Project Title Something Something Regression Analysis

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Data Science

Applied Statistics

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Abstract

Insert Abstract Here

1 Introduction

Introduction text here

1.1 Example Section

2 Background

Explain the math and notation.

3 Approach

Write a descriptive summary for each of the variables you are working with. It is up to you

- 3.1 Problem Definition
- 3.2 Part 1
- 3.3 Part N

4 Experiments

5 Conclusion

6 Appendix

6.1 Data Dictionary

Feature	Description
area_m	Area mun. area, sq.m.
raion_popul	Number of municipality population. district
$green_zone_part$	Proportion of area of greenery in the total area
$indust_part$	Share of industrial zones in area of the total area
children_preschool	Number of pre-school age population
$preschool_quota$	Number of seats in pre-school organizations
$preschool_education_centers_raion$	Number of pre-school institutions
$children_school$	Population of school-age children
$school_quota$	Number of high school seats in area
$school_education_centers_raion$	Number of high school institutions
$school_education_centers_top_20_raion$	Number of high schools of the top 20 best schools in Moscow
$hospital_beds_raion$	Number of hospital beds for the district
$healthcare_centers_raion$	Number of healthcare centers in district
$university_top_20_raion$	Number of higher education institutions in the top ten ranking
$sport_objects_raion$	Number of higher education institutions
${\it additional_education_raion}$	Number of additional education organizations
${\rm culture_objects_top_25}$	Presence of the key objects of cultural heritage (significant of
${\rm culture_objects_top_25_raion}$	Number of objects of cultural heritage
$shopping_centers_raion$	Number of malls and shopping centres in district
${ m office_raion}$	Number of malls and shopping centres in district
$thermal_power_plant_raion$	Presence of thermal power station in district
$incineration_raion$	Presence of incinerators
$oil_chemistry_raion$	Presence of dirty industries
radiation_raion	Presence of radioactive waste disposal
$railroad_terminal_raion$	Presence of the railroad terminal in district
big_market_raion	Presence of large grocery / wholesale markets

Table 1 continued from previous page

	Table 1 continued from previous pa
Feature	Description
nuclear_reactor_raion	Presence of existing nuclear reactors
detention_facility_raion	Presence of detention centers, prisons
full_all	Total number of population in the municipality
$male_f$	Male population
$female_f$	Female population
young_all	Population younger than working age
young_male	Male population younger than working age
${\bf young_female}$	Feale population younger than working age
work_all	Working-age population
work_male	Male working-age population
$work_female$	Female working-age population
ekder all	Population older than working age
${\rm ekder_male}$	Male population older than working age
${\rm ekder_female}$	Female population older than working age
0_6_all	Population aged 0-6
$0_6_{\rm male}$	Male population aged 0-7
$0_6_{\rm female}$	Female population aged 0-8
7_14_all	Population aged 7-14
7_14 _male	Male population aged 7-14
7_14_female	Female population aged 7-14
0_17_all	Population aged 0-17
0_17_{male}	Male population aged 0-17
$0_17_{\rm female}$	Female population aged 0-17
16_29_all	Population aged 16-19
$16_29_{\rm male}$	Male population aged 16-19
$16_29_{ m female}$	Female population aged 16-19
0_13_all	Population aged 0-13
0_13_{male}	Male population aged 0-13
$0_13_{\rm female}$	Female population aged 0-13
${\rm raion_build_count_with_material_info}$	Number of building with material info in district
build_count_block	Share of block buildings
build_count_wood	Share of wood buildings
build_count_frame	Share of frame buildings
build_count_brick	Share of brick buildings

