INFSCI 2809: Spatial Data Analytics

Project 2 Report

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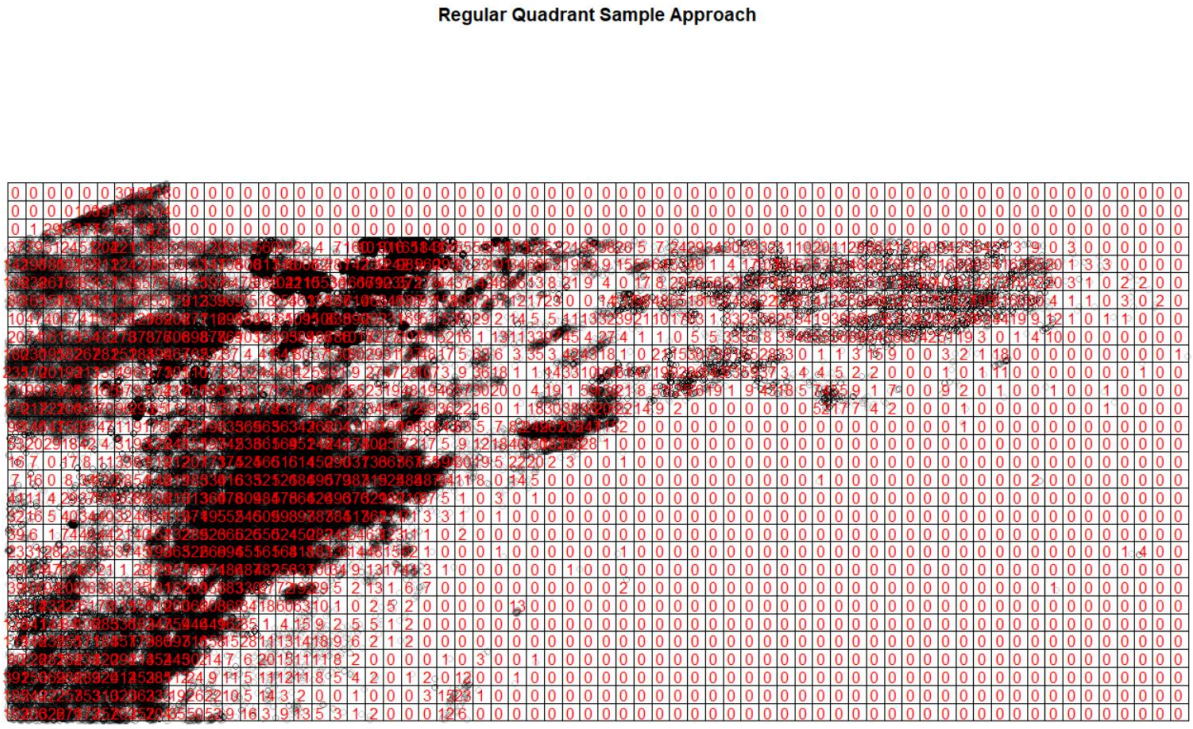
I. Regular quadrant sample approach

a. Map



b. Table

	K	X	$K-\mu$	$(K-\mu)^2$	$X(K-\mu)^2$
1	0	943	-78.9187	6228.159	5873154
2	1	63	-77.9187	6071.322	382493.3
3	2	27	-76.9187	5916.484	159745.1
4	3	23	-75.9187	5763.647	132563.9
5	4	17	-74.9187	5612.81	95417.76
6	5	22	-73.9187	5463.972	120207.4
7	6	6	-72.9187	5317.135	31902.81
8	7	9	-71.9187	5172.298	46550.68
9	8	9	-70.9187	5029.46	45265.14
10	9	18	-69.9187	4888.623	87995.21
11	10	7	-68.9187	4749.785	33248.5
12	11	16	-67.9187	4612.948	73807.17
13	12	6	-66.9187	4478.111	26868.66

14	13	8	-65.9187	4345.273	34762.19
15	14	9	-64.9187	4214.436	37929.92
16	15	8	-63.9187	4085.599	32684.79
17	16	7	-62.9187	3958.761	27711.33
18	17	9	-61.9187	3833.924	34505.31
19	18	11	-60.9187	3711.086	40821.95
20	19	11	-59.9187	3590.249	39492.74
21	20	9	-58.9187	3471.412	31242.7
22	21	7	-57.9187	3354.574	23482.02
23	22	5	-56.9187	3239.737	16198.68
24	23	7	-55.9187	3126.9	21888.3
25	24	3	-54.9187	3016.062	9048.187
26	25	3	-53.9187	2907.225	8721.674
27	26	1	-52.9187	2800.387	2800.387
28	27	2	-51.9187	2695.55	5391.1
29	28	6	-50.9187	2592.713	15556.28
30	29	9	-49.9187	2491.875	22426.88
31	30	7	-48.9187	2393.038	16751.27
32	31	3	-47.9187	2296.201	6888.602
33	32	6	-46.9187	2201.363	13208.18
34	33	8	-45.9187	2108.526	16868.21
35	34	8	-44.9187	2017.688	16141.51
36	35	4	-43.9187	1928.851	7715.404
37	36	4	-42.9187	1842.014	7368.055
38	37	6	-41.9187	1757.176	10543.06
39	38	4	-40.9187	1674.339	6697.356
40	39	7	-39.9187	1593.502	11154.51
41	40	7	-38.9187	1514.664	10602.65
42	41	7	-37.9187	1437.827	10064.79
43	42	5	-36.9187	1362.989	6814.947
44	43	3	-35.9187	1290.152	3870.456
45	44	4	-34.9187	1219.315	4877.259
46	45	3	-33.9187	1150.477	3451.432
47	46	2	-32.9187	1083.64	2167.28
48	47	7	-31.9187	1018.803	7131.618
49	48	8	-30.9187	955.9652	7647.722
50	49	3	-29.9187	895.1278	2685.383
51	50	3	-28.9187	836.2905	2508.871
52	51	6	-27.9187	779.4531	4676.718
53	52	8	-26.9187	724.6157	5796.926
54	53	4	-25.9187	671.7783	2687.113
55	54	3	-24.9187	620.941	1862.823
56	55	9	-23.9187	572.1036	5148.932

