



EXAMINING THE IMPACT OF
FOOD DESERTS
& FOOD IMBALANCE
ON PUBLIC HEALTH IN

...

Birmingham, Alabama

TECHNICAL APPENDIX

July 2010

The following document provides results
from the analysis in the full report.

Tract Level Regressions on Years of Potential Life Lost
Using Log[M'stream Grocer Dist.] and Log[Ratio]

The REG Procedure

Model: MODEL1

Dependent Variable: ypllpc Per Capita Years of Potential Life Lost, All Causes

Number of Observations Read 95
Number of Observations Used 95

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	5908.80009	5908.80009	8.33	0.0049
Error	93	65991	709.58224		
Corrected Total	94	71900			

Root MSE 26.63798 R-Square 0.0822
Dependent Mean 82.92631 Adj R-Sq 0.0723
Coeff Var 32.12248

Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	Intercept	1	71.43465	4.82991	14.79	<.0001
ratio	Log[(M'stream Grocer Dist.)/(Fringe Food Dist.)]	1	12.81146	4.43967	2.89	0.0049

Tract Level Regressions on Years of Potential Life Lost
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The REG Procedure

Model: MODEL1

Dependent Variable: ypllpc Per Capita Years of Potential Life Lost, All Causes

Number of Observations Read 95
Number of Observations Used 95

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	47159	23580	87.68	<.0001
Error	92	24741	268.91948		
Corrected Total	94	71900			

Root MSE 16.39876 R-Square 0.6559
Dependent Mean 82.92631 Adj R-Sq 0.6484
Coeff Var 19.77510

Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	Intercept	1	35.04134	4.18036	8.38	<.0001
ratio	Log[(M'stream Grocer Dist.)/(Fringe Food Dist.)]	1	1.32493	2.88620	0.46	0.6473
hhinc25pct	Pct of H'holds w/Income < \$25,000	1	1.15519	0.09327	12.39	<.0001

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Tract Level Regressions on Years of Potential Life Lost
Using Log[M'stream Grocer Dist.] and Log[Ratio]

The REG Procedure

Model: MODEL1

Dependent Variable: yplldietpc Per Capita Years of Potential Life Lost, Diet-Related Causes

Number of Observations Read 95
Number of Observations Used 95

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	546.20587	546.20587	9.84	0.0023
Error	93	5163.79267	55.52465		
Corrected Total	94	5709.99854			

Root MSE 7.45149 R-Square 0.0957
Dependent Mean 17.94573 Adj R-Sq 0.0859
Coeff Var 41.52234

Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	Intercept	1	14.45182	1.35108	10.70	<.0001
ratio	Log[(M'stream Grocer Dist.)/(Fringe Food Dist.)]	1	3.89518	1.24191	3.14	0.0023

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Tract Level Regressions on Years of Potential Life Lost
Using Log[M'stream Grocer Dist.] and Log[Ratio]

The REG Procedure

Model: MODEL1

Dependent Variable: yplldietpc Per Capita Years of Potential Life Lost, Diet-Related Causes

Number of Observations Read 95
Number of Observations Used 95

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	2910.45522	1455.22761	47.82	<.0001
Error	92	2799.54332	30.42982		
Corrected Total	94	5709.99854			

Root MSE 5.51632 R-Square 0.5097
Dependent Mean 17.94573 Adj R-Sq 0.4991
Coeff Var 30.73892

Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	Intercept	1	5.73911	1.40622	4.08	<.0001
ratio	Log[(M'stream Grocer Dist.)/(Fringe Food Dist.)]	1	1.14525	0.97088	1.18	0.2412
hhinc25pct	Pct of H'holds w/Income < \$25,000	1	0.27656	0.03138	8.81	<.0001

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Tract Level Regressions on Years of Potential Life Lost
Using Log[M'stream Grocer Dist.] and Log[Ratio]

The REG Procedure

Model: MODEL1

Dependent Variable: ypllcarpc Per Capita Years of Potential Life Lost, Cardiovascular Disease

Number of Observations Read 95
Number of Observations Used 95

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	150.57829	150.57829	5.58	0.0202
Error	93	2508.40066	26.97205		
Corrected Total	94	2658.97895			

Root MSE 5.19346 R-Square 0.0566
Dependent Mean 10.04124 Adj R-Sq 0.0465
Coeff Var 51.72133

Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	Intercept	1	8.20675	0.94166	8.72	<.0001
ratio	Log[(M'stream Grocer Dist.)/(Fringe Food Dist.)]	1	2.04517	0.86558	2.36	0.0202

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Tract Level Regressions on Years of Potential Life Lost
Using Log[M'stream Grocer Dist.] and Log[Ratio]

The REG Procedure

Model: MODEL1

Dependent Variable: ypllcarpc Per Capita Years of Potential Life Lost, Cardiovascular Disease

Number of Observations Read 95
Number of Observations Used 95

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	1364.11665	682.05832	48.46	<.0001
Error	92	1294.86230	14.07459		
Corrected Total	94	2658.97895			

Root MSE 3.75161 R-Square 0.5130
Dependent Mean 10.04124 Adj R-Sq 0.5024
Coeff Var 37.36204

Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	Intercept	1	1.96461	0.95636	2.05	0.0428
ratio	Log[(M'stream Grocer Dist.)/(Fringe Food Dist.)]	1	0.07502	0.66029	0.11	0.9098
hhinc25pct	Pct of H'holds w/Income < \$25,000	1	0.19814	0.02134	9.29	<.0001

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Tract Level Regressions on Years of Potential Life Lost
Using Log[M'stream Grocer Dist.] and Log[Ratio]

The REG Procedure

Model: MODEL1

Dependent Variable: yplllcanpc Per Capita Years of Potential Life Lost, Cancer

Number of Observations Read 95
Number of Observations Used 95

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	39.91661	39.91661	6.33	0.0136
Error	93	586.72638	6.30889		
Corrected Total	94	626.64299			

Root MSE 2.51175 R-Square 0.0637
Dependent Mean 4.50853 Adj R-Sq 0.0536
Coeff Var 55.71106

Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	Intercept	1	3.56401	0.45542	7.83	<.0001
ratio	Log[(M'stream Grocer Dist.)/(Fringe Food Dist.)]	1	1.05299	0.41863	2.52	0.0136

Tract Level Regressions on Years of Potential Life Lost
Using Log[M'stream Grocer Dist.] and Log[Ratio]

The REG Procedure

Model: MODEL1

Dependent Variable: yplllcanpc Per Capita Years of Potential Life Lost, Cancer

Number of Observations Read 95
Number of Observations Used 95

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	83.88901	41.94451	7.11	0.0013
Error	92	542.75398	5.89950		
Corrected Total	94	626.64299			

Root MSE 2.42889 R-Square 0.1339
Dependent Mean 4.50853 Adj R-Sq 0.1150
Coeff Var 53.87319

Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	Intercept	1	2.37579	0.61917	3.84	0.0002
ratio	Log[(M'stream Grocer Dist.)/(Fringe Food Dist.)]	1	0.67797	0.42749	1.59	0.1162
hhinc25pct	Pct of H'holds w/Income < \$25,000	1	0.03772	0.01381	2.73	0.0076

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Tract Level Regressions on Years of Potential Life Lost
Using Log[M'stream Grocer Dist.] and Log[Ratio]

The REG Procedure

Model: MODEL1

Dependent Variable: yplldiadc Per Capita Years of Potential Life Lost, Diabetes

Number of Observations Read 95
Number of Observations Used 95

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	1.37068	1.37068	1.13	0.2913
Error	93	113.17769	1.21696		
Corrected Total	94	114.54837			

Root MSE 1.10316 R-Square 0.0120
Dependent Mean 1.07876 Adj R-Sq 0.0013
Coeff Var 102.26166

Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	Intercept	1	0.90374	0.20002	4.52	<.0001
ratio	Log[(M'stream Grocer Dist.)/(Fringe Food Dist.)]	1	0.19513	0.18386	1.06	0.2913

Tract Level Regressions on Years of Potential Life Lost
Using Log[M'stream Grocer Dist.] and Log[Ratio]

The REG Procedure

Model: MODEL1

Dependent Variable: yplldiadc Per Capita Years of Potential Life Lost, Diabetes

Number of Observations Read 95
Number of Observations Used 95

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	15.32521	7.66260	7.10	0.0014
Error	92	99.22316	1.07851		
Corrected Total	94	114.54837			

Root MSE 1.03851 R-Square 0.1338
Dependent Mean 1.07876 Adj R-Sq 0.1150
Coeff Var 96.26901

Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	Intercept	1	0.23437	0.26474	0.89	0.3783
ratio	Log[(M'stream Grocer Dist.)/(Fringe Food Dist.)]	1	-0.01614	0.18278	-0.09	0.9298
hhinc25pct	Pct of H'holds w/Income < \$25,000	1	0.02125	0.00591	3.60	0.0005

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Tract Level Regressions on Years of Potential Life Lost
Using Log[M'stream Grocer Dist.] and Log[Ratio]

The REG Procedure

Model: MODEL1

Dependent Variable: ypllpc Per Capita Years of Potential Life Lost, All Causes

Number of Observations Read 95
Number of Observations Used 95

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	3453.56589	3453.56589	4.69	0.0329
Error	93	68446	735.98261		
Corrected Total	94	71900			

Root MSE 27.12900 R-Square 0.0480
Dependent Mean 82.92631 Adj R-Sq 0.0378
Coeff Var 32.71458

Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	Intercept	1	82.77924	2.78420	29.73	<.0001
meandistgr	Log[M'stream Grocer Dist.]	1	-10.46481	4.83094	-2.17	0.0329

Tract Level Regressions on Years of Potential Life Lost
Using Log[M'stream Grocer Dist.] and Log[Ratio]

The REG Procedure

Model: MODEL1

Dependent Variable: ypllpc Per Capita Years of Potential Life Lost, All Causes

Number of Observations Read 95
Number of Observations Used 95

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	47669	23834	90.49	<.0001
Error	92	24231	263.38331		
Corrected Total	94	71900			

Root MSE 16.22909 R-Square 0.6630
Dependent Mean 82.92631 Adj R-Sq 0.6557
Coeff Var 19.57049

Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	Intercept	1	33.65863	4.14090	8.13	<.0001
meandistgr	Log[M'stream Grocer Dist.]	1	4.56502	3.11408	1.47	0.1461
hhinc25pct	Pct of H'holds w/Income < \$25,000	1	1.22039	0.09419	12.96	<.0001

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Tract Level Regressions on Years of Potential Life Lost
Using Log[M'stream Grocer Dist.] and Log[Ratio]

The REG Procedure

Model: MODEL1

Dependent Variable: yplldietpc Per Capita Years of Potential Life Lost, Diet-Related Causes

Number of Observations Read 95
Number of Observations Used 95

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	98.83388	98.83388	1.64	0.2038
Error	93	5611.16466	60.33510		
Corrected Total	94	5709.99854			

Root MSE 7.76757 R-Square 0.0173
Dependent Mean 17.94573 Adj R-Sq 0.0067
Coeff Var 43.28365

Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	Intercept	1	17.92085	0.79717	22.48	<.0001
meandistgr	Log[M'stream Grocer Dist.]	1	-1.77031	1.38319	-1.28	0.2038

Tract Level Regressions on Years of Potential Life Lost
Using Log[M'stream Grocer Dist.] and Log[Ratio]

The REG Procedure

Model: MODEL1

Dependent Variable: yplldietpc Per Capita Years of Potential Life Lost, Diet-Related Causes

Number of Observations Read 95
Number of Observations Used 95

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	2984.40939	1492.20470	50.37	<.0001
Error	92	2725.58915	29.62597		
Corrected Total	94	5709.99854			

Root MSE 5.44297 R-Square 0.5227
Dependent Mean 17.94573 Adj R-Sq 0.5123
Coeff Var 30.33019

Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	Intercept	1	5.37227	1.38879	3.87	0.0002
meandistgr	Log[M'stream Grocer Dist.]	1	2.06928	1.04441	1.98	0.0505
hhinc25pct	Pct of H'holds w/Income < \$25,000	1	0.31177	0.03159	9.87	<.0001

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Tract Level Regressions on Years of Potential Life Lost
Using Log[M'stream Grocer Dist.] and Log[Ratio]

The REG Procedure

Model: MODEL1

Dependent Variable: ypllcarpc Per Capita Years of Potential Life Lost, Cardiovascular Disease

Number of Observations Read 95
Number of Observations Used 95

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	98.41064	98.41064	3.57	0.0618
Error	93	2560.56831	27.53299		
Corrected Total	94	2658.97895			

Root MSE 5.24719 R-Square 0.0370
Dependent Mean 10.04124 Adj R-Sq 0.0267
Coeff Var 52.25639

Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	Intercept	1	10.01641	0.53851	18.60	<.0001
meandistgr	Log[M'stream Grocer Dist.]	1	-1.76652	0.93438	-1.89	0.0618

