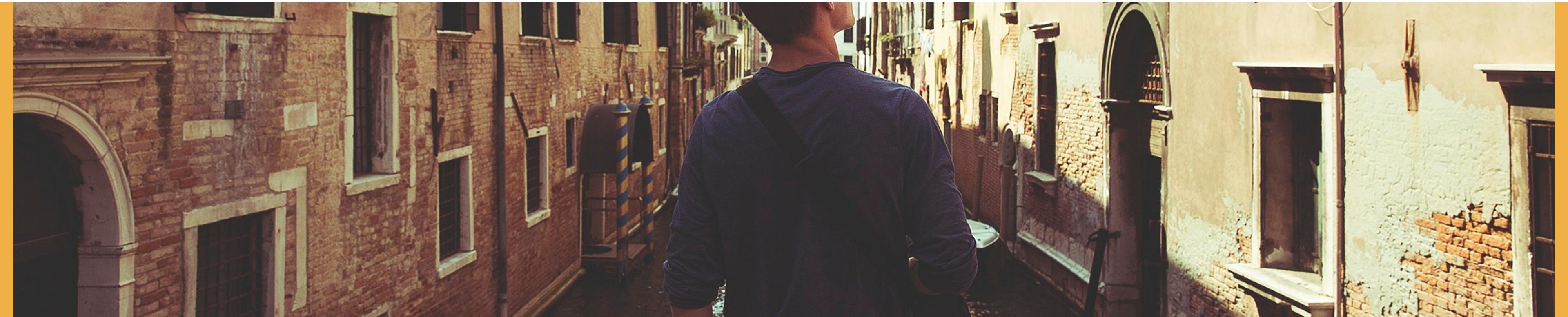




LABORATORY OF CUSTOMER AND BUSINESS ANALYTICS  
A.Y. 2020/2021

# Choice-based Conjoint Analysis on student accommodation

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# Outline

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Main objective

Experimental Design

Data analysis and results

Conclusion





# Main objective

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investigating customers' preferences  
about student accommodation

# Experimental Design



Fractional-factorial  
design



Mix-and-Match  
approach



Snowball sampling  
142 respondents

# Attributes

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## Typology

- single
- double/shared

## Nº of tenants

- 2
- 3-4
- 5-6

## Price

- 250 €
- 350 €
- 450 €

## Position

- < 500 m
- 500m - 1.5km
- > 1.5km

## Facilities

- private balcony
- living-room
- dishwasher and microwave

# 1st Research question

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Which room's features are considered  
the most important by students?

Which attributes' levels are associated  
with a positive part worth?

# Multinomial Logit Model

'm2' seems to be the best MNL to explain our data (Likelihood Ratio Test)

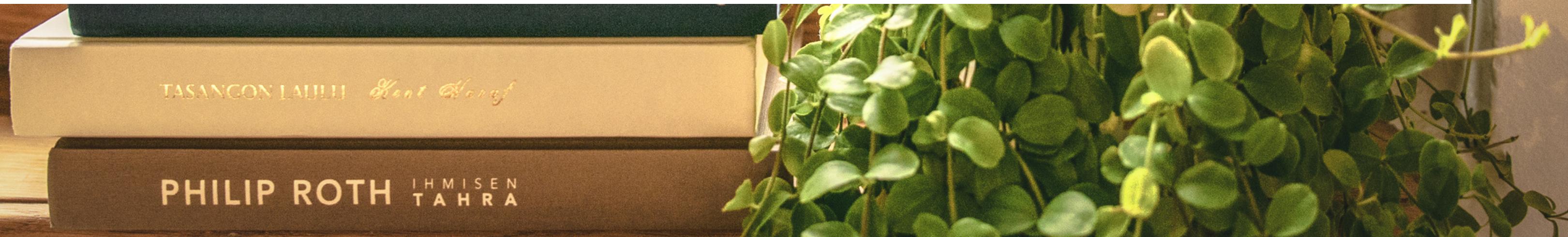
## Coefficients :	Estimate	Std. Error	z-value	Pr(> z )	
## TIPOLOGIA singola	<u>1.611738</u>	0.114229	14.1097	< 2.2e-16	***
## POSIZIONE 500m - 1.5km	-0.315874	0.118222	-2.6719	0.007543	**
## POSIZIONE > 1.5km	-1.242910	0.129364	-9.6078	< 2.2e-16	***
## INQUILINI 3-4	-0.181471	0.101675	-1.7848	0.074291	.
## INQUILINI 5-6	-0.946899	0.111372	-8.5022	< 2.2e-16	***
## SERVIZI lav. mic.	-0.044284	0.111533	-0.3970	0.691333	
## SERVIZI balconcino	-0.350181	0.121937	-2.8718	0.004081	**
## PREZZO 350	-0.623932	0.092798	-6.7235	1.774e-11	***
## PREZZO 450	-1.767213	0.131306	-13.4588	< 2.2e-16	***

