

Comparison on Discount Store and City Income

STA 6233 Symposium

Lia Spears

DOLLAR GENERAL®

Motivation

- From personal experience I have noticed the number of Dollar General stores grow in my hometown of Lancaster, Tx from one store to three stores in the span of five years. The estimated household total income \$13,177
- This is also evident in San Marcos, TX where there are currently four Dollar General stores located in this city where the Estimated household total income is \$22,755 based on the 2018 United States American Census Survey.
- Normal business practice leads itself to having an increase number of stores as the city income grow.

Research Question

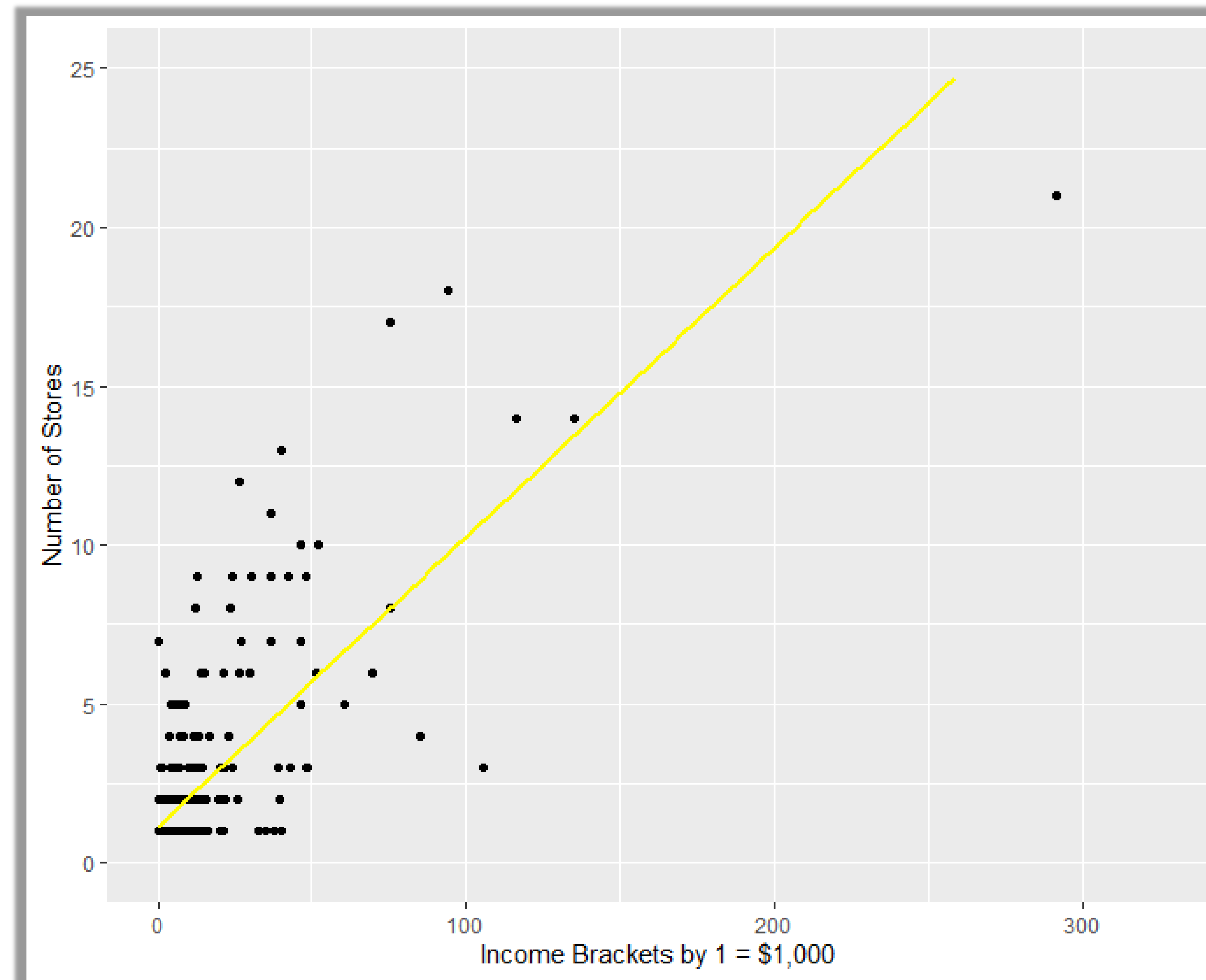
- Is there average number of stores per city the same across all income brackets?