57	56	3	-22.9187	525.2662	1575.799
58	57	3	-21.9187	480.4288	1441.287
59	58	2	-20.9187	437.5915	875.1829
60	59	5	-19.9187	396.7541	1983.77
61	60	3	-18.9187	357.9167	1073.75
62	61	5	-17.9187	321.0793	1605.397
63	62	4	-16.9187	286.242	1144.968
64	63	4	-15.9187	253.4046	1013.618
65	64	4	-14.9187	222.5672	890.2689
66	65	5	-13.9187	193.7298	968.6492
67	66	1	-12.9187	166.8925	166.8925
68	68	3	-10.9187	119.2177	357.6532
69	69	3	-9.91869	98.38035	295.141
70	70	2	-8.91869	79.54298	159.086
71	71	2	-7.91869	62.7056	125.4112
72	72	6	-6.91869	47.86823	287.2094
73	73	2	-5.91869	35.03085	70.06171
74	74	4	-4.91869	24.19348	96.77392
75	75	2	-3.91869	15.35611	30.71221
76	76	4	-2.91869	8.518733	34.07493
77	77	3	-1.91869	3.681359	11.04408
78	78	4	-0.91869	0.843986	3.375942
79	79	3	0.081313	0.006612	0.019835
80	80	4	1.081313	1.169238	4.676952
81	81	5	2.081313	4.331864	21.65932
82	82	2	3.081313	9.494491	18.98898
83	83	2	4.081313	16.65712	33.31423
84	84	3	5.081313	25.81974	77.45923
85	85	5	6.081313	36.98237	184.9118
86	86	5	7.081313	50.145	250.725
87	87	4	8.081313	65.30762	261.2305
88	88	2	9.081313	82.47025	164.9405
89	89	1	10.08131	101.6329	101.6329
90	90	1	11.08131	122.7955	122.7955
91	91	5	12.08131	145.9581	729.7906
92	92	1	13.08131	171.1208	171.1208
93	93	4	14.08131	198.2834	793.1335
94	94	4	15.08131	227.446	909.784
95	95	2	16.08131	258.6086	517.2173
96	96	3	17.08131	291.7713	875.3138
97	97	3	18.08131	326.9339	980.8017
98	98	3	19.08131	364.0965	1092.29
99	99	3	20.08131	403.2591	1209.777

100	100	4	21.08131	444.4218	1777.687
101	101	1	22.08131	487.5844	487.5844
102	102	4	23.08131	532.747	2130.988
103	103	4	24.08131	579.9096	2319.639
104	104	3	25.08131	629.0723	1887.217
105	105	3	26.08131	680.2349	2040.705
106	106	2	27.08131	733.3975	1466.795
107	107	1	28.08131	788.5601	788.5601
108	108	4	29.08131	845.7228	3382.891
109	109	1	30.08131	904.8854	904.8854
110	110	3	31.08131	966.048	2898.144
111	112	3	33.08131	1094.373	3283.12
112	113	2	34.08131	1161.536	2323.072
113	114	2	35.08131	1230.699	2461.397
114	115	2	36.08131	1301.861	2603.722
115	116	2	37.08131	1375.024	2750.048
116	117	1	38.08131	1450.186	1450.186
117	118	2	39.08131	1527.349	3054.698
118	119	4	40.08131	1606.512	6426.047
119	120	4	41.08131	1687.674	6750.697
120	121	1	42.08131	1770.837	1770.837
121	122	1	43.08131	1856	1856
122	123	1	44.08131	1943.162	1943.162
123	125	2	46.08131	2123.487	4246.975
124	126	1	47.08131	2216.65	2216.65
125	127	2	48.08131	2311.813	4623.625
126	128	3	49.08131	2408.975	7226.926
127	129	2	50.08131	2508.138	5016.276
128	130	1	51.08131	2609.301	2609.301
129	131	1	52.08131	2712.463	2712.463
130	132	2	53.08131	2817.626	5635.252
131	133	3	54.08131	2924.788	8774.365
132	134	1	55.08131	3033.951	3033.951
133	136	2	57.08131	3258.276	6516.553
134	137	2	58.08131	3373.439	6746.878
135	138	3	59.08131	3490.602	10471.8
136	139	1	60.08131	3609.764	3609.764
137	142	2	63.08131	3979.252	7958.504
138	143	2	64.08131	4106.415	8212.829
139	144	1	65.08131	4235.577	4235.577
140	146	1	67.08131	4499.903	4499.903
141	147	2	68.08131	4635.065	9270.13
142	148	2	69.08131	4772.228	9544.456

