

TEAM A
BETWEEN **WORKING AND SHOPPING**
CHANGES ON TRANSPORT MODE CHOICE
FROM A RATIONAL TO AN EMOTIONAL STATE O MIND

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BEHAVIOUR MODELING IN TRANSPORTATION NETWORK
THE TOKYO UNIVERSITY 2016 THE 15TH SUMMER COURSE

DATA_BASIC FACTS 1st READING

CREATING AN UNDERSTANDING ON DATA RANGE

01_ 30 subjects (monitor ID)

02_ 1522 trips (trip ID)

03_ area – Yokohama City

BETWEEN WORKING AND SHOPPING – TRANSPORT MODE

TRIP PURPOSE – MOVING FOR...

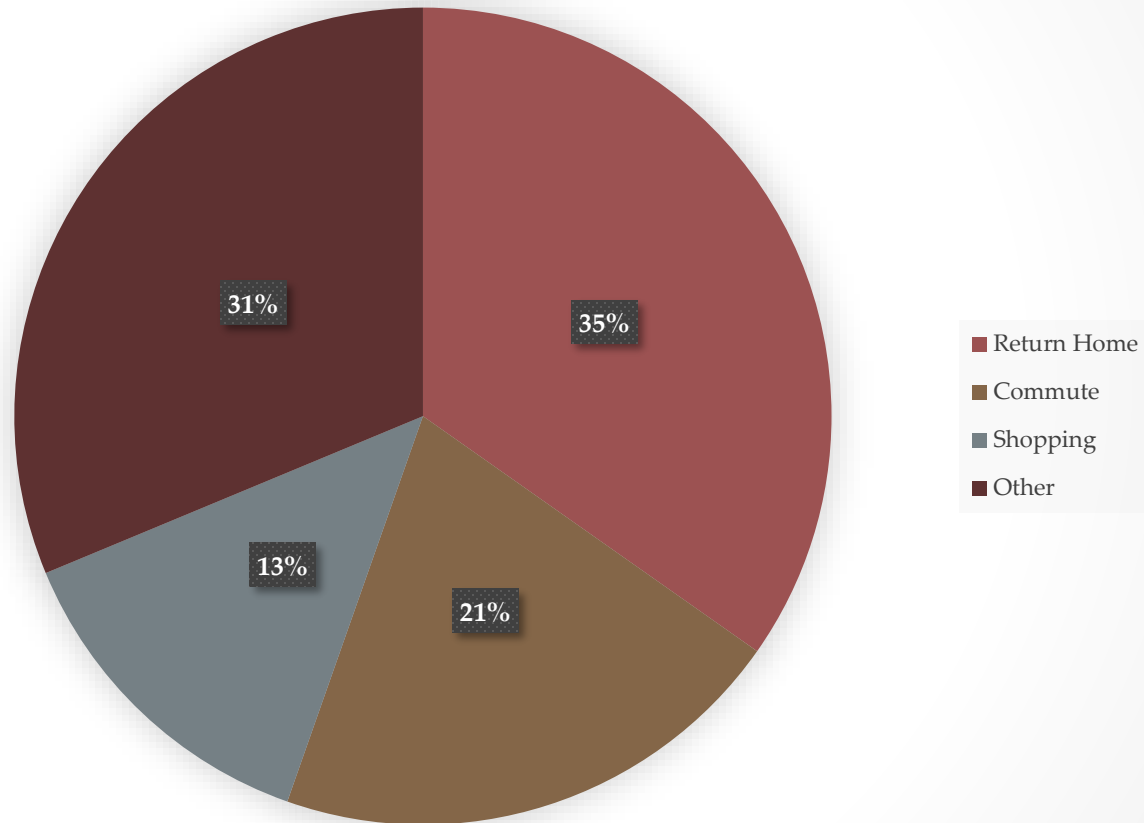
DIFFERENT JOURNIES DIFFERENT MOTIVATIONS

Purpose	Number of Trips
Return Home	529
Commute	314
Shopping	203
Other	159
Meal	104
Work-Related	103
Leisure	51
Return to Office	32
Leisure Walk	26
Cycling	1

BETWEEN WORKING AND SHOPPING – TRANSPORT MODE

TRIP PURPOSE – MOVING FOR...

