U.S. Lighting Market Characterization

Volume I: National Lighting Inventory and Energy Consumption Estimate

Final Report

Appendices H, I and J

Prepared by
Navigant Consulting, Inc.

for
U.S. Department of Energy

Office of Energy Efficiency and Renewable Energy
Building Technologies Program

September 2002

U.S. Lighting Market Characterization

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Prepared for:

Building Technologies Program
Office of Energy Efficiency and Renewable Energy
U.S. Department of Energy

Prepared by:

Navigant Consulting Inc.
1801 K Street, NW Suite 500
Washington DC, 20006

with XENERGY, Inc.
Burlington, MA

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Comments

The Department is interested in receiving input on the material presented in this report. If you have suggestions of better data sources and/or comments on the findings presented in this report, please submit your feedback to Jim Brodrick by September 30, 2003 at the following address:

       James R. Brodrick, Ph.D.
       Program Manager – Lighting Market Characterization Report
       EE-2J / **Forrestal Building**
       U.S. Department of Energy
       1000 Independence Avenue SW
       Washington D.C. 20585-0121

Acknowledgments

TABLE OF CONTENTS *

* Note: This shows the complete table of contents for the report, however this section of the report only includes the final three Appendices – H, I and J.

Appendix H. XenCAP™ Statistical Analysis of Residential Sector Update

This appendix contains the output of the SAS procedure that estimated the residential models for each of the space descriptions. The space descriptions are indicated by the room= designations at the top of each page. Four technologies were estimated for each space description. These are listed in the following table.

Variable	Definition
Compact Fluo	Compact Fluorescent
HHQar	High Intensity Discharge
Incandescent	Incandescent
Tube Fluores	Linear Fluorescent

These technologies are an aggregation of several technologies appearing in the raw data. The mapping of the variables to the technologies is the same for each space type (room) and is shown in the following table.

Lamp type	Aggregation Variable
Compact - Plug-in	Compact Fluo
Compact - Plug-in - reflector	Compact Fluo
Halogen - General Service	HHQar
Halogen - Reflector	HHQar
High pressure sodium	HHQar
Mercury vapor	HHQar
Miscellaneous fluorescent	Tube Fluores
Standard - General Service	Incandescent
Standard - Reflector	HHQar

The models are used to predict the probability that each technology is used in a space type and the lighting hours of operation in each space type. The independent variables included in the models are shown in the following table.

Variable	Definition
bath	Number of bathrooms in the home
bed	Number of bedrooms in the home
lit_hrs	Number of hours a fixture is on in the space type

The remainder of this appendix contains the parameter estimates for the independent variables for each of the technologies.

Appendix H.

-- **room=BATHROOM** --
--

The LOGISTIC Procedure

Model Information

Data Set	WORK.TAC6
Response Variable	tech_rz
Number of Response Levels	4
Number of Observations	415
Model	generalized logit
Optimization Technique	Newton-Raphson

Response Profile

Ordered Value	tech_rz	Total Frequency
1	Compact Fluo	3
2	HHQar	30
3	Incandescent	358
4	Tube Fluores	24

Logits modeled use tech_rz='Incandescent' as the reference category.

NOTE: 41 observations were deleted due to missing values for the response or explanatory variables.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	435.799	428.213
SC	447.884	476.553
-2 Log L	429.799	404.213

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-- **room=BATHROOM** --
--

                        The LOGISTIC Procedure

                Testing Global Null Hypothesis: BETA=0

            Test   Chi-Square   DF   Pr > ChiSq

            Likelihood Ratio   25.5862   9   0.0024
            Score   33.9616   9   <.0001
            Wald   23.5889   9   0.0050

                        Type III Analysis of Effects

                                       Wald
                    Effect   DF   Chi-Square   Pr > ChiSq

                    lit_hrs   3   12.1489   0.0069
                    bed   3   1.5244   0.6766
                    bath   3   6.9452   0.0737

                Analysis of Maximum Likelihood Estimates

                                          Standard   Wald
Parameter   tech_rz   DF   Estimate   Error   Chi-Square   Pr > ChiSq

Intercept   Compact Fluo   1   -0.7743   2.0247   0.1463   0.7021
Intercept   HHQar   1   -1.3412   0.6897   3.7817   0.0518
Intercept   Tube Fluores   1   -5.0796   0.9660   27.6518   <.0001
lit_hrs   Compact Fluo   1   -0.0258   0.0645   0.1596   0.6895
lit_hrs   HHQar   1   -0.0104   0.0148   0.4890   0.4844
lit_hrs   Tube Fluores   1   0.0174   0.00519   11.2491   0.0008
bed   Compact Fluo   1   -0.6701   0.7913   0.7171   0.3971
bed   HHQar   1   -0.1855   0.2440   0.5778   0.4472
bed   Tube Fluores   1   0.1259   0.2659   0.2241   0.6359
bath   Compact Fluo   1   -1.1644   1.2054   0.9331   0.3341
bath   HHQar   1   -0.2324   0.3051   0.5805   0.4461
bath   Tube Fluores   1   0.7184   0.3138   5.2403   0.0221

                        Odds Ratio Estimates

                                   Point   95% Wald
            Effect   tech_rz   Estimate   Confidence Limits

            lit_hrs   Compact Fluo   0.975   0.859   1.106
            lit_hrs   HHQar   0.990   0.961   1.019
            lit_hrs   Tube Fluores   1.018   1.007   1.028
            bed   Compact Fluo   0.512   0.108   2.413
```

Appendix H.

-------------------------------------- **room=BATHROOM** --------------------------------------
--

The LOGISTIC Procedure

Odds Ratio Estimates

| Effect | tech_rz | Point Estimate | 95% Wald Confidence Limits | |
|--------|---------|----------------|---------------|-------|
| bed | HHQar | 0.831 | 0.515 | 1.340 |
| bed | Tube Fluores | 1.134 | 0.673 | 1.910 |
| bath | Compact Fluo | 0.312 | 0.029 | 3.314 |
| bath | HHQar | 0.793 | 0.436 | 1.441 |
| bath | Tube Fluores | 2.051 | 1.109 | 3.795 |

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---------------------------------- **room=BEDROOM** ----------------------------------
--

The LOGISTIC Procedure

Model Information

| | |
|---|---|
| Data Set | WORK.TAC6 |
| Response Variable | tech_rz |
| Number of Response Levels | 4 |
| Number of Observations | 753 |
| Model | generalized logit |
| Optimization Technique | Newton-Raphson |

Response Profile

| Ordered Value | tech_rz | Total Frequency |
|---|---|---|
| 1 | Compact Fluo | 7 |
| 2 | HHQar | 12 |
| 3 | Incandescent | 718 |
| 4 | Tube Fluores | 16 |

Logits modeled use tech_rz='Incandescent' as the reference category.

NOTE: 196 observations were deleted due to missing values for the response or explanatory
      variables.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

| Criterion | Intercept Only | Intercept and Covariates |
|---|---|---|
| AIC | 362.429 | 350.447 |
| SC | 376.301 | 405.936 |
| -2 Log L | 356.429 | 326.447 |

Appendix H.

---------------------------------------- room=BEDROOM ----------------------------------------
--

The LOGISTIC Procedure

Testing Global Null Hypothesis: BETA=0

| Test | Chi-Square | DF | Pr > ChiSq |
|------|-----------|----|-----------|
| Likelihood Ratio | 29.9811 | 9 | 0.0004 |
| Score | 27.3475 | 9 | 0.0012 |
| Wald | 23.4465 | 9 | 0.0053 |

Type III Analysis of Effects

| Effect | DF | Wald Chi-Square | Pr > ChiSq |
|--------|----|----------------|-----------|
| lit_hrs | 3 | 2.4380 | 0.4866 |
| bed | 3 | 9.6509 | 0.0218 |
| bath | 3 | 7.9758 | 0.0465 |

Analysis of Maximum Likelihood Estimates

| Parameter | tech_rz | DF | Estimate | Standard Error | Wald Chi-Square | Pr > ChiSq |
|-----------|---------|----|----------|---------------|----------------|-----------|
| Intercept | Compact Fluo | 1 | 1.1925 | 1.5425 | 0.5977 | 0.4395 |
| Intercept | HHQar | 1 | -4.2511 | 1.1826 | 12.9217 | 0.0003 |
| Intercept | Tube Fluores | 1 | -6.9719 | 1.1675 | 35.6582 | <.0001 |
| lit_hrs | Compact Fluo | 1 | -0.0518 | 0.0739 | 0.4917 | 0.4832 |
| lit_hrs | HHQar | 1 | 0.0114 | 0.0154 | 0.5487 | 0.4589 |
| lit_hrs | Tube Fluores | 1 | 0.0159 | 0.0131 | 1.4856 | 0.2229 |
| bed | Compact Fluo | 1 | -1.2814 | 0.5603 | 5.2305 | 0.0222 |
| bed | HHQar | 1 | -0.3972 | 0.3909 | 1.0326 | 0.3095 |
| bed | Tube Fluores | 1 | 0.4397 | 0.2392 | 3.3792 | 0.0660 |
| bath | Compact Fluo | 1 | -1.4681 | 1.0743 | 1.8673 | 0.1718 |
| bath | HHQar | 1 | 0.6747 | 0.4248 | 2.5226 | 0.1122 |
| bath | Tube Fluores | 1 | 0.6539 | 0.3403 | 3.6931 | 0.0546 |

Odds Ratio Estimates

| Effect | tech_rz | Point Estimate | 95% Wald Confidence Limits | |
|--------|---------|---------------|---------------------------|---|
| lit_hrs | Compact Fluo | 0.950 | 0.822 | 1.097 |
| lit_hrs | HHQar | 1.011 | 0.981 | 1.042 |
| lit_hrs | Tube Fluores | 1.016 | 0.990 | 1.042 |
| bed | Compact Fluo | 0.278 | 0.093 | 0.833 |

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-------------------------------------- room=BEDROOM ----------------------------------------
--

                          The LOGISTIC Procedure

                        Odds Ratio Estimates
                                      Point              95% Wald
                Effect     tech_rz    Estimate      Confidence Limits

                bed        HHQar        0.672      0.312       1.446
                bed        Tube Fluores 1.552      0.971       2.481
                bath       Compact Fluo 0.230      0.028       1.892
                bath       HHQar        1.963      0.854       4.515
                bath       Tube Fluores 1.923      0.987       3.747
```

Appendix H.

-- **room=CLOSET** --
--

The LOGISTIC Procedure

Model Information

Data Set	WORK.TAC6
Response Variable	tech_rz
Number of Response Levels	4
Number of Observations	82
Model	generalized logit
Optimization Technique	Newton-Raphson

Response Profile

Ordered Value	tech_rz	Total Frequency
1	Compact Fluo	2
2	HHQar	2
3	Incandescent	73
4	Tube Fluores	5

Logits modeled use tech_rz='Incandescent' as the reference category.

NOTE: 29 observations were deleted due to missing values for the response or explanatory variables.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	80.655	75.759
SC	87.875	104.640
-2 Log L	74.655	51.759

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-- room=CLOSET --
--

The LOGISTIC Procedure

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	22.8961	9	0.0064
Score	27.0204	9	0.0014
Wald	12.6915	9	0.1771

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
lit_hrs	3	0.3823	0.9439
bed	3	10.5841	0.0142
bath	3	3.6069	0.3072

Analysis of Maximum Likelihood Estimates

Parameter	tech_rz	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	Compact Fluo	1	-3.1720	2.3563	1.8122	0.1782
Intercept	HHQar	1	-5.7691	3.0054	3.6849	0.0549
Intercept	Tube Fluores	1	-10.6406	4.4189	5.7985	0.0160
lit_hrs	Compact Fluo	1	0.00990	0.0179	0.3052	0.5806
lit_hrs	HHQar	1	-0.0167	0.2382	0.0049	0.9442
lit_hrs	Tube Fluores	1	-0.00455	0.0191	0.0564	0.8122
bed	Compact Fluo	1	-0.4268	0.9701	0.1936	0.6599
bed	HHQar	1	-2.0685	1.5445	1.7936	0.1805
bed	Tube Fluores	1	1.4106	0.4799	8.6389	0.0033
bath	Compact Fluo	1	0.3804	1.1736	0.1051	0.7458
bath	HHQar	1	3.3531	1.8943	3.1331	0.0767
bath	Tube Fluores	1	0.7385	1.0555	0.4896	0.4841

Odds Ratio Estimates

Effect	tech_rz	Point Estimate	95% Wald Confidence Limits	
lit_hrs	Compact Fluo	1.010	0.975	1.046
lit_hrs	HHQar	0.983	0.617	1.569
lit_hrs	Tube Fluores	0.995	0.959	1.034
bed	Compact Fluo	0.653	0.097	4.369

Appendix H.

-- **room=CLOSET** --
--

The LOGISTIC Procedure

Odds Ratio Estimates

Effect	tech_rz	Point Estimate	95% Wald Confidence Limits	
bed	HHQar	0.126	0.006	2.608
bed	Tube Fluores	4.098	1.600	10.499
bath	Compact Fluo	1.463	0.147	14.594
bath	HHQar	28.592	0.698	>999.999
bath	Tube Fluores	2.093	0.264	16.564

------------------------------------- **room=DINING / HALL**-------------------------------------
--

The LOGISTIC Procedure

Model Information

Data Set	WORK.TAC6
Response Variable	tech_rz
Number of Response Levels	4
Number of Observations	606
Model	generalized logit
Optimization Technique	Newton-Raphson

Response Profile

Ordered Value	tech_rz	Total Frequency
1	Compact Fluo	7
2	HHQar	34
3	Incandescent	552
4	Tube Fluores	13

Logits modeled use tech_rz='Incandescent' as the reference category.

NOTE: 69 observations were deleted due to missing values for the response or explanatory variables.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	467.258	457.670
SC	480.478	510.553
-2 Log L	461.258	433.670

Appendix H.

-------------------------------------- **room= DINING / HALL** --------------------------------
--

The LOGISTIC Procedure

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	27.5871	9	0.0011
Score	25.1700	9	0.0028
Wald	22.9553	9	0.0063

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
lit_hrs	3	8.6553	0.0342
bed	3	7.6420	0.0540
bath	3	3.4874	0.3224

Analysis of Maximum Likelihood Estimates

Parameter	tech_rz	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	Compact Fluo	1	-2.1941	1.3474	2.6517	0.1034
Intercept	HHQar	1	-4.3722	0.7397	34.9388	<.0001
Intercept	Tube Fluores	1	-5.0543	1.0606	22.7102	<.0001
lit_hrs	Compact Fluo	1	0.0167	0.00880	3.5940	0.0580
lit_hrs	HHQar	1	-0.0560	0.0250	5.0050	0.0253
lit_hrs	Tube Fluores	1	-0.00248	0.0139	0.0319	0.8582
bed	Compact Fluo	1	-0.4245	0.4640	0.8369	0.3603
bed	HHQar	1	0.3638	0.2006	3.2881	0.0698
bed	Tube Fluores	1	0.4683	0.2398	3.8122	0.0509
bath	Compact Fluo	1	-0.7478	0.6922	1.1671	0.2800
bath	HHQar	1	0.3510	0.2444	2.0629	0.1509
bath	Tube Fluores	1	-0.1636	0.3918	0.1743	0.6763

Odds Ratio Estimates

Effect	tech_rz	Point Estimate	95% Wald Confidence Limits	
lit_hrs	Compact Fluo	1.017	0.999	1.034
lit_hrs	HHQar	0.946	0.900	0.993
lit_hrs	Tube Fluores	0.998	0.971	1.025
bed	Compact Fluo	0.654	0.263	1.624

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------------------------------------- **room= DINING / HALL** --------------------------------
--

The LOGISTIC Procedure

Odds Ratio Estimates

Effect	tech_rz	Point Estimate	95% Wald Confidence Limits	
bed	HHQar	1.439	0.971	2.132
bed	Tube Fluores	1.597	0.998	2.556
bath	Compact Fluo	0.473	0.122	1.838
bath	HHQar	1.420	0.880	2.293
bath	Tube Fluores	0.849	0.394	1.830

Appendix H.

-------------------------------------- **room=KITCHEN** --
--

The LOGISTIC Procedure

Model Information

Data Set	WORK.TAC6
Response Variable	tech_rz
Number of Response Levels	4
Number of Observations	466
Model	generalized logit
Optimization Technique	Newton-Raphson

Response Profile

Ordered Value	tech_rz	Total Frequency
1	Compact Fluo	14
2	HHQar	66
3	Incandescent	262
4	Tube Fluores	124

Logits modeled use tech_rz='Incandescent' as the reference category.

NOTE: 47 observations were deleted due to missing values for the response or explanatory variables.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	992.211	967.653
SC	1004.643	1017.383
-2 Log L	986.211	943.653

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-------------------------------------- **room=KITCHEN** --
--

The LOGISTIC Procedure

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	42.5579	9	<.0001
Score	42.9716	9	<.0001
Wald	39.2073	9	<.0001

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
lit_hrs	3	12.1643	0.0068
bed	3	10.3956	0.0155
bath	3	10.9542	0.0120

Analysis of Maximum Likelihood Estimates

Parameter	tech_rz	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	Compact Fluo	1	-0.7175	0.9219	0.6058	0.4364
Intercept	HHQar	1	-3.4643	0.5674	37.2777	<.0001
Intercept	Tube Fluores	1	-0.9461	0.3956	5.7191	0.0168
lit_hrs	Compact Fluo	1	0.0231	0.00787	8.6503	0.0033
lit_hrs	HHQar	1	0.00133	0.00596	0.0499	0.8233
lit_hrs	Tube Fluores	1	0.0104	0.00422	6.1158	0.0134
bed	Compact Fluo	1	-0.9200	0.3756	6.0003	0.0143
bed	HHQar	1	0.2527	0.1692	2.2322	0.1352
bed	Tube Fluores	1	-0.1586	0.1375	1.3313	0.2486
bath	Compact Fluo	1	-0.1994	0.4911	0.1648	0.6847
bath	HHQar	1	0.6218	0.1963	10.0321	0.0015
bath	Tube Fluores	1	0.2467	0.1633	2.2839	0.1307

Odds Ratio Estimates

Effect	tech_rz	Point Estimate	95% Wald Confidence Limits	
lit_hrs	Compact Fluo	1.023	1.008	1.039
lit_hrs	HHQar	1.001	0.990	1.013
lit_hrs	Tube Fluores	1.011	1.002	1.019
bed	Compact Fluo	0.399	0.191	0.832

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Appendix H.

-------------------------------------- **room=KITCHEN** --------------------------------------
--

The LOGISTIC Procedure

Odds Ratio Estimates

Effect	tech_rz	Point Estimate	95% Wald Confidence Limits	
bed	HHQar	1.288	0.924	1.794
bed	Tube Fluores	0.853	0.652	1.117
bath	Compact Fluo	0.819	0.313	2.145
bath	HHQar	1.862	1.267	2.736
bath	Tube Fluores	1.280	0.929	1.763

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----------------------------------- **room=LIVING ROOM** --------------------------------------
--

The LOGISTIC Procedure

Model Information

Data Set	WORK.TAC6
Response Variable	tech_rz
Number of Response Levels	4
Number of Observations	425
Model	generalized logit
Optimization Technique	Newton-Raphson

Response Profile

Ordered Value	tech_rz	Total Frequency
1	Compact Fluo	16
2	HHQar	24
3	Incandescent	376
4	Tube Fluores	9

Logits modeled use tech_rz='Incandescent' as the reference category.

NOTE: 76 observations were deleted due to missing values for the response or explanatory variables.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	410.405	411.949
SC	422.562	460.574
-2 Log L	404.405	387.949

Appendix H.

------------------------------------ **room=LIVING ROOM** ------------------------------------
--

The LOGISTIC Procedure

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	16.4564	9	0.0579
Score	16.2407	9	0.0620
Wald	14.6632	9	0.1006

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
lit_hrs	3	2.3333	0.5062
bed	3	3.4904	0.3220
bath	3	9.4031	0.0244

Analysis of Maximum Likelihood Estimates

Parameter	tech_rz	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	Compact Fluo	1	-2.6587	0.8939	8.8451	0.0029
Intercept	HHQar	1	-3.9215	0.8229	22.7097	<.0001
Intercept	Tube Fluores	1	-6.1077	1.4760	17.1239	<.0001
lit_hrs	Compact Fluo	1	0.00488	0.0103	0.2251	0.6352
lit_hrs	HHQar	1	-0.00970	0.0130	0.5546	0.4564
lit_hrs	Tube Fluores	1	0.0162	0.0132	1.5130	0.2187
bed	Compact Fluo	1	-0.3602	0.3120	1.3326	0.2483
bed	HHQar	1	0.1889	0.2306	0.6711	0.4127
bed	Tube Fluores	1	-0.5509	0.4588	1.4415	0.2299
bath	Compact Fluo	1	0.2685	0.4271	0.3952	0.5296
bath	HHQar	1	0.3687	0.3260	1.2794	0.2580
bath	Tube Fluores	1	1.7968	0.6299	8.1358	0.0043

Odds Ratio Estimates

Effect	tech_rz	Point Estimate	95% Wald Confidence Limits	
lit_hrs	Compact Fluo	1.005	0.985	1.025
lit_hrs	HHQar	0.990	0.965	1.016
lit_hrs	Tube Fluores	1.016	0.990	1.043
bed	Compact Fluo	0.698	0.378	1.286

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----------------------------------- room=LIVING ROOM -------------------------------------
--

The LOGISTIC Procedure

Odds Ratio Estimates

Effect	tech_rz	Point Estimate	95% Wald Confidence Limits	
bed	HHQar	1.208	0.769	1.898
bed	Tube Fluores	0.576	0.235	1.417
bath	Compact Fluo	1.308	0.566	3.021
bath	HHQar	1.446	0.763	2.739
bath	Tube Fluores	6.030	1.754	20.728

Appendix H.

-------------------------------------- **room=OFFICE / FAMILY** --------------------------------
--

The LOGISTIC Procedure

Model Information

Data Set	WORK.TAC6
Response Variable	tech_rz
Number of Response Levels	4
Number of Observations	340
Model	generalized logit
Optimization Technique	Newton-Raphson

Response Profile

Ordered Value	tech_rz	Total Frequency
1	Compact Fluo	12
2	HHQar	38
3	Incandescent	243
4	Tube Fluores	47

Logits modeled use tech_rz='Incandescent' as the reference category.

NOTE: 79 observations were deleted due to missing values for the response or explanatory variables.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	602.047	580.674
SC	613.534	626.621
-2 Log L	596.047	556.674

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------------------------------------ **room= OFFICE / FAMILY** ------------------------------
-

                      The LOGISTIC Procedure

                Testing Global Null Hypothesis: BETA=0

          Test   Chi-Square   DF   Pr > ChiSq

          Likelihood Ratio   39.3728   9   <.0001
          Score   56.4420   9   <.0001
          Wald   31.1972   9   0.0003

                    Type III Analysis of Effects

                                      Wald
                  Effect   DF   Chi-Square   Pr > ChiSq

                  lit_hrs   3   26.0702   <.0001
                  bed   3   4.1280   0.2480
                  bath   3   6.2518   0.1000

                 Analysis of Maximum Likelihood Estimates

                                         Standard   Wald
Parameter   tech_rz   DF   Estimate   Error Chi-Square   Pr > ChiSq

Intercept   Compact Fluo   1   -5.1211   1.4609   12.2874   0.0005
Intercept   HHQar   1   -2.8280   0.6950   16.5593   <.0001
Intercept   Tube Fluores   1   -2.1167   0.5980   12.5283   0.0004
lit_hrs   Compact Fluo   1   0.0553   0.0116   22.8631   <.0001
lit_hrs   HHQar   1   -0.0212   0.0141   2.2618   0.1326
lit_hrs   Tube Fluores   1   0.00734 0.00822   0.7968   0.3721
bed   Compact Fluo   1   -0.5499   0.3908   1.9793   0.1595
bed   HHQar   1   0.1169   0.1573   0.5525   0.4573
bed   Tube Fluores   1   0.1683   0.1337   1.5852   0.2080
bath   Compact Fluo   1   0.9815   0.5194   3.5712   0.0588
bath   HHQar   1   0.3424   0.2308   2.2011   0.1379
bath   Tube Fluores   1   -0.1096   0.2153   0.2592   0.6106

                        Odds Ratio Estimates

                              Point   95% Wald
          Effect   tech_rz   Estimate   Confidence Limits

          lit_hrs   Compact Fluo   1.057   1.033   1.081
          lit_hrs   HHQar   0.979   0.952   1.006
          lit_hrs   Tube Fluores   1.007   0.991   1.024
          bed   Compact Fluo   0.577   0.268   1.241
```

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Appendix H.

-------------------------------------- **room= OFFICE / FAMILY** ------------------------------
--

The LOGISTIC Procedure

Odds Ratio Estimates

Effect	tech_rz	Point Estimate	95% Wald Confidence Limits	
bed	HHQar	1.124	0.826	1.530
bed	Tube Fluores	1.183	0.911	1.538
bath	Compact Fluo	2.668	0.964	7.385
bath	HHQar	1.408	0.896	2.214
bath	Tube Fluores	0.896	0.588	1.367

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-------------------------------------- room=OTHER / GARAGE ---------------------------------
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The LOGISTIC Procedure

Model Information

Data Set   WORK.TAC6
Response Variable   tech_rz
Number of Response Levels   4
Number of Observations   358
Model   generalized logit
Optimization Technique   Newton-Raphson

Response Profile

Ordered Value	tech_rz	Total Frequency
1	Compact Fluo	3
2	HHQar	6
3	Incandescent	206
4	Tube Fluores	143

Logits modeled use tech_rz='Incandescent' as the reference category.

NOTE: 107 observations were deleted due to missing values for the response or explanatory variables.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	573.910	571.486
SC	585.552	618.052
-2 Log L	567.910	547.486

Appendix H.

--------------------------------------- **room= OTHER / GARAGE** --------------------------------
--

The LOGISTIC Procedure

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	20.4246	9	0.0155
Score	19.2462	9	0.0232
Wald	16.3846	9	0.0593

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
lit_hrs	3	10.8711	0.0124
bed	3	1.9195	0.5893
bath	3	4.4146	0.2200

Analysis of Maximum Likelihood Estimates

Parameter	tech_rz	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	Compact Fluo	1	-3.2742	1.8886	3.0056	0.0830
Intercept	HHQar	1	-3.8072	1.4453	6.9391	0.0084
Intercept	Tube Fluores	1	-1.1243	0.4096	7.5359	0.0060
lit_hrs	Compact Fluo	1	0.0214	0.0227	0.8908	0.3453
lit_hrs	HHQar	1	0.0122	0.0185	0.4331	0.5105
lit_hrs	Tube Fluores	1	0.0201	0.00610	10.8059	0.0010
bed	Compact Fluo	1	-1.0471	0.7992	1.7165	0.1901
bed	HHQar	1	0.1502	0.4260	0.1243	0.7244
bed	Tube Fluores	1	-0.0358	0.1278	0.0786	0.7791
bath	Compact Fluo	1	0.9638	0.9585	1.0111	0.3147
bath	HHQar	1	-0.1831	0.6798	0.0726	0.7877
bath	Tube Fluores	1	0.3304	0.1780	3.4454	0.0634

Odds Ratio Estimates

Effect	tech_rz	Point Estimate	95% Wald Confidence Limits	
lit_hrs	Compact Fluo	1.022	0.977	1.068
lit_hrs	HHQar	1.012	0.976	1.050
lit_hrs	Tube Fluores	1.020	1.008	1.033
bed	Compact Fluo	0.351	0.073	1.681

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--------------------------------------- **room= OTHER / GARAGE** -------------------------------
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The LOGISTIC Procedure

Odds Ratio Estimates

Effect	tech_rz	Point Estimate	95% Wald Confidence Limits	
bed	HHQar	1.162	0.504	2.678
bed	Tube Fluores	0.965	0.751	1.239
bath	Compact Fluo	2.622	0.401	17.157
bath	HHQar	0.833	0.220	3.156
bath	Tube Fluores	1.391	0.982	1.972

Appendix H.

--------------------------------------- **room=OUTDOOR** --
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                          The LOGISTIC Procedure

                            Model Information

            Data Set   WORK.TAC6
            Response Variable   tech_rz
            Number of Response Levels   4
            Number of Observations   304
            Model   generalized logit
            Optimization Technique   Newton-Raphson

                            Response Profile

                Ordered   Total
                 Value   tech_rz   Frequency

                   1   Compact Fluo   8
                   2   HHQar   85
                   3   Incandescent   210
                   4   Tube Fluores   1

        Logits modeled use tech_rz='Incandescent' as the reference category.

NOTE: 148 observations were deleted due to missing values for the response or explanatory
       variables.

                         Model Convergence Status

           Convergence criterion (GCONV=1E-8) satisfied.

                          Model Fit Statistics

                                           Intercept
                             Intercept   and
                 Criterion   Only   Covariates

                 AIC   447.646   435.468
                 SC   458.797   480.072
                 -2 Log L   441.646   411.468

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-------------------------------------- **room=OUTDOOR** ---
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The LOGISTIC Procedure

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	30.1782	9	0.0004
Score	39.0187	9	<.0001
Wald	26.0951	9	0.0020

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
lit_hrs	3	19.3036	0.0002
bed	3	1.2747	0.7352
bath	3	5.0578	0.1676

Analysis of Maximum Likelihood Estimates

Parameter	tech_rz	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	Compact Fluo	1	-5.6133	1.7351	10.4656	0.0012
Intercept	HHQar	1	-1.8390	0.5009	13.4775	0.0002
Intercept	Tube Fluores	1	-4.6832	3.6342	1.6606	0.1975
lit_hrs	Compact Fluo	1	0.0320	0.00870	13.4760	0.0002
lit_hrs	HHQar	1	-0.0123	0.00587	4.3983	0.0360
lit_hrs	Tube Fluores	1	-0.0734	0.1565	0.2198	0.6392
bed	Compact Fluo	1	-0.2713	0.4574	0.3517	0.5531
bed	HHQar	1	0.1442	0.1605	0.8075	0.3689
bed	Tube Fluores	1	-0.2182	1.3247	0.0271	0.8691
bath	Compact Fluo	1	0.9138	0.5668	2.5994	0.1069
bath	HHQar	1	0.3346	0.1999	2.7999	0.0943
bath	Tube Fluores	1	0.3209	1.5495	0.0429	0.8360

Odds Ratio Estimates

Effect	tech_rz	Point Estimate	95% Wald Confidence Limits	
lit_hrs	Compact Fluo	1.032	1.015	1.050
lit_hrs	HHQar	0.988	0.976	0.999
lit_hrs	Tube Fluores	0.929	0.684	1.263
bed	Compact Fluo	0.762	0.311	1.869

Appendix H.

--------------------------------------- **room=OUTDOOR** ---------------------------------------
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The LOGISTIC Procedure

Odds Ratio Estimates

Effect	tech_rz	Point Estimate	95% Wald Confidence Limits	
bed	HHQar	1.155	0.843	1.582
bed	Tube Fluores	0.804	0.060	10.784
bath	Compact Fluo	2.494	0.821	7.573
bath	HHQar	1.397	0.944	2.068
bath	Tube Fluores	1.378	0.066	28.726

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----------------------------------- **room=UTILITY ROOM** -----------------------------------
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                              The LOGISTIC Procedure

                                Model Information

            Data Set   WORK.TAC6
            Response Variable   tech_rz
            Number of Response Levels 4
            Number of Observations   156
            Model   generalized logit
            Optimization Technique   Newton-Raphson

                                Response Profile

                Ordered   Total
                  Value   tech_rz   Frequency

                      1   Compact Fluo   10
                      2   HHQar   4
                      3   Incandescent   119
                      4   Tube Fluores   23

          Logits modeled use tech_rz='Incandescent' as the reference category.

    NOTE: 9 observations were deleted due to missing values for the response or explanatory
          variables.

                            Model Convergence Status

            Convergence criterion (GCONV=1E-8) satisfied.

                              Model Fit Statistics

                                                  Intercept
                                  Intercept   and
                    Criterion   Only   Covariates

                    AIC   242.749   237.865
                    SC   251.898   274.464
                    -2 Log L   236.749   213.865

Appendix H.

----------------------------------- **room=UTILITY ROOM** -------------------------------------
--

                            The LOGISTIC Procedure

                      Testing Global Null Hypothesis: BETA=0

            Test   Chi-Square   DF   Pr > ChiSq

            Likelihood Ratio   22.8834   9   0.0065
            Score   26.0866   9   0.0020
            Wald   18.3742   9   0.0311

                        Type III Analysis of Effects

                                       Wald
                  Effect   DF   Chi-Square   Pr > ChiSq

                  lit_hrs   3   15.1380   0.0017
                  bed   3   3.3484   0.3410
                  bath   3   2.9487   0.3996

                  Analysis of Maximum Likelihood Estimates

                                              Standard   Wald
        Parameter   tech_rz   DF   Estimate   Error   Chi-Square   Pr > ChiSq

        Intercept   Compact Fluo   1   -1.9673   1.0918   3.2467   0.0716
        Intercept   HHQar   1   -4.1942   1.9125   4.8095   0.0283
        Intercept   Tube Fluores   1   -2.2867   0.8150   7.8717   0.0050
        lit_hrs   Compact Fluo   1   0.0293   0.00840   12.1888   0.0005
        lit_hrs   HHQar   1   -0.0591   0.0835   0.5007   0.4792
        lit_hrs   Tube Fluores   1   0.0212   0.00699   9.2132   0.0024
        bed   Compact Fluo   1   -0.6634   0.4075   2.6504   0.1035
        bed   HHQar   1   0.1665   0.6349   0.0688   0.7931
        bed   Tube Fluores   1   -0.2840   0.2771   1.0509   0.3053
        bath   Compact Fluo   1   0.3928   0.4966   0.6256   0.4290
        bath   HHQar   1   0.3560   0.8133   0.1916   0.6616
        bath   Tube Fluores   1   0.5578   0.3427   2.6487   0.1036

                             Odds Ratio Estimates

                                        Point   95% Wald
                  Effect   tech_rz   Estimate   Confidence Limits

                  lit_hrs   Compact Fluo   1.030   1.013   1.047
                  lit_hrs   HHQar   0.943   0.800   1.110
                  lit_hrs   Tube Fluores   1.021   1.008   1.036
                  bed   Compact Fluo   0.515   0.232   1.145

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------------------------------------ room=UTILITY ROOM ------------------------------------
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                         The LOGISTIC Procedure

                         Odds Ratio Estimates
                                       Point          95% Wald
            Effect     tech_rz        Estimate     Confidence Limits

            bed        HHQar           1.181        0.340      4.100
            bed        Tube Fluores    0.753        0.437      1.296
            bath       Compact Fluo    1.481        0.560      3.920
            bath       HHQar           1.428        0.290      7.028
            bath       Tube Fluores    1.747        0.892      3.420
```

Appendix I. XenCAP™ Statistical Analysis of Commercial Sector Update

This appendix contains the output of the SAS procedure that estimated the commercial models for each of the space types. The space descriptions for the models are indicated at the top of each page. Up to nine aggregate technologies were estimated for each space description. These are designated as variable "Y" in the model output. Variable "Y" has values ranging from 0 to 8. Each value represents a number of aggregate technologies that differs based on space type. The technologies that each value of "Y" represents are indicated in Tables B-1 and B-2. For example, in the model for assembly, the variable Y=0 represents two incandescent technologies: Standard - General Service and Low wattage (less than 25W); and the variable Y=7 represents the four T8 technologies. Blanks indicate that the technology does not occur up in the space type.

The independent variables included in the models are shown in the following table.

Variable	Definition
ADJSQFT	Square footage of the space
tsqft	Square footage of the entire building in which the space type is located
ADJ_TSQFT	Square footage of the space as a fraction of the square footage of the entire building
lit_hrs	Number of hours the lights are on in the space
YEAR	Year
b1 – b9	Building Type

The remainder of this appendix contains the model outputs estimating the parameter estimates and statistics for the independent variables for each of the technologies.

Table I-1. Mapping of technologies to aggregation variable "Y" values

	assembly	athletic	bathroom	boarding	class	dining	display	exit	ext-archi	exterior	ext-park
Standard - General Service	0	1	0	0	1	1	2	1	2	0	2
Standard - Reflector	2	6	3	3	3	2	3	5	1	2	5
Halogen - General Service	4		0		1	5	4			0	
Halogen - Reflector	4	1	0	0	1	5	4	1	2	0	2
Halogen - refl. - low volt	4	1	0	0	1	5	4	1	2	0	2
Low wattage (less than 25W)	0	1	0	0	1	1	2	0	2	0	2
T5	5	7	5	4	4	4	7	3		7	
T8 – less than 4'	7	8	6	6	4	6	5	4	7	8	8
T8 – 4'	7	8	6	6	4	6	5	4	7	8	8
T8 – More than 4'	7			6			5		7	8	8
T8 – U-bent	7	8	6	6	4	6	5	4	7		
T12 – less than 4'	3	2	2	2	2	3	1	4	4	4	6
T12 – 4'	1	0	1	1	0	0	0	4	3	6	4
T12 – More than 4'	3	2	2	2	2	3	1	4	4	4	6
T12 – U-bent	3	2	2	2	2	3	1	4	4	4	6
Compact – Plug-in	5	7	5	4	4	4	7	3	7	7	7
Compact – Screw base	5	7	5	4	4	4	7	3	7	7	7
Compact – Screw base – reflector	5	7	5	4	4	4	7		7	7	7
Circline	5	7	4	5	4	4	7	3	7	7	7
Miscellaneous fluorescent	5	7	5	4	4	4	7	3	7	7	
Mercury vapor	8	3	7	7	4	7	6	4	5	3	1
Metal halide	6	4	7	7	4	7	6		6	5	3
High pressure sodium	6	5	7	7	4	7	6	4	0	1	0
Low pressure sodium	6	5			4	7	6	4	0	1	0
LED									3		0
Electroluminescent									3		

Table I-2. Mapping of technologies to aggregation variable "Y" values

	ext-sign	food prep	hall	healthcare	office	ship/rec	shop	storage	task	unknown	utility
Standard - General Service	2	2	1	2	2	3	2	2	0	2	1
Standard - Reflector	3	3	3	3	3	4	3	3	3	3	3
Halogen - General Service			1		2		2				1
Halogen - Reflector	2	2	1	2	2	3	2	2	0	2	1
Halogen - refl. - low volt	2	2	1	2	2	3	2	2	0	2	1
Low wattage (less than 25W)	2	2	1	2	2	3	2	2	0	2	1
T5	4	4	4	5	4		6	4		5	3
T8 – less than 4'	4	5	5	4	4	5	8	6	4	4	3
T8 – 4'	4	5	5	4	4	5	8	6	4	4	3
T8 – More than 4'	4	5	5		4			6		4	
T8 – U-bent		5	5	4	4	5	8	6		4	3
T12 – less than 4'	0	1	2	1	1	0	1	1	2	1	2
T12 – 4'	1	0	0	0	0	1	0	0	1	0	0
T12 – More than 4'	0	1	2	1	1	0	1	1	2	1	2
T12 – U-bent	0	1	2	1	1	0	1	1	2	1	2
Compact – Plug-in	4	3	4	5	3	5	4	3	5	5	2
Compact – Screw base	4	4	4	5	4		6	4	5	5	3
Compact – Screw base – reflector	4	4	4	5	4		6	4		5	3
Circline	4	4	4	4	4	5	6	4	5	5	3
Miscellaneous fluorescent	4	4	4	5	4	5	6	4		5	3
Mercury vapor	4	4	5	4	4	2	7	8	6	4	3
Metal halide	6	4	5	4	4	2	4	5	6	4	3
High pressure sodium	5	4	5	4	4	2	5	7	6	4	3
Low pressure sodium	5	4	5		4	2	5	7		4	3
LED			1	2	2		2	2		2	1
Electroluminescent					2						

Assembly

The LOGISTIC Procedure

Model Information

Data Set	WORK.SID1
Response Variable	Y
Number of Response Levels	9
Number of Observations	9821
Model	generalized logit
Optimization Technique	Newton-Raphson

Response Profile

Ordered Value	Y	Total Frequency
1	0	2869
2	1	2768
3	2	2013
4	3	1239
5	4	304
6	5	219
7	6	174
8	7	129
9	8	106

Logits modeled use Y=0 as the reference category.