Table 1 continued from previous page

build_count_monolith build_count_panel build_count_foam build_count_slag build_count_slag build_count_mix Share of slag buildings build_count_mix Share of slag buildings build_count_before_1920 Share of before_1920 buildings build_count_before_1920 Share of before_1920 buildings build_count_1921-1945 Share of 1921-1945 buildings build_count_1946-1970 Share of 1946-1970 buildings build_count_1971-1995 Share of 1971-1995 buildings build_count_after_1995 Share of after_1995 buildings build_count_after_1995 Share of after_1995 buildings 7_14_male Male population aged 7-14 7_14_female Female population aged 7-14 0_17_all 0_17_male Male population aged 0-17 0_17_female Female population aged 0-17 0_17_female Female population aged 16-19 16_29_male Male population aged 16-19 16_29_female Female population aged 16-19 0_13_all Population aged 0-13 0_13_male Dala_female Female population aged 0-13 Time to subway by car, min. metro_min_avto Distance to bindergarten build_count_before Dala buildings Share of slag buildings Share of mixed buildings Share of slag buildings Share of subildings Share of mixed buildings Share of slag buildings Share of subildings Share of		Table 1 confinued from previous page
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build_count_slag	build_count_monolith	Share of monolith buildings
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kindergarten_km Distance to kindergarten	$metro_min_walk$	Time to metro by foot
	${ m metro_km_walk}$	Distance to the metro, km
	kindergarten_km	Distance to kindergarten
school_km Distance to high school	${\it school_km}$	Distance to high school
park_km Distance to park	park_km	Distance to park
green_zone_km Distance to green zone	$green_zone_km$	Distance to green zone
industrial_zone_km Distance to industrial zone	$industrial_zone_km$	Distance to industrial zone
water_treatment_km Distance to water treatment	$water_treatment_km$	Distance to water treatment
cemetery_km Distance to the cemetery	${\rm cemetery_km}$	Distance to the cemetery
incineration_km Distance to the incineration	incineration_km	Distance to the incineration

Table 1 continued from previous page

	Table 1 continued from previous pag
Feature	Description
railroad_station_walk_km	Distance to the railroad station (walk)
${\tt railroad_station_walk_min}$	Time to the railroad station (walk)
ID_railroad_station_walk	Nearest railroad station id (walk)
${\rm railroad_station_avto_km}$	Distance to the railroad station (avto)
$railroad_station_avto_min$	Time to the railroad station (avto)
ID_railroad_station_avto	Nearest railroad station id (avto)
$public_transport_station_km$	Distance to the public transport station (walk)
$public_transport_station_min_walk$	Time to the public transport station (walk)
$water_km$	Distance to the water reservoir / river
$water_1line$	First line to the river (150 m)
$mkad_km$	Distance to MKAD (Moscow Circle Auto Road)
${ m ttk_km}$	Distance to the TTC (Third Transport Ring)
${\rm sadovoe_km}$	Distance to the Garden Ring
bulvar_ring_km	The distance to the Boulevard Ring
$kremlin_km$	Distance to the city center (Kremlin)
big_road1_km	Distance to Nearest major road
ID_big_road1	Nearest big road id
big_road1_1line	First line to the road (100 m for highwys, 250 m to MK
${ m big_road2_km}$	The distance to next distant major road
ID_big_road2	2nd nearest big road id
${\rm railroad_km}$	Distance to the railway $/$ Moscow Central Ring $/$ open
${\rm railroad_1line}$	First line to the railway (100 m)
$zd_vokzaly_avto_km$	Distance to train station
${ m ID_railroad_terminal}$	Nearest railroad terminal id
$bus_terminal_avto_km$	Distance to bus terminal (avto)
ID_bus_terminal	Nearest bus terminal id
$oil_chemistry_km$	Distance to dirty industries
$nuclear_reactor_km$	Distance to nuclear reactor
radiation_km	Distance to burial of radioactive waste
$power_transmission_line_km$	Distance to power transmission line
$thermal_power_plant_km$	Distance to thermal power plant
ts_km	Distance to power station
${ m big_market_km}$	Distance to grocery / wholesale markets