## 2nd Research question

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How can we assess the preference of a specific product profile  
we want to launch on the market?

How can we increase its success?



# Reference profile

- single room
- < 500 m from uni
- 3 students
- private balcony
- € 310



# Competitors' profiles



**AAA Appartamenti studenti  
Trento**

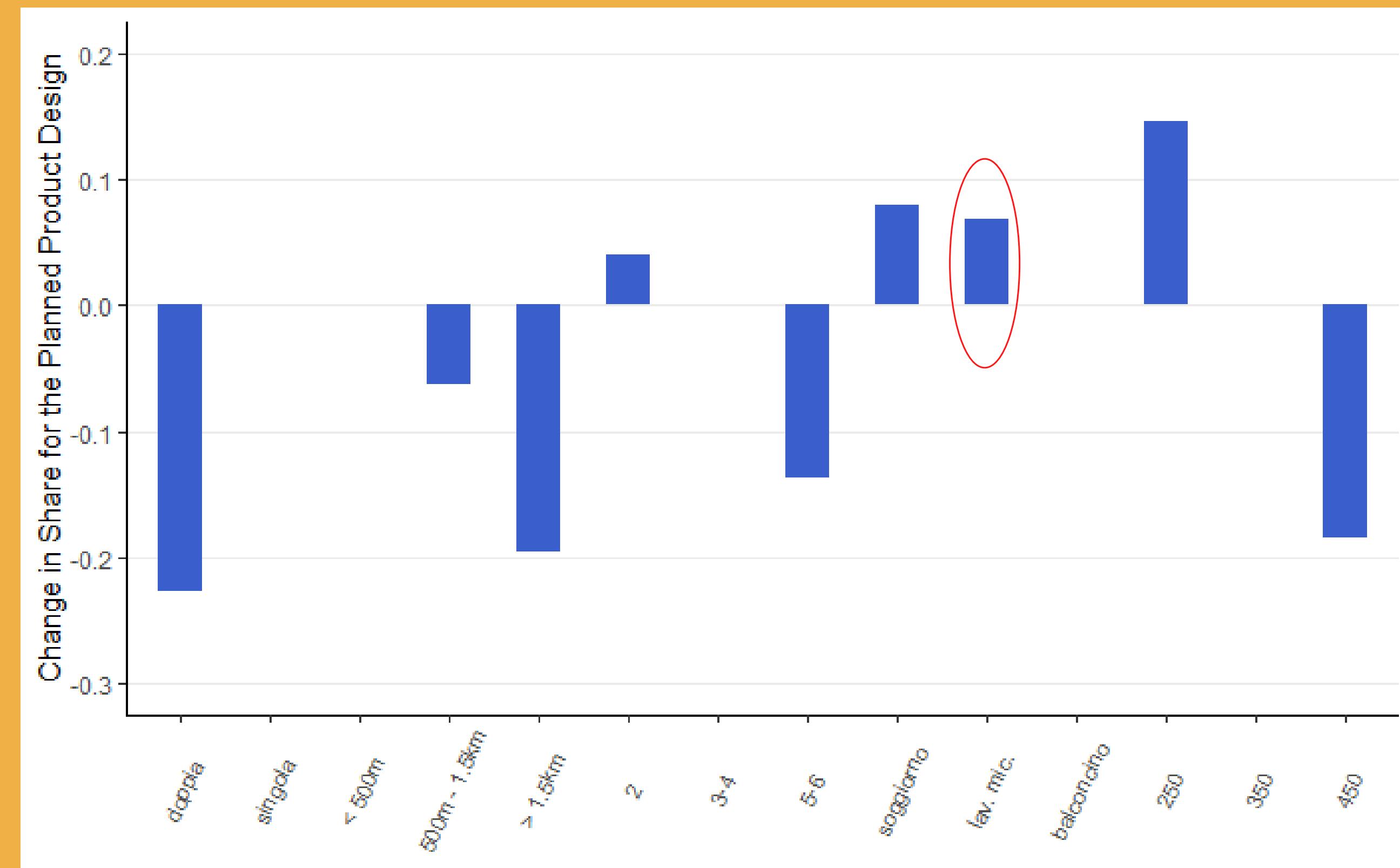
🔒 Gruppo Privato · 14.874 membri

+ Invita

# Preference share prediction with Bootstrap confidence intervals

##	share	2.5%	97.5%	TIPOLOGIA	POSIZIONE	INQUILINI	SERVIZI	PREZZO
## 98	0.30953630	0.250637286	0.37571633	singola	< 500m	3-4	balconcino	350
## 70	0.14900139	0.109117206	0.19901618	