C H A P T E R   7

SYSTEMIC DEVELOPMENT AND PUBLIC POLICIES FOR SUSTAINABILITY IN A DOCTORAL THESIS IN ADMINISTRATION AT TECNM MEXICO[1]

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ABSTRACT: The Doctorate in Administration (DA) trains people who are reflective, critical, oriented by responsibility and conscientious to meet the needs of the public and private sector environments in which they participate. In administrative intervention projects carried out during the program, the integration of expert teams is promoted with the aim of linking academia with the advances, conditions and needs in the fields of technology, society, culture, economy and the environment. The interdisciplinary and inter-institutional dialogues that are fostered through the reflective practice of intervention encourage graduates to lead social transformation projects.

1. INTRODUCTION

The Tecnológico Nacional de México Campus Tijuana has been characterized by training and updating the management team of companies and organizations for more than 54 years in the City of Tijuana and in the Baja California region. Where outstanding professionals and researchers have graduated, who have made important contributions in different sectors of society; at the local, national and international levels.

For this reason, after 30 years of offering a postgraduate Master's degree in Administration within the area of the Department of Economic and Administrative Sciences, the Doctorate in Administration (DA) is offered, which responds to the needs of the sector, competitiveness, innovation and sustainable development, under a sense of responsibility and social impact [1]. With a focus on Systemic Development and Public Policies for Sustainable Innovation according to the global demand for highly qualified professionals in ecosystems in constant evolution for development and social welfare, such is the case of the region characterized by the economic dynamism of the mega border region of Tijuana, Baja California and the City of San Diego. California. The Postgraduate Degree in Mixed Modality is national and international in scope. The lines of research (LGAC) of the Doctorate in Administration [2] are two:

1. Public Policies for Sustainable Innovation: The analysis, evaluation and proposal of Public Policies involves the study of Fiscal and Financial Incentives, regulation and Governance, Public-Private Cooperation for sustainable projects, Education and Training for the training of professionals in green technology, Infrastructure and Innovation Networks for the formation of ecosystems and innovation clusters with alliances of research centers, as well as the promotion of the development of environmental standards that favor the circular economy [3].

2. Systemic Development QHS (Fifth Systemic Helix): Involves multisectoral cooperation; Universities, Companies, Government, Associations, Researchers and Consultants. For the analysis of the needs of sectoral development through the application of methodologies of integration and inclusion of society, impacting on the Administration, Social Economy and Technological Humanism, Business Management, and application of critical thinking [4].

2. METHODS AND MATERIALS

In this Chapter, three Case Studies of research topics of PhD Students in Administration of the Technological Institute of Tijuana of the First Generation 2025-2 are presented, with a focus on the Line of Generation and Application of Knowledge (LGAC): QHS Systemic Development (Fifth Systemic Helix), and Public Policies for Sustainable Development, see Table 1, as well as the Congruence Matrix of each Research Project Case (Table 2 to Table 6), and the illustrative representation of the sectors methodologically involved in Figure 1.

Student	Institution	Research thesis topic project
Concepción Cruz Ibarra	University of Sonora, Mexico	Design of a Sustainable University Management Model based on the Fifth Systemic Helix Methodology
Qi Boacang	Yutong Bus, China	Factors determining the transition from traditional to green transport
Antonio Alfonso Landero Mada	SENEAM Tijuana International Airport	Components that establish the Learning Curve of Air Traffic Controllers in Mexico. SENEAM Case
Irais Graciela Barreto Canales	Anti-Corruption and Good Governance Secretariat	Sustainable public procurement in Mexico: a development lever for social and solidarity sector organizations
Mario Díaz Obrajero	Executive Secretariat of the 2030 Agenda	Design of a Strategic Methodological Guide for the Alignment of Subnational Public Policies with the 2030 Agenda"

Table 1. Thesis Projects with a systemic approach and sustainability

How do I define a doctoral thesis research topic?

Defining the research topic for a doctoral thesis is one of the most strategic and transformative acts in the academic career. It is not just a matter of choosing an area of interest, but of identifying a relevant, original and viable question that contributes to knowledge and the solution of real problems. With a structured approach, it is especially useful for someone with your systemic profile and committed to sustainable development.

Define the purpose as a researcher.

