Víctor Manuel Espinoza Juárez

victor.espinoza@tec.mx
Languages: Spanish and English

EDUCATION

**Escuela de Gobierno y Transformación Pública
Tecnológico de Monterrey**
PhD Public Policy

**Monterrey, N.L., México
2018-2023**

Instituto Mexicano de Tecnología del Agua (IMTA)
M.S. Water Sciences

**Jiutepec, Morelos, México
2013-2015**

Universidad Autónoma de Nuevo León (UANL)
Civil Engineering School
B.S. Civil Engineering

**Monterrey, N.L., México
2005-2010**

RESEARCH SKILLS AND THEMES

Analysis

My primary focus has been on the development and application of quantitative models to analyze long-term challenges in public policy. I have conducted extensive research in crucial sectors including water, security, economic, energy, and climate policies. The range of methodologies I have employed is comprehensive, encompassing system dynamics modeling, discrete event simulations, agent-based modeling, machine learning, and optimization. By integrating these techniques, I have been able to delve deeply into economic analysis, identifying underlying trends and forecasting the economic impacts of various policy decisions. This approach not only enhances my understanding of the multifaceted nature of economic issues but also aids in formulating more effective and sustainable strategies within the realm of economic policy-making.

Computing

Modeling tools: R, Python, Vensim, GAMS, OSeMOSYS
Statistical analysis tools: R, Python, Tableau
Programming languages: R, Python (comfortable learning new languages)

RELEVANT EXPERIENCE

**Escuela de Gobierno y Transformación Pública
Tecnológico de Monterrey**
Graduate level teacher

**08/2018-Today
Monterrey, N.L.,
México**

- R Programming
- Math leveling course
- Systems modeling
- Data Science
- Decision Analysis

Graduate and undergraduate level teaching assistant
- Machine Learning and Decision Analysis
- Data science for Decision Making
- Systems modeling
  - Responsibilities: reinforce the lessons by working with students in labs, work with small groups of students, help students with research skills, help teacher by creating and grading tests and homework.

Assistant Policy, Economic and Environmental Analyst in Policy Research Projects
- "Challenges of crime incidence analysis in Nuevo León"
  - Responsibilities: collaboration with multi-disciplinary team of researchers, coordinate stakeholders' workshops, construction and analysis of causal diagrams.
- "Robust Decision Making Analysis for Chile's Long-term Climate Neutrality Strategy"
  - Responsibilities: collaboration with multi-national team of researchers, support in stakeholders' workshops for Robust Decision Making analysis.
- "SImulating SEctoral Pathways and Uncertainty Exploration for Decarbonization (SISEPUEDE)"
  - Responsibilities: collaboration with multi-national team of researchers, coordination for the search and organization of information sources to feed the developed model.
- "The Digital Forescasting Project: Digital Maturity Index"
  - Responsibilities: preparation of reports related to the economic, competitiveness and environmental aspects of 14 projects in Latin American countries.

Comisión Nacional del Agua (CONAGUA)
Technical Liaison

-Responsibilities: Technical opinions on the appropriateness of users' requests for new groundwater uses as well as their modification and regularization; control of studies and projects for hydrogeological evaluation and groundwater availability in the aquifers administered by the Rio Bravo Basin Organization; formulation of technical aspects that support the draft agreements on average annual availability of water in the delimited aquifers; collaboration in the preparation of projects for modifying or establishing new groundwater bans, regulations or reserves for aquifer management and the sustainable use of groundwater; participation in carrying out technical studies to justify aquifer management in the state of Nuevo León; supervision of public works contracts awarded through the national public bidding procedure; control and management of the Electronic Public Works Logbook for the Federal Public Administration; review and authorization of estimates related to contract progress and settlements; ensuring the efficient and sustainable management of groundwater resources, which is crucial for economic stability and growth, my involvement in regulating groundwater use has a direct impact on economic policies, highlighting the importance of balancing environmental sustainability with economic development goals.

07/2011-07/2018
Monterrey, N.L., México

PROAMBIO, Consultoría y Proyectos, S.A. de C.V.
AutoCAD Draftsman and Project Engineer

-Responsibilities: Design and review of hydraulic calculation memories, development of functional and process plans, updating of layouts and preparation of project files for wastewater pipelines; development of architectural, functional and process plans for water treatment plants; development of pumping sump plants for redistribution of flows, updating of equipment and pumping methods.

06/2008-05/2011
Monterrey, N.L., México

SELECTED PRESENTATIONS

Víctor Manuel Espinoza Juárez. "Analysis of the land-energy-water interconnection as a tool for decision-making towards sustainable development: the case of Mexico". International Conference on Resilient Systems (ICRS) 2023. Mexico City, Mexico. June 30th, 2023.

Víctor Manuel Espinoza Juárez. "SImulating SEctoral Pathways and Uncertainty Exploration for Decarbonization (SISEPUEDE)". International Conference on Resilient Systems (ICRS) 2023. Mexico City, Mexico. June 29th, 2023.

Víctor Manuel Espinoza Juárez. "Analysis of climate-land-energy-water interconnection as a tool for sustainable development: the case of Mexico". Energy Modelling Platform for Latin America and the Carribean (EMP-LAC) 2023. San José, Costa Rica. February 1st, 2023.

Víctor Manuel Espinoza Juárez. *"Resilience and Robustness in Critical Infrastructure".* The 2020 Annual Meeting of the Society for Decision Making Under Deep Uncertainty. Virtual Conference. November 11th, 2020.

Víctor Manuel Espinoza Juárez. *"Evaluation of the impact on industrial users of the reform to the 'Ley Federal de Derechos 2014' for the use, exploitation and extraction of groundwater".* Foro de Ciencia y Tecnología del Agua. Jiutepec, Morelos, México. November 24th, 2017.

HONORS AND AWARDS

Selected as the Recognized Professor by the first generation of the Bachelor's Degree in Government and Public Transformation   *2023*
Tecnológico de Monterrey

Cum Laude Distinction   *2015*
Instituto Mexicano de Tecnología del Agua (IMTA)

Last updated: January 2024