Islands transport policy in Greece: The Island Transport Equivalent

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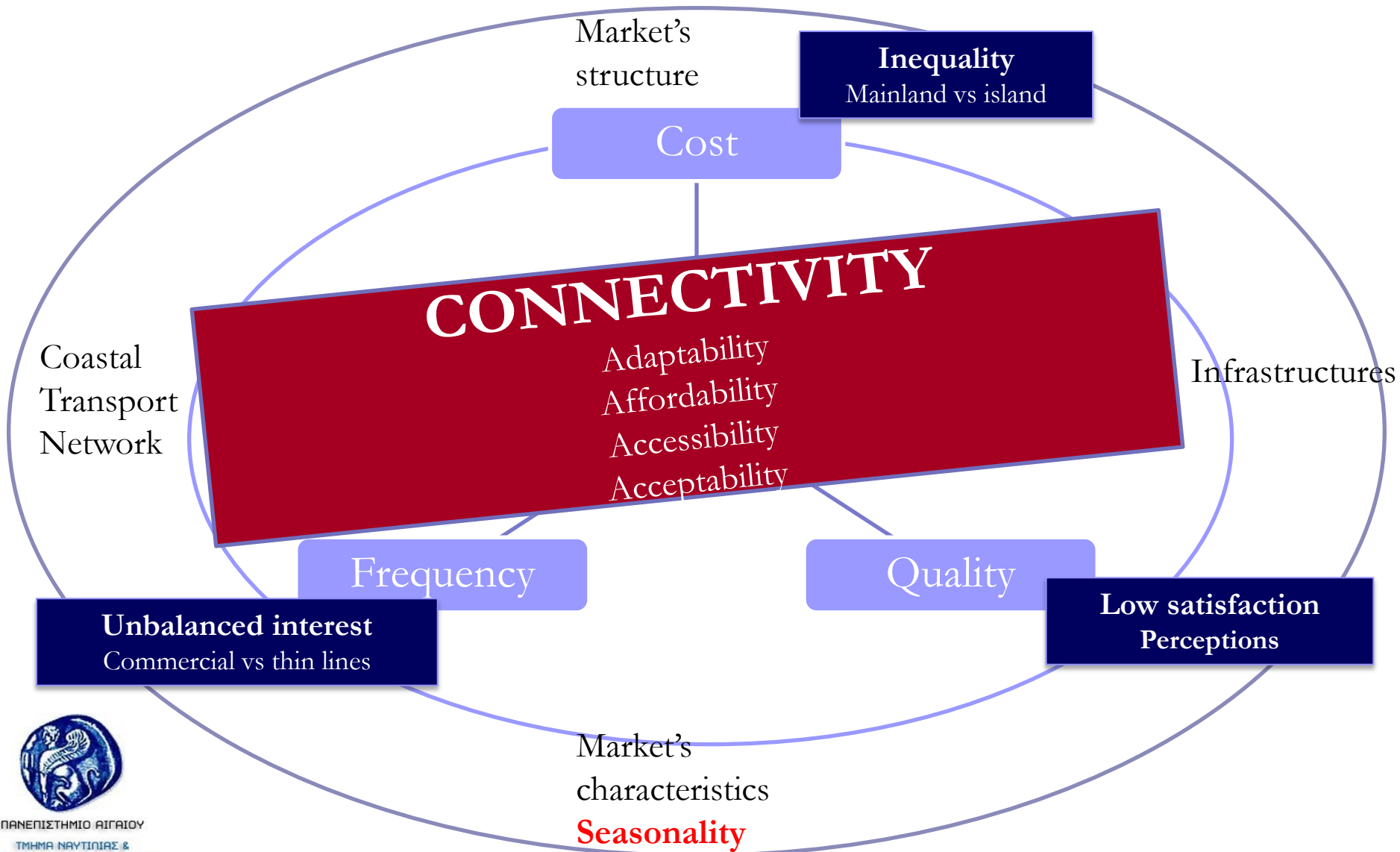
Greek insular Regions

