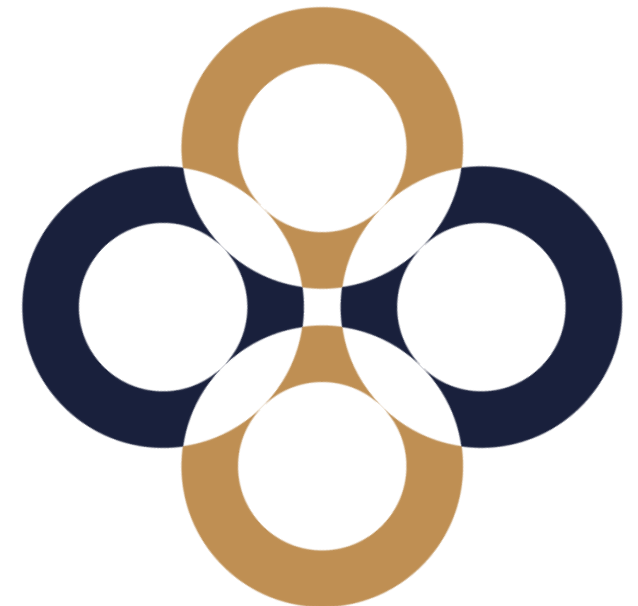# Empirical Analysis of the Office Real Estate Market in HHH

Your Name (compulsory)

Supervisor: X Y (optional)

Content

- Introduction

- Literature review

- Data and descriptive statistics

- Method

- Results

- Conclusion

Introduction

- Relevancy

- Personal interest

- What is the relationship between rental price of the office unit and its characteristics and location.

Literature review

- Dunse, N. and Jones, C. (1998) A Hedonic Price Model of Office Rents. *Journal of Property Valuation and Investment*, Vol. 16, pp. 297-312.

- Farooq, B., Miller, E. J. and Haider, M. (2010) Hedonic Analysis of Office Space Rent. *Journal of the Transportation Research Board*, Vol. 2174, pp. 118–127.

Actual transacted rent or Asking rent?

- Fuerst, F. and McAllister, P. (2011) Green. Noise or Green Value? Measuring the Effects of Environmental Certification on Office Values. Real Estate Economics, Vol. 39, pp. 45-69.

Data and descriptive statistics

- Initial dataset – **200** observations for 2020 year (specialist of the Center for Assessment and Expertise of Property "AL-STAR" in Bishkek)

- **86** observations were added

- A total sample of **286** asking rents is used in this study

- 14 variables: internal accessibility, indoor services, and physical structure
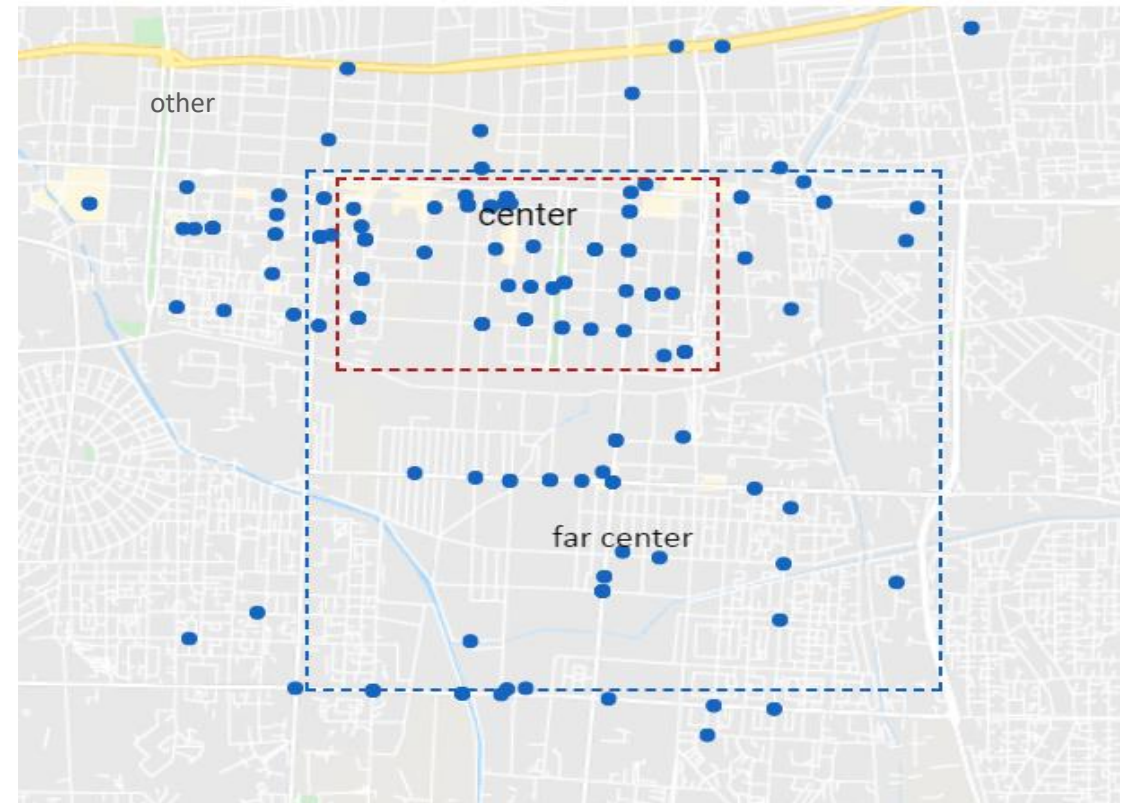
Quantitative variables

