

Factor Effecting Cost Of Housing

Posted on October 23, 2018

There are various factors that influence the cost of housing. One of the main considerations in business areas is the location of a house. This has turned into a noteworthy concern to managers throughout the years since it directly affects the measure of monthly housing compensation that employees have to offer to their workers. Houses that are situated in great locations draw in a bigger number of customers and offer at higher costs than those situated in poor locations since business managers offer less housing allowance to their workers, consequently decreasing the costs. This report proposes to perform an analysis of factors and techniques that will be utilized to enable businesses to decide the general significance of housing parameters to the overall monthly cost of housing. Different factors that influence the housing cost are the total number of rooms available in a house, exterior structures, for example, equipment, garage, and appliances like "new type," and interior features like the bathroom. This research has been conducted to examine factors that influence the cost of housing in the city of Seattle (Housing cost overburden rate in European countries. n.d). With the increasing costs of houses in the European nations, particularly in Seattle, it requires an exact investigation of the factors that are utilized by businesses to decide the cost of houses other than the area of the house.

Background Of Report

This report looks to address factors that impact the monthly cost of housing significantly in European nations. There has been a growth in housing costs in Seattle, making it hard for contractors to hire employees given the high cost of stipends that they request for the houses that are located in poor areas. Nonetheless, there are a few different factors that greatly impact the cost of housing for families and individuals living in both single-family homes and flats (Housing cost overburden rate in European countries. n.d). Among these elements are the total number of rooms accessible in each house, bathrooms per unit, utilities, kitchen, and garage. Research shows that houses with more number of rooms are charged highly than those with less number of rooms. Several individuals who live in houses with numerous rooms, whether condos or single-family homes, pay more housing charges than those living in houses with fewer rooms. This analysis gives a platform to home merchants to measure the valuation of houses they put up for marketing and purchasers to distinguish the basic parameters for checking the estimation of those houses they might want to purchase. However, it is important to venture into the housing market with a reasonable idea of what they need so that they get an incentive for their cash (Housing cost overburden rate in European countries. n.d.).

Analysis Of Variables

The following variables have been used to perform an analysis of the housing cost for this report: TOTAL MONTHLY HOUSING COST, BATHROOMS, UTILITYAM, WATERAMT, SEWTYPE, OTHERAMT, RENT, TOTROOM, OILAMT, STORIES BEDROOMS, GASAMT, KITCHEN, GARAGE, ELECAMT, DINING, and TRASHAMT.

Data Presentation, Discussion And Analysis

In view of the information that is accessible, the following variables were represented in the form of a text: heat-type variable, control variable, bathroom variable, and heat-type variable. Also, the following information was accessible in numeric form: Totrooms variable, BEDROOMS variable, REMODANT variable, YRBUILT, and Total Monthly Cost variable. These factors total up to 2546 observations and ten variables. These are the factors that were viewed as most critical in deciding the cost of monthly housing since they have an immediate bearing on the objective clients' inclination and the general viewpoint of a house.

Descriptive Statistics

With respect to the factors accessible, the following variables were considered as the most basic variables that can be utilized to considerably decide the costs of housing: bathroom, heat-type variable, heat-fuel variable, Totrooms variable, bedrooms, and kitchen variable. Thus, their means, standard deviation, and median were utilized to help in deciding their significance for the monthly housing costs in the process of analysis. The table below represents the important variables that were principally used to determine the costs of housing.

		TOTROOMS	BEDROOMS	KITCHENS	BATHROOMS	HEATFUEL	HEATTYPE
N	Valid	2545	2545	2545	2545	2545	2545
	Missing	0	0	0	0	0	0
Mean		5.67	2.65	.99			
Median		6.00	3.00	1.00			
Std. Deviation		1.973	1.122	.086			

The bar graph below signifies a representation of the connection between the number of bedrooms and the total monthly variable that can be utilized to best portray the impact that the two factors have on each other while explaining the rapid increase in the cost of housing ("Housing cost overburden rate in European nations," n.d). From this graph, data concerning housing rates can undoubtedly be formulated as the number of rooms in a house is specifically corresponding to the monthly housing cost.