143	150	2	71.08131	5052.553	10105.11
144	151	3	72.08131	5195.716	15587.15
145	152	1	73.08131	5340.878	5340.878
146	153	3	74.08131	5488.041	16464.12
147	154	2	75.08131	5637.204	11274.41
148	155	2	76.08131	5788.366	11576.73
149	156	2	77.08131	5941.529	11883.06
150	157	2	78.08131	6096.691	12193.38
151	158	3	79.08131	6253.854	18761.56
152	160	3	81.08131	6574.179	19722.54
153	161	3	82.08131	6737.342	20212.03
154	162	2	83.08131	6902.505	13805.01
155	163	1	84.08131	7069.667	7069.667
156	165	2	86.08131	7409.992	14819.98
157	166	1	87.08131	7583.155	7583.155
158	168	1	89.08131	7935.48	7935.48
159	169	1	90.08131	8114.643	8114.643
160	170	4	91.08131	8295.806	33183.22
161	171	2	92.08131	8478.968	16957.94
162	172	1	93.08131	8664.131	8664.131
163	173	1	94.08131	8851.293	8851.293
164	174	1	95.08131	9040.456	9040.456
165	175	1	96.08131	9231.619	9231.619
166	177	2	98.08131	9619.944	19239.89
167	178	4	99.08131	9817.107	39268.43
168	179	2	100.0813	10016.27	20032.54
169	180	3	101.0813	10217.43	30652.3
170	181	1	102.0813	10420.59	10420.59
171	182	3	103.0813	10625.76	31877.27
172	183	3	104.0813	10832.92	32498.76
173	184	2	105.0813	11042.08	22084.16
174	185	2	106.0813	11253.24	22506.49
175	186	2	107.0813	11466.41	22932.82
176	187	1	108.0813	11681.57	11681.57
177	188	2	109.0813	11898.73	23797.47
178	189	1	110.0813	12117.9	12117.9
179	191	2	112.0813	12562.22	25124.44
180	192	2	113.0813	12787.38	25574.77
181	193	1	114.0813	13014.55	13014.55
182	194	1	115.0813	13243.71	13243.71
183	195	2	116.0813	13474.87	26949.74
184	196	2	117.0813	13708.03	27416.07
185	197	2	118.0813	13943.2	27886.39

186	198	2	119.0813	14180.36	28360.72
187	199	1	120.0813	14419.52	14419.52
188	200	2	121.0813	14660.68	29321.37
189	201	1	122.0813	14903.85	14903.85
190	202	1	123.0813	15149.01	15149.01
191	203	2	124.0813	15396.17	30792.34
192	204	3	125.0813	15645.33	46936
193	205	1	126.0813	15896.5	15896.5
194	206	3	127.0813	16149.66	48448.98
195	207	2	128.0813	16404.82	32809.65
196	208	3	129.0813	16661.99	49985.96
197	209	1	130.0813	16921.15	16921.15
198	210	2	131.0813	17182.31	34364.62
199	211	2	132.0813	17445.47	34890.95
200	212	2	133.0813	17710.64	35421.27
201	213	2	134.0813	17977.8	35955.6
202	214	1	135.0813	18246.96	18246.96
203	217	1	138.0813	19066.45	19066.45
204	219	1	140.0813	19622.77	19622.77
205	221	2	142.0813	20187.1	40374.2
206	222	2	143.0813	20472.26	40944.52
207	224	1	145.0813	21048.59	21048.59
208	228	1	149.0813	22225.24	22225.24
209	230	1	151.0813	22825.56	22825.56
210	231	1	152.0813	23128.73	23128.73
211	232	1	153.0813	23433.89	23433.89
212	233	2	154.0813	23741.05	47482.1
213	234	1	155.0813	24050.21	24050.21
214	235	2	156.0813	24361.38	48722.75
215	237	1	158.0813	24989.7	24989.7
216	238	1	159.0813	25306.86	25306.86
217	239	1	160.0813	25626.03	25626.03
218	240	1	161.0813	25947.19	25947.19
219	242	2	163.0813	26595.51	53191.03
220	247	2	168.0813	28251.33	56502.66
221	248	2	169.0813	28588.49	57176.98
222	249	1	170.0813	28927.65	28927.65
223	250	1	171.0813	29268.82	29268.82
224	251	1	172.0813	29611.98	29611.98
225	253	1	174.0813	30304.3	30304.3
226	255	1	176.0813	31004.63	31004.63
227	256	1	177.0813	31357.79	31357.79
228	257	3	178.0813	31712.95	95138.86

229	261	1	182.0813	33153.6	33153.6
230	263	1	184.0813	33885.93	33885.93
231	266	2	187.0813	34999.42	69998.84
232	267	2	188.0813	35374.58	70749.16
233	271	2	192.0813	36895.23	73790.46
234	279	1	200.0813	40032.53	40032.53
235	281	2	202.0813	40836.86	81673.71
236	282	2	203.0813	41242.02	82484.04
237	284	1	205.0813	42058.34	42058.34
238	285	1	206.0813	42469.51	42469.51
239	289	2	210.0813	44134.16	88268.32
240	290	1	211.0813	44555.32	44555.32
241	293	2	214.0813	45830.81	91661.62
242	294	1	215.0813	46259.97	46259.97
243	300	1	221.0813	48876.95	48876.95
244	301	1	222.0813	49320.11	49320.11
245	302	1	223.0813	49765.27	49765.27
246	306	1	227.0813	51565.92	51565.92
247	309	1	230.0813	52937.41	52937.41
248	310	1	231.0813	53398.57	53398.57
249	312	1	233.0813	54326.9	54326.9
250	313	1	234.0813	54794.06	54794.06
251	316	1	237.0813	56207.55	56207.55
252	318	1	239.0813	57159.87	57159.87
253	319	1	240.0813	57639.04	57639.04
254	320	3	241.0813	58120.2	174360.6
255	326	1	247.0813	61049.18	61049.18
256	329	1	250.0813	62540.66	62540.66
257	330	2	251.0813	63041.83	126083.7
258	331	1	252.0813	63544.99	63544.99
259	335	1	256.0813	65577.64	65577.64
260	336	1	257.0813	66090.8	66090.8
261	337	1	258.0813	66605.96	66605.96
262	339	1	260.0813	67642.29	67642.29
263	341	1	262.0813	68686.61	68686.61
264	342	1	263.0813	69211.78	69211.78
265	343	1	264.0813	69738.94	69738.94
266	346	1	267.0813	71332.43	71332.43
267	348	1	269.0813	72404.75	72404.75
268	353	1	274.0813	75120.57	75120.57
269	356	1	277.0813	76774.05	76774.05
270	357	1	278.0813	77329.22	77329.22
271	358	1	279.0813	77886.38	77886.38