Variable code	Description	Mean / Proportion	SD	Min	Max
rental_price	The asking rental price per square meter (2020 USD)	13.19	3.34	4	23
size	The usable area of the object in square meters	165.98	199.25	6	1100

Qualitative variables

Variable code	Mean / Proportion
Internal accessibility	
location_center	0.41
location_farcenter	0.48
location_other	0.11
main_street	0.39
basement_floor	0.08
ground_floor	0.51
upper_floor	0.41

Spatial distribution of offices with reference to the location

Qualitative variables

Variable code	Mean / Proportion
Indoor services	
repair	0.53
AC	0.19
Furniture	0.14
Physical structure	
parking	0.22
residential	0.76
BC	0.24
elite_class	0.15
individual_series	0.26
stalinka	0.10

Model

rental price

$$= \beta_0 + \beta_1 \text{LOCATION} + \beta_2 \text{FLOOR LEVEL} + \beta_3 \text{MAIN STREET} + \beta_4 \text{AC} + \beta_5 \text{PARKING} + \beta_6 \text{RESIDENTIAL} + \beta_7 \text{TYPE OF THE BUIDLING} + \beta_8 \text{FURNITURE} + \beta_9 \text{REPAIR} + \beta_{10} \text{SIZE} + \varepsilon$$

The evaluation summary of the stepwise procedure

Parameters	Model 1	Model 2	Model 3	Criterion
RSE	61.5	62.1	62.1	Smaller the better
R^2	0.626	0.622	0.618	Higher the better
Adjusted R^2	0.606	0.604	0.601	Higher the better
p-value	< 2.2e-16	< 2.2e-16	< 2.2e-16	Smaller the better
AIC	1251.18	1251.52	1253.09	Higher the better
BIC	1309.68	1306.36	1304.27	Smaller the better

Notes: RSE = Residual Standard Error; AIC = Akaike's Information Criterion; BIC = Bayesian Information Criterion

Results

Variable	Coefficient	T-ratio
(Constant)	12.93	33.55 **
location_other	-5.65	-13.25 ***
location_farcenter	-2.28	-8.37 ***
parking	1.68	5.27 ***
main_street	1.27	3.88 ***
basement_floor	-1.76	-3.77 ***
upper_floor	-0.87	-3.12 **
BC	2.22	5.69 ***
elite_class	2.57	6.72 ***
stalinka	-1.26	-2.89 **
furniture	0.94	2.51 *
repair	0.71	2.74 **
size	0.002	2.54 *

Notes: Number of observations, 286; R^2 = 0.62; Adjusted R^2 = 0.60; Standard error = 62.1; F-stat = 36.83 (0.00); * Significant at the 95 per cent critical value; ** Significant at the 99 per cent critical value; *** Significant at the 99.9 per cent critical value

Conclusion

- The results highlight the importance of the *location* of offices in the city and the *floor* where it is situated as principal determinants of rents.

- A decrease in expected rental price by 5.65 \$/m2 can be explained by a location farther from the center on the outskirt of the city.

- Office belonging to an elite residential building, its current renovation, the availability of the furniture, parking and the exit directly to the main streets of Bishkek *increases* rental price.

- Office belonging to a *residential type of building "stalinka"* reduces rental price.

- There is an increase in the rental price by 2.22 \$/m² if the office is located in the *business center* type of the building.

- Location of office on any other floor than the first decreases rental price.

- **Limitations**

Thank you
for your attention!