does not influence the establishment of the agenda, the present work corroborates and recommends expanding the study to other entities administered by the opposition such as the cities of Guadalajara and Monterrey.

Keywords: Famine, COVID-19, Scarcity, Insalubrity, Agenda

1. Introduction

Anti-COVID-19 policies, consisting of mitigation and containment, focused their effectiveness on strategies of distancing and confinement of people [1]. As the pandemic continued and intensified, water policies were geared towards optimizing resources [2]. The impact of anti-COVID-19 policies, strategies and programs on the institutions in charge of managing water resources and services was in three areas [3]. The shortage was announced as an austerity policy for marginalized areas [4]. Batch policies contrasted with regular supply policies in residential areas, although they were encouraged by the increase in rates [5]. In a discretionary way, the subsidies and forgiveness were oriented towards scarcity and unhealthiness in peripheral areas of the cities, or in the receiving areas of migrants [6].

The coverage of the printed media around the relationship between anti-COVID-19 and water policies during the period from November 2019 to May 2023, registered the establishment of an agenda where the problems of scarcity, unhealthiness and famine were preponderantly disseminated [7]. Scarcity was a mediated problem such as *tandem* in peripheral areas of cities [8]. Unhealthiness as a scenario of contagion, disease and death from COVID-19 or any other associated disease [9]. The famine associated with water availability in residential areas [10]. In this way, the press established the problems as central axes of the local agenda [11]. The frequency of the problems suggests a convergence in the printed media consulted, but the ideological differences associated with the sources of information suggest an analysis of the interactions between the press releases [12]. That is, the flow of information can converge on a water agenda, but the ideological differences suggest an asymmetry between the interactions with a short-term scenario projected as divergent (Agenda of each newspaper) rather than convergent (Media Agenda) [13].

The objective of the study was to establish the network of interactions between the press releases in order to be able to appreciate the structure of the resulting media agenda, considering the review of printed media with national circulation and their notes related to the water problems associated with the pandemic in the period from November 2019 to May 2023.

Are there significant differences between the structure of press releases related to water problems during the pandemic with respect to the network analyzes of this study?

The premises that guide this work indicate that the pandemic generated an expectation of water availability, sanitation and cost of public service [14]. As the pandemic intensified, expectations turned to despair in the face of the

health, economic, social, and water crisis [15]. Consequently, the print media had to intensify their notes related to water problems to correspond to social expectation [16]. Once the vulnerable society was immunized, expectations decreased and media coverage was oriented towards the dissemination of risk scenarios such as migrant communities [17]. In this way, the establishment of the local water agenda was due to citizen expectations that diminished as their need for information on the pandemic decreased after the vaccination campaigns [18]. Once readers demanded content prior to the pandemic, press releases on water problems were combined with information from vulnerable sectors such as migrants [19]. Consequently, water problems went from being an axis of the media agenda to an axis of the migratory agenda.

2. Method

A retrospective, correlational and exploratory study was carried out with a selection of articles published in newspapers with national circulation and with an opposite ideological attribution, during the period from November 2019 to May 2023 (see Table 1).

Table 1. Sample Descriptive.

| | 2019 | 2020 | 2021 | 2022 |
|---------------|------|------|------|------|
| The country | 9 | 4 | 7 | 3 |
| The reform | 8 | 9 | 5 | 9 |
| the day | 6 | 5 | 3 | 6 |
| The universal | 7 | 8 | 8 | 7 |

Source: Prepared with study data.

