%include 'C:\Yangxi\Data\5. SAS\Non-parametric\One-way layout\LD\_CI.sas';

options ls=**100** ps=**1000** nodate nocenter nonumber;

**data** raw;

title 'Dante commercial lines data 2009 and 2010';

input sub trial block trt rating1;

cards;

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ;; |  |  |  |  |

proc sort data=raw;

by trial block trt;

run;

\*To do the Friedman test, first obtain the ranks within each block;

proc rank data=raw out=Dante;

by trial block;

var rating1;

ranks r;

run;

\*proc print data=Dante;

\*title 'after proc rank';

\*run;

\*Sort data by main effects -- probably not necessary here, but good practice;

proc sort data=Dante out=ranked;

by trial trt block;

run;

\*Summary Table of the mean ranks;

proc tabulate data=ranked f=6.2;

class trial trt;

var r;

table trial\*trt\*r\*(mean); \*<--Request mean rank per trt;

run;

\*proc print data=ranked;

\*title 'data ranked using proc tabulate';

\*run;

\*Do a 1-way analysis on the ranked (within block) data. This is the equivalent of the Friedman test;

title 'FRIEDMAN TEST';

proc sort data=ranked;

by trial trt;

run;

proc mixed data=ranked method=mivque0;

class block trt;

model r = block trt;

lsmeans trt; \*<--these are the means of the ranks, same as in Table above;

by trial;

run;

\*The Friedman test can also be done using the Brunner method outlined in the Shah & Madden paper

NOTE: dealing with blocks is still an active area of research within the context of the

Brunner method! The original framework (presented in Shah & Madden) does not deal with blocking.

Note that the code below (Brunner approach) gives the same results as the Friedman test above:

look at the F statistics and ANOVAF statistics respectively. Contrasts are the same;

title 'FRIEDMAN TEST VIA BRUNNER METHOD';

proc mixed data=ranked anovaf method=mivque0;

class trt;

model r = trt;

repeated / subject=block type=csh; \*<--note the syntax for blocks;

lsmeans trt/pdiff;

by trial;

run;

\*/

title1 'running macro';

/\*proc sort data=raw;

by sub trial trt;

run;

data raw2;

set raw;

if trial=1 then delete;

\*you will have to change the trial number in the command above to analyze one specific set of data. To analyze trial 1 delete trial 2 and vice versa. To analyze both trials at once, delete the entire command and the by statement in the two proc mixed statements above;

run;

proc print; run;

%ld\_ci (data=raw2, var=rating1, group=trt, alpha=0.05, subject=sub);

run;

\*The easiest way to do the Kruskal-Wallis test is using Proc npar1way;

/\*

title 'DIRECT 1-WAY KRUSKAL-WALLIS ANALYSIS WITH SAS PROC NPAR1WAY';

proc npar1way data=ranked wilcoxon;

class trt;

var rating1;

by trial;

run;

\*/

**quit**;