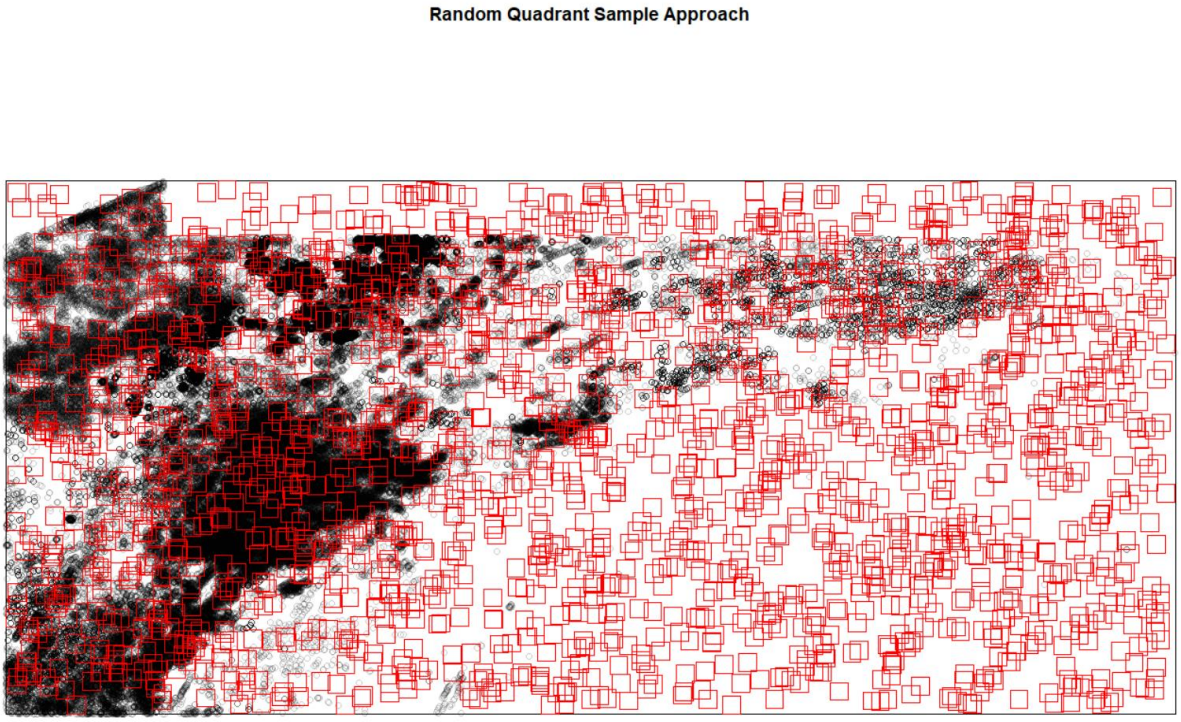
272	359	1	280.0813	78445.54	78445.54
273	360	1	281.0813	79006.7	79006.7
274	361	1	282.0813	79569.87	79569.87
275	363	2	284.0813	80702.19	161404.4
276	366	1	287.0813	82415.68	82415.68
277	367	1	288.0813	82990.84	82990.84
278	368	1	289.0813	83568.01	83568.01
279	369	2	290.0813	84147.17	168294.3
280	371	1	292.0813	85311.49	85311.49
281	372	1	293.0813	85896.66	85896.66
282	374	1	295.0813	87072.98	87072.98
283	376	2	297.0813	88257.31	176514.6
284	378	1	299.0813	89449.63	89449.63
285	383	1	304.0813	92465.44	92465.44
286	384	1	305.0813	93074.61	93074.61
287	385	1	306.0813	93685.77	93685.77
288	386	1	307.0813	94298.93	94298.93
289	387	2	308.0813	94914.1	189828.2
290	389	1	310.0813	96150.42	96150.42
291	390	1	311.0813	96771.58	96771.58
292	391	1	312.0813	97394.75	97394.75
293	395	1	316.0813	99907.4	99907.4
294	397	2	318.0813	101175.7	202351.4
295	412	1	333.0813	110943.2	110943.2
296	416	1	337.0813	113623.8	113623.8
297	418	1	339.0813	114976.1	114976.1
298	445	1	366.0813	134015.5	134015.5
299	446	1	367.0813	134748.7	134748.7
300	449	1	370.0813	136960.2	136960.2
301	450	2	371.0813	137701.3	275402.7
302	451	1	372.0813	138444.5	138444.5
303	452	2	373.0813	139189.7	278379.3
304	461	1	382.0813	145986.1	145986.1
305	467	1	388.0813	150607.1	150607.1
306	468	1	389.0813	151384.3	151384.3
307	471	1	392.0813	153727.8	153727.8
308	478	1	399.0813	159265.9	159265.9
309	482	1	403.0813	162474.5	162474.5
310	484	1	405.0813	164090.9	164090.9
311	486	1	407.0813	165715.2	165715.2
312	487	2	408.0813	166530.4	333060.7
313	488	1	409.0813	167347.5	167347.5
314	495	1	416.0813	173123.7	173123.7

