**APPENDIX 1 – SAS CODE USED**

/\*Question 1\*/

title " Opened Variable As A Function Of Subject Line, Weekend And Holiday Using Logistic Regression";

**proc** **logistic**

data=sasuser.email\_data descending;

model opened = subject\_length weekend holiday;

**run**;

/\*Question 2\*/

/\*Imputation To Handle Zero Values Of Total\_Sent\*/

**data** sasuser.email\_data1; set sasuser.email\_data;

if total\_sent =**0** then total\_sent\_imputed=**0.01**;

if total\_sent>**0** then total\_sent\_imputed=total\_sent;

**run**;

/\*Calculation of Pi Values\*/

**data** sasuser.email\_data1; set sasuser.email\_data1;

pi=total\_open/total\_sent\_imputed;

**run**;

/\*Calculation of 1-Pi Values\*/

**data** sasuser.email\_data1; set sasuser.email\_data1;

qi=**1**-pi;

**run**;

/\*Imputation To Handle Zero Values Of qi ie., (1-pi)\*/

**data** sasuser.email\_data1; set sasuser.email\_data1;

if qi=**0** then qi\_imputed=**0.01**;

if qi>**0** then qi\_imputed=qi;

**run**;

/\*Calculation of Fraction of Emails Opened (pi/(1-pi))\*/

**data** sasuser.email\_data1; set sasuser.email\_data1;

fraction\_email\_open=pi/qi\_imputed;

**run**;

/\*Imputation To Handle Zero Values Of Fraction of Emails Opened\*/

**data** sasuser.email\_data1; set sasuser.email\_data1;

if fraction\_email\_open=**0** then fraction\_email\_open\_imputed=**0.01**;

if fraction\_email\_open>**0** then fraction\_email\_open\_imputed=fraction\_email\_open;

**run**;

/\*Natural Log of Fraction of Emails Opened Imputed\*/

**data** sasuser.email\_data1; set sasuser.email\_data1;

log\_fraction=log(fraction\_email\_open\_imputed);

**run**;

/\*Linear Regression on Log of Fraction of Emails Opened as a Function of Subject Line, Weekend and Holiday\*/

title "Linear Regression on Log of Fraction of Emails Opened as a Function of Subject Line, Weekend and Holiday";

**proc** **reg**

data=sasuser.email\_data1;

model log\_fraction = subject\_length weekend holiday;

**run**;

/\*Question 3\*/

title " Opt Out Modelled As A Function of Pi, Weekend and Holiday Using Logistic Regression";

**proc** **logistic**

data=sasuser.email\_data1 descending;

model optout = pi weekend holiday;

**run**;

/\*Question 4\*/

/\*Linear Regression on Log of Fraction of Emails Opened as a Function of Subject Line, Weekend and Holiday\*/

title "Total Store Visits Modelled As A Function Of Pi, Opt Out, Weekend And Holiday Using Linear Regression";

**proc** **reg**

data=sasuser.email\_data1;

model total\_visits = pi optout weekend holiday;

**run**;