

WHICH
FACTORS
INFLUENCE
THE
FREQUENCY
OF GOING TO
THE McDON-
ALD'S?

ILKE
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XUEQING
ZHANG
ZHENNI
ZHENG

PROJECT
OBJECTIVE

DATA
COLLECTION

DATA
PROCESSING

OUTCOME

CONCLUSION

WHICH FACTORS INFLUENCE THE FREQUENCY OF GOING TO THE MCDONALD'S?

Ilke Lemmelijn
Xueqing Zhang
Zhenni Zheng

ENAC

January 20, 2013

PROJECT OBJECTIVE

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“Find which factor has the biggest influence on the frequency of going to the McDonald's”

DATA COLLECTION

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- By means of an online survey
- 12 multiple choice questions
- 137 replies

DATA PROCESSING

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- 1 Observe responses in Excel
- 2 Filter the data
- 3 Transform data into binary numbers
- 4 Split variables into columns

OUTCOME

Model 1

	Coefficient	Std. Error	t-Statistic	Prob.
C	2.857143	0.250797	11.39226	0.0000
T1	-0.857143	1.350582	-0.634647	0.5271
T2	-0.857143	0.971332	-0.882441	0.3796
T3	-0.723810	0.424630	-1.704566	0.0913
T4	-0.190476	0.301420	-0.631929	0.5288
R-squared	0.033844	Mean dependent var.		2.623853
Adjusted R-squared	-0.003316	S.D. dependent var.		1.324897
S.E. of regression	1.327092	Akaike info criterion		3.448643
Sum squared resid	183.1619	Schwarz criterion		3.572099
Log likelihood	-182.9510	Hannan-Quinn criter.		3.498709
F-statistic	0.910768	Durbin-Watson stat		1.926575
Prob(F-statistic)	0.460626			

$$Y = 2.857 - 0.857 \cdot T1 - 0.857 \cdot T2 \\ - 0.724 \cdot T3 - 0.190 \cdot T4$$

FIGURE : Results Model 1

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Model 2

	Coefficient	Std. Error	t-Statistic	Prob.
C	2.250000	0.321423	7.000111	0.0000
RC1	0.062500	0.393662	0.158766	0.8742
RC2	0.194444	0.535706	0.362969	0.7174
RC3	0.113636	0.503574	0.225660	0.8219
RC4	1.113636	0.422433	2.636243	0.0097
RC5	0.592105	0.436249	1.357263	0.1777
R-squared	0.101900	Mean dependent var.		2.623853
Adjusted R-squared	0.058303	S.D. dependent var.		1.324897
S.E. of regression	1.285694	Akaike info criterion		3.393947
Sum squared resid.	170.2599	Schwarz criterion		3.542095
Log likelihood	-178.9701	Hannan-Quinn criter.		3.454026
F-statistic	2.337323	Durbin-Watson stat		1.870817
Prob(F-statistic)	0.047029			

$$Y = 2.250 + 0.063 \cdot RC1 + 0.194 \cdot RC2 \\ + 0.114 \cdot RC3 + 1.114 \cdot RC4 \\ + 0.592 \cdot RC5$$

FIGURE : Results Model 2

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Model 3

Method: Least Squares
Date: 01/10/13 Time: 17:18
Sample: 1 109
Included observations: 109

	Coefficient	Std. Error	t-Statistic	Prob.
C	2.396663	0.379472	6.315783	0.0000
T1	-0.623729	1.375644	-0.453409	0.6512
T2	-1.019828	0.955505	-1.067318	0.2884
T3	-0.622901	0.419398	-1.485228	0.1407
T4	-0.122311	0.299804	-0.407971	0.6842
RC1	0.109659	0.398405	0.275244	0.7837
RC2	0.227067	0.561257	0.404568	0.6867
RC3	0.203571	0.508623	0.400240	0.6898
RC4	1.136672	0.425974	2.668410	0.0089
RC5	0.814607	0.437915	1.403485	0.1636

R-squared	0.131456	Mean dependent var.	2.623853
Adjusted R-squared	0.052498	S.D. dependent var.	1.324897
S.E. of regression	1.289651	Akaike info criterion	3.433879
Sum squared resid	164.6568	Schwarz criterion	3.680791
Log likelihood	-177.1464	Hannan-Quinn criter.	3.534011
F-statistic	1.664875	Durbin-Watson stat	1.882642
Prob(F-statistic)	0.107644		

$$Y = 2.397 - 0.624 \cdot T1 - 1.020 \cdot T2 \\ - 0.623 \cdot T3 - 0.122 \cdot T4 \\ + 0.110 \cdot RC1 + 0.227 \cdot RC2 \\ + 0.204 \cdot RC3 + 1.137 \cdot RC4 \\ + 0.615 \cdot RC5$$

