

Unit 7 - Week 5

Course outline

How does an NPTEL online course work?

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Week 1

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Week 3

Week 4

Week 5

- Lecture 21 - Non-motorised Transportation (NMT) Planning Introduction to NMT Systems
- Lecture 22 - Non-motorised Transportation (NMT) Planning Assessing existing NMT scenarios
- Lecture 23 - Non-motorised Transportation (NMT) Planning Data collection and analysis in NMT Planning
- Lecture 24 - Non-motorised Transportation (NMT) Planning Complementarity and Selection of interventions
- Lecture 25 - Non-motorised Transportation (NMT) Planning Alternative Selection Through Economic & Financial Analysis

Week 5 Lecture Material

Quiz : Week 5 Assignment 5

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Week 5 Assignment 5

The due date for submitting this assignment has passed. Due on 2020-10-21, 23:59 IST.
As per our records you have not submitted this assignment.

1) What are the three dimensions of sustainable transportation? 1 point

a) Social, Ecology and Environment
b) Social, Finance and Economy
c) Social, Economy and Environment
d) Social, Societal and Equity

a)
 b)
 c)
 d)

No, the answer is incorrect.
Score: 0
Accepted Answers: c)

2) What does VKT mean? 1 point

a) *Vesviken Kollektivtrafikk*, a public transport authority for Vestfold, Norway
b) *Vehicle Kilometres Transverse*, number of kilometres covered by vehicle in a day
c) *Vitipuri-Kuparsaari-Taipale*, a Finnish defensive line of war
d) *Vehicle Kilometre Travelled*, No. of KMs a vehicle have travelled (usually in a year)

a)
 b)
 c)
 d)

No, the answer is incorrect.
Score: 0
Accepted Answers: d)

3) As per the relationship between transport-related energy consumption and urban density, a higher urban density means (1) _____ and therefore (2) _____. 1 point

a) (1) safer travel; (2) less transport casualty
b) (1) more compact city; (2) less distance to travel
c) (1) more old people living in the city; (2) less travel ridership
d) (1) less compact city; (2) more distance to travel

a)
 b)
 c)
 d)

No, the answer is incorrect.
Score: 0
Accepted Answers: b)

4) The order of five steps in NMT planning as envisaged in the NMT Guidance Document (2016) by Govt. Of India, are (1) _____, Enable, (2) _____, Invest and Implement 1 point

a) (1)Assess; (2) Plan+Design
b) (1)Plan; (2) Design
c) (1) Design; (2) Plan
d) (1) Plan+Design; (2) Assess

a)
 b)
 c)
 d)

No, the answer is incorrect.
Score: 0
Accepted Answers: d)

5) **Table 1: Temporal Mode Share across Cities** 1 point

Number of trips in lakhs	City A		City B		City C		City D	
	1996	1999	1996	1999	1996	1999	1996	1999
Walk	18.5	19.4	15.2	15.4	16.2	17.2	18.5	17.5
Bicycle	18.6	19.7	16.8	16.9	17.5	16.8	14.5	16.3
Car	51.9	50.4	68.2	98.1	60.3	62.1	75.2	78.3

Using table 1, which city has most increase in NMT trips between 1999 and 1996?

a) City A, since trips for both walk and bicycle increased
b) City A, since trips for walk increased and bicycle decreased
c) City B, since trips for both walk and bicycle increased
d) City D, since trips for walk decreased and bicycle increased

a)
 b)
 c)
 d)

No, the answer is incorrect.
Score: 0
Accepted Answers: a)

6) Using table 1, which city has most car trip increase between 1999 and 1996, and by how much? 1 point

Table 1: Temporal Mode Share across Cities

Number of trips in lakhs	City A		City B		City C		City D	
	1996	1999	1996	1999	1996	1999	1996	1999
Walk	18.5	19.4	15.2	15.4	16.2	17.2	18.5	17.5
Bicycle	18.6	19.7	16.8	16.9	17.5	16.8	14.5	16.3
Car	51.9	50.4	68.2	98.1	60.3	62.1	75.2	78.3

a) City A, -2.98%
b) City B, 30.48%
c) City C, 2.90%
d) City D, 3.96%

a)
 b)
 c)
 d)

No, the answer is incorrect.
Score: 0
Accepted Answers: b)

7) Using table 1, which City can be called NMT friendly between 1999 and 1996? 1 point