1. What transformation do you want to generate in the academic, social or territorial environment?
2. What epistemological or methodological gaps have been detected?
3. How does research align with ethical values and vision of the future?

Detect the research problem.

     a) What is not working as it should?

     b) Which actors are excluded from the process?

     c) What indicators do not reflect the reality of the territory?

Delimitation of the research problem

It is the process by which the researcher precisely establishes the thematic, spatial, temporal and population limits of the phenomenon he wishes to study. It is a key stage in ensuring that the problem is addressable, relevant and scientifically treatable.

What does it mean to define a problem?

Un problema significa responder a preguntas como:

1. What? → What is the specific object or phenomenon being studied?

2. How? → What methodology will be used to analyses it?

3. When? → In what period will the research be carried out?

4. Where? → What is the geographical or institutional space of study?

5. Who? → What population or actors are involved?

6. Why? → What are the reasons for studying?

7. For what? → What are the objectives?

Figure 1. Thesis Projects with a systemic approach and sustainability

3. RESULTS

Below are five case studies of the development of Congruence Matrix initiatives of PhD in Administration thesis topics. Research initiatives to venture into case studies on sectoral systemic development and public policies to encourage sustainability for national development. Below are the summaries of the research thesis projects.

SUMMARY OF RESEARCH PROJECT

Student Case Study: Cruz Ibarra, C. (First Generation 2025-2)

DESIGN OF A SUSTAINABLE UNIVERSITY MANAGEMENT MODEL

BASED ON THE FIFTH SYSTEMIC HELIX METHODOLOGY

Universities face the challenge of transforming themselves into sustainable institutions that integrate the 2030 Agenda into their substantive functions: teaching, research, extension and linkage. However, many lack a systemic management model that articulates internal and external actors, guaranteeing social, environmental and economic impact. The Fifth Systemic Helix (QHS) Methodology offers an innovative framework that integrates five dimensions, see Figure 2.

1. Academia; University and Research Centers
2. Government; Public Policy and Regulation
3. Productive sector; Companies, technological innovation
4. Civil society; organizations, citizenship, associations
5. Environment; environment, culture, territory, consultants

Problematic situation:

Mexican and Latin American universities lack an administrative model that: Integrates sustainability in all its functions, articulates actors in a systemic way, generates impact indicators aligned with the SDGs, and is replicable and adaptable to different contexts.

Universities, as knowledge-forming institutions and agents of social transformation, face the challenge of integrating sustainability into their substantive functions (teaching, research, extension and linkage). The UN 2030 Agenda establishes the need for education systems to actively contribute to the fulfillment of the Sustainable Development Goals (SDGs). However, in practice, many universities have limitations:

1. Institutional fragmentation: The academic, administrative, and liaison areas work in isolation, without a systemic model that articulates efforts.

2. Absence of clear indicators: There are no homogeneous metrics to evaluate the impact of university actions on sustainability.

Title: Design of a sustainable university management model based on the Fifth Systemic Helix methodology	
Problem definition	In the context of the 2030 Agenda, universities are called upon to play a strategic role as agents of social, environmental and economic transformation. However, most higher education institutions face structural fragmentation that makes it difficult to integrate sustainability into their substantive functions (teaching, research, liaison and management).
General objective	Design a sustainable university management model, based on the Fifth Systemic Helix Methodology (QHS), which allows for the articulation of internal and external actors, integration of the 2030 Agenda into the substantive functions of the university, and the establishment of impact indicators that can be replicated in different contexts.
Specific objectives	1. To analyze the current state of university management in terms of sustainability 2. Identify the key internal and external actors that make up the five helixes of the Design impact indicators to assess the integration of the SDGs. 3. Build a sustainable university management model, based on QHS. 4. Validate the proposed model by applying it in a university case study
Assumption generation	If a sustainable university management model is designed based on the Fifth Systemic Helix Methodology (QHS), then an effective articulation of actors, integration of the SDGs into the substantive university functions and generation of replicable impact indicators will be achieved.
Variables	DEPENDENT: Level of incorporation of the SDGs in teaching, research, liaison and institutional management. INDEPENDENT Sustainable university management model based on QHS. Academic, government, productive, civil society and Environment of the Sustainable University Ecosystem
Research instrument	Semi-structured interviews Objective: to identify perceptions, experiences and expectations about university sustainability. Focus groups. Objective: to collectively explore sustainability practices, barriers and opportunities.
Type of research	Applied: it seeks to solve a practical problem in sustainable university management. Descriptive and propositional: describes the current situation and proposes a systemic model. Mixed approach (qualitative and quantitative): integrates documentary analysis, interviews and surveys with measurable indicators.
Research method	Case study: Mixed (qualitative and quantitative): the exploration of perceptions and experiences is combined with the measurement of indicators. Systemic methodology: based on the Fifth Systemic Helix (QHS). Data triangulation:
Research Design	Integration of findings into a sustainable university management model based on QHS.
Hypothesis	If the key actors of the five helixes (academia, government, productive sector, civil society and environment) are identified and articulated, then university governance and the capacity for territorial advocacy will be strengthened.