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Tract Level Regressions on Years of Potential Life Lost
Using Log[M'stream Grocer Dist.] and Log[Ratio]

The REG Procedure

Model: MODEL1

Dependent Variable: yplllcarpc Per Capita Years of Potential Life Lost, Cardiovascular Disease

Number of Observations Read 95
Number of Observations Used 95

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	1381.02948	690.51474	49.71	<.0001
Error	92	1277.94946	13.89076		
Corrected Total	94	2658.97895			

Root MSE 3.72703 R-Square 0.5194
Dependent Mean 10.04124 Adj R-Sq 0.5089
Coeff Var 37.11724

Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	Intercept	1	1.65023	0.95096	1.74	0.0860
meandistgr	Log[M'stream Grocer Dist.]	1	0.79335	0.71515	1.11	0.2702
hhinc25pct	Pct of H'holds w/Income < \$25,000	1	0.20786	0.02163	9.61	<.0001

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Tract Level Regressions on Years of Potential Life Lost
Using Log[M'stream Grocer Dist.] and Log[Ratio]

The REG Procedure

Model: MODEL1

Dependent Variable: yplllcanpc Per Capita Years of Potential Life Lost, Cancer

Number of Observations Read 95
Number of Observations Used 95

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	2.10056	2.10056	0.31	0.5773
Error	93	624.54243	6.71551		
Corrected Total	94	626.64299			

Root MSE 2.59143 R-Square 0.0034
Dependent Mean 4.50853 Adj R-Sq -0.0074
Coeff Var 57.47839

Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	Intercept	1	4.51216	0.26595	16.97	<.0001
meandistgr	Log[M'stream Grocer Dist.]	1	0.25809	0.46146	0.56	0.5773

Tract Level Regressions on Years of Potential Life Lost
Using Log[M'stream Grocer Dist.] and Log[Ratio]

The REG Procedure

Model: MODEL1

Dependent Variable: yplllcanpc Per Capita Years of Potential Life Lost, Cancer

Number of Observations Read 95
Number of Observations Used 95

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	93.03307	46.51654	8.02	0.0006
Error	92	533.60992	5.80011		
Corrected Total	94	626.64299			

Root MSE 2.40834 R-Square 0.1485
Dependent Mean 4.50853 Adj R-Sq 0.1300
Coeff Var 53.41744

Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	Intercept	1	2.28455	0.61449	3.72	0.0003
meandistgr	Log[M'stream Grocer Dist.]	1	0.93968	0.46212	2.03	0.0449
hhinc25pct	Pct of H'holds w/Income < \$25,000	1	0.05534	0.01398	3.96	0.0001

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Tract Level Regressions on Years of Potential Life Lost
Using Log[M'stream Grocer Dist.] and Log[Ratio]

The REG Procedure

Model: MODEL1

Dependent Variable: yplldiadc Per Capita Years of Potential Life Lost, Diabetes

Number of Observations Read 95
Number of Observations Used 95

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	1.58059	1.58059	1.30	0.2569
Error	93	112.96778	1.21471		
Corrected Total	94	114.54837			

Root MSE 1.10214 R-Square 0.0138
Dependent Mean 1.07876 Adj R-Sq 0.0032
Coeff Var 102.16679

Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	Intercept	1	1.07562	0.11311	9.51	<.0001
meandistgr	Log[M'stream Grocer Dist.]	1	-0.22388	0.19626	-1.14	0.2569

Tract Level Regressions on Years of Potential Life Lost
Using Log[M'stream Grocer Dist.] and Log[Ratio]

The REG Procedure

Model: MODEL1

Dependent Variable: ypllldiadc Per Capita Years of Potential Life Lost, Diabetes

Number of Observations Read 95
Number of Observations Used 95

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	15.36355	7.68177	7.13	0.0013
Error	92	99.18483	1.07810		
Corrected Total	94	114.54837			

Root MSE 1.03831 R-Square 0.1341
Dependent Mean 1.07876 Adj R-Sq 0.1153
Coeff Var 96.25041

Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	Intercept	1	0.20836	0.26493	0.79	0.4336
meandistgr	Log[M'stream Grocer Dist.]	1	0.04149	0.19923	0.21	0.8355
hhinc25pct	Pct of H'holds w/Income < \$25,000	1	0.02155	0.00603	3.58	0.0006