Data and Methods

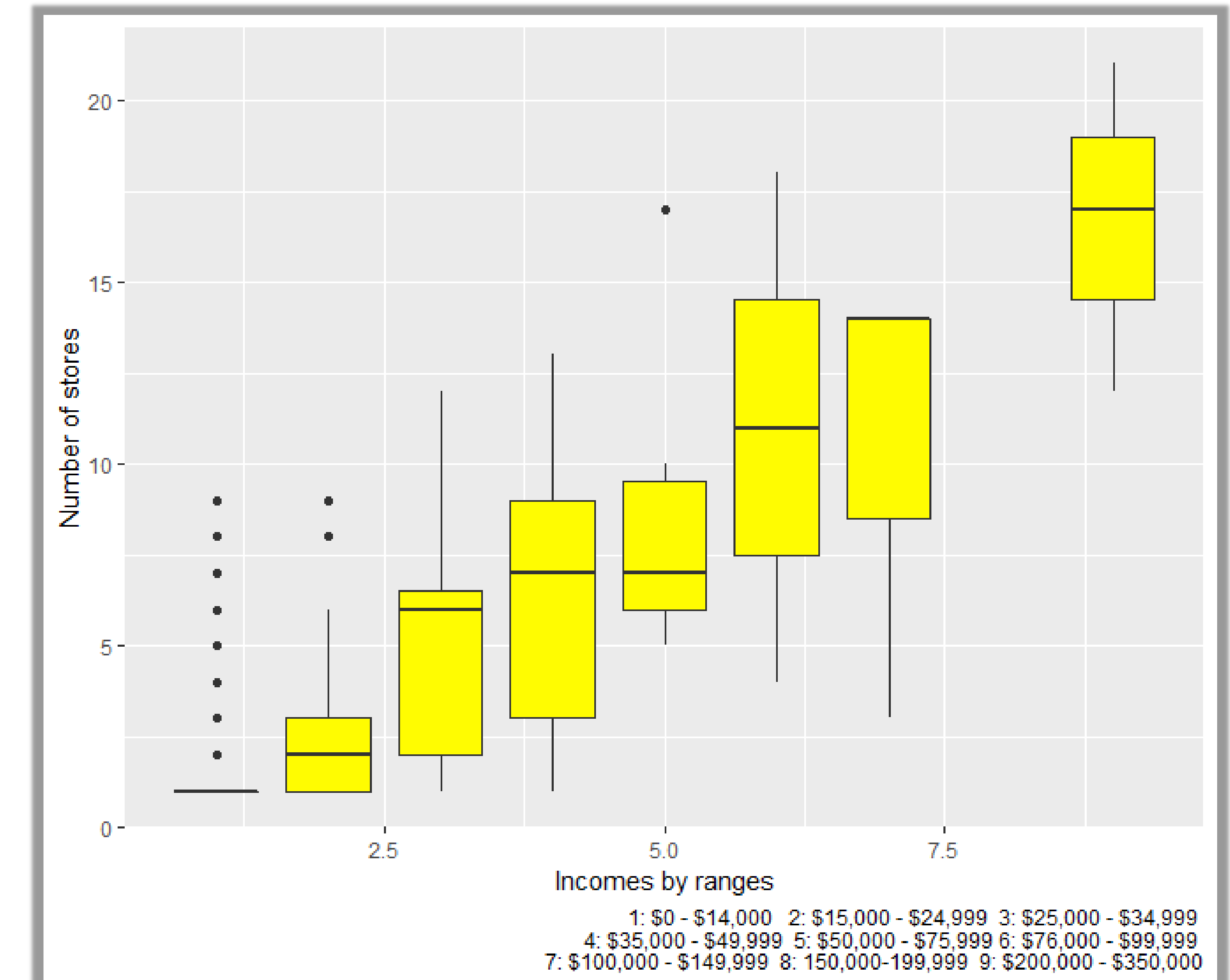
- Mystore411 - Listing of store locations and hours
- Data available on all store's city, street, and zip code
- Limited to the state of Texas
- Multiple stores withing each city was uniquely defined by address and zip code
- Cities with no Dollar General store where given a value of NA

- United States Census Bureau
- 2018 5-year American Community Survey
- Limited to the Geographic Area Name and Estimated Household Total