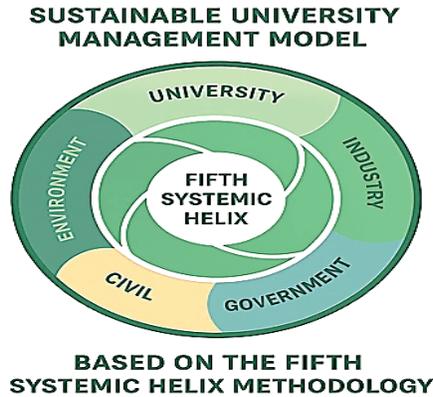Table 2. Congruence Matrix by Cruz Ibarra, C. (2025)

Figure 2. Sustainable University Management Model QHS Methodology

SUMMARY OF RESEARCH PROJECT

Student Case Study: Qi Baocang. (First Generation 2025-2)

FACTORS DETERMINING THE TRANSITION FROM TRADITIONAL TO GREEN TRANSPORT

The transformation from traditional transport to green transport is a systemic change. On the one hand, it reduces social dependence on oil, optimizes the energy structure and ensures the sustainable development of the environment, on the other hand, it boosts the development of emerging industries such as battery, electronic control and motor.

New energy buses are a platform for technological innovation and provide an ideal vehicle for intelligent driving and transportation. Not only do they improve the passenger experience, but they also become the engine of modern green transport and are a strategic measure to promote sustainable development.

The development of new energy buses in Latin America presents a picture of "coexistence of leadership and backwardness". Chile and Colombia are the regional leaders. Its capitals, Santiago and Bogota, have one of the largest fleets of pure electric buses in the world, thanks mainly to policy driving and urban emission reduction plans. Mexico and Brazil are actively pursuing renewable energy and developing photovoltaic generation and dual-source electric buses. Countries like Cuba have severely delayed development of new energy buses due to factors such as sanctions. See Figure 3.

Problematic situation

The development of new energy buses in Latin America presents a "leader and laggard" pattern, and some key cities have achieved certain results, but the overall development still faces challenges, such as the uncertainty of government policies, high initial investment, operators' lack of familiarity with technology and services, insufficient charging infrastructure and grid stability, which seriously affect the development of green public transport, thus hindering the development of green and environmentally friendly public services.

Title: Factors determining the transition from traditional to green transport	
Problem definition	Traditional transport, based mainly on fossil fuels, is one of the sectors with the greatest environmental impact due to its greenhouse gas emissions, air pollution and energy dependence. Despite technological advances and public policies aimed at sustainable mobility, the transition to green transport faces multiple obstacles: economic, social, cultural, technological and regulatory.
General objective	Analyze the economic, social, cultural, technological and regulatory factors that influence the transition from traditional transport to green transport, in order to identify the main barriers and opportunities that allow the design of effective strategies to promote sustainable mobility and contribute to the fulfilment of the sustainable development goals.
Specific objectives	1. Identify the economic factors (investment costs, tax incentives, financing) that influence the adoption of green transport. 2. Assess the regulatory and public policy factors that facilitate or limit the transition to sustainable transport.
Assumption generation	Identify barriers and opportunities for sustainable mobility. Generate evidence to design more effective public policies. Contribute to the reduction of emissions and the fulfilment of international commitments on climate change. Promote a cultural shift towards more responsible and ethical transportation practices.
Variables	DEPENDENT: Transition from traditional transport to green transport INDEPENDENT Economic, social and cultural, technological, regulatory and public policy factors
Research instrument	Qualitative procedure: Coding: open–axial–selective; use of deductive (economic, social, technological, regulatory) and emergent categories. Techniques: thematic analysis, grounded theory for patterns, and causal mapping (influence diagram).
Type of research	Type of study: Mixed sequential explanatory (quantitative → qualitative), with a correlational-explanatory approach.
Research method	Systemic framework: Fifth Systemic Helix (academia–government–business–civil society–environment) to map influences and feedback.
Research Design	Mixed documentary and systemic exploratory study. Size: Determined by formula for proportions, with 5% margin of error and 95% confidence; adjustment for finite population.
Hypothesis	The transition from traditional transport to green transport is significantly determined by economic, social, cultural, technological and regulatory factors, the interaction of which influences the degree of adoption of sustainable mobility practices.