singola	500m - 1.5km	5-6	soggiorno	350
## 66	0.12676644	0.096528719	0.16016860	singola	> 1.5km	3-4	soggiorno	350
## 140	0.06231888	0.040883658	0.08754352	singola	< 500m	5-6	lav. mic.	450
## 61	0.08766467	0.068813770	0.10831235	doppia	< 500m	3-4	soggiorno	350
## 33	0.05308352	0.035452955	0.07612043	doppia	500m - 1.5km	5-6	lav. mic.	250
## 1	0.19615835	0.147314373	0.24500944	doppia	< 500m	2	soggiorno	250
## 53	0.01547045	0.008554363	0.02470210	doppia	> 1.5km	5-6	balconcino	250

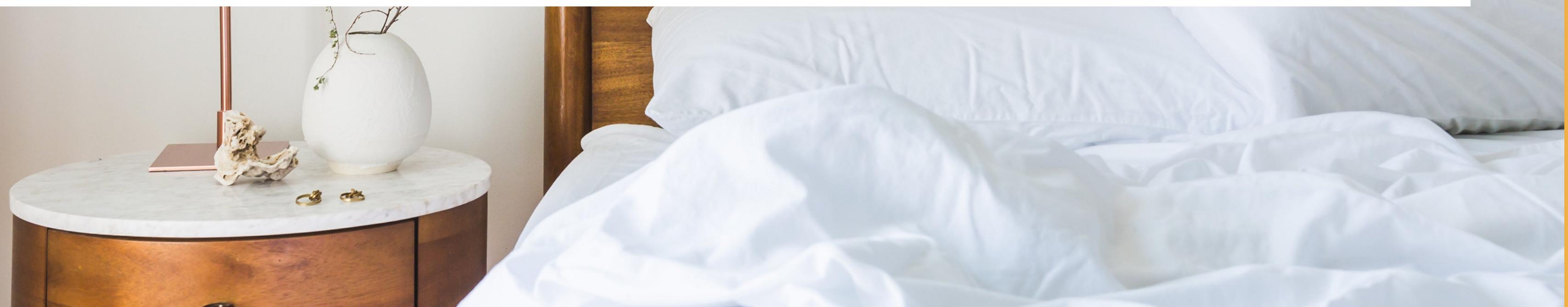
# Sensitivity chart



## 3rd Research question

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**Are students' preferences homogeneous  
towards the choice of the room?**