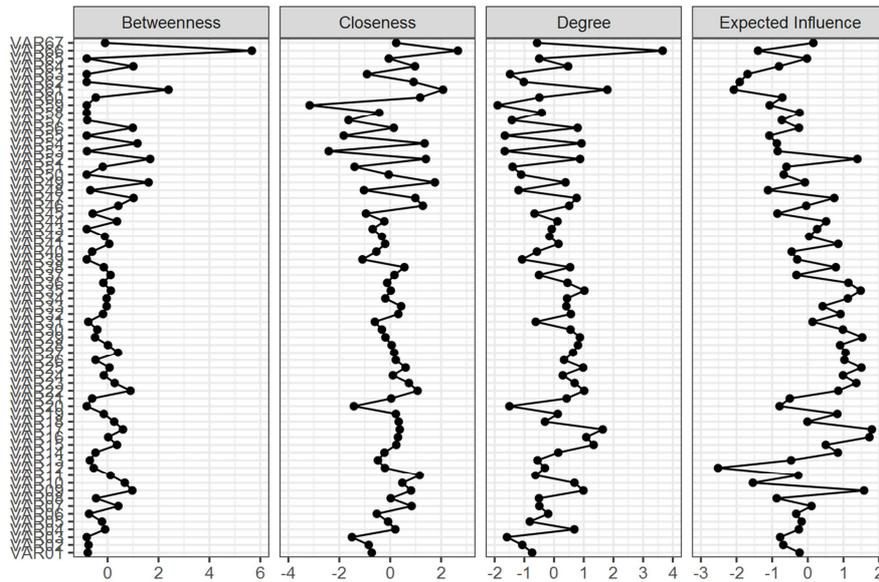
The Delphi Inventory was used for the coding of the information [20]. Experienced judges who are experts in water problems were contacted [21]. The objectives and those responsible for the project were reported, as well as the warning of non-remuneration for their answers [22]. Confidentiality and anonymity were guaranteed in writing following the Helsinki protocol and the APA format for studies with experts [23]. The judges qualified the press releases related to water resources and services [24]. In a second round, the averages were compared with the initial scores [25]. In the end, the rating of each note was reconsidered or ratified [26]. The judges assigned a zero to the note if it was not related to any of the problems, or assigned a value of five for the notes that were significantly related.

The information was captured in Excel and processed in JASP version 14. The centrality, grouping and structuring

coefficients were estimated to be able to test the hypothesis regarding the significant differences between the network of press releases with respect to the analyzes observed in the present work [27]. Values close to zero were considered evidence of neural networks due to the proximity of relationships and configuration of nodes and edges [28].

3. Results

Figure 1 shows the centrality values of water problems in the press from 2019 to 2023. It can be seen that the El País press releases reflect more proximity of the nodes and edges with respect to the El Universal press releases. In other words, the water problems disseminated in the country are less distant from the media agenda than the articles in El Universal.

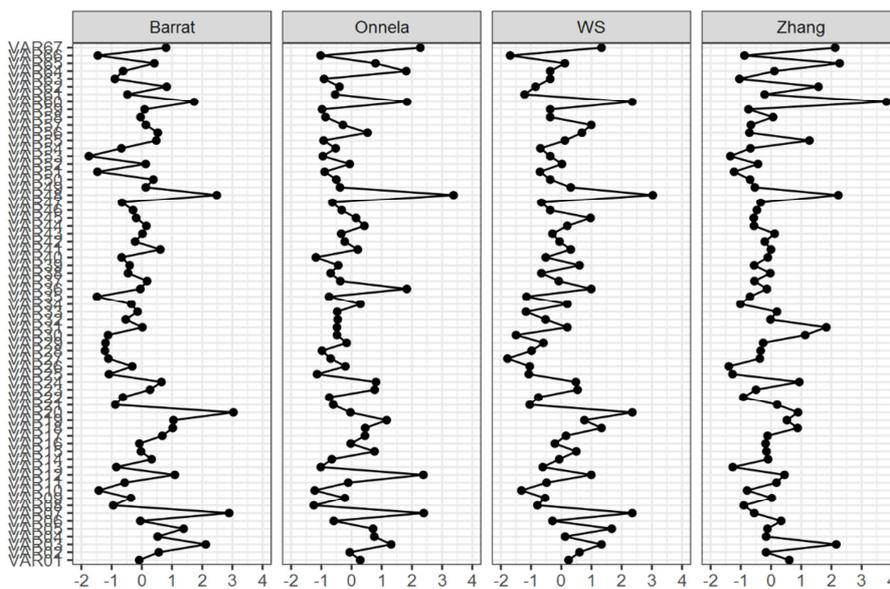


Source: Prepared with data study

Figure 1. Centrality of water issues in the press from 2019 to 2023.

