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ANALYSIS OF THE MAIN FACTORS INFLUENCING PRICE CHANGES IN THE HOUSING MARKET IN THE CONSTRUCTION SECTOR (ON THE EXAMPLE OF THE CITY OF ALMATY)

Abstract

The article examines the main factors influencing the price of three-room apartments in the housing market. The aim of the study is to conduct a quantitative analysis of the relationship between housing prices and apartment characteristics based on data from different districts of the city of Almaty. In addition, a forecast of price dynamics for the near future was developed based on the obtained results. The analysis was carried out in the Gretl software using correlation analysis and hedonic regression (OLS). The data were obtained from publicly available advertisements for the sale and rental of apartments and houses in the city of Almaty. The study is based on data from the largest metropolis of Kazakhstan – the city of Almaty. The results obtained allow for a deeper understanding of the patterns of price formation in the residential real estate segment and make it possible to assess potential changes in the market in the future. The study has practical significance for construction companies, analysts, and potential buyers. The analysis showed that the main factors affecting the price of three-room apartments are the district location, total area, and technical condition of the housing. The econometric analysis made it possible to quantitatively describe the relationship between price and these parameters. The constructed regression model was used to forecast prices for the coming years.

Keywords: housing market, construction industry, price, econometric analysis, correlation, regression, forecast.

Introduction

Housing affordability and price differentiation remain central socio-economic challenges in large urban centers of Kazakhstan. Almaty, as the largest city in the country, demonstrates sustained population growth driven by internal migration, urbanization, and increasing demand for improved living standards. These processes, combined with the expansion of mortgage lending and macroeconomic fluctuations, have significantly influenced residential property prices. In this context, understanding the determinants of housing price formation is essential for ensuring market transparency and supporting evidence-based decision-making.

The housing market is characterized by structural heterogeneity. Apartment prices are shaped not only by physical characteristics such as total area but also by spatial attributes, building quality, renovation level, and surrounding infrastructure. Price variation across districts reflects differences in accessibility, social prestige, and concentration of urban amenities. Therefore, housing price formation represents a multifactorial process that requires quantitative evaluation.

The hedonic pricing framework is widely applied in international housing economics to decompose property prices into implicit values of individual characteristics. Empirical studies demonstrate that structural factors (area, number of rooms), locational factors (district, accessibility), and qualitative attributes (renovation, condition, amenities) exert statistically significant effects on residential prices. The hedonic approach enables estimation of marginal contributions while controlling for other attributes.

In Kazakhstan, however, micro-level empirical studies based on listing data remain limited. Existing research often relies on aggregated regional indicators or macroeconomic variables, which do not capture intra-city heterogeneity. As a result, localized cross-sectional analysis using detailed property-level data is necessary to improve understanding of price differentiation within Almaty.

This study aims to identify and quantitatively assess the key determinants of listing prices for three-room apartments in Almaty. The focus on a single apartment type ensures structural comparability of observations while maintaining market relevance. Using correlation analysis and multivariate hedonic regression modeling, the research estimates the marginal effect of structural, spatial, and qualitative factors on housing prices.

The empirical contribution of this study lies in the use of a contemporary dataset consisting of 109 unique listings from 52 residential complexes collected from the krisha.kz platform. The analysis provides updated micro-level evidence on housing price formation in Almaty and offers scenario-based price estimation for typical apartment profiles.

From a methodological perspective, the application of econometric and mathematical models – such as regression analysis, factor modeling, and time series forecasting – provides a quantitative basis for identifying the determinants of housing prices and assessing their long-term trends.

Currently, the construction industry is one of the most important and rapidly developing sectors of the national economy. This sector plays a key role not only in the construction of residential housing but also in infrastructure development and the improvement of public welfare. The growth of the construction industry is closely related to the country's economic progress, the level of urbanization, and the overall investment climate [1]. Various scientific studies have identified the key factors influencing price formation in the construction market, such as geographical location, the quality and origin of construction materials, the level of infrastructure development, and the integration of innovative technologies [2, 3].

Ensuring the stable and efficient development of the construction sector requires close attention to the competitiveness of construction enterprises. To enhance the competitiveness of construction products, it is essential to identify the most influential factors and determine promising directions for improving the competitive capacity of construction companies [4]. Scientific literature devotes significant attention to identifying competitive advantages of construction companies and developing practical approaches to increase their market positions [5].

To maintain a sustainable market presence and attract customers, construction firms must possess distinct competitive advantages. These include strategic direction, market adaptability, and the ability to establish strong relationships with clients [6]. Competitiveness is not limited to product price and quality but also includes factors such as service efficiency, timeliness, reliability, and overall financial stability. A well-balanced combination of these factors ensures the commercial success of construction companies [7].

