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Comparative Analysis of the Impact of Building Regulations on Housing Prices: A Study of Kosovo and Slovenia

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Abstract

This study investigates the impact of building regulations and spatial planning restrictions on housing prices in Kosovo and Slovenia. The research employs a quantitative analysis, utilizing SPSS to analyze 1,468 housing sales and cost transactions in Kosovo and 677 transactions in Slovenia. Findings reveal a significant influence of building regulations on housing prices in both countries, supporting the hypothesis that legal restrictions affect housing prices. The novelty of this study is its comparative approach, shedding light on the effects of regulatory interventions in two different economic and social contexts, which could guide policymakers and real estate professionals towards sustainable and affordable housing.

Keywords: Building Regulations, Housing Prices, Spatial Planning Restrictions, Comparative Analysis, Quantitative Analysis, Kosovo, Slovenia

1. Introduction

The regulations determine the cost of construction and the quantity of livable space. Providing for unreasonably high standards through regulation increases the cost of construction and housing prices. While authorizing higher standards, regulatory authorities give insufficient consideration to the impact of regulations on housing supply and fail to analyze the impact of such regulations on building intensity or space consumption (Patel et al., 2018).

It is well understood that land is limited and is being used inefficiently, resulting in high cost of both land and built space in the region of South Asia (Sivam 2002; Bertaud 2010; Annez et al. 2010; Gandhi 2012; Gopalan & Venkataraman 2015). Malpezzi et al. (1997) estimated that housing prices increased by 50 percent in strictly regulated environment as opposed to a liberal real estate market (Malpezzi & Mayo, 1997).

The study is relevant because it examines the impact of building regulations and spatial planning restrictions on the housing market in two specific countries, Kosovo and Slovenia. Further, the study is important because it compares the effects of different building regulations and spatial planning restrictions on the housing market in two countries with different regulatory environments.

2. Literature review

Building regulation standards have a positive effect on the cost of construction and housing prices, as they affect the housing supply elasticity (Saiz, 2010) and are capitalized in the house prices (Dumm et al., 2011). However, excessive building code restrictions may have a huge impact on

the cost of housing construction, leading to housing price increases, known as a “regulatory tax” (Gyorko & Molloy, 2015). Different building codes impose various standards such as safety, health, and energy efficiency, which increase the cost of housing through compliance with these regulations (Reid & Raetz, 2018). Moreover, construction permit delays also have an impact on the cost of construction and housing prices, as they are capitalized in the cost of construction (Gyorko & Molloy, 2015). In the United States, Noam (2003) found that restrictive building codes affect housing values and increase the cost of production, demonstrating the impact of building codes on housing prices.

Likewise, zoning and land-use regulations have a significant impact on housing prices, with larger cities being more regulated and therefore less productive in housing (Albouy & Ehrlich, 2018). The zoning and land use regulations increase the price of housing and the limitations they impose on developers increase the cost of development, which if not capitalized into the price of land, will be transferred to the ultimate purchasers or renters of housing (Downs, 2002). To this end, zoning which separates industrial uses from residential uses of real estate creates real estate supply limitations, which increase the prices of existing residential buildings. According to economic theory, when land prices increase, developers tend to construct new single-family units on smaller lots or increase the proportion of multifamily units with higher densities and typically smaller floor areas (Downs, 2002).

Spatial planning laws and zoning regulations have a significant impact on housing prices. Municipalities impose regulations on developers, such as additional requirements for subdividing properties, which increases the cost of supplied land and affects the supply of new construction in the market, leading to higher prices for existing housing (Downs, 2002). Zoning and land use regulations also protect existing real estate against negative externalities, which increases the demand for the regulated housing market (Quigley and Rosenthal, 2005). However, such regulations have also been associated with increased housing prices, including caps on development, restrictive zoning limits on allowable densities, urban growth boundaries, and long permit-processing delays (Quigley and Rosenthal, 2005). Ihlanfeldt (2007) found that greater spatial regulation restrictiveness affects the increase of housing prices. Jackson (2016) and Mawhorter and Reid (2018) also conclude that land-use policies, zoning regulations, population growth management policies, and planning practices substantially affect the cost of housing, thereby increasing housing prices. Severen and Platinga (2018) found that regulation differences that occur in the proximity of city boundaries result in housing price discontinuities.

The literature gaps identified in the literature review are as follows:

- There is a need for further research on the impact of building code restrictions on housing prices, as the existing studies have reported different results,

3. Research method

In order to measure the effect of the implementation of building regulations on the cost of construction and housing prices, the present study uses the quantitative analysis to answer the following additional research question:

- RQ1: Does the implementation of building regulations affect the housing prices?

As a result of research question 3, the following hypotheses are formulated:

H₁: The implementation of legal restrictions affects the housing prices in Kosovo and Slovenia

To this end, in order to measure the influence of the implementation of regulations on the cost of construction and housing prices, the study uses quantitative analysis in SPSS to analyze 1,468 housing sales and cost transactions in Kosovo and 677 housing sales and cost transactions in Slovenia.

The methodology analyzes 1, 468 real estate transaction contracts of residential buildings using a probability random sampling whereby 734 are of the second construction period, which was built before the respective building regulations entered into force in Kosovo. The collection of data was made through the Department of Property Taxes of the Republic of Kosovo. The random probability sampling represents sales and cost transactions of residential properties in all municipalities in Kosovo. Nonetheless, 678 housing sales and cost transactions were collected with the assistance of the private real estate intermediation company Trieria in Ljubljana, Slovenia out of which 339 housing sales and cost transactions are before the building regulations were implemented.