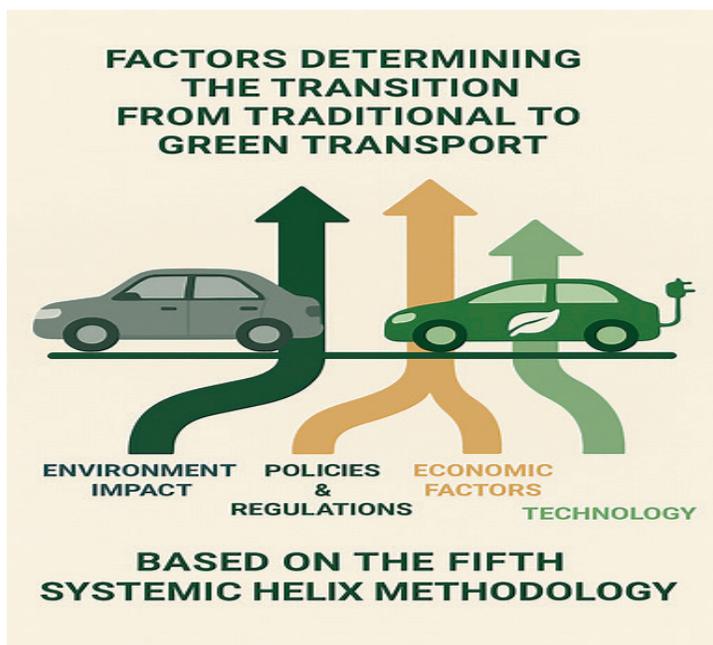Table 3. Qi Boacang Congruence Matrix (2025)

Figure 3. Factors determining the transition from traditional to green transport.

SUMMARY OF RESEARCH PROJECT

Student Case Study: Landero Mada, A. (First Generation 2025-2)

COMPONENTS THAT ESTABLISH THE LEARNING CURVE OF MEXICO'S AIR TRAFFIC CONTROLLERS. SENEAM CASE

This research seeks to establish the learning curve of air traffic controllers (ATCs) in SENEAM. The factors that affect the learning curve are analyzed according to the functions of the SINCO for CTA. The aim is to standardize sectoral competencies to improve performance. The study methods provide a mixed research style: explanatory, descriptive and exploratory. There are no hypotheses, only assumptions of the investigation. Questionnaires, interviews, observation, documentary analysis and congruence matrix are used. The expected impact and its relationship with the lines of knowledge generation and application (LGAC) in the 2030 agenda and SDG 9 on aviation's contributions are analyzed. Aviation supports several SDGs, such as: The contribution of the SDGs to aeronautics: against climate change aviation strives (SDG 13) to reduce pollutants with new technologies and better fuels. The ICAO has recognized that aircraft have significantly reduced aircraft pollution compared to 30 years ago.

The increase in jobs and the economy in the (SDGs 8 and SDG 9), and in the context of infrastructure and investments in this area, as well as in aeronautical innovation, which accelerate development and increase productivity. The thesis favors the learning curve in complex times and an increase in risks, such as aviation.