Among the key factors influencing competitiveness are price, quality, and infrastructure development. In Kazakhstan's housing market, research has identified the main factors affecting apartment prices to be apartment size, location, interior finishing quality, and the availability of surrounding infrastructure [8]. Based on these factors, economic and mathematical modeling can be applied to forecast housing price trends and support the effective design of public housing policy [9].

Another important factor affecting the efficiency and competitiveness of the construction sector is the quality and origin of the construction materials used. Recent studies show that using domestic materials reduces construction costs and increases economic efficiency [10]. This, in turn, stabilizes the local market and decreases dependence on imports [11].

In addition, consumer demand and preferences play a significant role in determining competitiveness in the construction sector. Today's consumers are not only concerned with price but also seek high-quality, comfortable, and safe housing located in well-developed areas [12]. Therefore, construction

companies must adapt to market needs by offering services and products that align with consumer expectations.

In recent years, there has been a growing demand for domestically produced construction materials in Kazakhstan. This is due to several reasons. Firstly, domestic products are of high quality. Secondly, they are more affordable compared to imported alternatives. Thirdly, local producers are directly responsible for the quality of their materials. In cases where structural issues arise, such as building defects or collapses, accountability typically falls on the domestic suppliers. As a result, local manufacturers tend to prioritize product quality. Supporting domestic products at the state level also helps stabilize prices and ensure consistent construction quality, contributing to the overall stability and independence of the national construction market.

Materials and methods

In the context of ongoing urbanization and population growth, the demand for housing in Almaty continues to rise steadily, highlighting the importance of studying the determinants of housing prices. This study aims to identify and quantify the key factors influencing the market value of three-room apartments in residential complexes in Almaty, Republic of Kazakhstan. Understanding these factors is crucial for buyers, developers, investors, and policymakers, particularly in a market experiencing rapid demographic and economic change.

The empirical dataset for this study was collected from public listings on krisha.kz, the largest online real-estate platform in Kazakhstan. The sample includes 109 three-room apartments distributed across administrative districts and representing 52 residential complexes. To ensure data consistency, only unique listings were retained: duplicated entries for the same apartment (re-posted with identical address, complex, area, and price) were removed. The dependent variable is the listing price, denominated in KZT, which reflects asking prices rather than finalized transaction prices. This represents a methodological limitation, as asking prices may be systematically higher than transaction prices due to negotiation, seller expectations, or market trends.

Descriptive statistics reveal that the average listing price of the analyzed apartments amounts to 52,643,496 KZT, representing the current market value of three-room apartments in Almaty at the time of data collection. While apartment area is an obvious determinant of price, additional factors such as district location, building condition, floor level, construction period, availability of furniture, and proximity to infrastructure and cultural amenities are expected to contribute significantly to price differentiation. These variables form the basis for further correlation and multivariate regression analysis aimed at assessing their individual and joint influence on market valuation.

By systematically analyzing these micro-level data, this study provides a foundation for understanding price formation mechanisms in Almaty's residential market. The results offer empirical benchmarks for marginal price per square meter, allow identification of premium features that increase market value, and provide guidance for scenario-based forecasting. Furthermore, the research highlights the potential and limitations of using publicly available listing data for applied econometric modeling in Kazakhstan, including issues related to cross-sectional analysis, simplified spatial coding, and the absence of temporal transaction dynamics.

The following key factors were considered as determinants of apartment prices:
- Total apartment area (in square meters).
- Location of the residential complex (central or peripheral districts).
- Year of construction and technical condition of the building.
- Floor level and total number of floors.
- Level of interior finishing (renovated/unrenovated, European-style renovation).
- Availability of surrounding infrastructure (schools, kindergartens, transportation links).
- Amenities within the residential complex (security, parking, playgrounds, etc.).

Each of these factors was found to have a certain degree of influence on the final market price of the apartment. For instance, apartments located in central districts tend to be significantly more expensive compared to those in outlying areas. Similarly, newly constructed or fully renovated apartments are generally priced higher.

The results of this study contribute to a deeper understanding of price formation mechanisms in the housing market. They also provide a foundation for developing econometric models for forecasting future price trends and support effective planning of public housing policy. In addition, the findings may serve as a valuable information source for construction companies, real estate agencies, and investors seeking to operate in the Almaty housing market.

Table 1 – Variables and coding

	Variable (name)	Type / unit	Contract mark,	Coding
Y	Price	KZT	listing price	
x1	Area	m^2	continuous	
x2	Bathroom	binary	0	1 bathroom
			1	2 + bathrooms
x3	Floor group	binary	0	1st floor or $\geq 10^{th}$ floor
			1	2nd – 9th floor
x4	District group	binary	0	Auezov / Nauryzbay / Almaly / Alatau
			1	Medeu / Bostandyk
x5	Condition (renovation)	ordinal	0	unfinished / needs repair / standard
			1	euro renovation
x6	Year of construction group	binary	0	Before 2015
			1	2015 or newer
x7	Furniture / equipment	binary	0	Empty / partly
			1	Furnished / appliances
x8	Infrastructure nearby	binary	0	no
			1	yes
Note: Compiled by the authors based on the source [18].				