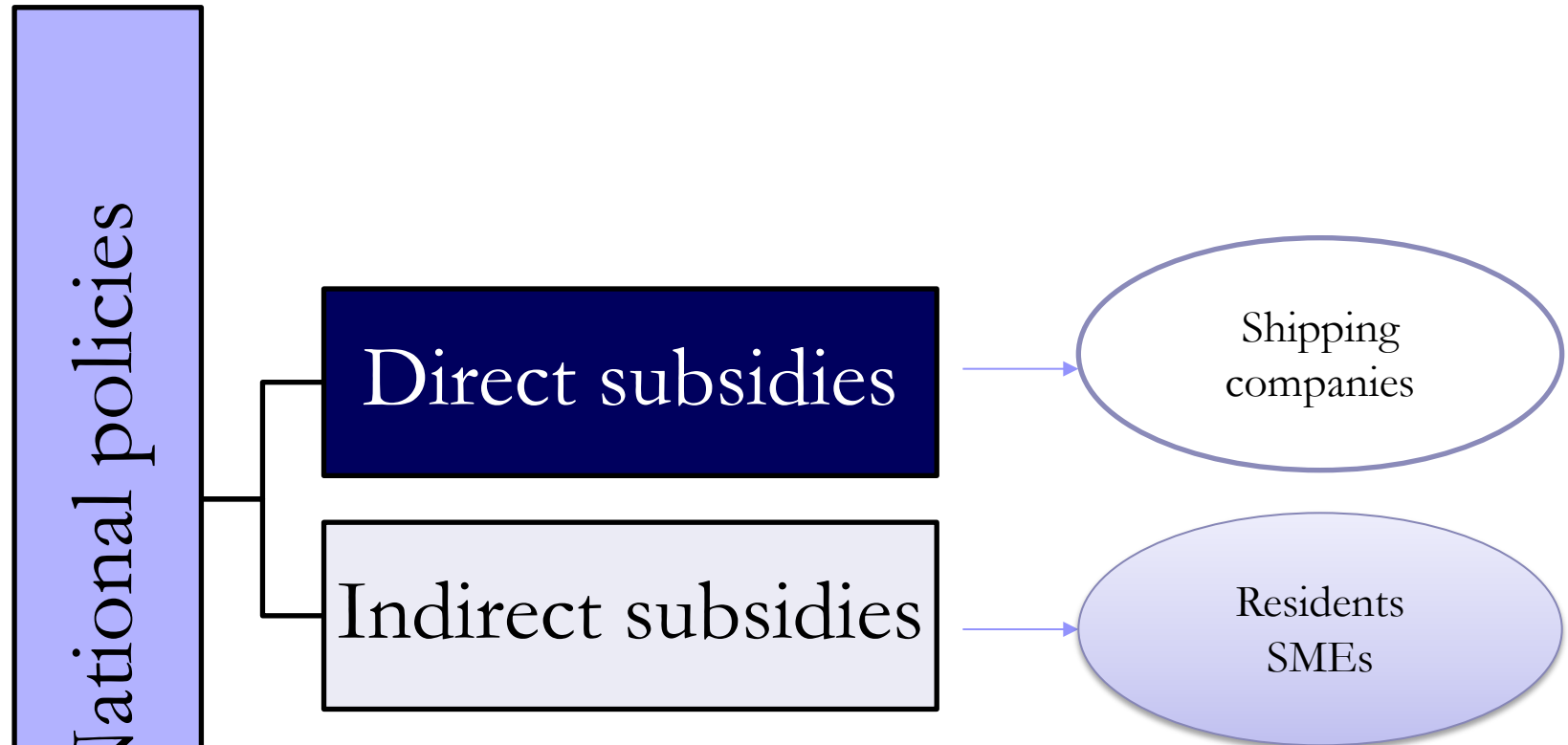120 inhabited islands
13% of country's population

