

Lab Notebook for: beerEthnicityConsumptionBrandChoice

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S1.beer__2010DataCleaning - Process raw beer data

Algorithm name: S1.beer_2010DataCleaning(save_2010_main_data = 'all_formats',
out_algoRunTime = T)

Algorithm run time: 33.2137923 minute(s).

S2.construct__2010marketData - Partition the cleaned data by city

```
Algorithm name: S2.construct_2010marketData(input_fileType = 'feather',  
                                             marketNames = c('all'),  
                                             out_algoRunTime = T)
```

Algorithm run time: 3.2091913 minute(s).

S3.explore_2010marketData - Explore the completeness of the data

This algorithm takes city level data and determines, by brand, if there are any weeks over a 52 week period (one year) that a brand is missing in the data. If there are missing weeks in the data it is impossible to tell if there were no sales of a particular brand during that week or if the brand was not offered for sale. All we can see is that the week is missing data. Further, this algorithm determines the completeness of the data at the chain level. The same problem occurs when evaluating missing data at the chain level. It is not possible to say why the data is missing, simply that the data is missing.

The output of the algorithm presents a data file called: D3.explore_2010marketData.rds

This files contains information on missingness in the data by city / brand / week / chain.

Several data frames are contained in the list.

- BrandsOnly_CompleteData_wks: contains a list of brands with complete data over all 52 weeks.
- explore_Data_Complete_wks: contains the raw data.frame for the brands with complete data over all 52 weeks.
- Brands_CompleteData_wksANDChains: contains a list of brands with complete data over all 52 weeks and complete data over all chains in the city. The number of chains is variable depending on the city.
- explore_Data_Complete_wksANDChains: contains the raw data.frame for the brands with complete data over all 52 weeks and chains with complete data over all chains.
- explore_Data: contains the complete raw data.frame used to obtain the above filtered results.

Algorithm name: S3.explore_2010marketData(out_algoRunTime = T)

Algorithm run time: 3.0931297 minute(s).

S4.allBrands_2010analysis -

```
Algorithm name: S4.allBrands_2010analysis(brands= c("CHICAGO",  
                                                    "DALLAS, TX",  
                                                    "LOS ANGELES",  
                                                    "SPOKANE",  
                                                    "SYRACUSE",  
                                                    "HOUSTON"),  
                                           out_algoRunTime = T  
                                           )
```

Algorithm run time: 0.0076146 minute(s).

S5.aggregate_allBrands_2010 -

City: CHICAGO

```
Algorithm name: S5.aggregate_allBrands_2010(Market = 'CHICAGO',  
                                             figurePlot = T,  
                                             screenPlot = T,  
                                             saveData = T,  
                                             out_algoRunTime = T)
```

Algorithm run time: 0.9425799 minute(s).

prcntBrandRep_units: 76.1677326%.

prcntBrandRep_dol: 79.7331841%.

prcntBrandRep_gal: 83.8276386%.

prcntFirmRep_units: 93.2128207%.

prcntFirmRep_dol: 93.6344766%.

prcntFirmRep_gal: 96.1166734%.

prcntConglomerateRep_units: 93.4637987%.

prcntConglomerateRep_dol: 93.8386745%.

prcntConglomerateRep_gal: 96.2340386%.

Table 1: Aggregate Conglomerate Data for CHICAGO

	Conglomerates	UNITS	DOLLARS	total_gal
1	SABMILLER	1341061	12858494.13	1919373.805
2	ANHEUSER-BUSCH INBEV	703186	6592746.34	929321.930
3	CONSTELLATION BRANDS INC	320397	3689692.35	332339.297
4	HEINEKEN USA INC	223202	2317296.07	204782.828
5	S & P COMPANY	95268	767591.99	131722.266
6	DIAGEO	90385	800058.38	60240.594
8	BOSTON BEER CO	74781	794918.76	66500.641
9	MARK ANTHONY BRANDS INC	73022	719802.50	51868.125
11	SIERRA NEVADA BREWING CO	17230	188197.02	13167.656
20	E & J GALLO WNRV	2670	21262.27	1499.062

Note:

