
Arowwai Industries
EUREF
MOBILITY
MOBILITY BEHAVIOUR STUDY
What are the mobility behaviour of employees on the EUREF Campus
and; what is the choice of the selected mode of transport?

EMPLOYEE MOBILITY
EUREF CAMPUS: SURVEY ANALYSIS

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Agenda

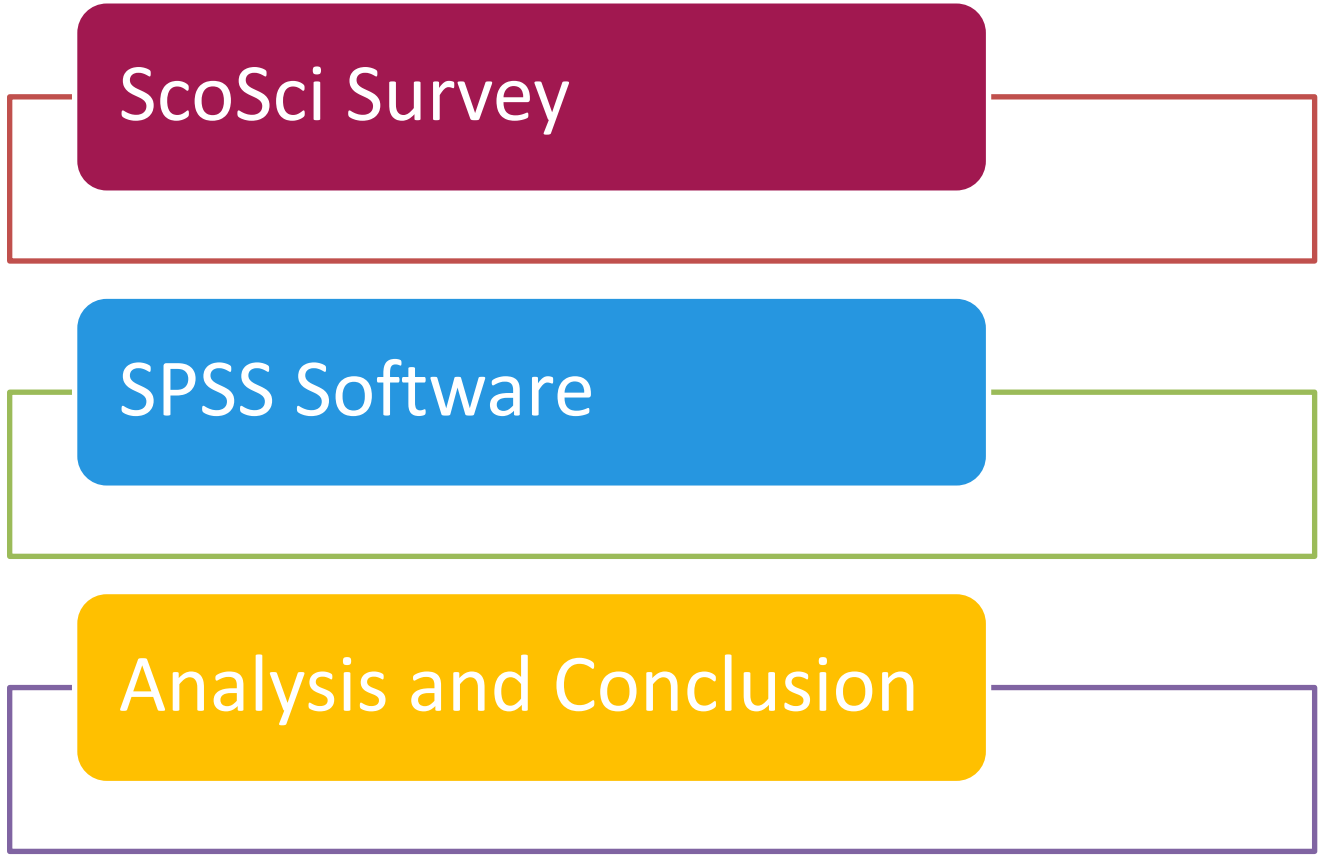
- Executive Summary
- Background
- Demographics
- Vehicle ownership
- Preferred Mode of Transport
- Mobility behaviors of employees
- Openness to Technology
- Eco Friendly Modes of Transport
- Shared mobility availability at EUREF
- Safety and Parking Infrastructure
- Conclusion and Recommendations

Executive Summary

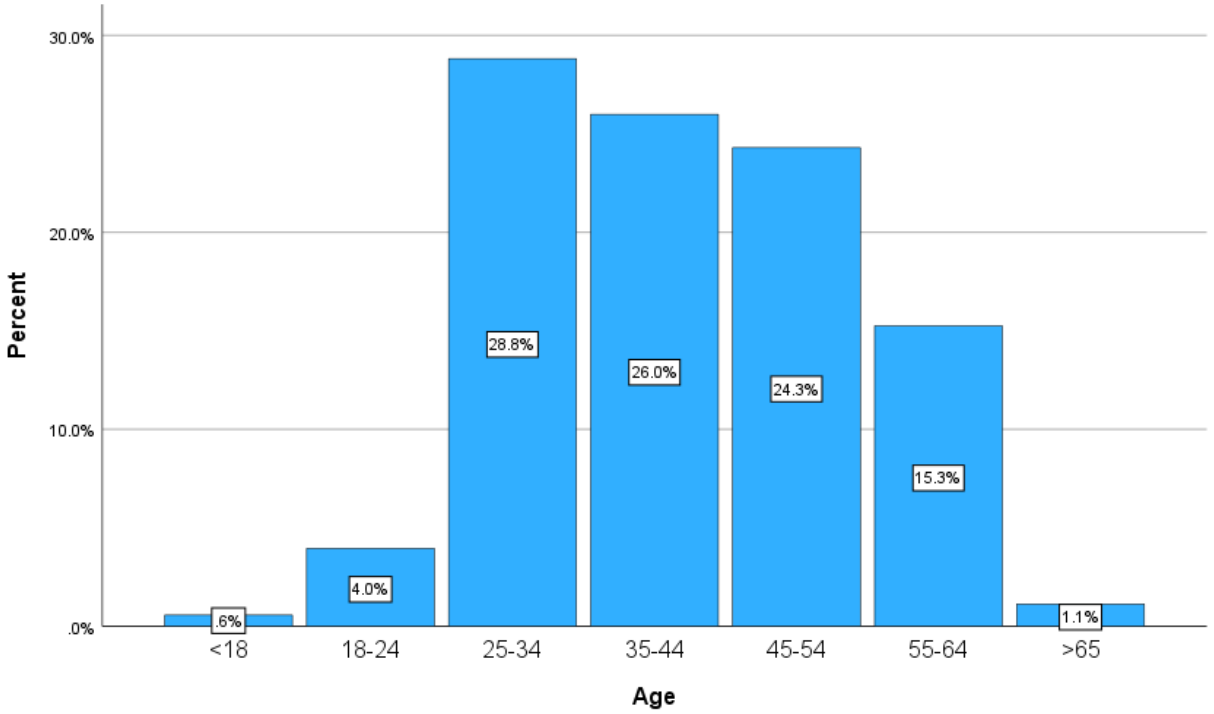
The survey was conducted through ScoSci survey to understand the mobility behavior of the employees at Euref, and it recorded more than 200 responses. The results were analyzed using statistical methods in SPSS software. The analysis showed that many of the survey takers lay in the income range of 2000 - 3000 Euro. Most employees at Euref own at least 1 bike irrespective of age, gender and income distribution and show an environmentally conscious behavior by using eco-friendly transport at least from time to time. The survey shows that employees travel to Euref quite frequently and more than 61% travel at least 3 times a week. The dominant modes of commute for employees at Euref are public transport and cycling both in winter and summer although there is a decrease in cycling and increase in use of public transport during winter. The overall consensus of employees concerning safety and parking space at Euref is positive which brings us to a conclusion that Euref infrastructure is well suited for the requirements of employees. However, there could always be a room for improvement with regards to making mobility more sustainable and accessible.

Background

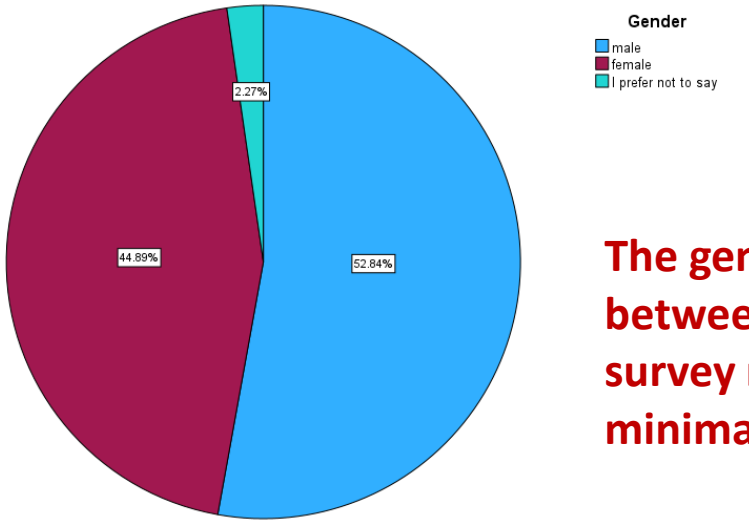
To gain more insights regarding the employee mobility behavior in EUREF-Campus we have used ScoSci Survey to program the specific survey questionnaire. The survey data was later analyzed using statistical methods through IBM SPSS software.