NOTE: 17 observations were deleted due to missing values for the response or explanatory variables.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	32858.733	30361.931
SC	32916.271	31109.928
-2 Log L	32842.733	30153.931

Appendix I.

Assembly

The LOGISTIC Procedure

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	2688.8014	96	<.0001
Score	2562.6877	96	<.0001
Wald	2077.6835	96	<.0001

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
b1	8	46.0216	<.0001
b2	8	62.1725	<.0001
b5	8	114.9176	<.0001
b6	8	128.2949	<.0001
b7	8	62.6730	<.0001
b8	8	286.8600	<.0001
b9	8	119.0870	<.0001
tsqft	8	10.9575	0.2041
YEAR	8	156.0602	<.0001
ADJSQFT	8	153.2398	<.0001
lit_hrs	8	305.3787	<.0001
ADJ_TSQFT	8	267.6968	<.0001

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	-115.7	24.6330	22.0443	<.0001
Intercept	2	1	-24.8212	26.4727	0.8791	0.3484
Intercept	3	1	-86.2664	31.5946	7.4552	0.0063
Intercept	4	1	-378.2	57.3361	43.5160	<.0001
Intercept	5	1	-338.3	69.8550	23.4468	<.0001
Intercept	6	1	-306.4	72.2513	17.9791	<.0001
Intercept	7	1	-873.3	94.6901	85.0556	<.0001
Intercept	8	1	49.3084	88.2947	0.3119	0.5765
b1	1	1	-0.3971	0.1260	9.9296	0.0016
b1	2	1	-0.0773	0.1609	0.2310	0.6308
b1	3	1	-0.8056	0.1605	25.1977	<.0001
b1	4	1	0.4846	0.3178	2.3262	0.1272
b1	5	1	-0.2380	0.3117	0.5830	0.4451
b1	6	1	0.8950	0.5488	2.6595	0.1029
b1	7	1	-0.7538	0.3662	4.2372	0.0395
b1	8	1	1.5963	1.1303	1.9947	0.1579
b2	1	1	-0.0593	0.1484	0.1598	0.6893
b2	2	1	0.8267	0.1769	21.8299	<.0001

Assembly

The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
b2	3	1	0.3895	0.1588	6.0149	0.0142
b2	4	1	1.2470	0.3331	14.0159	0.0002
b2	5	1	-0.0743	0.3593	0.0427	0.8363
b2	6	1	0.7850	0.6070	1.6725	0.1959
b2	7	1	0.8703	0.3012	8.3475	0.0039
b2	8	1	1.3069	1.2337	1.1223	0.2894
b5	1	1	-1.2999	0.1697	58.6732	<.0001
b5	2	1	0.3273	0.1772	3.4117	0.0647
b5	3	1	-1.0820	0.1986	29.6742	<.0001
b5	4	1	0.0512	0.3984	0.0165	0.8978
b5	5	1	-0.7766	0.4101	3.5869	0.0582
b5	6	1	-0.4286	0.8519	0.2532	0.6149
b5	7	1	-1.2442	0.4808	6.6959	0.0097
b5	8	1	0.6741	1.4231	0.2244	0.6357
b6	1	1	-1.2024	0.1420	71.6651	<.0001
b6	2	1	-0.1651	0.1680	0.9648	0.3260
b6	3	1	-1.3731	0.1826	56.5225	<.0001
b6	4	1	-0.0682	0.3454	0.0389	0.8435
b6	5	1	-0.3908	0.3107	1.5815	0.2085
b6	6	1	0.7663	0.5626	1.8552	0.1732
b6	7	1	-2.3055	0.5549	17.2627	<.0001
b6	8	1	1.3994	1.1319	1.5286	0.2163
b7	1	1	-0.6456	0.1826	12.5067	0.0004
b7	2	1	0.0921	0.2197	0.1758	0.6750
b7	3	1	-0.6397	0.2212	8.3673	0.0038
b7	4	1	0.1774	0.4535	0.1530	0.6957
b7	5	1	0.0456	0.4027	0.0128	0.9099
b7	6	1	2.2007	0.5321	17.1086	<.0001
b7	7	1	-0.0911	0.4369	0.0435	0.8348
b7	8	1	3.4435	1.0590	10.5730	0.0011
b8	1	1	-1.4615	0.1098	177.1020	<.0001
b8	2	1	0.0494	0.1336	0.1366	0.7116
b8	3	1	-1.1877	0.1307	82.5866	<.0001
b8	4	1	0.0586	0.2881	0.0414	0.8388
b8	5	1	-0.3721	0.2569	2.0977	0.1475
b8	6	1	0.5478	0.5027	1.1878	0.2758
b8	7	1	-1.4350	0.3267	19.2940	<.0001
b8	8	1	2.0653	1.0431	3.9200	0.0477
b9	1	1	-0.8061	0.1103	53.4498	<.0001
b9	2	1	-0.3915	0.1408	7.7282	0.0054
b9	3	1	-0.9611	0.1378	48.6166	<.0001
b9	4	1	-0.1213	0.3005	0.1629	0.6865
b9	5	1	-0.8527	0.3071	7.7081	0.0055
b9	6	1	1.8046	0.4891	13.6121	0.0002
b9	7	1	-1.5681	0.3853	16.5677	<.0001
b9	8	1	3.1865	1.0288	9.5941	0.0020

Appendix I.

The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
tsqft	1	1	-2.56E-7	2.77E-7	0.8559	0.3549
tsqft	2	1	1.036E-7	3.304E-7	0.0984	0.7537
tsqft	3	1	7.489E-8	3.531E-7	0.0450	0.8321
tsqft	4	1	4.613E-7	4.756E-7	0.9407	0.3321
tsqft	5	1	6.687E-7	5.604E-7	1.4238	0.2328
tsqft	6	1	2.214E-8	6.384E-7	0.0012	0.9723
tsqft	7	1	-3.2E-6	1.31E-6	5.9674	0.0146
tsqft	8	1	-3.62E-7	9.383E-7	0.1492	0.6993
YEAR	1	1	0.0582	0.0124	22.1087	<.0001
YEAR	2	1	0.0125	0.0133	0.8773	0.3489
YEAR	3	1	0.0429	0.0159	7.3044	0.0069
YEAR	4	1	0.1886	0.0288	42.9352	<.0001
YEAR	5	1	0.1690	0.0351	23.2239	<.0001
YEAR	6	1	0.1513	0.0363	17.3915	<.0001
YEAR	7	1	0.4368	0.0475	84.5449	<.0001
YEAR	8	1	-0.0281	0.0443	0.4009	0.5266
ADJSQFT	1	1	0.000027	5.349E-6	26.1683	<.0001
ADJSQFT	2	1	-0.00005	9.87E-6	21.4089	<.0001
ADJSQFT	3	1	-0.00002	8.678E-6	7.6631	0.0056
ADJSQFT	4	1	0.000027	8.766E-6	9.7666	0.0018
ADJSQFT	5	1	-0.00051	0.000089	32.2948	<.0001
ADJSQFT	6	1	0.000041	6.613E-6	39.1863	<.0001
ADJSQFT	7	1	0.000049	9.337E-6	27.9084	<.0001
ADJSQFT	8	1	0.000042	7.858E-6	28.7126	<.0001
lit_hrs	1	1	0.00822	0.000921	79.7197	<.0001
lit_hrs	2	1	-0.00301	0.00112	7.1993	0.0073
lit_hrs	3	1	0.0138	0.00105	172.1470	<.0001
lit_hrs	4	1	0.00178	0.00214	0.6924	0.4054
lit_hrs	5	1	0.00868	0.00193	20.2775	<.0001
lit_hrs	6	1	0.00973	0.00254	14.6371	0.0001
lit_hrs	7	1	0.0174	0.00224	60.1526	<.0001
lit_hrs	8	1	0.0130	0.00313	17.3796	<.0001
ADJ_TSQFT	1	1	1.8676	0.1971	89.8104	<.0001
ADJ_TSQFT	2	1	-1.1160	0.2723	16.7988	<.0001
ADJ_TSQFT	3	1	2.0846	0.2324	80.4382	<.0001
ADJ_TSQFT	4	1	0.3387	0.4457	0.5773	0.4474
ADJ_TSQFT	5	1	-4.4087	1.4745	8.9394	0.0028
ADJ_TSQFT	6	1	3.6849	0.3957	86.7099	<.0001
ADJ_TSQFT	7	1	-1.5711	0.8622	3.3200	0.0684
ADJ_TSQFT	8	1	1.7439	0.6232	7.8294	0.0051

Assembly

The LOGISTIC Procedure

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
b1	1	0.672	0.525	0.861
b1	2	0.926	0.675	1.269
b1	3	0.447	0.326	0.612
b1	4	1.624	0.871	3.027
b1	5	0.788	0.428	1.452
b1	6	2.447	0.835	7.175
b1	7	0.471	0.230	0.965
b1	8	4.935	0.538	45.224
b2	1	0.942	0.704	1.261
b2	2	2.286	1.616	3.233
b2	3	1.476	1.081	2.015
b2	4	3.480	1.812	6.685
b2	5	0.928	0.459	1.877
b2	6	2.192	0.667	7.204
b2	7	2.388	1.323	4.309
b2	8	3.695	0.329	41.463
b5	1	0.273	0.195	0.380
b5	2	1.387	0.980	1.963
b5	3	0.339	0.230	0.500
b5	4	1.052	0.482	2.298
b5	5	0.460	0.206	1.027
b5	6	0.651	0.123	3.460
b5	7	0.288	0.112	0.739
b5	8	1.962	0.121	31.922
b6	1	0.300	0.227	0.397
b6	2	0.848	0.610	1.179
b6	3	0.253	0.177	0.362
b6	4	0.934	0.475	1.838
b6	5	0.677	0.368	1.244
b6	6	2.152	0.714	6.482
b6	7	0.100	0.034	0.296
b6	8	4.053	0.441	37.258
b7	1	0.524	0.367	0.750
b7	2	1.097	0.713	1.687
b7	3	0.527	0.342	0.814
b7	4	1.194	0.491	2.904
b7	5	1.047	0.475	2.305
b7	6	9.032	3.183	25.624
b7	7	0.913	0.388	2.149
b7	8	31.295	3.927	249.399
b8	1	0.232	0.187	0.288
b8	2	1.051	0.809	1.365
b8	3	0.305	0.236	0.394
b8	4	1.060	0.603	1.865
b8	5	0.689	0.417	1.140
b8	6	1.729	0.646	4.632

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Assembly

The LOGISTIC Procedure

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
b8	7	0.238	0.126	0.452
b8	8	7.888	1.021	60.936
b9	1	0.447	0.360	0.554
b9	2	0.676	0.513	0.891
b9	3	0.382	0.292	0.501
b9	4	0.886	0.491	1.596
b9	5	0.426	0.233	0.778
b9	6	6.078	2.330	15.852
b9	7	0.208	0.098	0.444
b9	8	24.204	3.223	181.787
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000
tsqft	4	1.000	1.000	1.000
tsqft	5	1.000	1.000	1.000
tsqft	6	1.000	1.000	1.000
tsqft	7	1.000	1.000	1.000
tsqft	8	1.000	1.000	1.000
YEAR	1	1.060	1.034	1.086
YEAR	2	1.013	0.986	1.039
YEAR	3	1.044	1.012	1.077
YEAR	4	1.208	1.141	1.278
YEAR	5	1.184	1.105	1.268
YEAR	6	1.163	1.083	1.249
YEAR	7	1.548	1.410	1.699
YEAR	8	0.972	0.891	1.061
ADJSQFT	1	1.000	1.000	1.000
ADJSQFT	2	1.000	1.000	1.000
ADJSQFT	3	1.000	1.000	1.000
ADJSQFT	4	1.000	1.000	1.000
ADJSQFT	5	0.999	0.999	1.000
ADJSQFT	6	1.000	1.000	1.000
ADJSQFT	7	1.000	1.000	1.000
ADJSQFT	8	1.000	1.000	1.000
lit_hrs	1	1.008	1.006	1.010
lit_hrs	2	0.997	0.995	0.999
lit_hrs	3	1.014	1.012	1.016
lit_hrs	4	1.002	0.998	1.006
lit_hrs	5	1.009	1.005	1.013
lit_hrs	6	1.010	1.005	1.015
lit_hrs	7	1.018	1.013	1.022
lit_hrs	8	1.013	1.007	1.019
ADJ_TSQFT	1	6.473	4.399	9.525
ADJ_TSQFT	2	0.328	0.192	0.559
ADJ_TSQFT	3	8.042	5.099	12.682
ADJ_TSQFT	4	1.403	0.586	3.361

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Assembly

The LOGISTIC Procedure

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
ADJ_TSQFT	5	0.012	<0.001	0.219
ADJ_TSQFT	6	39.840	18.343	86.528
ADJ_TSQFT	7	0.208	0.038	1.126
ADJ_TSQFT	8	5.720	1.686	19.403

Appendix I.

Athletic

The LOGISTIC Procedure

Model Information

Data Set   WORK.SID1
Response Variable   Y
Number of Response Levels   9
Number of Observations   5818
Model   generalized logit
Optimization Technique   Newton-Raphson

Response Profile

Ordered Value	Y	Total Frequency
1	0	2125
2	1	1258
3	2	790
4	3	464
5	4	407
6	5	329
7	6	236
8	7	131
9	8	78

Logits modeled use Y=0 as the reference category.

NOTE: 13 observations were deleted due to missing values for the response or explanatory variables.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	20885.767	18824.345
SC	20939.116	19357.842
-2 Log L	20869.767	18664.345

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The LOGISTIC Procedure

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	2205.4218	72	<.0001
Score	1676.4522	72	<.0001
Wald	1448.6192	72	<.0001

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
b4	8	5.6172	0.6900
b6	8	112.7693	<.0001
b7	8	12.7082	0.1223
b9	8	438.7099	<.0001
tsqft	8	39.6877	<.0001
YEAR	8	146.2043	<.0001
ADJSQFT	8	362.1433	<.0001
lit_hrs	8	38.1054	<.0001
ADJ_TSQFT	8	18.7934	0.0160

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	198.7	30.1583	43.4284	<.0001
Intercept	2	1	24.6025	33.9555	0.5250	0.4687
Intercept	3	1	93.2705	44.1400	4.4650	0.0346
Intercept	4	1	-172.9	47.0404	13.5172	0.0002
Intercept	5	1	200.6	52.4359	14.6294	0.0001
Intercept	6	1	27.1807	58.5109	0.2158	0.6423
Intercept	7	1	-172.6	80.7575	4.5672	0.0326
Intercept	8	1	-776.9	112.5	47.6889	<.0001
b4	1	1	0.0898	0.2132	0.1775	0.6735
b4	2	1	0.2591	0.1830	2.0059	0.1567
b4	3	1	-0.0767	0.4277	0.0321	0.8577
b4	4	1	0.0496	0.4356	0.0130	0.9094
b4	5	1	-0.5869	0.7630	0.5917	0.4418
b4	6	1	0.4805	0.3262	2.1696	0.1408
b4	7	1	0.2832	0.5479	0.2672	0.6052
b4	8	1	-0.5883	0.7437	0.6258	0.4289
b6	1	1	0.9136	0.1413	41.7769	<.0001
b6	2	1	0.0720	0.1655	0.1894	0.6634
b6	3	1	1.1603	0.2655	19.0970	<.0001
b6	4	1	1.0683	0.2880	13.7572	0.0002
b6	5	1	1.2479	0.4095	9.2870	0.0023

Appendix I.

The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
b6	6	1	1.3369	0.2022	43.7250	<.0001
b6	7	1	1.6083	0.2606	38.0827	<.0001
b6	8	1	-0.2418	0.4258	0.3224	0.5702
b7	1	1	-0.2582	0.1762	2.1480	0.1428
b7	2	1	0.1658	0.1421	1.3617	0.2432
b7	3	1	-0.3550	0.3551	0.9996	0.3174
b7	4	1	-0.0261	0.3248	0.0065	0.9359
b7	5	1	-0.1215	0.4762	0.0651	0.7986
b7	6	1	0.5292	0.2366	5.0022	0.0253
b7	7	1	0.4300	0.3559	1.4595	0.2270
b7	8	1	0.1564	0.3677	0.1808	0.6706
b9	1	1	1.0867	0.0912	142.0028	<.0001
b9	2	1	-0.1823	0.1043	3.0560	0.0804
b9	3	1	1.8686	0.1646	128.8464	<.0001
b9	4	1	1.8983	0.1721	121.7226	<.0001
b9	5	1	2.6019	0.2477	110.3042	<.0001
b9	6	1	0.3142	0.1899	2.7374	0.0980
b9	7	1	0.9568	0.2469	15.0226	0.0001
b9	8	1	-0.2702	0.3120	0.7499	0.3865
tsqft	1	1	-7.24E-7	3.648E-7	3.9420	0.0471
tsqft	2	1	-9.41E-7	3.605E-7	6.8113	0.0091
tsqft	3	1	-1.45E-6	5.869E-7	6.1374	0.0132
tsqft	4	1	-3.4E-6	7.523E-7	20.4163	<.0001
tsqft	5	1	-3.64E-6	8.505E-7	18.2782	<.0001
tsqft	6	1	4.313E-7	4.406E-7	0.9584	0.3276
tsqft	7	1	1.5E-7	6.258E-7	0.0574	0.8106
tsqft	8	1	9.96E-8	5.941E-7	0.0281	0.8668
YEAR	1	1	-0.1001	0.0151	43.6694	<.0001
YEAR	2	1	-0.0130	0.0170	0.5801	0.4463
YEAR	3	1	-0.0482	0.0222	4.7308	0.0296
YEAR	4	1	0.0854	0.0236	13.0892	0.0003
YEAR	5	1	-0.1026	0.0263	15.1768	<.0001
YEAR	6	1	-0.0146	0.0294	0.2464	0.6196
YEAR	7	1	0.0851	0.0405	4.4129	0.0357
YEAR	8	1	0.3880	0.0564	47.3045	<.0001
ADJSQFT	1	1	-0.00064	0.000080	63.7065	<.0001
ADJSQFT	2	1	0.000242	0.000042	33.5044	<.0001
ADJSQFT	3	1	0.000446	0.000045	100.5500	<.0001
ADJSQFT	4	1	0.000560	0.000045	157.9650	<.0001
ADJSQFT	5	1	0.000549	0.000045	150.2327	<.0001
ADJSQFT	6	1	-0.00344	0.000463	55.0401	<.0001
ADJSQFT	7	1	-0.00259	0.000549	22.3129	<.0001
ADJSQFT	8	1	-1.86E-6	0.000172	0.0001	0.9914
lit_hrs	1	1	-0.00313	0.00108	8.3514	0.0039
lit_hrs	2	1	0.00324	0.00109	8.8858	0.0029
lit_hrs	3	1	-0.00364	0.00188	3.7556	0.0526

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Athletic

The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
lit_hrs	4	1	-0.00296	0.00193	2.3465	0.1256
lit_hrs	5	1	-0.00239	0.00236	1.0220	0.3120
lit_hrs	6	1	0.000283	0.00172	0.0271	0.8692
lit_hrs	7	1	0.00405	0.00219	3.4161	0.0646
lit_hrs	8	1	0.00550	0.00267	4.2537	0.0392
ADJ_TSQFT	1	1	-4.9262	2.1482	5.2585	0.0218
ADJ_TSQFT	2	1	-0.8892	0.7604	1.3675	0.2422
ADJ_TSQFT	3	1	-2.3608	1.1209	4.4354	0.0352
ADJ_TSQFT	4	1	-4.5650	1.3261	11.8497	0.0006
ADJ_TSQFT	5	1	-3.4551	1.3034	7.0271	0.0080
ADJ_TSQFT	6	1	2.0296	3.8776	0.2740	0.6007
ADJ_TSQFT	7	1	-12.9065	13.5296	0.9100	0.3401
ADJ_TSQFT	8	1	-1.7285	3.4735	0.2476	0.6188

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
b4	1	1.094	0.720	1.661
b4	2	1.296	0.905	1.855
b4	3	0.926	0.401	2.142
b4	4	1.051	0.447	2.468
b4	5	0.556	0.125	2.481
b4	6	1.617	0.853	3.065
b4	7	1.327	0.454	3.884
b4	8	0.555	0.129	2.385
b6	1	2.493	1.890	3.289
b6	2	1.075	0.777	1.487
b6	3	3.191	1.896	5.369
b6	4	2.910	1.655	5.118
b6	5	3.483	1.561	7.771
b6	6	3.807	2.562	5.658
b6	7	4.994	2.997	8.324
b6	8	0.785	0.341	1.809
b7	1	0.772	0.547	1.091
b7	2	1.180	0.893	1.559
b7	3	0.701	0.350	1.406
b7	4	0.974	0.515	1.841
b7	5	0.886	0.348	2.252
b7	6	1.698	1.068	2.699
b7	7	1.537	0.765	3.088
b7	8	1.169	0.569	2.404
b9	1	2.964	2.479	3.545
b9	2	0.833	0.679	1.022

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The LOGISTIC Procedure

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
b9	3	6.479	4.692	8.946
b9	4	6.674	4.764	9.351
b9	5	13.490	8.301	21.922
b9	6	1.369	0.944	1.987
b9	7	2.603	1.605	4.224
b9	8	0.763	0.414	1.407
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000
tsqft	4	1.000	1.000	1.000
tsqft	5	1.000	1.000	1.000
tsqft	6	1.000	1.000	1.000
tsqft	7	1.000	1.000	1.000
tsqft	8	1.000	1.000	1.000
YEAR	1	0.905	0.878	0.932
YEAR	2	0.987	0.955	1.021
YEAR	3	0.953	0.912	0.995
YEAR	4	1.089	1.040	1.141
YEAR	5	0.902	0.857	0.950
YEAR	6	0.986	0.930	1.044
YEAR	7	1.089	1.006	1.179
YEAR	8	1.474	1.320	1.646
ADJSQFT	1	0.999	0.999	1.000
ADJSQFT	2	1.000	1.000	1.000
ADJSQFT	3	1.000	1.000	1.001
ADJSQFT	4	1.001	1.000	1.001
ADJSQFT	5	1.001	1.000	1.001
ADJSQFT	6	0.997	0.996	0.997
ADJSQFT	7	0.997	0.996	0.998
ADJSQFT	8	1.000	1.000	1.000
lit_hrs	1	0.997	0.995	0.999
lit_hrs	2	1.003	1.001	1.005
lit_hrs	3	0.996	0.993	1.000
lit_hrs	4	0.997	0.993	1.001
lit_hrs	5	0.998	0.993	1.002
lit_hrs	6	1.000	0.997	1.004
lit_hrs	7	1.004	1.000	1.008
lit_hrs	8	1.006	1.000	1.011
ADJ_TSQFT	1	0.007	<0.001	0.489
ADJ_TSQFT	2	0.411	0.093	1.824
ADJ_TSQFT	3	0.094	0.010	0.849
ADJ_TSQFT	4	0.010	<0.001	0.140
ADJ_TSQFT	5	0.032	0.002	0.406
ADJ_TSQFT	6	7.611	0.004	>999.999
ADJ_TSQFT	7	<0.001	<0.001	>999.999
ADJ_TSQFT	8	0.178	<0.001	160.681

Bathroom

The LOGISTIC Procedure

Model Information

Data Set	WORK.SID1
Response Variable	Y
Number of Response Levels	8
Number of Observations	18261
Model	generalized logit
Optimization Technique	Newton-Raphson

Response Profile

Ordered Value	Y	Total Frequency
1	0	6938
2	1	6563
3	2	2871
4	3	767
5	4	415
6	5	392
7	6	271
8	7	44

Logits modeled use Y=0 as the reference category.

NOTE: 21 observations were deleted due to missing values for the response or explanatory variables.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	51325.807	46697.726
SC	51380.494	47299.291
-2 Log L	51311.807	46543.726

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The LOGISTIC Procedure

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	4768.0803	70	<.0001
Score	4101.4551	70	<.0001
Wald	3248.1778	70	<.0001

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
b1	7	482.3973	<.0001
b6	7	62.2563	<.0001
b7	7	368.3121	<.0001
b8	7	135.1597	<.0001
b9	7	297.8211	<.0001
tsqft	7	20.1973	0.0052
YEAR	7	358.7464	<.0001
ADJSQFT	7	377.1970	<.0001
lit_hrs	7	517.5203	<.0001
ADJ_TSQFT	7	601.3961	<.0001

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	-129.9	17.5068	55.0867	<.0001
Intercept	2	1	-212.8	21.5396	97.6021	<.0001
Intercept	3	1	-124.7	35.5844	12.2821	0.0005
Intercept	4	1	-282.7	49.6678	32.3995	<.0001
Intercept	5	1	-466.6	51.6168	81.7039	<.0001
Intercept	6	1	-988.6	65.6719	226.5915	<.0001
Intercept	7	1	170.0	138.6	1.5039	0.2201
b1	1	1	1.0140	0.0506	401.0763	<.0001
b1	2	1	0.8692	0.0587	219.1214	<.0001
b1	3	1	0.0390	0.0993	0.1542	0.6946
b1	4	1	0.0893	0.1473	0.3681	0.5440
b1	5	1	0.5244	0.1331	15.5229	<.0001
b1	6	1	0.9123	0.1654	30.4142	<.0001
b1	7	1	1.3497	0.9938	1.8445	0.1744
b6	1	1	-0.5995	0.0903	44.0608	<.0001
b6	2	1	-0.4145	0.1028	16.2721	<.0001
b6	3	1	0.0249	0.1327	0.0352	0.8511
b6	4	1	0.3203	0.1991	2.5875	0.1077
b6	5	1	0.1618	0.1778	0.8279	0.3629
b6	6	1	-0.2694	0.2663	1.0232	0.3118

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The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
b6	7	1	-0.3615	1.2646	0.0817	0.7750
b7	1	1	1.2355	0.0740	278.8631	<.0001
b7	2	1	0.9075	0.0866	109.7033	<.0001
b7	3	1	-0.5648	0.1930	8.5668	0.0034
b7	4	1	-0.0961	0.2365	0.1650	0.6846
b7	5	1	-0.2114	0.2469	0.7329	0.3919
b7	6	1	1.1854	0.2111	31.5246	<.0001
b7	7	1	3.6001	0.8647	17.3355	<.0001
b8	1	1	0.6695	0.0678	97.5277	<.0001
b8	2	1	0.1459	0.0881	2.7430	0.0977
b8	3	1	-0.5392	0.1590	11.5056	0.0007
b8	4	1	0.5308	0.1524	12.1263	0.0005
b8	5	1	-0.2178	0.2222	0.9604	0.3271
b8	6	1	0.3423	0.2580	1.7601	0.1846
b8	7	1	1.9207	1.2670	2.2979	0.1295
b9	1	1	0.7138	0.0617	133.8702	<.0001
b9	2	1	-0.1684	0.0843	3.9848	0.0459
b9	3	1	-1.6312	0.2172	56.4200	<.0001
b9	4	1	0.2233	0.1734	1.6577	0.1979
b9	5	1	-0.3408	0.1936	3.0988	0.0784
b9	6	1	0.4187	0.2188	3.6624	0.0557
b9	7	1	4.3992	0.7734	32.3573	<.0001
tsqft	1	1	4.137E-7	2.875E-7	2.0709	0.1501
tsqft	2	1	5.582E-7	3.121E-7	3.1997	0.0737
tsqft	3	1	7.158E-7	4.405E-7	2.6403	0.1042
tsqft	4	1	-1.49E-6	1.098E-6	1.8307	0.1760
tsqft	5	1	1.407E-6	3.756E-7	14.0241	0.0002
tsqft	6	1	7.549E-7	5.281E-7	2.0433	0.1529
tsqft	7	1	1.778E-6	9.239E-7	3.7033	0.0543
YEAR	1	1	0.0643	0.00879	53.5843	<.0001
YEAR	2	1	0.1058	0.0108	95.8066	<.0001
YEAR	3	1	0.0614	0.0179	11.8003	0.0006
YEAR	4	1	0.1405	0.0249	31.7647	<.0001
YEAR	5	1	0.2324	0.0259	80.5447	<.0001
YEAR	6	1	0.4937	0.0329	224.6958	<.0001
YEAR	7	1	-0.0903	0.0696	1.6832	0.1945
ADJSQFT	1	1	0.000251	0.000014	334.3351	<.0001
ADJSQFT	2	1	0.000224	0.000014	245.9857	<.0001
ADJSQFT	3	1	0.000111	0.000028	15.7087	<.0001
ADJSQFT	4	1	-0.00004	0.000065	0.4164	0.5187
ADJSQFT	5	1	0.000240	0.000017	197.3586	<.0001
ADJSQFT	6	1	0.000246	0.000017	213.5715	<.0001
ADJSQFT	7	1	0.000270	0.000015	329.5597	<.0001
lit_hrs	1	1	0.0108	0.000499	466.0268	<.0001
lit_hrs	2	1	0.00887	0.000581	233.0274	<.0001
lit_hrs	3	1	0.00896	0.000871	105.9013	<.0001

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The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
lit_hrs	4	1	0.00356	0.00136	6.8339	0.0089
lit_hrs	5	1	0.00897	0.00117	58.3612	<.0001
lit_hrs	6	1	0.0110	0.00144	58.8409	<.0001
lit_hrs	7	1	0.0111	0.00461	5.7694	0.0163
ADJ_TSQFT	1	1	5.4325	0.2683	409.9361	<.0001
ADJ_TSQFT	2	1	2.7554	0.3232	72.6637	<.0001
ADJ_TSQFT	3	1	-2.3934	0.7650	9.7885	0.0018
ADJ_TSQFT	4	1	-4.8641	1.3766	12.4845	0.0004
ADJ_TSQFT	5	1	-6.1837	1.3192	21.9735	<.0001
ADJ_TSQFT	6	1	2.3294	0.8879	6.8824	0.0087
ADJ_TSQFT	7	1	8.9456	0.7958	126.3462	<.0001

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
b1	1	2.757	2.496	3.044
b1	2	2.385	2.126	2.676
b1	3	1.040	0.856	1.263
b1	4	1.093	0.819	1.459
b1	5	1.689	1.302	2.193
b1	6	2.490	1.801	3.444
b1	7	3.856	0.550	27.045
b6	1	0.549	0.460	0.655
b6	2	0.661	0.540	0.808
b6	3	1.025	0.790	1.330
b6	4	1.378	0.932	2.035
b6	5	1.176	0.830	1.666
b6	6	0.764	0.453	1.287
b6	7	0.697	0.058	8.307
b7	1	3.440	2.976	3.977
b7	2	2.478	2.091	2.937
b7	3	0.568	0.389	0.830
b7	4	0.908	0.571	1.444
b7	5	0.809	0.499	1.313
b7	6	3.272	2.163	4.949
b7	7	36.603	6.722	199.309
b8	1	1.953	1.710	2.231
b8	2	1.157	0.974	1.375
b8	3	0.583	0.427	0.796
b8	4	1.700	1.261	2.292
b8	5	0.804	0.520	1.243
b8	6	1.408	0.849	2.335
b8	7	6.825	0.570	81.776

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The LOGISTIC Procedure

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
b9	1	2.042	1.809	2.304
b9	2	0.845	0.716	0.997
b9	3	0.196	0.128	0.300
b9	4	1.250	0.890	1.756
b9	5	0.711	0.487	1.039
b9	6	1.520	0.990	2.334
b9	7	81.383	17.875	370.528
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000
tsqft	4	1.000	1.000	1.000
tsqft	5	1.000	1.000	1.000
tsqft	6	1.000	1.000	1.000
tsqft	7	1.000	1.000	1.000
YEAR	1	1.066	1.048	1.085
YEAR	2	1.112	1.088	1.135
YEAR	3	1.063	1.027	1.101
YEAR	4	1.151	1.096	1.208
YEAR	5	1.262	1.199	1.327
YEAR	6	1.638	1.536	1.748
YEAR	7	0.914	0.797	1.047
ADJSQFT	1	1.000	1.000	1.000
ADJSQFT	2	1.000	1.000	1.000
ADJSQFT	3	1.000	1.000	1.000
ADJSQFT	4	1.000	1.000	1.000
ADJSQFT	5	1.000	1.000	1.000
ADJSQFT	6	1.000	1.000	1.000
ADJSQFT	7	1.000	1.000	1.000
lit_hrs	1	1.011	1.010	1.012
lit_hrs	2	1.009	1.008	1.010
lit_hrs	3	1.009	1.007	1.011
lit_hrs	4	1.004	1.001	1.006
lit_hrs	5	1.009	1.007	1.011
lit_hrs	6	1.011	1.008	1.014
lit_hrs	7	1.011	1.002	1.020
ADJ_TSQFT	1	228.715	135.178	386.974
ADJ_TSQFT	2	15.727	8.347	29.635
ADJ_TSQFT	3	0.091	0.020	0.409
ADJ_TSQFT	4	0.008	<0.001	0.115
ADJ_TSQFT	5	0.002	<0.001	0.027
ADJ_TSQFT	6	10.271	1.802	58.535
ADJ_TSQFT	7	>999.999	>999.999	>999.999

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The LOGISTIC Procedure

Model Information

Data Set	WORK.SID1
Response Variable	Y
Number of Response Levels	8
Number of Observations	4367
Model	generalized logit
Optimization Technique	Newton-Raphson

Response Profile

Ordered Value	Y	Total Frequency
1	0	1931
2	1	1204
3	2	499
4	3	334
5	4	171
6	5	146
7	6	58
8	7	24

Logits modeled use Y=0 as the reference category.