Aggregate Conglomerate Data for CHICAGO

Table 2: Aggregate Firm Data for CHICAGO

	Firms	UNITS	DOLLARS	total_gal
1	MILLERCOORS	1211060	11517961.02	1805195.477
2	ANHEUSER-BUSCH INBEV	666259	6273777.01	890461.148
3	CROWN IMPORTS	320397	3689692.35	332339.297
4	HEINEKEN USA INC	223202	2317296.07	204782.828
5	TENTH & BLAKE BEER CO	130001	1340533.11	114178.328
6	PABST BREWING CO	95268	767591.99	131722.266
7	DIAGEO GUINNESS USA	82487	737496.75	55714.953
9	BOSTON BEER CO	74781	794918.76	66500.641
10	MARK ANTHONY BRANDS INC	73022	719802.50	51868.125
11	MICHELOB BREWING CO	36927	318969.33	38860.781
13	SIERRA NEVADA BREWING CO	17230	188197.02	13167.656
23	E & J GALLO WNRV	2670	21262.27	1499.062

Note:

Number of firms: 12

Aggregate Firm Data for CHICAGO

Table 3: Aggregate Brand Data for CHICAGO

	Brands	UNITS	DOLLARS	total_gal
1	MILLER LITE	513772	5563091.56	840811.6875
2	BUD LIGHT	214515	2269587.47	338383.8125
3	CORONA EXTRA	167318	1930201.41	176218.2656
4	COORS LIGHT	133061	1492072.15	226284.3750
5	MILLER GENUINE DRAFT	132885	1260618.66	183935.3750
6	BUDWEISER	126866	1154621.76	168268.1250
7	MILLER HIGH LIFE	115827	1013147.98	198003.5625
8	HEINEKEN	107693	1172537.88	99689.8594

9	MODELO ESPECIAL	79514	898638.77	81288.7500
10	MILLER GENUINE DRAFT LIGHT 64	65706	708916.38	106581.9375
11	ICEHOUSE	58526	385122.27	71708.3125
12	BUSCH LIGHT	52330	557267.29	116339.8125
13	CORONA LIGHT	45439	515927.62	46569.9375
14	BUSCH	44881	373276.49	75306.1875
16	BLUE MOON BELGIAN WHITE ALE	35520	364205.64	29579.7500
18	STELLA ARTOIS LAGER	31406	367912.87	26216.1016
21	BUD LIGHT LIME	27644	260709.77	24785.8594
22	PABST BLUE RIBBON	26540	253936.60	48990.5625
23	GUINNESS DRAUGHT	25835	249137.71	18565.9062
24	TECATE	25571	248155.13	29058.8125
25	SAMUEL ADAMS SEASONAL	25401	266005.13	22169.1719
26	BECKS	25206	256068.80	22508.4375
27	HEINEKEN PREMIUM LIGHT LAGER	22964	272217.95	22651.8828
28	MICHELOB ULTRA	22643	194070.37	24943.8750
30	SAMUEL ADAMS BOSTON LAGER	21899	231142.51	19720.4062
35	FOSTERS LAGER	18848	65355.29	5778.2266
40	ODOULS	14893	96729.46	12209.6250
41	MIKES HARD LEMONADE	14618	144903.91	10632.1250
44	SIERRA NEVADA PALE ALE	12767	140917.46	10002.2812
45	ROLLING ROCK EXTRA PALE	12027	114186.01	12163.8750
48	RED STRIPE	11791	88735.21	6543.3516
49	NEWCASTLE BROWN ALE	11416	124317.39	9319.4609
50	BLUE MOON SEASONAL COLLECTION	11083	110675.70	8778.3750
57	GUINNESS EXTRA STOUT	9967	73609.97	5361.7969
58	NEGRA MODELO	9886	108652.49	8704.8750
59	MILLER CHILL	9631	75513.07	8915.6250
60	MIKES HARD CRANBERRY LEMONADE	8858	86867.06	6257.6797
61	COORS	8758	99598.51	15621.7500
62	NATURAL ICE	8375	58195.68	11723.0625
70	KEYSTONE LIGHT	6739	85668.46	18833.2500
71	BUD LIGHT GOLDEN WHEAT	6513	60730.89	5654.2500
74	MIKES HARD SEASONAL	6204	54444.63	3879.8047
75	SMIRNOFF ICE	6177	52095.94	3936.7109
78	MIKES HARD LIGHT LEMONADE	5676	54972.06	3882.3359
84	SMIRNOFF ICE PARTY PACK	5495	67279.16	5752.5781
86	SAINT PAULI GIRL	5103	56195.11	5158.5000
89	GEORGE KILLIANS IRISH RED LAG	4854	49350.13	4457.6250
94	ODOULS AMBER	4712	22462.29	2650.5000
99	BACARDI SILVER MOJITO	4414	31121.06	2482.8750
102	LANDSHARK LAGER	4039	35863.90	2977.8750
103	SHOCK TOP BELGIAN WHITE ALE	4018	29929.89	2450.3438
113	SMIRNOFF ICE RASPBERRY BURST	3219	24231.18	1684.9453
118	SMIRNOFF ICE GREEN APPLE BITE	2583	19221.26	1352.0391
121	DOS EQUIS XX AMBAR LAGER	2361	28237.74	2511.5625
131	MICHELOB AMBER BOCK	2025	19924.78	2036.2500
133	NATURAL LIGHT	1993	22733.25	5027.0625
144	MICHELOB ULTRA AMBER	1679	13861.68	1812.9375
149	MIKES HARD MANGO PUNCH	1510	12176.94	790.3906
154	MICHELOB ULTRA LIME CACTUS	1366	7969.91	768.3750