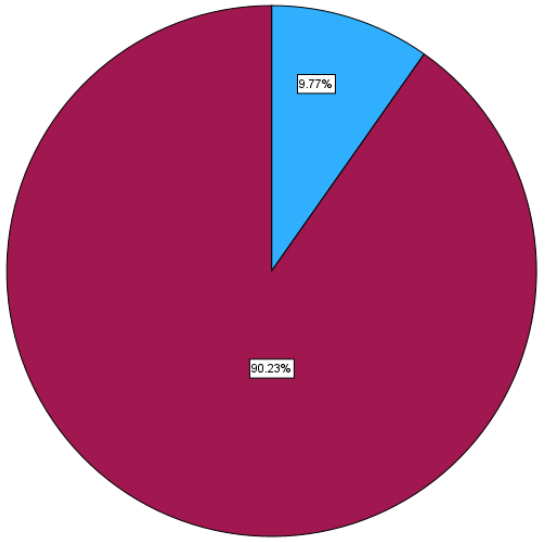
Demographics (1/2)



More than 52% of the survey respondents are in the age range of 25-44



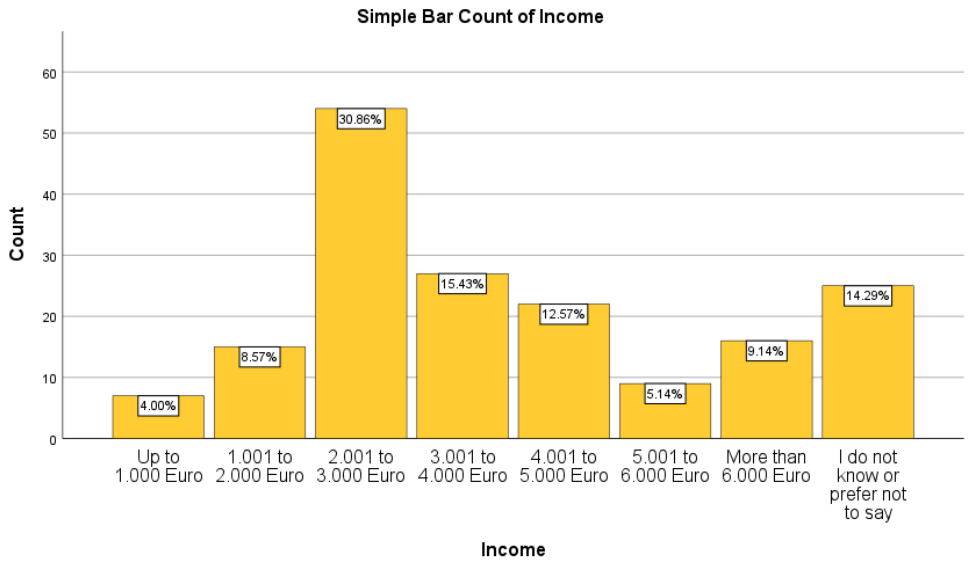
The gender distribution between male and female survey respondents is minimal.



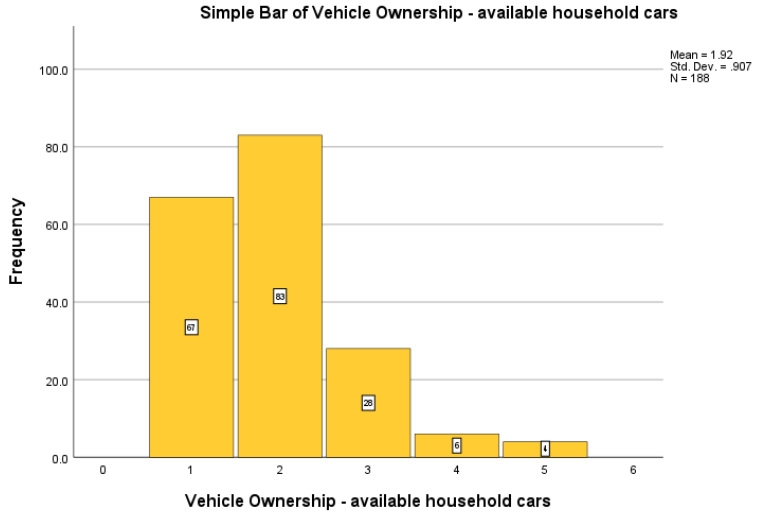
More than 90% of the survey respondents answered the survey in German

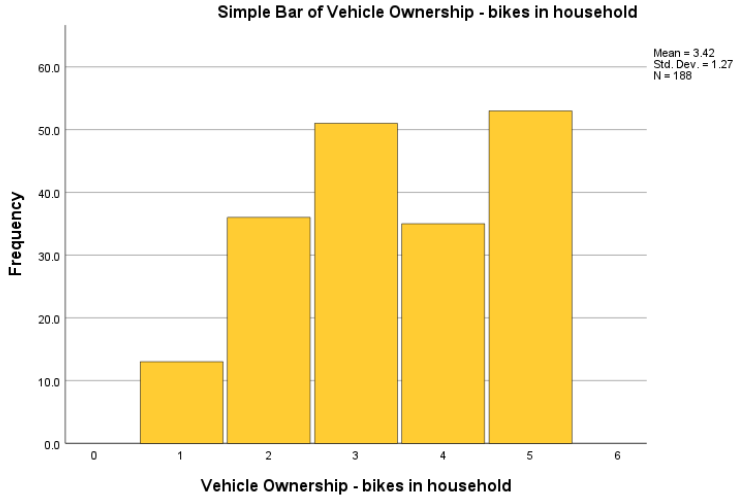
Demographics (2/2)

Income



- 1 in 4 respondents earn between 2001-3000 euros.
- 7.4% participants earn more than 6000 euros.





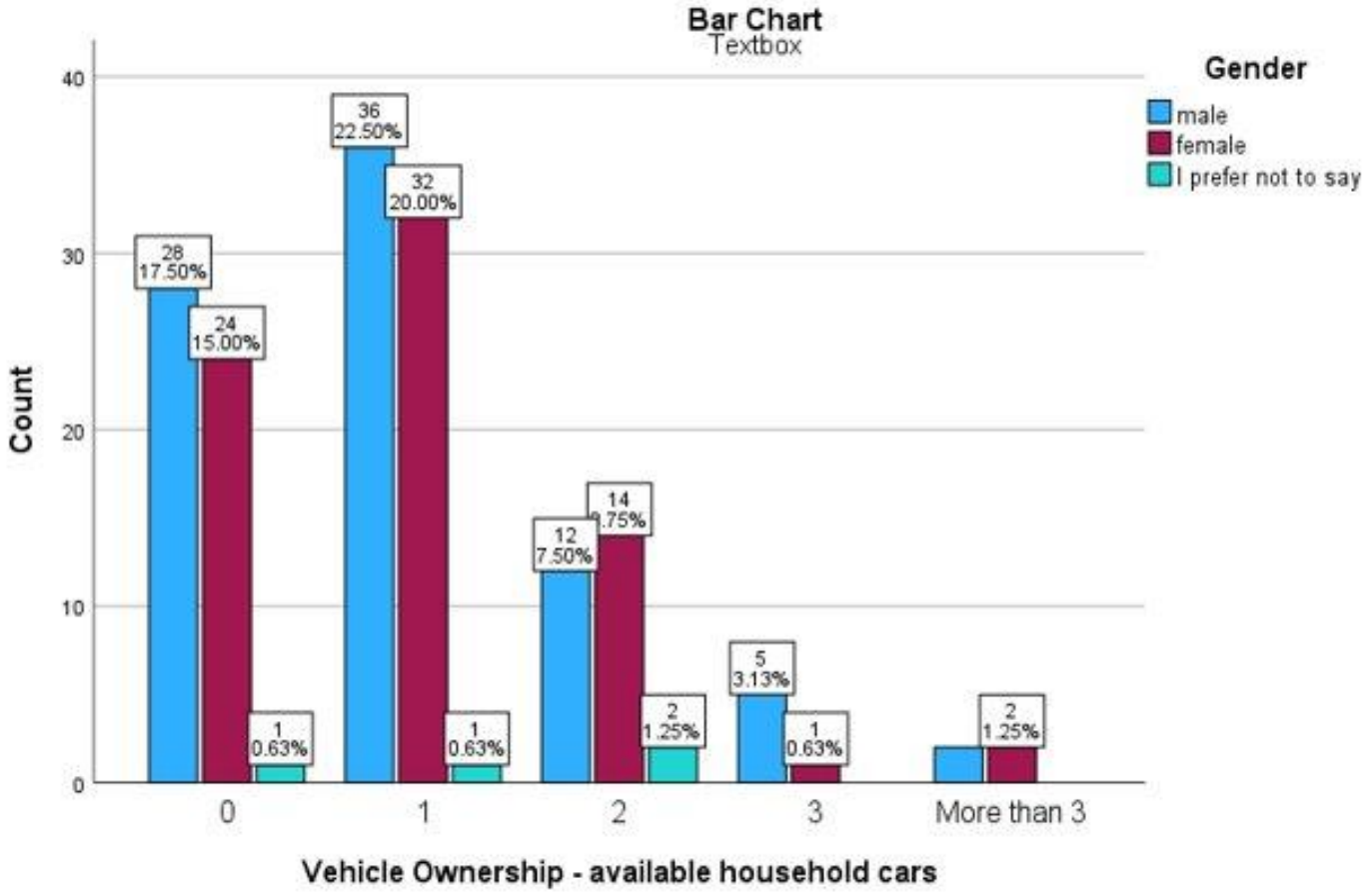
Car ownership:

- 38.6% has one car
- 1.9% has more than 3 cars which is quite low.

Bike ownership

- 24.7% has more than 3 bikes
- 6% has no bike

Vehicle Ownership - Cars



DISTRIBUTION BY AGE

1/3rd of respondents own NO CAR!