As per the results of the analyzed data, these conclusions can be construed: there exists a sum of 2545 houses in the market. The cost of each house is dictated by the number of rooms each house contains. The bedroom variable has a mean value of 3.00 and a standard deviation of 1.122. This means the number of rooms accessible in a house deviates broadly from its mean value, showing that a house with a high number of bedrooms attracts higher expenses than a house with a number of rooms, which draws in less cost. For example, an individual living in a house with three rooms pays more house charges than a person living in a house with one room. The kitchen is another basic variable with a mean value of 0.99 and a standard deviation of 0.86. This means most houses have an equivalent number of kitchens, bringing about less difference in the housing cost in light of the fact that the number of kitchens in a house does not have an immediate bearing on the monthly house cost. On the contrary, the houses with a larger number of kitchens are probably going to draw higher expenses than those with a smaller number of kitchens. Other different factors like bathrooms, heat fuel, and heat type additionally impact the assurance of the cost of houses. However, according to data in Table 1, the impact of these different housing variables could be evaluated. Figure 2 shows how the aggregate monthly housing cost is dictated by the number of bedrooms in every house. For example, a house with a higher number of bedrooms draws in higher housing costs than that with a few rooms. From the bar graph above, houses with one bedroom have charges ranging from 1 million to 1.5 million U.S dollars. Houses that contain 2-3 bedrooms have a mean monthly cost of between 1.5 million to 1.9 million U.S. dollars. In addition, houses having 4-5 bedrooms are charged a mean monthly rent of between 2 million to 2.5 million U.S dollars. This bar graph provides a clear description of the rapid increase in housing charges with an increase in the number of bedrooms. I.e., houses with more number of bedrooms are considered to be more expensive than houses with less number of bedrooms. Therefore, irrespective of the housing outlook, one has to pay more money to rent or buy a house with more bedrooms.

Pie Chart

The pie chart below is a visual representation of the relationship between the variable GARAGE and the monthly housing cost that can be used to explain the influence that the two variables have on each other in explaining the rapid increase in the cost of housing.

In view of the analyzed information, the following conclusions can be made about the impact of the GARAGE variable on the monthly housing costs; there a sum of 2545 houses whose costs are dictated by the availability or unavailability of a garage in their compounds. The mean value and the standard

deviation for the GARAGE variable are zero, implying that they are irrelevant. This is an illustration that there is no critical variety between houses with a garage and those without a garage. Nonetheless, considering customer inclination for houses with a garage to sell at higher costs than those without a garage. A garage offers a storage room for the family and a parking space for house tenants. This is incorporated into the housing cost if the garage is developed by the property owner, hence acquiring more housing costs. However, a garage does not directly affect the monthly housing cost. From the pie chart above, it is clear that there is a 70% value distinction in monthly housing cost between houses with a garage and houses without a garage.

Regression Analysis

Regression Table Of Models

Regression Table Of The 4 Models

VARIABLE	(1) TOTAL MONTHLY HOUSING COST	(2) TOTAL MONTHLY HOUSING COST	(3) TOTAL MONTHLY HOUSING COST	(4) TOTAL MONTHLY HOUSING COST
GARAGE	-33.8460 (-0.8742)	-35.4586 (-0.9173)		
ELECMT	1.4648*** (3.5594)	1.4886*** (3.6278)	1.4997*** (4.6565)	1.6670*** (4.3642)
GASMT	3.6512*** (7.9117)	3.6688*** (7.9605)	3.6924*** (8.0242)	3.8679*** (8.9409)
OILMT	0.9258* (2.0909)	0.9293* (2.0992)	0.9402* (2.1246)	0.9947* (2.2613)
OTHERMT	-2.6238 (-1.6651)	-2.5652 (-1.6300)	-2.5364 (-1.6120)	-2.4616 (3.3121)
TRASHMT	1.2382** (3.1967)	1.2318** (3.1810)	1.2438** (3.2140)	1.2778** (3.3121)

WATERAMT	1.6036*** (5.1048)	1.5909*** (5.0717)	1.6161*** (5.1723)	1.6972*** (5.5833)
BATHROOM	129.7366*** (7.6489)	129.7522*** (8.7.6505)	132.4065*** (7.9235)	140.9019*** (9.4644)
TOTROOMS	13.0169 (0.9576)	13.2310 (0.9736)	15.0448 (1.1191)	
SEWTYPE	13.7117 (0.7731)			
Observations	2384	2384	2384	2384
R ²	0.2304	0.2302	0.2299	0.2295
Adjusted R ²	0.227119	0.227250	0.227302	0.22722