Note. Variables are coded to represent commonly observed listing characteristics. The district grouping is used as a simplified location proxy due to sample size; this is a limitation and can be refined in future work by using a full set of district dummy variables.

According to the variables presented in the table, the main factors influencing the listing price of housing – Y were identified as follows: housing area – x1, number of bathrooms – x2, floor group – x3, district group – x4, housing condition/renovation level – x5, construction period group – x6, availability of furniture and appliances – x7, and proximity to infrastructure and cultural facilities – x8. The analysis was conducted based on the selected factors.

The identified factors comprehensively characterize the housing price formation process in the real estate market and are considered key determinants that directly or indirectly influence the listing price of housing. The total floor area of a dwelling – x1 represents a fundamental quantitative factor reflecting the size and functional capacity of the property. The number of bathrooms – x2 serves as an important indicator of planning convenience and housing quality. The floor group – x3 and district group – x4 represent spatial characteristics that affect the functional, environmental, and social attractiveness of a dwelling. The housing condition or renovation level – x5 reflects the qualitative state of the property and the extent of required improvements. The construction period group – x6 captures differences in building technologies and the potential degree of physical depreciation. The availability of furniture and appliances – x7 indicates the readiness of the dwelling for immediate occupancy. Proximity to infrastructure and cultural facilities – x8 reflects the level of urban development and accessibility, thereby influencing housing demand.

Taking these variables into account, the conducted analysis enables the identification of patterns in housing price formation and provides a quantitative assessment of property values through the development of a multifactor regression model.

Results and discussion

After selecting factors and making edits or adjustments to the data, it is determined there is independence between them. A correlation analysis of the statistical data of the factors must be carried out. The analysis is determined by the correlation coefficient. The correlation coefficient shows that the trend corresponds to common factors.

After selecting the relevant factors and performing standardization and data adjustment procedures, their mutual independence was examined. Within the framework of the study, correlation analysis was employed to identify potential linear relationships among the independent variables. Correlation analysis allows for assessing the degree of interdependence between factors, as well as detecting the presence of multicollinearity, which may distort the results of econometric modeling.

The correlation coefficient quantitatively characterizes the strength of the relationship between the examined factors and housing prices and serves as a key indicator for evaluating the consistency of the observed trend with overall market determinants. Interpretation of the coefficient values makes it possible to determine the extent of each factor's influence on housing prices: a higher absolute value of the correlation coefficient indicates the greater significance of a factor in the price formation process, whereas lower values suggest a weaker impact.

The obtained results contribute to a deeper understanding of housing price formation mechanisms and provide a methodological basis for further regression modeling and forecasting changes in housing prices.

Table 2 – Correlation matrix between factors

	Y	X1	X2	X3	X4	X5	X6	X7	X8
Y	1,000								
X1	0,689	1,000							
X2	0,416	0,396	1,000						
X3	-0,053	-0,25	-0,11	1,000					
X4	0,347	0,282	0,174	-0,200	1,000				
X5	0,326	0,002	0,159	-0,167	0,235	1,000			
X6	-0,218	-0,18	-0,298	0,150	-0,070	-0,264	1,000		
X7	0,455	0,272	0,318	0,107	0,015	0,221	-0,337	1,000	
X8	0,201	0,204	0,037	-0,266	0,188	-0,029	-0,029	-0,070	1,000
Note: Compiled by the authors.									

According to the correlation matrix, the variables that demonstrate a positive relationship with the apartment listing price include: total housing area – x1, number of bathrooms – x2, district group – x4, housing condition/renovation level – x5, and availability of furniture and appliances – x7. These factors are associated with an increase in the market value of apartments in residential complexes.

At the same time, the analysis indicates that the floor group – x3, construction period group – x6, and proximity to infrastructure and cultural facilities – x8 do not show a statistically significant correlation with the listing price within the analyzed sample. Therefore, their direct influence on price formation appears to be limited under the given empirical conditions.

ryx1=0.689 because there is a close positive relationship between the price of an apartment in a building and the size of the apartment, that is, the larger the area of the apartment, the higher the price of the apartment. Due to the fact that we are considering three-room apartments that are in great demand, even if not too small in size. Having a large available square meter is especially important for a family. The wider, the better for us.

ryx2=0.416 can see that the price of an apartment in a residential complex and a bathroom in itreally have a close positive relationship, or rather, they affect the price of an apartment if there are 2 or more bathrooms. And they don't pay much attention to the type from the anitarian node.