25-34 years:
41.5% respondents own no cars

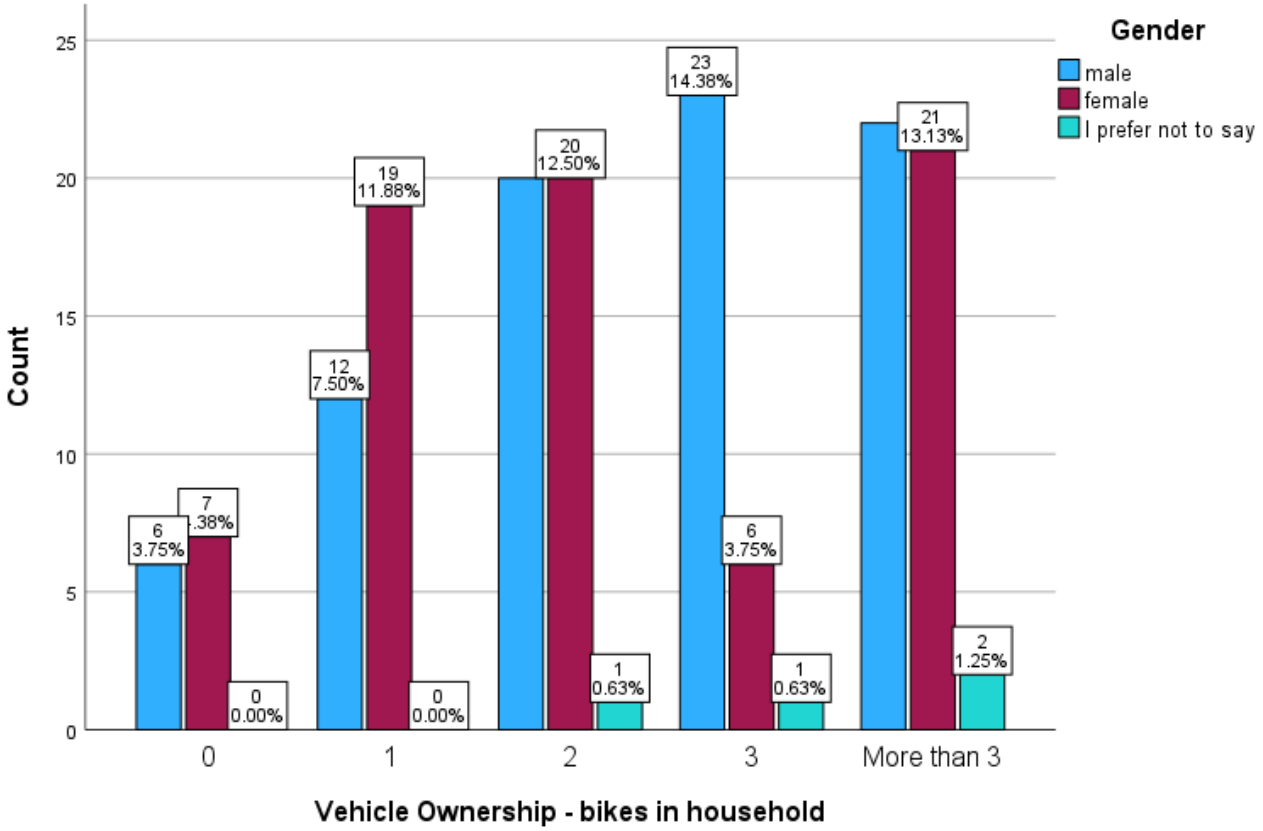
35-44 years
39% respondents own one car

DISTRIBUTION BY INCOME

Between 2001 – 3000 euros
29% respondents own more than 1 car

More than 6000 euros
33% participants own more than 3 cars

Vehicle Ownership - Bikes



DISTRIBUTION BY AGE

25-34 age group – 36 % respondents owns 2 bikes

45-54 – 33% respondents more than 3

DISTRIBUTION BY INCOME

Between 2000-3000 euros

42 % respondents own 1 bike

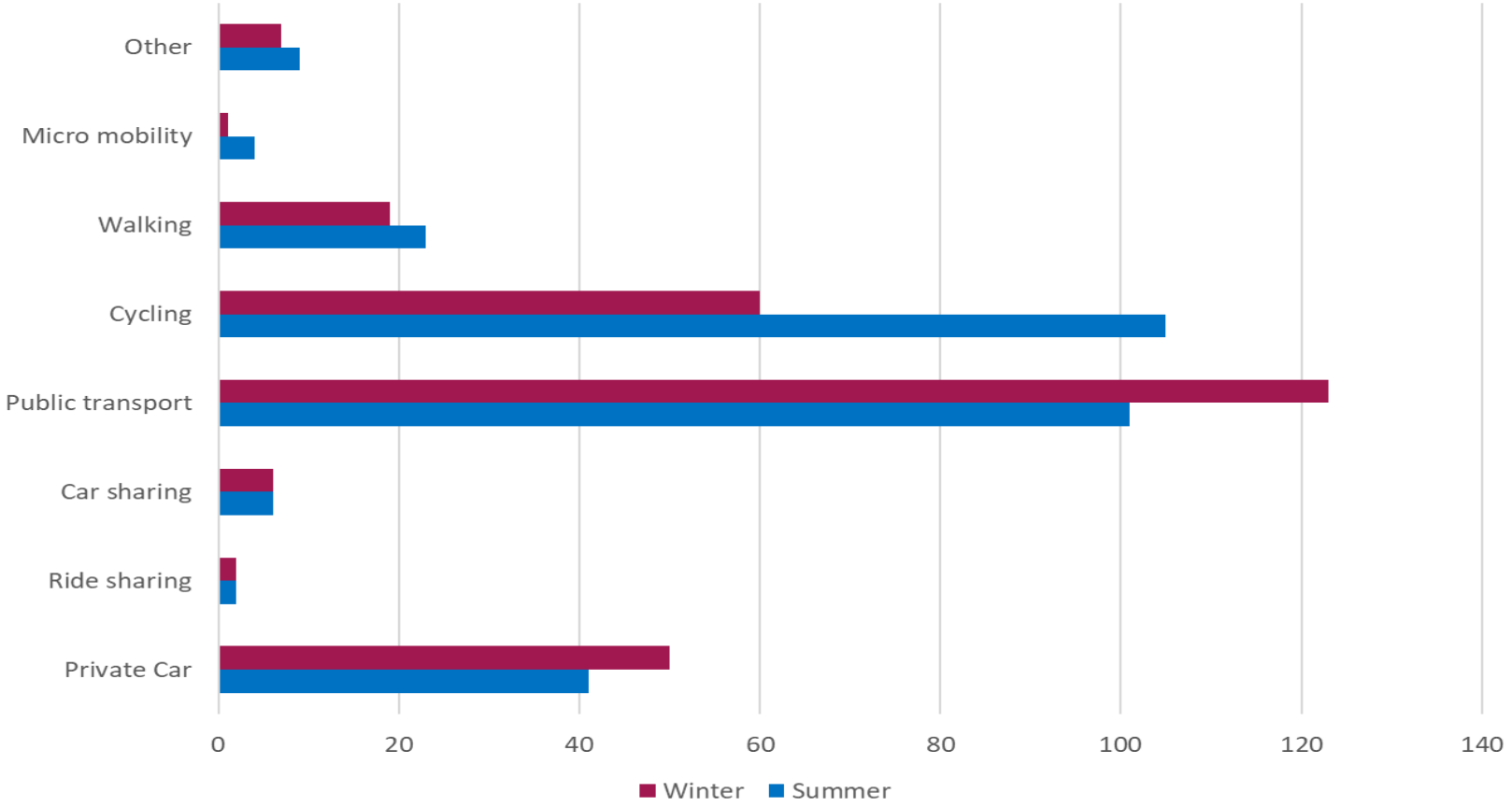
33% respondents own 2 bike

30% respondents own 3 bike

Preferred Modes of Transport (1/3)

Public Transport and Cycling are the main modes of commute of employees at Euref

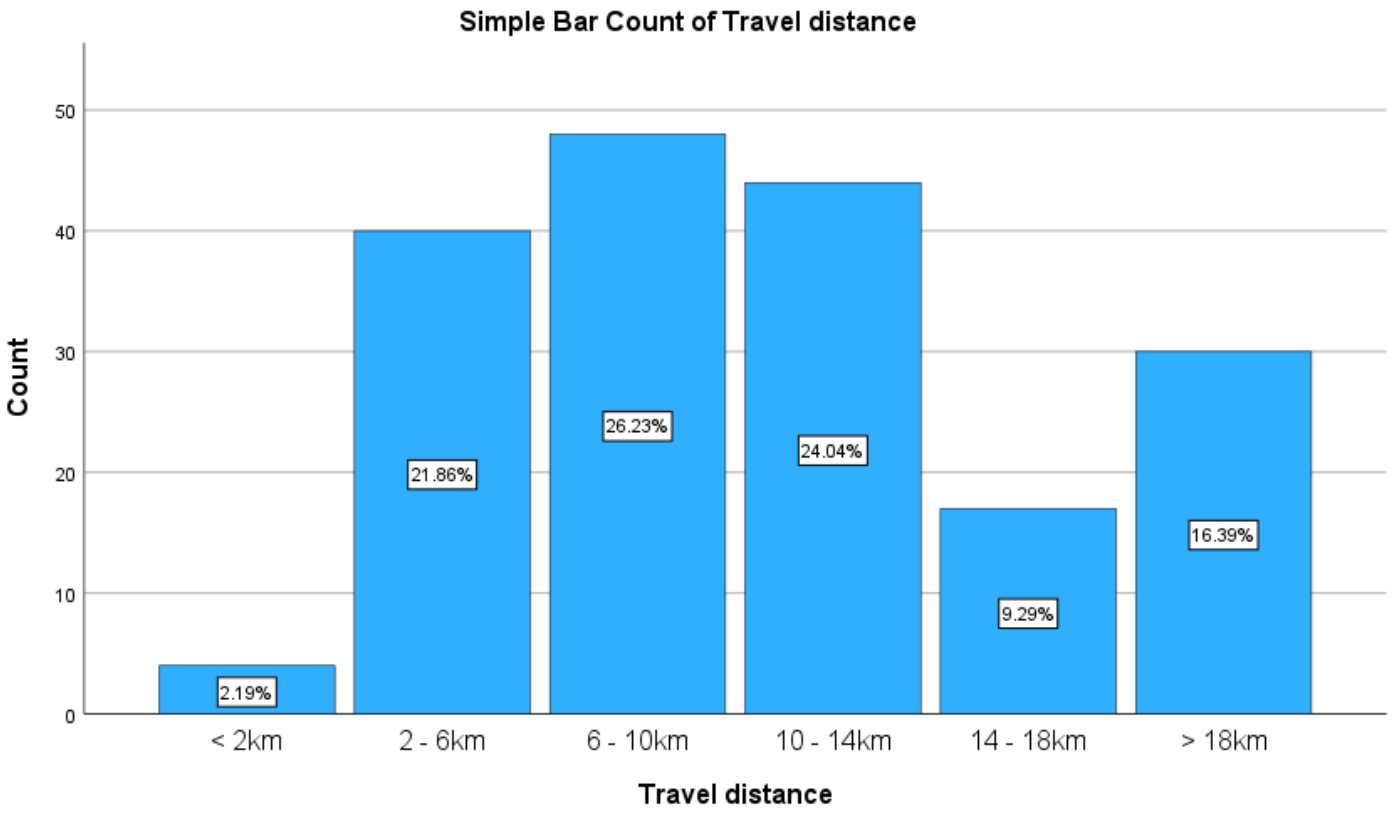
Preferred mode of commute to Euref in Summer vs Winter