163	MICHELOB ULTR POMEGRANAT RSPB	1183	6954.70	665.4375
171	MOLSON CANADIAN	1027	8695.54	1036.1250
177	HORNSBYS AMBER DRAFT	939	7490.31	528.1875
198	MILWAUKEES BEST	622	5570.19	1170.5625
201	WILD BLUE	583	4426.37	327.9375

Note:

Aggregate Brand Data for CHICAGO

City: DALLAS, TX

```
Algorithm name: S5.aggregate_allBrands_2010(Market = 'DALLAS, TX',  
                                             figurePlot = T,  
                                             screenPlot = F,  
                                             saveData = T,  
                                             out_algoRunTime = T)
```

Algorithm run time: 0.8903018 minute(s).

prcntBrandRep_units: 77.3324622%.

prcntBrandRep_dol: 82.2188882%.

prcntBrandRep_gal: 84.7795074%.

prcntFirmRep_units: 91.2448634%.

prcntFirmRep_dol: 92.4068525%.

prcntFirmRep_gal: 94.2156599%.

prcntConglomerateRep_units: 91.611992%.

prcntConglomerateRep_dol: 92.6923266%.

prcntConglomerateRep_gal: 94.4031074%.

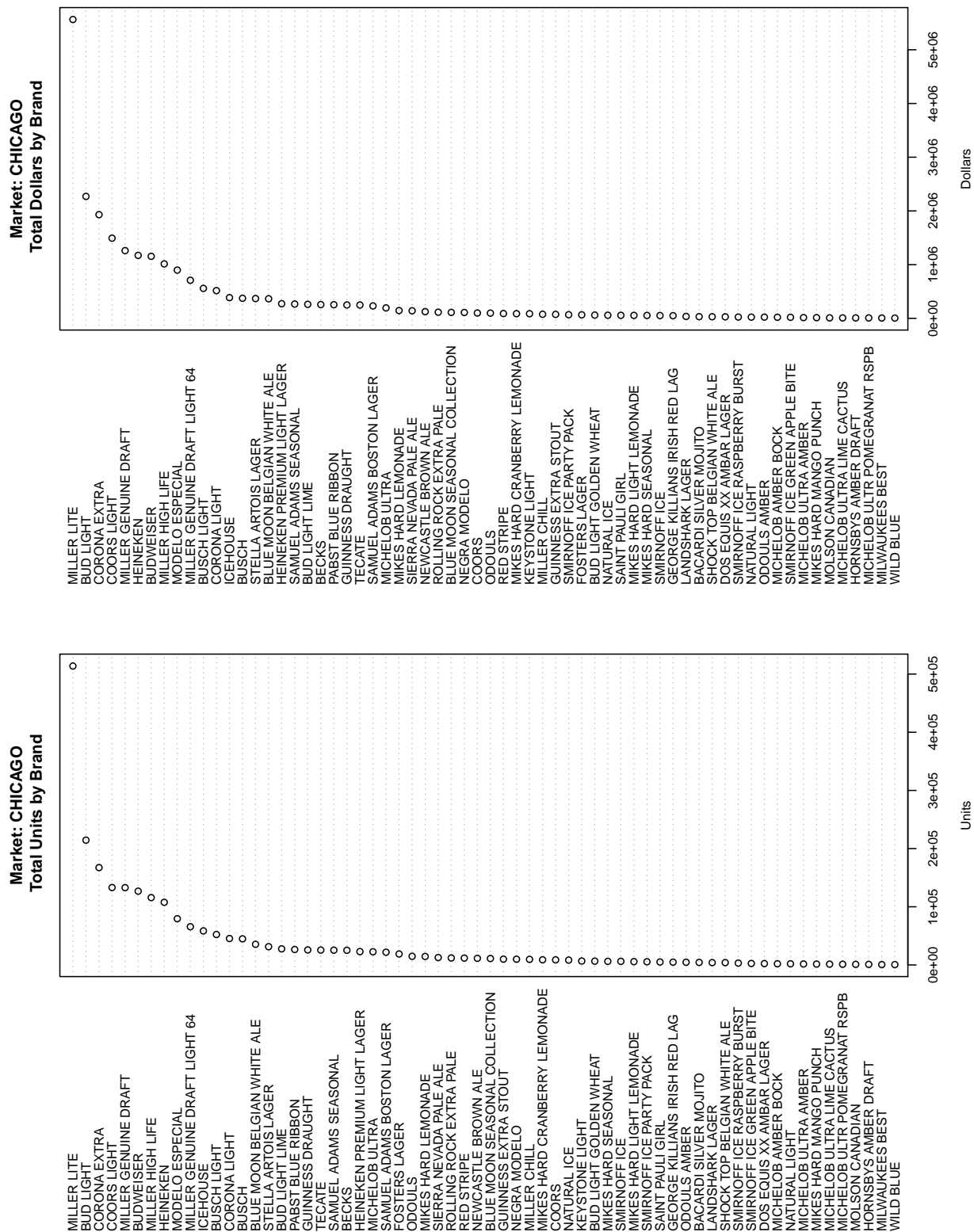


Figure 1: Plot of Aggregate Data for Chicago

Table 4: Aggregate Conglomerate Data for DALLAS, TX

	Conglomerates	UNITS	DOLLARS	total_gal
1	ANHEUSER-BUSCH INBEV	688219	6790446.22	732432.953
2	SABMILLER	590613	6474931.16	717953.281
3	HEINEKEN USA INC	111980	1159499.73	92121.086
4	CONSTELLATION BRANDS INC	109039	1169835.79	91547.211
6	DIAGEO	50060	374340.07	24842.922