ryx4=0.347 the location of a residential complex affects the price of an apartment, i.e. it meansthat there is an average positive relationship between the price of a residential complex and the location of x4. For example, one residential building may be closer to the center, but now one may be located on the outskirts of the city. This is also an important factor when buying an apartment. Currently, many new residential complex being built in remote areas of the city.

ryx5=0.326 the condition of a house in a residential complex affects the price of an apartment, which means that there is a relationship between the price of a residential complex and the condition of the apartment. That is, the interior work of the apartment is not finished and the rooms are free, renovation in particular, the General condition of the apartment is important, which did not pass the repair. Buying apartment renovation is one of the most important factors. Currently, many new residential complexes are rented at low, affordable prices, without repairs.

ryx7=0.455 the relationship between the price of an apartment and the availability of furniture has a close positive relationship. Before buying an apartment, any consumer takes its internal structure very seriously. It can be divided into 3 categories: fully equipped, internally equipped and empty. If the apartment is fully equipped, then the price of the apartment will be more expensive, and if the apartment is partially equipped or sold empty, thenits price will be cheaper accordingly.

The correlation results indicate that apartment price has the strongest positive association with area – x1, bathrooms – x2, district group – x4, condition – x5 and while moderate associations are observed for furniture – x7. These results are consistent with hedonic logic: larger dwellings and better quality/location attributes are priced higher in the market.

Now the regression model has been created. In the regression model, the factors that most closely influence the correlation coefficient were considered.
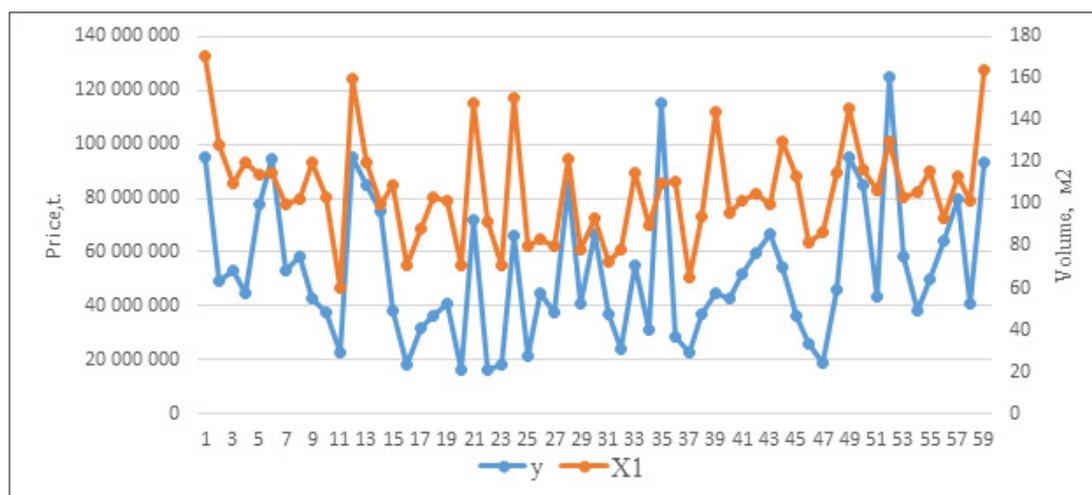

Figure 1– Housing volume

Note: Compiled by the authors.

The cost of the largest apartment with an area of 170.5 m2, as shown in the diagram, is more than 95,100,000 KZT. And if the area of the apartment with the smallest size is 60 m2, then the price will be higher than 23,000,000 KZT. That is, on average, the cost of purchased apartments per 1 m2 is 725,698 KZT. This means that the buyer will be able to navigate the level of the apartment, looking at the amount of his funds.

Given the average cost of 725,698 KZT per m², buyers can estimate how large of an apartment they can afford:

For example:
- 30,000,000 ₸ budget → 41.3 m² apartment
- 50,000,000 ₸ budget → 68.9 m² apartment
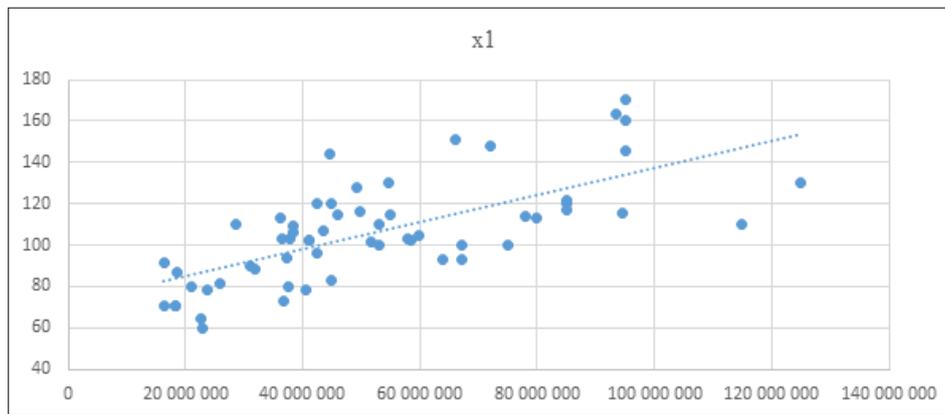- 80,000,000 ₸ budget → 110.3 m² apartment.