# Consumer Heterogeneity:

## MNL with random coefficients

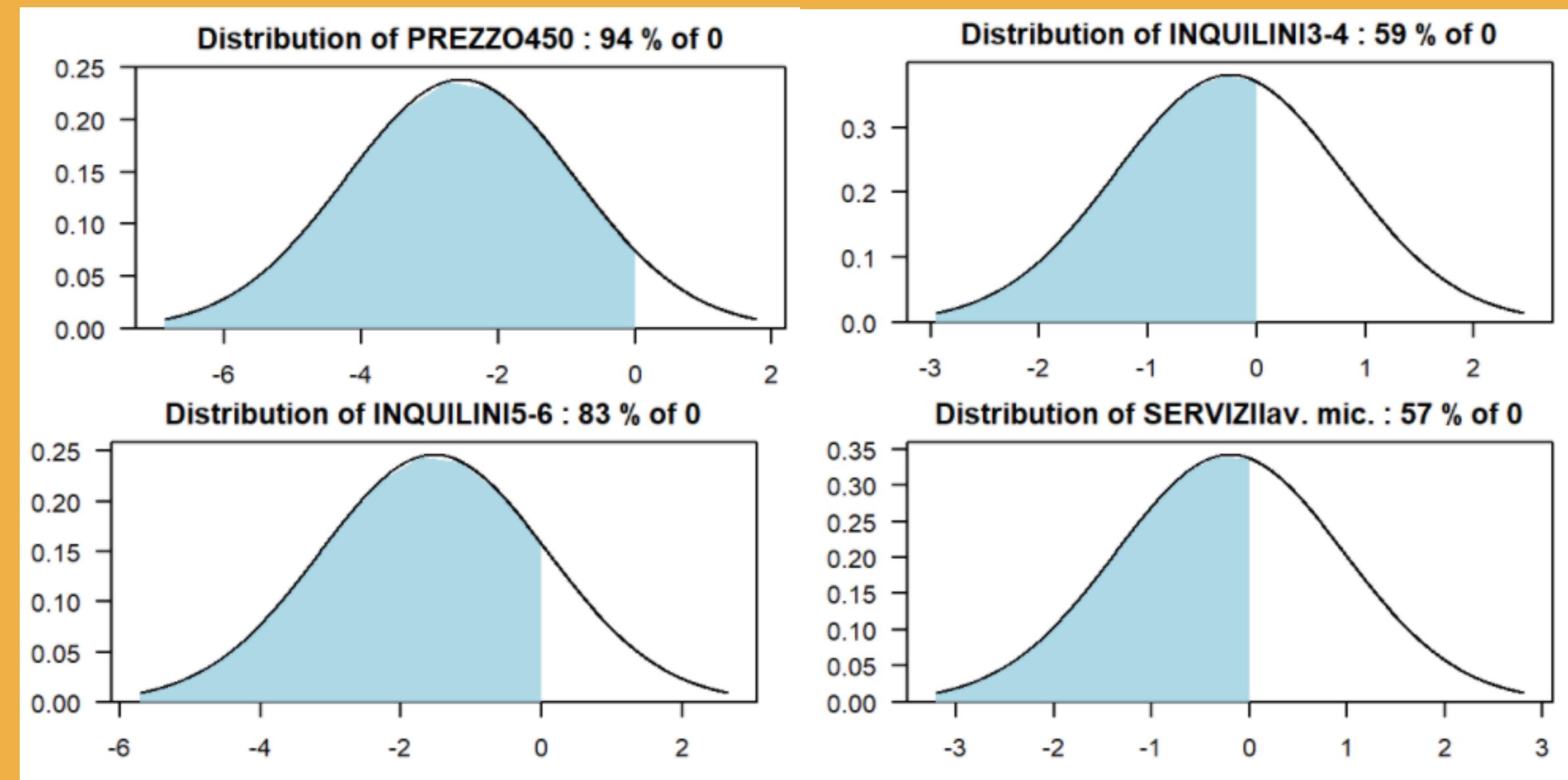
```
## Coefficients :  
##                                     Estimate Std. Error z-value Pr(>|z|)  
## TIPOLOGIASingola          2.55874151 0.23551443 10.8645 < 2.2e-16 ***  
## POSIZIONE500m - 1.5km     -0.27994808 0.16487619 -1.6979 0.089521 .  
## POSIZIONE> 1.5km        -1.64244110 0.17946007 -9.1521 < 2.2e-16 ***  
## INQUILINI3-4            -0.24771233 0.13124913 -1.8873 0.059114 .  
## INQUILINI5-6            -1.53129378 0.18167946 -8.4285 < 2.2e-16 ***  
## SERVIZIlav. mic.       -0.19916419 0.14338615 -1.3890 0.164831  
## SERVIZIbalconcino      -0.68726278 0.16587131 -4.1433 3.423e-05 ***  
## PREZZO350              -0.80022315 0.12757799 -6.2724 3.555e-10 ***  
## PREZZO450              -2.54714387 0.22207458 -11.4698 < 2.2e-16 ***  
## sd.TIPOLOGIASingola    1.88133558 0.24516100 7.6739 1.665e-14 ***  
## sd.POSIZIONE500m - 1.5km -0.00057661 0.23306601 -0.0025 0.998026  
## sd.POSIZIONE> 1.5km    -0.74067211 0.22237162 -3.3308 0.000866 ***  
## sd.INQUILINI3-4        1.04909143 0.18895054 5.5522 2.821e-08 ***  
## sd.INQUILINI5-6        1.62062670 0.26326852 6.1558 7.470e-10 ***  
## sd.SERVIZIlav. mic.    1.16694420 0.18899651 6.1744 6.641e-10 ***  
## sd.SERVIZIbalconcino   -0.23814246 0.21826260 -1.0911 0.275237  
## sd.PREZZO350            0.29981682 0.19566567 1.5323 0.125451  
## sd.PREZZO450            1.67484492 0.26862331 6.2349 4.520e-10 ***
```