Figure 2 shows the grouping values of the water problems reported in the press from 2019 to 2023. The press releases of La Jornada and El Reforma show greater proximity with respect to the notes of El País and El Universal. In other words, if the country's stories are closer to the media agenda,

they are not reconfigured towards that agenda by interrelating with each other and with other stories. On the other hand, the press releases of La Jornada and El Reforma are more related to the emerging agenda.

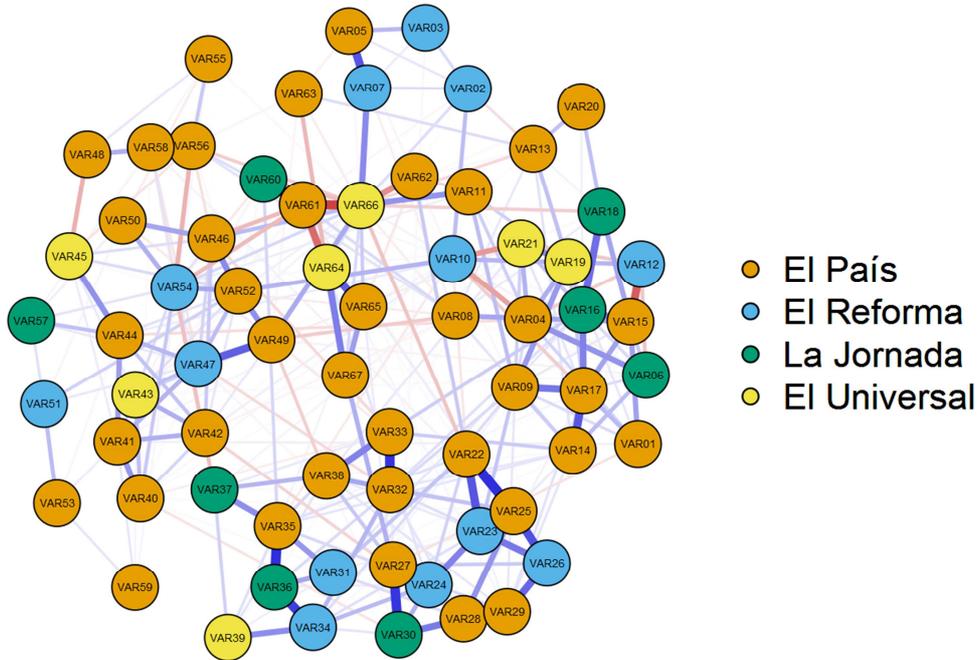


Source: Prepared with data study

Figure 2. Clustering of water issues in the press from 2019 to 2023.

Figure 3 shows the structuring values of the water issues disseminated in the press from 2019 to 2023. The neural network suggests learning from the print media when disseminating water issues. In other words, the press moved from a verifiability frame to a verisimilitude frame. The data prevails in the first phase because reduced interactions can be seen, but as the pandemic progresses, readers' expectations

drop and they force the press to generate a plausible frame. The difference is substantial, the verifiability framework supposes information concentrated in data and readers who compare sources. The verisimilitude suggests notes in accordance with the ideologies attributed to the left for La Jornada and the right for El Reforma.



Source: Prepared with data study

Figure 3. Structuring of water issues in the press from 2019 to 2023.

The results show that the structure of the press releases in the period from 2019 to 2023 is grouped around a verisimilitude agenda. In other words, the high expectations of the readers led the newspapers to offer data to be compared with other sources, but once the immunization had passed and the consequent lack of confidence, the demand for information was reduced. In this situation, the press opted for a new verisimilitude framework that consisted of the dissemination of images rather than data. Readers were able to find out from the same vaccine-oriented content, the reduction of infected, sick and dead by COVID-19. Therefore, the hypothesis of significant differences between the theoretical structure of the agenda and the framework of water resources and services with respect to the analyzes presented is not rejected.

