

Which Variables help in predicting supermarket revenue? Evidence from Chicago

R Markdown

References

Appendix

Table A: Description of variables

Variable Name	Description
unemp	% of Unemployed
wrkch5	% of working women with children under 5
wrkch17	% of working women with children 6 - 17
nwrkch5	% of non-working women with children under 5
nwrkch17	% of non-working women with children 6 - 17
wrkch	% of working women with children
nwrkch	% of non-working women with children
wrkwch	% of working women with children under 5
wrkwnch	% of working women with no children
telephn	% of households with telephones
mortgage	% of households with mortgages
nwhite	% of population that is non-white
poverty	% of population with income under \$15,000
shopcons	% of Constrained Shoppers
shophurr	% of Hurried Shoppers
shopavid	% of Avid Shoppers
shopstr	% of Shopping Strangers
shopunft	% of Unfettered Shoppers
shopbird	% of Shopper Birds
shopindx	Ability to Shop (Car and Single Family House)
shpindx	Ability to Shop (Car and Single Family House)
store	Store identification number
city	City of supermarket
zip	zip code
grocery_sum	Total turnover in one year of groceries(dollar)
groccoup_sum	Total of redeemed grocery coupos ()
age9	% population under age 9
age60	% population over age 60
ethnic	% Blacks and Hispanics
educ	% College Graduates
nocar	% With No Vehicles
income	Log of median income
incsigma	Standard deviation of income distribution(approximated)
hsizeavg	Average Household Size
hsize1	% of households with 1 person
hsize2	% of households with 2 persons
hsize34	% of households with 3 or 4 persons
hsize567	% of households with 5 ore more persons
hh3plus	% of households with 3 or more persons
hh4plus	% of households with 4 or more persons
hhsingle	% Detached Houses
hhlarge	% of households with 5 or more persons
workwom	% Working Women with full-time jobs
sinhouse	% of households with 1 person
density	Trading Area in Sq Miles per Capita
hval150	% of Households with Value over \$150,000
hval200	% of Households with Value over \$200,000
hvalmean	Mean Household Value(Approximated)
single	% of Singles
retired	% of Retired