315	496	1	417.0813	173956.8	173956.8
316	498	1	419.0813	175629.1	175629.1
317	500	1	421.0813	177309.5	177309.5
318	509	1	430.0813	184969.9	184969.9
319	510	1	431.0813	185831.1	185831.1
320	514	1	435.0813	189295.7	189295.7
321	516	1	437.0813	191040.1	191040.1
322	517	1	438.0813	191915.2	191915.2
323	521	2	442.0813	195435.9	390871.8
324	522	1	443.0813	196321.1	196321.1
325	523	1	444.0813	197208.2	197208.2
326	524	2	445.0813	198097.4	396194.8
327	525	1	446.0813	198988.5	198988.5
328	532	1	453.0813	205282.7	205282.7
329	533	1	454.0813	206189.8	206189.8
330	546	1	467.0813	218165	218165
331	550	1	471.0813	221917.6	221917.6
332	552	1	473.0813	223805.9	223805.9
333	560	1	481.0813	231439.2	231439.2
334	561	1	482.0813	232402.4	232402.4
335	563	2	484.0813	234334.7	468669.4
336	564	1	485.0813	235303.9	235303.9
337	566	1	487.0813	237248.2	237248.2
338	568	1	489.0813	239200.5	239200.5
339	569	1	490.0813	240179.7	240179.7
340	578	1	499.0813	249082.2	249082.2
341	579	1	500.0813	250081.3	250081.3
342	598	1	519.0813	269445.4	269445.4
343	609	1	530.0813	280986.2	280986.2
344	610	2	531.0813	282047.4	564094.7
345	626	2	547.0813	299298	598595.9
346	633	1	554.0813	307006.1	307006.1
347	641	1	562.0813	315935.4	315935.4
348	651	1	572.0813	327277	327277
349	661	1	582.0813	338818.7	338818.7
350	665	1	586.0813	343491.3	343491.3
351	667	1	588.0813	345839.6	345839.6
352	669	1	590.0813	348196	348196
353	684	1	605.0813	366123.4	366123.4
354	690	2	611.0813	373420.4	746840.7
355	694	1	615.0813	378325	378325
356	698	1	619.0813	383261.7	383261.7
357	706	1	627.0813	393231	393231

358	712	1	633.0813	400791.9	400791.9
359	733	1	654.0813	427822.4	427822.4
360	742	1	663.0813	439676.8	439676.8
361	762	1	683.0813	466600.1	466600.1
362	786	1	707.0813	499964	499964
363	811	1	732.0813	535943	535943
364	816	1	737.0813	543288.9	543288.9
365	833	1	754.0813	568638.6	568638.6
366	869	1	790.0813	624228.5	624228.5
367	877	1	798.0813	636933.8	636933.8
368	898	1	819.0813	670894.2	670894.2
369	960	1	881.0813	776304.3	776304.3
370	985	1	906.0813	820983.3	820983.3
371	1008	1	929.0813	863192.1	863192.1
372	1010	1	931.0813	866912.4	866912.4
373	1015	1	936.0813	876248.2	876248.2
374	1042	1	963.0813	927525.6	927525.6
375	1095	1	1016.081	1032421	1032421
376	1106	1	1027.081	1054896	1054896
377	1235	1	1156.081	1336524	1336524
378	1242	1	1163.081	1352758	1352758
379	1553	1	1474.081	2172916	2172916
380	1651	1	1572.081	2471440	2471440
381	1666	1	1587.081	2518827	2518827
382	1790	1	1711.081	2927799	2927799
383	1841	1	1762.081	3104931	3104931
384	2110	1	2031.081	4125291	4125291
Totals		1980			64421548

II. Random quadrant sample approach

a. Map



b. Table

	K	X	$K-\mu$	$(K-\mu)^2$	$X(K-\mu)^2$
1	0	919	-78.9187	6228.159	5723678
2	74	5	-4.91869	24.19348	120.9674
3	689	2	610.0813	372199.2	744398.4
4	154	2	75.08131	5637.204	11274.41
5	32	4	-46.9187	2201.363	8805.453
6	491	1	412.0813	169811	169811
7	1	58	-77.9187	6071.322	352136.7
8	269	1	190.0813	36130.91	36130.91
9	99	4	20.08131	403.2591	1613.037
10	31	4	-47.9187	2296.201	9184.802
11	552	1	473.0813	223805.9	223805.9
12	86	4	7.081313	50.145	200.58
13	49	4	-29.9187	895.1278	3580.511
14	103	4	24.08131	579.9096	2319.639
15	71	7	-7.91869	62.7056	438.9392
16	78	3	-0.91869	0.843986	2.531957
17	14	8	-64.9187	4214.436	33715.49
18	92	2	13.08131	171.1208	342.2415

19	151	3	72.08131	5195.716	15587.15
20	230	2	151.0813	22825.56	45651.13
21	137	2	58.08131	3373.439	6746.878
22	39	9	-39.9187	1593.502	14341.51
23	181	2	102.0813	10420.59	20841.19
24	482	2	403.0813	162474.5	324949.1
25	152	1	73.08131	5340.878	5340.878
26	111	3	32.08131	1029.211	3087.632
27	60	4	-18.9187	357.9167	1431.667
28	5	19	-73.9187	5463.972	103815.5
29	48	2	-30.9187	955.9652	1911.93
30	45	6	-33.9187	1150.477	6902.864
31	497	1	418.0813	174792	174792
32	16	11	-62.9187	3958.761	43546.37
33	95	2	16.08131	258.6086	517.2173
34	911	1	832.0813	692359.3	692359.3
35	42	5	-36.9187	1362.989	6814.947
36	94	4	15.08131	227.446	909.784
37	696	1	617.0813	380789.3	380789.3
38	64	7	-14.9187	222.5672	1557.971
39	9	16	-69.9187	4888.623	78217.96
40	10	8	-68.9187	4749.785	37998.28
41	53	5	-25.9187	671.7783	3358.892
42	81	5	2.081313	4.331864	21.65932
43	455	2	376.0813	141437.2	282874.3
44	244	3	165.0813	27251.84	81755.52
45	346	2	267.0813	71332.43	142664.9
46	217	5	138.0813	19066.45	95332.25
47	30	5	-48.9187	2393.038	11965.19
48	12	12	-66.9187	4478.111	53737.33
49	171	1	92.08131	8478.968	8478.968
50	224	3	145.0813	21048.59	63145.76
51	75	3	-3.91869	15.35611	46.06832
52	59	6	-19.9187	396.7541	2380.525
53	8	8	-70.9187	5029.46	40235.68
54	107	3	28.08131	788.5601	2365.68
55	29	11	-49.9187	2491.875	27410.63
56	647	1	568.0813	322716.4	322716.4
57	361	1	282.0813	79569.87	79569.87
58	66	5	-12.9187	166.8925	834.4624
59	352	1	273.0813	74573.4	74573.4
60	25	4	-53.9187	2907.225	11628.9
61	444	1	365.0813	133284.4	133284.4