7	BOSTON BEER CO	24117	234265.39	17253.688
8	MARK ANTHONY BRANDS INC	18967	161480.19	9855.641
9	S & P COMPANY	16844	124785.47	15563.188
11	SIERRA NEVADA BREWING CO	7983	75761.25	5438.156
19	E & J GALLO WNRV	3167	24954.52	1781.438

Note:

Aggregate Conglomerate Data for DALLAS, TX

Table 5: Aggregate Firm Data for DALLAS, TX

	Firms	UNITS	DOLLARS	total_gal
1	ANHEUSER-BUSCH INBEV	628160	6119184.40	672328.453
2	MILLERCOORS	563441	6235040.50	700044.406
3	HEINEKEN USA INC	111980	1159499.73	92121.086
4	CROWN IMPORTS	109039	1169835.79	91547.211
6	MICHELOB BREWING CO	60059	671261.82	60104.500
7	DIAGEO GUINNESS USA	43564	323245.22	21449.938
8	TENTH & BLAKE BEER CO	27172	239890.66	17908.875
9	BOSTON BEER CO	24117	234265.39	17253.688
10	MARK ANTHONY BRANDS INC	18967	161480.19	9855.641
11	PABST BREWING CO	16844	124785.47	15563.188
13	SIERRA NEVADA BREWING CO	7983	75761.25	5438.156
21	E & J GALLO WNRV	3167	24954.52	1781.438

Note:

Number of firms: 12

Aggregate Firm Data for DALLAS, TX

Table 6: Aggregate Brand Data for DALLAS, TX

	Brands	UNITS	DOLLARS	total_gal
1	BUD LIGHT	230647	3021591.69	328123.2969
2	MILLER LITE	168370	2250876.03	244095.2500
3	COORS LIGHT	156719	2060687.09	223288.6406
4	NATURAL LIGHT	145116	698813.33	101012.2500
5	BUDWEISER	74386	919542.14	99608.0938
6	KEYSTONE LIGHT	62288	648020.41	85787.3125
7	CORONA EXTRA	57793	661677.78	50638.8828
9	MICHELOB ULTRA	40841	513799.36	46778.6875