Distance to markets and department stores

 $market_shop_km$

Table 1 continued from previous page

	Table 1 continued from previous page
Feature	Description
$fitness_km$	Distance to fitness
$swim_pool_km$	Distance to swimming pool
ice_rink_km	Distance to ice palace
$\operatorname{stadium}$ km	Distance to stadium
$basketball_km$	Distance to the basketball courts
$hospice_morgue_km$	Distance to hospice/morgue
$detention_facility_km$	Distance to detention facility
$public_healthcare_km$	Distance to public healthcare
${ m university_km}$	Distance to universities
${ m workplaces_km}$	Distance to workplaces
${ m shopping_centers_km}$	Distance to shopping centers
$office _km$	Distance to business centers/ offices
$additional_education_km$	Distance to additional education
$preschool_km$	Distance to preschool education organizations
big_church_km	Distance to large church
${\rm church_synagogue_km}$	Distance to Christian chirches and Synagogues
${ m mosque_km}$	Distance to mosques
$theater_km$	Distance to theater
${ m museum_km}$	Distance to museums
$\operatorname{exhibition}_{\underline{}}\operatorname{km}$	Distance to exhibition
$\operatorname{catering_km}$	Distance to catering
ecology	Ecological zone where the house is located
$green_part_500$	The share of green zones in 500 meters zone
$prom_part_500$	The share of industrial zones in 500 meters zone
$office_count_500$	The number of office space in 500 meters zone
$office_sqm_500$	The square of office space in 500 meters zone
${ m trc_count_500}$	The number of shopping malls in 500 meters zone
${ m trc_sqm_500}$	The square of shopping malls in 500 meters zone
${\rm cafe_count_500}$	The number of cafes or restaurants in 500 meters zone
cafe_sum_500_min_price_avg	Cafes and restaurant min average bill in 500 meters zone
${\rm cafe_sum_500_max_price_avg}$	Cafes and restaurant max average bill in 500 meters zone
${\tt cafe_avg_price_500}$	Cafes and restaurant average bill in 500 meters zone
${\tt cafe_count_500_na_price}$	Cafes and restaurant bill N/A in 500 meters zone
cafe_count_500_price_500	Cafes and restaurant bill, average under 500 in 500 meters zo

Table 1 continued from previous page

	Table 1 continued from previous page
Feature	Description
${\tt cafe_count_500_price_1000}$	Cafes and restaurant bill, average 500-1000 in 500 meters
${\tt cafe_count_500_price_1500}$	Cafes and restaurant bill, average $1000-1500$ in 500 me
${\tt cafe_count_500_price_2500}$	Cafes and restaurant bill, average 1500-2500 in 500 me
${\tt cafe_count_500_price_4000}$	Cafes and restaurant bill, average 2500-4000 in 500 me
${\tt cafe_count_500_price_high}$	Cafes and restaurant bill, average over 4000 in 500 met
${ m big_church_count_500}$	The number of big churchs in 500 meters zone
$\operatorname{church_count_500}$	The number of churchs in 500 meters zone
${\rm mosque_count_500}$	The number of mosques in 500 meters zone
${\rm leisure_count_500}$	The number of leisure facilities in 500 meters zone
$\operatorname{sport} _\operatorname{count} _500$	The number of sport facilities in 500 meters zone
${ m market_count_500}$	The number of markets in 500 meters zone
${\rm green_part_1000}$	The share of green zones in 1000 meters zone
${\rm prom_part_1000}$	The share of industrial zones in 1000 meters zone
${\rm office_count_1000}$	The number of office space in 1000 meters zone
$office_sqm_1000$	The square of office space in 1000 meters zone
${ m trc_count_1000}$	The number of shopping malls in 1000 meters zone
${\rm trc_sqm_1000}$	The square of shopping malls in 1000 meters zone
${\rm cafe_count_1000}$	The number of cafes or restaurants in 1000 meters zone
$cafe_sum_1000_min_price_avg$	Cafes and restaurant min average bill in 1000 meters ze
$cafe_sum_1000_max_price_avg$	Cafes and restaurant max average bill in 1000 meters z
${\tt cafe_avg_price_1000}$	Cafes and restaurant average bill in 1000 meters zone
${\tt cafe_count_1000_na_price}$	Cafes and restaurant bill N/A in 1000 meters zone
${\tt cafe_count_1000_price_500}$	Cafes and restaurant bill, average under 500 in 1000 m
$cafe_count_1000_price_1000$	Cafes and restaurant bill, average $500\text{-}1000$ in 1000 me
${\tt cafe_count_1000_price_1500}$	Cafes and restaurant bill, average 1000-1500 in 1000 m $$
${\tt cafe_count_1000_price_2500}$	Cafes and restaurant bill, average 1500-2500 in 1000 m $$
$cafe_count_1000_price_4000$	Cafes and restaurant bill, average $2500\text{-}4000$ in $1000~\mathrm{m}$
${\tt cafe_count_1000_price_high}$	Cafes and restaurant bill, average over 4000 in 1000 me
$\rm big_church_count_1000$	The number of big churchs in 1000 meters zone
$\mathrm{church_count_1000}$	The number of churchs in 1000 meters zone
${\rm mosque_count_1000}$	The number of mosques in 1000 meters zone
${\rm leisure_count_1000}$	The number of leisure facilities in 1000 meters zone
${\rm sport_count_1000}$	The number of sport facilities in 1000 meters zone
market_count_1000	The number of markets in 1000 meters zone