Problematic situation

Reckless management of the curve can generate risks in air safety, with accusations of untrained personnel that must be verified by the authority. Human factors, such as attention, concentration, decision-making ability and stress control, are decisive in the work. Not understanding how these elements affect the learning curve can result in inadequate training and performance difficulties. An unoptimized learning curve affects the safety of air operations. Delays in the professional maturity of CTAs can lead to incidents and risks at airports and national airspace.

Title: Components that set the learning curve for the air traffic from Mexico. SENEAM Case	
Problem definition	The learning curve of the functions of the air traffic controller (ATC) in SENEAM is unknown.
General objective	Formulate the learning curve through the functions of the air traffic controller in SENEAM.
Specific objectives	1. Determine the learning curve of the functions of air traffic controllers in SENEAM 2. Identify the sectoral competencies of the CTAs in SENEAM.
Assumption generation	How is the learning curve of air traffic controller functions determined? What are the competencies of the CTA position at SENEAM?
Variables	DEPENDENT: Air Traffic Controller Learning Curve INDEPENDENT: Functions to be performed according to the SINCO by the CTA in SENEAM. ASSOCIATION OF VARIABLES: They are measures with central tendency, median, mode, and standard deviation.
Research instrument	Data sources, Closed questionnaires (items), Interviews, Life Stories, Direct Observation, Congruence Matrix Documentary Research, Focus Group
Type of research	Qualitative (Case Study), STRUCTURE OF THE RESEARCH, Method: Epistemological hermeneutical (interpretive)
Research method	Exploratory, descriptive, correlational and explanatory
Research Design	Mixed: Explanatory, Descriptive and Applied
Hypothesis	It is exploratory because there is NO hypothesis, the assumption of the research is formulated

Table 4. Congruence Matrix by Landero Mada, A,. (2025)

The congruence matrix is critical, as it ensures the internal coherence of a research project by aligning the problem, objectives, hypotheses, variables, and methodology. Without their presence, the study might lack consistency and rigor. It allows the interrelationship of each component to be observed, ensuring that the

study design is coherent and logical. The congruence matrix is the foundation of the research project, since it ensures that all the elements are properly aligned and that the results obtained are valid, reliable and useful for the academic community.

SUMMARY OF RESEARCH PROJECT

Student Case Study: Barreto Canales, I.G. (First Generation 2025-2)

SUSTAINABLE PUBLIC PROCUREMENT IN MEXICO: A DEVELOPMENT LEVER FOR ORGANIZATIONS IN THE SOCIAL AND SOLIDARITY SECTOR.

This research analyzes how sustainable public procurement can become a development model for social and solidarity sector organizations in Mexico, in the context of the implementation of the 2025 Procurement Law, Plan Mexico, and the commitments of the 2030 Agenda, particularly SDG 12 on responsible production and consumption. In a country where public procurement represents about 5% of GDP – well below the OECD average (12.9%) – there is a transformative potential that is still underutilized to promote sustainability, productive inclusion and territorial cohesion. The central problem lies in the predominance of the traditional contracting model based on the lowest cost, which has limited the incorporation of environmental, social and public value criteria, as well as the participation of Social and Solidarity Sector Organizations (OSS). These organizations face administrative, technological, and regulatory barriers that exclude them from public markets, despite their ability to generate employment, social innovation, and regional dynamization. The recent regulatory reform and the federal sustainability agenda open a window of opportunity to reorient public spending towards inclusive development goals. See Figure 4.

Problematic situation

In Mexico, the public procurement system represents one of the main mechanisms for allocating State resources and constitutes a strategic instrument to promote economic, social and environmental development policies. Based on data from the ComprasMX Platform, in 2023 expenditure was 727,005,267,419 for the acquisition of goods, services, and work, that is, approximately 5% of GDP for that year. However, despite international progress towards sustainable procurement models and the recognition of the transformative power of public spending, a predominant approach based on criteria of lower immediate cost persists, leaving aside attributes such as social impact, environmental value, working conditions, productive strengthening and revitalization of local economies.