The number of employees using public transport is higher in winter compared to summer

More employees prefer to cycle in summer compared to winter

Preferred Modes of Transport (2/3)



No use of kickscooters in winter

80 % respondents don't use private car in summer and 75 % don't use private car in winter

2-6 kms

In winter : 35 % cycling

Summer : 29 % cycling

6-10 kms

In winters: 30% prefer Private cars

In winters :26 % prefer PT

In summer : 26.3% private cars

In summer : 24 % PT

10-14 Kms

Winters : 27 % PT

Winters : 25 % cycle

Summer : 29 % PT usage

Summer : 27 % cycle

Preferred Modes of Transport (3/3)

Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Receptiveness: Carsharing	male	83	1.25	3.345	.367
	female	71	-.20	4.351	.516

There is significant difference between receptiveness of car sharing between men and woman

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
						Significance				95% Confidence Interval of the Difference	
		F	Sig.	t	df	One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	Lower	Upper
Receptiveness: Carsharing	Equal variances assumed	8.451	.004	2.335	152	.010	.021	1.450	.621	.223	2.677
	Equal variances not assumed			2.289	130.259	.012	.024	1.450	.634	.197	2.704

Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Openness to technology: navigation	male	81	3.54	.949	.105
	female	71	3.04	1.752	.208

There is significant difference between openness to technology such as navigation between men and woman

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
						Significance				95% Confidence Interval of the Difference	
		F	Sig.	t	df	One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	Lower	Upper
Openness to technology: navigation	Equal variances assumed	.556	.457	2.228	150	.014	.027	.501	.225	.057	.945
	Equal variances not assumed			2.149	104.603	.017	.034	.501	.233	.039	.963

Student T test < 0.05 - significant difference between two groups

Mobility behavior of employees (1/2)

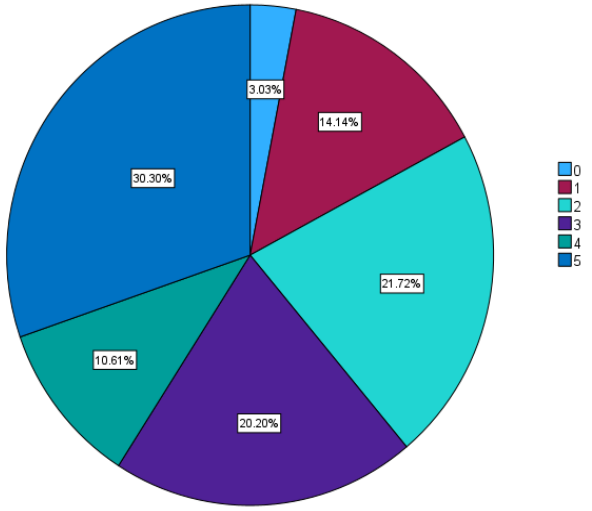
The survey shows that majority of the employees working in EUREF commute to work at least thrice a week

commute_days - weekly commute days to/ from Euref

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	6	2.8	3.0	3.0
	1	28	13.0	14.1	17.2
	2	43	20.0	21.7	38.9
	3	40	18.6	20.2	59.1
	4	21	9.8	10.6	69.7
	5	60	27.9	30.3	100.0
	Total	198	92.1	100.0	
Missing	System	17	7.9		
Total		215	100.0		

Frequency table generated from SPSS survey data

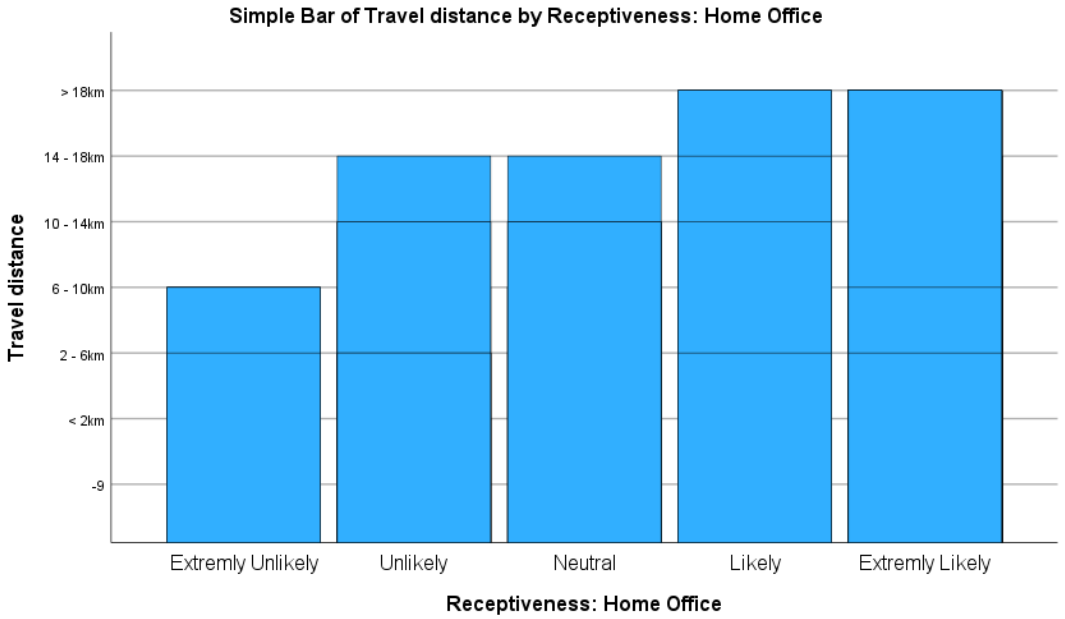
Pie chart – weekly commute days



Mean	**3.12**
Median	3
Mode	5

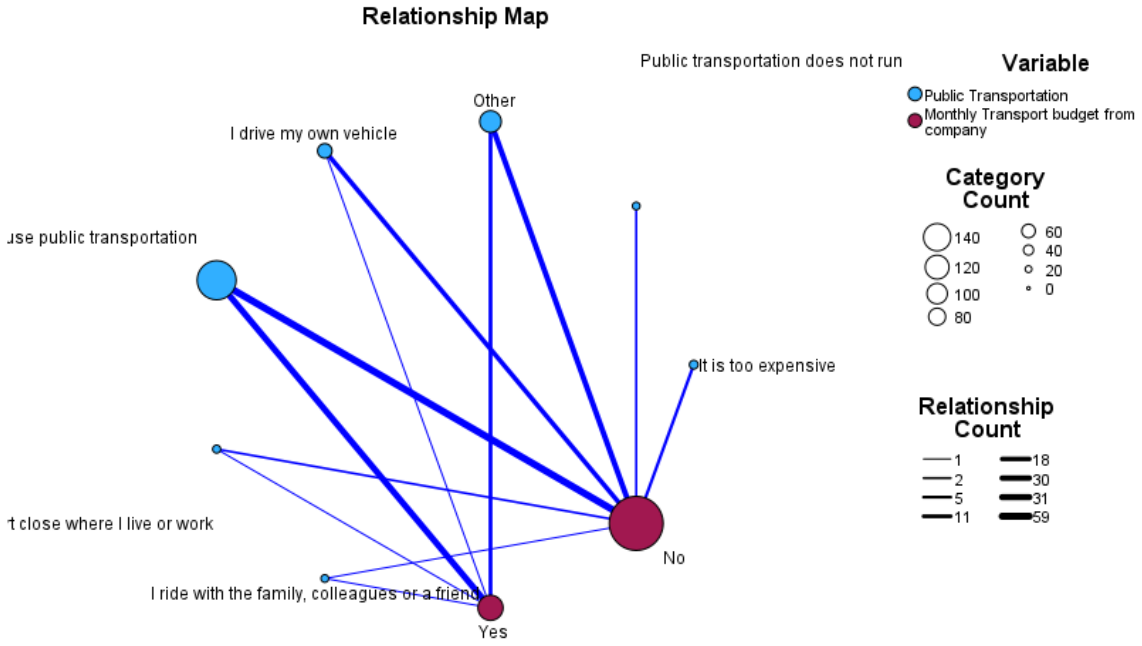
Mobility behavior of employees (2/2)

Home office



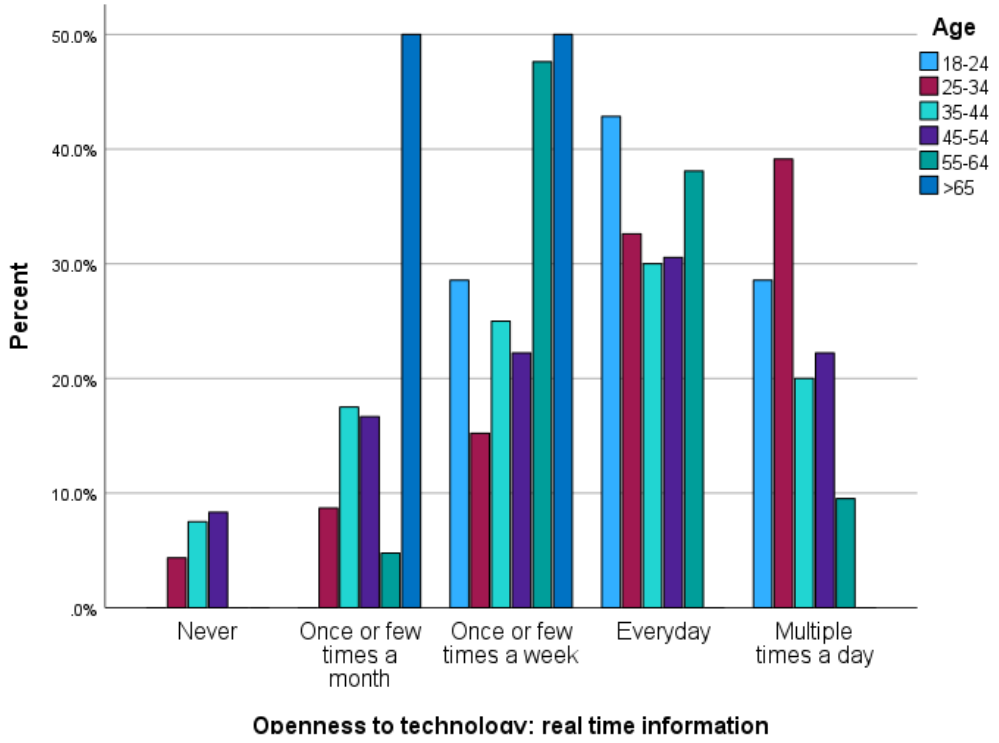
Respondents living at a distance of 14 Kms and more preferred working from Home Office