4. Discussion

The contribution of this work to the state of the art lies in the establishment of a verisimilitude agenda of water problems disseminated by the press from 2019 to 2023. The notes on water problems had an asymmetric centrality and grouping in the newspapers observed [29]. The structuring of the notes related to scarcity, unhealthiness and famine are

initially set in a verifiability framework due to the high data content, but in the end, interactions explained by the plausibility framework adopted by the sources are appreciated [30]. In relation to the studies of the establishment of the agenda and the framework where asymmetries between the sources of information are demonstrated, the present work observed the same behavior [31]. In a prolonged phenomenon such as the COVID-19 health crisis, the media move from the verifiability frame because they try to reduce false news with data towards a verifiability frame because they try to maintain the level of audience and expectation [32]. In the present study the same structure is appreciated, although the ideology of the source does not explain this tendency or communicative strategy [33]. Framing studies warn that verifiability is generated in sources that seek to sustain a narrative in the face of an uncertain and prolonged event [34]. In the present work it is appreciated that verifiability was the first strategy of the printed media to spread the pandemic [35]. Verisimilitude studies have shown that this framework emerges once the audiences have given up seeking information from different sources because they consider that the problem or risk event has been controlled [36]. In the present work, it is noted that the plausibility framework underlies once the pandemic has

been declared controlled and the immunization carried out.

However, verifiability and plausibility coexist in risk media diffusion scenarios [37]. The pandemic, assumed as a risk event, was spread by the media from both frames, but in the case of the water problems of scarcity, unhealthiness and famine derived from the health and economic crisis, the frames were structured in a linear way [38]. Research lines related to the differences between the coverage of the pandemic and water problems will allow corroborating the studies of the framework and the establishment of the agenda from the path that goes from verifiability to plausibility.

5. Conclusion

The objective of this work was to establish a network of notes related to the water problems associated with the pandemic. The results show that the structure of notes is oriented from verifiability at the beginning of the economic crisis to plausibility at the end of the confinement and distancing of people. The application of the observed results to risk communication suggests a plausibility frame at the beginning of every crisis and a verifiability frame without the risk being imminent, immeasurable, unpredictable and uncontrollable.