62	36	4	-42.9187	1842.014	7368.055
63	162	2	83.08131	6902.505	13805.01
64	314	1	235.0813	55263.22	55263.22
65	56	6	-22.9187	525.2662	3151.597
66	54	2	-24.9187	620.941	1241.882
67	422	1	343.0813	117704.8	117704.8
68	163	1	84.08131	7069.667	7069.667
69	500	1	421.0813	177309.5	177309.5
70	1151	1	1072.081	1149358	1149358
71	574	2	495.0813	245105.5	490211
72	112	4	33.08131	1094.373	4377.493
73	519	1	440.0813	193671.6	193671.6
74	6	12	-72.9187	5317.135	63805.62
75	401	1	322.0813	103736.4	103736.4
76	89	3	10.08131	101.6329	304.8986
77	447	1	368.0813	135483.9	135483.9
78	170	2	91.08131	8295.806	16591.61
79	329	1	250.0813	62540.66	62540.66
80	69	7	-9.91869	98.38035	688.6624
81	1073	1	994.0813	988197.7	988197.7
82	15	9	-63.9187	4085.599	36770.39
83	3	22	-75.9187	5763.647	126800.2
84	592	1	513.0813	263252.4	263252.4
85	20	4	-58.9187	3471.412	13885.65
86	80	4	1.081313	1.169238	4.676952
87	238	3	159.0813	25306.86	75920.59
88	481	1	402.0813	161669.4	161669.4
89	4	16	-74.9187	5612.81	89804.95
90	13	9	-65.9187	4345.273	39107.46
91	50	5	-28.9187	836.2905	4181.452
92	322	1	243.0813	59088.52	59088.52
93	172	3	93.08131	8664.131	25992.39
94	225	1	146.0813	21339.75	21339.75
95	155	4	76.08131	5788.366	23153.46
96	67	3	-11.9187	142.0551	426.1653
97	38	5	-40.9187	1674.339	8371.695
98	93	3	14.08131	198.2834	594.8501
99	34	2	-44.9187	2017.688	4035.377
100	290	1	211.0813	44555.32	44555.32
101	797	1	718.0813	515640.8	515640.8
102	310	1	231.0813	53398.57	53398.57
103	409	1	330.0813	108953.7	108953.7
104	37	4	-41.9187	1757.176	7028.705

105	2	41	-76.9187	5916.484	242575.9
106	228	2	149.0813	22225.24	44450.48
107	63	4	-15.9187	253.4046	1013.618
108	538	1	459.0813	210755.7	210755.7
109	261	4	182.0813	33153.6	132614.4
110	150	4	71.08131	5052.553	20210.21
111	109	2	30.08131	904.8854	1809.771
112	24	4	-54.9187	3016.062	12064.25
113	17	5	-61.9187	3833.924	19169.62
114	341	1	262.0813	68686.61	68686.61
115	197	3	118.0813	13943.2	41829.59
116	301	2	222.0813	49320.11	98640.22
117	134	3	55.08131	3033.951	9101.853
118	354	1	275.0813	75669.73	75669.73
119	11	8	-67.9187	4612.948	36903.58
120	102	3	23.08131	532.747	1598.241
121	26	6	-52.9187	2800.387	16802.32
122	510	1	431.0813	185831.1	185831.1
123	242	2	163.0813	26595.51	53191.03
124	159	3	80.08131	6413.017	19239.05
125	27	8	-51.9187	2695.55	21564.4
126	180	1	101.0813	10217.43	10217.43
127	120	2	41.08131	1687.674	3375.349
128	276	2	197.0813	38841.04	77682.09
129	227	2	148.0813	21928.08	43856.15
130	548	1	469.0813	220037.3	220037.3
131	406	1	327.0813	106982.2	106982.2
132	44	5	-34.9187	1219.315	6096.573
133	448	2	369.0813	136221	272442
134	73	4	-5.91869	35.03085	140.1234
135	72	2	-6.91869	47.86823	95.73646
136	921	1	842.0813	709100.9	709100.9
137	194	2	115.0813	13243.71	26487.42
138	19	6	-59.9187	3590.249	21541.49
139	58	3	-20.9187	437.5915	1312.774
140	168	2	89.08131	7935.48	15870.96
141	125	1	46.08131	2123.487	2123.487
142	293	3	214.0813	45830.81	137492.4
143	116	3	37.08131	1375.024	4125.071
144	946	1	867.0813	751830	751830
145	76	6	-2.91869	8.518733	51.1124
146	131	1	52.08131	2712.463	2712.463
147	226	4	147.0813	21632.91	86531.65

148	435	1	356.0813	126793.9	126793.9
149	442	1	363.0813	131828	131828
150	83	2	4.081313	16.65712	33.31423
151	342	1	263.0813	69211.78	69211.78
152	274	2	195.0813	38056.72	76113.44
153	123	1	44.08131	1943.162	1943.162
154	7	14	-71.9187	5172.298	72412.17
155	23	10	-55.9187	3126.9	31269
156	40	4	-38.9187	1514.664	6058.657
157	608	1	529.0813	279927	279927
158	438	1	359.0813	128939.4	128939.4
159	663	1	584.0813	341151	341151
160	62	4	-16.9187	286.242	1144.968
161	308	1	229.0813	52478.25	52478.25
162	332	1	253.0813	64050.15	64050.15
163	333	2	254.0813	64557.31	129114.6
164	930	1	851.0813	724339.4	724339.4
165	115	2	36.08131	1301.861	2603.722
166	41	7	-37.9187	1437.827	10064.79
167	204	1	125.0813	15645.33	15645.33
168	136	1	57.08131	3258.276	3258.276
169	298	3	219.0813	47996.62	143989.9
170	215	1	136.0813	18518.12	18518.12
171	279	2	200.0813	40032.53	80065.06
172	33	9	-45.9187	2108.526	18976.73
173	35	2	-43.9187	1928.851	3857.702
174	268	1	189.0813	35751.74	35751.74
175	113	5	34.08131	1161.536	5807.68
176	612	2	533.0813	284175.7	568351.4
177	404	1	325.0813	105677.9	105677.9
178	255	2	176.0813	31004.63	62009.26
179	258	1	179.0813	32070.12	32070.12
180	439	2	360.0813	129658.6	259317.1
181	87	2	8.081313	65.30762	130.6152
182	698	1	619.0813	383261.7	383261.7
183	218	2	139.0813	19343.61	38687.22
184	55	4	-23.9187	572.1036	2288.414
185	121	1	42.08131	1770.837	1770.837
186	488	1	409.0813	167347.5	167347.5
187	140	3	61.08131	3730.927	11192.78
188	190	2	111.0813	12339.06	24678.12
189	1504	1	1425.081	2030857	2030857
190	207	2	128.0813	16404.82	32809.65