4 Island Regions:
- North Aegean
- South Aegean
- Ionio Islands
- Crete

- In average 30% decline of GDP
- 13,3% of total workforce
- Dependency from tertiary sector
- High unemployment rates
- High percentages of people at risk of poverty and social exclusion
- High migration flows (North Aegean)

Transport Challenges

Market's structure

Inequality
Mainland vs island

Cost

CONNECTIVITY
Adaptability
Affordability
Accessibility
Acceptability

Coastal Transport Network

Infrastructures

Frequency

Quality

Unbalanced interest
Commercial vs thin lines

**Low satisfaction
Perceptions**

Market's characteristics
Seasonality

ΠΑΝΕΠΙΣΤΗΜΙΟ ΑΙΓΑΙΟΥ
ΤΜΗΜΑ ΝΑΥΤΙΛΙΑΣ &
ΕΠΙΧΕΙΡΗΜΑΤΙΚΩΝ ΥΠΗΡΕΣΙΩΝ

National policies for remote islands

National policies for remote islands

Thin lines

Type of policy: Direct subsidies

Beneficiary: Shipping company

Scope: Ensure a minima number of ferry connections for lines that present non-commercial interest

Budget:90 million euro ➔ 130 million for 2020 (+45%)

Process: Tendering

Minimum requirements: frequency of itineraries

No further quantitative or qualitative criteria are used for the selection of the service provider

National policies for remote islands

Commercial lines

Condition:

All year round services– Public Service Obligation

Barrier to entry the market   **BUT**   **Ensures territorial and social cohesion**

Manning:

host state rules vs flag state rules (EU REGULATION 3577/92)

National policies for remote islands

Island Transport Equivalent for Passengers

Type of policy: Indirect subsidy

Beneficiary: All islanders

Scope: islanders have to pay a fair fare corresponding to what residents of the mainland pay for equivalent transport services

Estimated cost: 109 million

Process: rebate per trip

Pilot phase: June- Dec 2018

Full application: Jan. 2019

- Ferry ticket subsidy:

$$TFi = f(Distance\ covered\ ;\ Bus\ reference\ ticket\ value\ ;\ Ferry\ ticket\ value)$$

- The amount of max annual subsidy/ beneficiary of island i:

$$PLi = f(Total\ annual\ budget\ ;\ Number\ of\ island's\ beneficiaries\ ;\ Average\ distance\ ;\ Bus\ reference\ ticket\ value\ ;\ Ferry\ ticket\ value\ ;\ Island's\ insularity\ index)$$

National policies for remote islands

Island Transport Equivalent for Commodities

Type of policy: Indirect subsidy

Beneficiary: SMEs retail & manufacturing

Scope: island companies have to pay a fare corresponding to what mainland companies pay for equivalent transport services

Estimated cost: 64 million euro

Process: compensation per bill of landing

Pilot phase: June- Dec 2018

Full application: Jan. 2019

- Bill of landing subsidy:

Czi= (Bill of lading value ; Commodities Road Transport Equivalent ; Amount of cargo carried ; Distance covered ; Subsidy rate)

- Maximum annual subsidy amount for island i:

Pi = f(Commodities Sea Transport Equivalent ; Commodities Road Transport Equivalent ; **Annual maximum quantity of transported commodities ; Distance covered***)*
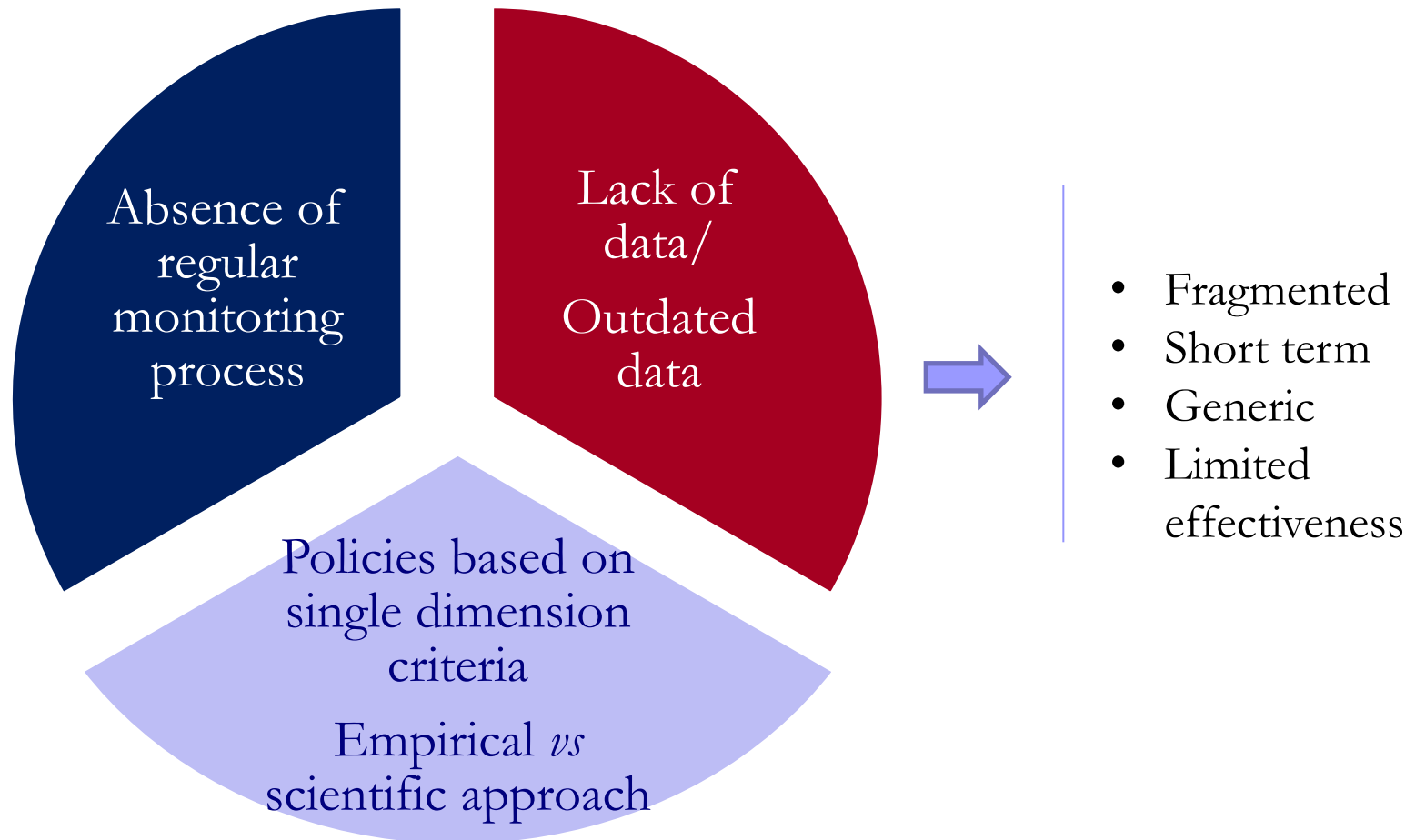
National policies for remote islands

Island Transport Equivalent expansion to:

* Air transport

* Fuels

* Other strategic cargoes

* Private cars

Insular policy challenges in the Greek case

Absence of regular monitoring process

Lack of data/ Outdated data

Policies based on single dimension criteria

Empirical *vs* scientific approach

- Fragmented
- Short term
- Generic
- Limited effectiveness

Solving the island policy making (un)equation: the connectivity index

Connectivity is **NOT ONLY** the availability of transport that enables people and goods to reach a range of destinations at a reasonable generalised cost.