NOTE: 8 observations were deleted due to missing values for the response or explanatory variables.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	13001.662	12390.151
SC	13046.335	12881.552
-2 Log L	12987.662	12236.151

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The LOGISTIC Procedure

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	751.5105	70	<.0001
Score	656.6181	70	<.0001
Wald	575.5418	70	<.0001

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
b1	7	41.0277	<.0001
b4	7	4.8132	0.6827
b6	7	52.9532	<.0001
b8	7	52.0223	<.0001
b9	7	30.6384	<.0001
tsqft	7	36.0696	<.0001
YEAR	7	34.9338	<.0001
ADJSQFT	7	15.4332	0.0308
lit_hrs	7	64.6629	<.0001
ADJ_TSQFT	7	99.0001	<.0001

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	-57.3930	32.6423	3.0914	0.0787
Intercept	2	1	-13.0666	43.5780	0.0899	0.7643
Intercept	3	1	-86.3082	52.2901	2.7244	0.0988
Intercept	4	1	-292.0	73.4697	15.7965	<.0001
Intercept	5	1	4.8270	74.5186	0.0042	0.9484
Intercept	6	1	-556.6	130.3	18.2498	<.0001
Intercept	7	1	-198.9	188.0	1.1189	0.2902
b1	1	1	0.6683	0.1439	21.5671	<.0001
b1	2	1	0.1179	0.1914	0.3796	0.5378
b1	3	1	-0.0217	0.2365	0.0084	0.9269
b1	4	1	-0.5372	0.3851	1.9467	0.1629
b1	5	1	-0.1037	0.4218	0.0604	0.8058
b1	6	1	0.2839	0.5095	0.3105	0.5774
b1	7	1	2.1712	0.6180	12.3427	0.0004
b4	1	1	0.0931	0.2905	0.1028	0.7485
b4	2	1	-0.1109	0.4129	0.0721	0.7882
b4	3	1	0.5772	0.4318	1.7870	0.1813
b4	4	1	0.0168	0.7586	0.0005	0.9823
b4	5	1	-0.2688	1.0446	0.0662	0.7969
b4	6	1	0.4298	1.0703	0.1612	0.6880

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The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
b4	7	1	1.9090	1.1725	2.6510	0.1035
b6	1	1	-0.5602	0.1018	30.3134	<.0001
b6	2	1	-0.5977	0.1295	21.3063	<.0001
b6	3	1	-0.0834	0.1539	0.2936	0.5879
b6	4	1	0.1259	0.1982	0.4032	0.5254
b6	5	1	0.3867	0.2437	2.5176	0.1126
b6	6	1	-0.2350	0.3562	0.4350	0.5095
b6	7	1	-0.8830	0.7261	1.4787	0.2240
b8	1	1	-0.4424	0.1277	12.0011	0.0005
b8	2	1	-0.7509	0.1708	19.3237	<.0001
b8	3	1	-0.8748	0.2020	18.7592	<.0001
b8	4	1	-1.5108	0.3431	19.3872	<.0001
b8	5	1	0.1360	0.2856	0.2269	0.6338
b8	6	1	-0.7649	0.4729	2.6159	0.1058
b8	7	1	-1.0276	1.1448	0.8057	0.3694
b9	1	1	0.3939	0.1631	5.8367	0.0157
b9	2	1	-0.2494	0.2333	1.1433	0.2850
b9	3	1	-1.0559	0.3735	7.9915	0.0047
b9	4	1	-1.1757	0.5399	4.7425	0.0294
b9	5	1	0.1063	0.4485	0.0561	0.8127
b9	6	1	0.5807	0.5205	1.2446	0.2646
b9	7	1	1.4407	0.7394	3.7969	0.0513
tsqft	1	1	1.854E-6	4.009E-7	21.3748	<.0001
tsqft	2	1	1.863E-6	4.52E-7	16.9862	<.0001
tsqft	3	1	1.231E-6	6.182E-7	3.9620	0.0465
tsqft	4	1	1.714E-6	5.958E-7	8.2777	0.0040
tsqft	5	1	-2.03E-7	1.21E-6	0.0282	0.8665
tsqft	6	1	-1.72E-6	1.977E-6	0.7571	0.3842
tsqft	7	1	3.439E-6	6.727E-7	26.1324	<.0001
YEAR	1	1	0.0284	0.0164	2.9999	0.0833
YEAR	2	1	0.00594	0.0219	0.0736	0.7862
YEAR	3	1	0.0428	0.0263	2.6641	0.1026
YEAR	4	1	0.1456	0.0369	15.5997	<.0001
YEAR	5	1	-0.00372	0.0374	0.0099	0.9208
YEAR	6	1	0.2777	0.0654	18.0523	<.0001
YEAR	7	1	0.0972	0.0944	1.0602	0.3032
ADJSQFT	1	1	-5.46E-7	2.159E-6	0.0640	0.8002
ADJSQFT	2	1	-3.7E-6	3.329E-6	1.2381	0.2658
ADJSQFT	3	1	-0.00006	0.000018	10.3828	0.0013
ADJSQFT	4	1	-0.00001	0.000011	1.8099	0.1785
ADJSQFT	5	1	-0.00004	0.000023	2.4460	0.1178
ADJSQFT	6	1	6.549E-6	0.000012	0.2875	0.5918
ADJSQFT	7	1	-5.58E-6	9.41E-6	0.3514	0.5533
lit_hrs	1	1	0.00737	0.00105	49.7014	<.0001
lit_hrs	2	1	0.00622	0.00133	21.7859	<.0001
lit_hrs	3	1	0.000563	0.00164	0.1175	0.7317

Boarding

The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
lit_hrs	4	1	0.00148	0.00203	0.5313	0.4661
lit_hrs	5	1	0.00707	0.00208	11.5227	0.0007
lit_hrs	6	1	0.00624	0.00330	3.5765	0.0586
lit_hrs	7	1	0.00939	0.00476	3.8881	0.0486
ADJ_TSQFT	1	1	0.6754	0.2258	8.9473	0.0028
ADJ_TSQFT	2	1	-1.1265	0.3894	8.3689	0.0038
ADJ_TSQFT	3	1	-5.7141	0.9366	37.2243	<.0001
ADJ_TSQFT	4	1	-4.8942	1.0861	20.3063	<.0001
ADJ_TSQFT	5	1	-4.5910	1.2243	14.0625	0.0002
ADJ_TSQFT	6	1	-3.7342	1.6054	5.4102	0.0200
ADJ_TSQFT	7	1	-1.4363	1.9789	0.5268	0.4679

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
b1	1	1.951	1.471	2.587
b1	2	1.125	0.773	1.637
b1	3	0.979	0.616	1.555
b1	4	0.584	0.275	1.243
b1	5	0.902	0.394	2.061
b1	6	1.328	0.489	3.605
b1	7	8.769	2.612	29.445
b4	1	1.098	0.621	1.940
b4	2	0.895	0.398	2.010
b4	3	1.781	0.764	4.152
b4	4	1.017	0.230	4.498
b4	5	0.764	0.099	5.922
b4	6	1.537	0.189	12.523
b4	7	6.746	0.678	67.158
b6	1	0.571	0.468	0.697
b6	2	0.550	0.427	0.709
b6	3	0.920	0.680	1.244
b6	4	1.134	0.769	1.673
b6	5	1.472	0.913	2.374
b6	6	0.791	0.393	1.589
b6	7	0.414	0.100	1.716
b8	1	0.642	0.500	0.825
b8	2	0.472	0.338	0.660
b8	3	0.417	0.281	0.619
b8	4	0.221	0.113	0.432
b8	5	1.146	0.655	2.005
b8	6	0.465	0.184	1.176
b8	7	0.358	0.038	3.374

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The LOGISTIC Procedure

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
b9	1	1.483	1.077	2.041
b9	2	0.779	0.493	1.231
b9	3	0.348	0.167	0.723
b9	4	0.309	0.107	0.889
b9	5	1.112	0.462	2.679
b9	6	1.787	0.644	4.957
b9	7	4.224	0.992	17.992
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000
tsqft	4	1.000	1.000	1.000
tsqft	5	1.000	1.000	1.000
tsqft	6	1.000	1.000	1.000
tsqft	7	1.000	1.000	1.000
YEAR	1	1.029	0.996	1.062
YEAR	2	1.006	0.964	1.050
YEAR	3	1.044	0.991	1.099
YEAR	4	1.157	1.076	1.243
YEAR	5	0.996	0.926	1.072
YEAR	6	1.320	1.161	1.501
YEAR	7	1.102	0.916	1.326
ADJSQFT	1	1.000	1.000	1.000
ADJSQFT	2	1.000	1.000	1.000
ADJSQFT	3	1.000	1.000	1.000
ADJSQFT	4	1.000	1.000	1.000
ADJSQFT	5	1.000	1.000	1.000
ADJSQFT	6	1.000	1.000	1.000
ADJSQFT	7	1.000	1.000	1.000
lit_hrs	1	1.007	1.005	1.009
lit_hrs	2	1.006	1.004	1.009
lit_hrs	3	1.001	0.997	1.004
lit_hrs	4	1.001	0.998	1.005
lit_hrs	5	1.007	1.003	1.011
lit_hrs	6	1.006	1.000	1.013
lit_hrs	7	1.009	1.000	1.019
ADJ_TSQFT	1	1.965	1.262	3.059
ADJ_TSQFT	2	0.324	0.151	0.695
ADJ_TSQFT	3	0.003	<0.001	0.021
ADJ_TSQFT	4	0.007	<0.001	0.063
ADJ_TSQFT	5	0.010	<0.001	0.112
ADJ_TSQFT	6	0.024	0.001	0.556
ADJ_TSQFT	7	0.238	0.005	11.498

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The LOGISTIC Procedure

Model Information

```
Data Set                       WORK.SID1
Response Variable              Y
Number of Response Levels      5
Number of Observations         10383
Model                          generalized logit
Optimization Technique         Newton-Raphson
```

Response Profile

Ordered Value	Y	Total Frequency
1	0	5544
2	1	2017
3	2	1869
4	3	527
5	4	426

Logits modeled use Y=0 as the reference category.

NOTE: 20 observations were deleted due to missing values for the response or explanatory variables.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	25847.481	23804.211
SC	25876.473	23978.161
-2 Log L	25839.481	23756.211

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	2083.2701	20	<.0001
Score	1001.5990	20	<.0001
Wald	839.9241	20	<.0001

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Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
tsqft	4	19.0597	0.0008
YEAR	4	89.9358	<.0001
ADJSQFT	4	405.0721	<.0001
lit_hrs	4	74.0284	<.0001
ADJ_TSQFT	4	44.3958	<.0001

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	29.5093	23.2405	1.6122	0.2042
Intercept	2	1	-7.5749	22.9405	0.1090	0.7413
Intercept	3	1	-18.0412	41.5211	0.1888	0.6639
Intercept	4	1	-416.1	45.4231	83.9284	<.0001
tsqft	1	1	9.909E-7	3.125E-7	10.0550	0.0015
tsqft	2	1	5.235E-7	3.077E-7	2.8943	0.0889
tsqft	3	1	1.747E-6	4.408E-7	15.6988	<.0001
tsqft	4	1	6.456E-7	4.486E-7	2.0706	0.1502
YEAR	1	1	-0.0150	0.0117	1.6530	0.1986
YEAR	2	1	0.00322	0.0115	0.0784	0.7795
YEAR	3	1	0.00832	0.0208	0.1593	0.6898
YEAR	4	1	0.2076	0.0228	82.9092	<.0001
ADJSQFT	1	1	-0.00041	0.000026	239.1463	<.0001
ADJSQFT	2	1	-0.00005	5.617E-6	84.1259	<.0001
ADJSQFT	3	1	-0.00199	0.000190	110.0145	<.0001
ADJSQFT	4	1	-0.00001	0.000010	1.0073	0.3155
lit_hrs	1	1	-0.00129	0.00106	1.4808	0.2236
lit_hrs	2	1	0.00609	0.00100	36.9313	<.0001
lit_hrs	3	1	0.00484	0.00154	9.8746	0.0017
lit_hrs	4	1	0.00879	0.00163	29.0804	<.0001
ADJ_TSQFT	1	1	-1.3813	0.3357	16.9320	<.0001
ADJ_TSQFT	2	1	-0.4791	0.2144	4.9935	0.0254
ADJ_TSQFT	3	1	-4.4501	2.1834	4.1542	0.0415
ADJ_TSQFT	4	1	-4.3075	0.8844	23.7242	<.0001

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000

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Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
tsqft	4	1.000	1.000	1.000
YEAR	1	0.985	0.963	1.008
YEAR	2	1.003	0.981	1.026
YEAR	3	1.008	0.968	1.050
YEAR	4	1.231	1.177	1.287
ADJSQFT	1	1.000	1.000	1.000
ADJSQFT	2	1.000	1.000	1.000
ADJSQFT	3	0.998	0.998	0.998
ADJSQFT	4	1.000	1.000	1.000
lit_hrs	1	0.999	0.997	1.001
lit_hrs	2	1.006	1.004	1.008
lit_hrs	3	1.005	1.002	1.008
lit_hrs	4	1.009	1.006	1.012
ADJ_TSQFT	1	0.251	0.130	0.485
ADJ_TSQFT	2	0.619	0.407	0.943
ADJ_TSQFT	3	0.012	<0.001	0.843
ADJ_TSQFT	4	0.013	0.002	0.076

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The LOGISTIC Procedure

Model Information

Data Set	WORK.SID1
Response Variable	Y
Number of Response Levels	8
Number of Observations	10981
Model	generalized logit
Optimization Technique	Newton-Raphson

Response Profile

Ordered Value	Y	Total Frequency
1	0	4061
2	1	2971
3	2	1584
4	3	1542
5	4	306
6	5	256
7	6	162
8	7	99

Logits modeled use Y=0 as the reference category.

NOTE: 27 observations were deleted due to missing values for the response or explanatory variables.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	34463.199	32698.955
SC	34514.326	33005.720
-2 Log L	34449.199	32614.955

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The LOGISTIC Procedure

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	1834.2434	35	<.0001
Score	1144.2532	35	<.0001
Wald	1158.6563	35	<.0001

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
tsqft	7	23.6124	0.0013
YEAR	7	257.8924	<.0001
ADJSQFT	7	536.0270	<.0001
lit_hrs	7	125.6107	<.0001
ADJ_TSQFT	7	36.1606	<.0001

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	-8.7412	21.9463	0.1586	0.6904
Intercept	2	1	-62.6811	27.0021	5.3886	0.0203
Intercept	3	1	-28.3168	26.0300	1.1834	0.2767
Intercept	4	1	-160.5	54.5089	8.6707	0.0032
Intercept	5	1	-695.5	64.0036	118.0658	<.0001
Intercept	6	1	-966.9	80.1393	145.5654	<.0001
Intercept	7	1	40.9342	87.4316	0.2192	0.6397
tsqft	1	1	-3.82E-7	2.654E-7	2.0720	0.1500
tsqft	2	1	1.055E-7	2.946E-7	0.1283	0.7202
tsqft	3	1	4.953E-8	2.542E-7	0.0380	0.8455
tsqft	4	1	1.09E-6	3.57E-7	9.3185	0.0023
tsqft	5	1	1.622E-7	5.687E-7	0.0813	0.7755
tsqft	6	1	-1.59E-7	5.722E-7	0.0773	0.7810
tsqft	7	1	1.193E-6	3.808E-7	9.8095	0.0017
YEAR	1	1	0.00440	0.0110	0.1594	0.6897
YEAR	2	1	0.0311	0.0136	5.2468	0.0220
YEAR	3	1	0.0136	0.0131	1.0869	0.2972
YEAR	4	1	0.0793	0.0274	8.3996	0.0038
YEAR	5	1	0.3476	0.0321	117.1168	<.0001
YEAR	6	1	0.4834	0.0402	144.5814	<.0001
YEAR	7	1	-0.0223	0.0439	0.2568	0.6123
ADJSQFT	1	1	-0.00027	0.000015	330.6853	<.0001
ADJSQFT	2	1	-0.00033	0.000022	219.7096	<.0001
ADJSQFT	3	1	-0.00004	7.495E-6	31.1865	<.0001
ADJSQFT	4	1	-0.00040	0.000058	48.6535	<.0001

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The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
ADJSQFT	5	1	-0.00028	0.000049	31.5608	<.0001
ADJSQFT	6	1	-4.71E-6	0.000014	0.1056	0.7453
ADJSQFT	7	1	0.000010	5.454E-6	3.3715	0.0663
lit_hrs	1	1	0.00309	0.000672	21.1451	<.0001
lit_hrs	2	1	0.00597	0.000794	56.5442	<.0001
lit_hrs	3	1	0.00462	0.000798	33.5961	<.0001
lit_hrs	4	1	0.0100	0.00144	48.2890	<.0001
lit_hrs	5	1	0.00855	0.00162	27.9881	<.0001
lit_hrs	6	1	0.00810	0.00197	16.9350	<.0001
lit_hrs	7	1	-0.00881	0.00324	7.4135	0.0065
ADJ_TSQFT	1	1	-0.4418	0.1755	6.3349	0.0118
ADJ_TSQFT	2	1	-0.0393	0.2063	0.0362	0.8491
ADJ_TSQFT	3	1	0.0837	0.1886	0.1971	0.6571
ADJ_TSQFT	4	1	-4.0779	0.8448	23.3013	<.0001
ADJ_TSQFT	5	1	0.5078	0.4167	1.4848	0.2230
ADJ_TSQFT	6	1	-1.1999	0.6627	3.2788	0.0702
ADJ_TSQFT	7	1	0.2493	0.6526	0.1459	0.7025

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000
tsqft	4	1.000	1.000	1.000
tsqft	5	1.000	1.000	1.000
tsqft	6	1.000	1.000	1.000
tsqft	7	1.000	1.000	1.000
YEAR	1	1.004	0.983	1.026
YEAR	2	1.032	1.004	1.059
YEAR	3	1.014	0.988	1.040
YEAR	4	1.083	1.026	1.142
YEAR	5	1.416	1.329	1.508
YEAR	6	1.622	1.499	1.754
YEAR	7	0.978	0.897	1.066
ADJSQFT	1	1.000	1.000	1.000
ADJSQFT	2	1.000	1.000	1.000
ADJSQFT	3	1.000	1.000	1.000
ADJSQFT	4	1.000	0.999	1.000
ADJSQFT	5	1.000	1.000	1.000
ADJSQFT	6	1.000	1.000	1.000
ADJSQFT	7	1.000	1.000	1.000
lit_hrs	1	1.003	1.002	1.004

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The LOGISTIC Procedure

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
lit_hrs	2	1.006	1.004	1.008
lit_hrs	3	1.005	1.003	1.006
lit_hrs	4	1.010	1.007	1.013
lit_hrs	5	1.009	1.005	1.012
lit_hrs	6	1.008	1.004	1.012
lit_hrs	7	0.991	0.985	0.998
ADJ_TSQFT	1	0.643	0.456	0.907
ADJ_TSQFT	2	0.961	0.642	1.441
ADJ_TSQFT	3	1.087	0.751	1.574
ADJ_TSQFT	4	0.017	0.003	0.089
ADJ_TSQFT	5	1.662	0.734	3.760
ADJ_TSQFT	6	0.301	0.082	1.104
ADJ_TSQFT	7	1.283	0.357	4.610

Appendix I.

Display

The LOGISTIC Procedure

Model Information

Data Set	WORK.SID1
Response Variable	Y
Number of Response Levels	8
Number of Observations	14256
Model	generalized logit
Optimization Technique	Newton-Raphson

Response Profile

Ordered Value	Y	Total Frequency
1	0	5572
2	1	3968
3	2	1821
4	3	1750
5	4	333
6	5	315
7	6	254
8	7	243

Logits modeled use Y=0 as the reference category.

NOTE: 23 observations were deleted due to missing values for the response or explanatory variables.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	44397.119	40700.583
SC	44450.074	41441.947
-2 Log L	44383.119	40504.583

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Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	3878.5364	91	<.0001
Score	3071.5480	91	<.0001
Wald	2425.6575	91	<.0001

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
b1	7	36.9496	<.0001
b2	7	141.6518	<.0001
b3	7	77.5624	<.0001
b4	7	56.3858	<.0001
b5	7	80.8220	<.0001
b6	7	33.1233	<.0001
b7	7	78.8530	<.0001
b9	7	27.3294	0.0003
tsqft	7	7.1752	0.4109
YEAR	7	367.3739	<.0001
ADJSQFT	7	9.7076	0.2058
lit_hrs	7	203.6419	<.0001
ADJ_TSQFT	7	797.0267	<.0001

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	-42.4979	18.8410	5.0878	0.0241
Intercept	2	1	18.2653	25.0817	0.5303	0.4665
Intercept	3	1	-33.8058	25.5083	1.7564	0.1851
Intercept	4	1	-620.0	55.8311	123.3253	<.0001
Intercept	5	1	-882.7	58.0746	231.0226	<.0001
Intercept	6	1	-174.1	57.0727	9.3013	0.0023
Intercept	7	1	-358.8	61.7083	33.7991	<.0001
b1	1	1	0.3517	0.1475	5.6854	0.0171
b1	2	1	-0.2433	0.1455	2.7954	0.0945
b1	3	1	0.4979	0.1754	8.0567	0.0045
b1	4	1	1.6193	0.5320	9.2670	0.0023
b1	5	1	0.1522	0.3754	0.1643	0.6852
b1	6	1	2.8184	1.0191	7.6480	0.0057
b1	7	1	0.5617	0.3272	2.9474	0.0860
b2	1	1	0.9666	0.1406	47.2883	<.0001
b2	2	1	0.6209	0.1357	20.9479	<.0001
b2	3	1	1.5183	0.1670	82.6243	<.0001

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The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
b2	4	1	2.7859	0.5182	28.9002	<.0001
b2	5	1	1.0235	0.3420	8.9578	0.0028
b2	6	1	3.0231	1.0133	8.9010	0.0029
b2	7	1	0.9680	0.3169	9.3297	0.0023
b3	1	1	1.1179	0.1452	59.2596	<.0001
b3	2	1	0.5306	0.1509	12.3716	0.0004
b3	3	1	0.4164	0.1909	4.7605	0.0291
b3	4	1	1.3387	0.5609	5.6962	0.0170
b3	5	1	1.1363	0.3524	10.3955	0.0013
b3	6	1	3.0781	1.0160	9.1792	0.0024
b3	7	1	0.6829	0.3467	3.8791	0.0489
b4	1	1	0.3145	0.1580	3.9605	0.0466
b4	2	1	0.4865	0.1542	9.9506	0.0016
b4	3	1	1.1943	0.1817	43.2191	<.0001
b4	4	1	1.3806	0.5727	5.8118	0.0159
b4	5	1	0.1485	0.4276	0.1206	0.7284
b4	6	1	2.4068	1.0465	5.2892	0.0215
b4	7	1	0.9341	0.3639	6.5901	0.0103
b5	1	1	0.8799	0.1689	27.1349	<.0001
b5	2	1	1.0506	0.1648	40.6297	<.0001
b5	3	1	1.2455	0.2004	38.6345	<.0001
b5	4	1	2.2286	0.5577	15.9681	<.0001
b5	5	1	0.9351	0.3931	5.6571	0.0174
b5	6	1	0.1734	1.4205	0.0149	0.9029
b5	7	1	-0.0980	0.4552	0.0464	0.8295
b6	1	1	0.3202	0.2634	1.4773	0.2242
b6	2	1	0.8120	0.2240	13.1427	0.0003
b6	3	1	1.1571	0.2605	19.7341	<.0001
b6	4	1	1.9356	0.6450	9.0053	0.0027
b6	5	1	0.9678	0.4902	3.8981	0.0483
b6	6	1	2.0191	1.2336	2.6791	0.1017
b6	7	1	0.6111	0.4851	1.5869	0.2078
b7	1	1	0.9800	0.1631	36.1204	<.0001
b7	2	1	-0.7450	0.2065	13.0171	0.0003
b7	3	1	0.2916	0.2122	1.8884	0.1694
b7	4	1	1.3457	0.5823	5.3403	0.0208
b7	5	1	0.6165	0.4129	2.2293	0.1354
b7	6	1	3.4327	1.0301	11.1047	0.0009
b7	7	1	-0.2344	0.4789	0.2396	0.6245
b9	1	1	-0.2501	0.1889	1.7525	0.1856
b9	2	1	0.2026	0.1551	1.7063	0.1915
b9	3	1	-1.1287	0.2787	16.3999	<.0001
b9	4	1	0.0574	0.7145	0.0065	0.9359
b9	5	1	0.0158	0.4810	0.0011	0.9738
b9	6	1	2.3542	1.0682	4.8575	0.0275
b9	7	1	0.0142	0.4096	0.0012	0.9723

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The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
tsqft	1	1	-5.37E-8	2.703E-7	0.0395	0.8424
tsqft	2	1	-4.23E-7	3.751E-7	1.2700	0.2598
tsqft	3	1	-1.51E-7	3.485E-7	0.1886	0.6641
tsqft	4	1	-2.87E-7	7.168E-7	0.1601	0.6890
tsqft	5	1	-1.25E-7	7.052E-7	0.0316	0.8590
tsqft	6	1	8.808E-7	4.193E-7	4.4125	0.0357
tsqft	7	1	-4.53E-7	7.442E-7	0.3708	0.5426
YEAR	1	1	0.0206	0.00946	4.7575	0.0292
YEAR	2	1	-0.00938	0.0126	0.5557	0.4560
YEAR	3	1	0.0164	0.0128	1.6310	0.2016
YEAR	4	1	0.3092	0.0280	121.8511	<.0001
YEAR	5	1	0.4411	0.0291	229.3015	<.0001
YEAR	6	1	0.0841	0.0286	8.6191	0.0033
YEAR	7	1	0.1784	0.0310	33.2187	<.0001
ADJSQFT	1	1	-2.82E-6	2.075E-6	1.8500	0.1738
ADJSQFT	2	1	-0.00003	0.000017	2.4927	0.1144
ADJSQFT	3	1	-5.24E-6	6.555E-6	0.6379	0.4245
ADJSQFT	4	1	5.007E-6	5.805E-6	0.7437	0.3885
ADJSQFT	5	1	-7.33E-7	6.828E-6	0.0115	0.9146
ADJSQFT	6	1	4.289E-6	2.445E-6	3.0760	0.0795
ADJSQFT	7	1	7.436E-6	0.000029	0.0672	0.7955
lit_hrs	1	1	0.00242	0.000621	15.2159	<.0001
lit_hrs	2	1	-0.00641	0.000844	57.7205	<.0001
lit_hrs	3	1	-0.00584	0.000878	44.1814	<.0001
lit_hrs	4	1	-0.00420	0.00175	5.7645	0.0164
lit_hrs	5	1	0.00469	0.00157	8.9138	0.0028
lit_hrs	6	1	0.00936	0.00164	32.6252	<.0001
lit_hrs	7	1	0.00522	0.00161	10.4859	0.0012
ADJ_TSQFT	1	1	0.5935	0.0891	44.3394	<.0001
ADJ_TSQFT	2	1	-8.8346	0.4911	323.6631	<.0001
ADJ_TSQFT	3	1	-5.0402	0.2869	308.7030	<.0001
ADJ_TSQFT	4	1	-5.3478	0.6617	65.3096	<.0001
ADJ_TSQFT	5	1	-1.1478	0.3526	10.5959	0.0011
ADJ_TSQFT	6	1	-0.6889	0.3269	4.4401	0.0351
ADJ_TSQFT	7	1	-21.0729	2.8518	54.6006	<.0001

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
b1	1	1.421	1.065	1.898
b1	2	0.784	0.589	1.043
b1	3	1.645	1.167	2.320
b1	4	5.050	1.780	14.324

Appendix I.

Display

The LOGISTIC Procedure

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
b1	5	1.164	0.558	2.430
b1	6	16.751	2.273	123.459
b1	7	1.754	0.924	3.330
b2	1	2.629	1.996	3.463
b2	2	1.861	1.426	2.427
b2	3	4.565	3.290	6.333
b2	4	16.215	5.872	44.775
b2	5	2.783	1.424	5.440
b2	6	20.554	2.821	149.763
b2	7	2.633	1.415	4.899
b3	1	3.058	2.301	4.065
b3	2	1.700	1.265	2.285
b3	3	1.517	1.043	2.205
b3	4	3.814	1.270	11.450
b3	5	3.115	1.561	6.215
b3	6	21.717	2.965	159.066
b3	7	1.980	1.003	3.906
b4	1	1.370	1.005	1.867
b4	2	1.627	1.202	2.201
b4	3	3.301	2.312	4.713
b4	4	3.977	1.295	12.220
b4	5	1.160	0.502	2.682
b4	6	11.099	1.427	86.317
b4	7	2.545	1.247	5.192
b5	1	2.411	1.731	3.357
b5	2	2.859	2.070	3.950
b5	3	3.475	2.346	5.146
b5	4	9.287	3.113	27.705
b5	5	2.547	1.179	5.505
b5	6	1.189	0.073	19.251
b5	7	0.907	0.371	2.213
b6	1	1.377	0.822	2.308
b6	2	2.252	1.452	3.494
b6	3	3.181	1.909	5.300
b6	4	6.928	1.957	24.526
b6	5	2.632	1.007	6.880
b6	6	7.532	0.671	84.514
b6	7	1.842	0.712	4.768
b7	1	2.665	1.936	3.668
b7	2	0.475	0.317	0.712
b7	3	1.339	0.883	2.029
b7	4	3.841	1.227	12.024
b7	5	1.852	0.825	4.161
b7	6	30.961	4.111	233.160
b7	7	0.791	0.309	2.022
b9	1	0.779	0.538	1.128

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Display

The LOGISTIC Procedure

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
b9	2	1.225	0.904	1.659
b9	3	0.323	0.187	0.559
b9	4	1.059	0.261	4.296
b9	5	1.016	0.396	2.608
b9	6	10.530	1.298	85.438
b9	7	1.014	0.454	2.264
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000
tsqft	4	1.000	1.000	1.000
tsqft	5	1.000	1.000	1.000
tsqft	6	1.000	1.000	1.000
tsqft	7	1.000	1.000	1.000
YEAR	1	1.021	1.002	1.040
YEAR	2	0.991	0.967	1.015
YEAR	3	1.016	0.991	1.042
YEAR	4	1.362	1.290	1.439
YEAR	5	1.554	1.468	1.646
YEAR	6	1.088	1.028	1.150
YEAR	7	1.195	1.125	1.270
ADJSQFT	1	1.000	1.000	1.000
ADJSQFT	2	1.000	1.000	1.000
ADJSQFT	3	1.000	1.000	1.000
ADJSQFT	4	1.000	1.000	1.000
ADJSQFT	5	1.000	1.000	1.000
ADJSQFT	6	1.000	1.000	1.000
ADJSQFT	7	1.000	1.000	1.000
lit_hrs	1	1.002	1.001	1.004
lit_hrs	2	0.994	0.992	0.995
lit_hrs	3	0.994	0.992	0.996
lit_hrs	4	0.996	0.992	0.999
lit_hrs	5	1.005	1.002	1.008
lit_hrs	6	1.009	1.006	1.013
lit_hrs	7	1.005	1.002	1.008
ADJ_TSQFT	1	1.810	1.520	2.156
ADJ_TSQFT	2	<0.001	<0.001	<0.001
ADJ_TSQFT	3	0.006	0.004	0.011
ADJ_TSQFT	4	0.005	0.001	0.017
ADJ_TSQFT	5	0.317	0.159	0.633
ADJ_TSQFT	6	0.502	0.265	0.953
ADJ_TSQFT	7	<0.001	<0.001	<0.001

Appendix I.

The LOGISTIC Procedure

Model Information

Data Set	WORK.SID1
Response Variable	Y
Number of Response Levels	6
Number of Observations	9902
Model	generalized logit
Optimization Technique	Newton-Raphson

Response Profile

Ordered Value	Y	Total Frequency
1	0	6432
2	1	2120
3	2	689
4	3	543
5	4	101
6	5	17

Logits modeled use Y=0 as the reference category.

NOTE: 10 observations were deleted due to missing values for the response or explanatory variables.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	20063.910	19648.015
SC	20099.912	19792.025
-2 Log L	20053.910	19608.015

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Exit

The LOGISTIC Procedure

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	445.8944	15	<.0001
Score	636.5506	15	<.0001
Wald	460.8974	15	<.0001

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
tsqft	5	96.9669	<.0001
YEAR	5	223.7356	<.0001
lit_hrs	5	145.6010	<.0001

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	176.1	21.9750	64.2198	<.0001
Intercept	2	1	39.4117	35.2513	1.2500	0.2636
Intercept	3	1	-495.4	42.8272	133.8249	<.0001
Intercept	4	1	-139.9	90.9790	2.3662	0.1240
Intercept	5	1	-34.9986	214.8	0.0265	0.8706
tsqft	1	1	-2.81E-7	2.929E-7	0.9202	0.3374
tsqft	2	1	1.694E-6	2.568E-7	43.4912	<.0001
tsqft	3	1	2.105E-6	2.517E-7	69.9523	<.0001
tsqft	4	1	2.219E-6	4.238E-7	27.4164	<.0001
tsqft	5	1	2.431E-6	8.22E-7	8.7441	0.0031
YEAR	1	1	-0.0884	0.0110	64.2295	<.0001
YEAR	2	1	-0.0208	0.0177	1.3813	0.2399
YEAR	3	1	0.2474	0.0215	132.5124	<.0001
YEAR	4	1	0.0700	0.0457	2.3512	0.1252
YEAR	5	1	0.0165	0.1079	0.0235	0.8782
lit_hrs	1	1	-0.00648	0.00141	20.9844	<.0001
lit_hrs	2	1	-0.00185	0.00268	0.4768	0.4899
lit_hrs	3	1	-0.00053	0.00330	0.0257	0.8727
lit_hrs	4	1	-0.0241	0.00219	121.2456	<.0001
lit_hrs	5	1	-0.0253	0.00466	29.5539	<.0001

Appendix I.

The LOGISTIC Procedure

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000
tsqft	4	1.000	1.000	1.000
tsqft	5	1.000	1.000	1.000
YEAR	1	0.915	0.896	0.935
YEAR	2	0.979	0.946	1.014
YEAR	3	1.281	1.228	1.336
YEAR	4	1.073	0.981	1.173
YEAR	5	1.017	0.823	1.256
lit_hrs	1	0.994	0.991	0.996
lit_hrs	2	0.998	0.993	1.003
lit_hrs	3	0.999	0.993	1.006
lit_hrs	4	0.976	0.972	0.980
lit_hrs	5	0.975	0.966	0.984

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Exterior - Architectural

The LOGISTIC Procedure

Model Information

Data Set	WORK.SID1
Response Variable	Y
Number of Response Levels	8
Number of Observations	1742
Model	generalized logit
Optimization Technique	Newton-Raphson

Response Profile

Ordered Value	Y	Total Frequency
1	0	528
2	1	321
3	2	303
4	3	182
5	4	181
6	5	132
7	6	75
8	7	20

Logits modeled use Y=0 as the reference category.

NOTE: 7 observations were deleted due to missing values for the response or explanatory variables.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	6393.778	6207.499
SC	6432.017	6589.894
-2 Log L	6379.778	6067.499

Appendix I.

Exterior - Architectural

The LOGISTIC Procedure

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	312.2789	63	<.0001
Score	318.2572	63	<.0001
Wald	279.8126	63	<.0001

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
b1	7	30.7720	<.0001
b5	7	6.1284	0.5248
b6	7	26.4245	0.0004
b7	7	19.3705	0.0071
b8	7	26.2895	0.0004
b9	7	52.2780	<.0001
tsqft	7	45.1609	<.0001
YEAR	7	14.9219	0.0370
lit_hrs	7	41.0862	<.0001

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	0.8310	75.6064	0.0001	0.9912
Intercept	2	1	-67.2093	75.9784	0.7825	0.3764
Intercept	3	1	90.1319	88.6428	1.0339	0.3092
Intercept	4	1	-26.1546	90.4479	0.0836	0.7725
Intercept	5	1	-54.1770	100.7	0.2892	0.5907
Intercept	6	1	-370.1	123.3	9.0130	0.0027
Intercept	7	1	-387.5	230.1	2.8371	0.0921
b1	1	1	-0.2422	0.2051	1.3949	0.2376
b1	2	1	-0.3765	0.2132	3.1193	0.0774
b1	3	1	0.0372	0.2313	0.0258	0.8723
b1	4	1	-0.9600	0.2419	15.7467	<.0001
b1	5	1	-0.2947	0.2854	1.0665	0.3017
b1	6	1	0.9390	0.3597	6.8151	0.0090
b1	7	1	0.1773	0.7762	0.0521	0.8194
b5	1	1	0.4974	0.2854	3.0367	0.0814
b5	2	1	0.6342	0.2867	4.8933	0.0270
b5	3	1	0.2067	0.3636	0.3232	0.5697
b5	4	1	0.3579	0.3042	1.3842	0.2394
b5	5	1	0.4916	0.3897	1.5914	0.2071
b5	6	1	0.6456	0.5464	1.3962	0.2374
b5	7	1	0.3034	1.1846	0.0656	0.7979

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Exterior - Architectural

The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
b6	1	1	0.1900	0.3560	0.2848	0.5935
b6	2	1	0.8083	0.3109	6.7582	0.0093
b6	3	1	-0.2241	0.4481	0.2501	0.6170
b6	4	1	-1.1158	0.5176	4.6466	0.0311
b6	5	1	0.0291	0.4757	0.0038	0.9511
b6	6	1	0.1572	0.6881	0.0522	0.8193
b6	7	1	2.1783	0.7507	8.4195	0.0037
b7	1	1	-0.5562	0.3038	3.3515	0.0671
b7	2	1	-0.7935	0.3185	6.2070	0.0127
b7	3	1	-0.5109	0.3376	2.2903	0.1302
b7	4	1	-0.8288	0.3194	6.7323	0.0095
b7	5	1	0.0990	0.3409	0.0843	0.7715
b7	6	1	0.6875	0.4448	2.3884	0.1222
b7	7	1	-0.3734	1.1701	0.1018	0.7496
b8	1	1	0.3341	0.2592	1.6612	0.1974
b8	2	1	0.1997	0.2677	0.5567	0.4556
b8	3	1	-0.6795	0.3786	3.2214	0.0727
b8	4	1	-1.5016	0.4198	12.7961	0.0003
b8	5	1	-0.3093	0.4213	0.5390	0.4629
b8	6	1	-0.8718	0.7910	1.2148	0.2704
b8	7	1	0.6854	0.9456	0.5253	0.4686
b9	1	1	-0.6880	0.2348	8.5848	0.0034
b9	2	1	-1.0408	0.2526	16.9761	<.0001
b9	3	1	-1.2590	0.3175	15.7269	<.0001
b9	4	1	-2.1456	0.3617	35.1793	<.0001
b9	5	1	-0.4638	0.3018	2.3613	0.1244
b9	6	1	-0.9114	0.5498	2.7474	0.0974
b9	7	1	-0.0151	0.8313	0.0003	0.9856
tsqft	1	1	-3.12E-6	1.127E-6	7.6701	0.0056
tsqft	2	1	1.02E-6	6.833E-7	2.2301	0.1353
tsqft	3	1	3.02E-6	5.924E-7	25.9903	<.0001
tsqft	4	1	2.034E-6	6.591E-7	9.5251	0.0020
tsqft	5	1	1.818E-6	6.9E-7	6.9391	0.0084
tsqft	6	1	1.964E-6	7.701E-7	6.5067	0.0107
tsqft	7	1	1.861E-6	1.442E-6	1.6656	0.1968
YEAR	1	1	-0.00022	0.0380	0.0000	0.9954
YEAR	2	1	0.0339	0.0382	0.7916	0.3736
YEAR	3	1	-0.0453	0.0445	1.0341	0.3092
YEAR	4	1	0.0134	0.0454	0.0867	0.7685
YEAR	5	1	0.0266	0.0506	0.2759	0.5994
YEAR	6	1	0.1848	0.0619	8.9211	0.0028
YEAR	7	1	0.1926	0.1155	2.7792	0.0955
lit_hrs	1	1	-0.00875	0.00264	10.9952	0.0009
lit_hrs	2	1	-0.0115	0.00266	18.6995	<.0001
lit_hrs	3	1	-0.0146	0.00324	20.3712	<.0001
lit_hrs	4	1	-0.0138	0.00323	18.3218	<.0001

Appendix I.

Exterior - Architectural

The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
lit_hrs	5	1	-0.00137	0.00334	0.1676	0.6822
lit_hrs	6	1	-0.00532	0.00440	1.4625	0.2265
lit_hrs	7	1	0.00235	0.00697	0.1137	0.7360

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
b1	1	0.785	0.525	1.173
b1	2	0.686	0.452	1.042
b1	3	1.038	0.660	1.633
b1	4	0.383	0.238	0.615
b1	5	0.745	0.426	1.303
b1	6	2.558	1.264	5.176
b1	7	1.194	0.261	5.467
b5	1	1.644	0.940	2.877
b5	2	1.885	1.075	3.307
b5	3	1.230	0.603	2.507
b5	4	1.430	0.788	2.597
b5	5	1.635	0.762	3.509
b5	6	1.907	0.654	5.565
b5	7	1.354	0.133	13.805
b6	1	1.209	0.602	2.430
b6	2	2.244	1.220	4.128
b6	3	0.799	0.332	1.924
b6	4	0.328	0.119	0.904
b6	5	1.030	0.405	2.616
b6	6	1.170	0.304	4.508
b6	7	8.831	2.028	38.462
b7	1	0.573	0.316	1.040
b7	2	0.452	0.242	0.844
b7	3	0.600	0.310	1.163
b7	4	0.437	0.233	0.816
b7	5	1.104	0.566	2.153
b7	6	1.989	0.832	4.756
b7	7	0.688	0.069	6.821
b8	1	1.397	0.840	2.321
b8	2	1.221	0.723	2.063
b8	3	0.507	0.241	1.065
b8	4	0.223	0.098	0.507
b8	5	0.734	0.321	1.676
b8	6	0.418	0.089	1.971
b8	7	1.984	0.311	12.663
b9	1	0.503	0.317	0.796

Exterior - Architectural

The LOGISTIC Procedure

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
b9	2	0.353	0.215	0.579
b9	3	0.284	0.152	0.529
b9	4	0.117	0.058	0.238
b9	5	0.629	0.348	1.136
b9	6	0.402	0.137	1.181
b9	7	0.985	0.193	5.024
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000
tsqft	4	1.000	1.000	1.000
tsqft	5	1.000	1.000	1.000
tsqft	6	1.000	1.000	1.000
tsqft	7	1.000	1.000	1.000
YEAR	1	1.000	0.928	1.077
YEAR	2	1.035	0.960	1.115
YEAR	3	0.956	0.876	1.043
YEAR	4	1.013	0.927	1.108
YEAR	5	1.027	0.930	1.134
YEAR	6	1.203	1.066	1.358
YEAR	7	1.212	0.967	1.520
lit_hrs	1	0.991	0.986	0.996
lit_hrs	2	0.989	0.983	0.994
lit_hrs	3	0.985	0.979	0.992
lit_hrs	4	0.986	0.980	0.993
lit_hrs	5	0.999	0.992	1.005
lit_hrs	6	0.995	0.986	1.003
lit_hrs	7	1.002	0.989	1.016

Appendix I.