Figure 2– Regression model

Note: Compiled by the authors.

To investigate the determinants of three-room apartment prices in Almaty, a multivariate hedonic pricing model was employed. The hedonic approach assumes that the market price of a property is the sum of implicit values attributed to its various characteristics. This allows researchers to quantify how structural, spatial, and qualitative attributes individually and jointly influence apartment prices.

The multivariate hedonic model allows for the estimation of each factor's marginal contribution to the market price while controlling for other characteristics. The regression can be formally expressed as:

$$Price_i = \beta_0 + \beta_1 Area_i + \beta_2 Bathroom_i + \beta_3 District_i + \beta_4 Condition_i + \beta_5 Furniture_i + \epsilon_i$$

Where:
Price listing price (KZT);
- area (x1) – total apartment area (m2);
- 1 if two or more bathrooms, 0 otherwise;
- if Medeu / Bostandyk district, 0 otherwise;
- condition (x5) – renovation category;
- furniture (x7) – 1 if furnished, 0 otherwise.

This approach follows internationally recognized methodology in housing economics, capturing the implicit contribution of each property characteristic to price formation. It also allows identification of which factors have statistically significant effects, providing empirical guidance for buyers, developers, and policymakers.

By incorporating both structural and qualitative factors, the model improves understanding of how apartment characteristics translate into market value, supporting more transparent, data-driven decision-making in urban housing policy.

The estimated baseline regression is:

Price=-24462668.2+725,698.13Area

The slope coefficient implies that, within the baseline model, an additional 1 m² of area is associated with an average increase of 725,698 KZT in listing price. $R2=0.81$ coefficient of determination. The model is statistically significant according to the F-test (F = 51.42), and the area coefficient is significant by the t-test (t = 7.17). This confirms that region is a key factor determining price.

Before estimating regression models, we examined relationships among predictors to detect potential multicollinearity. Figure 2 reports pairwise correlations. Pairwise correlation alone does not fully confirm the absence of multicollinearity; therefore, in the multivariate model we additionally computed the Variance Inflation Factor (VIF) for each regressor. Variables with acceptable VIF values were retained, ensuring stable coefficient estimates and interpretable inference.

As a result of the regression analysis, a linear model describing the relationship between housing prices and housing volume was obtained. According to the estimated equation, an increase in housing volume by one unit leads to an average increase in housing prices by units. This indicates a positive and

statistically significant relationship between housing volume and housing prices. Thus, the obtained regression model can be considered adequate and suitable for analyzing and forecasting housing price dynamics.

The dataset is cross-sectional (a single observation per listing), therefore the econometric models are designed for price explanation and scenario-based prediction. The term "forecast" in this paper refers to prediction intervals for apartment profiles, not to time-series forecasting.
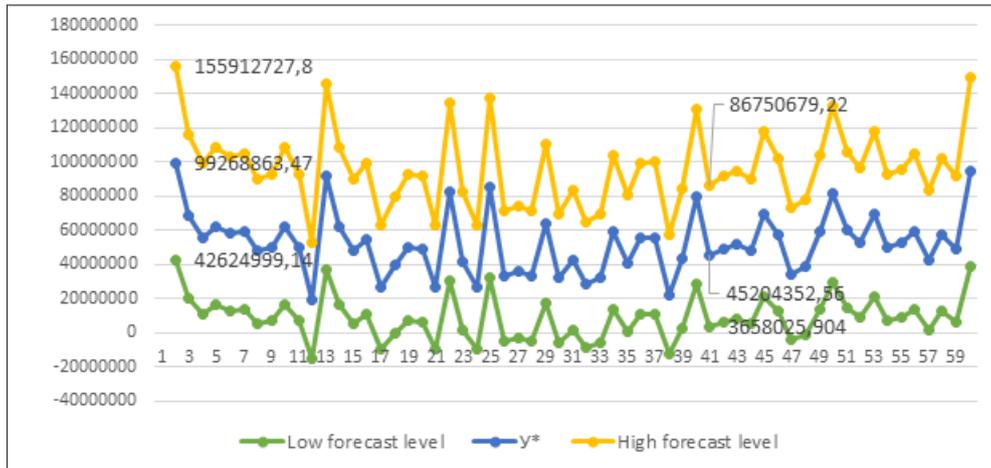

Figure 3 – Prediction interval (baseline model)

Note: Compiled by the authors.