Transport Budget

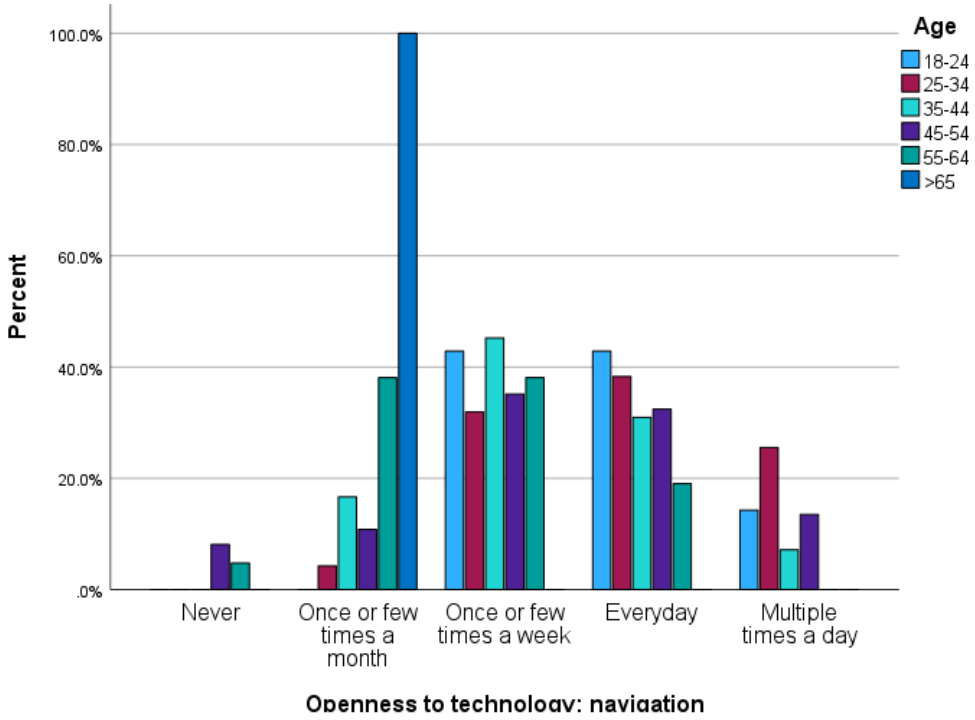


Respondents with no monthly transport budget by company suggested that PT is too expensive

Openness to Technology

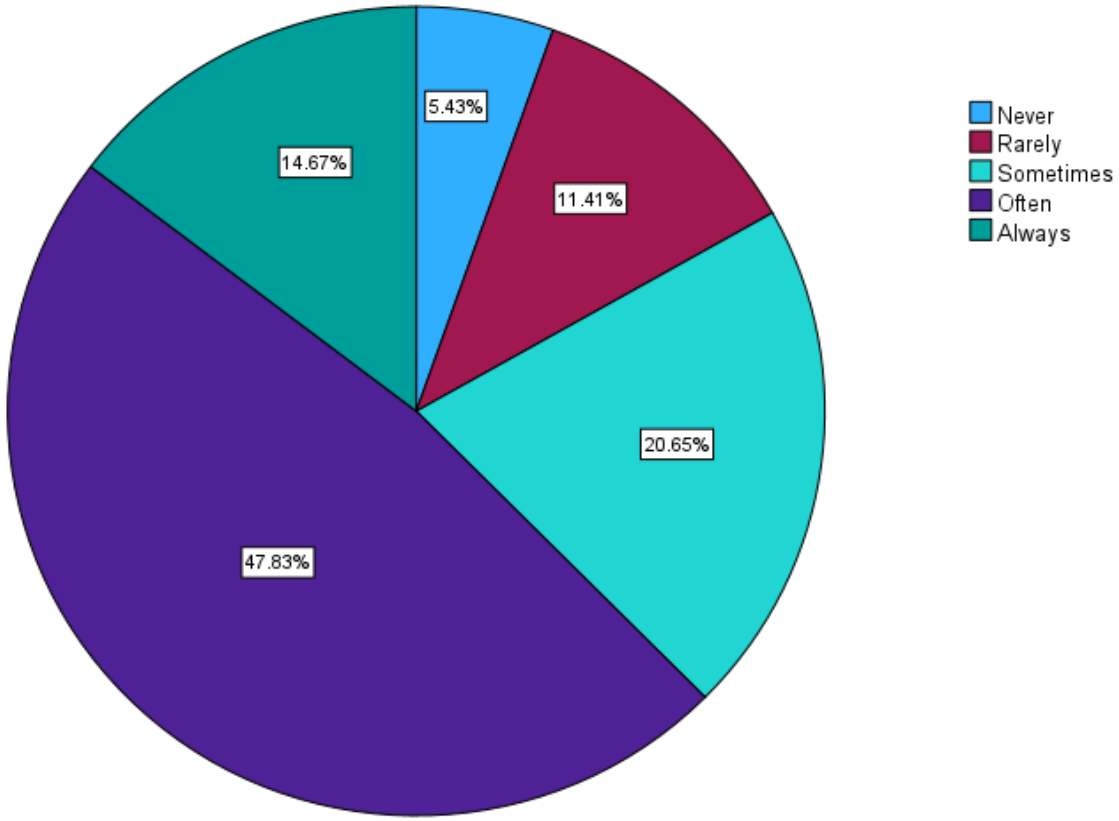


Majority Respondents in the age range of 25-34 use technology for real-time information on mobility at least once a day



Respondents above the age of 55 use technology less frequently for navigation compared to the respondents below the age of 55. This shows that younger employees are more reliant on technology

Eco Friendly Modes of Transport (1/5)

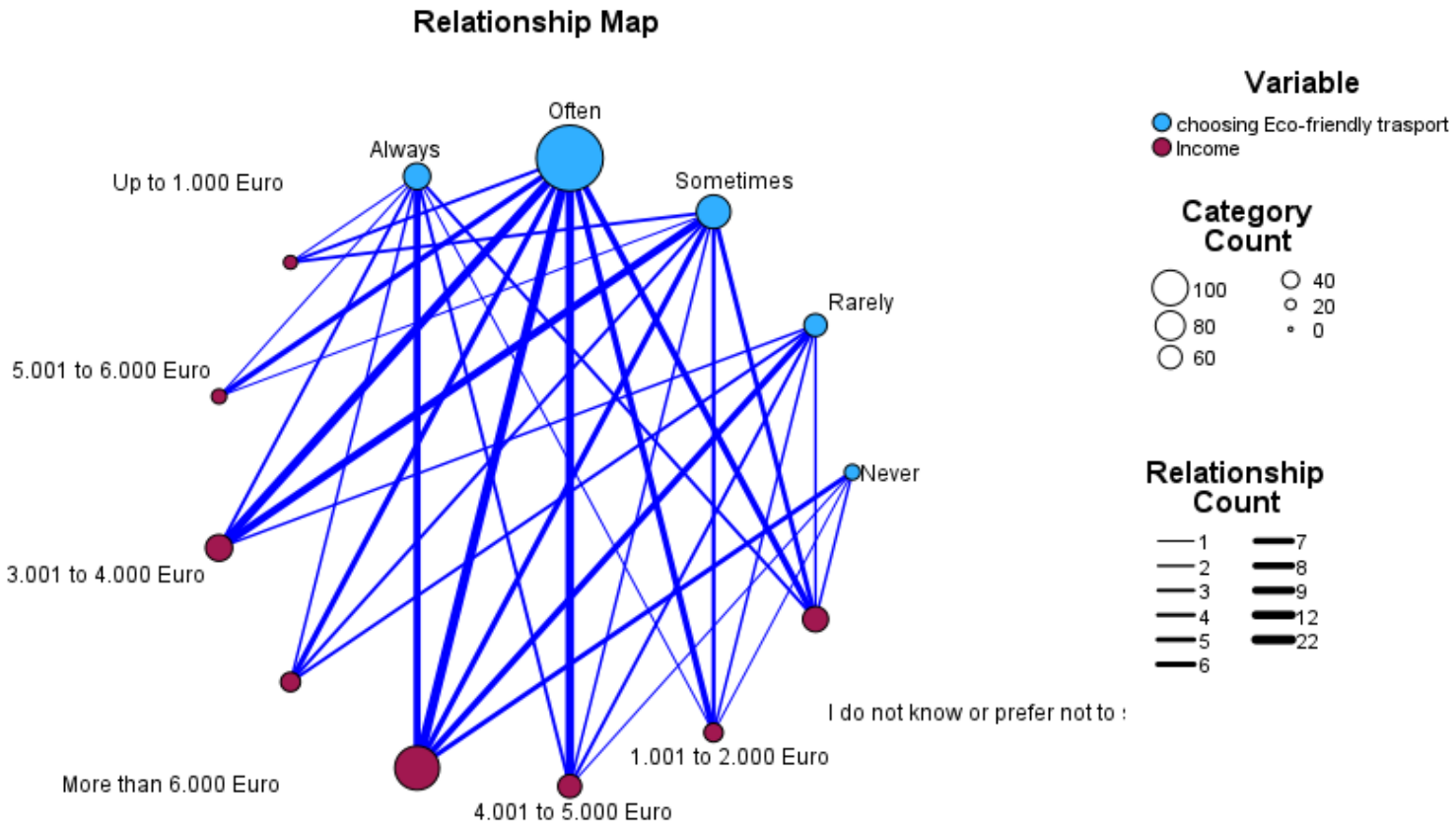


Eco-friendly modes of transport

The survey analysis shows that more than 62% of the employees at Euref choose eco-friendly modes of transport frequently whereas more than 83 % choose it at least from time to time