Exterior - Parking

The LOGISTIC Procedure

Model Information

Data Set	WORK.SID1
Response Variable	Y
Number of Response Levels	9
Number of Observations	2882
Model	generalized logit
Optimization Technique	Newton-Raphson

Response Profile

Ordered Value	Y	Total Frequency
1	0	1244
2	1	573
3	2	309
4	3	280
5	4	176
6	5	168
7	6	115
8	7	11
9	8	6

Logits modeled use Y=0 as the reference category.

NOTE: 9 observations were deleted due to missing values for the response or explanatory
      variables.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	9519.647	9231.458
SC	9567.377	9470.108
-2 Log L	9503.647	9151.458

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Exterior - Parking

The LOGISTIC Procedure

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	352.1892	32	<.0001
Score	350.4128	32	<.0001
Wald	321.9102	32	<.0001

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
b1	8	44.2894	<.0001
tsqft	8	21.6957	0.0055
YEAR	8	148.9207	<.0001
lit_hrs	8	73.3040	<.0001

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	103.3	44.3295	5.4296	0.0198
Intercept	2	1	-158.0	55.1563	8.2090	0.0042
Intercept	3	1	-544.1	57.6760	89.0026	<.0001
Intercept	4	1	-380.3	68.8749	30.4821	<.0001
Intercept	5	1	-62.7475	71.9506	0.7605	0.3832
Intercept	6	1	-338.6	83.0833	16.6075	<.0001
Intercept	7	1	-673.1	258.5	6.7787	0.0092
Intercept	8	1	-885.7	394.6	5.0386	0.0248
b1	1	1	-0.2910	0.1110	6.8698	0.0088
b1	2	1	-0.0790	0.1369	0.3331	0.5639
b1	3	1	-0.3328	0.1517	4.8135	0.0282
b1	4	1	0.7798	0.1645	22.4634	<.0001
b1	5	1	-0.1162	0.1775	0.4288	0.5126
b1	6	1	0.1751	0.2037	0.7391	0.3900
b1	7	1	0.8498	0.6135	1.9187	0.1660
b1	8	1	-0.0489	0.8991	0.0030	0.9566
tsqft	1	1	-3.75E-7	4.012E-7	0.8758	0.3494
tsqft	2	1	-2.16E-6	7.133E-7	9.1488	0.0025
tsqft	3	1	-8.66E-8	4.445E-7	0.0380	0.8455
tsqft	4	1	6.217E-9	5.167E-7	0.0001	0.9904
tsqft	5	1	-3.04E-6	1.11E-6	7.5085	0.0061
tsqft	6	1	6.618E-7	4.908E-7	1.8185	0.1775
tsqft	7	1	-2.36E-6	3.147E-6	0.5629	0.4531
tsqft	8	1	-0.00008	0.000054	2.1729	0.1405
YEAR	1	1	-0.0520	0.0223	5.4495	0.0196
YEAR	2	1	0.0791	0.0277	8.1492	0.0043

Appendix I.

Exterior - Parking

The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
YEAR	3	1	0.2728	0.0290	88.6883	<.0001
YEAR	4	1	0.1897	0.0346	30.0718	<.0001
YEAR	5	1	0.0310	0.0361	0.7333	0.3918
YEAR	6	1	0.1684	0.0417	16.2739	<.0001
YEAR	7	1	0.3355	0.1298	6.6805	0.0097
YEAR	8	1	0.4412	0.1981	4.9606	0.0259
lit_hrs	1	1	-0.00643	0.00176	13.3465	0.0003
lit_hrs	2	1	-0.00944	0.00226	17.3829	<.0001
lit_hrs	3	1	-0.00523	0.00218	5.7270	0.0167
lit_hrs	4	1	0.00300	0.00238	1.5883	0.2076
lit_hrs	5	1	-0.00952	0.00297	10.2781	0.0013
lit_hrs	6	1	0.0102	0.00261	15.3688	<.0001
lit_hrs	7	1	0.000924	0.00910	0.0103	0.9191
lit_hrs	8	1	0.0321	0.00945	11.5339	0.0007

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
b1	1	0.747	0.601	0.929
b1	2	0.924	0.707	1.208
b1	3	0.717	0.533	0.965
b1	4	2.181	1.580	3.011
b1	5	0.890	0.629	1.261
b1	6	1.191	0.799	1.776
b1	7	2.339	0.703	7.785
b1	8	0.952	0.163	5.547
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000
tsqft	4	1.000	1.000	1.000
tsqft	5	1.000	1.000	1.000
tsqft	6	1.000	1.000	1.000
tsqft	7	1.000	1.000	1.000
tsqft	8	1.000	1.000	1.000
YEAR	1	0.949	0.909	0.992
YEAR	2	1.082	1.025	1.143
YEAR	3	1.314	1.241	1.390
YEAR	4	1.209	1.130	1.294
YEAR	5	1.031	0.961	1.107
YEAR	6	1.183	1.090	1.284
YEAR	7	1.399	1.084	1.804
YEAR	8	1.555	1.054	2.292
lit_hrs	1	0.994	0.990	0.997

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Exterior - Parking

The LOGISTIC Procedure

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
lit_hrs	2	0.991	0.986	0.995
lit_hrs	3	0.995	0.991	0.999
lit_hrs	4	1.003	0.998	1.008
lit_hrs	5	0.991	0.985	0.996
lit_hrs	6	1.010	1.005	1.015
lit_hrs	7	1.001	0.983	1.019
lit_hrs	8	1.033	1.014	1.052

The LOGISTIC Procedure

Model Information

Data Set	WORK.SID1
Response Variable	Y
Number of Response Levels	7
Number of Observations	2653
Model	generalized logit
Optimization Technique	Newton-Raphson

Response Profile

Ordered Value	Y	Total Frequency
1	0	1474
2	1	738
3	2	226
4	3	117
5	4	50
6	5	26
7	6	22

Logits modeled use Y=0 as the reference category.

NOTE: 1 observation was deleted due to missing values for the response or explanatory variables.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	6325.259	6272.049
SC	6360.559	6413.251
-2 Log L	6313.259	6224.049

Appendix I.

Exterior - Signs

The LOGISTIC Procedure

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	89.2099	18	<.0001
Score	137.6566	18	<.0001
Wald	85.5451	18	<.0001

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
tsqft	6	27.2653	0.0001
YEAR	6	18.0884	0.0060
lit_hrs	6	35.8904	<.0001

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	59.3296	40.0988	2.1892	0.1390
Intercept	2	1	120.7	62.3040	3.7557	0.0526
Intercept	3	1	142.6	83.4484	2.9208	0.0874
Intercept	4	1	-172.0	134.3	1.6405	0.2003
Intercept	5	1	474.9	161.1	8.6869	0.0032
Intercept	6	1	-165.1	199.4	0.6850	0.4079
tsqft	1	1	8.694E-7	1.128E-6	0.5939	0.4409
tsqft	2	1	3.402E-6	1.122E-6	9.1909	0.0024
tsqft	3	1	1.026E-6	2.251E-6	0.2078	0.6485
tsqft	4	1	5.565E-6	1.205E-6	21.3195	<.0001
tsqft	5	1	5.436E-6	1.333E-6	16.6372	<.0001
tsqft	6	1	3.253E-6	2.903E-6	1.2554	0.2625
YEAR	1	1	-0.0303	0.0201	2.2660	0.1322
YEAR	2	1	-0.0619	0.0313	3.9086	0.0480
YEAR	3	1	-0.0728	0.0419	3.0155	0.0825
YEAR	4	1	0.0842	0.0675	1.5595	0.2117
YEAR	5	1	-0.2407	0.0810	8.8367	0.0030
YEAR	6	1	0.0808	0.1001	0.6507	0.4199
lit_hrs	1	1	0.00514	0.00129	15.9779	<.0001
lit_hrs	2	1	0.00777	0.00190	16.6254	<.0001
lit_hrs	3	1	-0.00390	0.00315	1.5389	0.2148
lit_hrs	4	1	0.0109	0.00349	9.7302	0.0018
lit_hrs	5	1	0.00165	0.00595	0.0770	0.7815
lit_hrs	6	1	-0.00109	0.00657	0.0277	0.8678

Exterior - Signs

The LOGISTIC Procedure

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000
tsqft	4	1.000	1.000	1.000
tsqft	5	1.000	1.000	1.000
tsqft	6	1.000	1.000	1.000
YEAR	1	0.970	0.933	1.009
YEAR	2	0.940	0.884	0.999
YEAR	3	0.930	0.856	1.009
YEAR	4	1.088	0.953	1.242
YEAR	5	0.786	0.671	0.921
YEAR	6	1.084	0.891	1.319
lit_hrs	1	1.005	1.003	1.008
lit_hrs	2	1.008	1.004	1.012
lit_hrs	3	0.996	0.990	1.002
lit_hrs	4	1.011	1.004	1.018
lit_hrs	5	1.002	0.990	1.013
lit_hrs	6	0.999	0.986	1.012

Appendix I.

Exterior

The LOGISTIC Procedure

Model Information

Data Set	WORK.SID1
Response Variable	Y
Number of Response Levels	9
Number of Observations	22284
Model	generalized logit
Optimization Technique	Newton-Raphson

Response Profile

Ordered Value	Y	Total Frequency
1	0	5949
2	1	5723
3	2	3954
4	3	2543
5	4	1482
6	5	1296
7	6	956
8	7	365
9	8	16

Logits modeled use Y=0 as the reference category.

NOTE: 46 observations were deleted due to missing values for the response or explanatory variables.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	80662.657	77324.207
SC	80726.750	78093.323
-2 Log L	80646.657	77132.207

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The LOGISTIC Procedure

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	3514.4502	88	<.0001
Score	3719.4071	88	<.0001
Wald	3132.2674	88	<.0001

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
b1	8	42.2935	<.0001
b2	8	180.6447	<.0001
b3	8	284.7302	<.0001
b5	8	131.9484	<.0001
b6	8	101.6605	<.0001
b7	8	163.3280	<.0001
b8	8	60.9827	<.0001
b9	8	188.7477	<.0001
tsqft	8	162.3903	<.0001
YEAR	8	383.8726	<.0001
lit_hrs	8	209.3728	<.0001

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	19.3466	16.0130	1.4597	0.2270
Intercept	2	1	-34.2019	17.7063	3.7312	0.0534
Intercept	3	1	91.8181	20.1460	20.7721	<.0001
Intercept	4	1	-160.8	26.0345	38.1379	<.0001
Intercept	5	1	-380.1	28.1266	182.6489	<.0001
Intercept	6	1	-133.0	30.4367	19.0815	<.0001
Intercept	7	1	-445.3	50.0838	79.0495	<.0001
Intercept	8	1	-1127.6	264.6	18.1578	<.0001
b1	1	1	0.2222	0.0727	9.3506	0.0022
b1	2	1	-0.0769	0.0787	0.9549	0.3285
b1	3	1	0.1571	0.0938	2.8061	0.0939
b1	4	1	-0.3199	0.1346	5.6528	0.0174
b1	5	1	0.4780	0.1283	13.8858	0.0002
b1	6	1	0.0385	0.1330	0.0839	0.7721
b1	7	1	-0.2516	0.2006	1.5730	0.2098
b1	8	1	0.3568	1.1571	0.0951	0.7578
b2	1	1	0.3553	0.0850	17.4950	<.0001
b2	2	1	0.1523	0.0908	2.8120	0.0936
b2	3	1	0.5621	0.1053	28.4749	<.0001

Appendix I.

The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
b2	4	1	1.3640	0.1267	115.8142	<.0001
b2	5	1	1.0801	0.1366	62.5076	<.0001
b2	6	1	0.7633	0.1411	29.2461	<.0001
b2	7	1	-0.2432	0.2459	0.9781	0.3227
b2	8	1	-7.8500	52.5320	0.0223	0.8812
b3	1	1	0.4004	0.1097	13.3092	0.0003
b3	2	1	0.0877	0.1198	0.5355	0.4643
b3	3	1	0.3228	0.1418	5.1838	0.0228
b3	4	1	2.1295	0.1393	233.5889	<.0001
b3	5	1	0.9456	0.1722	30.1470	<.0001
b3	6	1	0.7938	0.1770	20.1155	<.0001
b3	7	1	-0.2499	0.3388	0.5440	0.4608
b3	8	1	0.9572	1.4254	0.4509	0.5019
b5	1	1	-0.5995	0.0881	46.2975	<.0001
b5	2	1	-0.0277	0.0848	0.1065	0.7442
b5	3	1	-0.5135	0.1164	19.4711	<.0001
b5	4	1	0.6669	0.1279	27.1959	<.0001
b5	5	1	0.0550	0.1448	0.1443	0.7040
b5	6	1	0.2682	0.1415	3.5930	0.0580
b5	7	1	-0.5911	0.2338	6.3936	0.0115
b5	8	1	0.0765	1.2351	0.0038	0.9506
b6	1	1	-0.5880	0.0924	40.5318	<.0001
b6	2	1	-0.5040	0.0974	26.7907	<.0001
b6	3	1	-0.3848	0.1172	10.7789	0.0010
b6	4	1	-0.9027	0.1830	24.3235	<.0001
b6	5	1	-0.5383	0.1715	9.8460	0.0017
b6	6	1	-0.8648	0.1872	21.3399	<.0001
b6	7	1	0.6611	0.1944	11.5633	0.0007
b6	8	1	0.8653	1.1579	0.5584	0.4549
b7	1	1	0.6712	0.0867	59.8671	<.0001
b7	2	1	-0.1589	0.1021	2.4221	0.1196
b7	3	1	0.6204	0.1093	32.2109	<.0001
b7	4	1	-0.1036	0.1660	0.3899	0.5324
b7	5	1	0.6594	0.1484	19.7362	<.0001
b7	6	1	-0.5460	0.1953	7.8148	0.0052
b7	7	1	-1.3196	0.3734	12.4856	0.0004
b7	8	1	0.8544	1.2282	0.4840	0.4866
b8	1	1	-0.3808	0.0882	18.6385	<.0001
b8	2	1	-0.1929	0.0886	4.7407	0.0295
b8	3	1	-0.2386	0.1141	4.3689	0.0366
b8	4	1	-1.1898	0.1899	39.2437	<.0001
b8	5	1	-0.6516	0.1711	14.5081	0.0001
b8	6	1	-0.3607	0.1643	4.8171	0.0282
b8	7	1	-0.7001	0.2491	7.9007	0.0049
b8	8	1	0.5212	1.1719	0.1978	0.6565
b9	1	1	0.4188	0.0795	27.7453	<.0001

Exterior

The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
b9	2	1	-0.4106	0.0941	19.0435	<.0001
b9	3	1	0.3751	0.1011	13.7633	0.0002
b9	4	1	-2.0069	0.2679	56.1112	<.0001
b9	5	1	-0.0533	0.1547	0.1188	0.7303
b9	6	1	-0.8101	0.1830	19.5935	<.0001
b9	7	1	-0.4248	0.2445	3.0195	0.0823
b9	8	1	-0.0216	1.4185	0.0002	0.9878
tsqft	1	1	1.066E-6	2.062E-7	26.7242	<.0001
tsqft	2	1	-9.45E-7	3.14E-7	9.0549	0.0026
tsqft	3	1	1.764E-6	2.149E-7	67.4073	<.0001
tsqft	4	1	1.021E-6	3.345E-7	9.3101	0.0023
tsqft	5	1	2.018E-6	2.321E-7	75.6091	<.0001
tsqft	6	1	2.104E-6	2.49E-7	71.3613	<.0001
tsqft	7	1	5.763E-7	5.01E-7	1.3230	0.2500
tsqft	8	1	1.855E-6	1.342E-6	1.9117	0.1668
YEAR	1	1	-0.0101	0.00804	1.5692	0.2103
YEAR	2	1	0.0171	0.00889	3.7017	0.0544
YEAR	3	1	-0.0468	0.0101	21.4313	<.0001
YEAR	4	1	0.0798	0.0131	37.3025	<.0001
YEAR	5	1	0.1898	0.0141	180.7531	<.0001
YEAR	6	1	0.0656	0.0153	18.4113	<.0001
YEAR	7	1	0.2220	0.0251	77.9809	<.0001
YEAR	8	1	0.5628	0.1327	17.9799	<.0001
lit_hrs	1	1	0.00756	0.000699	116.8140	<.0001
lit_hrs	2	1	-0.00184	0.000772	5.6590	0.0174
lit_hrs	3	1	0.00563	0.000880	40.8495	<.0001
lit_hrs	4	1	0.000778	0.00110	0.5039	0.4778
lit_hrs	5	1	0.00176	0.00113	2.4380	0.1184
lit_hrs	6	1	0.00612	0.00124	24.5777	<.0001
lit_hrs	7	1	0.00670	0.00193	12.0923	0.0005
lit_hrs	8	1	-0.00382	0.00905	0.1779	0.6732

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
b1	1	1.249	1.083	1.440
b1	2	0.926	0.794	1.080
b1	3	1.170	0.974	1.406
b1	4	0.726	0.558	0.945
b1	5	1.613	1.254	2.074
b1	6	1.039	0.801	1.349
b1	7	0.778	0.525	1.152
b1	8	1.429	0.148	13.802

Appendix I.

The LOGISTIC Procedure

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
b2	1	1.427	1.208	1.685
b2	2	1.164	0.975	1.391
b2	3	1.754	1.427	2.157
b2	4	3.912	3.051	5.015
b2	5	2.945	2.253	3.849
b2	6	2.145	1.627	2.829
b2	7	0.784	0.484	1.270
b2	8	<0.001	<0.001	>999.999
b3	1	1.492	1.204	1.851
b3	2	1.092	0.863	1.381
b3	3	1.381	1.046	1.823
b3	4	8.411	6.401	11.052
b3	5	2.574	1.837	3.608
b3	6	2.212	1.563	3.129
b3	7	0.779	0.401	1.513
b3	8	2.604	0.159	42.563
b5	1	0.549	0.462	0.653
b5	2	0.973	0.824	1.149
b5	3	0.598	0.476	0.752
b5	4	1.948	1.516	2.503
b5	5	1.057	0.796	1.403
b5	6	1.308	0.991	1.726
b5	7	0.554	0.350	0.876
b5	8	1.079	0.096	12.148
b6	1	0.555	0.463	0.666
b6	2	0.604	0.499	0.731
b6	3	0.681	0.541	0.856
b6	4	0.405	0.283	0.580
b6	5	0.584	0.417	0.817
b6	6	0.421	0.292	0.608
b6	7	1.937	1.323	2.835
b6	8	2.376	0.246	22.982
b7	1	1.957	1.651	2.319
b7	2	0.853	0.698	1.042
b7	3	1.860	1.501	2.304
b7	4	0.902	0.651	1.248
b7	5	1.934	1.446	2.586
b7	6	0.579	0.395	0.849
b7	7	0.267	0.129	0.556
b7	8	2.350	0.212	26.092
b8	1	0.683	0.575	0.812
b8	2	0.825	0.693	0.981
b8	3	0.788	0.630	0.985
b8	4	0.304	0.210	0.442
b8	5	0.521	0.373	0.729
b8	6	0.697	0.505	0.962

Exterior

The LOGISTIC Procedure

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
b8	7	0.497	0.305	0.809
b8	8	1.684	0.169	16.744
b9	1	1.520	1.301	1.777
b9	2	0.663	0.552	0.798
b9	3	1.455	1.194	1.774
b9	4	0.134	0.080	0.227
b9	5	0.948	0.700	1.284
b9	6	0.445	0.311	0.637
b9	7	0.654	0.405	1.056
b9	8	0.979	0.061	15.777
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000
tsqft	4	1.000	1.000	1.000
tsqft	5	1.000	1.000	1.000
tsqft	6	1.000	1.000	1.000
tsqft	7	1.000	1.000	1.000
tsqft	8	1.000	1.000	1.000
YEAR	1	0.990	0.974	1.006
YEAR	2	1.017	1.000	1.035
YEAR	3	0.954	0.936	0.973
YEAR	4	1.083	1.056	1.111
YEAR	5	1.209	1.176	1.243
YEAR	6	1.068	1.036	1.100
YEAR	7	1.249	1.189	1.312
YEAR	8	1.756	1.353	2.277
lit_hrs	1	1.008	1.006	1.009
lit_hrs	2	0.998	0.997	1.000
lit_hrs	3	1.006	1.004	1.007
lit_hrs	4	1.001	0.999	1.003
lit_hrs	5	1.002	1.000	1.004
lit_hrs	6	1.006	1.004	1.009
lit_hrs	7	1.007	1.003	1.011
lit_hrs	8	0.996	0.979	1.014

Appendix I.

Food Preparation

The LOGISTIC Procedure

Model Information

Data Set	WORK.SID1
Response Variable	Y
Number of Response Levels	6
Number of Observations	11331
Model	generalized logit
Optimization Technique	Newton-Raphson

Response Profile

Ordered Value	Y	Total Frequency
1	0	5551
2	1	2622
3	2	2329
4	3	418
5	4	254
6	5	157

Logits modeled use Y=0 as the reference category.

NOTE: 17 observations were deleted due to missing values for the response or explanatory variables.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	29008.206	26200.157
SC	29044.882	26456.893
-2 Log L	28998.206	26130.157

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The LOGISTIC Procedure

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	2868.0488	30	<.0001
Score	1073.8030	30	<.0001
Wald	1441.6321	30	<.0001

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
b5	5	251.2895	<.0001
tsqft	5	68.5420	<.0001
YEAR	5	181.9308	<.0001
ADJSQFT	5	342.7614	<.0001
lit_hrs	5	80.3025	<.0001
ADJ_TSQFT	5	287.3953	<.0001

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	-9.4400	21.1161	0.1999	0.6548
Intercept	2	1	105.6	23.8539	19.5821	<.0001
Intercept	3	1	22.7559	47.3925	0.2306	0.6311
Intercept	4	1	-253.1	58.2136	18.8978	<.0001
Intercept	5	1	-986.3	85.0010	134.6445	<.0001
b5	1	1	0.2283	0.0585	15.2174	<.0001
b5	2	1	0.9408	0.0702	179.6138	<.0001
b5	3	1	1.2088	0.1264	91.5013	<.0001
b5	4	1	-0.3393	0.1938	3.0657	0.0800
b5	5	1	-0.7449	0.2443	9.2971	0.0023
tsqft	1	1	-1.6E-6	3.785E-7	17.8093	<.0001
tsqft	2	1	1.648E-6	3.307E-7	24.8244	<.0001
tsqft	3	1	2.345E-6	4.3E-7	29.7412	<.0001
tsqft	4	1	-1.96E-6	9.088E-7	4.6401	0.0312
tsqft	5	1	6.602E-7	5.397E-7	1.4966	0.2212
YEAR	1	1	0.00417	0.0106	0.1547	0.6941
YEAR	2	1	-0.0530	0.0120	19.6197	<.0001
YEAR	3	1	-0.0125	0.0238	0.2759	0.5994
YEAR	4	1	0.1256	0.0292	18.4828	<.0001
YEAR	5	1	0.4931	0.0426	133.7574	<.0001
ADJSQFT	1	1	-0.00004	0.000024	2.5995	0.1069
ADJSQFT	2	1	-0.00305	0.000177	297.5142	<.0001
ADJSQFT	3	1	-0.00317	0.000396	64.1027	<.0001
ADJSQFT	4	1	0.000039	0.000033	1.4548	0.2278

Appendix I.

The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
ADJSQFT	5	1	-0.00020	0.000125	2.4632	0.1165
lit_hrs	1	1	0.00518	0.000637	66.2238	<.0001
lit_hrs	2	1	-0.00010	0.000730	0.0171	0.8960
lit_hrs	3	1	0.00248	0.00137	3.2660	0.0707
lit_hrs	4	1	0.00285	0.00168	2.8944	0.0889
lit_hrs	5	1	0.00600	0.00200	9.0243	0.0027
ADJ_TSQFT	1	1	0.4553	0.2525	3.2509	0.0714
ADJ_TSQFT	2	1	-27.8452	1.8352	230.2060	<.0001
ADJ_TSQFT	3	1	-26.1828	3.6648	51.0435	<.0001
ADJ_TSQFT	4	1	-11.8266	2.5469	21.5624	<.0001
ADJ_TSQFT	5	1	-3.2597	2.0561	2.5135	0.1129

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
b5	1	1.256	1.120	1.409
b5	2	2.562	2.233	2.940
b5	3	3.349	2.615	4.291
b5	4	0.712	0.487	1.041
b5	5	0.475	0.294	0.766
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000
tsqft	4	1.000	1.000	1.000
tsqft	5	1.000	1.000	1.000
YEAR	1	1.004	0.984	1.025
YEAR	2	0.948	0.926	0.971
YEAR	3	0.988	0.943	1.035
YEAR	4	1.134	1.071	1.201
YEAR	5	1.637	1.506	1.780
ADJSQFT	1	1.000	1.000	1.000
ADJSQFT	2	0.997	0.997	0.997
ADJSQFT	3	0.997	0.996	0.998
ADJSQFT	4	1.000	1.000	1.000
ADJSQFT	5	1.000	1.000	1.000
lit_hrs	1	1.005	1.004	1.006
lit_hrs	2	1.000	0.998	1.001
lit_hrs	3	1.002	1.000	1.005
lit_hrs	4	1.003	1.000	1.006
lit_hrs	5	1.006	1.002	1.010
ADJ_TSQFT	1	1.577	0.961	2.586
ADJ_TSQFT	2	<0.001	<0.001	<0.001
ADJ_TSQFT	3	<0.001	<0.001	<0.001

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Food Preparation

The LOGISTIC Procedure

Odds Ratio Estimates

		Point	95% Wald	
Effect	Y	Estimate	Confidence Limits	
ADJ_TSQFT	4	<0.001	<0.001	0.001
ADJ_TSQFT	5	0.038	<0.001	2.160

The LOGISTIC Procedure

Model Information

Data Set	WORK.SID1
Response Variable	Y
Number of Response Levels	6
Number of Observations	30271
Model	generalized logit
Optimization Technique	Newton-Raphson

Response Profile

Ordered Value	Y	Total Frequency
1	0	10459
2	1	7792
3	2	5643
4	3	3524
5	4	1906
6	5	947

Logits modeled use Y=0 as the reference category.

NOTE: 44 observations were deleted due to missing values for the response or explanatory variables.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	94607.295	85582.683
SC	94648.885	86248.119
-2 Log L	94597.295	85422.683

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The LOGISTIC Procedure

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	9174.6121	75	<.0001
Score	7767.3058	75	<.0001
Wald	6039.6151	75	<.0001

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
b1	5	106.3746	<.0001
b2	5	98.4170	<.0001
b3	5	34.7506	<.0001
b4	5	130.6957	<.0001
b5	5	573.1973	<.0001
b6	5	537.1529	<.0001
b8	5	373.2404	<.0001
b9	5	138.3305	<.0001
b10	5	50.9270	<.0001
b11	5	233.1732	<.0001
tsqft	5	81.7519	<.0001
YEAR	5	385.6532	<.0001
ADJSQFT	5	398.8856	<.0001
lit_hrs	5	364.2991	<.0001
ADJ_TSQFT	5	1661.6156	<.0001

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	116.3	14.2009	67.1232	<.0001
Intercept	2	1	-11.1122	14.4684	0.5899	0.4425
Intercept	3	1	65.8156	18.0602	13.2805	0.0003
Intercept	4	1	-267.9	23.6597	128.2014	<.0001
Intercept	5	1	-297.6	30.8129	93.2633	<.0001
b1	1	1	0.3501	0.0750	21.7680	<.0001
b1	2	1	-0.1865	0.0670	7.7503	0.0054
b1	3	1	0.3819	0.0900	18.0053	<.0001
b1	4	1	0.7435	0.1314	32.0053	<.0001
b1	5	1	-0.3865	0.1228	9.9109	0.0016
b2	1	1	0.5249	0.0918	32.7167	<.0001
b2	2	1	0.1964	0.0804	5.9722	0.0145
b2	3	1	0.9757	0.1042	87.5987	<.0001
b2	4	1	0.2719	0.1739	2.4441	0.1180
b2	5	1	0.0948	0.1483	0.4087	0.5226

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The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
b3	1	1	0.5639	0.1329	18.0062	<.0001
b3	2	1	0.4929	0.1100	20.0803	<.0001
b3	3	1	0.0788	0.1830	0.1857	0.6665
b3	4	1	-0.0148	0.2775	0.0029	0.9574
b3	5	1	0.6243	0.1861	11.2513	0.0008
b4	1	1	0.7531	0.1055	50.9141	<.0001
b4	2	1	-0.1144	0.1001	1.3061	0.2531
b4	3	1	0.9707	0.1220	63.2597	<.0001
b4	4	1	0.8164	0.1929	17.9137	<.0001
b4	5	1	-0.4342	0.2197	3.9061	0.0481
b5	1	1	1.7020	0.0950	321.2490	<.0001
b5	2	1	-0.1640	0.1033	2.5222	0.1123
b5	3	1	1.6522	0.1104	223.8201	<.0001
b5	4	1	0.8776	0.1725	25.8930	<.0001
b5	5	1	-0.8033	0.2340	11.7834	0.0006
b6	1	1	1.6684	0.0960	302.2165	<.0001
b6	2	1	-0.0356	0.0978	0.1326	0.7157
b6	3	1	1.1664	0.1190	96.0517	<.0001
b6	4	1	1.9690	0.1485	175.7668	<.0001
b6	5	1	-0.8098	0.2013	16.1793	<.0001
b8	1	1	1.0991	0.0833	174.0632	<.0001
b8	2	1	-0.4853	0.0881	30.3103	<.0001
b8	3	1	0.3015	0.1057	8.1360	0.0043
b8	4	1	1.0249	0.1462	49.1721	<.0001
b8	5	1	-0.7774	0.1865	17.3734	<.0001
b9	1	1	0.4491	0.0807	30.9764	<.0001
b9	2	1	-0.3798	0.0742	26.1786	<.0001
b9	3	1	-0.4190	0.1088	14.8400	0.0001
b9	4	1	0.4193	0.1457	8.2797	0.0040
b9	5	1	-0.5914	0.1423	17.2675	<.0001
b10	1	1	0.5023	0.1317	14.5411	0.0001
b10	2	1	-0.0798	0.1175	0.4619	0.4967
b10	3	1	0.3593	0.1622	4.9071	0.0267
b10	4	1	0.8486	0.1927	19.3840	<.0001
b10	5	1	-0.6630	0.2212	8.9821	0.0027
b11	1	1	1.1284	0.1109	103.4394	<.0001
b11	2	1	-0.3924	0.1163	11.3766	0.0007
b11	3	1	0.0968	0.1658	0.3408	0.5593
b11	4	1	1.2925	0.1718	56.5959	<.0001
b11	5	1	-1.0936	0.2630	17.2910	<.0001
tsqft	1	1	8.641E-7	1.895E-7	20.8003	<.0001
tsqft	2	1	6.521E-7	1.749E-7	13.9071	0.0002
tsqft	3	1	1.616E-6	1.991E-7	65.8877	<.0001
tsqft	4	1	8.212E-7	2.305E-7	12.6881	0.0004
tsqft	5	1	1.384E-6	2E-7	47.8888	<.0001
YEAR	1	1	-0.0583	0.00713	66.9122	<.0001

Appendix I.

The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
YEAR	2	1	0.00548	0.00726	0.5698	0.4503
YEAR	3	1	-0.0332	0.00907	13.4179	0.0002
YEAR	4	1	0.1335	0.0119	126.4625	<.0001
YEAR	5	1	0.1483	0.0155	91.9231	<.0001
ADJSQFT	1	1	-0.00006	3.874E-6	226.1373	<.0001
ADJSQFT	2	1	-0.00001	1.433E-6	67.1533	<.0001
ADJSQFT	3	1	-0.00010	7.298E-6	176.6620	<.0001
ADJSQFT	4	1	-0.00003	4.848E-6	35.0834	<.0001
ADJSQFT	5	1	-1.03E-6	1.212E-6	0.7199	0.3962
lit_hrs	1	1	-0.00473	0.000372	161.5231	<.0001
lit_hrs	2	1	-0.00014	0.000375	0.1298	0.7186
lit_hrs	3	1	-0.00462	0.000470	96.9687	<.0001
lit_hrs	4	1	0.00239	0.000546	19.1050	<.0001
lit_hrs	5	1	0.00398	0.000728	29.8744	<.0001
ADJ_TSQFT	1	1	-5.0470	0.1524	1096.5577	<.0001
ADJ_TSQFT	2	1	-1.0419	0.0896	135.1858	<.0001
ADJ_TSQFT	3	1	-5.3027	0.2113	629.8051	<.0001
ADJ_TSQFT	4	1	-6.3062	0.3369	350.3557	<.0001
ADJ_TSQFT	5	1	-1.1371	0.1907	35.5555	<.0001

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
b1	1	1.419	1.225	1.644
b1	2	0.830	0.728	0.946
b1	3	1.465	1.228	1.748
b1	4	2.103	1.626	2.721
b1	5	0.679	0.534	0.864
b2	1	1.690	1.412	2.023
b2	2	1.217	1.040	1.425
b2	3	2.653	2.163	3.254
b2	4	1.312	0.933	1.846
b2	5	1.099	0.822	1.470
b3	1	1.757	1.354	2.280
b3	2	1.637	1.320	2.031
b3	3	1.082	0.756	1.549
b3	4	0.985	0.572	1.697
b3	5	1.867	1.296	2.689
b4	1	2.124	1.727	2.612
b4	2	0.892	0.733	1.085
b4	3	2.640	2.078	3.353
b4	4	2.262	1.550	3.302
b4	5	0.648	0.421	0.996

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The LOGISTIC Procedure

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
b5	1	5.485	4.553	6.607
b5	2	0.849	0.693	1.039
b5	3	5.218	4.203	6.479
b5	4	2.405	1.715	3.372
b5	5	0.448	0.283	0.708
b6	1	5.304	4.394	6.402
b6	2	0.965	0.797	1.169
b6	3	3.210	2.542	4.054
b6	4	7.163	5.354	9.584
b6	5	0.445	0.300	0.660
b8	1	3.001	2.549	3.534
b8	2	0.616	0.518	0.732
b8	3	1.352	1.099	1.663
b8	4	2.787	2.093	3.711
b8	5	0.460	0.319	0.662
b9	1	1.567	1.338	1.835
b9	2	0.684	0.591	0.791
b9	3	0.658	0.531	0.814
b9	4	1.521	1.143	2.024
b9	5	0.554	0.419	0.732
b10	1	1.653	1.277	2.139
b10	2	0.923	0.733	1.162
b10	3	1.432	1.042	1.968
b10	4	2.336	1.601	3.409
b10	5	0.515	0.334	0.795
b11	1	3.091	2.487	3.841
b11	2	0.675	0.538	0.848
b11	3	1.102	0.796	1.525
b11	4	3.642	2.601	5.100
b11	5	0.335	0.200	0.561
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000
tsqft	4	1.000	1.000	1.000
tsqft	5	1.000	1.000	1.000
YEAR	1	0.943	0.930	0.957
YEAR	2	1.005	0.991	1.020
YEAR	3	0.967	0.950	0.985
YEAR	4	1.143	1.117	1.170
YEAR	5	1.160	1.125	1.195
ADJSQFT	1	1.000	1.000	1.000
ADJSQFT	2	1.000	1.000	1.000
ADJSQFT	3	1.000	1.000	1.000
ADJSQFT	4	1.000	1.000	1.000
ADJSQFT	5	1.000	1.000	1.000
lit_hrs	1	0.995	0.995	0.996

Appendix I.

The LOGISTIC Procedure

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
lit_hrs	2	1.000	0.999	1.001
lit_hrs	3	0.995	0.994	0.996
lit_hrs	4	1.002	1.001	1.003
lit_hrs	5	1.004	1.003	1.005
ADJ_TSQFT	1	0.006	0.005	0.009
ADJ_TSQFT	2	0.353	0.296	0.421
ADJ_TSQFT	3	0.005	0.003	0.008
ADJ_TSQFT	4	0.002	<0.001	0.004
ADJ_TSQFT	5	0.321	0.221	0.466

The LOGISTIC Procedure

Model Information

Data Set	WORK.SID1
Response Variable	Y
Number of Response Levels	6
Number of Observations	2147
Model	generalized logit
Optimization Technique	Newton-Raphson

Response Profile

Ordered Value	Y	Total Frequency
1	0	989
2	1	419
3	2	443
4	3	118
5	4	88
6	5	90

Logits modeled use Y=0 as the reference category.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	6128.666	5652.724
SC	6157.025	5851.238
-2 Log L	6118.666	5582.724

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	535.9413	30	<.0001
Score	230.6953	30	<.0001
Wald	268.4304	30	<.0001

Health Care

The LOGISTIC Procedure

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
b10	5	43.1502	<.0001
tsqft	5	50.8287	<.0001
YEAR	5	16.5292	0.0055
ADJSQFT	5	75.9665	<.0001
lit_hrs	5	33.1235	<.0001
ADJ_TSQFT	5	21.6380	0.0006

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	54.3165	48.7016	1.2439	0.2647
Intercept	2	1	110.9	49.2985	5.0587	0.0245
Intercept	3	1	-20.8158	89.4292	0.0542	0.8159
Intercept	4	1	-229.3	100.7	5.1891	0.0227
Intercept	5	1	-165.0	103.7	2.5282	0.1118
b10	1	1	0.3143	0.1402	5.0221	0.0250
b10	2	1	-0.3889	0.1342	8.3926	0.0038
b10	3	1	1.0973	0.2858	14.7382	0.0001
b10	4	1	-0.5691	0.2595	4.8086	0.0283
b10	5	1	-0.3738	0.2677	1.9496	0.1626
tsqft	1	1	1.053E-6	4E-7	6.9322	0.0085
tsqft	2	1	2.598E-6	3.868E-7	45.0937	<.0001
tsqft	3	1	1.623E-6	5.937E-7	7.4754	0.0063
tsqft	4	1	2.338E-6	6.618E-7	12.4792	0.0004
tsqft	5	1	2.4E-6	6.638E-7	13.0744	0.0003
YEAR	1	1	-0.0279	0.0245	1.2984	0.2545
YEAR	2	1	-0.0557	0.0248	5.0714	0.0243
YEAR	3	1	0.00919	0.0449	0.0419	0.8378
YEAR	4	1	0.1140	0.0505	5.0871	0.0241
YEAR	5	1	0.0817	0.0521	2.4636	0.1165
ADJSQFT	1	1	-0.00006	0.000017	10.4305	0.0012
ADJSQFT	2	1	-0.00032	0.000041	60.0236	<.0001
ADJSQFT	3	1	-0.00038	0.000164	5.3614	0.0206
ADJSQFT	4	1	-0.00017	0.000057	9.3290	0.0023
ADJSQFT	5	1	-0.00023	0.000120	3.6747	0.0552
lit_hrs	1	1	0.00303	0.00120	6.3661	0.0116
lit_hrs	2	1	-0.00433	0.00130	11.1257	0.0009
lit_hrs	3	1	0.00317	0.00205	2.4039	0.1210
lit_hrs	4	1	0.00234	0.00226	1.0723	0.3004
lit_hrs	5	1	0.00408	0.00221	3.3933	0.0655
ADJ_TSQFT	1	1	-7.8881	2.8316	7.7603	0.0053
ADJ_TSQFT	2	1	-0.3906	1.3825	0.0798	0.7775
ADJ_TSQFT	3	1	-88.2850	29.7474	8.8080	0.0030

Appendix I.