191	193	3	114.0813	13014.55	39043.64
192	47	4	-31.9187	1018.803	4075.21
193	398	1	319.0813	101812.9	101812.9
194	568	2	489.0813	239200.5	478401.1
195	98	1	19.08131	364.0965	364.0965
196	77	3	-1.91869	3.681359	11.04408
197	61	6	-17.9187	321.0793	1926.476
198	22	4	-56.9187	3239.737	12958.95
199	350	2	271.0813	73485.08	146970.2
200	1107	1	1028.081	1056951	1056951
201	211	2	132.0813	17445.47	34890.95
202	272	3	193.0813	37280.39	111841.2
203	85	1	6.081313	36.98237	36.98237
204	132	2	53.08131	2817.626	5635.252
205	118	6	39.08131	1527.349	9164.094
206	203	1	124.0813	15396.17	15396.17
207	68	4	-10.9187	119.2177	476.8709
208	306	2	227.0813	51565.92	103131.8
209	303	1	224.0813	50212.43	50212.43
210	515	1	436.0813	190166.9	190166.9
211	356	2	277.0813	76774.05	153548.1
212	487	1	408.0813	166530.4	166530.4
213	384	2	305.0813	93074.61	186149.2
214	687	1	608.0813	369762.9	369762.9
215	104	2	25.08131	629.0723	1258.145
216	57	3	-21.9187	480.4288	1441.287
217	251	1	172.0813	29611.98	29611.98
218	189	3	110.0813	12117.9	36353.69
219	144	3	65.08131	4235.577	12706.73
220	51	6	-27.9187	779.4531	4676.718
221	330	1	251.0813	63041.83	63041.83
222	499	2	420.0813	176468.3	352936.6
223	105	3	26.08131	680.2349	2040.705
224	96	1	17.08131	291.7713	291.7713
225	259	4	180.0813	32429.28	129717.1
226	250	1	171.0813	29268.82	29268.82
227	199	1	120.0813	14419.52	14419.52
228	1844	1	1765.081	3115512	3115512
229	65	2	-13.9187	193.7298	387.4597
230	232	2	153.0813	23433.89	46867.78
231	791	1	712.0813	507059.8	507059.8
232	129	2	50.08131	2508.138	5016.276
233	267	3	188.0813	35374.58	106123.7

234	165	2	86.08131	7409.992	14819.98
235	239	1	160.0813	25626.03	25626.03
236	166	1	87.08131	7583.155	7583.155
237	278	2	199.0813	39633.37	79266.74
238	79	7	0.081313	0.006612	0.046283
239	596	1	517.0813	267373.1	267373.1
240	347	1	268.0813	71867.59	71867.59
241	292	1	213.0813	45403.65	45403.65
242	101	3	22.08131	487.5844	1462.753
243	468	1	389.0813	151384.3	151384.3
244	174	1	95.08131	9040.456	9040.456
245	626	1	547.0813	299298	299298
246	359	1	280.0813	78445.54	78445.54
247	43	5	-35.9187	1290.152	6450.76
248	177	2	98.08131	9619.944	19239.89
249	128	5	49.08131	2408.975	12044.88
250	185	3	106.0813	11253.24	33759.73
251	148	1	69.08131	4772.228	4772.228
252	443	1	364.0813	132555.2	132555.2
253	21	4	-57.9187	3354.574	13418.3
254	183	1	104.0813	10832.92	10832.92
255	257	1	178.0813	31712.95	31712.95
256	130	1	51.08131	2609.301	2609.301
257	222	2	143.0813	20472.26	40944.52
258	82	1	3.081313	9.494491	9.494491
259	145	2	66.08131	4366.74	8733.48
260	471	1	392.0813	153727.8	153727.8
261	553	2	474.0813	224753.1	449506.2
262	127	2	48.08131	2311.813	4623.625
263	271	1	192.0813	36895.23	36895.23
264	153	2	74.08131	5488.041	10976.08
265	100	2	21.08131	444.4218	888.8435
266	106	1	27.08131	733.3975	733.3975
267	494	1	415.0813	172292.5	172292.5
268	1255	1	1176.081	1383167	1383167
269	560	1	481.0813	231439.2	231439.2
270	157	1	78.08131	6096.691	6096.691
271	323	1	244.0813	59575.69	59575.69
272	169	4	90.08131	8114.643	32458.57
273	46	1	-32.9187	1083.64	1083.64
274	210	2	131.0813	17182.31	34364.62
275	521	1	442.0813	195435.9	195435.9
276	243	2	164.0813	26922.68	53845.35