According to the forecast, the cost of an apartment is on average 99,268,863.47 KZT. 155,912,727.8 KZT according to the upper level of the forecast and 42,624,999. 14 KZT according to the lower level of the forecast. Of the received apartments, the cost of a small apartment is 45,204,352.56 KZT with an average forecast value of 86,750,679.22 KZT.

Because the dataset is cross-sectional, the model is used for scenario-based prediction rather than time-series forecasting. Figure 3 presents predicted price levels and the corresponding prediction interval from the baseline area-only model. The reported "upper" and "lower" levels represent the uncertainty band for individual observations given the estimated variance of the regression residuals.

These forecasting models make it possible to assess the flexibility of the housing market and anticipate how prices may change in the future. Moreover, the provision of confidence intervals for both the highest and lowest predicted prices allows decision-makers and investors to evaluate risk levels, optimize market strategies, and effectively plan housing policies.
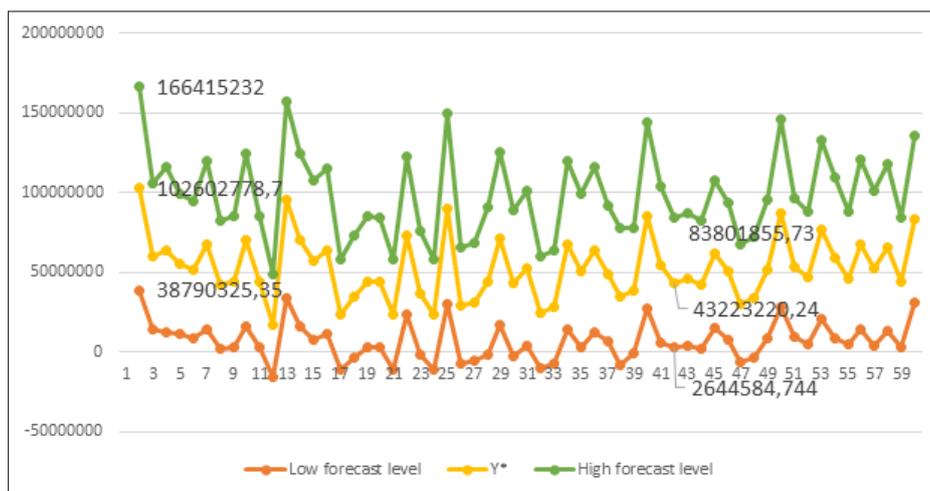

Figure 4 – Prediction interval (multivariate model)

Note: Compiled by the authors.

From the diagram, we can see that the predicted highest price for an apartment is 102,602,778.7 KZT, with the upper forecast level at 166,415,232 KZT, and the lower forecast level at 38790325.35 KZT. The lowest predicted price for an apartment is 16545700.75 KZT, with the corresponding upper level at 48973313.33 KZT, and the lower level at 15885911.84 KZT.

As a result of the plural regression Yx1x5 (the size of the housing and the condition of the apartment), the model is adequate. F=34.43>F=4.03 and tx1=6.5>t=2.0; tx5=3.1>t=2.0. All conditions for regression analysis have been met. Therefore, the quality of the real regression equation found is considered high. Multicollinearity was tested using the Variance Inflation Factor (VIF). All VIF values remained below the commonly accepted threshold of 5, indicating that multicollinearity does not distort coefficient estimates.

Figure 4 presents prediction results from the multivariate hedonic specification that includes apartment area – x1 and condition – x5 as predictors (and other significant controls when included). The wider interval reflects heterogeneity in listing prices due to unobserved attributes and negotiation effects inherent in advertisement data.

The forecast results presented above demonstrate the wide range of apartment prices in the housing market and confirm that these prices are influenced by a variety of factors. Such significant variations in price can be explained by variables such as the location of the apartment, its total area, the quality of interior finishing, the level of available infrastructure, and the origin of the construction materials used.

The results of economic and mathematical modeling serve as a valuable tool for understanding market trends and for making scientifically grounded investment decisions in the residential construction sector.

The key variables affecting housing prices include the apartment's location, size, quality of construction materials, level of interior finishing, as well as socio-economic indicators such as the average income of the population, inflation rate, mortgage lending conditions, and the national currency exchange rate.

Contemporary scientific studies indexed in the Scopus database [13–15] demonstrate a statistically significant relationship between housing prices and regional income levels. Additionally, psychological and demographic factors known as "preference shocks" [16] directly influence fluctuations in housing demand and, consequently, price volatility. In this context, government support measures, including preferential mortgage programs, help maintain a certain degree of price stability; however, these interventions may prove insufficient in the long term.

Furthermore, forecasting methods based on econometric models [17] indicate that housing prices are likely to continue rising in the coming years. This trend is driven by factors such as increasing urbanization, limited new construction volumes, and the import dependence of construction materials.