Title: Sustainable Public Procurement in Mexico: A Development Lever for Social and Solidarity Sector Organizations	
Problem definition	Despite the international progress towards sustainable procurement models and the recognition of the transformative power of public spending, a predominant approach based on criteria of lower immediate cost persists, leaving aside attributes such as social impact, environmental value, working conditions, productive strengthening and revitalization of local economies.
General objective	To analyze how the transition from the public procurement model based on the lowest cost to a sustainability approach, in the context of the 2030 Agenda, Plan Mexico and the implementation of the 2025 Procurement Law during the period 2025–2028, can be configured as a development model for organizations in the social and solidarity sector in Mexico, through the identification and evaluation of the normative, institutional and operational conditions that enable or limit such articulation.
Specific objectives	1. Identify and analyze regulatory changes in the 2025 Procurement Law, 2. Assess institutional, technical and operational capacities 3. Formalization of organizations in the social and solidarity sector with the potential or interest in participating in sustainable public procurement. 4. Analyze articulation between public agencies 5. Examining the potential of sustainable public procurement
Assumption generation	How can the adoption of sustainable public procurement in Mexico become a lever for development for organizations in the social and solidarity sector, considering the current institutional, regulatory and operational context?
Variables	DEPENDENT: Development of the social and solidarity sector, measured by: • Access to public markets. • Improvement in organizational and productive capacities. • Integration into value chains. • Diversification of the supplier base. • Generation of employment and territorial impact. INDEPENDENT Level of adoption of sustainable public procurement in Mexico
Research instrument	1. Review of the Procurement Law regulations 2. Analysis of Development Plans for the Social Sector. 3. Review of indicators and targets for monitoring the SDGs. 4. Interviews and meetings with specialists 5. Analysis of collegiate bodies in the field of public policies
Type of research	a) Exploratoria Porque las CPS vinculadas al sector social y solidario son un campo incipiente en México, con escasa evidencia empírica. b) Descriptiva Para caracterizar el estado actual de: Capacidades institucionales, Prácticas de compra sostenible, Barreras de participación del sector social y solidario.
Research method	The research is based on a systemic approach, complemented by a critical and ethical-territorial perspective. This approach conceives sustainable public procurement as a complex system where public actors, social organizations, regulatory frameworks, institutional capacities and territorial dynamics interact.
Hypothesis	The transition from traditional transport to green transport is significantly determined by economic, social, cultural, technological and regulatory factors, the interaction of which influences the degree of adoption of sustainable mobility practices.

Table 5. Matrix of Congruence by Barreto Canales, I.G (2025)

Figure 4. Sustainable Public Procurement in Mexico

SUMMARY OF RESEARCH PROJECT

Student Case Study: Diaz Obrajero, M. (First Generation 2025-2)

DESIGN OF A STRATEGIC METHODOLOGICAL GUIDE FOR THE ALIGNMENT OF SUBNATIONAL PUBLIC POLICIES WITH THE 2030 AGENDA

Public administration in Mexico's local governments faces a fundamental and priority task: the effective alignment of their management and development policies with the principles of the 2030 Agenda and its 17 Sustainable Development Goals (SDGs). This challenge promotes the transition towards sustainable development, which is compromised by a problematic structural situation: the absence of an updated, strategic and standardized methodology that guarantees systemic and operational coherence between global goals and local planning instruments, such as State and Municipal Development Plans.

This deficiency generates an institutional disarticulation that limits the effectiveness and real impact of public policies to achieve sustainability in the country. The General Objective of this doctoral thesis is to design and validate a Strategic Methodological Guide, based on a systemic approach, for the effective alignment of public policies of state and municipal governments in Mexico with the SDGs and the 2030 Agenda. The research is of high relevance for its practical contribution, by generating the Methodological Guide as a tangible and replicable tool that solves

an operational deficiency in local management, it aims to guide the understanding of how to apply integral models in public administration, overcoming fragmented visions of development.

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The problematic situation that gives rise to this doctoral research is located in local public management in Mexico, specifically in state and municipal governments. The current context requires these actors to comply with actions implemented in their communities in response to the 2030 Agenda for Sustainable Development, which implies integrating the social, economic and environmental spheres in planning and decision-making.

The contradiction arises because, although the mandate is systemic and global, the officials in charge of designing public policies continue to use fragmented and sectoral planning methodologies. The result is an operational disarticulation; isolated policies are formulated that solve part of the problem. Development plans are filled with objectives of the 2030 Agenda only for compliance, but without a clear methodological process that guarantees their coherence and real traceability in budget programs.