The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
ADJ_TSQFT	4	1	-1.8915	4.2656	0.1966	0.6575
ADJ_TSQFT	5	1	-57.9071	23.2337	6.2119	0.0127

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
b10	1	1.369	1.040	1.802
b10	2	0.678	0.521	0.882
b10	3	2.996	1.711	5.246
b10	4	0.566	0.340	0.941
b10	5	0.688	0.407	1.163
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000
tsqft	4	1.000	1.000	1.000
tsqft	5	1.000	1.000	1.000
YEAR	1	0.973	0.927	1.020
YEAR	2	0.946	0.901	0.993
YEAR	3	1.009	0.924	1.102
YEAR	4	1.121	1.015	1.237
YEAR	5	1.085	0.980	1.202
ADJSQFT	1	1.000	1.000	1.000
ADJSQFT	2	1.000	1.000	1.000
ADJSQFT	3	1.000	0.999	1.000
ADJSQFT	4	1.000	1.000	1.000
ADJSQFT	5	1.000	1.000	1.000
lit_hrs	1	1.003	1.001	1.005
lit_hrs	2	0.996	0.993	0.998
lit_hrs	3	1.003	0.999	1.007
lit_hrs	4	1.002	0.998	1.007
lit_hrs	5	1.004	1.000	1.008
ADJ_TSQFT	1	<0.001	<0.001	0.096
ADJ_TSQFT	2	0.677	0.045	10.165
ADJ_TSQFT	3	<0.001	<0.001	<0.001
ADJ_TSQFT	4	0.151	<0.001	644.798
ADJ_TSQFT	5	<0.001	<0.001	<0.001

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The LOGISTIC Procedure

Model Information

Data Set	WORK.SID1
Response Variable	Y
Number of Response Levels	5
Number of Observations	32988
Model	generalized logit
Optimization Technique	Newton-Raphson

Response Profile

Ordered Value	Y	Total Frequency
1	0	17849
2	1	6545
3	2	4618
4	3	2494
5	4	1482

Logits modeled use Y=0 as the reference category.

NOTE: 71 observations were deleted due to missing values for the response or explanatory variables.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	83342.410	78101.259
SC	83376.026	78302.953
-2 Log L	83334.410	78053.259

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	5281.1512	20	<.0001
Score	2691.7633	20	<.0001
Wald	2481.4733	20	<.0001

Appendix I.

The LOGISTIC Procedure

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
tsqft	4	90.8446	<.0001
YEAR	4	363.4624	<.0001
ADJSQFT	4	317.2986	<.0001
lit_hrs	4	166.4933	<.0001
ADJ_TSQFT	4	856.9041	<.0001

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	-27.3808	12.5155	4.7862	0.0287
Intercept	2	1	-9.2104	14.8649	0.3839	0.5355
Intercept	3	1	-40.0456	19.1812	4.3587	0.0368
Intercept	4	1	-482.3	25.3011	363.3807	<.0001
tsqft	1	1	2.157E-7	1.336E-7	2.6058	0.1065
tsqft	2	1	7.468E-7	1.717E-7	18.9116	<.0001
tsqft	3	1	1.503E-6	1.752E-7	73.5822	<.0001
tsqft	4	1	9.054E-7	1.612E-7	31.5582	<.0001
YEAR	1	1	0.0132	0.00628	4.4365	0.0352
YEAR	2	1	0.00433	0.00746	0.3368	0.5617
YEAR	3	1	0.0195	0.00963	4.0922	0.0431
YEAR	4	1	0.2407	0.0127	359.5313	<.0001
ADJSQFT	1	1	-4.23E-6	1.679E-6	6.3426	0.0118
ADJSQFT	2	1	-0.00037	0.000028	175.8986	<.0001
ADJSQFT	3	1	-0.00057	0.000046	156.2748	<.0001
ADJSQFT	4	1	1.665E-6	9.496E-7	3.0730	0.0796
lit_hrs	1	1	0.00332	0.000442	56.3363	<.0001
lit_hrs	2	1	-0.00207	0.000546	14.3762	0.0001
lit_hrs	3	1	-0.00115	0.000682	2.8594	0.0908
lit_hrs	4	1	0.00634	0.000737	74.0774	<.0001
ADJ_TSQFT	1	1	-2.3464	0.1409	277.2704	<.0001
ADJ_TSQFT	2	1	-14.5443	0.7349	391.7183	<.0001
ADJ_TSQFT	3	1	-13.7892	0.9940	192.4298	<.0001
ADJ_TSQFT	4	1	-4.2949	0.4133	107.9763	<.0001

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000

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The LOGISTIC Procedure

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
tsqft	4	1.000	1.000	1.000
YEAR	1	1.013	1.001	1.026
YEAR	2	1.004	0.990	1.019
YEAR	3	1.020	1.001	1.039
YEAR	4	1.272	1.241	1.304
ADJSQFT	1	1.000	1.000	1.000
ADJSQFT	2	1.000	1.000	1.000
ADJSQFT	3	0.999	0.999	1.000
ADJSQFT	4	1.000	1.000	1.000
lit_hrs	1	1.003	1.002	1.004
lit_hrs	2	0.998	0.997	0.999
lit_hrs	3	0.999	0.998	1.000
lit_hrs	4	1.006	1.005	1.008
ADJ_TSQFT	1	0.096	0.073	0.126
ADJ_TSQFT	2	<0.001	<0.001	<0.001
ADJ_TSQFT	3	<0.001	<0.001	<0.001
ADJ_TSQFT	4	0.014	0.006	0.031

Appendix I.

Shipping / Receiving

The LOGISTIC Procedure

Model Information

Data Set	WORK.SID1
Response Variable	Y
Number of Response Levels	6
Number of Observations	1292
Model	generalized logit
Optimization Technique	Newton-Raphson

Response Profile

Ordered Value	Y	Total Frequency
1	0	496
2	1	450
3	2	120
4	3	118
5	4	71
6	5	37

Logits modeled use Y=0 as the reference category.

NOTE: 3 observations were deleted due to missing values for the response or explanatory variables.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	3719.004	3450.149
SC	3744.824	3605.067
-2 Log L	3709.004	3390.149

Shipping / Receiving

The LOGISTIC Procedure

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	318.8550	25	<.0001
Score	193.5270	25	<.0001
Wald	189.3323	25	<.0001

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
tsqft	5	24.0345	0.0002
YEAR	5	50.3892	<.0001
ADJSQFT	5	34.8823	<.0001
lit_hrs	5	41.3946	<.0001
ADJ_TSQFT	5	16.9685	0.0046

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	27.4714	54.5178	0.2539	0.6143
Intercept	2	1	67.7698	85.2889	0.6314	0.4269
Intercept	3	1	131.0	85.6580	2.3372	0.1263
Intercept	4	1	12.5491	109.6	0.0131	0.9088
Intercept	5	1	-1263.2	188.6	44.8447	<.0001
tsqft	1	1	1.572E-6	5.236E-7	9.0158	0.0027
tsqft	2	1	1.492E-6	5.642E-7	6.9885	0.0082
tsqft	3	1	6.643E-7	1.054E-6	0.3970	0.5286
tsqft	4	1	3.98E-6	8.675E-7	21.0449	<.0001
tsqft	5	1	-1.27E-7	1.68E-6	0.0057	0.9399
YEAR	1	1	-0.0137	0.0274	0.2521	0.6156
YEAR	2	1	-0.0352	0.0428	0.6769	0.4106
YEAR	3	1	-0.0657	0.0430	2.3323	0.1267
YEAR	4	1	-0.00660	0.0550	0.0144	0.9044
YEAR	5	1	0.6323	0.0946	44.7048	<.0001
ADJSQFT	1	1	-0.00010	0.000029	12.0465	0.0005
ADJSQFT	2	1	-7.47E-6	8.977E-6	0.6916	0.4056
ADJSQFT	3	1	-0.00031	0.000169	3.3319	0.0679
ADJSQFT	4	1	-0.00286	0.000621	21.1712	<.0001
ADJSQFT	5	1	-0.00007	0.000088	0.6123	0.4339
lit_hrs	1	1	-0.00118	0.00165	0.5147	0.4731
lit_hrs	2	1	0.00913	0.00226	16.2820	<.0001
lit_hrs	3	1	-0.0124	0.00313	15.5932	<.0001
lit_hrs	4	1	-0.00540	0.00346	2.4356	0.1186
lit_hrs	5	1	0.00376	0.00405	0.8605	0.3536

Appendix I.

The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
ADJ_TSQFT	1	1	-2.5728	1.4308	3.2334	0.0721
ADJ_TSQFT	2	1	1.1748	1.3554	0.7513	0.3861
ADJ_TSQFT	3	1	-28.7322	8.1837	12.3264	0.0004
ADJ_TSQFT	4	1	-10.5516	9.6907	1.1856	0.2762
ADJ_TSQFT	5	1	-1.6115	5.5940	0.0830	0.7733

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000
tsqft	4	1.000	1.000	1.000
tsqft	5	1.000	1.000	1.000
YEAR	1	0.986	0.935	1.041
YEAR	2	0.965	0.888	1.050
YEAR	3	0.936	0.861	1.019
YEAR	4	0.993	0.892	1.106
YEAR	5	1.882	1.564	2.265
ADJSQFT	1	1.000	1.000	1.000
ADJSQFT	2	1.000	1.000	1.000
ADJSQFT	3	1.000	0.999	1.000
ADJSQFT	4	0.997	0.996	0.998
ADJSQFT	5	1.000	1.000	1.000
lit_hrs	1	0.999	0.996	1.002
lit_hrs	2	1.009	1.005	1.014
lit_hrs	3	0.988	0.982	0.994
lit_hrs	4	0.995	0.988	1.001
lit_hrs	5	1.004	0.996	1.012
ADJ_TSQFT	1	0.076	0.005	1.260
ADJ_TSQFT	2	3.238	0.227	46.123
ADJ_TSQFT	3	<0.001	<0.001	<0.001
ADJ_TSQFT	4	<0.001	<0.001	>999.999
ADJ_TSQFT	5	0.200	<0.001	>999.999

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The LOGISTIC Procedure

Model Information

```
Data Set                      WORK.SID1
Response Variable             Y
Number of Response Levels     9
Number of Observations        9144
Model                         generalized logit
Optimization Technique        Newton-Raphson
```

Response Profile

Ordered Value	Y	Total Frequency
1	0	3894
2	1	3036
3	2	1070
4	3	294
5	4	272
6	5	198
7	6	136
8	7	131
9	8	113

Logits modeled use Y=0 as the reference category.

NOTE: 12 observations were deleted due to missing values for the response or explanatory variables.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	26651.202	24500.286
SC	26708.169	25069.954
-2 Log L	26635.202	24340.286

Appendix I.

The LOGISTIC Procedure

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	2294.9167	72	<.0001
Score	1816.7379	72	<.0001
Wald	1459.6361	72	<.0001

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
b1	8	105.5325	<.0001
b2	8	163.0647	<.0001
b4	8	68.4878	<.0001
b7	8	235.8186	<.0001
tsqft	8	45.6949	<.0001
YEAR	8	121.7262	<.0001
ADJSQFT	8	150.8637	<.0001
lit_hrs	8	151.9021	<.0001
ADJ_TSQFT	8	300.9987	<.0001

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	-45.2264	21.6093	4.3803	0.0364
Intercept	2	1	-9.8846	30.8055	0.1030	0.7483
Intercept	3	1	18.0865	51.8215	0.1218	0.7271
Intercept	4	1	-300.7	57.3726	27.4737	<.0001
Intercept	5	1	12.2162	62.9794	0.0376	0.8462
Intercept	6	1	-224.7	81.4487	7.6083	0.0058
Intercept	7	1	27.0239	75.0982	0.1295	0.7190
Intercept	8	1	-908.7	95.1747	91.1539	<.0001
b1	1	1	0.1856	0.0727	6.5276	0.0106
b1	2	1	-0.4002	0.0988	16.4230	<.0001
b1	3	1	0.2456	0.1714	2.0525	0.1520
b1	4	1	0.9964	0.2429	16.8308	<.0001
b1	5	1	1.9884	0.2784	51.0065	<.0001
b1	6	1	-0.4144	0.2537	2.6686	0.1023
b1	7	1	0.6357	0.2912	4.7673	0.0290
b1	8	1	0.3634	0.2489	2.1321	0.1442
b2	1	1	0.5925	0.0738	64.5129	<.0001
b2	2	1	-0.1703	0.1098	2.4085	0.1207
b2	3	1	0.6601	0.1819	13.1702	0.0003
b2	4	1	1.8078	0.2266	63.6266	<.0001
b2	5	1	1.5870	0.3111	26.0138	<.0001

Shop

The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
b2	6	1	0.0645	0.2717	0.0564	0.8123
b2	7	1	1.1502	0.2859	16.1831	<.0001
b2	8	1	0.2111	0.3074	0.4715	0.4923
b4	1	1	0.2564	0.0969	7.0059	0.0081
b4	2	1	-0.3355	0.1483	5.1185	0.0237
b4	3	1	0.8793	0.2139	16.8966	<.0001
b4	4	1	1.2090	0.2900	17.3747	<.0001
b4	5	1	1.6271	0.3607	20.3544	<.0001
b4	6	1	0.0466	0.3722	0.0157	0.9004
b4	7	1	0.9008	0.3712	5.8904	0.0152
b4	8	1	0.2833	0.4074	0.4838	0.4867
b7	1	1	0.7288	0.0805	82.0444	<.0001
b7	2	1	0.2077	0.1125	3.4099	0.0648
b7	3	1	0.6997	0.1918	13.3048	0.0003
b7	4	1	2.1102	0.2278	85.8373	<.0001
b7	5	1	2.5911	0.2841	83.2060	<.0001
b7	6	1	-0.1180	0.3314	0.1268	0.7217
b7	7	1	1.7248	0.2708	40.5565	<.0001
b7	8	1	0.4751	0.2972	2.5565	0.1098
tsqft	1	1	-6.6E-7	2.566E-7	6.6149	0.0101
tsqft	2	1	2.561E-7	3.499E-7	0.5355	0.4643
tsqft	3	1	-3.24E-7	6.454E-7	0.2516	0.6159
tsqft	4	1	4.102E-7	4.607E-7	0.7929	0.3732
tsqft	5	1	1.436E-6	3.09E-7	21.5942	<.0001
tsqft	6	1	1.321E-6	5.387E-7	6.0100	0.0142
tsqft	7	1	1.338E-6	3.925E-7	11.6276	0.0006
tsqft	8	1	7.208E-7	4.482E-7	2.5868	0.1078
YEAR	1	1	0.0223	0.0109	4.2097	0.0402
YEAR	2	1	0.00482	0.0155	0.0970	0.7555
YEAR	3	1	-0.0103	0.0260	0.1570	0.6920
YEAR	4	1	0.1486	0.0288	26.6301	<.0001
YEAR	5	1	-0.00908	0.0316	0.0824	0.7740
YEAR	6	1	0.1115	0.0409	7.4438	0.0064
YEAR	7	1	-0.0160	0.0377	0.1797	0.6716
YEAR	8	1	0.4540	0.0477	90.4362	<.0001
ADJSQFT	1	1	2.414E-6	3.548E-6	0.4629	0.4963
ADJSQFT	2	1	-0.00093	0.000087	115.0850	<.0001
ADJSQFT	3	1	-0.00014	0.000062	5.2007	0.0226
ADJSQFT	4	1	6.958E-6	4.418E-6	2.4798	0.1153
ADJSQFT	5	1	8.218E-6	3.96E-6	4.3069	0.0380
ADJSQFT	6	1	-0.00334	0.000646	26.7944	<.0001
ADJSQFT	7	1	4.617E-6	5.904E-6	0.6114	0.4343
ADJSQFT	8	1	0.000011	7.013E-6	2.5475	0.1105
lit_hrs	1	1	0.00114	0.000645	3.1307	0.0768
lit_hrs	2	1	-0.00614	0.000953	41.4490	<.0001
lit_hrs	3	1	-0.00146	0.00157	0.8720	0.3504

Appendix I.

The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
lit_hrs	4	1	0.00749	0.00154	23.7228	<.0001
lit_hrs	5	1	0.0129	0.00161	64.7998	<.0001
lit_hrs	6	1	0.00325	0.00197	2.7141	0.0995
lit_hrs	7	1	0.00612	0.00210	8.5294	0.0035
lit_hrs	8	1	0.00267	0.00222	1.4533	0.2280
ADJ_TSQFT	1	1	2.5213	0.1651	233.2586	<.0001
ADJ_TSQFT	2	1	-1.9313	0.6777	8.1211	0.0044
ADJ_TSQFT	3	1	-6.6554	1.4716	20.4535	<.0001
ADJ_TSQFT	4	1	2.0251	0.3258	38.6452	<.0001
ADJ_TSQFT	5	1	1.5198	0.4386	12.0044	0.0005
ADJ_TSQFT	6	1	-15.7461	6.8871	5.2273	0.0222
ADJ_TSQFT	7	1	0.7583	0.5733	1.7496	0.1859
ADJ_TSQFT	8	1	-1.4368	1.1655	1.5198	0.2177

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
b1	1	1.204	1.044	1.388
b1	2	0.670	0.552	0.813
b1	3	1.278	0.914	1.789
b1	4	2.708	1.683	4.360
b1	5	7.304	4.232	12.605
b1	6	0.661	0.402	1.086
b1	7	1.888	1.067	3.342
b1	8	1.438	0.883	2.342
b2	1	1.809	1.565	2.090
b2	2	0.843	0.680	1.046
b2	3	1.935	1.355	2.764
b2	4	6.097	3.910	9.506
b2	5	4.889	2.657	8.996
b2	6	1.067	0.626	1.817
b2	7	3.159	1.804	5.532
b2	8	1.235	0.676	2.256
b4	1	1.292	1.069	1.562
b4	2	0.715	0.535	0.956
b4	3	2.409	1.584	3.664
b4	4	3.350	1.897	5.915
b4	5	5.089	2.510	10.319
b4	6	1.048	0.505	2.173
b4	7	2.462	1.189	5.095
b4	8	1.328	0.597	2.950
b7	1	2.073	1.770	2.427
b7	2	1.231	0.987	1.534

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The LOGISTIC Procedure

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
b7	3	2.013	1.382	2.932
b7	4	8.250	5.279	12.891
b7	5	13.345	7.647	23.287
b7	6	0.889	0.464	1.702
b7	7	5.612	3.300	9.542
b7	8	1.608	0.898	2.879
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000
tsqft	4	1.000	1.000	1.000
tsqft	5	1.000	1.000	1.000
tsqft	6	1.000	1.000	1.000
tsqft	7	1.000	1.000	1.000
tsqft	8	1.000	1.000	1.000
YEAR	1	1.023	1.001	1.044
YEAR	2	1.005	0.975	1.036
YEAR	3	0.990	0.941	1.042
YEAR	4	1.160	1.097	1.228
YEAR	5	0.991	0.931	1.054
YEAR	6	1.118	1.032	1.211
YEAR	7	0.984	0.914	1.060
YEAR	8	1.575	1.434	1.729
ADJSQFT	1	1.000	1.000	1.000
ADJSQFT	2	0.999	0.999	0.999
ADJSQFT	3	1.000	1.000	1.000
ADJSQFT	4	1.000	1.000	1.000
ADJSQFT	5	1.000	1.000	1.000
ADJSQFT	6	0.997	0.995	0.998
ADJSQFT	7	1.000	1.000	1.000
ADJSQFT	8	1.000	1.000	1.000
lit_hrs	1	1.001	1.000	1.002
lit_hrs	2	0.994	0.992	0.996
lit_hrs	3	0.999	0.995	1.002
lit_hrs	4	1.008	1.004	1.011
lit_hrs	5	1.013	1.010	1.016
lit_hrs	6	1.003	0.999	1.007
lit_hrs	7	1.006	1.002	1.010
lit_hrs	8	1.003	0.998	1.007
ADJ_TSQFT	1	12.445	9.005	17.199
ADJ_TSQFT	2	0.145	0.038	0.547
ADJ_TSQFT	3	0.001	<0.001	0.023
ADJ_TSQFT	4	7.577	4.001	14.347
ADJ_TSQFT	5	4.571	1.935	10.800
ADJ_TSQFT	6	<0.001	<0.001	0.106
ADJ_TSQFT	7	2.135	0.694	6.567
ADJ_TSQFT	8	0.238	0.024	2.334

Appendix I.

Storage

The LOGISTIC Procedure

Model Information

Data Set	WORK.SID1
Response Variable	Y
Number of Response Levels	9
Number of Observations	22419
Model	generalized logit
Optimization Technique	Newton-Raphson

Response Profile

Ordered Value	Y	Total Frequency
1	0	8428
2	1	6468
3	2	5304
4	3	700
5	4	472
6	5	313
7	6	299
8	7	271
9	8	164

Logits modeled use Y=0 as the reference category.

NOTE: 30 observations were deleted due to missing values for the response or explanatory
      variables.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	65637.521	57196.481
SC	65701.662	58030.318
-2 Log L	65621.521	56988.481

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The LOGISTIC Procedure

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	8633.0400	96	<.0001
Score	7909.5047	96	<.0001
Wald	5090.0216	96	<.0001

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
b1	8	363.6263	<.0001
b2	8	344.0261	<.0001
b3	8	204.2274	<.0001
b4	8	87.3773	<.0001
b6	8	16.9699	0.0304
b7	8	402.8131	<.0001
b9	8	70.9049	<.0001
tsqft	8	38.6848	<.0001
YEAR	8	468.6072	<.0001
ADJSQFT	8	156.5556	<.0001
lit_hrs	8	344.8969	<.0001
ADJ_TSQFT	8	1394.6134	<.0001

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	-13.8906	15.4790	0.8053	0.3695
Intercept	2	1	165.6	16.8058	97.0558	<.0001
Intercept	3	1	81.8562	36.4698	5.0377	0.0248
Intercept	4	1	-123.9	45.5798	7.3849	0.0066
Intercept	5	1	-420.2	54.7709	58.8629	<.0001
Intercept	6	1	-956.5	61.3377	243.1834	<.0001
Intercept	7	1	133.6	56.1713	5.6571	0.0174
Intercept	8	1	226.3	69.0617	10.7330	0.0011
b1	1	1	-0.00175	0.0545	0.0010	0.9745
b1	2	1	-0.8926	0.0535	277.9025	<.0001
b1	3	1	-0.5792	0.1165	24.7093	<.0001
b1	4	1	-0.6152	0.1319	21.7433	<.0001
b1	5	1	1.5744	0.4179	14.1937	0.0002
b1	6	1	-0.3896	0.1981	3.8677	0.0492
b1	7	1	2.3590	0.6034	15.2826	<.0001
b1	8	1	2.2999	0.7392	9.6801	0.0019
b2	1	1	0.6415	0.0566	128.6209	<.0001
b2	2	1	-0.5324	0.0637	69.7854	<.0001

Appendix I.

The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
b2	3	1	0.1440	0.1241	1.3455	0.2461
b2	4	1	-0.4936	0.1762	7.8433	0.0051
b2	5	1	1.9303	0.4213	20.9923	<.0001
b2	6	1	0.4452	0.1984	5.0346	0.0248
b2	7	1	2.0499	0.6260	10.7212	0.0011
b2	8	1	2.3059	0.7584	9.2444	0.0024
b3	1	1	0.7977	0.0672	140.8008	<.0001
b3	2	1	0.3112	0.0701	19.6813	<.0001
b3	3	1	-0.7826	0.2209	12.5517	0.0004
b3	4	1	-0.1014	0.1939	0.2733	0.6011
b3	5	1	1.7060	0.4495	14.4041	0.0001
b3	6	1	1.1053	0.1890	34.2171	<.0001
b3	7	1	1.6971	0.6700	6.4159	0.0113
b3	8	1	1.5136	0.8400	3.2465	0.0716
b4	1	1	0.1541	0.0833	3.4256	0.0642
b4	2	1	-0.4673	0.0902	26.8215	<.0001
b4	3	1	0.5307	0.1554	11.6663	0.0006
b4	4	1	-0.4764	0.2712	3.0849	0.0790
b4	5	1	1.5138	0.5236	8.3577	0.0038
b4	6	1	-0.4332	0.4341	0.9956	0.3184
b4	7	1	2.1993	0.6821	10.3972	0.0013
b4	8	1	2.2068	0.8700	6.4343	0.0112
b6	1	1	-0.1685	0.1160	2.1084	0.1465
b6	2	1	0.0737	0.0936	0.6204	0.4309
b6	3	1	-0.0416	0.1993	0.0435	0.8347
b6	4	1	0.5409	0.1775	9.2893	0.0023
b6	5	1	0.5507	0.8060	0.4668	0.4944
b6	6	1	-0.5082	0.4071	1.5587	0.2119
b6	7	1	0.6507	1.1576	0.3159	0.5741
b6	8	1	0.8864	1.2282	0.5209	0.4704
b7	1	1	0.7556	0.0618	149.3378	<.0001
b7	2	1	-0.2346	0.0726	10.4447	0.0012
b7	3	1	0.4020	0.1351	8.8514	0.0029
b7	4	1	-0.6036	0.2152	7.8708	0.0050
b7	5	1	3.8461	0.3902	97.1592	<.0001
b7	6	1	0.5484	0.2033	7.2724	0.0070
b7	7	1	4.4785	0.5866	58.2878	<.0001
b7	8	1	4.6020	0.7180	41.0871	<.0001
b9	1	1	-0.3818	0.1000	14.5898	0.0001
b9	2	1	-0.2558	0.0757	11.4024	0.0007
b9	3	1	-1.1333	0.2291	24.4647	<.0001
b9	4	1	-0.6728	0.2135	9.9273	0.0016
b9	5	1	1.2376	0.6321	3.8333	0.0502
b9	6	1	0.1025	0.2847	0.1296	0.7188
b9	7	1	0.5687	1.1580	0.2412	0.6233
b9	8	1	3.3132	0.7697	18.5295	<.0001

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The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
tsqft	1	1	-1.26E-7	1.831E-7	0.4719	0.4921
tsqft	2	1	-1.13E-6	2.994E-7	14.3501	0.0002
tsqft	3	1	3.389E-7	3.785E-7	0.8016	0.3706
tsqft	4	1	-1.19E-6	7.161E-7	2.7579	0.0968
tsqft	5	1	6.792E-7	3.361E-7	4.0834	0.0433
tsqft	6	1	3.97E-7	4.006E-7	0.9820	0.3217
tsqft	7	1	6.847E-7	3.429E-7	3.9869	0.0459
tsqft	8	1	1.099E-6	2.964E-7	13.7476	0.0002
YEAR	1	1	0.00646	0.00777	0.6905	0.4060
YEAR	2	1	-0.0827	0.00844	96.1943	<.0001
YEAR	3	1	-0.0419	0.0183	5.2434	0.0220
YEAR	4	1	0.0614	0.0229	7.1957	0.0073
YEAR	5	1	0.2075	0.0275	57.0265	<.0001
YEAR	6	1	0.4782	0.0308	241.6171	<.0001
YEAR	7	1	-0.0710	0.0282	6.3365	0.0118
YEAR	8	1	-0.1176	0.0347	11.5012	0.0007
ADJSQFT	1	1	-2.37E-7	1.063E-6	0.0498	0.8234
ADJSQFT	2	1	-0.00016	0.000015	123.9641	<.0001
ADJSQFT	3	1	-0.00014	0.000031	21.3463	<.0001
ADJSQFT	4	1	-0.00018	0.000059	8.8041	0.0030
ADJSQFT	5	1	1.608E-6	1.39E-6	1.3371	0.2475
ADJSQFT	6	1	3.024E-6	3.161E-6	0.9154	0.3387
ADJSQFT	7	1	2.967E-6	1.25E-6	5.6295	0.0177
ADJSQFT	8	1	8.824E-7	1.733E-6	0.2593	0.6106
lit_hrs	1	1	0.00167	0.000420	15.8979	<.0001
lit_hrs	2	1	-0.00479	0.000454	111.2918	<.0001
lit_hrs	3	1	-0.00062	0.000936	0.4446	0.5049
lit_hrs	4	1	0.00136	0.00104	1.7148	0.1904
lit_hrs	5	1	0.00989	0.00136	52.8067	<.0001
lit_hrs	6	1	0.00436	0.00127	11.6881	0.0006
lit_hrs	7	1	0.0123	0.00150	67.8304	<.0001
lit_hrs	8	1	0.0129	0.00175	54.3906	<.0001
ADJ_TSQFT	1	1	1.7859	0.0824	469.5007	<.0001
ADJ_TSQFT	2	1	-5.6384	0.2489	513.1122	<.0001
ADJ_TSQFT	3	1	-6.7327	0.6618	103.4885	<.0001
ADJ_TSQFT	4	1	-15.7477	1.6268	93.7000	<.0001
ADJ_TSQFT	5	1	2.1445	0.2202	94.8046	<.0001
ADJ_TSQFT	6	1	-2.1882	0.5005	19.1161	<.0001
ADJ_TSQFT	7	1	2.1879	0.2320	88.9162	<.0001
ADJ_TSQFT	8	1	0.4595	0.3430	1.7941	0.1804

Appendix I.

The LOGISTIC Procedure

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
b1	1	0.998	0.897	1.111
b1	2	0.410	0.369	0.455
b1	3	0.560	0.446	0.704
b1	4	0.541	0.417	0.700
b1	5	4.828	2.128	10.952
b1	6	0.677	0.459	0.999
b1	7	10.580	3.242	34.526
b1	8	9.973	2.342	42.466
b2	1	1.899	1.700	2.122
b2	2	0.587	0.518	0.665
b2	3	1.155	0.905	1.473
b2	4	0.610	0.432	0.862
b2	5	6.892	3.018	15.738
b2	6	1.561	1.058	2.303
b2	7	7.767	2.277	26.493
b2	8	10.033	2.269	44.358
b3	1	2.220	1.946	2.533
b3	2	1.365	1.190	1.566
b3	3	0.457	0.297	0.705
b3	4	0.904	0.618	1.321
b3	5	5.507	2.282	13.290
b3	6	3.020	2.085	4.374
b3	7	5.458	1.468	20.294
b3	8	4.543	0.876	23.572
b4	1	1.167	0.991	1.373
b4	2	0.627	0.525	0.748
b4	3	1.700	1.254	2.305
b4	4	0.621	0.365	1.057
b4	5	4.544	1.628	12.681
b4	6	0.648	0.277	1.518
b4	7	9.019	2.369	34.335
b4	8	9.086	1.651	49.993
b6	1	0.845	0.673	1.061
b6	2	1.077	0.896	1.293
b6	3	0.959	0.649	1.418
b6	4	1.718	1.213	2.432
b6	5	1.734	0.357	8.418
b6	6	0.602	0.271	1.336
b6	7	1.917	0.198	18.533
b6	8	2.426	0.219	26.940
b7	1	2.129	1.886	2.403
b7	2	0.791	0.686	0.912
b7	3	1.495	1.147	1.948
b7	4	0.547	0.359	0.834
b7	5	46.810	21.787	100.570
b7	6	1.730	1.162	2.578

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The LOGISTIC Procedure

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
b7	7	88.099	27.904	278.154
b7	8	99.684	24.407	407.144
b9	1	0.683	0.561	0.830
b9	2	0.774	0.667	0.898
b9	3	0.322	0.205	0.504
b9	4	0.510	0.336	0.775
b9	5	3.447	0.999	11.900
b9	6	1.108	0.634	1.936
b9	7	1.766	0.183	17.089
b9	8	27.474	6.078	124.192
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000
tsqft	4	1.000	1.000	1.000
tsqft	5	1.000	1.000	1.000
tsqft	6	1.000	1.000	1.000
tsqft	7	1.000	1.000	1.000
tsqft	8	1.000	1.000	1.000
YEAR	1	1.006	0.991	1.022
YEAR	2	0.921	0.906	0.936
YEAR	3	0.959	0.925	0.994
YEAR	4	1.063	1.017	1.112
YEAR	5	1.231	1.166	1.299
YEAR	6	1.613	1.519	1.713
YEAR	7	0.931	0.881	0.984
YEAR	8	0.889	0.831	0.952
ADJSQFT	1	1.000	1.000	1.000
ADJSQFT	2	1.000	1.000	1.000
ADJSQFT	3	1.000	1.000	1.000
ADJSQFT	4	1.000	1.000	1.000
ADJSQFT	5	1.000	1.000	1.000
ADJSQFT	6	1.000	1.000	1.000
ADJSQFT	7	1.000	1.000	1.000
ADJSQFT	8	1.000	1.000	1.000
lit_hrs	1	1.002	1.001	1.003
lit_hrs	2	0.995	0.994	0.996
lit_hrs	3	0.999	0.998	1.001
lit_hrs	4	1.001	0.999	1.003
lit_hrs	5	1.010	1.007	1.013
lit_hrs	6	1.004	1.002	1.007
lit_hrs	7	1.012	1.009	1.015
lit_hrs	8	1.013	1.009	1.016
ADJ_TSQFT	1	5.965	5.075	7.011
ADJ_TSQFT	2	0.004	0.002	0.006
ADJ_TSQFT	3	0.001	<0.001	0.004
ADJ_TSQFT	4	<0.001	<0.001	<0.001

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Storage

The LOGISTIC Procedure

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
ADJ_TSQFT	5	8.538	5.544	13.146
ADJ_TSQFT	6	0.112	0.042	0.299
ADJ_TSQFT	7	8.916	5.658	14.050
ADJ_TSQFT	8	1.583	0.808	3.101

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The LOGISTIC Procedure

Model Information

Data Set	WORK.SID1
Response Variable	Y
Number of Response Levels	7
Number of Observations	938
Model	generalized logit
Optimization Technique	Newton-Raphson

Response Profile

Ordered Value	Y	Total Frequency
1	0	463
2	1	215
3	2	136
4	3	55
5	4	33
6	5	27
7	6	9

Logits modeled use Y=0 as the reference category.

Maximum Likelihood Iteration History

Iter	Ridge	-2 Log L	Intercept_1	Intercept_2	Intercept_3	Intercept_4
0	0	2620.621789	-0.767089	-1.225072	-2.130394	-2.641219
1	0	2455.819247	364.953337	117.083381	-334.340797	-655.787541
2	0	2425.297765	408.618287	124.703448	-360.420676	-653.307338
3	0	2405.785867	390.122357	111.148835	-364.127167	-629.189026
4	0	2398.115141	383.362296	104.755150	-357.601818	-585.098371
5	0	2396.452289	381.856263	103.232272	-356.727690	-571.691779
6	0	2396.340327	381.625954	103.047737	-356.404016	-569.567436
7	0	2396.338893	381.599321	103.031347	-356.378412	-569.454823

Maximum Likelihood Iteration History

Iter	Intercept_5	Intercept_6	tsqft_1	tsqft_2	tsqft_3	tsqft_4
0	-2.841890	-3.940502	0	0	0	0
1	-70.919804	246.806542	0.000001522	0.000000709	0.000000561	0.000000914
2	-40.477247	135.969074	0.000001141	0.000000528	0.000000328	3.4629116E-8
3	-6.760048	218.203815	0.000000592	-5.246789E-9	0.000000737	0.000000201
4	18.564818	227.298585	0.000000444	-0.000000229	0.000001057	0.000000356
5	26.577511	234.063252	0.000000399	-0.000000308	0.000001136	0.000000386
6	27.803919	237.350590	0.000000392	-0.000000318	0.000001149	0.000000392
7	27.887448	237.927759	0.000000391	-0.000000319	0.000001150	0.000000392

Appendix I.