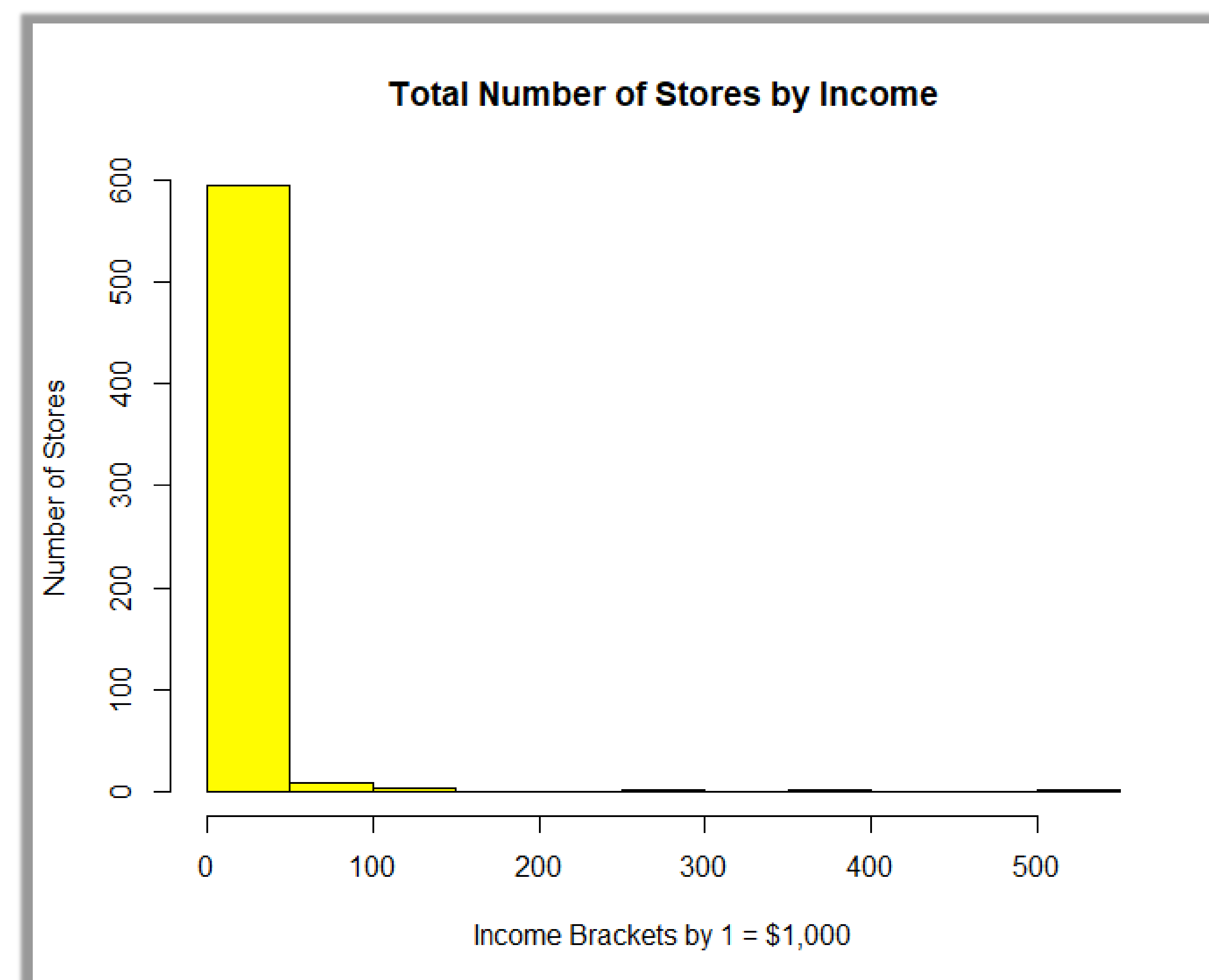
Comparison between city income and the number of stores