Table 1: Temporal Mode Share across Cities

Number of trips in lakhs	City A		City B		City C		City D	
	1996	1999	1996	1999	1996	1999	1996	1999
Walk	18.5	19.4	15.2	15.4	16.2	17.2	18.5	17.5
Bicycle	18.6	19.7	16.8	16.9	17.5	16.8	14.5	16.3
Car	51.9	50.4	68.2	98.1	60.3	62.1	75.2	78.3

a) City A, since it has increasing walk and bicycle trip, and a decreasing car trips
b) City B, since it has increasing walk, bicycle and car trip
c) City C, since it has increasing walk and car trips
d) City D, since it has increasing bicycle and car trip

a)
 b)
 c)
 d)

No, the answer is incorrect.
Score: 0
Accepted Answers: a)

8) What scale of an NMT plan is selected for a city if there is a proposed Bus Transit System (BTS) or a Detailed Project Report (DPR) for the system exists? 1 point

a) City level
b) Area level
c) Corridor level
d) Street level

a)
 b)
 c)
 d)

No, the answer is incorrect.
Score: 0
Accepted Answers: c)

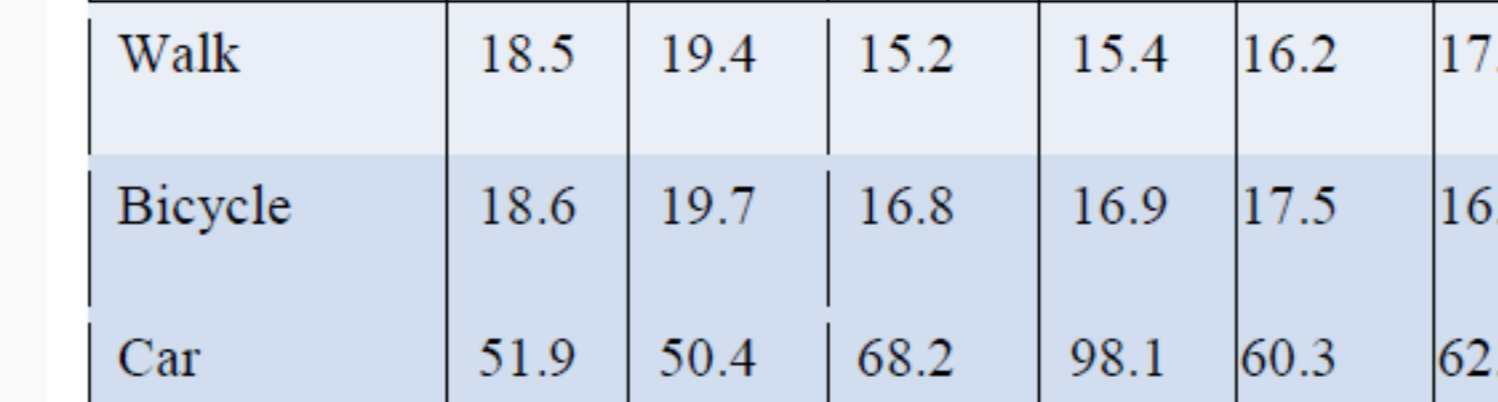
9) Determine the sample size of respondents from a city of 1, 00,000 with 50,000 males and 50,000 females. The objective of the survey is to understand the feeling of safety and security of using bicycles among residents. Consider CL=95% and ME=5% (round-off to whole number). 1 point

Use the formula $\frac{z^2 p(1-p)}{d^2}$, where, Z =1.96 for 95% CI and 5% ME; P= Population proportion, 0.50; N= Population Size; d= ME=0.05

a) 382 persons
b) 380 persons
c) 383 persons
d) 381 persons

a)
 b)
 c)
 d)

No, the answer is incorrect.
Score: 0
Accepted Answers: c)

10)  1 point

What type of sampling does this diagram represent?

a) Simple random sampling
b) Stratified sampling
c) Systematic sampling
d) Cluster sampling

a)
 b)
 c)
 d)

No, the answer is incorrect.
Score: 0
Accepted Answers: d)

11) Determine the level of congestion (LOS) using IndoHCM standards of a private vehicle plying on an interrupted urban corridor of length 1KM from the following Moving-Vehicle travel time data. Determine the LOS values for only the east direction of movement. 1 point

Given, $V_c=2400$ veh/hr

LOS	Uninterrupted Corridor	Interrupted Corridor	Interurban Corridor
A	< 64	< 75	< 40
B	64 - 80	75 - 135	40 - 46
C	80 - 95	135 - 186	46 - 50
D	95 - 136	186 - 279	50 - 65
E	> 136	> 279	> 65

IndoHCM standards

Run Direction/ Number	Travel time in mins	Veh. in opp. Lane	Veh. Overtaking test vehicle	Veh. passed by vehicle
East				
1	4.75	181	20	13
2	4.56	172	13	14
3	5.56	180	6	48
4	5.00	175	2	67
5	5.05	180	19	74
6	5.08	200	24	42

