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DS 5003

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Exam 3

Determining Requirements

My client is looking for information on Russian housing, specifically apartments. They want to know the average statistics when it comes to apartments so that they may have an idea of what to expect when they eventually move to Russia and begin looking at properties. The client would like to know 5 key criteria when it comes to evaluating the average apartment building in Russia, with those criteria being pricing, total square meters of the apartment (full\_sq), total square meters of living room and kitchen respectively, and the level of floors in the building complex. They have also asked for an analysis of the surrounding amenities, specifically asking to see sports facilities as they are heavily into fitness as well as other various amenities in the area. The amenities analyzed that were chosen at random were the counts of markets, leisure activities, green space, and cafes in the area. These along with Sports facilities were all based on a 5000-meter radius in order to insure maximum coverage. The client would like to know how many of the apartments contain more than 15 various sport facilities in the area on a separate account in combination with the average numbers so that they may have many options of sport facilities upon arriving in Russia. Once more, the client is asking for averages, meaning that we will primarily be observing measures of central tendency, besides the one-off question of determining how many apartments contain more than 15 sport facilities in a 5000 m radius.

Table

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FG1

Table

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Chart

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FG4

Chart, line chart

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FG 5 – Distribution of Amenities

Chart, histogram

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Possibilities

Beginning with the client’s initial question of wanting to know the average of their specific apartment criteria, if you take a look at figures 1 and 2 you can see just that in tabular format. Starting with figure 1, we can see the table describe the various measures of central tendency involving apartment statistics (Pricing, size, etc.) based on the original apartment information given to us. Taking a look at figure 1 reveals that the average apartment in Russia sells at roughly 7123035 (7.123035e+06) Russian Rubles (The type of currency was never expressed in the data dictionary, so the assumption is it is in rubles). The average square meterage is 54.21 m^2, with average living room and kitchen square meterage laying at 34.40m^2 and 6.39m^2 respectively. The final statistic measured, which was max floors, lies at an average of 12.5 floors. Moving on to figure 2 reveals the average amount of various amenities offered in a 5000m radius respective to apartment locations. Starting with the first amenity, sports facilities, we can see there is an average of 52 sports facilities around any given apartment! A wonderful fact for our client especially considering they were keen on the number of available sports facilities surrounding them. Moving on, we can see that there was an average of 6 markets (5.98 rounded) around any given apartment, 8.64 leisure-based businesses/activities, 22.76 average number of green zones, and 18 (17.8 rounded) cafes surrounding the average apartment building in Russia. Lastly, as mentioned previously, the client was keen on knowing there was a high number of sports facilities located around them so that they have options on which sports facility they would like to go to. They asked for how many of the total apartments contained at least 15 or more sport facilities around the 5000m radius. A quick analysis of the data frame used in obtaining the information on sport facilities showed that 21542 of the 30471 analyzed apartments contained 15 or more sports facilities surrounding them, meaning that 70% of total apartments pass the criteria that was asked for by the client.

With all this data in hand, we can begin to see the bigger picture. Taking a look at figures 3 and 4 show the relations between various apartment statistics. Figure 3 shows the relation of apartment price (x) and apartment total square meterage (y). Despite the outlier that is present showing an apartment with low price and high square meterage, if you take a look at the “Best Fit” line you can see there is a positive correlation among apartment price and total square meterage, meaning that the more money you invest into your apartment, the larger your apartment will be, an obvious assumption as given. Considering the fact that we also had data on living room and kitchen square meterage, this gave us the ability to see if there was a correlation among these components as well and taking a look at figure 4 explains just that. Figure 4 shows “Living Room Square Meterage” as X variable and “Kitchen Square Meterage” as Y variable, and once you take a look you can see a negative correlation in this comparison. The larger an apartments living room size gets, the smaller its kitchen size becomes, and the oppositive is true as well as indicated by the beginning of the line graph in figure 4, if you have a larger kitchen size, then your living room size tends to take a hit.

Moving on to amenities, figure 5 shows the distribution of all 5 of the various amenities analyzed for our client. Starting with “Sports Facilities”, we can see that there is a high rise in the beginning, indicating that a high frequency of apartments falls in between the range of 0 to 25 apartments. Interestingly, there’s a dip once you reach 25 apartments and then it rises again once reaching 50 sports facilities in the area, which was around the mean, meaning this chart is skewed to the right. The next graph, distribution of markets, visually shows us that a high amount of apartments contain nearly 1-3 markets in the area, so one could at least expect to have an easy to access market at any given apartment. Graph 3 shows leisure activities, with this graph indicated that almost all apartments in Russia tend to have in between 1 and 20 given leisure-based business surrounding them in a 5000m radius. Graph 4 indicates the average distribution of Green Zones, and it seems be skewed right indicating a decent amount of available green zones across all available apartments. Lastly is distribution of cafes, which is similar to graph 3, leisure activities. This graph shows us that any given apartment in Russia should expect between 0-25 cafes around them in a 5000m radius.

All in all, the information expressed to us through this dataset is helpful to answering all the client’s questions. Using the knowledge, we now have, the client can rest easy knowing that wherever he decides to move to in Russia, they will have a plethora of sport facilities to choose from, with every 7 out of 10 apartments containing 15 various sport facilities options in a 5000m radius. The client also knows that living in Russia can be costly in that the average rent price is 7123035 rubles, so it might be wise to have savings built up before making the move to Russia. Amenities are also readily available within the clients 5000m radius check, so they could expect a pleasant lifestyle once arriving in Russia.