References

- [1] World Health Organization (2022). SARS CoV-2 and COVID-19 coronavirus statistics. Geneva: WHO.
- [2] Pan American Health Organization (2022). SARS CoV-2 and COVID-19 coronavirus statistics for the world. New York: PAHO.
- [3] Organization for Economic Development and Cooperation (2022). Statistics of coronavirus SARS CoV-2 and COVID-19 disease for the country. Gynevra: OECD.
- [4] National Institute of Statistics, Geography and Informatics (2020). *XIII National Population and Housing Census*. Mexico: INEGI.
- [5] National Water Commission (2021). *Water banks in Mexico*. Mexico: Conagua.
- [6] Berroeta, H., Ramoneda, A., Rodríguez, V., Di Masso, A., and Vidal, T. (2015). Place attachment, place identity, sense of community and civic participation in displaced persons from the city of Chaitén. *Magallania*, 43 (3), 51-63 <https://scielo.conicyt.cl/pdf/magallania/v43n3/art05.pdf>
- [7] Bustos Aguayo, José Marcos, Juárez Nájera, Margarita, Sandoval Vázquez, Francisco Rubén, & García Lirios, Cruz. (2022). Social Representations of Water Resources and Services in the COVID-19 Era. *Revista de Derecho*, (57), 155-165. Epub September 30, 2022. <https://doi.org/10.14482/dere.57.356.213>
- [8] Carreón Guillén, J., Amemiya Ramírez, M., Bustos Aguayo, J. M., Juárez Nájera, M., Limón Domínguez, G. A., Pérez Ortega, M. I., & García Lirios, C. (2017). Gobernanza del Desarrollo Local: Hacia un dispositivo del Trabajo Social para la sustentabilidad hídrica. *Realidades Revista De La Facultad De Trabajo Social Y Desarrollo Humano*, 6 (2), 39–51. Recuperado a partir de <https://realidades.uanl.mx/index.php/realidades/article/view/a2a2n2>
- [9] Carreón, J., Hernández, J., García, C., Bustos, JM, Morales, ML, and Aguilar, JA (2014). The psychology of water sustainability: Public policies and consumption models. *Bet*, 63, 1-29 <https://www.redalyc.org/pdf/4959/495950259004.pdf>
- [10] Carreón-Guillén, J., Bustos-Aguayo, J. M., Sandoval-Vázquez, F. R., Juárez-Nájera, M., & García-Lirios, C. (2022). Gobernanza en la era COVID -19: Expectativas sobre los servicios de agua. *FIGEMPA: Investigación Y Desarrollo*, 14 (2), 68–80. <https://doi.org/10.29166/revfig.v14i2.3525>
- [11] Cortes, H. G. & Pena, J. I. (2015). From sustainability to sustainability, sustainable development model for its implementation in policies and projects. *School of Business and Administration Magazine*, 78, 40-54 <https://www.redalyc.org/pdf/206/20640430004.pdf>
- [12] Coulomb, R. (2008). Sustainability of the urban and historical centrality. A reflection from the historic center of Mexico City. *Quivera*, 10 (2), 29-49 <https://www.redalyc.org/pdf/401/40113196003.pdf>
- [13] Cruz García Lirios. (2020) Specification a Model for Study of Water Sustainability. *J Clinical Case Reports and Clinical Study*, 1 (1); DOI: <http://doi.org/03.2020/1.1003>
- [14] Cruz García-Lirios, J. M. B. A. (2022). Water Framing Network in Central Mexico during the COVID-19 era. *International Journal of Medical Sciences and Academic Research*, 3 (05), 17-46. Retrieved from <http://www.scientificpublications.in/index.php/ijmsar/article/view/45>
- [15] Galicia, LA, Balderrama, JA and Navarro, RE (2017). Content validity by expert judgment: proposal of a virtual tool. *Opening*, 9 (2), 42-53 <http://dx.doi.org/10.32870/Ap.v9n2.993>
- [16] García Lirios, C., Carreón Guillén, J., Hernández Valdés, J., Bustos Aguayo, J. M., & Aguilar Fuentes, J. A. (2016). Especificación de un modelo de hipermetropía sociopolítica. *Luna Azul*, (42), 270 - 292. <https://doi.org/10.17151/luaz.2016.42.17>
- [17] García Lirios, C., Bustos Aguayo, J. M., & Sandoval Vázquez, F. R. (2023). La agenda y encuadre de los problemas hídricos en la Ciudad de México en la prensa de 2019 a 2022. *Anuario Del Conflicto Social*, (13), e-40712. <https://doi.org/10.1344/ACS2022.13.4>
- [18] García Lirios, C., Francisco Rubén Sandoval Vázquez, Margarita Juárez Nájera, José Marcos Bustos Aguayo, Javier Carreón Guillén, María Luisa Quintero Soto, Rosa María Rincon Ornelas, & Sonia Sujell Velez Baez. (2021). Confirmatory Model of Attitudes in the COVID-19 Era. *Pak-Euro Journal of Medical and Life Sciences*, 4 (4), 275–282. <https://doi.org/10.31580/pjmls.v4i4.2167>
- [19] García Lirios, Cruz, Carreón Guillén, Javier, & Quintero Soto, María Luisa. (2015). Dimensiones de gobernanza para la sustentabilidad hídrica. *Revista pueblos y fronteras digital*, 10 (20), 195-203. <https://doi.org/10.22201/cimsur.18704115e.2015.20.39>
- [20] García Lirios, Cruz, Carreón Guillén, Javier, Hernández Valdés, Jorge, Mejía Rubio, Silvia, García Estrada, Erle, & Rosas Ferrusca, José Francisco. (2015). Hacia una agenda hídrica para la gobernanza local sustentable. *Revista Internacional de Investigación en Ciencias Sociales*, 11 (1), 130-154. <https://doi.org/10.18004/riics.2015.julio.130-154>