Table B: Summary Statistics

Predictor variable	N	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
GROCERY_sum	77	7,341,015.000	2,341,073.000	1,423,582.000	5,778,987.000	9,022,599.000	13,165,586.000
AGE9	77	0.138	0.025	0.046	0.121	0.151	0.193
AGE60	77	0.173	0.063	0.058	0.122	0.214	0.307
ETHNIC	77	0.160	0.193	0.024	0.044	0.188	0.996
EDUC	77	0.227	0.114	0.050	0.146	0.284	0.528
NOCAR	77	0.113	0.132	0.012	0.025	0.144	0.551
INCOME	77	10.616	0.293	9.867	10.414	10.797	11.236
INCSIGMA	77	24,840.880	2,295.236	20,359.560	23,488.270	26,458.280	30,276.640
HSIZEAVG	77	2.665	0.263	1.554	2.543	2.790	3.309
HSIZE1	77	0.245	0.083	0.122	0.200	0.269	0.614
HSIZE2	77	0.309	0.031	0.219	0.290	0.333	0.369
HSIZE34	77	0.330	0.060	0.092	0.306	0.367	0.446
HSIZE67	77	0.116	0.031	0.014	0.098	0.132	0.216
HH3PLUS	77	0.446	0.083	0.106	0.405	0.490	0.650
HH4PLUS	77	0.274	0.063	0.041	0.241	0.305	0.443
HHSINGLE	77	0.245	0.083	0.122	0.200	0.269	0.614
HHLARGE	77	0.116	0.031	0.014	0.098	0.132	0.216
WORKWOM	77	0.358	0.053	0.244	0.312	0.402	0.472
SINHOUSE	77	0.548	0.216	0.017	0.517	0.706	0.822
DENSITY	77	0.001	0.001	0.0001	0.0004	0.001	0.005
HVAL150	77	0.349	0.246	0.003	0.123	0.534	0.917
HVAL200	77	0.186	0.186	0.001	0.043	0.268	0.781
HVALMEAN	77	147.907	47.534	64.348	108.924	179.072	267.390
SINGLE	77	0.280	0.068	0.203	0.242	0.286	0.593
RETIRED	77	0.150	0.051	0.056	0.109	0.188	0.236
UNEMP	77	0.182	0.023	0.142	0.166	0.195	0.245
WRKCH5	77	0.056	0.020	0.024	0.041	0.070	0.118
WRKCH17	77	0.124	0.029	0.041	0.103	0.144	0.198
NWRKCH5	77	0.084	0.028	0.030	0.064	0.101	0.169
NWRKCH17	77	0.070	0.021	0.018	0.059	0.082	0.122
WRKCH	77	0.180	0.044	0.071	0.149	0.214	0.293
NWRKCH	77	0.154	0.043	0.048	0.123	0.183	0.250
WRKWCH	77	0.055	0.020	0.024	0.041	0.069	0.115
WRKWCH	77	0.258	0.044	0.157	0.227	0.282	0.460
TELEPHN	77	0.977	0.029	0.839	0.976	0.993	0.998
MORTGAGE	77	0.710	0.147	0.443	0.617	0.826	0.960
NWHITE	77	0.204	0.194	0.035	0.091	0.205	0.995
POVERTY	77	0.058	0.045	0.014	0.027	0.076	0.213
SHPCONS	77	0.082	0.062	0.019	0.037	0.115	0.279
SHPHURR	77	0.153	0.059	0.026	0.110	0.191	0.286
SHPAVID	77	0.189	0.043	0.061	0.161	0.220	0.310
SHPKSTR	77	0.284	0.066	0.184	0.232	0.330	0.558
SHPUNFT	77	0.246	0.055	0.145	0.197	0.291	0.391
SHPBIRD	77	0.046	0.025	0.004	0.025	0.064	0.105
SHOPINDX	77	0.736	0.246	0.00000	0.730	0.890	0.986

Table C: Variables that have an absolute correlation of more than 0.7

	Predictor Variable 1	Predictor Variable 2	Correlation
1	HSIZE1	HSIZE34	-0.966
2	HSIZEAVG	HSIZE1	-0.908
3	HH4PLUS	HHSINGLE	-0.887
4	MORTGAGE	SHPBIRD	-0.869
5	SINHOUSE	SINGLE	-0.862
6	WORKWOM	RETIRED	-0.859
7	NOCAR	INCOME	-0.835
8	SHPCONS	SHPHURR	-0.810
9	HHLARGE	WRKWNCN	-0.800
10	HHSINGLE	SINHOUSE	-0.798
11	HSIZE2	UNEMP	-0.775
12	TELEPHN	NWHITE	-0.761
13	RETIRED	WRKCH17	-0.727
14	SINGLE	TELEPHN	-0.726
15	UNEMP	TELEPHN	-0.726
16	ETHNIC	INCOME	-0.720
17	AGE9	AGE60	-0.700
18	EDUC	INCSIGMA	0.717
19	WRKCH5	NWRKCH5	0.745
20	WRKCH17	NWRKCH5	0.748
21	WRKCH	NWRKCH	0.749
22	INCSIGMA	HVAL150	0.779
23	SHPHURR	SHOPINDX	0.779
24	NWRKCH	SHPHURR	0.790
25	INCOME	INCSIGMA	0.796
26	HSIZE567	HH3PLUS	0.836
27	NWRKCH17	NWRKCH	0.838
28	NWHITE	POVERTY	0.841
29	NWRKCH5	WRKCH	0.841
30	AGE60	RETIRED	0.877
31	HVAL150	HVAL200	0.928
32	HVAL200	HVALMEAN	0.943
33	HSIZE34	HH3PLUS	0.959
34	HH3PLUS	HH4PLUS	0.990
35	POVERTY	SHPCONS	0.997