Figure 5. Methodological Guide for the Alignment of 2030 Agenda

Title: Design of a Strategic Methodological Guide for the Alignment of Subnational Public Policies with the 2030 Agenda	
Problem definition	Operational disarticulation, isolated policies are formulated that solve part of the problem. Development plans are filled with objectives of the 2030 Agenda only for compliance, but without a clear methodological process that guarantees their coherence and real traceability in budget programs.
General objective	Design and validate a Strategic Methodological Guide, based on a systemic approach, for the effective alignment of public policies of state and municipal governments in Mexico with the 2030 Agenda
Specific objectives	1. Analizar los modelos y prácticas actuales de planeación local en México para identificar las brechas metodológicas 2. Desarrollar la estructura, los componentes, las matrices y las herramientas de gestión 3. Validar la pertinencia, coherencia interna y viabilidad de la Guía Metodológica Estratégica
Assumption generation	How can a strategic methodological guide, based on a systemic approach, be designed and validated that allows state and municipal governments in Mexico to align their planning instruments in a standardized way with the Sustainable Development Goals of the 2030 Agenda?
Variables	DEPENDENT: Effectiveness of the Alignment of Subnational Public Policies with the 2030 Agenda INDEPENDENT: Implementation of the Strategic Methodological Guide with a Systemic Approach

Research instrument	1. Review of current local and national regulations. 2. Analysis of local Development Plans. 3. Review of indicators and targets for monitoring the SDGs. 4. Interviews and meetings with local governments. 5. Analysis of collegiate bodies in the field of sustainable development.
Type of research	Step 1: Analytical-Synthetic (Review) Step 2: Engineering Design (Methodological): Step 3: Inductive-Deductive (Validation)
Hypothesis	The transition from traditional transport to green transport is significantly determined by economic, social, cultural, technological and regulatory factors, the interaction of which influences the degree of adoption of sustainable mobility practices.

Table 6. Matrix of Congruence by Díaz Obrajero, M. (2025)

The congruence matrix is critical, as it ensures the internal coherence of a research project by aligning the problem, objectives, hypotheses, variables, and methodology. Without their presence, the study might lack consistency and rigor. It allows the interrelationship of each component to be observed, ensuring that the study design is coherent and logical. The congruence matrix is the foundation of the research project, since it ensures that all the elements are properly aligned and that the results obtained are valid, reliable and useful for the academic community.

Importance of the Congruence Matrix in a Doctoral Thesis

1. Ensure internal consistency

The congruence matrix ensures that all components of the thesis are aligned with each other. For example, that the objectives respond to the problem posed, that the hypotheses are consistent with the objectives, and that the methodology allows answering the research questions. This avoids inconsistencies and ensures that the work has a logical and solid structure.

2. Facilitates planning and development

By visualising all the elements of the project in a structured way, the doctoral student can identify possible gaps, redundancies or inconsistencies before moving forward with the development of the research. This allows for early adjustments and saves time and resources.

3. Improves quality and scientific rigor

A doctoral thesis must be an original and rigorous contribution to knowledge. The congruence matrix helps to comply with these standards, since it forces the researcher to justify each methodological decision and to demonstrate that each part of the work contributes to the achievement of the objectives set.

4. It facilitates evaluation by the synod

Thesis committees and evaluators often review the congruence matrix to ensure that the work is solid and well-founded. A well-crafted matrix conveys clarity, professionalism, and mastery of the subject.

3. CONCLUSIONS AND REFLECTIONS

The development of the preliminary projects of doctoral thesis topics consolidates the development of the skills of the Profile of the Doctoral Graduate in Administration. This will allow you to develop the following cutting-edge competencies in the field of Economic-Administrative Sciences.

1. Capable of producing and transmitting knowledge and skills.
2. Identify problems and how to address them systemically, with scientific, ethical rigor and critical thinking.
3. Substantiate the research carried out by public or private.
4. Transmit research in the publication of printed and digital documents in journals of high scientific impact.
5. Possess comprehensive competencies to test the results of their projects, models and research in the State of the Art.
6. Knowledge, tools and instruments to adequately support their frontier science research.
7. Intervene in organizations in a competent and creative way.
8. Competencies to offer Social Innovation Consultancy, Sustainable Development

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