- [21] Garcia, C. (2018). Specified model for the study of the effects of climate change on public health. *William of Ockham Scientific Review*, 16 (2), 1-10 <https://www.redalyc.org/jatsRepo/1053/105358033006/html/index.html>
- [22] Garcia, R. and Marquez, H. (2013). Mexico: Violence and insecurity. Towards a strategy of development and human security. *Special Issue*, 1—30 <https://www.redalyc.org/pdf/181/18127008015.pdf>
- [23] Guevara, E. (2012). Management strategies for environmental sustainability. *Industrial Engineering, News and New Trends*, 3 (8), 83-92 <https://www.redalyc.org/pdf/2150/215025114008.pdf>
- [24] Henríquez, C., Guzmán, J., & Salcedo, D. (2016). Opinion mining based on the Spanish adaptation of ANEW on opinions about hotels. *Natural Language Processing*, 56, 25-32 <https://www.redalyc.org/pdf/5157/515754423002.pdf>
- [25] Javier C Guillén, Francisco E Morales, C Y Q Campas, Gilberto B Ruíz, R M R Ornelas, Cruz G Lirios. (2022). Governance of the public Administration of water Resources and Services in the COVID-19 era. *Brain and Neurological Disorders*. 5 (2); DOI: 10.31579/2642-9730/023.
- [26] Lirios CG, Aguayo JMB, Nájera MJ, et al. Exploratory factor structural of environmental perception. *Sociol Int J*. 2020; 4 (6): 161-166. DOI: 10.15406/sij.2020.04.00241.
- [27] Lirios, C. G. (2005). Un Modelo para Explicar el Uso del Agua en la Zona Metropolitana del Valle de México. *Revista Internacional De Psicología*, 6 (02), 1—108. <https://doi.org/10.33670/18181023.v6i02.34>
- [28] Martínez Muñoz, E., Carreón Guillén, J., Sánchez Sánchez, A., Espinoza Morales, F., Anguiano Salazar, F., Bucio Pacheco, C., García Lirios, C., & Quintero Soto, M. L. (2019). Hybrid determinant model of the coffee entrepreneurship. *Interconectando Saberes*, (8). <https://doi.org/10.25009/is.v0i8.2603>
- [29] Medrano, L. A. and Munoz, R. (2017). Conceptual and practical approach to structural equation models. *Digital Journal of Research in University Teaching*, 11 (1), 219-239 <http://dx.doi.org/10.19083/ridu.11.486>
- [30] Nieto, F. (2020). The legacy of the six-year term of corruption: the challenges of the national anti-corruption system. *International Forum*, 40 (2), 683-715 <http://www.scielo.org.mx/pdf/ifi/v60n2/0185-013X-ifi-60-02-683.pdf>
- [31] Quiroz Campas, C. Y., Carreón Guillén, J., Bustos-Aguayo, J. M., Sánchez Sánchez, A., Espinoza Morales, F., & García Lirios, C. (2022). Ecocentric Governance: Sustainability Between the Availability of Resources and Needs. *Jurnal Bina Praja: Journal of Home Affairs Governance*, 14 (1), 147-158. <https://doi.org/10.21787/jbp.14.2022.147-158>
- [32] Sandoval Vázquez, F. R., Bustos Aguayo, J. M., & García Lirios, C. (2018). Implicaciones sociopolíticas del servicio de agua potable en un territorio de la ciudad de México. *Civilizar*, 18 (34), 75–84. <https://doi.org/10.22518/usergioa/jour/ccsh/2018.1/a05>
- [33] Sandoval, FR, Bustos, JM, Juarez, M. & Garcia, C. (2021). Specification of a model for the study of the sustainability of social work. *Amazonia*, 8 (1), 343-353.
- [34] Sandoval, I. E. (2016). Structural corruption approach: power, impunity and citizen voice. *Mexican Journal of Sociology*, 78 (1), 119-152 <http://www.scielo.org.mx/pdf/rms/v78n1/0188-2503-rms-78-01-00119.pdf>
- [35] Sandoval-Vázquez, F. R., Bustos Aguayo, J. M., & García-Lirios, C. (2021). Desarrollo Local en la Era Post Covid-19. *Ciencia Huasteca Boletín Científico De La Escuela Superior De Huejutla*, 9 (18), 17-22. <https://doi.org/10.29057/esh.v9i18.6283>
- [36] Tinto, J. A. (2009). Meta-analysis as an instrument for searching and selecting information. An experience in the bibliographical selection process for the development of a doctoral thesis. *Management Vision, special issue*, 203-229 <https://www.redalyc.org/pdf/4655/465545882015.pdf>
- [37] Tonello, G. and Valladares, N. (2015). Environmental awareness and sustainable conduct related to the use of energy for lighting. *Management and Environment*, 18 (1), 45-59 <https://www.redalyc.org/pdf/1694/169439782003.pdf>
- [38] Uribe, ID, Gallo, LE, and Fernandez, A. (2017). Traces of a hedonistic education. *Movements*, 23 (1), 339-349 <https://www.redalyc.org/pdf/1153/115350608024.pdf>