Athenian's Preferences toward Public Space Redistribution

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Introduction

- Urban environments today face escalating challenges linked to **congestion, pollution, safety, and declining quality of life**.
- Urban areas account for over 70% of global CO_2 emissions and 75% of energy use, making urban mobility a key focus of climate and sustainability policies
- According to the European Commission (2022), nearly 30% of all trips in EU cities are under 3 km, distances easily walkable or cyclable, yet **still predominantly covered by private car.**
- Reallocating road space from vehicles to pedestrians can reduce local emissions by up to 25% and increase street-level commercial activity by 10–40%

State-of-the-art

Why Athens?

1. Athens exemplifies the pressures of car dependency and limited pedestrian infrastructure, with narrow sidewalks, illegal parking, and fragmented public spaces.
2. Previous initiatives (e.g., the Great Walk of Athens) revealed both strong public reactions and the need for evidence-based, participatory planning.
3. Understanding citizen attitudes is therefore essential for implementing successful pedestrianisation policies.

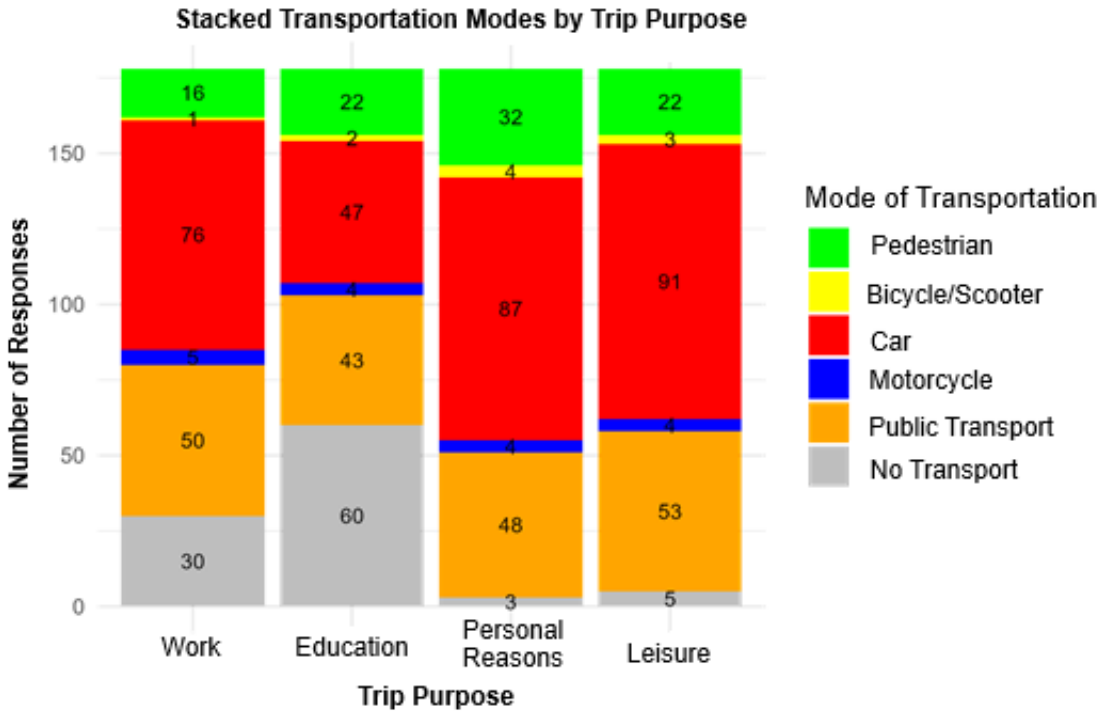
Aim of the Research

1. To investigate Athenian residents' preferences regarding the redistribution of public space from vehicles to pedestrians.
2. To identify the demographic, perceptual, and behavioural factors influencing support for partial or full pedestrianisation.
3. To provide data-driven guidance for urban planners and policymakers aiming to create safer, more walkable, and sustainable cityscapes.