DIFFERENT JOURNIES DIFFERENT MOTIVATIONS



BETWEEN WORKING AND SHOPPING – TRANSPORT MODE

WHY TO WORKING AND SHOPPING

DIFFERENT JOURNIES DIFFERENT MOTIVATIONS

01_ DATA AVAILABILITY

20/30 subjects

314 trips/1522 trips

02_ POLICY INTERESTS

understand users behavior depending on trip purpose

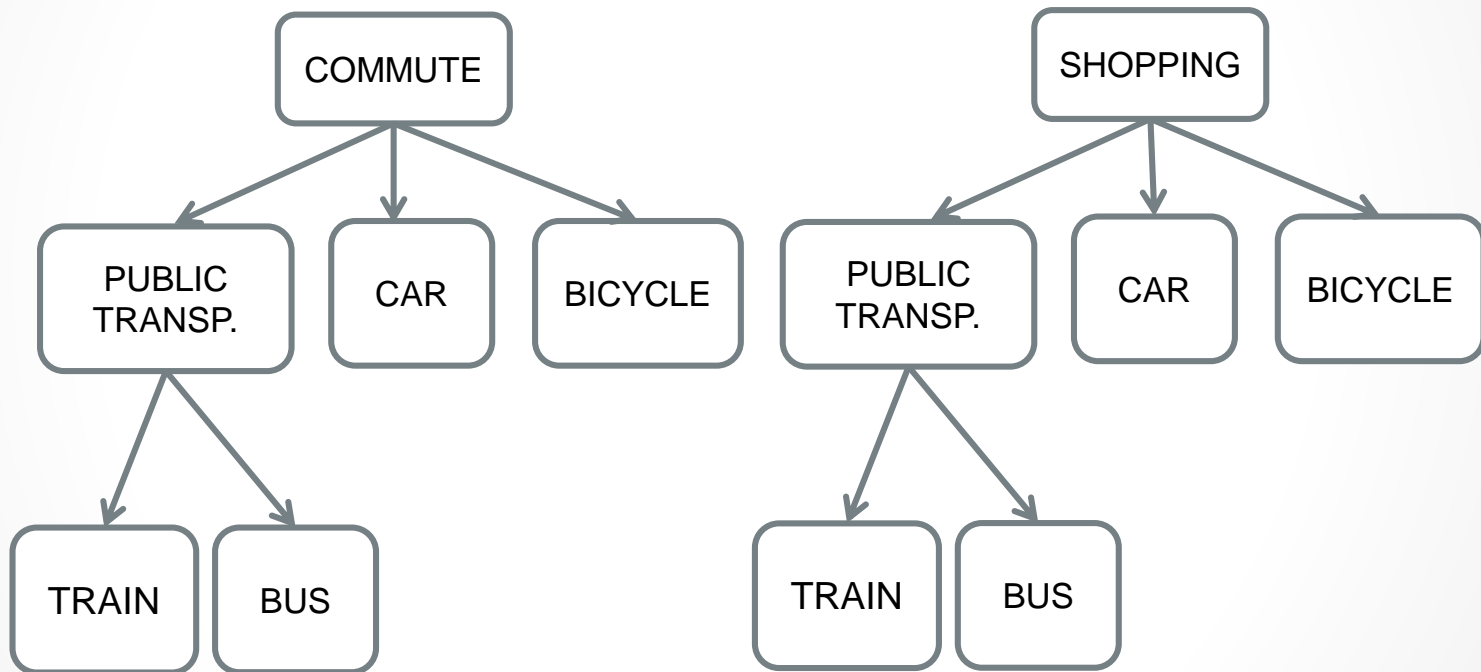
manage users expectations/needs on transport service

promote services accordingly to type of trip purpose

BETWEEN WORKING AND SHOPPING – TRANSPORT MODE

NEST LOGIT MODEL STRUCTURE

DIFFERENT JOURNIES DIFFERENT MOTIVATIONS



BETWEEN WORKING AND SHOPPING – TRANSPORT MODE

MODEL INCLUDED ATTRIBUTES

WHAT TO CONSIDER ON THE ANALYSES

01_ TRIP ATTRIBUTES FOR EACH MODE

total travel time

fare (train and bus)

cost (car): 6 yen / 1km

CBD Dummy: Is D in a CBD area? (Nishi-ku 西区,
Naka-ku 中区)

Access / Egress (train and bus)

BETWEEN WORKING AND SHOPPING – TRANSPORT MODE

PARAMETER ESTIMATION - COMMUTE

Attribute	Parameter	t-val
ASC train	1.652502798	1.3261159
ASC car	1.188876912	1.1086867
ASC bike	0.340789775	0.3424668
Travel time	-5.932507263	-6.4048019
Fare Public Transport	-0.261245064	-1.0964323
Car cost	0.001730653	0.2824265
CBD dummy (car)	-6.638932875	-3.6135692
Access/Egress Train	0.718219300	0.2671213
Access/Egress Bus	4.508771444	0.4076116
Scale Parameter	0.789817102	2.2988670
Rho-square (adjusted)	0.5744498	

BETWEEN WORKING AND SHOPPING – TRANSPORT MODE

PARAMETER ESTIMATION - SHOPPING

Attribute	Parameter	t-val
ASC train	4.71227102	4.5043985
ASC car	3.71964412	NaN
ASC bike	3.66854487	NaN
Travel time	-10.73054723	-6.2413035
Fare Public Transport	0.46506869	2.1516501
Car cost	0.01424896	2.7418265
CBD dummy (car)	-0.58946408	-1.4329718
Access/Egress Train	0.45038096	0.1340942
Access/Egress Bus	1.85309524	0.1098618
Scale Parameter	1.00523467	NaN
Rho-square (adjusted)	0.2991975	

BETWEEN WORKING AND SHOPPING – TRANSPORT MODE

WORK-IN-PROGRESS

LIMITATIONS ON CURRENT ANALYSIS

01_ Initialization of parameters

A better estimate for car travel cost

Proper specification of utility function for shopping

BETWEEN WORKING AND SHOPPING – TRANSPORT MODE