10	HEINEKEN	40471	435514.52	33137.1250
11	MILLER HIGH LIFE	36562	273401.65	34161.8750
14	BUD LIGHT LIME	25411	262896.80	22486.3281
15	MODELO ESPECIAL	20950	200882.42	17446.5938
16	FOSTERS LAGER	18721	50955.69	4456.1953
17	CORONA LIGHT	16460	193162.17	14916.1875
18	COORS	16383	229961.43	25076.5625
19	BUSCH	16334	158208.29	20229.3750
20	TECATE	15874	141072.98	13134.2500
21	MILLER GENUINE DRAFT LIGHT 64	15614	187587.72	19626.2500
22	BLUE MOON BELGIAN WHITE ALE	14008	127876.45	9937.8438
25	MILLER GENUINE DRAFT	11251	132785.29	13909.8750
27	GUINNESS EXTRA STOUT	9492	52869.28	3407.2188
28	SMIRNOFF ICE	9440	65500.84	4489.6641
31	BUSCH LIGHT	8534	125843.40	16472.4375
33	MILWAUKEES BEST	8253	37597.96	5415.8125
34	SAMUEL ADAMS SEASONAL	8227	77807.61	5782.2188
35	STELLA ARTOIS LAGER	7881	65523.04	4004.6094
37	ODOULS	7336	50993.29	4897.6875
38	SAMUEL ADAMS BOSTON LAGER	7090	72688.79	5604.7969
39	MILLER CHILL	7047	49278.32	4994.4375
40	HEINEKEN PREMIUM LIGHT LAGER	6806	83025.99	6205.5234
41	GUINNESS DRAUGHT	6659	55585.96	3405.6953
44	NEGRA MODELO	6050	46833.28	3396.8438
45	BECKS	5789	57791.53	4397.3438
47	MICHELOB ULTRA LIME CACTUS	5616	38365.78	3170.2500
49	DOS EQUIS XX AMBAR LAGER	5506	54953.18	4402.3125
52	BLUE MOON SEASONAL COLLECTION	5228	45797.12	3488.6250
56	SIERRA NEVADA PALE ALE	4898	50276.72	3702.9375
58	ROLLING ROCK EXTRA PALE	4613	44441.66	3704.0625
59	MIKES HARD LEMONADE	4370	36444.97	2280.5781
60	RED STRIPE	4353	39085.90	2799.1562
62	BACARDI SILVER MOJITO	4100	29990.16	2325.9375
65	NEWCASTLE BROWN ALE	3945	39495.27	2727.3750
69	NATURAL ICE	3607	9132.19	1318.6875
70	LANDSHARK LAGER	3580	31177.73	2155.9688
74	BUD LIGHT GOLDEN WHEAT	3304	28691.01	2390.7188
77	SAINT PAULI GIRL	3119	28776.96	2356.6875
79	GEORGE KILLIANS IRISH RED LAG	3030	21832.42	1750.9688
80	MIKES HARD CRANBERRY LEMONADE	3022	25348.00	1578.3281
81	SMIRNOFF ICE GREEN APPLE BITE	2846	22728.31	1485.7656
84	MICHELOB ULTRA AMBER	2602	25102.31	2190.3750
87	MIKES HARD LIGHT LEMONADE	2225	18622.04	1163.3359
90	MICHELOB ULTR POMEGRANAT RSPB	2150	14673.36	1209.3750
96	MIKES HARD SEASONAL	1916	16117.31	999.4062
102	ODOULS AMBER	1736	10077.84	976.5000
104	SHOCK TOP BELGIAN WHITE ALE	1686	12269.64	934.7812
107	HORNSBYS AMBER DRAFT	1568	12321.92	882.0000
123	MOLSON CANADIAN	1137	7925.91	633.0000
128	ICEHOUSE	1092	6254.66	757.6875
139	MICHELOB AMBER BOCK	947	6236.92	532.6875