The LOGISTIC Procedure

Maximum Likelihood Iteration History

Iter	tsqft_5	tsqft_6	YEAR_1	YEAR_2	YEAR_3	YEAR_4
0	0	0	0	0	0	0
1	-0.000000362	0.000004216	-0.183817	-0.059458	0.167238	0.328298
2	-0.000001375	0.000001035	-0.205800	-0.063277	0.180328	0.326989
3	-0.000001214	0.000001603	-0.196500	-0.056465	0.182201	0.314941
4	-0.000000846	0.000001266	-0.193111	-0.053258	0.178940	0.292902
5	-0.000000585	0.000001243	-0.192358	-0.052496	0.178512	0.286226
6	-0.000000508	0.000001267	-0.192242	-0.052403	0.178352	0.285172
7	-0.000000502	0.000001271	-0.192229	-0.052395	0.178339	0.285116

Maximum Likelihood Iteration History

Iter	YEAR_5	YEAR_6	ADJSQFT_1	ADJSQFT_2	ADJSQFT_3	ADJSQFT_4
0	0	0	0	0	0	0
1	0.034278	-0.126272	0.000024973	-0.000000873	0.000001781	0.000007606
2	0.019053	-0.070498	0.000054138	0.000049550	0.000003482	0.000034297
3	0.002176	-0.111891	0.000101	0.000087727	-0.000034725	0.000045538
4	-0.010493	-0.116469	0.000134	0.000121	-0.000124	0.000003648
5	-0.014496	-0.119870	0.000145	0.000132	-0.000193	-0.000032439
6	-0.015108	-0.121522	0.000146	0.000133	-0.000212	-0.000042194
7	-0.015150	-0.121812	0.000146	0.000133	-0.000213	-0.000042643

Maximum Likelihood Iteration History

Iter	ADJSQFT_5	ADJSQFT_6	lit_hrs_1	lit_hrs_2	lit_hrs_3	lit_hrs_4
0	0	0	0	0	0	0
1	0.000006804	-0.000004524	0.000357	-0.003033	-0.013474	-0.008304
2	0.000027413	0.000068339	0.000235	-0.003560	-0.017589	-0.010509
3	0.000024369	0.000102	-0.000184	-0.003821	-0.018578	-0.011706
4	-0.000027939	0.000128	-0.000278	-0.003842	-0.018771	-0.012282
5	-0.000105	0.000133	-0.000258	-0.003823	-0.018920	-0.012733
6	-0.000144	0.000130	-0.000258	-0.003823	-0.018943	-0.012817
7	-0.000148	0.000129	-0.000259	-0.003823	-0.018943	-0.012820

Maximum Likelihood Iteration History

Iter	lit_hrs_5	lit_hrs_6	ADJ_TSQFT_1	ADJ_TSQFT_2	ADJ_TSQFT_3	ADJ_TSQFT_4
0	0	0	0	0	0	0
1	-0.001036	0.005765	0.860857	2.891706	0.543447	-0.343393
2	-0.001379	0.003765	0.689986	1.801809	0.679275	-3.437805
3	-0.001649	0.004254	0.381270	1.627713	0.978190	-9.337092
4	-0.001950	0.004474	0.246919	1.502596	1.201139	-19.703898
5	-0.002163	0.004628	0.211827	1.467646	1.292648	-28.418194
6	-0.002204	0.004708	0.207488	1.464036	1.317745	-31.125330
7	-0.002207	0.004725	0.207091	1.463745	1.319104	-31.309804

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Task

The LOGISTIC Procedure

Maximum Likelihood Iteration History

Iter	ADJ_TSQFT_5	ADJ_TSQFT_6
0	0	0
1	-1.417435	1.519143
2	-5.287889	0.660664
3	-10.279470	0.573821
4	-15.014065	0.548898
5	-16.633096	0.632119
6	-16.574850	0.679830
7	-16.546104	0.688454

Last Change in -2 Log L   0.001433474

Last Evaluation of Gradient

Intercept_1	Intercept_2	Intercept_3	Intercept_4	Intercept_5	Intercept_6
0.000430706	0.0001152186	-1.846384E-6	-0.000083546	-0.000085585	-0.000473285

Last Evaluation of Gradient

tsqft_1	tsqft_2	tsqft_3	tsqft_4	tsqft_5	tsqft_6
118.62638713	22.382233244	-0.698083465	-2.10605169	-19.8210725	-133.3263833

Last Evaluation of Gradient

YEAR_1	YEAR_2	YEAR_3	YEAR_4	YEAR_5	YEAR_6
0.8566816607	0.229227812	-0.003662347	-0.166408589	-0.170334706	-0.941299679

Last Evaluation of Gradient

ADJSQFT_1	ADJSQFT_2	ADJSQFT_3	ADJSQFT_4	ADJSQFT_5	ADJSQFT_6
38.887751144	6.227251876	-0.071193207	-0.089978043	-0.494416832	-44.75588112

Last Evaluation of Gradient

lit_hrs_1	lit_hrs_2	lit_hrs_3	lit_hrs_4	lit_hrs_5	lit_hrs_6
0.0328717533	0.0077899819	-0.000159854	-0.003535245	-0.00519971	-0.037266573

Appendix I.

The LOGISTIC Procedure

Last Evaluation of Gradient

ADJ_TSQFT_1	ADJ_TSQFT_2	ADJ_TSQFT_3	ADJ_TSQFT_4	ADJ_TSQFT_5	ADJ_TSQFT_6
0.0001777514	0.000040461	-1.559142E-6	-4.294613E-6	-3.188271E-6	-0.000215868

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	2632.622	2468.339
SC	2661.684	2642.714
-2 Log L	2620.622	2396.339

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	224.2829	30	<.0001
Score	176.0572	30	<.0001
Wald	120.8733	30	<.0001

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
tsqft	6	2.1039	0.9099
YEAR	6	40.2056	<.0001
ADJSQFT	6	21.0266	0.0018
lit_hrs	6	19.5625	0.0033
ADJ_TSQFT	6	12.7007	0.0480

Task

The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	381.6	85.3557	19.9871	<.0001
Intercept	2	1	103.0	96.5996	1.1376	0.2862
Intercept	3	1	-356.4	143.0	6.2149	0.0127
Intercept	4	1	-569.5	188.0	9.1797	0.0024
Intercept	5	1	27.8874	188.0	0.0220	0.8821
Intercept	6	1	237.9	326.9	0.5298	0.4667
tsqft	1	1	3.91E-7	7.499E-7	0.2719	0.6021
tsqft	2	1	-3.19E-7	1.079E-6	0.0872	0.7678
tsqft	3	1	1.15E-6	1.19E-6	0.9332	0.3340
tsqft	4	1	3.917E-7	2.023E-6	0.0375	0.8465
tsqft	5	1	-5.02E-7	2.965E-6	0.0287	0.8655
tsqft	6	1	1.271E-6	1.29E-6	0.9718	0.3242
YEAR	1	1	-0.1922	0.0429	20.1066	<.0001
YEAR	2	1	-0.0524	0.0485	1.1668	0.2801
YEAR	3	1	0.1783	0.0717	6.1783	0.0129
YEAR	4	1	0.2851	0.0943	9.1420	0.0025
YEAR	5	1	-0.0152	0.0944	0.0258	0.8725
YEAR	6	1	-0.1218	0.1642	0.5505	0.4581
ADJSQFT	1	1	0.000146	0.000037	15.7749	<.0001
ADJSQFT	2	1	0.000133	0.000037	12.7118	0.0004
ADJSQFT	3	1	-0.00021	0.000186	1.3083	0.2527
ADJSQFT	4	1	-0.00004	0.000287	0.0220	0.8820
ADJSQFT	5	1	-0.00015	0.000356	0.1726	0.6778
ADJSQFT	6	1	0.000129	0.000046	7.8677	0.0050
lit_hrs	1	1	-0.00026	0.00226	0.0131	0.9088
lit_hrs	2	1	-0.00382	0.00272	1.9761	0.1598
lit_hrs	3	1	-0.0189	0.00506	13.9940	0.0002
lit_hrs	4	1	-0.0128	0.00579	4.9001	0.0269
lit_hrs	5	1	-0.00221	0.00517	0.1819	0.6698
lit_hrs	6	1	0.00472	0.00790	0.3574	0.5500
ADJ_TSQFT	1	1	0.2071	0.6570	0.0994	0.7526
ADJ_TSQFT	2	1	1.4637	0.6552	4.9904	0.0255
ADJ_TSQFT	3	1	1.3191	1.3524	0.9514	0.3294
ADJ_TSQFT	4	1	-31.3098	16.2968	3.6911	0.0547
ADJ_TSQFT	5	1	-16.5461	11.1929	2.1853	0.1393
ADJ_TSQFT	6	1	0.6885	2.0447	0.1134	0.7363

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000

Appendix I.

The LOGISTIC Procedure

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
tsqft	4	1.000	1.000	1.000
tsqft	5	1.000	1.000	1.000
tsqft	6	1.000	1.000	1.000
YEAR	1	0.825	0.759	0.897
YEAR	2	0.949	0.863	1.044
YEAR	3	1.195	1.038	1.376
YEAR	4	1.330	1.105	1.600
YEAR	5	0.985	0.819	1.185
YEAR	6	0.885	0.642	1.221
ADJSQFT	1	1.000	1.000	1.000
ADJSQFT	2	1.000	1.000	1.000
ADJSQFT	3	1.000	0.999	1.000
ADJSQFT	4	1.000	0.999	1.001
ADJSQFT	5	1.000	0.999	1.001
ADJSQFT	6	1.000	1.000	1.000
lit_hrs	1	1.000	0.995	1.004
lit_hrs	2	0.996	0.991	1.002
lit_hrs	3	0.981	0.972	0.991
lit_hrs	4	0.987	0.976	0.999
lit_hrs	5	0.998	0.988	1.008
lit_hrs	6	1.005	0.989	1.020
ADJ_TSQFT	1	1.230	0.339	4.458
ADJ_TSQFT	2	4.322	1.197	15.611
ADJ_TSQFT	3	3.740	0.264	52.970
ADJ_TSQFT	4	<0.001	<0.001	1.880
ADJ_TSQFT	5	<0.001	<0.001	219.532
ADJ_TSQFT	6	1.991	0.036	109.498

Unknown

The LOGISTIC Procedure

Model Information

```
Data Set                      WORK.SID1
Response Variable             Y
Number of Response Levels     6
Number of Observations        11805
Model                         generalized logit
Optimization Technique        Newton-Raphson
```

Response Profile

Ordered Value	Y	Total Frequency
1	0	5057
2	1	2459
3	2	2446
4	3	967
5	4	567
6	5	309

Logits modeled use Y=0 as the reference category.

NOTE: 31 observations were deleted due to missing values for the response or explanatory variables.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	34532.780	32596.893
SC	34569.662	33039.469
-2 Log L	34522.780	32476.893

Appendix I.

The LOGISTIC Procedure

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	2045.8876	55	<.0001
Score	1577.9604	55	<.0001
Wald	1397.2847	55	<.0001

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
b1	5	179.9571	<.0001
b2	5	101.8197	<.0001
b4	5	28.4199	<.0001
b5	5	162.8591	<.0001
b7	5	181.4488	<.0001
b10	5	68.0208	<.0001
tsqft	5	57.8586	<.0001
YEAR	5	104.3029	<.0001
ADJSQFT	5	80.5141	<.0001
lit_hrs	5	151.4101	<.0001
ADJ_TSQFT	5	180.4361	<.0001

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	-47.6703	20.2148	5.5611	0.0184
Intercept	2	1	56.4894	20.2500	7.7819	0.0053
Intercept	3	1	-15.6027	29.3817	0.2820	0.5954
Intercept	4	1	-324.6	39.5094	67.4956	<.0001
Intercept	5	1	-226.0	52.6086	18.4516	<.0001
b1	1	1	0.1044	0.0647	2.6053	0.1065
b1	2	1	-0.7669	0.0637	144.7471	<.0001
b1	3	1	-0.0119	0.0924	0.0165	0.8978
b1	4	1	-0.1518	0.1210	1.5748	0.2095
b1	5	1	-0.3912	0.1424	7.5491	0.0060
b2	1	1	0.5869	0.0878	44.6848	<.0001
b2	2	1	-0.2054	0.0939	4.7857	0.0287
b2	3	1	0.7274	0.1222	35.4077	<.0001
b2	4	1	0.4668	0.1523	9.3957	0.0022
b2	5	1	0.00153	0.2177	0.0000	0.9944
b4	1	1	0.3278	0.1246	6.9269	0.0085
b4	2	1	-0.1948	0.1284	2.3009	0.1293
b4	3	1	0.6110	0.1737	12.3722	0.0004
b4	4	1	0.3319	0.2234	2.2073	0.1374

Unknown

The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
b4	5	1	-0.3977	0.4316	0.8489	0.3569
b5	1	1	0.2896	0.1385	4.3689	0.0366
b5	2	1	1.0053	0.1099	83.7378	<.0001
b5	3	1	1.5009	0.1427	110.6217	<.0001
b5	4	1	-0.5881	0.3260	3.2547	0.0712
b5	5	1	0.1531	0.2849	0.2886	0.5912
b7	1	1	0.7628	0.0892	73.0581	<.0001
b7	2	1	-0.4210	0.1049	16.1187	<.0001
b7	3	1	-0.2953	0.1735	2.8982	0.0887
b7	4	1	0.8942	0.1412	40.0809	<.0001
b7	5	1	-1.4358	0.3948	13.2291	0.0003
b10	1	1	0.0845	0.1105	0.5855	0.4441
b10	2	1	-0.8421	0.1234	46.5566	<.0001
b10	3	1	-0.5199	0.1785	8.4799	0.0036
b10	4	1	-0.7602	0.2283	11.0870	0.0009
b10	5	1	-0.5417	0.2272	5.6820	0.0171
tsqft	1	1	2.387E-7	1.698E-7	1.9760	0.1598
tsqft	2	1	6.459E-7	1.813E-7	12.6862	0.0004
tsqft	3	1	1.303E-6	2.158E-7	36.4425	<.0001
tsqft	4	1	1.07E-6	2.097E-7	26.0383	<.0001
tsqft	5	1	1.299E-6	2.941E-7	19.4925	<.0001
YEAR	1	1	0.0234	0.0101	5.3025	0.0213
YEAR	2	1	-0.0284	0.0102	7.8040	0.0052
YEAR	3	1	0.00712	0.0147	0.2329	0.6294
YEAR	4	1	0.1614	0.0198	66.2731	<.0001
YEAR	5	1	0.1122	0.0264	18.0741	<.0001
ADJSQFT	1	1	-3.09E-6	1.304E-6	5.6111	0.0178
ADJSQFT	2	1	-0.00006	9.748E-6	34.4346	<.0001
ADJSQFT	3	1	-0.00021	0.000033	38.7127	<.0001
ADJSQFT	4	1	-6.09E-7	1.013E-6	0.3620	0.5474
ADJSQFT	5	1	-0.00025	0.000080	9.8658	0.0017
lit_hrs	1	1	0.00293	0.000596	24.1205	<.0001
lit_hrs	2	1	-0.00262	0.000643	16.6458	<.0001
lit_hrs	3	1	-0.00069	0.000892	0.6025	0.4376
lit_hrs	4	1	0.00823	0.000982	70.3725	<.0001
lit_hrs	5	1	0.00627	0.00127	24.4630	<.0001
ADJ_TSQFT	1	1	-0.2032	0.1684	1.4559	0.2276
ADJ_TSQFT	2	1	-3.9322	0.4117	91.2052	<.0001
ADJ_TSQFT	3	1	-8.2975	1.1374	53.2170	<.0001
ADJ_TSQFT	4	1	0.8853	0.2499	12.5495	0.0004
ADJ_TSQFT	5	1	-33.2756	6.0349	30.4027	<.0001

Appendix I.

The LOGISTIC Procedure

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
b1	1	1.110	0.978	1.260
b1	2	0.464	0.410	0.526
b1	3	0.988	0.825	1.184
b1	4	0.859	0.678	1.089
b1	5	0.676	0.512	0.894
b2	1	1.798	1.514	2.136
b2	2	0.814	0.677	0.979
b2	3	2.070	1.629	2.630
b2	4	1.595	1.183	2.149
b2	5	1.002	0.654	1.534
b4	1	1.388	1.087	1.772
b4	2	0.823	0.640	1.059
b4	3	1.842	1.311	2.590
b4	4	1.394	0.899	2.159
b4	5	0.672	0.288	1.566
b5	1	1.336	1.018	1.753
b5	2	2.733	2.203	3.389
b5	3	4.486	3.391	5.933
b5	4	0.555	0.293	1.052
b5	5	1.165	0.667	2.037
b7	1	2.144	1.800	2.554
b7	2	0.656	0.534	0.806
b7	3	0.744	0.530	1.046
b7	4	2.445	1.854	3.225
b7	5	0.238	0.110	0.516
b10	1	1.088	0.876	1.351
b10	2	0.431	0.338	0.549
b10	3	0.595	0.419	0.844
b10	4	0.468	0.299	0.731
b10	5	0.582	0.373	0.908
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000
tsqft	4	1.000	1.000	1.000
tsqft	5	1.000	1.000	1.000
YEAR	1	1.024	1.003	1.044
YEAR	2	0.972	0.953	0.992
YEAR	3	1.007	0.978	1.037
YEAR	4	1.175	1.130	1.222
YEAR	5	1.119	1.062	1.178
ADJSQFT	1	1.000	1.000	1.000
ADJSQFT	2	1.000	1.000	1.000
ADJSQFT	3	1.000	1.000	1.000
ADJSQFT	4	1.000	1.000	1.000
ADJSQFT	5	1.000	1.000	1.000
lit_hrs	1	1.003	1.002	1.004

Unknown

The LOGISTIC Procedure

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
lit_hrs	2	0.997	0.996	0.999
lit_hrs	3	0.999	0.998	1.001
lit_hrs	4	1.008	1.006	1.010
lit_hrs	5	1.006	1.004	1.009
ADJ_TSQFT	1	0.816	0.587	1.135
ADJ_TSQFT	2	0.020	0.009	0.044
ADJ_TSQFT	3	<0.001	<0.001	0.002
ADJ_TSQFT	4	2.424	1.485	3.955
ADJ_TSQFT	5	<0.001	<0.001	<0.001

The LOGISTIC Procedure

Model Information

Data Set	WORK.SID1
Response Variable	Y
Number of Response Levels	4
Number of Observations	11883
Model	generalized logit
Optimization Technique	Newton-Raphson

Response Profile

Ordered Value	Y	Total Frequency
1	0	5611
2	1	2866
3	2	2293
4	3	1113

Logits modeled use Y=0 as the reference category.

NOTE: 16 observations were deleted due to missing values for the response or explanatory variables.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	29395.149	27772.779
SC	29417.298	27905.670
-2 Log L	29389.149	27736.779

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	1652.3708	15	<.0001
Score	1014.4274	15	<.0001
Wald	981.8263	15	<.0001

Appendix I.

Utility

The LOGISTIC Procedure

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
tsqft	3	10.5238	0.0146
YEAR	3	120.4953	<.0001
ADJSQFT	3	231.1186	<.0001
lit_hrs	3	310.8464	<.0001
ADJ_TSQFT	3	207.9146	<.0001

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	172.0	20.3888	71.1816	<.0001
Intercept	2	1	-20.2207	21.0290	0.9246	0.3363
Intercept	3	1	-131.7	28.7441	21.0073	<.0001
tsqft	1	1	4.215E-7	1.868E-7	5.0903	0.0241
tsqft	2	1	-1.59E-8	1.511E-7	0.0111	0.9161
tsqft	3	1	-4.08E-7	2.129E-7	3.6713	0.0554
YEAR	1	1	-0.0862	0.0102	71.0083	<.0001
YEAR	2	1	0.00956	0.0106	0.8209	0.3649
YEAR	3	1	0.0653	0.0144	20.4866	<.0001
ADJSQFT	1	1	-0.00021	0.000014	227.5508	<.0001
ADJSQFT	2	1	-2.85E-6	1.378E-6	4.2917	0.0383
ADJSQFT	3	1	1.085E-6	1.947E-6	0.3105	0.5774
lit_hrs	1	1	-0.00536	0.000480	124.4328	<.0001
lit_hrs	2	1	0.00336	0.000441	58.0497	<.0001
lit_hrs	3	1	0.00400	0.000574	48.5186	<.0001
ADJ_TSQFT	1	1	-3.6784	0.3171	134.5414	<.0001
ADJ_TSQFT	2	1	0.3710	0.1408	6.9441	0.0084
ADJ_TSQFT	3	1	-2.7172	0.3465	61.4916	<.0001

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000
YEAR	1	0.917	0.899	0.936
YEAR	2	1.010	0.989	1.031
YEAR	3	1.067	1.038	1.098
ADJSQFT	1	1.000	1.000	1.000
ADJSQFT	2	1.000	1.000	1.000
ADJSQFT	3	1.000	1.000	1.000

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Utility

The LOGISTIC Procedure

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
lit_hrs	1	0.995	0.994	0.996
lit_hrs	2	1.003	1.003	1.004
lit_hrs	3	1.004	1.003	1.005
ADJ_TSQFT	1	0.025	0.014	0.047
ADJ_TSQFT	2	1.449	1.100	1.910
ADJ_TSQFT	3	0.066	0.033	0.130

Appendix J. XenCAP™ Statistical Analysis of Industrial Sector Update

This appendix contains the output of the SAS procedure that estimated the industrial models for each of the space types. The space descriptions for the models are indicated at the top of each page. Up to eight aggregate technologies were estimated for each space description. These are designated as variable "Y" in the model output. Variable "Y" has values ranging from 0 to 7. Each value represents a number of aggregate technologies that differs based on space type. The technologies that each value of "Y" represents are indicated in Tables C-1 and C-2.

The independent variables included in the models are shown in the following table.

Variable	Definition
ADJSQFT	Square footage of the space
tsqft	Square footage of the entire building in which the space type is located
ADJ_TSQFT	Square footage of the space as a fraction of the square footage of the entire building
lit_hrs	Number of hours the lights are on in the space
YEAR	Year

The remainder of this appendix contains the model outputs estimating the parameter estimates and statistics for the independent variables for each of the technologies.

Table J-1. Mapping of technologies to aggregation variable "Y" values

	assembly	athletic	bathroom	boarding	class	dining	display	exit	ext-archi	exterior	ext-park
Standard - General Service	2	2	1	2	2	2	2	1	5	3	2
Standard - Reflector	3	4	3	2	2	3	3	1	4	1	2
Halogen - General Service		2	1	2	2	2	5	1	5	3	2
Halogen - Reflector		4	3	2	2	3	5		4	1	2
Halogen - refl. - low volt		4	3	2	2	3	5		4	1	2
Low wattage (less than 25W)	2	2	1	2	2	2	2	0	5	3	2
T5	2	3	3	3	3	3	4	2	7	7	
T8 – less than 4'	1	3	4	3	3	4	4	2	7	7	3
T8 – 4'	0	3	4	3	3	4	4	2	7	7	3
T8 – More than 4'	1	3	4	3	3	4	4	2	7	7	3
T8 – U-bent	1	3	4	3	3	4	4	2	7	7	3
T12 – less than 4'	1	1	2	1	1	1	1	2	2	5	3
T12 – 4'	0	0	0	0	0	0	0	2	1	6	3
T12 – More than 4'	1	1	2	1	1	1	1	2	2	5	3
T12 – U-bent	1	1	2	1	1	1	1	2	2	5	3
Compact – Plug-in	2	3	2	3	3	3	4	2	6	5	3
Compact – Screw base	2	3	3	3	3	3	4	2	7	7	
Compact – Screw base – reflector	2	3	3	3	3	3	4	2	7	7	
Circline	2	3	3			3	4	2	7	7	
Miscellaneous fluorescent		1	3	1	1	3	4	2	7	7	3
Mercury vapor	4	4	4	3	3	3	5	2	3	2	1
Metal halide	4	4	4	3	3	3	5	2	6	4	4
High pressure sodium	4	4	4	3	3	3	5	2	0	0	0
Low pressure sodium	4	4	4	3	3	3	5	2	0	0	0
LED	2	2	1	2	2	2	2	2	5	3	2
Electroluminescent	2	2	1	2	2	2	2	2	5	3	2

Appendix J.

Table J-2. Mapping of technologies to aggregation variable "Y" values

	ext-sign	food prep	hall	healthcare	office	ship/rec	shop	storage	task	unknown	utility
Standard - General Service	4	2	2	4	2	3	3	2	2	3	2
Standard - Reflector	3	3	3	5	3	3	5	5	4	4	5
Halogen - General Service	4	2	2	4	2	3	3	2	2	3	2
Halogen - Reflector	3	3	3	5	3	3	5	5	4	4	5
Halogen - refl. - low volt	3	3	3	5	3	3	5	5	4	4	5
Low wattage (less than 25W)	4	2	2	4	2	3	3	2	2	3	2
T5		4	5	5	4		5	5	3	6	6
T8 – less than 4'	2	4	4	2	4	4	5	5	3	5	4
T8 – 4'	2	4	4	2	4	4	5	5	3	5	4
T8 – More than 4'	2	4	4	2	4	4	5	5	3	5	4
T8 – U-bent	2	4	4	2	4	4	5	5	3	5	4
T12 – less than 4'	0	1	1	1	1	0	0	0	0	1	1
T12 – 4'	1	0	0	0	0	1	1	1	1	0	0
T12 – More than 4'	0	1	1	1	1	0	0	0	0	1	1
T12 – U-bent	0	1	1	1	1	0	0	0	0	1	1
Compact – Plug-in	4	4	5	5	4	4	5	5	3	6	6
Compact – Screw base		4	5	5	4		5	5	3	6	6
Compact – Screw base – reflector		4	5	5	4		5	5	3	6	6
Circline		4	7	5	4		5	5	3	6	6
Miscellaneous fluorescent		4	5	5	4		5	5	3	6	6
Mercury vapor	2	3	6	3	4	4	4	5		2	3
Metal halide	2	3	6	3	4	2	2	3		2	3
High pressure sodium	2	3	6	3	4	5	4	4		2	3
Low pressure sodium	2	3	6	3	4	5	4	4		2	3
LED	4	2	2	4	2	3	3	2	2	3	2
Electroluminescent	4	2	2	4	2	3	3	2	2	3	2

Assembly

The LOGISTIC Procedure

Model Information

Data Set   WORK.SID1
Response Variable   Y
Number of Response Levels   5
Number of Observations   142
Model   generalized logit
Optimization Technique   Newton-Raphson

Response Profile

Ordered Value	Y	Total Frequency
1	0	70
2	1	34
3	2	15
4	3	12
5	4	11

Logits modeled use Y=0 as the reference category.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	387.240	360.193
SC	399.063	431.133
-2 Log L	379.240	312.193

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	67.0472	20	<.0001
Score	48.6035	20	0.0003
Wald	34.5330	20	0.0227

Appendix J.

Assembly

The LOGISTIC Procedure

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
tsqft	4	5.1273	0.2745
YEAR	4	3.7729	0.4376
lit_hrs	4	15.7011	0.0034
ADJSQFT	4	9.8291	0.0434
ADJ_TSQFT	4	7.9550	0.0932

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	318.3	189.1	2.8331	0.0923
Intercept	2	1	309.4	274.5	1.2710	0.2596
Intercept	3	1	-45.6669	309.2	0.0218	0.8826
Intercept	4	1	207.6	416.6	0.2483	0.6183
tsqft	1	1	-5.38E-6	3.557E-6	2.2909	0.1301
tsqft	2	1	1.122E-6	1.631E-6	0.4730	0.4916
tsqft	3	1	2.272E-6	1.453E-6	2.4473	0.1177
tsqft	4	1	-2.15E-6	5.613E-6	0.1473	0.7011
YEAR	1	1	-0.1600	0.0949	2.8406	0.0919
YEAR	2	1	-0.1552	0.1377	1.2710	0.2596
YEAR	3	1	0.0223	0.1551	0.0207	0.8856
YEAR	4	1	-0.1067	0.2091	0.2603	0.6099
lit_hrs	1	1	0.00491	0.00511	0.9236	0.3365
lit_hrs	2	1	-0.00965	0.00964	1.0014	0.3170
lit_hrs	3	1	-0.00149	0.00930	0.0258	0.8724
lit_hrs	4	1	0.0342	0.00921	13.8043	0.0002
ADJSQFT	1	1	0.000043	0.000023	3.4820	0.0620
ADJSQFT	2	1	-0.00043	0.000298	2.1074	0.1466
ADJSQFT	3	1	-0.00065	0.000312	4.2842	0.0385
ADJSQFT	4	1	0.000015	0.000030	0.2660	0.6060
ADJ_TSQFT	1	1	-4.4485	2.6205	2.8818	0.0896
ADJ_TSQFT	2	1	-9.9693	12.4089	0.6454	0.4217
ADJ_TSQFT	3	1	4.9715	2.4938	3.9743	0.0462
ADJ_TSQFT	4	1	-1.3461	3.7780	0.1270	0.7216

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000

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Assembly

The LOGISTIC Procedure

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
tsqft	4	1.000	1.000	1.000
YEAR	1	0.852	0.708	1.026
YEAR	2	0.856	0.654	1.121
YEAR	3	1.023	0.755	1.386
YEAR	4	0.899	0.597	1.354
lit_hrs	1	1.005	0.995	1.015
lit_hrs	2	0.990	0.972	1.009
lit_hrs	3	0.999	0.980	1.017
lit_hrs	4	1.035	1.016	1.054
ADJSQFT	1	1.000	1.000	1.000
ADJSQFT	2	1.000	0.999	1.000
ADJSQFT	3	0.999	0.999	1.000
ADJSQFT	4	1.000	1.000	1.000
ADJ_TSQFT	1	0.012	<0.001	1.989
ADJ_TSQFT	2	<0.001	<0.001	>999.999
ADJ_TSQFT	3	144.249	1.087	>999.999
ADJ_TSQFT	4	0.260	<0.001	427.751

Appendix J.

Athletic

The LOGISTIC Procedure

Model Information

Data Set   WORK.SID1
Response Variable   Y
Number of Response Levels   5
Number of Observations   485
Model   generalized logit
Optimization Technique   Newton-Raphson

Response Profile

Ordered Value	Y	Total Frequency
1	0	271
2	1	143
3	2	30
4	3	23
5	4	18

Logits modeled use Y=0 as the reference category.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	1098.544	1051.341
SC	1115.281	1151.760
-2 Log L	1090.544	1003.341

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	87.2036	20	<.0001
Score	85.7610	20	<.0001
Wald	62.7595	20	<.0001

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Athletic

The LOGISTIC Procedure

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
tsqft	4	2.9016	0.5744
YEAR	4	27.3900	<.0001
lit_hrs	4	11.7160	0.0196
ADJSQFT	4	12.3919	0.0147
ADJ_TSQFT	4	3.6917	0.4493

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	222.1	79.2556	7.8519	0.0051
Intercept	2	1	-6.2347	155.6	0.0016	0.9680
Intercept	3	1	-910.3	222.2	16.7797	<.0001
Intercept	4	1	-15.0636	194.9	0.0060	0.9384
tsqft	1	1	-5.14E-7	5.898E-7	0.7603	0.3832
tsqft	2	1	-9.13E-7	2.801E-6	0.1062	0.7445
tsqft	3	1	-6.33E-6	4.487E-6	1.9906	0.1583
tsqft	4	1	-7.27E-7	1.092E-6	0.4431	0.5056
YEAR	1	1	-0.1117	0.0398	7.8822	0.0050
YEAR	2	1	0.00206	0.0781	0.0007	0.9790
YEAR	3	1	0.4560	0.1114	16.7454	<.0001
YEAR	4	1	0.00660	0.0978	0.0045	0.9462
lit_hrs	1	1	-0.00326	0.00231	1.9939	0.1579
lit_hrs	2	1	0.00738	0.00390	3.5800	0.0585
lit_hrs	3	1	-0.00598	0.00559	1.1447	0.2847
lit_hrs	4	1	-0.0149	0.00719	4.2758	0.0387
ADJSQFT	1	1	0.000125	0.000140	0.7958	0.3724
ADJSQFT	2	1	-0.00478	0.00189	6.3544	0.0117
ADJSQFT	3	1	-0.00205	0.00186	1.2128	0.2708
ADJSQFT	4	1	0.000431	0.000199	4.6847	0.0304
ADJ_TSQFT	1	1	3.1464	3.4018	0.8555	0.3550
ADJ_TSQFT	2	1	12.6367	6.6234	3.6400	0.0564
ADJ_TSQFT	3	1	3.1000	20.7994	0.0222	0.8815
ADJ_TSQFT	4	1	1.7771	6.3206	0.0791	0.7786

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000

Appendix J.

The LOGISTIC Procedure

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
tsqft	4	1.000	1.000	1.000
YEAR	1	0.894	0.827	0.967
YEAR	2	1.002	0.860	1.168
YEAR	3	1.578	1.268	1.963
YEAR	4	1.007	0.831	1.219
lit_hrs	1	0.997	0.992	1.001
lit_hrs	2	1.007	1.000	1.015
lit_hrs	3	0.994	0.983	1.005
lit_hrs	4	0.985	0.971	0.999
ADJSQFT	1	1.000	1.000	1.000
ADJSQFT	2	0.995	0.992	0.999
ADJSQFT	3	0.998	0.994	1.002
ADJSQFT	4	1.000	1.000	1.001
ADJ_TSQFT	1	23.252	0.030	>999.999
ADJ_TSQFT	2	>999.999	0.708	>999.999
ADJ_TSQFT	3	22.197	<0.001	>999.999
ADJ_TSQFT	4	5.913	<0.001	>999.999

Bathroom

The LOGISTIC Procedure

Model Information

```
Data Set                   WORK.SID1
Response Variable          Y
Number of Response Levels  5
Number of Observations     1970
Model                      generalized logit
Optimization Technique     Newton-Raphson
```

Response Profile

Ordered Value	Y	Total Frequency
1	0	923
2	1	462
3	2	446
4	3	73
5	4	66

Logits modeled use Y=0 as the reference category.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	5002.016	3886.160
SC	5024.360	4020.219
-2 Log L	4994.016	3838.160

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	1155.8568	20	<.0001
Score	399.6412	20	<.0001
Wald	369.9392	20	<.0001

Appendix J.

Bathroom

The LOGISTIC Procedure

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
tsqft	4	5.3652	0.2518
YEAR	4	63.7910	<.0001
lit_hrs	4	18.9357	0.0008
ADJSQFT	4	214.3336	<.0001
ADJ_TSQFT	4	12.3879	0.0147

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	162.5	68.5816	5.6116	0.0178
Intercept	2	1	-31.6608	51.7158	0.3748	0.5404
Intercept	3	1	-120.6	129.0	0.8736	0.3500
Intercept	4	1	-1030.4	141.9	52.7623	<.0001
tsqft	1	1	2.314E-6	1.082E-6	4.5756	0.0324
tsqft	2	1	5.497E-7	5.107E-7	1.1589	0.2817
tsqft	3	1	1.584E-6	1.649E-6	0.9229	0.3367
tsqft	4	1	-5.09E-7	1.574E-6	0.1044	0.7466
YEAR	1	1	-0.0805	0.0344	5.4776	0.0193
YEAR	2	1	0.0155	0.0259	0.3582	0.5495
YEAR	3	1	0.0608	0.0647	0.8821	0.3476
YEAR	4	1	0.5154	0.0711	52.5245	<.0001
lit_hrs	1	1	-0.00804	0.00203	15.7038	<.0001
lit_hrs	2	1	-0.00052	0.00141	0.1367	0.7116
lit_hrs	3	1	-0.00658	0.00360	3.3361	0.0678
lit_hrs	4	1	0.00380	0.00311	1.4942	0.2216
ADJSQFT	1	1	-0.00369	0.000261	199.5789	<.0001
ADJSQFT	2	1	-0.00005	0.000021	5.3857	0.0203
ADJSQFT	3	1	-0.00370	0.000660	31.4831	<.0001
ADJSQFT	4	1	-0.00003	0.000048	0.3966	0.5289
ADJ_TSQFT	1	1	-1.1149	2.4932	0.2000	0.6547
ADJ_TSQFT	2	1	1.7508	0.9245	3.5869	0.0582
ADJ_TSQFT	3	1	-39.8826	13.8069	8.3440	0.0039
ADJ_TSQFT	4	1	0.7659	2.5090	0.0932	0.7602

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000

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Bathroom

The LOGISTIC Procedure

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
tsqft	4	1.000	1.000	1.000
YEAR	1	0.923	0.862	0.987
YEAR	2	1.016	0.965	1.069
YEAR	3	1.063	0.936	1.206
YEAR	4	1.674	1.456	1.925
lit_hrs	1	0.992	0.988	0.996
lit_hrs	2	0.999	0.997	1.002
lit_hrs	3	0.993	0.986	1.000
lit_hrs	4	1.004	0.998	1.010
ADJSQFT	1	0.996	0.996	0.997
ADJSQFT	2	1.000	1.000	1.000
ADJSQFT	3	0.996	0.995	0.998
ADJSQFT	4	1.000	1.000	1.000
ADJ_TSQFT	1	0.328	0.002	43.449
ADJ_TSQFT	2	5.759	0.941	35.261
ADJ_TSQFT	3	<0.001	<0.001	<0.001
ADJ_TSQFT	4	2.151	0.016	293.977

Appendix J.

Boarding

The LOGISTIC Procedure

Model Information

Data Set	WORK.SID1
Response Variable	Y
Number of Response Levels	4
Number of Observations	76
Model	generalized logit
Optimization Technique	Newton-Raphson

Response Profile

Ordered Value	Y	Total Frequency
1	0	32
2	1	24
3	2	12
4	3	8

Logits modeled use Y=0 as the reference category.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	197.009	208.179
SC	204.001	250.132
-2 Log L	191.009	172.179

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	18.8297	15	0.2216
Score	15.8120	15	0.3947
Wald	13.1827	15	0.5882

Boarding

The LOGISTIC Procedure

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
tsqft	3	2.2623	0.5198
YEAR	3	5.5976	0.1329
lit_hrs	3	3.4027	0.3336
ADJSQFT	3	0.3476	0.9508
ADJ_TSQFT	3	3.4629	0.3256

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	382.6	265.6	2.0746	0.1498
Intercept	2	1	263.2	339.6	0.6006	0.4384
Intercept	3	1	-987.3	627.6	2.4746	0.1157
tsqft	1	1	-4.88E-6	4.633E-6	1.1083	0.2925
tsqft	2	1	3.693E-6	5.054E-6	0.5338	0.4650
tsqft	3	1	4.967E-7	6.706E-6	0.0055	0.9410
YEAR	1	1	-0.1927	0.1334	2.0867	0.1486
YEAR	2	1	-0.1323	0.1705	0.6020	0.4378
YEAR	3	1	0.4941	0.3148	2.4626	0.1166
lit_hrs	1	1	0.0232	0.0150	2.3909	0.1220
lit_hrs	2	1	-0.00851	0.0164	0.2700	0.6034
lit_hrs	3	1	0.00494	0.0209	0.0559	0.8132
ADJSQFT	1	1	-1.8E-6	0.000030	0.0036	0.9523
ADJSQFT	2	1	-0.00005	0.000100	0.2903	0.5900
ADJSQFT	3	1	6.94E-6	0.000039	0.0319	0.8583
ADJ_TSQFT	1	1	1.8710	2.7033	0.4790	0.4889
ADJ_TSQFT	2	1	-6.9071	9.2496	0.5576	0.4552
ADJ_TSQFT	3	1	5.4449	3.3570	2.6306	0.1048

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000
YEAR	1	0.825	0.635	1.071
YEAR	2	0.876	0.627	1.224
YEAR	3	1.639	0.884	3.038
lit_hrs	1	1.024	0.994	1.054
lit_hrs	2	0.992	0.960	1.024
lit_hrs	3	1.005	0.965	1.047

Appendix J.