Table 1 continued from previous page

	Table 1 continued from previous page
Feature	Description
green_part_1500	The share of green zones in 1500 meters zone
${\rm prom_part_1500}$	The share of industrial zones in 1500 meters zone
${\it office_count_1500}$	The number of office space in 1500 meters zone
$office_sqm_1500$	The square of office space in 1500 meters zone
${ m trc_count_1500}$	The number of shopping malls in 1500 meters zone
${\rm trc_sqm_1500}$	The square of shopping malls in 1500 meters zone
${\tt cafe_count_1500}$	The number of cafes or restaurants in 1500 meters zone
cafe_sum_1500_min_price_avg	Cafes and restaurant min average bill in 1500 meters zone
cafe_sum_1500_max_price_avg	Cafes and restaurant max average bill in 1500 meters zone
cafe_avg_price_1500	Cafes and restaurant average bill in 1500 meters zone
${\tt cafe_count_1500_na_price}$	Cafes and restaurant bill N/A in 1500 meters zone
${\tt cafe_count_1500_price_500}$	Cafes and restaurant bill, average under 500 in 1500 meters z
${\tt cafe_count_1500_price_1000}$	Cafes and restaurant bill, average 500-1000 in 1500 meters zo
${\tt cafe_count_1500_price_1500}$	Cafes and restaurant bill, average 1000-1500 in 1500 meters z
${\tt cafe_count_1500_price_2500}$	Cafes and restaurant bill, average $1500\text{-}2500$ in 1500 meters z
${\tt cafe_count_1500_price_4000}$	Cafes and restaurant bill, average 2500-4000 in 1500 meters z
${\tt cafe_count_1500_price_high}$	Cafes and restaurant bill, average over 4000 in 1500 meters zo
big_church_count_1500	The number of big churchs in 1500 meters zone
${\rm church_count_1500}$	The number of churchs in 1500 meters zone
${\rm mosque_count_1500}$	The number of mosques in 1500 meters zone
leisure_count_1500	The number of leisure facilities in 1500 meters zone
${\rm sport_count_1500}$	The number of sport facilities in 1500 meters zone
${ m market_count_1500}$	The number of markets in 1500 meters zone
$green_part_2000$	The share of green zones in 2000 meters zone
$prom_part_2000$	The share of industrial zones in 2000 meters zone
$office_count_2000$	The number of office space in 2000 meters zone
$office_sqm_2000$	The square of office space in 2000 meters zone
${ m trc_count_2000}$	The number of shopping malls in 2000 meters zone
${\rm trc_sqm_2000}$	The square of shopping malls in 2000 meters zone
${ m cafe_count_2000}$	The number of cafes or restaurants in 1500 meters zone
cafe_sum_2000_min_price_avg	Cafes and restaurant min average bill in 2000 meters zone
$cafe_sum_2000_max_price_avg$	Cafes and restaurant max average bill in 2000 meters zone
cafe_avg_price_2000	Cafes and restaurant average bill in 2000 meters zone
cafe_count_2000_na_price	Cafes and restaurant bill N/A in 2000 meters zone