Thus, effective management of housing market dynamics requires a comprehensive approach that considers not only economic factors but also institutional and infrastructural elements. The findings of this research provide a foundation for improving housing policy and developing targeted market regulation measures.

Key Indicators

◆ Between January and April 2025, the volume of construction works in Kazakhstan amounted to KZT 1,438.4 billion, showing a growth of +16.2%.

◆ In the same period, private construction companies accounted for 91.9% of the total volume, while foreign organizations represented 6.8%.

◆ During the period from January to August 2025, the total volume of construction works reached KZT 4,851 billion, reflecting an +18.1% increase.

◆ From January to September 2025, the construction output totaled KZT 6,441.3 billion, marking a +14.9% growth.

Price Dynamics

In 2025, price growth in Kazakhstan's housing market remained steady. The increase in the average cost of new housing is directly linked to the country's rapid urbanization, rising household incomes, and the higher prices of construction materials.

According to data from January 2025, the average price per square meter of new housing amounted to KZT 500,198, which is 3% higher compared to the previous year. Based on Krisha.kz data, during the same period, the average price per square meter in the secondary housing market was approximately KZT 454,782, showing a monthly increase of 0.66%.

In the second and third quarters of 2025, housing prices rose at a faster pace. By September 2025, prices for new housing had increased by 12.8% year-on-year, secondary market apartment prices grew by 10.3%, and rental prices rose by 9.9%. This trend reflects the sustained high demand for housing, as well as the influence of inflation and rising construction costs.

The main factors contributing to price growth include:
- the rising cost of construction materials and engineering equipment;
- increased participation of the population in mortgage programs;
- high demand in major cities (especially Astana and Almaty);
- structural changes in new housing construction (growth in the share of business- and comfort-class residential complexes).

Conclusions

This study conducted a comprehensive econometric analysis of listing prices for three-room apartments in Almaty, utilizing a micro-dataset of 109 observations sourced from the krisha.kz platform. The primary objective was to identify and quantify the structural, spatial, and qualitative determinants of housing prices within the framework of hedonic price theory. Considering the ongoing urbanization trends, expanding mortgage financing, and rising concerns about housing affordability in Kazakhstan, micro-level empirical analysis of housing price formation is both socially relevant and academically significant.

The empirical findings demonstrate that housing price formation in the Almaty residential market is a multifactorial process. The baseline regression model shows a stable and statistically significant positive relationship between apartment area – x1 and listing price, confirming the fundamental role of size in residential valuation. This relationship provides an empirically grounded benchmark for estimating marginal price per square meter, offering a practical reference point for real estate analysts, investors, and potential buyers. Nevertheless, the results indicate that relying solely on structural size is insufficient for explaining price differentiation across properties.

The multivariate hedonic specification, which incorporates additional variables such as district group – x4, number of bathrooms – x2, housing condition and renovation level – x5, and availability of furniture and appliances – x7, substantially improves the explanatory power and interpretability of the model. This approach aligns with standard international methodology for housing price analysis, reflecting the theoretical principle that market prices represent the implicit aggregation of marginal valuations of property characteristics. Spatial location and qualitative condition were shown to generate measurable price premiums, highlighting the importance of urban heterogeneity and property quality in shaping market valuations.

From a methodological perspective, the study demonstrates the feasibility of applying hedonic modeling techniques to micro-level digital platform data in Kazakhstan. Compared to aggregated official statistics, listing-level data allow for more precise estimation of marginal effects and capture property-level heterogeneity. While the econometric methods employed – correlation analysis and Ordinary Least Squares (OLS) regression – are standard in housing economics, their application to contemporary 2025 market data provides updated empirical evidence for the Almaty context.

Several methodological limitations are acknowledged. First, the dataset includes listing prices rather than finalized transaction prices, which may introduce upward bias due to seller expectations and negotiation effects. Second, the cross-sectional nature of the data does not allow for dynamic analysis over time. Third, the simplified coding of districts may not fully reflect spatial heterogeneity across the urban landscape. Future research could improve precision through full district dummy variables, geospatial coordinates, or spatial econometric techniques. Additionally, standard diagnostic tests for OLS assumptions – such as residual normality, homoscedasticity, and multicollinearity (e.g., VIF diagnostics) – should be incorporated in future studies to enhance robustness.

Despite these limitations, the study contributes in several key ways. It provides updated micro-level empirical evidence on housing price determinants in Almaty, addressing the scarcity of localized econometric studies in Kazakhstan. The estimated coefficients can be used for scenario-based price predictions of typical apartment profiles, supporting budget planning and comparative evaluation by market participants. Furthermore, the study establishes a methodological foundation for future research using panel data, time-series forecasting, or spatial models, thereby enhancing both analytical depth and policy relevance.