Connectivity reflects the current state and the prevailed conditions of an island, not only in terms of transport links but also in terms of developmental potential

Island's Connectivity = f(quantity ; quality) = **Transport Capacity * Performance Indicator**

The islands' connectivity index

Island's Connectivity =

Transport Capacity * Performance Indicator

Performance Indicator:

An additive value function for a given ranking of specific criteria / sub criteria on a reference set of alternatives A_R (islands), according to the UTA (Utilities Additives) multi criteria decision making methodology

The islands' connectivity index

Passenger Ferry Services' index (ICI) criteria and sub criteria:

Criteria g_i	Sub criteria g_{ij}
FINANCIAL COST	Fare cost - Cost for accessing port - Cost for "on board" services
TIME	Trip duration - Consistency of timetables - Access time to ports
ACCESSIBILITY	Number of itineraries - Frequency of itineraries - Number of transits - Number of interconnected destinations
QUALITY OF SERVICES	Ship's accommodation - On board services - Information services - Ticket purchase facilities
SOCIAL COST	Ships' environmental performance - Ships' age - Corporate social responsibility of passenger ferries' operators

The islands' connectivity index

Passenger Ferry Services

Island's Connectivity: $IC = P * u(g)$

$IC = [FP + APeq] * u(g) = [FP + c(g)*AP] * u(g) = FP * u(g) + AP * u(g)*c(g)$

P = is the total number of the passenger transport **capacity provided through the port(s) and airport(s)** of an island

FP, is the number of the ferries' passenger capacity

AP, is the number of the airplanes' passenger capacity

Apeq, is the air (to sea) equivalent passenger capacity value

c(g) = is a transport mode conversion factor

u(g), is the qualitative additive value function (**performance indicator**) of the transport services criteria g

$$u(g) = \sum_{i=1}^{n} p_i * \sum_{j=1}^{m} p_{ij} * u_{ij}(g_{ij})$$

Island Connectivity Index: $ICI = IC / IC_{max}$

The islands' transport potential index

Islands' Transport Potential index (IPI) criteria and sub criteria:

Criteria f_i	Sub criteria f_{ij}
DEVELOPMENT	Per capita income - (Un)employment rate - Entrepreneurship rate
TOURISTIC ATTRACTIVENES	Interest for visiting - Availability of cultural sites, touristic areas and resorts - Multitude of cultural, athletic and touristic events and activities - Availability of hosting, catering and entertainment services
INFRASTRUCTURE	Adequacy of ports - Internal transport system - Existence of airport - Public services
LOCATION	Remoteness and isolation - National interests

The islands' transport potential index

Island's Transport Potential

Islands' Potential: IP = N * v(f)

N = is the size of the **island's population** (<u>winter season</u>), or
the gross sum of the **island's population plus the total available beds** in all the island's tourist accommodation establishments (<u>summer season</u>)

v(f), is the qualitative additive value function (performance indicator) of the transport potential of an island related to the islands' transport needs criteria f

$$v(f) = \sum_{i=1}^{n} q_i * v_i(f_i) * \sum_{j=1}^{m} q_{ij} * v_{ij}(f_{ij})$$

Island Transport Potential Index: IPI =IP / IP $_{max}$

Island Connectivity Adequacy Index: IPI =ICI / IPI

Restructuring CTN

➤ Reviewing and redesigning of the minimum islands' connection requirements as well as determining of an optimal islands' connections network

➤ Examining and implementing joint or multimodal transport systems to and from the islands

➤ Forming joint ventures between port authorities and shipping companies

➤ Establishing a ISLANDS TRANSPORT ORGANIZATION

Integrated approach for insular policy

Data

Processes and tools (B.I. systems)

Stakeholders consultations

Institutions and KPIs(e.x. observatories)

Education (policy makers, local authorities)

Thank you for your attention

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