Boarding

The LOGISTIC Procedure

Odds Ratio Estimates

		Point	95% Wald	
Effect	Y	Estimate	Confidence	Limits
ADJSQFT	1	1.000	1.000	1.000
ADJSQFT	2	1.000	1.000	1.000
ADJSQFT	3	1.000	1.000	1.000
ADJ_TSQFT	1	6.495	0.032	>999.999
ADJ_TSQFT	2	0.001	<0.001	>999.999
ADJ_TSQFT	3	231.567	0.321	>999.999

Classroom

The LOGISTIC Procedure

Model Information

Data Set	WORK.SID1
Response Variable	Y
Number of Response Levels	4
Number of Observations	377
Model	generalized logit
Optimization Technique	Newton-Raphson

Response Profile

Ordered Value	Y	Total Frequency
1	0	186
2	1	137
3	2	28
4	3	26

Logits modeled use Y=0 as the reference category.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	830.836	771.082
SC	842.633	841.862
-2 Log L	824.836	735.082

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	89.7544	15	<.0001
Score	55.2457	15	<.0001
Wald	53.0043	15	<.0001

Appendix J.

The LOGISTIC Procedure

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
tsqft	3	0.1077	0.9909
YEAR	3	24.5973	<.0001
lit_hrs	3	8.2524	0.0411
ADJSQFT	3	12.1869	0.0068
ADJ_TSQFT	3	7.9051	0.0480

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	45.3392	98.0833	0.2137	0.6439
Intercept	2	1	481.2	174.6	7.5975	0.0058
Intercept	3	1	-851.8	219.5	15.0522	0.0001
tsqft	1	1	-1.4E-8	3.432E-7	0.0017	0.9674
tsqft	2	1	-2.82E-7	1.254E-6	0.0505	0.8222
tsqft	3	1	-2.65E-7	1.081E-6	0.0602	0.8062
YEAR	1	1	-0.0231	0.0492	0.2206	0.6386
YEAR	2	1	-0.2423	0.0877	7.6386	0.0057
YEAR	3	1	0.4257	0.1101	14.9617	0.0001
lit_hrs	1	1	0.00108	0.00320	0.1133	0.7364
lit_hrs	2	1	0.00660	0.00540	1.4927	0.2218
lit_hrs	3	1	0.0137	0.00508	7.2104	0.0072
ADJSQFT	1	1	0.000063	0.000058	1.2092	0.2715
ADJSQFT	2	1	-0.00414	0.00131	10.0582	0.0015
ADJSQFT	3	1	0.000093	0.000066	1.9733	0.1601
ADJ_TSQFT	1	1	11.9375	4.4746	7.1172	0.0076
ADJ_TSQFT	2	1	15.6028	11.6521	1.7931	0.1806
ADJ_TSQFT	3	1	4.9674	8.5808	0.3351	0.5627

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000
YEAR	1	0.977	0.887	1.076
YEAR	2	0.785	0.661	0.932
YEAR	3	1.531	1.234	1.899
lit_hrs	1	1.001	0.995	1.007
lit_hrs	2	1.007	0.996	1.017
lit_hrs	3	1.014	1.004	1.024

Classroom

The LOGISTIC Procedure

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
ADJSQFT	1	1.000	1.000	1.000
ADJSQFT	2	0.996	0.993	0.998
ADJSQFT	3	1.000	1.000	1.000
ADJ_TSQFT	1	>999.999	23.745	>999.999
ADJ_TSQFT	2	>999.999	<0.001	>999.999
ADJ_TSQFT	3	143.652	<0.001	>999.999

Appendix J.

Dining

The LOGISTIC Procedure

Model Information

Data Set	WORK.SID1
Response Variable	Y
Number of Response Levels	5
Number of Observations	1265
Model	generalized logit
Optimization Technique	Newton-Raphson

Response Profile

Ordered Value	Y	Total Frequency
1	0	768
2	1	327
3	2	72
4	3	61
5	4	37

Logits modeled use Y=0 as the reference category.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	2703.284	2564.294
SC	2723.855	2687.722
-2 Log L	2695.284	2516.294

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	178.9897	20	<.0001
Score	117.6539	20	<.0001
Wald	113.1221	20	<.0001

Dining

The LOGISTIC Procedure

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
tsqft	4	22.7275	0.0001
YEAR	4	36.6163	<.0001
lit_hrs	4	18.6649	0.0009
ADJSQFT	4	18.7894	0.0009
ADJ_TSQFT	4	6.9988	0.1360

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	37.9142	54.1948	0.4894	0.4842
Intercept	2	1	-20.0712	115.1	0.0304	0.8616
Intercept	3	1	51.3573	110.8	0.2149	0.6429
Intercept	4	1	-1102.7	186.5	34.9400	<.0001
tsqft	1	1	-1.15E-6	6.402E-7	3.2342	0.0721
tsqft	2	1	2.259E-6	5.39E-7	17.5555	<.0001
tsqft	3	1	1.024E-6	5.037E-7	4.1338	0.0420
tsqft	4	1	-6.79E-7	1.531E-6	0.1965	0.6576
YEAR	1	1	-0.0192	0.0272	0.4970	0.4808
YEAR	2	1	0.00979	0.0577	0.0287	0.8654
YEAR	3	1	-0.0269	0.0556	0.2335	0.6289
YEAR	4	1	0.5518	0.0935	34.8212	<.0001
lit_hrs	1	1	-0.00588	0.00164	12.8675	0.0003
lit_hrs	2	1	-0.00982	0.00362	7.3753	0.0066
lit_hrs	3	1	-0.00314	0.00323	0.9459	0.3308
lit_hrs	4	1	-0.00465	0.00432	1.1557	0.2824
ADJSQFT	1	1	0.000013	8.071E-6	2.4146	0.1202
ADJSQFT	2	1	-0.00068	0.000173	15.7440	<.0001
ADJSQFT	3	1	-0.00002	0.000029	0.5741	0.4486
ADJSQFT	4	1	7.413E-6	0.000021	0.1222	0.7266
ADJ_TSQFT	1	1	-1.0106	0.8969	1.2699	0.2598
ADJ_TSQFT	2	1	-12.3676	5.8503	4.4691	0.0345
ADJ_TSQFT	3	1	-3.6462	2.9546	1.5229	0.2172
ADJ_TSQFT	4	1	-1.9620	2.8922	0.4602	0.4975

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000

Appendix J.

Dining

The LOGISTIC Procedure

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
tsqft	4	1.000	1.000	1.000
YEAR	1	0.981	0.930	1.035
YEAR	2	1.010	0.902	1.131
YEAR	3	0.973	0.873	1.086
YEAR	4	1.736	1.446	2.086
lit_hrs	1	0.994	0.991	0.997
lit_hrs	2	0.990	0.983	0.997
lit_hrs	3	0.997	0.991	1.003
lit_hrs	4	0.995	0.987	1.004
ADJSQFT	1	1.000	1.000	1.000
ADJSQFT	2	0.999	0.999	1.000
ADJSQFT	3	1.000	1.000	1.000
ADJSQFT	4	1.000	1.000	1.000
ADJ_TSQFT	1	0.364	0.063	2.111
ADJ_TSQFT	2	<0.001	<0.001	0.406
ADJ_TSQFT	3	0.026	<0.001	8.539
ADJ_TSQFT	4	0.141	<0.001	40.713

Display

```
                      The LOGISTIC Procedure

                         Model Information

         Data Set                    WORK.SID1
         Response Variable           Y
         Number of Response Levels   6
         Number of Observations      505
         Model                       generalized logit
         Optimization Technique      Newton-Raphson


                         Response Profile

              Ordered                      Total
               Value          Y         Frequency

                 1            0             238
                 2            1             158
                 3            2              34
                 4            3              31
                 5            4              22
                 6            5              22
```

Logits modeled use Y=0 as the reference category.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

```
                                       Intercept
                         Intercept        and
         Criterion         Only        Covariates

         AIC              1367.512       1303.382
         SC               1388.634       1430.119
         -2 Log L         1357.512       1243.382
```

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	114.1294	25	<.0001
Score	71.5797	25	<.0001
Wald	73.8901	25	<.0001

Appendix J.

Display

The LOGISTIC Procedure

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
tsqft	5	5.9847	0.3077
YEAR	5	25.4653	0.0001
lit_hrs	5	19.2933	0.0017
ADJSQFT	5	18.7123	0.0022
ADJ_TSQFT	5	18.8140	0.0021

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	-49.2717	91.6719	0.2889	0.5909
Intercept	2	1	23.6667	166.9	0.0201	0.8872
Intercept	3	1	103.5	175.0	0.3500	0.5541
Intercept	4	1	-1373.0	277.9	24.4088	<.0001
Intercept	5	1	-138.1	212.3	0.4235	0.5152
tsqft	1	1	1.045E-6	8.887E-7	1.3822	0.2397
tsqft	2	1	2.255E-6	1.211E-6	3.4669	0.0626
tsqft	3	1	2.002E-6	1.279E-6	2.4507	0.1175
tsqft	4	1	2.066E-7	2.082E-6	0.0098	0.9209
tsqft	5	1	2.583E-6	1.33E-6	3.7739	0.0521
YEAR	1	1	0.0243	0.0460	0.2780	0.5980
YEAR	2	1	-0.0129	0.0838	0.0236	0.8779
YEAR	3	1	-0.0524	0.0878	0.3555	0.5510
YEAR	4	1	0.6876	0.1393	24.3589	<.0001
YEAR	5	1	0.0671	0.1065	0.3974	0.5284
lit_hrs	1	1	0.00621	0.00324	3.6811	0.0550
lit_hrs	2	1	0.00818	0.00546	2.2446	0.1341
lit_hrs	3	1	-0.0109	0.00829	1.7282	0.1886
lit_hrs	4	1	-0.00544	0.00937	0.3369	0.5616
lit_hrs	5	1	0.0204	0.00547	13.9122	0.0002
ADJSQFT	1	1	-0.00006	0.000050	1.6348	0.2010
ADJSQFT	2	1	-0.00254	0.000754	11.3406	0.0008
ADJSQFT	3	1	-0.00246	0.000941	6.8092	0.0091
ADJSQFT	4	1	-0.00006	0.000149	0.1812	0.6703
ADJSQFT	5	1	-0.00004	0.000059	0.4567	0.4992
ADJ_TSQFT	1	1	4.5817	2.2277	4.2300	0.0397
ADJ_TSQFT	2	1	17.0775	4.5022	14.3878	0.0001
ADJ_TSQFT	3	1	3.8290	10.2714	0.1390	0.7093
ADJ_TSQFT	4	1	4.7299	4.2540	1.2362	0.2662
ADJ_TSQFT	5	1	8.6941	2.7353	10.1028	0.0015

Display

The LOGISTIC Procedure

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000
tsqft	4	1.000	1.000	1.000
tsqft	5	1.000	1.000	1.000
YEAR	1	1.025	0.936	1.121
YEAR	2	0.987	0.838	1.163
YEAR	3	0.949	0.799	1.127
YEAR	4	1.989	1.514	2.613
YEAR	5	1.069	0.868	1.318
lit_hrs	1	1.006	1.000	1.013
lit_hrs	2	1.008	0.997	1.019
lit_hrs	3	0.989	0.973	1.005
lit_hrs	4	0.995	0.976	1.013
lit_hrs	5	1.021	1.010	1.032
ADJSQFT	1	1.000	1.000	1.000
ADJSQFT	2	0.997	0.996	0.999
ADJSQFT	3	0.998	0.996	0.999
ADJSQFT	4	1.000	1.000	1.000
ADJSQFT	5	1.000	1.000	1.000
ADJ_TSQFT	1	97.685	1.240	>999.999
ADJ_TSQFT	2	>999.999	>999.999	>999.999
ADJ_TSQFT	3	46.014	<0.001	>999.999
ADJ_TSQFT	4	113.286	0.027	>999.999
ADJ_TSQFT	5	>999.999	28.023	>999.999

Appendix J.

Exit

The LOGISTIC Procedure

Model Information

Data Set   WORK.SID1
Response Variable   Y
Number of Response Levels   3
Number of Observations   1026
Model   generalized logit
Optimization Technique   Newton-Raphson

Response Profile

Ordered Value	Y	Total Frequency
1	0	686
2	1	250
3	2	90

Logits modeled use Y=0 as the reference category.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	1700.324	1670.792
SC	1710.191	1710.260
-2 Log L	1696.324	1654.792

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	41.5314	6	<.0001
Score	40.8661	6	<.0001
Wald	37.9681	6	<.0001

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Exit

The LOGISTIC Procedure

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
tsqft	2	0.7143	0.6997
YEAR	2	29.5857	<.0001
lit_hrs	2	8.9515	0.0114

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	191.0	62.5473	9.3205	0.0023
Intercept	2	1	-426.5	105.6	16.2999	<.0001
tsqft	1	1	-3.52E-7	4.294E-7	0.6708	0.4128
tsqft	2	1	5.104E-8	4.791E-7	0.0114	0.9152
YEAR	1	1	-0.0954	0.0314	9.2331	0.0024
YEAR	2	1	0.2143	0.0530	16.3338	<.0001
lit_hrs	1	1	-0.0112	0.00494	5.1042	0.0239
lit_hrs	2	1	-0.0164	0.00574	8.1373	0.0043

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
YEAR	1	0.909	0.855	0.967
YEAR	2	1.239	1.117	1.375
lit_hrs	1	0.989	0.979	0.999
lit_hrs	2	0.984	0.973	0.995

Exterior - Architectural

The LOGISTIC Procedure

Model Information

Data Set	WORK.SID1
Response Variable	Y
Number of Response Levels	8
Number of Observations	254
Model	generalized logit
Optimization Technique	Newton-Raphson

Response Profile

Ordered Value	Y	Total Frequency
1	0	80
2	1	45
3	2	40
4	3	30
5	4	23
6	5	19
7	6	11
8	7	6

Logits modeled use Y=0 as the reference category.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	953.683	962.887
SC	978.445	1061.932
-2 Log L	939.683	906.887

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	32.7964	21	0.0485
Score	32.8454	21	0.0480
Wald	27.7464	21	0.1475

Exterior - Architectural

The LOGISTIC Procedure

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
tsqft	7	9.3853	0.2262
YEAR	7	11.1926	0.1304
lit_hrs	7	7.7060	0.3592

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	-64.7737	174.4	0.1380	0.7103
Intercept	2	1	-76.3360	185.1	0.1701	0.6800
Intercept	3	1	-139.3	211.3	0.4347	0.5097
Intercept	4	1	185.1	207.9	0.7931	0.3732
Intercept	5	1	139.9	228.3	0.3756	0.5400
Intercept	6	1	-906.7	336.3	7.2683	0.0070
Intercept	7	1	-622.4	457.1	1.8541	0.1733
tsqft	1	1	3.036E-7	7.739E-7	0.1539	0.6949
tsqft	2	1	1.31E-6	6.605E-7	3.9310	0.0474
tsqft	3	1	1.286E-7	8.247E-7	0.0243	0.8761
tsqft	4	1	-2.08E-6	1.903E-6	1.1991	0.2735
tsqft	5	1	9.692E-7	8.917E-7	1.1814	0.2771
tsqft	6	1	-2.78E-6	3.112E-6	0.7952	0.3725
tsqft	7	1	1.734E-6	9.011E-7	3.7046	0.0543
YEAR	1	1	0.0323	0.0876	0.1362	0.7121
YEAR	2	1	0.0381	0.0930	0.1682	0.6817
YEAR	3	1	0.0691	0.1061	0.4234	0.5152
YEAR	4	1	-0.0935	0.1045	0.8016	0.3706
YEAR	5	1	-0.0708	0.1147	0.3811	0.5370
YEAR	6	1	0.4541	0.1688	7.2365	0.0071
YEAR	7	1	0.3116	0.2294	1.8455	0.1743
lit_hrs	1	1	-0.00232	0.00512	0.2053	0.6505
lit_hrs	2	1	-0.00595	0.00537	1.2282	0.2678
lit_hrs	3	1	0.00811	0.00550	2.1761	0.1402
lit_hrs	4	1	0.000506	0.00680	0.0055	0.9406
lit_hrs	5	1	-0.00597	0.00725	0.6779	0.4103
lit_hrs	6	1	0.00487	0.00820	0.3530	0.5524
lit_hrs	7	1	-0.0151	0.0120	1.5910	0.2072

Appendix J.

Exterior - Architectural

The LOGISTIC Procedure

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000
tsqft	4	1.000	1.000	1.000
tsqft	5	1.000	1.000	1.000
tsqft	6	1.000	1.000	1.000
tsqft	7	1.000	1.000	1.000
YEAR	1	1.033	0.870	1.226
YEAR	2	1.039	0.866	1.246
YEAR	3	1.071	0.870	1.319
YEAR	4	0.911	0.742	1.118
YEAR	5	0.932	0.744	1.166
YEAR	6	1.575	1.131	2.192
YEAR	7	1.366	0.871	2.141
lit_hrs	1	0.998	0.988	1.008
lit_hrs	2	0.994	0.984	1.005
lit_hrs	3	1.008	0.997	1.019
lit_hrs	4	1.001	0.987	1.014
lit_hrs	5	0.994	0.980	1.008
lit_hrs	6	1.005	0.989	1.021
lit_hrs	7	0.985	0.962	1.008

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Exterior - Parking

The LOGISTIC Procedure

Model Information

```
Data Set                      WORK.SID1
Response Variable             Y
Number of Response Levels     5
Number of Observations        146
Model                         generalized logit
Optimization Technique        Newton-Raphson
```

Response Profile

Ordered Value	Y	Total Frequency
1	0	74
2	1	29
3	2	16
4	3	14
5	4	13

Logits modeled use Y=0 as the reference category.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	401.603	411.415
SC	413.538	459.153
-2 Log L	393.603	379.415

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	14.1879	12	0.2889
Score	11.8109	12	0.4610
Wald	10.2780	12	0.5916

Appendix J.

Exterior - Parking

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The LOGISTIC Procedure

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
tsqft	4	2.4330	0.6567
YEAR	4	2.2356	0.6925
lit_hrs	4	6.6188	0.1575

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	223.6	189.8	1.3882	0.2387
Intercept	2	1	173.3	236.2	0.5380	0.4632
Intercept	3	1	-106.5	242.2	0.1934	0.6601
Intercept	4	1	114.1	250.8	0.2071	0.6491
tsqft	1	1	1.874E-7	3.721E-7	0.2536	0.6146
tsqft	2	1	-2.19E-6	3.038E-6	0.5185	0.4715
tsqft	3	1	-2.92E-6	3.425E-6	0.7256	0.3943
tsqft	4	1	4.021E-7	3.702E-7	1.1798	0.2774
YEAR	1	1	-0.1120	0.0953	1.3814	0.2399
YEAR	2	1	-0.0869	0.1186	0.5373	0.4636
YEAR	3	1	0.0532	0.1216	0.1911	0.6620
YEAR	4	1	-0.0584	0.1260	0.2153	0.6427
lit_hrs	1	1	-0.0218	0.0100	4.7096	0.0300
lit_hrs	2	1	-0.0197	0.0120	2.6765	0.1018
lit_hrs	3	1	-0.00921	0.0115	0.6446	0.4221
lit_hrs	4	1	0.00517	0.0104	0.2463	0.6197

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000
tsqft	4	1.000	1.000	1.000
YEAR	1	0.894	0.742	1.078
YEAR	2	0.917	0.727	1.157
YEAR	3	1.055	0.831	1.339
YEAR	4	0.943	0.737	1.207
lit_hrs	1	0.978	0.959	0.998
lit_hrs	2	0.980	0.958	1.004
lit_hrs	3	0.991	0.969	1.013
lit_hrs	4	1.005	0.985	1.026

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Exterior - Signs

The LOGISTIC Procedure

Model Information

Data Set	WORK.SID1
Response Variable	Y
Number of Response Levels	5
Number of Observations	79
Model	generalized logit
Optimization Technique	Newton-Raphson

Response Profile

Ordered Value	Y	Total Frequency
1	0	38
2	1	21
3	2	8
4	3	6
5	4	6

Logits modeled use Y=0 as the reference category.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	217.773	200.771
SC	227.251	238.683
-2 Log L	209.773	168.771

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	41.0016	12	<.0001
Score	47.7048	12	<.0001
Wald	20.3983	12	0.0599

Appendix J.

Exterior - Signs

The LOGISTIC Procedure

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
tsqft	4	3.9689	0.4102
YEAR	4	7.7752	0.1002
lit_hrs	4	10.1942	0.0373

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	261.1	238.1	1.2023	0.2729
Intercept	2	1	-1168.4	555.0	4.4314	0.0353
Intercept	3	1	-109.2	407.1	0.0719	0.7886
Intercept	4	1	-702.5	681.9	1.0612	0.3030
tsqft	1	1	2.053E-6	4.611E-6	0.1983	0.6561
tsqft	2	1	9.113E-6	4.944E-6	3.3976	0.0653
tsqft	3	1	6.146E-6	5.554E-6	1.2246	0.2685
tsqft	4	1	-0.00001	0.000035	0.1258	0.7229
YEAR	1	1	-0.1319	0.1195	1.2187	0.2696
YEAR	2	1	0.5851	0.2783	4.4185	0.0356
YEAR	3	1	0.0532	0.2043	0.0678	0.7945
YEAR	4	1	0.3481	0.3416	1.0387	0.3081
lit_hrs	1	1	0.0165	0.0125	1.7577	0.1849
lit_hrs	2	1	3.209E-6	0.0209	0.0000	0.9999
lit_hrs	3	1	0.0163	0.0191	0.7234	0.3950
lit_hrs	4	1	0.0788	0.0250	9.9815	0.0016

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000
tsqft	4	1.000	1.000	1.000
YEAR	1	0.876	0.693	1.108
YEAR	2	1.795	1.040	3.098
YEAR	3	1.055	0.707	1.574
YEAR	4	1.416	0.725	2.767
lit_hrs	1	1.017	0.992	1.042
lit_hrs	2	1.000	0.960	1.042
lit_hrs	3	1.016	0.979	1.055
lit_hrs	4	1.082	1.030	1.136

Exterior

The LOGISTIC Procedure

Model Information

Data Set	WORK.SID1
Response Variable	Y
Number of Response Levels	8
Number of Observations	2435
Model	generalized logit
Optimization Technique	Newton-Raphson

Response Profile

Ordered Value	Y	Total Frequency
1	0	933
2	1	467
3	2	446
4	3	259
5	4	155
6	5	81
7	6	78
8	7	16

Logits modeled use Y=0 as the reference category.

NOTE: 1 observation was deleted due to missing values for the response or explanatory variables.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	8124.020	8085.226
SC	8164.604	8247.561
-2 Log L	8110.020	8029.226

Appendix J.

Exterior

The LOGISTIC Procedure

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	80.7941	21	<.0001
Score	78.5073	21	<.0001
Wald	73.9539	21	<.0001

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
tsqft	7	17.1806	0.0163
YEAR	7	35.1982	<.0001
lit_hrs	7	24.0433	0.0011

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	5.6694	43.8783	0.0167	0.8972
Intercept	2	1	75.5457	44.1065	2.9337	0.0867
Intercept	3	1	52.9200	53.7797	0.9683	0.3251
Intercept	4	1	-208.9	69.6620	8.9910	0.0027
Intercept	5	1	-157.6	92.4447	2.9058	0.0883
Intercept	6	1	-179.2	94.9054	3.5671	0.0589
Intercept	7	1	-872.7	240.9	13.1233	0.0003
tsqft	1	1	-4.23E-7	2.922E-7	2.0915	0.1481
tsqft	2	1	2.873E-7	1.732E-7	2.7531	0.0971
tsqft	3	1	1.085E-7	2.358E-7	0.2118	0.6453
tsqft	4	1	2.564E-7	2.671E-7	0.9215	0.3371
tsqft	5	1	5.618E-7	2.531E-7	4.9286	0.0264
tsqft	6	1	5.991E-7	2.545E-7	5.5417	0.0186
tsqft	7	1	9.263E-7	4.092E-7	5.1260	0.0236
YEAR	1	1	-0.00275	0.0220	0.0156	0.9006
YEAR	2	1	-0.0383	0.0221	2.9856	0.0840
YEAR	3	1	-0.0271	0.0270	1.0070	0.3156
YEAR	4	1	0.1043	0.0350	8.8899	0.0029
YEAR	5	1	0.0780	0.0464	2.8259	0.0928
YEAR	6	1	0.0890	0.0476	3.4929	0.0616
YEAR	7	1	0.4360	0.1208	13.0199	0.0003
lit_hrs	1	1	-0.0109	0.00242	20.0920	<.0001
lit_hrs	2	1	-0.00128	0.00228	0.3164	0.5738
lit_hrs	3	1	-0.00305	0.00284	1.1469	0.2842
lit_hrs	4	1	-0.00795	0.00356	5.0056	0.0253
lit_hrs	5	1	-0.00408	0.00456	0.8010	0.3708
lit_hrs	6	1	-0.00846	0.00479	3.1226	0.0772

Exterior

The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
lit_hrs	7	1	-0.00430	0.00956	0.2021	0.6530

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000
tsqft	4	1.000	1.000	1.000
tsqft	5	1.000	1.000	1.000
tsqft	6	1.000	1.000	1.000
tsqft	7	1.000	1.000	1.000
YEAR	1	0.997	0.955	1.041
YEAR	2	0.962	0.922	1.005
YEAR	3	0.973	0.923	1.026
YEAR	4	1.110	1.036	1.189
YEAR	5	1.081	0.987	1.184
YEAR	6	1.093	0.996	1.200
YEAR	7	1.546	1.220	1.960
lit_hrs	1	0.989	0.985	0.994
lit_hrs	2	0.999	0.994	1.003
lit_hrs	3	0.997	0.991	1.003
lit_hrs	4	0.992	0.985	0.999
lit_hrs	5	0.996	0.987	1.005
lit_hrs	6	0.992	0.982	1.001
lit_hrs	7	0.996	0.977	1.015

Appendix J.

Food Prep

The LOGISTIC Procedure

Model Information

Data Set	WORK.SID1
Response Variable	Y
Number of Response Levels	5
Number of Observations	415
Model	generalized logit
Optimization Technique	Newton-Raphson

Response Profile

Ordered Value	Y	Total Frequency
1	0	248
2	1	99
3	2	25
4	3	22
5	4	21

Logits modeled use Y=0 as the reference category.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	942.157	891.496
SC	958.270	988.174
-2 Log L	934.157	843.496

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	90.6615	20	<.0001
Score	58.6684	20	<.0001
Wald	51.9223	20	0.0001

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Food Prep

The LOGISTIC Procedure

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
tsqft	4	3.4639	0.4834
YEAR	4	13.9047	0.0076
lit_hrs	4	16.0394	0.0030
ADJSQFT	4	1.6738	0.7955
ADJ_TSQFT	4	13.0089	0.0112

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	-22.0969	98.3173	0.0505	0.8222
Intercept	2	1	353.4	185.0	3.6492	0.0561
Intercept	3	1	-220.8	191.6	1.3290	0.2490
Intercept	4	1	-637.6	217.2	8.6190	0.0033
tsqft	1	1	-1.01E-6	9.879E-7	1.0423	0.3073
tsqft	2	1	1.411E-6	1.006E-6	1.9667	0.1608
tsqft	3	1	-2.15E-6	2.846E-6	0.5700	0.4503
tsqft	4	1	-2.74E-7	1.31E-6	0.0438	0.8343
YEAR	1	1	0.0103	0.0493	0.0432	0.8353
YEAR	2	1	-0.1774	0.0928	3.6539	0.0559
YEAR	3	1	0.1090	0.0961	1.2868	0.2566
YEAR	4	1	0.3184	0.1088	8.5546	0.0034
lit_hrs	1	1	0.00908	0.00366	6.1709	0.0130
lit_hrs	2	1	-0.0190	0.0100	3.5894	0.0581
lit_hrs	3	1	0.0171	0.00624	7.4795	0.0062
lit_hrs	4	1	0.00860	0.00758	1.2856	0.2569
ADJSQFT	1	1	0.000069	0.000100	0.4767	0.4899
ADJSQFT	2	1	-0.00085	0.000913	0.8666	0.3519
ADJSQFT	3	1	0.000102	0.000117	0.7584	0.3838
ADJSQFT	4	1	-0.00001	0.000271	0.0022	0.9627
ADJ_TSQFT	1	1	12.7103	5.7910	4.8173	0.0282
ADJ_TSQFT	2	1	-484.4	171.9	7.9411	0.0048
ADJ_TSQFT	3	1	11.0302	8.2538	1.7859	0.1814
ADJ_TSQFT	4	1	-2.7262	19.5466	0.0195	0.8891

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000

Appendix J.

The LOGISTIC Procedure

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
tsqft	4	1.000	1.000	1.000
YEAR	1	1.010	0.917	1.113
YEAR	2	0.837	0.698	1.005
YEAR	3	1.115	0.924	1.346
YEAR	4	1.375	1.111	1.702
lit_hrs	1	1.009	1.002	1.016
lit_hrs	2	0.981	0.962	1.001
lit_hrs	3	1.017	1.005	1.030
lit_hrs	4	1.009	0.994	1.024
ADJSQFT	1	1.000	1.000	1.000
ADJSQFT	2	0.999	0.997	1.001
ADJSQFT	3	1.000	1.000	1.000
ADJSQFT	4	1.000	0.999	1.001
ADJ_TSQFT	1	>999.999	3.897	>999.999
ADJ_TSQFT	2	<0.001	<0.001	<0.001
ADJ_TSQFT	3	>999.999	0.006	>999.999
ADJ_TSQFT	4	0.065	<0.001	>999.999

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The LOGISTIC Procedure

Model Information

Data Set	WORK.SID1
Response Variable	Y
Number of Response Levels	8
Number of Observations	2344
Model	generalized logit
Optimization Technique	Newton-Raphson

Response Profile

Ordered Value	Y	Total Frequency
1	0	992
2	1	639
3	2	277
4	3	199
5	4	80
6	5	72
7	6	63
8	7	22

Logits modeled use Y=0 as the reference category.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	7248.817	6512.241
SC	7289.134	6754.144
-2 Log L	7234.817	6428.241

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	806.5761	35	<.0001
Score	405.3187	35	<.0001
Wald	399.7029	35	<.0001

Appendix J.

The LOGISTIC Procedure

Type III Analysis of Effects

		Wald	
Effect	DF	Chi-Square	Pr > ChiSq
tsqft	7	21.1951	0.0035
YEAR	7	107.7693	<.0001
lit_hrs	7	41.9722	<.0001
ADJSQFT	7	66.0847	<.0001
ADJ_TSQFT	7	89.5816	<.0001

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	44.9349	42.5710	1.1141	0.2912
Intercept	2	1	192.6	59.0847	10.6283	0.0011
Intercept	3	1	122.6	67.5641	3.2906	0.0697
Intercept	4	1	-1193.4	134.3	78.9934	<.0001
Intercept	5	1	-323.7	117.8	7.5560	0.0060
Intercept	6	1	-103.9	113.0	0.8451	0.3579
Intercept	7	1	57.7740	184.5	0.0980	0.7542
tsqft	1	1	-1.53E-7	3.365E-7	0.2070	0.6491
tsqft	2	1	1.859E-6	5.325E-7	12.1948	0.0005
tsqft	3	1	8.275E-7	4.79E-7	2.9839	0.0841
tsqft	4	1	-1.08E-6	1.36E-6	0.6347	0.4256
tsqft	5	1	5.891E-7	7.274E-7	0.6560	0.4180
tsqft	6	1	8.969E-7	3.298E-7	7.3983	0.0065
tsqft	7	1	-7.34E-6	6.341E-6	1.3396	0.2471
YEAR	1	1	-0.0229	0.0214	1.1478	0.2840
YEAR	2	1	-0.0968	0.0297	10.6500	0.0011
YEAR	3	1	-0.0614	0.0339	3.2836	0.0700
YEAR	4	1	0.5972	0.0673	78.7364	<.0001
YEAR	5	1	0.1619	0.0591	7.5118	0.0061
YEAR	6	1	0.0502	0.0567	0.7829	0.3763
YEAR	7	1	-0.0299	0.0926	0.1039	0.7472
lit_hrs	1	1	0.000809	0.00118	0.4694	0.4933
lit_hrs	2	1	-0.00054	0.00163	0.1079	0.7425
lit_hrs	3	1	-0.0112	0.00227	24.5493	<.0001
lit_hrs	4	1	0.00345	0.00272	1.6042	0.2053
lit_hrs	5	1	0.00142	0.00266	0.2861	0.5927
lit_hrs	6	1	0.00918	0.00275	11.1273	0.0009
lit_hrs	7	1	0.00136	0.00485	0.0788	0.7789
ADJSQFT	1	1	1.079E-6	2.717E-6	0.1576	0.6914
ADJSQFT	2	1	-0.00062	0.000082	57.5413	<.0001
ADJSQFT	3	1	-0.00009	0.000050	3.5279	0.0603
ADJSQFT	4	1	7.528E-6	9.236E-6	0.6644	0.4150
ADJSQFT	5	1	-0.00011	0.000127	0.7041	0.4014
ADJSQFT	6	1	-2.73E-6	3.344E-6	0.6641	0.4151

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The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
ADJSQFT	7	1	-0.00167	0.000701	5.6501	0.0175
ADJ_TSQFT	1	1	1.4913	0.3559	17.5573	<.0001
ADJ_TSQFT	2	1	-5.0091	1.7553	8.1435	0.0043
ADJ_TSQFT	3	1	-20.1986	3.3251	36.9004	<.0001
ADJ_TSQFT	4	1	-0.4477	1.1936	0.1407	0.7076
ADJ_TSQFT	5	1	-75.4600	16.2711	21.5081	<.0001
ADJ_TSQFT	6	1	2.2671	0.7934	8.1642	0.0043
ADJ_TSQFT	7	1	-11.3672	11.0028	1.0673	0.3015

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000
tsqft	4	1.000	1.000	1.000
tsqft	5	1.000	1.000	1.000
tsqft	6	1.000	1.000	1.000
tsqft	7	1.000	1.000	1.000
YEAR	1	0.977	0.937	1.019
YEAR	2	0.908	0.857	0.962
YEAR	3	0.940	0.880	1.005
YEAR	4	1.817	1.592	2.073
YEAR	5	1.176	1.047	1.320
YEAR	6	1.051	0.941	1.175
YEAR	7	0.971	0.809	1.164
lit_hrs	1	1.001	0.998	1.003
lit_hrs	2	0.999	0.996	1.003
lit_hrs	3	0.989	0.984	0.993
lit_hrs	4	1.003	0.998	1.009
lit_hrs	5	1.001	0.996	1.007
lit_hrs	6	1.009	1.004	1.015
lit_hrs	7	1.001	0.992	1.011
ADJSQFT	1	1.000	1.000	1.000
ADJSQFT	2	0.999	0.999	1.000
ADJSQFT	3	1.000	1.000	1.000
ADJSQFT	4	1.000	1.000	1.000
ADJSQFT	5	1.000	1.000	1.000
ADJSQFT	6	1.000	1.000	1.000
ADJSQFT	7	0.998	0.997	1.000
ADJ_TSQFT	1	4.443	2.212	8.925
ADJ_TSQFT	2	0.007	<0.001	0.208
ADJ_TSQFT	3	<0.001	<0.001	<0.001

Appendix J.

Hall

The LOGISTIC Procedure

Odds Ratio Estimates

		Point	95% Wald	
Effect	Y	Estimate	Confidence Limits	
ADJ_TSQFT	4	0.639	0.062	6.631
ADJ_TSQFT	5	<0.001	<0.001	<0.001
ADJ_TSQFT	6	9.651	2.038	45.706
ADJ_TSQFT	7	<0.001	<0.001	>999.999

The LOGISTIC Procedure

Model Information

Data Set	WORK.SID1
Response Variable	Y
Number of Response Levels	6
Number of Observations	864
Model	generalized logit
Optimization Technique	Newton-Raphson

Response Profile

Ordered Value	Y	Total Frequency
1	0	445
2	1	278
3	2	50
4	3	41
5	4	30
6	5	20

Logits modeled use Y=0 as the reference category.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	2118.138	2042.073
SC	2141.946	2184.920
-2 Log L	2108.138	1982.073

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	126.0648	25	<.0001
Score	105.9585	25	<.0001
Wald	97.3890	25	<.0001

Healthcare

The LOGISTIC Procedure

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
tsqft	5	3.6642	0.5987
YEAR	5	53.4974	<.0001
lit_hrs	5	32.3343	<.0001
ADJSQFT	5	1.9389	0.8575
ADJ_TSQFT	5	7.3769	0.1941

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	162.8	60.5936	7.2181	0.0072
Intercept	2	1	-970.1	158.5	37.4661	<.0001
Intercept	3	1	-29.3313	133.5	0.0483	0.8261
Intercept	4	1	302.8	146.9	4.2522	0.0392
Intercept	5	1	-113.9	195.9	0.3381	0.5609
tsqft	1	1	4.505E-8	2.91E-7	0.0240	0.8770
tsqft	2	1	-1.83E-6	1.688E-6	1.1730	0.2788
tsqft	3	1	-1.06E-7	6.23E-7	0.0290	0.8649
tsqft	4	1	5.325E-7	3.91E-7	1.8545	0.1733
tsqft	5	1	-1.02E-6	1.592E-6	0.4102	0.5219
YEAR	1	1	-0.0818	0.0304	7.2394	0.0071
YEAR	2	1	0.4859	0.0795	37.3989	<.0001
YEAR	3	1	0.0128	0.0670	0.0365	0.8485
YEAR	4	1	-0.1534	0.0737	4.3295	0.0375
YEAR	5	1	0.0559	0.0983	0.3230	0.5698
lit_hrs	1	1	-0.00299	0.00199	2.2511	0.1335
lit_hrs	2	1	-0.0106	0.00509	4.2948	0.0382
lit_hrs	3	1	0.0160	0.00352	20.7768	<.0001
lit_hrs	4	1	0.00227	0.00448	0.2562	0.6127
lit_hrs	5	1	0.00515	0.00524	0.9653	0.3258
ADJSQFT	1	1	-7.39E-6	8.067E-6	0.8393	0.3596
ADJSQFT	2	1	6.847E-6	0.000023	0.0910	0.7629
ADJSQFT	3	1	-0.00001	0.000017	0.3990	0.5276
ADJSQFT	4	1	-0.00004	0.000056	0.3870	0.5339
ADJSQFT	5	1	0.000035	0.000061	0.3254	0.5684
ADJ_TSQFT	1	1	-0.7574	0.8981	0.7114	0.3990
ADJ_TSQFT	2	1	-2.5184	3.4452	0.5343	0.4648
ADJ_TSQFT	3	1	0.7520	1.6899	0.1980	0.6563
ADJ_TSQFT	4	1	-6.8940	6.3650	1.1731	0.2788
ADJ_TSQFT	5	1	-78.8472	35.8126	4.8473	0.0277

Appendix J.