# Market segments or Market niches?

```
## random coefficients
##                                     Min.   1st Qu.    Median      Mean   3rd Qu.   Max.
## TIPOLOGIAsingola          -Inf  1.2897999  2.5587415  2.5587415  3.8276831 Inf
## POSIZIONE500m - 1.5km -Inf -0.2803370 -0.2799481 -0.2799481 -0.2795592 Inf
## POSIZIONE> 1.5km          -Inf -2.1420168 -1.6424411 -1.6424411 -1.1428653 Inf
## INQUILINI3-4              -Inf -0.9553137 -0.2477123 -0.2477123  0.4598891 Inf
## INQUILINI5-6              -Inf -2.6243899 -1.5312938 -1.5312938 -0.4381977 Inf
## SERVIZIlav. mic.          -Inf -0.9862561 -0.1991642 -0.1991642  0.5879277 Inf
## SERVIZIbalconcino         -Inf -0.8478874 -0.6872628 -0.6872628 -0.5266381 Inf
## PREZZO350                  -Inf -1.0024465 -0.8002232 -0.8002232 -0.5979998 Inf
## PREZZO450                  -Inf -3.6768096 -2.5471439 -2.5471439 -1.4174781 Inf
```

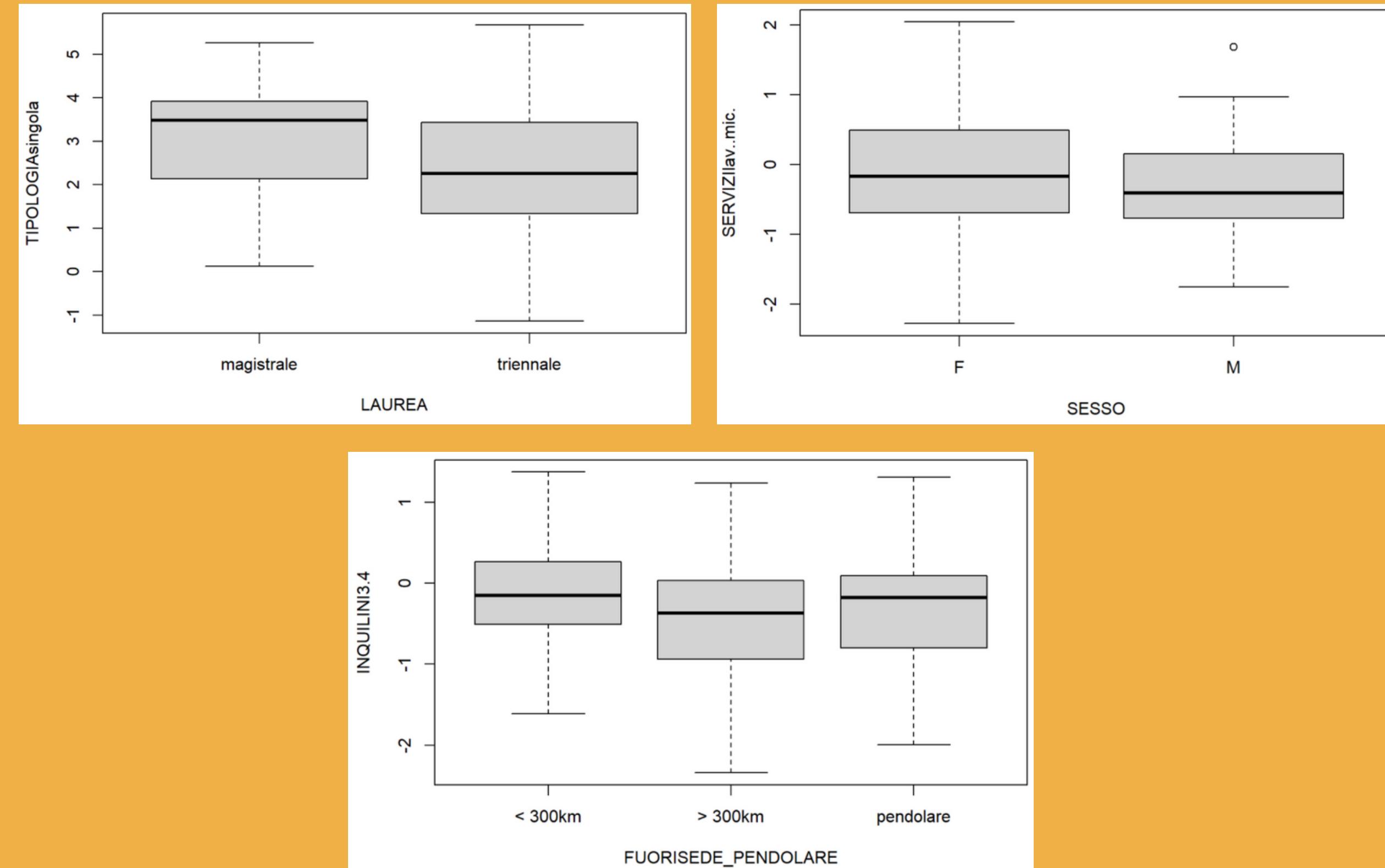


# Market segments or Market niches?



# Consumer heterogeneity:

## Individual-level predictors



# Conclusion

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- Marta's room meets the tastes of the students
- It is easier to rent a single room, near the university at less than 450 €
- Dishwasher+microwave and living-room are the most popular choices
- Since the living-room is expensive (having an empty room), the landlord could replace it with a single room, buying a dishwasher and a microwave



Thank you!

