

Module 3: Transport Modeling and Simulation

Lecture 11: Travel Demand Modelling

Section 7: Quiz - Answers

1. What is the primary goal of travel demand modeling?

- A) Predicting the weather
- B) Estimating future travel patterns and transport needs
- C) Increasing fuel consumption
- D) Reducing the number of vehicles on the road

✓ **Correct Answer: B**

Explanation: Travel demand modeling helps forecast future travel behavior, allowing planners to design efficient transportation systems.

2. Which of the following factors does NOT influence travel demand?

- A) Population and employment levels
- B) Land use patterns
- C) Weather forecasts
- D) Transportation costs

✓ **Correct Answer: C**

Explanation: While extreme weather events may impact travel temporarily, long-term travel demand is driven by population, land use, and costs.

3. Which step in the four-step model predicts where trips will go?

- A) Trip generation
- B) Trip distribution
- C) Mode choice
- D) Route assignment

✓ **Correct Answer: B**

Explanation: Trip distribution determines the destinations of trips, forming origin-destination patterns based on factors like distance and attractiveness.

4. What does the mode choice step analyze?

- A) How people select their travel routes
- B) How people choose between different transport options
- C) The number of trips generated in a zone
- D) The speed of vehicles on highways

✓ **Correct Answer: B**

Explanation: Mode choice modeling helps predict whether people will use private cars, public transit, bicycles, or other modes of travel.

5. Which method is commonly used in trip distribution modeling?

- A) Regression analysis
- B) Gravity model
- C) Monte Carlo simulation
- D) Machine learning

✓ **Correct Answer: B**

Explanation: The Gravity Model is based on the principle that travel demand between two locations is proportional to their attractiveness and inversely related to distance.

6. What is the primary factor influencing route assignment in travel demand modeling?

- A) Availability of public transport
- B) Travel time and congestion levels
- C) The number of shopping malls in a city
- D) Population density alone

✓ **Correct Answer: B**

Explanation: Travelers tend to choose routes with the shortest travel time and least congestion, which is modeled in route assignment.

7. A city expands its metro system. What impact might this have on travel demand?

- A) Increased use of public transit and reduced car travel
- B) Higher congestion on roads
- C) Fewer people commuting to work
- D) No change in travel behavior

✓ **Correct Answer: A**

Explanation: A well-planned metro expansion encourages more public transit use, reducing reliance on personal vehicles and easing congestion.

8. Why is travel demand forecasting important for urban planning?

- A) It helps in designing public transportation systems efficiently
- B) It increases traffic congestion intentionally
- C) It eliminates the need for new infrastructure
- D) It predicts crime rates in a city

✓ **Correct Answer: A**

Explanation: Travel demand forecasting allows urban planners to allocate resources effectively, ensuring efficient transportation systems.

9. Which of the following is an example of trip generation?

- A) Choosing to travel by bicycle instead of a car
- B) A residential neighborhood generating work trips in the morning
- C) A navigation app recommending a faster route
- D) A toll road reducing highway congestion

✓ **Correct Answer: B**

Explanation: Trip generation predicts how many trips originate from or are attracted to different zones based on land use and population factors.

10. What is the limitation of the traditional four-step model?

- A) It does not account for population growth
- B) It assumes travel behavior is fixed and does not change dynamically
- C) It only applies to large cities
- D) It is only used for predicting air travel demand

✓ **Correct Answer: B**

Explanation: The four-step model assumes static travel behavior, whereas real-world travel patterns change due to technology, policies, and lifestyle shifts.