(a) LOS B, low congestion
(b) LOS C, Moderate Congestion
(c) LOS E, moderately heavy congestion
(d) LOS E, heavy congestion

a)
 b)
 c)
 d)

No, the answer is incorrect.
Score: 0
Accepted Answers: d)

12) Which of these manuals are used to develop typical street design template? 1 point

(a) IRC 103: 2013
(b) IndoHCM manual
(c) ITDP Manual
(d) ITDP and UTTIPEC Manual

a)
 b)
 c)
 d)

No, the answer is incorrect.
Score: 0
Accepted Answers: d)

13) Three NMT alternatives were selected for a neighbourhood to encourage more people using NMT. The transport planner has to select the best alternative based on the proposal cost—estimated by the engineers, aesthetics—as judged by the urban designers and public opinion—based on stakeholders' survey. Determine the best alternative for the neighbourhood using **weighted ranking method**. Assume weightages 3 is assigned to Cost and 2 to public opinion 1 point

Alternatives	Cost (INR in lakhs)	Aesthetics (% of experts)	Public Opinion
A	60	90	Neutral
B	130	40	Favorable
C	140	70	Unfavourable

(a) A
(b) B
(c) C
(d) Both B & C

a)
 b)
 c)
 d)

No, the answer is incorrect.
Score: 0
Accepted Answers: a)

14) The scale of measurement which categorizes, ranks ordered data, quantifies difference between each data point, AND can also be multiplicable is called a _____ scale 1 point

(a) Nominal
(b) Interval
(c) Ratio
(d) Ordinal

a)
 b)
 c)
 d)

No, the answer is incorrect.
Score: 0
Accepted Answers: c)

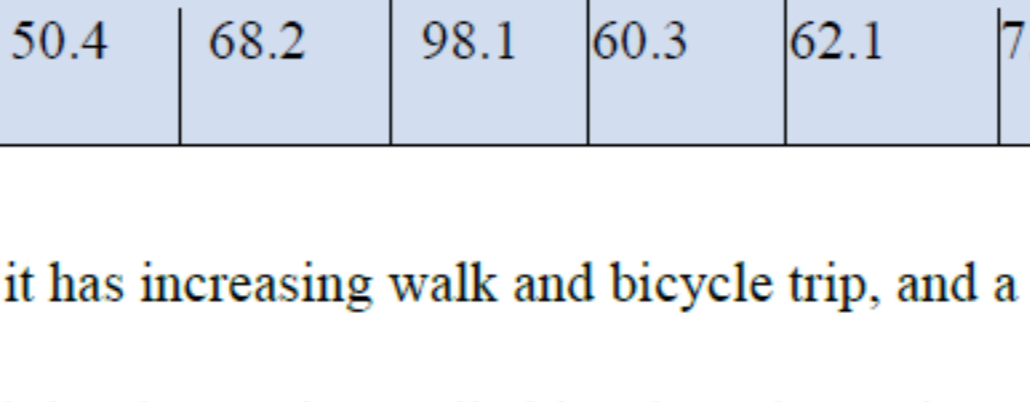
15) Determine the best alternative for the neighbourhood using **scaled criteria method**. 1 point

Alternatives	Cost (INR in lakhs)	Aesthetics (% of experts)	Public Opinion
A	140	70	Neutral
B	80	20	Favorable
C	110	90	Unfavorable

(a) A
(b) Both A & B
(c) B
(d) C

a)
 b)
 c)
 d)

No, the answer is incorrect.
Score: 0
Accepted Answers: a)

16)  1 point

A public bike sharing (PBS) system has the following demand curve.

Determine the Consumer surplus earned by decreasing the fare from 5 to 3 INR/Km

(a) 10 INR/Km
(b) 20 INR/Km
(c) 50 INR/Km
(d) 70 INR/Km

a)
 b)
 c)
 d)

No, the answer is incorrect.
Score: 0
Accepted Answers: b)

17) Three NMT alternatives were selected for a neighbourhood to encourage more people using NMT. The transport planner has to select the best alternative based on increased safety and reduced emission improved health quality. Determine the best alternative for the neighbourhood using **Benefit-to-Cost(B/C) Ratio Method**, if the economic life for the project is considered to be 20 year with $i=2.5\%$, (All monetary value=INR in lakhs) 1 point

Alternatives	Const. Cost C_0	Annual savings in accident	Annual emission savings	Annual health savings	Annual maintenance cost
A	50000	7000	2000	200	3500
B	70000	6000	5500	800	2500
C	80000	8000	7000	900	1000

(a) A
(b) B
(c) C
(d) None of them

a)
 b)
 c)
 d)

No, the answer is incorrect.
Score: 0
Accepted Answers: c)