140	PABST BLUE RIBBON	897	7262.43	873.3750
161	SMIRNOFF ICE RASPBERRY BURST	703	5561.53	366.2266
164	MIKES HARD MANGO PUNCH	689	6149.46	360.6484
178	WILD BLUE	578	3859.88	268.4062
190	SMIRNOFF ICE PARTY PACK	460	6113.00	481.5625

Note:

Aggregate Brand Data for DALLAS, TX

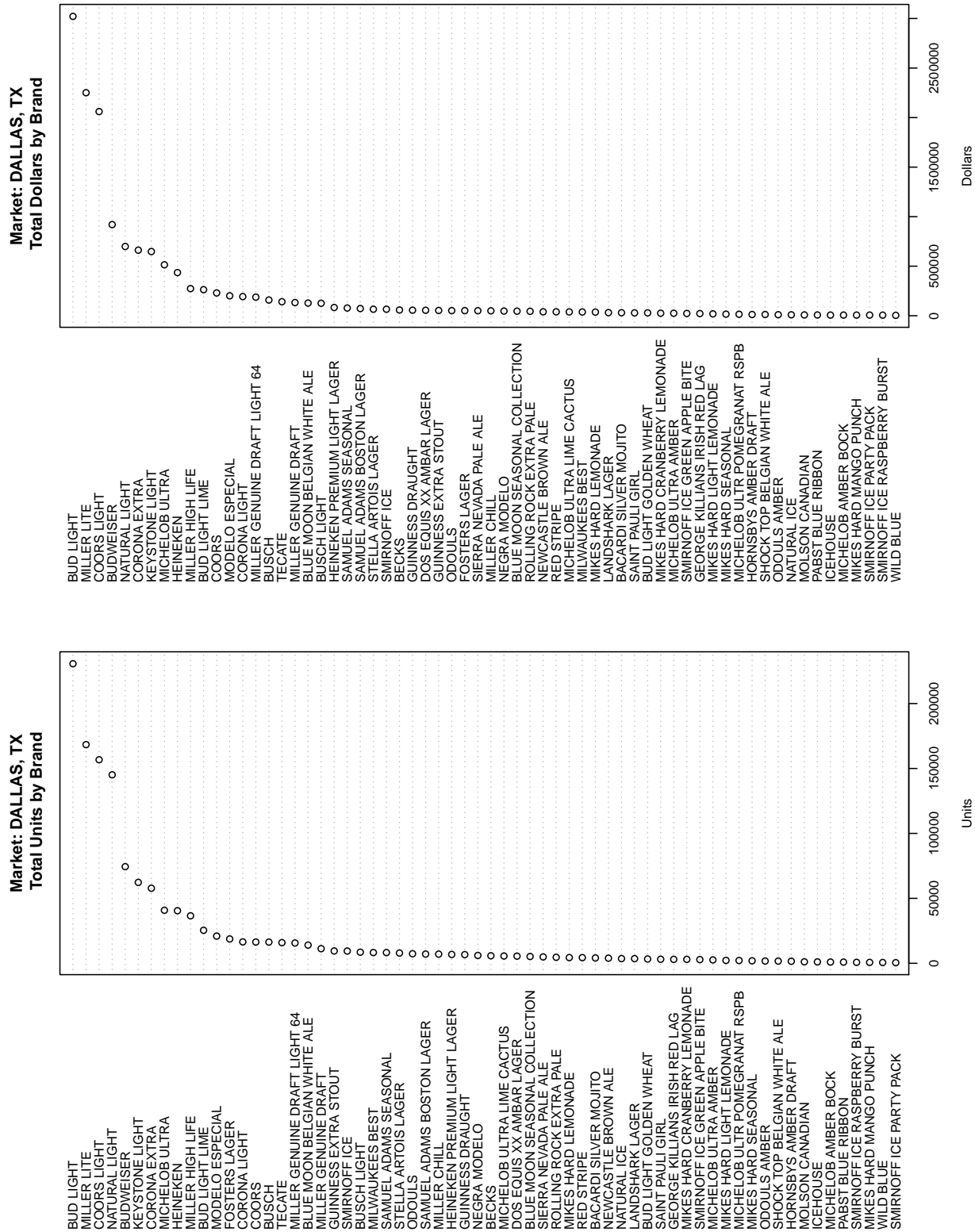


Figure 2: Plot of Aggregate Data for Dallas, TX