The geographical distribution in the main cities across Kosovo and Slovenia is presented in Table 1.

The present study uses SPSS to process the residential sales and cost transactions and mainly uses Paired Sample T-test to conduct paired measurements of two sets of data before the implementation and after the implementation of building regulations to measure the effect of noted regulations on the housing prices. Paired *t-tests* are probably the most widely used tests in statistics for the comparison of mean values between two samples, especially used for comparing the mean values of two data sets before and after one particular phenomenon has occurred (Xu et al., 2017).

The paired T-test cannot control for temporal effects unrelated to the implementation of regulatory frameworks because it is a simplistic method that compares the mean values of two data sets before and after the implementation of building regulations. This helps to measure the effect of the regulations on the housing prices, but does not control for any other temporal effects that might be driving the price increases.

Table 1: Number of collected data in different cities in Kosovo and Slovenia

City in Kosovo	Number of sales and cost transactions selected before the implementation in Kosovo	Number of sales and cost transactions selected after the implementation in Kosovo		Number of sales and cost transactions selected before the implementation in Slovenia	Number of sales and cost transactions selected after the implementation in Slovenia

			City in Slovenia		
Prishtina	184	184	Ljubljana	79	79
Prizren	135	135	Maribor	65	65
Mitrovica	115	115	Celje	52	52
Gjilan	105	105	Kranj	50	50
Ferizaj	100	100	Velenje	47	47
Peja	95	95	Koper	46	46
Total	734	734	Total	339	339

4. Research results

The present section uses Paired Sample T-Test to compare the means of two data sets of housing sales and construction transactions before the implementation of regulation and after the implementation of building regulations, including energy performance measures.

In order to confirm the positive effect of the implementation of building regulations on the housing prices in Kosovo, the present study uses the Paired Sample T-Test in which the housing prices of buildings before and after the implementation of the regulation are compared.

The Paired Samples Statistics of housing prices in Kosovo are presented in Table 2.

Table 2: Paired Samples Statistics of housing prices in Kosovo

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Before measures	755.44	734	121.922	55.660
	After measures	845.65	734	212.015	45.520

Furthermore, Paired Samples Test of housing prices for Kosovo is presented in Table 3. In table 3, the value $t=5.292$ and $p=.000$, which is lower than $p=.05$ proves the effect of the implementation of building regulations on housing prices in Kosovo.

Table 3: Paired Samples Test of housing prices in Kosovo

	Paired Differences	t	df	
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		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				Sig. (2-tailed)
					Lower	Upper			
Pair 1	Before – After measures	790.98	180.677	55.855	18.429	43.546	5.292	14	.000

Additionally, the paired sample T-Test is run for Slovenia and the Paired Samples Statistics are presented in Table 4. Similarly, Paired Samples Test of housing prices for Slovenia is presented in Table 5.

In Table 5, the value of $t=4.935$ and $p=.000$ which is lower than $p=.05$ proves the effect of the implementation of building regulations on housing prices in Slovenia.

Table 4: Paired Samples Statistics of housing prices in Slovenia

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Before measures	1,920	339	345.254	74.830
	After measures	2,250	339	385.015	69.520

Table 5: Paired Samples Test of housing prices in Slovenia

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Before – After measures	2,075	356.15	70.17	22.319	52.496	4.935	13	.000

The Paired Sample T-test of housing prices proves that hypothesis 1 is verified and it can be concluded that the implementation of legal restrictions affects the housing prices in Kosovo and Slovenia.

In response to the RQ1, the study concludes that the implementation of building regulation affects the housing prices in Kosovo and Slovenia and there is very little difference of statistical significance figures in both respective countries.

5. Discussion

By using quantitative analysis and Paired Sample T-test, the present study found that the implementation of building regulations affects the housing prices in both Kosovo and Slovenia. Additionally, the study concludes that there is very little difference in statistical significance figures between the two respective countries. In this regard, authors such as Gyorko and Molloy (2015) and Reid and Raetz (2018) argue that building regulations' restrictions related to safety, health, and energy performance affect the cost of construction and housing prices.

In terms of policymaking, this can be translated into laws that would ensure higher standards in health, safety, and energy performance need to be enforced regardless of the involuntary increase of prices in construction and housing. One immediate remedy could be tax breaks for home buyers that buy better energy performance real estate, however, this cannot be offered for health and safety since policy safeguards in these aspects should not be circumvented but strongly inspected for strict implementation.

The societal implication of this finding is that policymakers should enforce laws that ensure higher standards in health, safety, and energy performance in construction and housing, even though it may lead to an involuntary increase in prices, and tax breaks for better energy performance real estate could be a remedy.

6. Conclusion

The study found that the implementation of building regulations affects the housing prices and both countries do not differ in terms of statistical significance of the effect of the implementation of these regulations on housing prices.

The study explores the impact of regulatory interventions on housing prices in both countries, and the comparison between the two allows for a deeper understanding of the effects of regulatory interventions on housing prices in different contexts.

In summary, the study's findings suggest that regulatory interventions have a significant impact on housing prices in both Kosovo and Slovenia, but the importance of these interventions varies between the two countries. Policymakers and real estate professionals in both countries should prioritize practical implementation of energy efficiency measures to promote sustainable and affordable housing.

Overall, the novelty of the study lies in its comparative approach, which sheds light on the impact of regulatory interventions on housing prices in two countries with different levels of economic and social development. This provides a valuable contribution to the literature on housing market regulation and highlights the importance of taking into account the unique contexts in which regulatory interventions are implemented.

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