Data Overview

- The study is based on a structured online stated-preference survey conducted among 178 adult residents of Athens and its surrounding suburbs.
- The goal was to capture citizens' attitudes toward pedestrianisation and public space redistribution, alongside their daily mobility behaviour and perceptions of walkability.

- Each participant's answers were transformed into quantitative variables, covering:
  - •Demographics (age, gender, income, education, employment)
  - •Mobility behaviour (main transport mode, car ownership, walking frequency)
  - •Perceptions (safety, comfort, accessibility, environmental quality)
  - •Scenario choices (preference between full, partial, or no pedestrianisation)
- Two key dependent variables were created:
  - •G5 → Support for pedestrianisation across Athens in general.
  - •G6 → Support for pedestrianisation near one's home.



Methodology

- To quantify the factors influencing Athenian residents' support for pedestrianisation and redistribution of public space.
- The analysis aimed to understand how demographic, behavioural, and perceptual variables shape preferences for full, partial, or no pedestrianisation.

- Statistical Modelling Framework:
  - Two model types were developed:
    1. **Binary Logistic Regression** → to predict **overall support** (Yes/No) for pedestrianisation (G5).
    2. **Multinomial Logistic Regression** → to assess prefer**ences between levels** of pedestrianisation (Full, Partial, None) (G6).
  - Stepwise selection (forward & backward) based on Akaike Information Criterion (AIC) ensured model parsimony.
  - Multicollinearity tested using the Variance Inflation Factor (VIF) (threshold <10).

Key Descriptive Findings

- The public demonstrates strong support for pedestrianisation:
  - 66.7% of respondents favour full pedestrianisation, especially when **safety and comfort are improved**.
- 69% report that no pedestrian projects have been implemented in their area in the past five years → **evidence of a policy implementation gap.**
- Younger respondents (under 35) and active commuters (walkers, cyclists) show the **highest willingness** to support space redistribution.
- Main barriers to acceptance include:
  - **Poor infrastructure quality** (narrow sidewalks, poor lighting).
  - **Safety concerns**, especially at night.
  - **Parking difficulties** and **limited accessibility** for daily needs.
- Overall, respondents express a latent demand for safer, more inclusive, and better-connected pedestrian spaces.

Key Findings Considered in the Models

1. Travel Characteristics:

•Percentage change in travel time, number of weekly trips, and weekly transport costs.

2. Perceived Quality and Safety:

•Level of satisfaction with public transport safety and technological services.

3. Economic and Environmental Factors:

•Financial benefits from mobility services, environmental improvement percentage, and cost of courier services.

4. Rewards and Discounts:

•Interest in gaining rewards for using public transport, parking in controlled areas, and shared bicycles/scooters.

5. Personal and Demographic Attributes:

•Gender, annual income level, and ownership of private vehicles or motorcycles.

Results

Factor Category	Influential Variables (included in models)	Impact on Support
Demographic	Age Gender Income Employment	Younger adults and women more likely to support pedestrianisation; higher income linked to higher acceptance.
Mobility Behaviour	Car ownership Travel time Relaxation and personal walking preferences	Longer travel time reduces support; car owners remain open when incentives (safety, parking) are evident.
Perceptual / Environmental	Safety Accessibility Road quality Environmental impact Green space	Perceived **safety, environmental benefits, and infrastructure quality** significantly increase support.
Health & Comfort	Health perception Walking comfort Weather conditions	Positive health perception and comfort strongly correlate with willingness to pedestrianise.

Conclusions

- The findings underscore the necessity for **evidence-based** and **participatory urban design processes** that integrate citizens' perceptions and daily mobility needs.
- Municipal authorities should prioritise:
  - **Enhancing pedestrian infrastructure**, wider, safer, and better-maintained sidewalks.
  - **Implementing environmental and safety incentives**, linking pedestrianisation to cleaner air and reduced traffic incidents.
  - **Transparent communication** about the expected social, health, and environmental benefits to strengthen public trust.
  - **Integrated planning**, combining pedestrian areas with accessible public transport, green networks, and urban amenities.
- Data-driven modelling tools such as those applied in this study can inform **strategic decision-making** and **prioritisation of urban interventions.**

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