Eco Friendly Modes of Transport (2/5)

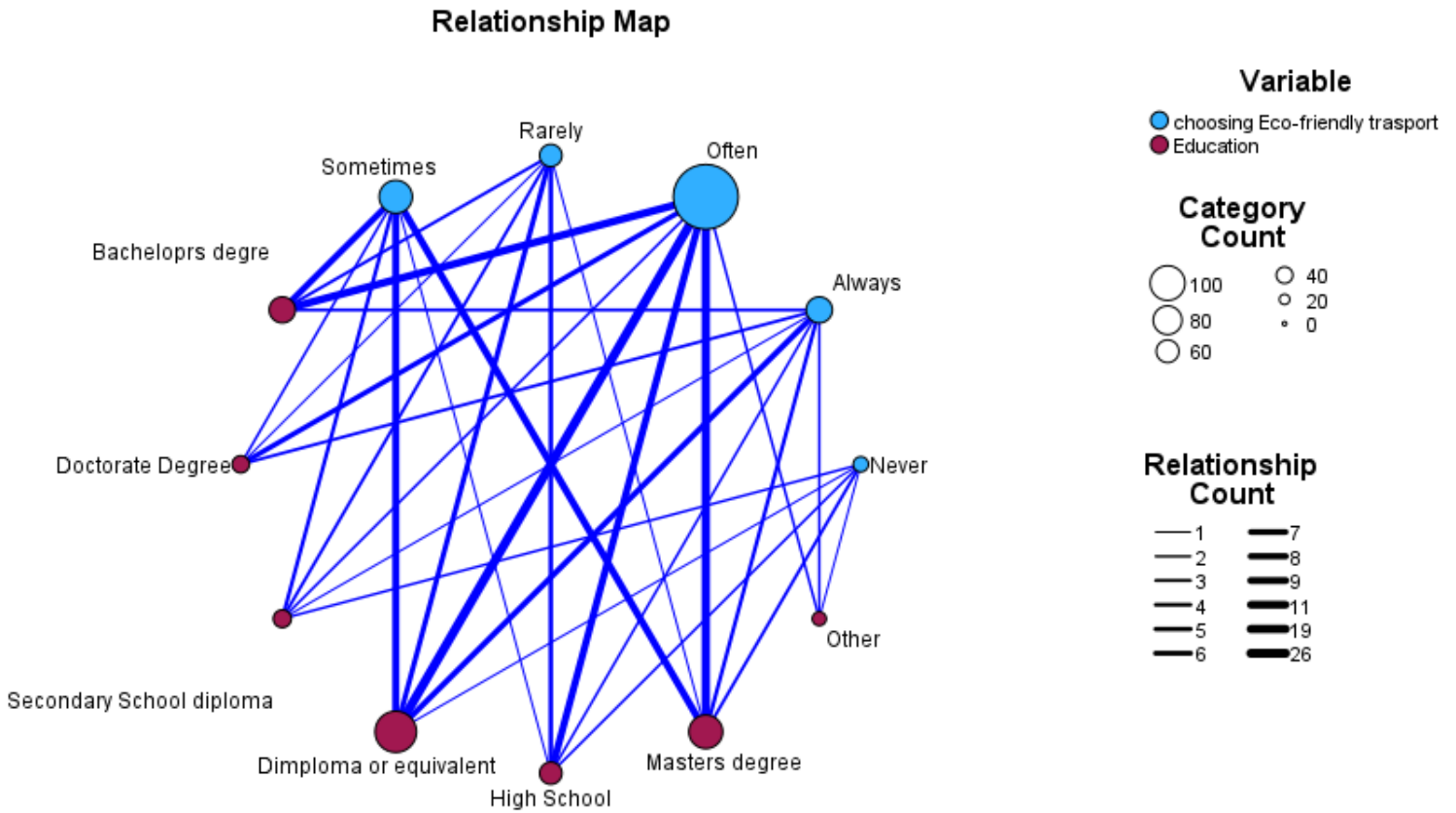
Effect of Travel Income



Respondents with Income Level above 3000 euros are choosing eco-friendly modes of transport (eg: walking, e-bikes, EVs, PT, etc)

Eco Friendly Modes of Transport (3/5)

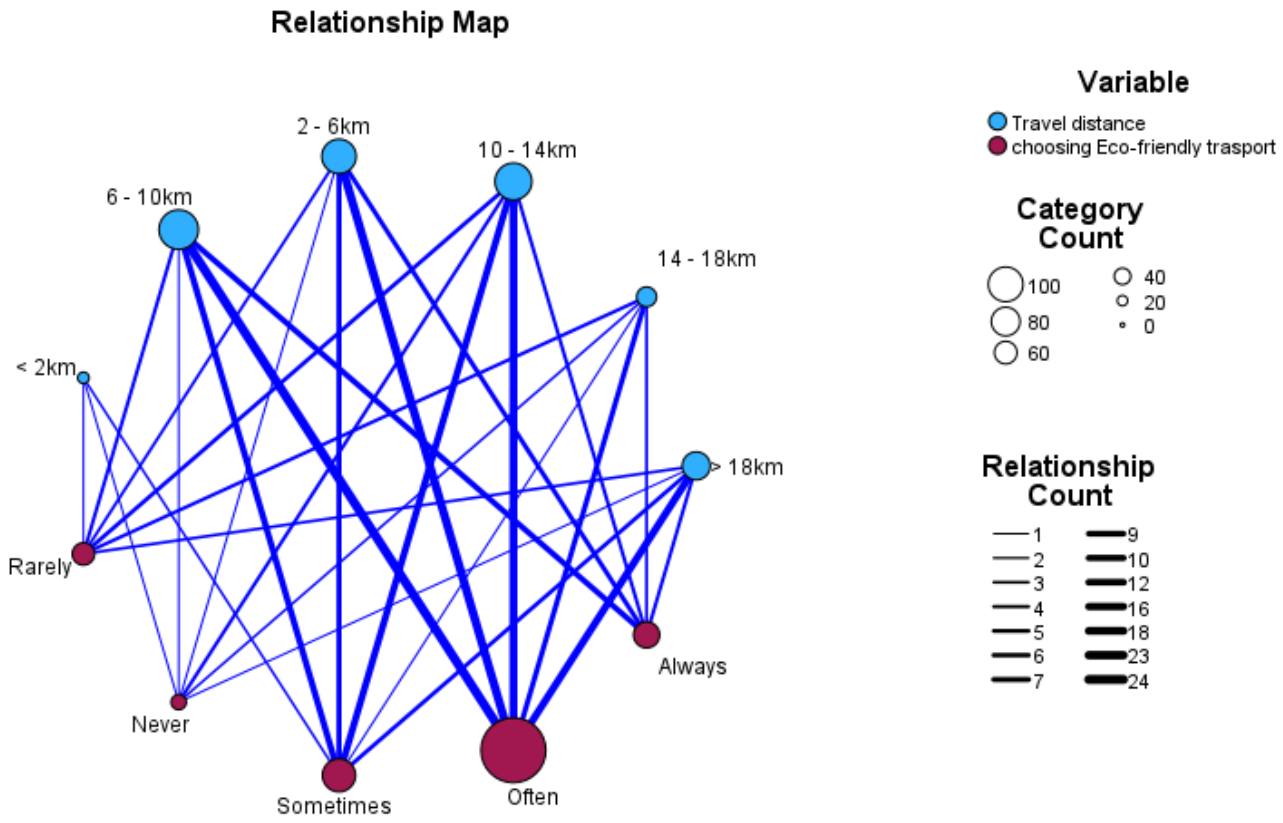
Effect of Education



Respondents with Higher degree of education using more Eco-friendly modes of transport

Eco Friendly Modes of Transport (4/5)

Effect of Distance



No fixed pattern could be determined basis the travel distance

Eco Friendly Modes of Transport (5/5)

COMPANY INCENTIVES

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1153.684	7	164.812	73.369	<.001[b]
	Residual	354.924	158	2.246		
	Total	1508.608	165			

a. Dependent Variable: choosing Eco-friendly trasport

b. Predictors: (Constant), Company Mobility incentives, Daily commute: Cost of commute, Income, Travel distance, Education, Travel time, Openness to technology

Company incentives has significant effect on choosing more eco-friendly mode of transport .

Coefficients[a]

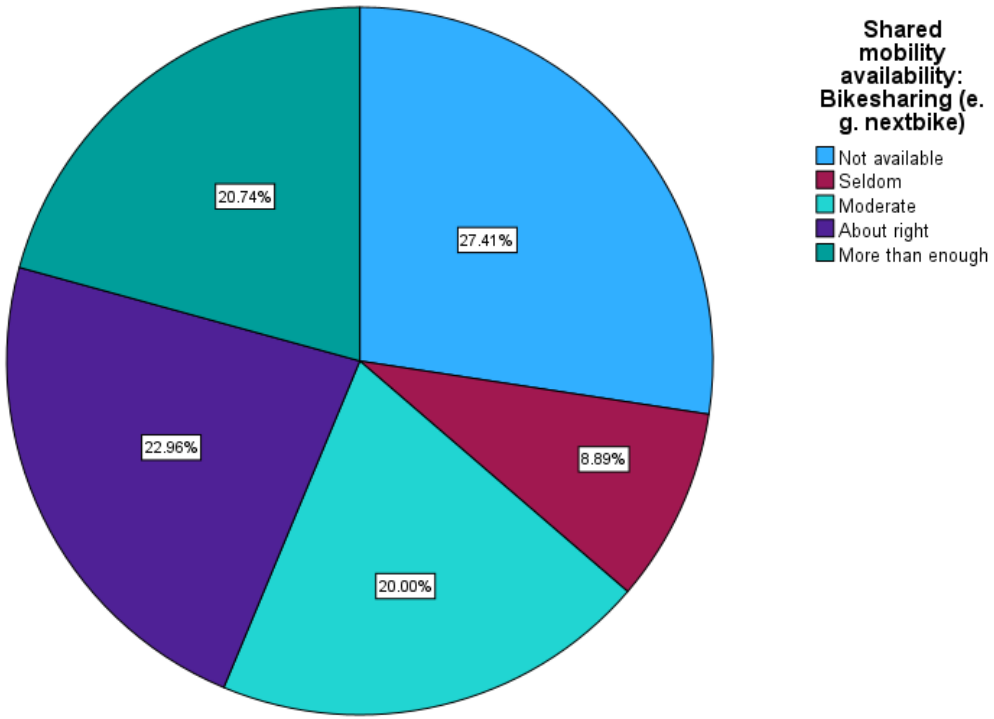
Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	1.180	.237		4.971	<.001
	Openness to technology	.396	.128	.264	3.089	.002
	Travel distance	.022	.060	.024	.362	.718
	Income	.077	.054	.084	1.418	.158
	Travel time	.158	.080	.152	1.980	.049
	Daily commute: Cost of commute	.136	.048	.156	2.816	.005
	Education	.075	.063	.073	1.192	.235
	Company Mobility incentives	.298	.087	.247	3.427	<.001