277	681	1	602.0813	362501.9	362501.9
278	90	3	11.08131	122.7955	368.3865
279	492	1	413.0813	170636.2	170636.2
280	377	1	298.0813	88852.47	88852.47
281	514	1	435.0813	189295.7	189295.7
282	652	1	573.0813	328422.2	328422.2
283	167	2	88.08131	7758.318	15516.64
284	400	1	321.0813	103093.2	103093.2
285	277	1	198.0813	39236.21	39236.21
286	117	2	38.08131	1450.186	2900.373
287	206	4	127.0813	16149.66	64598.64
288	351	1	272.0813	74028.24	74028.24
289	559	2	480.0813	230478.1	460956.1
290	70	2	-8.91869	79.54298	159.086
291	1085	1	1006.081	1012200	1012200
292	270	1	191.0813	36512.07	36512.07
293	382	1	303.0813	91858.28	91858.28
294	637	1	558.0813	311454.8	311454.8
295	372	1	293.0813	85896.66	85896.66
296	601	1	522.0813	272568.9	272568.9
297	558	1	479.0813	229518.9	229518.9
298	1488	1	1409.081	1985510	1985510
299	363	2	284.0813	80702.19	161404.4
300	88	3	9.081313	82.47025	247.4107
301	408	1	329.0813	108294.5	108294.5
302	534	1	455.0813	207099	207099
303	149	1	70.08131	4911.39	4911.39
304	433	1	354.0813	125373.6	125373.6
305	801	1	722.0813	521401.4	521401.4
306	28	3	-50.9187	2592.713	7778.138
307	690	1	611.0813	373420.4	373420.4
308	178	1	99.08131	9817.107	9817.107
309	358	1	279.0813	77886.38	77886.38
310	198	1	119.0813	14180.36	14180.36
311	97	3	18.08131	326.9339	980.8017
312	184	2	105.0813	11042.08	22084.16
313	364	1	285.0813	81271.36	81271.36
314	2030	1	1951.081	3806718	3806718
315	135	1	56.08131	3145.114	3145.114
316	436	1	357.0813	127507.1	127507.1
317	264	1	185.0813	34255.09	34255.09
318	1089	1	1010.081	1020264	1020264
319	546	1	467.0813	218165	218165

320	302	1	223.0813	49765.27	49765.27
321	1142	1	1063.081	1130142	1130142
322	550	1	471.0813	221917.6	221917.6
323	411	2	332.0813	110278	220556
324	164	1	85.08131	7238.83	7238.83
325	334	1	255.0813	65066.48	65066.48
326	691	1	612.0813	374643.5	374643.5
327	381	1	302.0813	91253.12	91253.12
328	473	1	394.0813	155300.1	155300.1
329	317	1	238.0813	56682.71	56682.71
330	390	1	311.0813	96771.58	96771.58
331	528	1	449.0813	201674	201674
332	192	2	113.0813	12787.38	25574.77
333	1874	1	1795.081	3222317	3222317
334	221	2	142.0813	20187.1	40374.2
335	114	2	35.08131	1230.699	2461.397
336	319	1	240.0813	57639.04	57639.04
337	423	1	344.0813	118392	118392
338	524	1	445.0813	198097.4	198097.4
339	280	1	201.0813	40433.69	40433.69
340	309	1	230.0813	52937.41	52937.41
341	563	1	484.0813	234334.7	234334.7
342	283	1	204.0813	41649.18	41649.18
343	275	1	196.0813	38447.88	38447.88
344	122	2	43.08131	1856	3711.999
345	216	2	137.0813	18791.29	37582.57
346	316	1	237.0813	56207.55	56207.55
347	458	1	379.0813	143702.6	143702.6
348	18	3	-60.9187	3711.086	11133.26
349	366	1	287.0813	82415.68	82415.68
350	1116	1	1037.081	1075538	1075538
351	1333	1	1254.081	1572720	1572720
352	253	2	174.0813	30304.3	60608.61
353	368	1	289.0813	83568.01	83568.01
354	108	1	29.08131	845.7228	845.7228
355	629	1	550.0813	302589.5	302589.5
356	517	1	438.0813	191915.2	191915.2
357	288	1	209.0813	43715	43715
358	823	1	744.0813	553657	553657
359	355	1	276.0813	76220.89	76220.89
360	967	1	888.0813	788688.4	788688.4
361	223	1	144.0813	20759.42	20759.42
362	650	1	571.0813	326133.9	326133.9

363	622	1	543.0813	294937.3	294937.3
364	719	1	640.0813	409704.1	409704.1
365	594	1	515.0813	265308.8	265308.8
366	249	1	170.0813	28927.65	28927.65
367	142	2	63.08131	3979.252	7958.504
368	484	1	405.0813	164090.9	164090.9
369	413	1	334.0813	111610.3	111610.3
370	52	1	-26.9187	724.6157	724.6157
371	744	1	665.0813	442333.2	442333.2
372	138	1	59.08131	3490.602	3490.602
373	196	1	117.0813	13708.03	13708.03
374	233	1	154.0813	23741.05	23741.05
375	837	1	758.0813	574687.3	574687.3
376	266	1	187.0813	34999.42	34999.42
377	91	1	12.08131	145.9581	145.9581
378	320	1	241.0813	58120.2	58120.2
379	158	2	79.08131	6253.854	12507.71
380	212	1	133.0813	17710.64	17710.64
381	1043	1	964.0813	929452.8	929452.8
382	756	1	677.0813	458439.1	458439.1
383	321	1	242.0813	58603.36	58603.36
384	459	1	380.0813	144461.8	144461.8
385	543	1	464.0813	215371.5	215371.5
386	147	1	68.08131	4635.065	4635.065
387	175	1	96.08131	9231.619	9231.619
388	605	1	526.0813	276761.5	276761.5
389	126	1	47.08131	2216.65	2216.65
390	173	1	94.08131	8851.293	8851.293
391	777	1	698.0813	487317.5	487317.5
Totals		1980			68095208

III. Summary

a. Regular quadrant sample approach

VMR = 64421548 / (1980-1) / 78.91869 = 412.4825

VMR > 1, indicating the data set is clustered.

b. Random quadrant sample approach

VMR = 68095208 / (1980-1) / 78.91869 = 436.0044

VMR > 1, indicating the data set is clustered.