T-statistics for the models

*p<0.05, **<0.01, ***p<0.001

Variable utilized for this report were chosen by putting into consideration the amount of utility and number of rooms accessible. Every utility was treated as an independent variable. However, the first column variable was treated as a control variable for the investigation. Prior to the analysis, columns with missing values were erased. Consequently, the subsequent sample after deletion was 2384. A standard multiple regression was performed on the available information, and the best model was created using the elimination strategy. The model with the highest value of adjusted R squared (0.229896) was picked as the best model among the three regression models (Gelman & Nolan, 2017). From the investigation, the third model was regarded as the best in predicting the aggregate monthly cost since it has the highest value of adjusted R squared value.

Model 3 Summary

<i>Regression Statistics</i>	
Multiple R	0.479475

R Square	0.229896
Adjusted R Square	0.227302
Standard Error	786.7901
Observations	2384

The multiple correlation coefficient for the model is 0.4578. This is an indication that an estimated 23% of the variance of the monthly housing cost can be accounted for by water, oil, gas, monthly electricity, the total number of rooms, trash, and other costs under the utility amount. The remaining 77% of the sample variables may have been accrued due to other factors that have not been accounted for in the model or the error term (Model specification in regression analysis. n.d.).

Significance Of The Model

ANOVA Table

	DF	SS	MS	F	Significance F
Regression	8.0000	438897613.9135	54862201.7392	89.6248	0.0000
Residual	2375.0000	1470216785.2701	619038.6464		
Total	2383.0000	1909114399.1836			

The above ANOVA table was used to define the statistical significance of the model used in the analysis process. The linear combination of independent variables relates significantly to the monthly housing cost. I.e., $F(8,2375) = 88.6248$, $p < 0.05$.

Interpretation of the model

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
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Intercept	901.5284	53.1214	16.9711	0.0000
ELECAMT	1.4997	0.4101	3.6565	0.0003
GASAMT	3.6924	0.4602	8.0242	0.0000
OILAMT	0.9402	0.4425	2.1246	0.0337
OTHERAMT	-2.5364	1.5734	-1.6120	0.1071
TRASHAMT	1.2438	0.3870	3.2140	0.0013
WATERAMT	1.6161	0.3125	5.1723	0.0000
BATHROOMS	132.4065	16.7107	7.9235	0.0000
TOTROOMS	15.0448	13.4442	1.1191	0.2632

The regression equation used to fit the best model for predicting monthly housing cost is;

$$\text{Monthly housing cost} = 901.5284 + 1.49987X_1 + 3.6924X_2 + 0.9402X_3 - 2.5364X_4 + 1.2438X_5 + 1.6161X_6 + 132.4065X_7 + 15.0448X_8$$

The monthly housing cost was calculated to be 901.5284 while holding all other variables constant. The BEDROOMS variable brings the most contribution to the monthly housing cost and has a significant statistical coefficient with t-value ($t = 7.9235$, $p < 0.05$). The electricity, water amount, trash, gas, and oil variables coefficients were statistically significant, too, although they do not contribute greatly to the determination of monthly housing costs. They also had a positive effect on the total monthly housing cost because they led to an increase in the total monthly housing cost (Model specification in regression analysis .n.d). This means that an increase in the amount of money spent on the above-mentioned utilities results in an increase in the monthly housing cost and vice versa.

Conclusion

From the discoveries of this investigation, it is ideally correct to conclude that there are numerous parameters that impact the monthly housing costs. One of the most critical variables that one needs to investigate is the location of the house. Other factors that need to be put into consideration are the

number of bathrooms accessible in a unit, the number of utility costs, and the total number of rooms accessible in a house. However, from the examination of the findings of the investigation, it is obvious that the total number of bedrooms in a house is considered the key determinant of the monthly housing costs. In this way, one can infer that a house with a higher number of bedrooms draws in higher housing costs than one with less number of bedrooms. Moreover, utilities additionally influence housing costs, specifically with a little divergence in cost variations. Houses with high utility utilization are viewed as more costly than those with less utility costs. However, every one of these factors plays a basic part in deciding the aggregate housing cost.

References

Figure 4.3. Housing cost overburden rate in European countries. (n.d.). doi:10.1787/888932492359

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