a. Dependent Variable: choosing Eco-friendly trasport

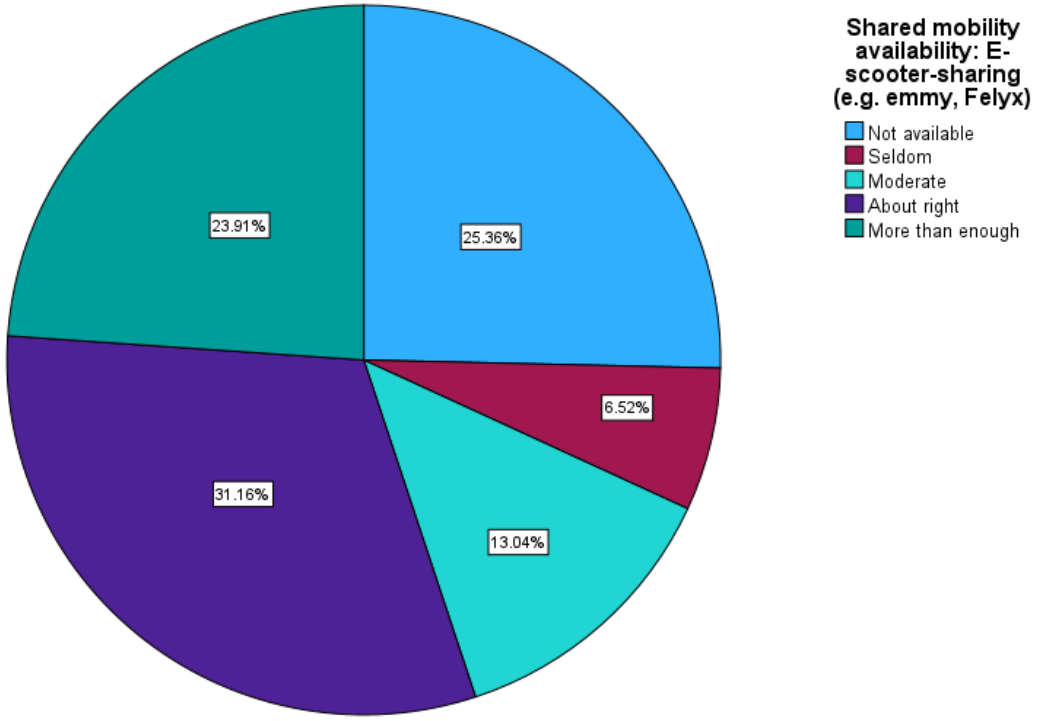
Linear Regressions test t < 0.05 - significant

Shared mobility availability at EUREF(1/2)

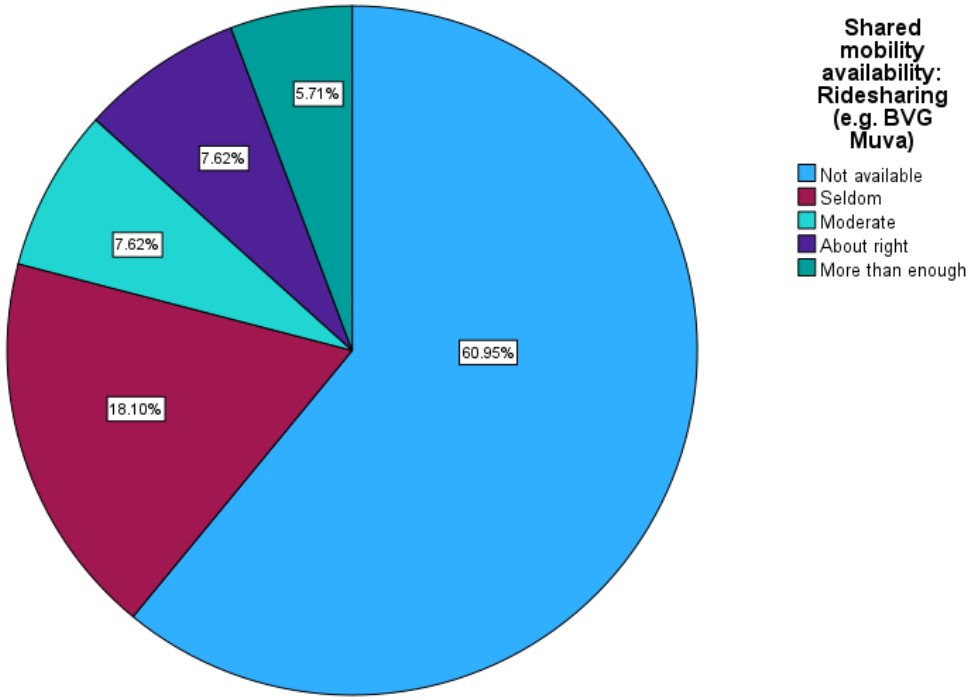
About 43% respondents said that there is enough bike-sharing availability at Euref



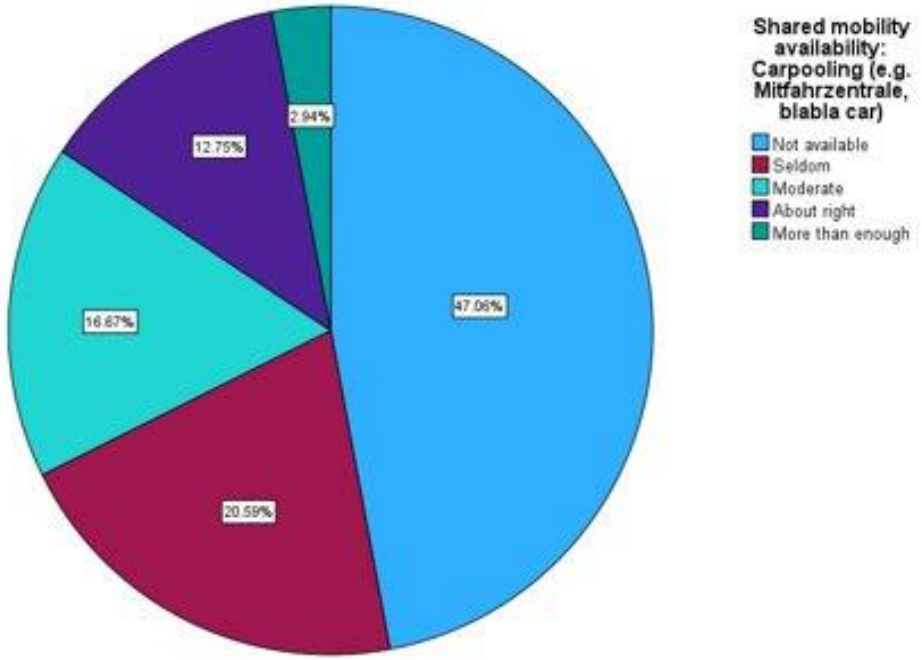
About 55% respondents said that there is enough shared e-scooter availability at Euref



Shared mobility availability at EUREF(2/2)



Nearly 80% of the respondents say that ride-sharing is seldom or not available at Euref campus.



More than 67% of the respondents say that carpooling is seldom or not available at Euref campus.

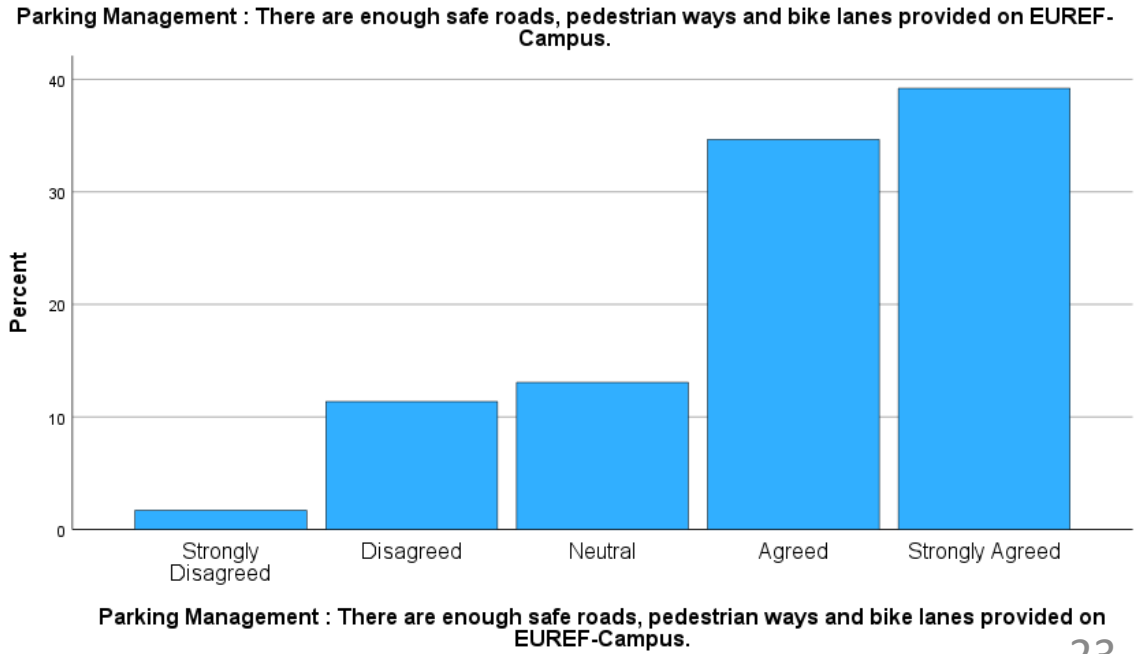
Safety Infrastructure (1/2)