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Feature	Description
${\tt cafe_count_2000_price_500}$	Cafes and restaurant bill, average under 500 in 2000 m
${\tt cafe_count_2000_price_1000}$	Cafes and restaurant bill, average 500-1000 in 2000 me
${\tt cafe_count_2000_price_1500}$	Cafes and restaurant bill, average 1000-1500 in 2000 m
${\tt cafe_count_2000_price_2500}$	Cafes and restaurant bill, average 1500-2500 in 2000 m
${\tt cafe_count_2000_price_4000}$	Cafes and restaurant bill, average 2500-4000 in 2000 m
${\tt cafe_count_2000_price_high}$	Cafes and restaurant bill, average over 4000 in 2000 me
big_church_count_2000	The number of big churchs in 2000 meters zone
${\rm church_count}_2000$	The number of churchs in 2000 meters zone
${\rm mosque_count_2000}$	The number of mosques in 2000 meters zone
leisure_count_2000	The number of leisure facilities in 2000 meters zone
${\rm sport_count_2000}$	The number of sport facilities in 2000 meters zone
${\rm market_count_2000}$	The number of markets in 2000 meters zone
${\tt green_part_3000}$	The share of green zones in 3000 meters zone
$prom_part_3000$	The share of industrial zones in 3000 meters zone
$office_count_3000$	The number of office space in 3000 meters zone
$office_sqm_3000$	The square of office space in 3000 meters zone
${ m trc_count_3000}$	The number of shopping malls in 3000 meters zone
${ m trc_sqm_3000}$	The square of shopping malls in 3000 meters zone
${\tt cafe_count_3000}$	The number of cafes or restaurants in 1500 meters zone
${\rm cafe_sum_3000_min_price_avg}$	Cafes and restaurant min average bill in 3000 meters zo
$cafe_sum_3000_max_price_avg$	Cafes and restaurant max average bill in 3000 meters z
cafe_avg_price_3000	Cafes and restaurant average bill in 3000 meters zone
${\tt cafe_count_3000_na_price}$	Cafes and restaurant bill N/A in 3000 meters zone
${\tt cafe_count_3000_price_500}$	Cafes and restaurant bill, average under 500 in 3000 m
${\tt cafe_count_3000_price_1000}$	Cafes and restaurant bill, average 500-1000 in 3000 me
${\tt cafe_count_3000_price_1500}$	Cafes and restaurant bill, average 1000-1500 in 3000 m
${\tt cafe_count_3000_price_2500}$	Cafes and restaurant bill, average 1500-2500 in 3000 m
${\tt cafe_count_3000_price_4000}$	Cafes and restaurant bill, average 2500-4000 in 3000 m
${\tt cafe_count_3000_price_high}$	Cafes and restaurant bill, average over 4000 in 3000 me
${\rm big_church_count_3000}$	The number of big churchs in 3000 meters zone
$church_count_3000$	The number of churchs in 3000 meters zone
${\rm mosque_count_3000}$	The number of mosques in 3000 meters zone
leisure_count_3000	The number of leisure facilities in 3000 meters zone
${\rm sport_count_3000}$	The number of sport facilities in 3000 meters zone

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Feature	Description
market_count_3000	The number of markets in 3000 meters zone
${\tt green_part_5000}$	The share of green zones in 5000 meters zone
$prom_part_5000$	The share of industrial zones in 5000 meters zone
$office_count_5000$	The number of office space in 5000 meters zone
$office_sqm_5000$	The square of office space in 5000 meters zone
${ m trc_count_5000}$	The number of shopping malls in 5000 meters zone
${ m trc_sqm_5000}$	The square of shopping malls in 5000 meters zone
${\tt cafe_count_5000}$	The number of cafes or restaurants in 1500 meters zone
$cafe_sum_5000_min_price_avg$	Cafes and restaurant min average bill in 5000 meters zone
${\tt cafe_sum_5000_max_price_avg}$	Cafes and restaurant max average bill in 5000 meters zone
${\tt cafe_avg_price_5000}$	Cafes and restaurant average bill in 5000 meters zone
${\tt cafe_count_5000_na_price}$	Cafes and restaurant bill N/A in 5000 meters zone
${\tt cafe_count_5000_price_500}$	Cafes and restaurant bill, average under 500 in 5000 meters z
${\tt cafe_count_5000_price_1000}$	Cafes and restaurant bill, average 500-1000 in 5000 meters zo
${\tt cafe_count_5000_price_1500}$	Cafes and restaurant bill, average $1000-1500$ in 5000 meters z
${\tt cafe_count_5000_price_2500}$	Cafes and restaurant bill, average 1500-2500 in 5000 meters z
${\tt cafe_count_5000_price_4000}$	Cafes and restaurant bill, average $2500\text{-}4000$ in 5000 meters z
${\rm cafe_count_5000_price_high}$	Cafes and restaurant bill, average over 4000 in 5000 meters zo
$big_church_count_5000$	The number of big churchs in 5000 meters zone
$church_count_5000$	The number of churchs in 5000 meters zone
${\rm mosque_count_5000}$	The number of mosques in 5000 meters zone
${\rm leisure_count_5000}$	The number of leisure facilities in 5000 meters zone
${\rm sport_count_5000}$	The number of sport facilities in 5000 meters zone
${\rm market_count_5000}$	The number of markets in 5000 meters zone