The LOGISTIC Procedure

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000
tsqft	4	1.000	1.000	1.000
tsqft	5	1.000	1.000	1.000
YEAR	1	0.921	0.868	0.978
YEAR	2	1.626	1.391	1.900
YEAR	3	1.013	0.888	1.155
YEAR	4	0.858	0.742	0.991
YEAR	5	1.057	0.872	1.282
lit_hrs	1	0.997	0.993	1.001
lit_hrs	2	0.990	0.980	0.999
lit_hrs	3	1.016	1.009	1.023
lit_hrs	4	1.002	0.994	1.011
lit_hrs	5	1.005	0.995	1.016
ADJSQFT	1	1.000	1.000	1.000
ADJSQFT	2	1.000	1.000	1.000
ADJSQFT	3	1.000	1.000	1.000
ADJSQFT	4	1.000	1.000	1.000
ADJSQFT	5	1.000	1.000	1.000
ADJ_TSQFT	1	0.469	0.081	2.726
ADJ_TSQFT	2	0.081	<0.001	68.999
ADJ_TSQFT	3	2.121	0.077	58.213
ADJ_TSQFT	4	0.001	<0.001	265.414
ADJ_TSQFT	5	<0.001	<0.001	<0.001

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Office

The LOGISTIC Procedure

Model Information

Data Set	WORK.SID1
Response Variable	Y
Number of Response Levels	5
Number of Observations	6361
Model	generalized logit
Optimization Technique	Newton-Raphson

Response Profile

Ordered Value	Y	Total Frequency
1	0	3422
2	1	1830
3	2	408
4	3	390
5	4	311

Logits modeled use Y=0 as the reference category.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	15107.065	13165.826
SC	15134.097	13328.017
-2 Log L	15099.065	13117.826

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	1981.2391	20	<.0001
Score	628.4129	20	<.0001
Wald	705.4013	20	<.0001

Appendix J.

The LOGISTIC Procedure

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
tsqft	4	11.9480	0.0177
YEAR	4	197.4589	<.0001
lit_hrs	4	60.5863	<.0001
ADJSQFT	4	176.5166	<.0001
ADJ_TSQFT	4	83.1499	<.0001

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	75.5138	23.3418	10.4661	0.0012
Intercept	2	1	263.3	46.8173	31.6302	<.0001
Intercept	3	1	156.8	49.4102	10.0725	0.0015
Intercept	4	1	-655.2	55.8310	137.6989	<.0001
tsqft	1	1	7.692E-8	1.852E-7	0.1726	0.6778
tsqft	2	1	1.324E-6	4.304E-7	9.4698	0.0021
tsqft	3	1	1.456E-6	4.455E-7	10.6775	0.0011
tsqft	4	1	1.958E-7	3.13E-7	0.3913	0.5316
YEAR	1	1	-0.0382	0.0117	10.6240	0.0011
YEAR	2	1	-0.1323	0.0235	31.6902	<.0001
YEAR	3	1	-0.0786	0.0248	10.0440	0.0015
YEAR	4	1	0.3273	0.0280	136.6373	<.0001
lit_hrs	1	1	0.00239	0.000964	6.1344	0.0133
lit_hrs	2	1	-0.00224	0.00185	1.4583	0.2272
lit_hrs	3	1	-0.00885	0.00216	16.8114	<.0001
lit_hrs	4	1	0.00944	0.00165	32.6113	<.0001
ADJSQFT	1	1	-0.00004	7.983E-6	29.5901	<.0001
ADJSQFT	2	1	-0.00305	0.000332	84.4808	<.0001
ADJSQFT	3	1	-0.00383	0.000420	83.1971	<.0001
ADJSQFT	4	1	-5.72E-6	9.272E-6	0.3811	0.5370
ADJ_TSQFT	1	1	-1.6487	0.4139	15.8653	<.0001
ADJ_TSQFT	2	1	-49.8747	8.2899	36.1958	<.0001
ADJ_TSQFT	3	1	-68.5498	11.0927	38.1891	<.0001
ADJ_TSQFT	4	1	-1.7556	0.9431	3.4654	0.0627

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000

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Office

The LOGISTIC Procedure

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
tsqft	4	1.000	1.000	1.000
YEAR	1	0.963	0.941	0.985
YEAR	2	0.876	0.837	0.917
YEAR	3	0.924	0.881	0.970
YEAR	4	1.387	1.313	1.465
lit_hrs	1	1.002	1.000	1.004
lit_hrs	2	0.998	0.994	1.001
lit_hrs	3	0.991	0.987	0.995
lit_hrs	4	1.009	1.006	1.013
ADJSQFT	1	1.000	1.000	1.000
ADJSQFT	2	0.997	0.996	0.998
ADJSQFT	3	0.996	0.995	0.997
ADJSQFT	4	1.000	1.000	1.000
ADJ_TSQFT	1	0.192	0.085	0.433
ADJ_TSQFT	2	<0.001	<0.001	<0.001
ADJ_TSQFT	3	<0.001	<0.001	<0.001
ADJ_TSQFT	4	0.173	0.027	1.097

Appendix J.

Shipping / Receiving

The LOGISTIC Procedure

Model Information

```
Data Set                      WORK.SID1
Response Variable             Y
Number of Response Levels     6
Number of Observations        855
Model                         generalized logit
Optimization Technique        Newton-Raphson
```

Response Profile

Ordered Value	Y	Total Frequency
1	0	416
2	1	226
3	2	71
4	3	58
5	4	44
6	5	40

Logits modeled use Y=0 as the reference category.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	2382.341	2253.354
SC	2406.096	2395.887
-2 Log L	2372.341	2193.354

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	178.9870	25	<.0001
Score	157.8168	25	<.0001
Wald	115.5334	25	<.0001

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Shipping / Receiving

The LOGISTIC Procedure

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
tsqft	5	7.7604	0.1699
YEAR	5	15.0325	0.0102
lit_hrs	5	28.9392	<.0001
ADJSQFT	5	27.3601	<.0001
ADJ_TSQFT	5	12.5498	0.0280

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	22.1991	64.7114	0.1177	0.7316
Intercept	2	1	-202.0	104.3	3.7507	0.0528
Intercept	3	1	142.7	112.5	1.6089	0.2046
Intercept	4	1	-397.6	133.9	8.8145	0.0030
Intercept	5	1	-58.2998	143.2	0.1658	0.6839
tsqft	1	1	1.421E-7	6.148E-7	0.0534	0.8172
tsqft	2	1	-1.1E-6	1.225E-6	0.8086	0.3685
tsqft	3	1	1.805E-6	9.556E-7	3.5678	0.0589
tsqft	4	1	7.849E-7	7.205E-7	1.1868	0.2760
tsqft	5	1	-1.27E-6	1.098E-6	1.3296	0.2489
YEAR	1	1	-0.0115	0.0325	0.1246	0.7240
YEAR	2	1	0.1000	0.0523	3.6546	0.0559
YEAR	3	1	-0.0722	0.0564	1.6381	0.2006
YEAR	4	1	0.1981	0.0672	8.6989	0.0032
YEAR	5	1	0.0274	0.0718	0.1458	0.7026
lit_hrs	1	1	0.00428	0.00220	3.7789	0.0519
lit_hrs	2	1	0.0139	0.00318	19.1466	<.0001
lit_hrs	3	1	0.00614	0.00369	2.7715	0.0960
lit_hrs	4	1	0.00712	0.00399	3.1812	0.0745
lit_hrs	5	1	0.0150	0.00414	13.1284	0.0003
ADJSQFT	1	1	-0.00004	0.000033	1.2699	0.2598
ADJSQFT	2	1	1.08E-6	0.000038	0.0008	0.9775
ADJSQFT	3	1	-0.00138	0.000406	11.5636	0.0007
ADJSQFT	4	1	0.000028	0.000034	0.6853	0.4078
ADJSQFT	5	1	0.000130	0.000036	13.0989	0.0003
ADJ_TSQFT	1	1	-6.1418	2.5298	5.8944	0.0152
ADJ_TSQFT	2	1	-2.4283	3.0922	0.6167	0.4323
ADJ_TSQFT	3	1	-19.7514	12.5935	2.4598	0.1168
ADJ_TSQFT	4	1	-1.9314	3.2870	0.3453	0.5568
ADJ_TSQFT	5	1	-11.1953	4.7068	5.6574	0.0174

Appendix J.

The LOGISTIC Procedure

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000
tsqft	4	1.000	1.000	1.000
tsqft	5	1.000	1.000	1.000
YEAR	1	0.989	0.928	1.054
YEAR	2	1.105	0.997	1.224
YEAR	3	0.930	0.833	1.039
YEAR	4	1.219	1.069	1.391
YEAR	5	1.028	0.893	1.183
lit_hrs	1	1.004	1.000	1.009
lit_hrs	2	1.014	1.008	1.020
lit_hrs	3	1.006	0.999	1.013
lit_hrs	4	1.007	0.999	1.015
lit_hrs	5	1.015	1.007	1.023
ADJSQFT	1	1.000	1.000	1.000
ADJSQFT	2	1.000	1.000	1.000
ADJSQFT	3	0.999	0.998	0.999
ADJSQFT	4	1.000	1.000	1.000
ADJSQFT	5	1.000	1.000	1.000
ADJ_TSQFT	1	0.002	<0.001	0.306
ADJ_TSQFT	2	0.088	<0.001	37.800
ADJ_TSQFT	3	<0.001	<0.001	138.571
ADJ_TSQFT	4	0.145	<0.001	91.011
ADJ_TSQFT	5	<0.001	<0.001	0.139

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Shop

The LOGISTIC Procedure

Model Information

Data Set	WORK.SID1
Response Variable	Y
Number of Response Levels	6
Number of Observations	5870
Model	generalized logit
Optimization Technique	Newton-Raphson

Response Profile

Ordered Value	Y	Total Frequency
1	0	2429
2	1	1860
3	2	472
4	3	452
5	4	410
6	5	247

Logits modeled use Y=0 as the reference category.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	17016.651	15429.291
SC	17050.039	15629.620
-2 Log L	17006.651	15369.291

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	1637.3601	25	<.0001
Score	1260.8552	25	<.0001
Wald	955.6407	25	<.0001

Appendix J.

Shop

The LOGISTIC Procedure

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
tsqft	5	11.6242	0.0403
YEAR	5	112.0228	<.0001
lit_hrs	5	162.6794	<.0001
ADJSQFT	5	60.2714	<.0001
ADJ_TSQFT	5	419.2720	<.0001

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	30.8255	25.9992	1.4057	0.2358
Intercept	2	1	-243.4	41.0570	35.1514	<.0001
Intercept	3	1	114.2	42.4892	7.2249	0.0072
Intercept	4	1	21.4631	42.1665	0.2591	0.6107
Intercept	5	1	-455.9	60.6322	56.5454	<.0001
tsqft	1	1	8.371E-8	1.879E-7	0.1984	0.6560
tsqft	2	1	2.353E-7	2.414E-7	0.9497	0.3298
tsqft	3	1	7.821E-7	2.913E-7	7.2067	0.0073
tsqft	4	1	4.481E-7	2.094E-7	4.5771	0.0324
tsqft	5	1	6.404E-7	3.835E-7	2.7890	0.0949
YEAR	1	1	-0.0152	0.0130	1.3587	0.2438
YEAR	2	1	0.1210	0.0206	34.4768	<.0001
YEAR	3	1	-0.0576	0.0213	7.2874	0.0069
YEAR	4	1	-0.0120	0.0212	0.3199	0.5717
YEAR	5	1	0.2280	0.0304	56.1949	<.0001
lit_hrs	1	1	-0.00159	0.000834	3.6223	0.0570
lit_hrs	2	1	0.0105	0.00118	78.6783	<.0001
lit_hrs	3	1	-0.00237	0.00141	2.8353	0.0922
lit_hrs	4	1	0.00950	0.00124	58.4922	<.0001
lit_hrs	5	1	0.00233	0.00169	1.8968	0.1684
ADJSQFT	1	1	-5.53E-7	2.153E-6	0.0660	0.7973
ADJSQFT	2	1	6.519E-7	1.389E-6	0.2203	0.6388
ADJSQFT	3	1	-0.00024	0.000038	40.7855	<.0001
ADJSQFT	4	1	1.463E-6	1.299E-6	1.2686	0.2600
ADJSQFT	5	1	-0.00015	0.000033	19.5195	<.0001
ADJ_TSQFT	1	1	-5.2464	0.2704	376.5115	<.0001
ADJ_TSQFT	2	1	-0.3147	0.2247	1.9620	0.1613
ADJ_TSQFT	3	1	-6.1136	0.9133	44.8123	<.0001
ADJ_TSQFT	4	1	-1.3050	0.2658	24.1018	<.0001
ADJ_TSQFT	5	1	-4.0308	0.8869	20.6549	<.0001

Shop

The LOGISTIC Procedure

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000
tsqft	4	1.000	1.000	1.000
tsqft	5	1.000	1.000	1.000
YEAR	1	0.985	0.960	1.010
YEAR	2	1.129	1.084	1.175
YEAR	3	0.944	0.905	0.984
YEAR	4	0.988	0.948	1.030
YEAR	5	1.256	1.183	1.333
lit_hrs	1	0.998	0.997	1.000
lit_hrs	2	1.011	1.008	1.013
lit_hrs	3	0.998	0.995	1.000
lit_hrs	4	1.010	1.007	1.012
lit_hrs	5	1.002	0.999	1.006
ADJSQFT	1	1.000	1.000	1.000
ADJSQFT	2	1.000	1.000	1.000
ADJSQFT	3	1.000	1.000	1.000
ADJSQFT	4	1.000	1.000	1.000
ADJSQFT	5	1.000	1.000	1.000
ADJ_TSQFT	1	0.005	0.003	0.009
ADJ_TSQFT	2	0.730	0.470	1.134
ADJ_TSQFT	3	0.002	<0.001	0.013
ADJ_TSQFT	4	0.271	0.161	0.457
ADJ_TSQFT	5	0.018	0.003	0.101

Appendix J.

Storage

The LOGISTIC Procedure

Model Information

Data Set	WORK.SID1
Response Variable	Y
Number of Response Levels	6
Number of Observations	2648
Model	generalized logit
Optimization Technique	Newton-Raphson

Response Profile

Ordered Value	Y	Total Frequency
1	0	1113
2	1	779
3	2	275
4	3	184
5	4	160
6	5	137

Logits modeled use Y=0 as the reference category.

NOTE: 1 observation was deleted due to missing values for the response or explanatory variables.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	7782.133	7030.921
SC	7811.540	7207.368
-2 Log L	7772.133	6970.921

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	801.2113	25	<.0001
Score	675.0525	25	<.0001
Wald	497.4706	25	<.0001

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Storage

The LOGISTIC Procedure

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
tsqft	5	4.4845	0.4820
YEAR	5	38.4950	<.0001
lit_hrs	5	106.3215	<.0001
ADJSQFT	5	35.4717	<.0001
ADJ_TSQFT	5	169.0564	<.0001

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	36.2039	40.0610	0.8167	0.3661
Intercept	2	1	129.3	56.7897	5.1827	0.0228
Intercept	3	1	-322.8	69.4150	21.6233	<.0001
Intercept	4	1	-46.1217	69.6063	0.4390	0.5076
Intercept	5	1	-213.1	77.8503	7.4910	0.0062
tsqft	1	1	1.271E-7	2.469E-7	0.2651	0.6066
tsqft	2	1	-8.72E-7	8.47E-7	1.0596	0.3033
tsqft	3	1	-5.86E-8	4.351E-7	0.0182	0.8928
tsqft	4	1	-1.11E-6	6.927E-7	2.5839	0.1080
tsqft	5	1	1.836E-7	3.672E-7	0.2501	0.6170
YEAR	1	1	-0.0179	0.0201	0.7966	0.3721
YEAR	2	1	-0.0651	0.0285	5.2100	0.0225
YEAR	3	1	0.1605	0.0348	21.2437	<.0001
YEAR	4	1	0.0215	0.0349	0.3782	0.5386
YEAR	5	1	0.1060	0.0391	7.3593	0.0067
lit_hrs	1	1	-0.00064	0.00116	0.3031	0.5819
lit_hrs	2	1	0.000666	0.00169	0.1556	0.6933
lit_hrs	3	1	0.0112	0.00175	40.7956	<.0001
lit_hrs	4	1	0.0152	0.00185	67.5288	<.0001
lit_hrs	5	1	0.00546	0.00197	7.6489	0.0057
ADJSQFT	1	1	-0.00001	4.802E-6	5.1166	0.0237
ADJSQFT	2	1	-0.00009	0.000023	15.8138	<.0001
ADJSQFT	3	1	6.598E-6	2.284E-6	8.3454	0.0039
ADJSQFT	4	1	9.802E-6	2.761E-6	12.6033	0.0004
ADJSQFT	5	1	-2.53E-6	5.536E-6	0.2092	0.6474
ADJ_TSQFT	1	1	-4.9865	0.4397	128.6029	<.0001
ADJ_TSQFT	2	1	-5.3151	0.9096	34.1483	<.0001
ADJ_TSQFT	3	1	0.6383	0.3736	2.9195	0.0875
ADJ_TSQFT	4	1	-0.1385	0.4369	0.1004	0.7513
ADJ_TSQFT	5	1	-3.3143	0.7242	20.9432	<.0001

Appendix J.

The LOGISTIC Procedure

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000
tsqft	4	1.000	1.000	1.000
tsqft	5	1.000	1.000	1.000
YEAR	1	0.982	0.944	1.022
YEAR	2	0.937	0.886	0.991
YEAR	3	1.174	1.097	1.257
YEAR	4	1.022	0.954	1.094
YEAR	5	1.112	1.030	1.200
lit_hrs	1	0.999	0.997	1.002
lit_hrs	2	1.001	0.997	1.004
lit_hrs	3	1.011	1.008	1.015
lit_hrs	4	1.015	1.012	1.019
lit_hrs	5	1.005	1.002	1.009
ADJSQFT	1	1.000	1.000	1.000
ADJSQFT	2	1.000	1.000	1.000
ADJSQFT	3	1.000	1.000	1.000
ADJSQFT	4	1.000	1.000	1.000
ADJSQFT	5	1.000	1.000	1.000
ADJ_TSQFT	1	0.007	0.003	0.016
ADJ_TSQFT	2	0.005	<0.001	0.029
ADJ_TSQFT	3	1.893	0.910	3.937
ADJ_TSQFT	4	0.871	0.370	2.050
ADJ_TSQFT	5	0.036	0.009	0.150

Task

The LOGISTIC Procedure

Model Information

Data Set	WORK.SID1
Response Variable	Y
Number of Response Levels	5
Number of Observations	171
Model	generalized logit
Optimization Technique	Newton-Raphson

Response Profile

Ordered Value	Y	Total Frequency
1	0	67
2	1	42
3	2	32
4	3	18
5	4	12

Logits modeled use Y=0 as the reference category.

Maximum Likelihood Iteration History

Iter	Ridge	-2 Log L	Intercept_1	Intercept_2	Intercept_3	Intercept_4
0	0	495.557637	-0.467023	-0.738957	-1.314321	-1.719786
1	0	444.327931	420.983921	512.085161	-41.490766	217.269426
2	0	429.372482	494.593427	575.878712	-46.334323	271.477881
3	0	415.420643	485.334129	545.401050	-93.508703	262.695771
4	0	403.558491	468.649348	522.576458	-128.349155	232.217406
5	0	396.069908	460.778591	542.594491	-129.551379	242.249652
6	0	393.851184	461.194811	565.192370	-113.190822	241.553804
7	0	393.561948	460.877236	566.426833	-112.347939	224.926055
8	0	393.552947	460.770400	565.996740	-112.844462	220.444799
9	0	393.552935	460.766380	565.980670	-112.862063	220.278177

Maximum Likelihood Iteration History

Iter	tsqft_1	tsqft_2	tsqft_3	tsqft_4	YEAR_1	YEAR_2
0	0	0	0	0	0	0
1	-0.000000290	-0.000008584	-0.000007102	0.000009052	-0.211399	-0.256918
2	-0.000001162	-0.000013154	-0.000011978	0.000005825	-0.248286	-0.288816
3	-0.000001499	-0.000015347	-0.000013999	0.000007255	-0.243624	-0.273386
4	-0.000001747	-0.000016766	-0.000013924	0.000008894	-0.235241	-0.261766
5	-0.000001863	-0.000016564	-0.000012445	0.000011491	-0.231287	-0.271666
6	-0.000001848	-0.000016081	-0.000011196	0.000013216	-0.231497	-0.282936
7	-0.000001821	-0.000015961	-0.000010728	0.000013924	-0.231339	-0.283539

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The LOGISTIC Procedure

Maximum Likelihood Iteration History

Iter	tsqft_1	tsqft_2	tsqft_3	tsqft_4	YEAR_1	YEAR_2
8	-0.000001816	-0.000015949	-0.000010680	0.000014054	-0.231286	-0.283322
9	-0.000001815	-0.000015949	-0.000010679	0.000014058	-0.231284	-0.283314

Maximum Likelihood Iteration History

Iter	YEAR_3	YEAR_4	lit_hrs_1	lit_hrs_2	lit_hrs_3	lit_hrs_4
0	0	0	0	0	0	0
1	0.020844	-0.109755	0.001687	0.001310	-0.010049	-0.007678
2	0.023474	-0.136901	0.002231	0.002955	-0.011615	-0.005832
3	0.047292	-0.132445	0.002357	0.003387	-0.012019	-0.005895
4	0.064896	-0.117061	0.002296	0.002875	-0.012604	-0.006672
5	0.065593	-0.121985	0.002257	0.002111	-0.013383	-0.008085
6	0.057429	-0.121570	0.002280	0.001664	-0.013774	-0.008916
7	0.057018	-0.113194	0.002274	0.001502	-0.013965	-0.009353
8	0.057268	-0.110939	0.002270	0.001484	-0.013993	-0.009466
9	0.057277	-0.110855	0.002270	0.001483	-0.013994	-0.009471

Maximum Likelihood Iteration History

Iter	ADJSQFT_1	ADJSQFT_2	ADJSQFT_3	ADJSQFT_4	ADJ_TSQFT_1	ADJ_TSQFT_2
0	0	0	0	0	0	0
1	0.000022335	0.000025338	0.000029573	-0.000022327	-5.553839	-8.912997
2	0.000015662	0.000031543	0.000037600	-0.000117	-6.172928	-16.658160
3	0.000021153	0.000044457	0.000034779	-0.000534	-6.627072	-30.244444
4	0.000023641	0.000019391	-0.000165	-0.001193	-6.754901	-52.887552
5	0.000024148	-0.000219	-0.000654	-0.002356	-6.762754	-78.552287
6	0.000024042	-0.000449	-0.001132	-0.003547	-6.753894	-94.064955
7	0.000023933	-0.000514	-0.001328	-0.004281	-6.734033	-97.535795
8	0.000023911	-0.000518	-0.001348	-0.004445	-6.729082	-97.695511
9	0.000023910	-0.000518	-0.001348	-0.004451	-6.728904	-97.697317

Maximum Likelihood Iteration History

Iter	ADJ_TSQFT_3	ADJ_TSQFT_4
0	0	0
1	-7.218977	-4.111812
2	-15.439056	-3.194863
3	-28.748236	1.101467
4	-43.143344	1.958440
5	-52.892804	4.406965
6	-56.162956	7.155085
7	-56.188728	8.899375
8	-56.138656	9.282549
9	-56.138683	9.296520

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The LOGISTIC Procedure

Last Change in -2 Log L   0.0000120736

Last Evaluation of Gradient

Intercept_1	Intercept_2	Intercept_3	Intercept_4	tsqft_1	tsqft_2
1.5745537E-6	5.0034265E-7	2.7528535E-7	-4.864306E-6	0.1596688469	0.0378160267

Last Evaluation of Gradient

tsqft_3	tsqft_4	YEAR_1	YEAR_2	YEAR_3	YEAR_4
0.0207881601	-0.471495729	0.0031370381	0.0009967116	0.0005488137	-0.009693473

Last Evaluation of Gradient

lit_hrs_1	lit_hrs_2	lit_hrs_3	lit_hrs_4	ADJSQFT_1	ADJSQFT_2
0.0001125128	0.0000324001	0.0000149646	-0.000347089	0.0012105757	0.0002440638

Last Evaluation of Gradient

ADJSQFT_3	ADJSQFT_4	ADJ_TSQFT_1	ADJ_TSQFT_2	ADJ_TSQFT_3	ADJ_TSQFT_4
0.0001231708	-0.00376401	4.9424133E-8	4.2732171E-9	2.4348246E-9	-2.698263E-7

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	503.558	441.553
SC	516.124	516.953
-2 Log L	495.558	393.553

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	102.0047	20	<.0001
Score	48.5333	20	0.0004
Wald	46.4606	20	0.0007

The LOGISTIC Procedure

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
tsqft	4	10.9078	0.0276
YEAR	4	12.2858	0.0153
lit_hrs	4	2.9942	0.5588
ADJSQFT	4	7.0111	0.1353
ADJ_TSQFT	4	15.5481	0.0037

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	460.8	175.7	6.8771	0.0087
Intercept	2	1	566.0	226.9	6.2225	0.0126
Intercept	3	1	-112.9	283.2	0.1588	0.6903

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Intercept      4    1        220.3       357.3       0.3802    0.5375
tsqft          1    1     -1.82E-6    3.836E-6       0.2240    0.6360
tsqft          2    1     -0.00002    9.174E-6       3.0225    0.0821
tsqft          3    1     -0.00001    9.965E-6       1.1484    0.2839
tsqft          4    1     0.000014    6.361E-6       4.8841    0.0271
YEAR           1    1      -0.2313      0.0882        6.8790    0.0087
YEAR           2    1      -0.2833      0.1139        6.1901    0.0128
YEAR           3    1       0.0573      0.1421        0.1624    0.6869
YEAR           4    1      -0.1109      0.1793        0.3821    0.5365
lit_hrs        1    1      0.00227     0.00634        0.1280    0.7205
lit_hrs        2    1      0.00148     0.00842        0.0310    0.8601
lit_hrs        3    1      -0.0140      0.0117        1.4346    0.2310
lit_hrs        4    1     -0.00947     0.00952        0.9902    0.3197
ADJSQFT        1    1     0.000024    0.000023        1.1268    0.2885
ADJSQFT        2    1     -0.00052     0.00127        0.1651    0.6845
ADJSQFT        3    1     -0.00135     0.00174        0.5975    0.4395
ADJSQFT        4    1     -0.00445     0.00192        5.3868    0.0203
ADJ_TSQFT      1    1      -6.7289      2.6644        6.3780    0.0116
ADJ_TSQFT      2    1     -97.6973     41.7966        5.4637    0.0194
ADJ_TSQFT      3    1     -56.1387     40.6571        1.9066    0.1673
ADJ_TSQFT      4    1       9.2965      6.1956        2.2515    0.1335
```

                          Odds Ratio Estimates

```
                              Point          95% Wald
            Effect      Y    Estimate    Confidence Limits

            tsqft       1     1.000      1.000      1.000
            tsqft       2     1.000      1.000      1.000
            tsqft       3     1.000      1.000      1.000
```

Task

The LOGISTIC Procedure

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
tsqft	4	1.000	1.000	1.000
YEAR	1	0.794	0.668	0.943
YEAR	2	0.753	0.603	0.942
YEAR	3	1.059	0.802	1.399
YEAR	4	0.895	0.630	1.272
lit_hrs	1	1.002	0.990	1.015
lit_hrs	2	1.001	0.985	1.018
lit_hrs	3	0.986	0.964	1.009
lit_hrs	4	0.991	0.972	1.009
ADJSQFT	1	1.000	1.000	1.000
ADJSQFT	2	0.999	0.997	1.002
ADJSQFT	3	0.999	0.995	1.002
ADJSQFT	4	0.996	0.992	0.999
ADJ_TSQFT	1	0.001	<0.001	0.222
ADJ_TSQFT	2	<0.001	<0.001	<0.001
ADJ_TSQFT	3	<0.001	<0.001	>999.999
ADJ_TSQFT	4	>999.999	0.058	>999.999

Appendix J.

Unknown

The LOGISTIC Procedure

Model Information

Data Set	WORK.SID1
Response Variable	Y
Number of Response Levels	7
Number of Observations	2378
Model	generalized logit
Optimization Technique	Newton-Raphson

Response Profile

Ordered Value	Y	Total Frequency
1	0	923
2	1	848
3	2	264
4	3	195
5	4	67
6	5	57
7	6	24

Logits modeled use Y=0 as the reference category.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	6768.032	6393.032
SC	6802.676	6600.896
-2 Log L	6756.032	6321.032

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	435.0006	30	<.0001
Score	272.7991	30	<.0001
Wald	274.6726	30	<.0001

Unknown

The LOGISTIC Procedure

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
tsqft	6	20.2620	0.0025
YEAR	6	72.8238	<.0001
lit_hrs	6	82.9305	<.0001
ADJSQFT	6	44.4633	<.0001
ADJ_TSQFT	6	34.3864	<.0001

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	22.1095	39.0158	0.3211	0.5709
Intercept	2	1	-84.1900	60.2126	1.9550	0.1620
Intercept	3	1	64.8781	64.9707	0.9972	0.3180
Intercept	4	1	-159.2	114.9	1.9175	0.1661
Intercept	5	1	-1250.4	154.8	65.2604	<.0001
Intercept	6	1	-174.5	202.1	0.7457	0.3878
tsqft	1	1	1.324E-8	1.625E-7	0.0066	0.9350
tsqft	2	1	3.294E-7	1.821E-7	3.2741	0.0704
tsqft	3	1	6.137E-7	2.149E-7	8.1547	0.0043
tsqft	4	1	7.967E-7	2.99E-7	7.1009	0.0077
tsqft	5	1	1.76E-7	6.908E-7	0.0649	0.7988
tsqft	6	1	1.257E-6	4.028E-7	9.7348	0.0018
YEAR	1	1	-0.0112	0.0196	0.3272	0.5673
YEAR	2	1	0.0409	0.0302	1.8332	0.1758
YEAR	3	1	-0.0333	0.0326	1.0435	0.3070
YEAR	4	1	0.0787	0.0577	1.8629	0.1723
YEAR	5	1	0.6258	0.0776	65.0706	<.0001
YEAR	6	1	0.0866	0.1014	0.7291	0.3932
lit_hrs	1	1	-1.05E-6	0.00110	0.0000	0.9992
lit_hrs	2	1	0.0125	0.00151	68.1367	<.0001
lit_hrs	3	1	0.000958	0.00184	0.2715	0.6023
lit_hrs	4	1	0.00662	0.00273	5.8970	0.0152
lit_hrs	5	1	-0.00182	0.00355	0.2632	0.6079
lit_hrs	6	1	-0.00025	0.00493	0.0026	0.9594
ADJSQFT	1	1	-4.56E-7	2.3E-6	0.0394	0.8427
ADJSQFT	2	1	2.069E-6	2.265E-6	0.8342	0.3611
ADJSQFT	3	1	-0.00016	0.000034	22.9346	<.0001
ADJSQFT	4	1	-0.00100	0.000268	13.9501	0.0002
ADJSQFT	5	1	-0.00003	0.000028	0.9806	0.3221
ADJSQFT	6	1	-0.00315	0.00131	5.7454	0.0165
ADJ_TSQFT	1	1	2.0925	0.4842	18.6777	<.0001
ADJ_TSQFT	2	1	3.0737	0.5733	28.7487	<.0001
ADJ_TSQFT	3	1	2.4909	0.6980	12.7365	0.0004
ADJ_TSQFT	4	1	-6.7154	7.9348	0.7163	0.3974

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Unknown

The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
ADJ_TSQFT	5	1	1.7604	1.5009	1.3756	0.2408
ADJ_TSQFT	6	1	-109.4	71.6354	2.3318	0.1268

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000
tsqft	4	1.000	1.000	1.000
tsqft	5	1.000	1.000	1.000
tsqft	6	1.000	1.000	1.000
YEAR	1	0.989	0.952	1.028
YEAR	2	1.042	0.982	1.105
YEAR	3	0.967	0.907	1.031
YEAR	4	1.082	0.966	1.211
YEAR	5	1.870	1.606	2.177
YEAR	6	1.090	0.894	1.330
lit_hrs	1	1.000	0.998	1.002
lit_hrs	2	1.013	1.010	1.016
lit_hrs	3	1.001	0.997	1.005
lit_hrs	4	1.007	1.001	1.012
lit_hrs	5	0.998	0.991	1.005
lit_hrs	6	1.000	0.990	1.009
ADJSQFT	1	1.000	1.000	1.000
ADJSQFT	2	1.000	1.000	1.000
ADJSQFT	3	1.000	1.000	1.000
ADJSQFT	4	0.999	0.998	1.000
ADJSQFT	5	1.000	1.000	1.000
ADJSQFT	6	0.997	0.994	0.999
ADJ_TSQFT	1	8.105	3.138	20.935
ADJ_TSQFT	2	21.621	7.029	66.501
ADJ_TSQFT	3	12.072	3.074	47.410
ADJ_TSQFT	4	0.001	<0.001	>999.999
ADJ_TSQFT	5	5.815	0.307	110.181
ADJ_TSQFT	6	<0.001	<0.001	>999.999

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Utility

The LOGISTIC Procedure

Model Information

Data Set	WORK.SID1
Response Variable	Y
Number of Response Levels	7
Number of Observations	2426
Model	generalized logit
Optimization Technique	Newton-Raphson

Response Profile

Ordered Value	Y	Total Frequency
1	0	1054
2	1	798
3	2	243
4	3	178
5	4	75
6	5	60
7	6	18

Logits modeled use Y=0 as the reference category.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	6734.084	6308.104
SC	6768.848	6516.688
-2 Log L	6722.084	6236.104

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	485.9806	30	<.0001
Score	310.7980	30	<.0001
Wald	301.0520	30	<.0001

Appendix J.

Utility

The LOGISTIC Procedure

Type III Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
tsqft	6	18.8066	0.0045
YEAR	6	102.9418	<.0001
lit_hrs	6	80.3334	<.0001
ADJSQFT	6	63.6980	<.0001
ADJ_TSQFT	6	30.0217	<.0001

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1	36.1074	38.2752	0.8899	0.3455
Intercept	2	1	207.4	57.2396	13.1325	0.0003
Intercept	3	1	0.2536	67.5899	0.0000	0.9970
Intercept	4	1	-1253.0	139.3	80.8855	<.0001
Intercept	5	1	185.7	104.9	3.1331	0.0767
Intercept	6	1	-287.4	232.4	1.5298	0.2161
tsqft	1	1	-3.45E-7	2.159E-7	2.5551	0.1099
tsqft	2	1	6.834E-7	2.419E-7	7.9812	0.0047
tsqft	3	1	-4.72E-7	3.547E-7	1.7702	0.1834
tsqft	4	1	2.235E-7	5.818E-7	0.1476	0.7008
tsqft	5	1	3.25E-7	7.614E-7	0.1821	0.6695
tsqft	6	1	-9.21E-6	4.548E-6	4.1060	0.0427
YEAR	1	1	-0.0184	0.0192	0.9161	0.3385
YEAR	2	1	-0.1047	0.0287	13.2682	0.0003
YEAR	3	1	-0.00170	0.0339	0.0025	0.9600
YEAR	4	1	0.6272	0.0698	80.6601	<.0001
YEAR	5	1	-0.0942	0.0527	3.1986	0.0737
YEAR	6	1	0.1436	0.1166	1.5166	0.2181
lit_hrs	1	1	0.00206	0.000954	4.6721	0.0307
lit_hrs	2	1	0.000500	0.00151	0.1095	0.7407
lit_hrs	3	1	0.0133	0.00159	70.0162	<.0001
lit_hrs	4	1	-0.00252	0.00273	0.8521	0.3560
lit_hrs	5	1	0.00757	0.00247	9.3934	0.0022
lit_hrs	6	1	-0.00262	0.00524	0.2496	0.6173
ADJSQFT	1	1	3.308E-6	1.894E-6	3.0487	0.0808
ADJSQFT	2	1	-0.00009	0.000018	27.1653	<.0001
ADJSQFT	3	1	5.497E-6	2.192E-6	6.2887	0.0122
ADJSQFT	4	1	3.052E-7	6.666E-6	0.0021	0.9635
ADJSQFT	5	1	-0.00080	0.000164	23.6505	<.0001
ADJSQFT	6	1	0.000056	0.000020	7.9337	0.0049
ADJ_TSQFT	1	1	0.5903	0.2381	6.1461	0.0132
ADJ_TSQFT	2	1	-1.1598	0.5008	5.3625	0.0206
ADJ_TSQFT	3	1	0.7409	0.4308	2.9574	0.0855
ADJ_TSQFT	4	1	0.2997	0.8607	0.1212	0.7277

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Utility

The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	Y	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
ADJ_TSQFT	5	1	-2.9692	1.8247	2.6478	0.1037
ADJ_TSQFT	6	1	-82.0579	25.1024	10.6859	0.0011

Odds Ratio Estimates

Effect	Y	Point Estimate	95% Wald Confidence Limits	
tsqft	1	1.000	1.000	1.000
tsqft	2	1.000	1.000	1.000
tsqft	3	1.000	1.000	1.000
tsqft	4	1.000	1.000	1.000
tsqft	5	1.000	1.000	1.000
tsqft	6	1.000	1.000	1.000
YEAR	1	0.982	0.946	1.019
YEAR	2	0.901	0.851	0.953
YEAR	3	0.998	0.934	1.067
YEAR	4	1.872	1.633	2.147
YEAR	5	0.910	0.821	1.009
YEAR	6	1.154	0.919	1.451
lit_hrs	1	1.002	1.000	1.004
lit_hrs	2	1.001	0.998	1.003
lit_hrs	3	1.013	1.010	1.017
lit_hrs	4	0.997	0.992	1.003
lit_hrs	5	1.008	1.003	1.012
lit_hrs	6	0.997	0.987	1.008
ADJSQFT	1	1.000	1.000	1.000
ADJSQFT	2	1.000	1.000	1.000
ADJSQFT	3	1.000	1.000	1.000
ADJSQFT	4	1.000	1.000	1.000
ADJSQFT	5	0.999	0.999	1.000
ADJSQFT	6	1.000	1.000	1.000
ADJ_TSQFT	1	1.805	1.132	2.878
ADJ_TSQFT	2	0.314	0.117	0.837
ADJ_TSQFT	3	2.098	0.902	4.881
ADJ_TSQFT	4	1.349	0.250	7.291
ADJ_TSQFT	5	0.051	0.001	1.835
ADJ_TSQFT	6	<0.001	<0.001	<0.001