Parking Management : I feel safe moving on EUREF-Campus and the nearby area

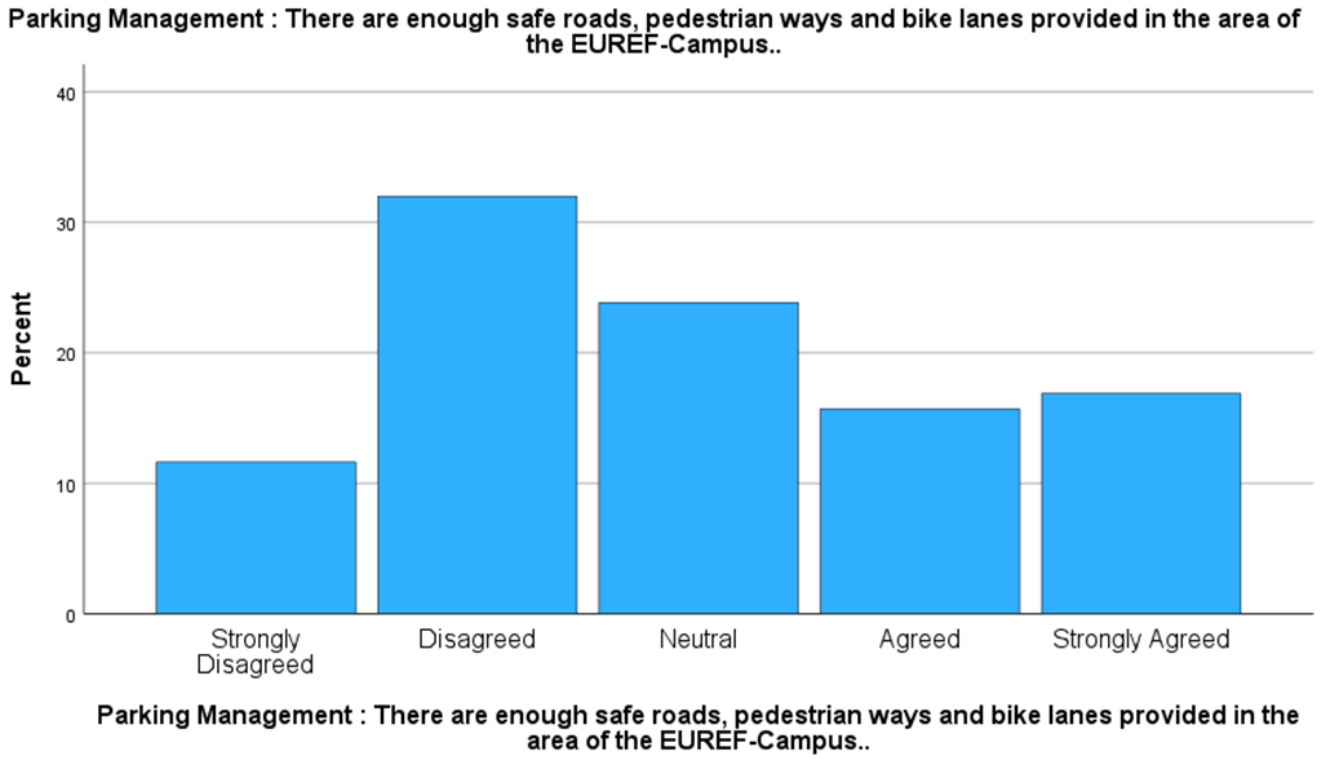
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Answered	2	.9	1.1	1.1
	Strongly Disagreed	1	.5	.6	1.7
	Disagreed	16	7.4	8.9	10.6
	Neutral	18	8.4	10.1	20.7
	Agreed	71	33.0	39.7	60.3
	Strongly Agreed	71	33.0	39.7	100.0
	Total	179	83.3	100.0	
Missing	System	36	16.7		
Total		215	100.0		

Pedestrians feel safe moving in the Euref campus

Cyclists feel safe moving in the Euref campus



Safety Infrastructure (2/2)



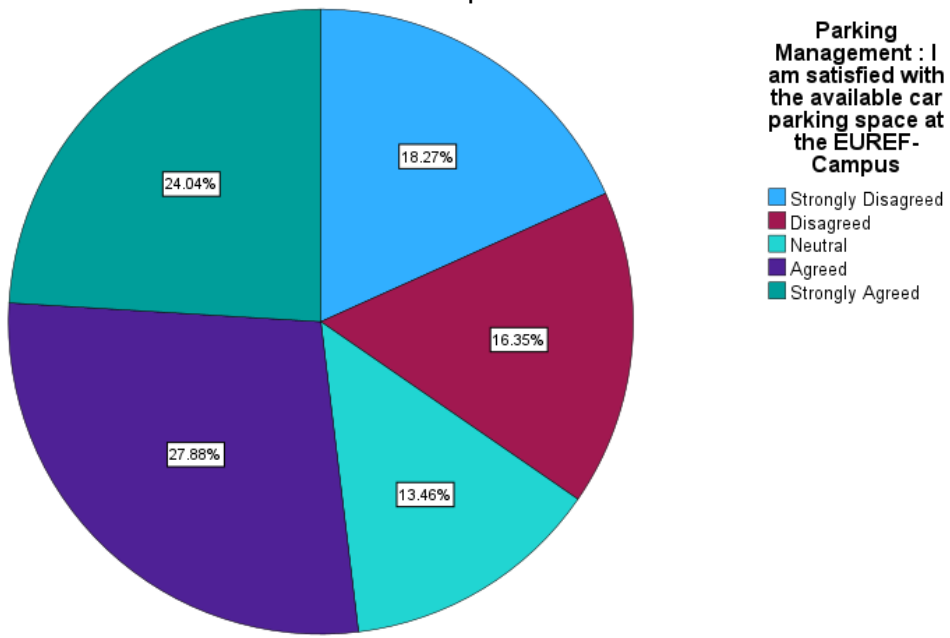
Although, survey respondents were satisfied with the safe roads and bike lanes on Euref, the responses concerning the same in the area around Euref are strikingly different.

More than 40% of the respondents felt that there are not enough safety roads, pedestrian ways and bike lanes in the area around Euref.

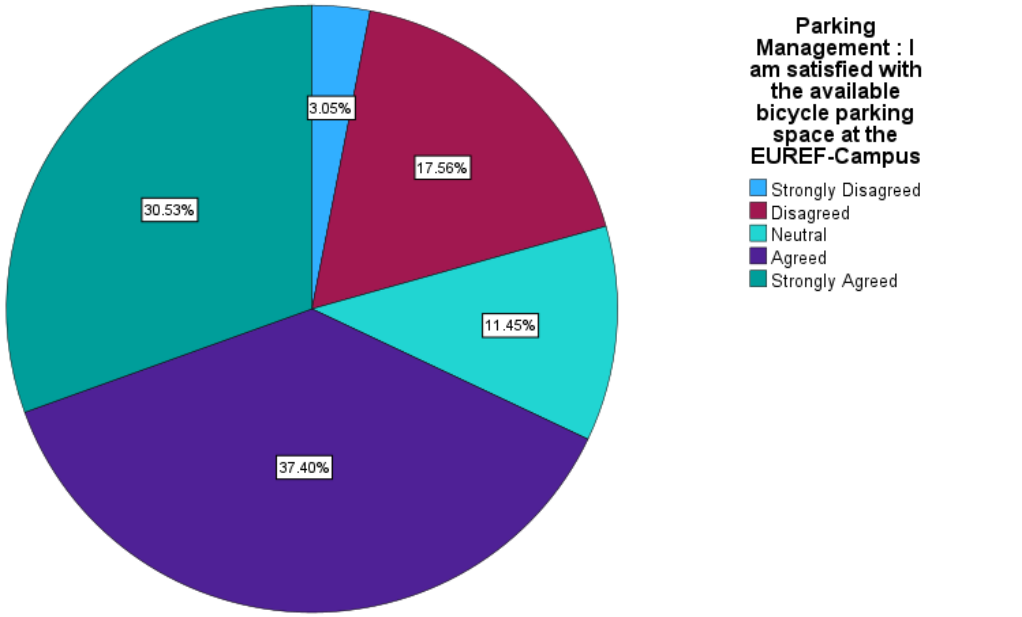
Parking Infrastructure

More than 51 % respondents are satisfied with car parking availability on Euref campus.

Pie Chart Count of Parking Management : I am satisfied with the available car parking space at the EUREF-Campus



Pie Chart Count of Parking Management : I am satisfied with the available bicycle parking space at the EUREF-Campus



More than 67 % respondents are satisfied with bike parking availability on Euref campus.

Conclusion & Recommendations (1/3)

SAFETY

Overall consensus concerning safety and parking space availability at Euref is positive.

However, there could always be improvements in shifting the behavior of people to use more sustainable modes of transport.

Technology could be used to update digital, real-time data to show where construction/repairs are going on in and around Euref, so that employees become aware of the limited walking/biking/parking spaces.

Clearly defined boundaries for pedestrians for walking at Torgauer strasse to promote ease of accessibility for cyclists and pedestrians both.

Conclusion & Recommendations (2/3)

ACCESSIBILITY

EUREF should be made more accessible for micro-mobility users (eg: kick-scooters). Emphasis should be laid on making micro-mobility more available at Euref to cater to the growing usage of micro-mobility by people.

MaaS platform like Jelbi Station exclusively for EUREF employees

A small kiosk for fixing bikes (with an air pump and basic tools) to promote more eco-friendly modes of commute and convenience.

VISIBILITY

More visible signages for better parking of private cars and other vehicles.

Conclusion & Recommendations (3/3)

PARKING

Additional parking slots to be assigned for

- **Bicycles**
- **Carsharing parking spaces**
- **Bikesharing (especially for connectivity with Sudkreuz station)**

Utilisation of available parking spaces: Parking to be made available to employees on site rather than reservation for companies.

SHARED MOBILITY

- **Shared mobility especially carpooling and ride-sharing are seldom or not available at the Euref Campus.**
- **A mobility app with incentives which focuses on shared mobility or planning daily commute to EUREF could promote more environmental conscious behaviour among employees.**

THANK YOU