In practical terms, the results indicate that apartment prices in Almaty are primarily determined by structural size, spatial location, and qualitative condition, with additional amenities contributing incremental value. While the econometric approach does not introduce a fundamentally new method, the research demonstrates the empirical applicability of hedonic modeling to the Kazakhstan housing market. The study provides a scientifically grounded framework for future investigations aimed at strengthening methodology, improving forecasting accuracy, and informing policy decisions related to housing affordability and urban development.

In conclusion, this research bridges a significant empirical gap by offering a rigorous, data-driven assessment of the contemporary Almaty housing market. It emphasizes the importance of micro-level data, clarifies methodological strengths and limitations, and lays the groundwork for more advanced econometric and policy-oriented studies in Kazakhstan's housing sector.

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ҚҰРЫЛЫС САЛАСЫНДАҒЫ ТҰРҒЫН ҮЙ НАРЫҒЫНДАҒЫ БАҒА ӨЗГЕРІСТЕРІНЕ ӘСЕР ЕТЕТІН НЕГІЗГІ ФАКТОРЛАРДЫ ТАЛДАУ (АЛМАТЫ ҚАЛАСЫ МЫСАЛЫНДА)

Аңдатпа

Мақалада тұрғын үй нарығындағы үш бөлмелі пәтерлердің бағасына әсер ететін негізгі факторларды анықтау және оларды сандық тұрғыда талдау көзделеді. Бұл мақсатта Алматы қаласының әртүрлі аудандарындағы пәтерлер туралы мәліметтер негізінде бағалар мен сипаттамалар арасындағы тәуелділік зерттелді.

Сонымен қатар алынған деректер негізінде келешекке баға динамикасына болжам жасалды. Талдау Gretl бағдарламасында корреляциялық талдау және гедоникалық регрессия (OLS) әдістері арқылы жүргізілді. Мәліметтер Алматы қаласындағы пәтерлер мен үйлерді сату және жалға беру бойынша жарияланған жарнамалық дереккөздерден алынды. Зерттеу мәліметтері Қазақстандағы ең ірі мегаполис – Алматы қаласына қатысты жинақталған. Бұл жұмыс жылжымайтын мүлік нарығын, соның ішінде тұрғын үй сегментін тереңірек түсінуге және болашақтағы нарықтық өзгерістерге дайын болуға мүмкіндік береді. Сондай-ақ, нақты деректер негізінде жүргізілген талдау құрылыс компаниялары мен сатып алушылар үшін практикалық маңызға ие. Зерттеу нәтижесінде үш бөлмелі пәтерлердің бағасы ең алдымен пәтердің орналасқан ауданына, жалпы көлеміне және техникалық жағдайына тәуелді екені анықталды. Жүргізілген эконометриялық талдау пәтер бағасы мен факторлар арасындағы өзара байланысты сандық түрде сипаттауға мүмкіндік берді. Қолданылған регрессиялық модель негізінде келесі жылдарға болжам жасалып, тұрғын үй нарығындағы мүмкін болатын өзгерістер бағаланды.

Тірек сөздер: тұрғын үй нарығы, құрылыс саласы, баға, эконометриялық талдау, корреляция, регрессия, болжам.

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АНАЛИЗ ОСНОВНЫХ ФАКТОРОВ, ВЛИЯЮЩИХ НА ИЗМЕНЕНИЕ ЦЕН НА РЫНКЕ ЖИЛЬЯ В СФЕРЕ СТРОИТЕЛЬСТВА (НА ПРИМЕРЕ ГОРОДА АЛМАТЫ)

Аннотация
В статье рассматриваются основные факторы, влияющие на стоимость трехкомнатных квартир на рынке жилья. Целью является количественный анализ взаимосвязи между ценами и характеристиками квартир на основе данных по различным районам г. Алматы. Также на основе полученных данных осуществлен прогноз динамики цен на ближайшее будущее. Анализ был проведен в программе Gretl с использованием корреляционного анализа и гедонистической регрессии (OLS). Данные были получены из общедоступных объявлений о продаже и аренде квартир и домов в г. Алматы. Исследование основано на данных крупнейшего мегаполиса Казахстана – г. Алматы. Полученные результаты позволяют глубже понять закономерности формирования цен в сегменте жилой недвижимости и оценить возможные изменения на рынке в будущем. Работа имеет практическую ценность для строительных компаний, аналитиков и потенциальных покупателей. Анализ показал, что основными факторами, влияющими на стоимость трехкомнатных квартир, являются район расположения, общая площадь и техническое состояние жилья. Эконометрический анализ позволил количественно описать взаимосвязь между ценой и указанными параметрами. Построенная регрессионная модель использовалась для прогноза цен на ближайшие годы.

Ключевые слова: рынок жилья, строительная отрасль, цена, эконометрический анализ, корреляция, регрессия, прогноз.