Box Plot of stores by Income brackets

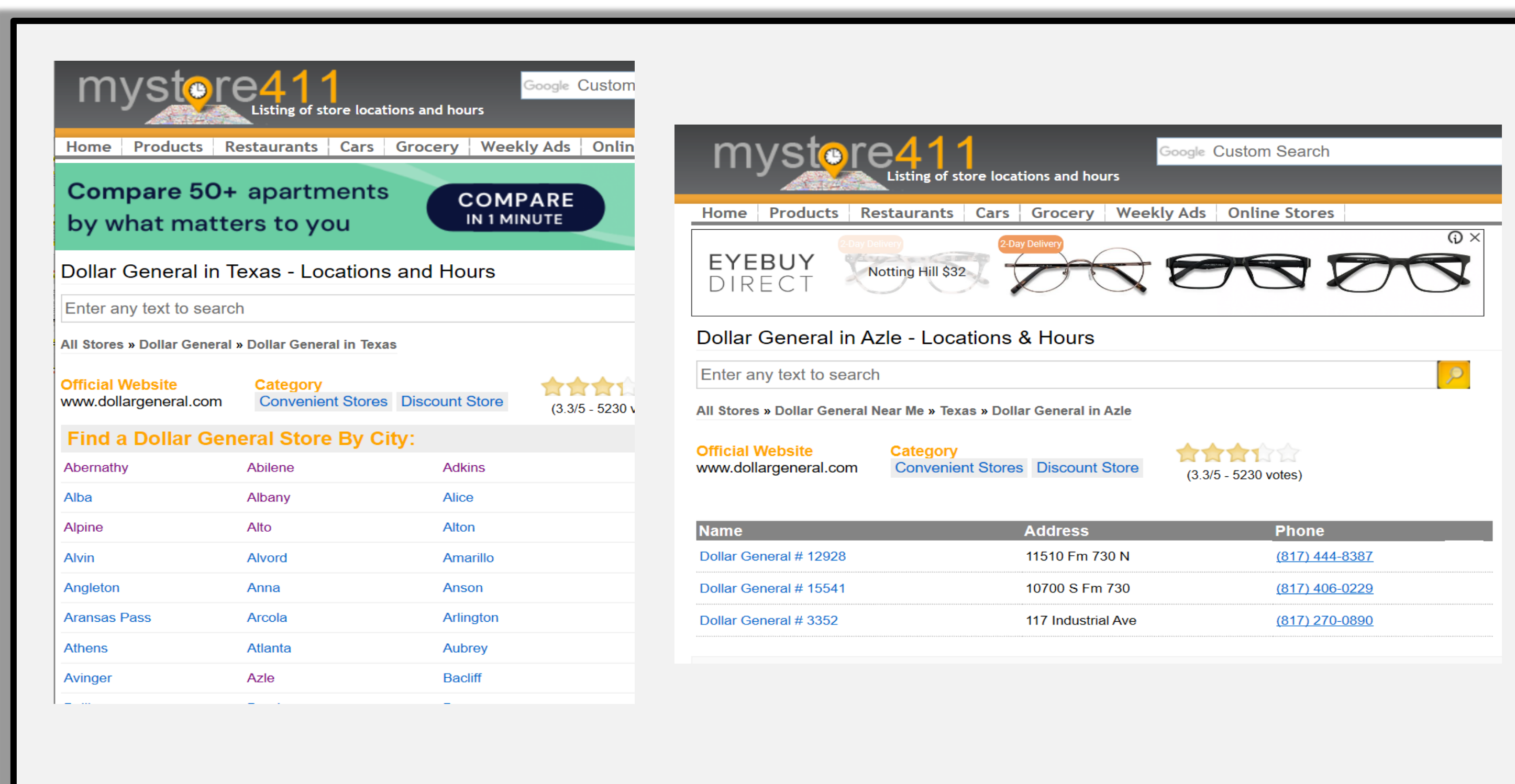


Bar chart of the total number of stores across all incomes



Results

- *The regression analysis shows there is a positive correlation between income levels and number of stores.
- *There is a dense concentration of stores in the lower income cities than in the higher income cities.



	A	B	C	D	E	F	G
1	id	Geographic Area Name	Estimate!!Households!!Total	Margin of Estimate!!	Margin of Estimate!!	Estimate!!	
2	16000000U	Abbott city, Texas	126	30	84	31	76
3	16000000U	Abernathy city, Texas	1094	120	900	110	681
4	16000000U	Abilene city, Texas	42327	714	27198	680	19136
5	16000000U	Abram CDP, Texas	506	127	444	118	281
6	16000000U	Ackerly city, Texas	64	19	47	18	34
7	16000000U	Addison town, Texas	8689	336	3153	209	2395
8	16000000U	Adrian city, Texas	43	23	25	15	25
9	16000000U	Agua Dulce CDP, Texas	726	96	614	95	285
10	16000000U	Agua Dulce city, Texas	291	63	228	57	177
11	16000000U	Aguilares CDP, Texas	0	13	0	13	0
12	16000000U	Airport Heights CDP, Texas	6	10	6	10	0
13	16000000U	Airport Road Addition CDP, Texas	47	35	47	35	27
14	16000000U	Alamo city, Texas	5901	381	4769	241	3413
15	16000000U	Alamo Heights city, Texas	3151	200	2159	142	1858
16	16000000U	Alba town, Texas	255	85	188	75	154
17	16000000U	Albany city, Texas	717	100	438	84	359
18	16000000U	Aldine CDP, Texas	4023	193	3347	195	2128
19	16000000U	Aledo city, Texas	1085	84	894	52	706
20	16000000U	Alfred CDP, Texas	0	13	0	13	0
21	16000000U	Alice city, Texas	6545	397	4719	380	2916
22	16000000U	Alice Acres CDP, Texas	70	63	70	63	39
23	16000000U	Allen city, Texas	32518	596	26230	562	21809
24	16000000U	Alma town, Texas	133	37	105	33	93
25	16000000U	Alpine city, Texas	2615	184	1375	177	948
26	16000000U	Alto town, Texas	462	115	318	101	224
27	16000000U	Alto Bonito Heights CDP, Texas	45	41	45	41	29
28	16000000U	Altom city, Texas	4436	286	3743	272	2218