FIGURE : Results Model 3

OUTCOME

Model 4

Dependent Variable: Y

Method: Least Squares

Date: 01/10/13 Time: 18:19

Sample: 1 109

Included observations: 109

	Coefficient	Std. Error	t-Statistic	Prob.
C	2.099516	0.250032	8.396975	0.0000
CAR	0.738633	0.262314	2.815836	0.0058
TR1	0.124279	0.266503	0.466330	0.6420
TR2	0.485068	0.266443	1.820535	0.0716
TR3	0.003735	0.282204	0.013234	0.9895
R-squared	0.108615	Mean dependent var.		2.623853
Adjusted R-squared	0.074331	S.D. dependent var.		1.324897
S.E. of regression	1.274706	Akaike info criterion		3.368094
Sum squared resid	168.9869	Schwarz criterion		3.491550
Log likelihood	-178.5611	Hannan-Quinn criter.		3.418160
F-statistic	3.168100	Durbin-Watson stat		1.845182
Prob(F-statistic)	0.016830			

$$Y = 2.100 + 0.739 \cdot CAR + 0.124 \cdot TR1 + 0.485 \cdot TR2$$

FIGURE : Results Model 4

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Model 5

Dependent Variable: Y
 Method: Least Squares
 Date: 01/10/13 Time: 17:06
 Sample: 1 109
 Included observations: 109

	Coefficient	Std. Error	t-Statistic	Prob.
C	1.564351	0.738145	2.119301	0.0370
G	-0.184832	0.291991	-0.633004	0.5284
O	0.714461	0.493954	1.446413	0.1517
MI1	-0.723492	0.397141	-1.821754	0.0720
MI2	0.333081	0.439632	0.757636	0.4508
CAR	0.663779	0.300999	2.205253	0.0301
S1	-0.459025	0.877595	-0.523049	0.6023
S2	0.222835	0.455809	0.488878	0.6262
S3	0.080104	0.431093	0.185816	0.8530
S4	0.350930	0.485789	0.722392	0.4720
TR1	-0.225290	0.327949	-0.686967	0.4940
TR2	0.086658	0.308670	0.280746	0.7796
TR3	0.255571	0.318041	0.803578	0.4239
T1	0.377998	1.656548	0.228184	0.8201
T2	-1.037606	0.975250	-1.063938	0.2904
T3	-0.471000	0.424097	-1.110594	0.2699
T4	0.031273	0.312331	0.100127	0.9205
H	-0.161952	0.283108	-0.572051	0.5688
RC1	-0.184061	0.429937	-0.428113	0.6697
RC2	-0.035833	0.612775	-0.058477	0.9535
RC3	-0.183920	0.570355	-0.322466	0.7479
RC4	0.535481	0.478372	1.119381	0.2661
RC5	0.456756	0.465819	0.980543	0.3296
BA	0.454172	0.278664	1.629820	0.1068

R-squared	0.306581	Mean dependent var	2.623853
Adjusted R-squared	0.118950	S.D. dependent var	1.324897
S.E. of regression	1.243605	Akaike info criterion	3.465576
Sum squared resid	131.4570	Schwarz criterion	4.058167
Log likelihood	-164.8739	Hannan-Quinn criter.	3.705893

$$\begin{aligned}
 Y = & 1.564 - 0.185 \cdot G + 0.714 \cdot O \\
 & - 0.723 \cdot MI1 + 0.333 \cdot MI2 \\
 & + 0.664 \cdot CAR - 0.459 \cdot S1 \\
 & + 0.223 \cdot S2 + 0.080 \cdot S3 \\
 & + 0.351 \cdot S4 - 0.225 \cdot TR1 \\
 & + 0.087 \cdot TR2 + 0.256 \cdot TR3 \\
 & + 0.378 \cdot T1 - 1.038 \cdot T2 \\
 & - 0.471 \cdot T3 + 0.031 \cdot T4 \\
 & - 0.162 \cdot H - 0.184 \cdot RC1 \\
 & - 0.036 \cdot RC2 - 0.184 \cdot RC3 \\
 & + 0.535 \cdot RC4 + 0.457 \cdot RC5 \\
 & + 0.454 \cdot BA
 \end{aligned}$$

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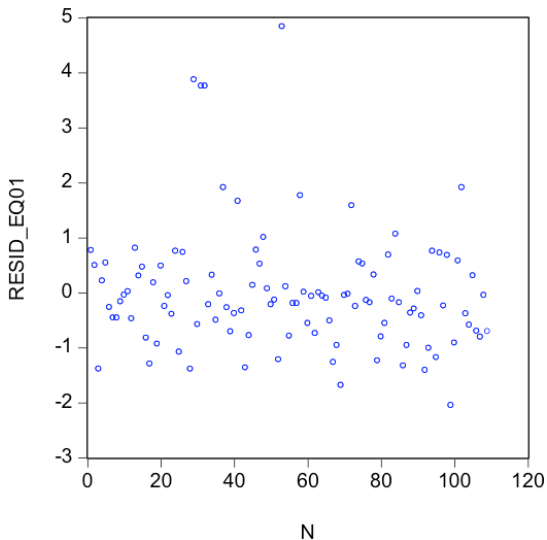
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Model 5



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- Gender
- Origin
- Monthly income
- Car
- Sports
- Transportation
- Time needed to go to McDonald's
- Reason for going (during childhood)
- Burger alternatives (Quick, Burger King)

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Are you, Steve?