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Supplementary material 6 – Complete PCA, Kruskal-Wallis Test and Dunn's test results for Study 2

Complete results for Purchase attitudes and Willingness to buy

Principal Components Analysis

Call: principal(r = data_standardized_attitudes, nfactors = 1, scores = TRUE)

Standardized loadings (pattern matrix) based upon correlation matrix

	PC1	h2	u2	com
PA1	0.77	0.60	0.40	1
PA2	0.84	0.70	0.30	1
PA3	0.82	0.67	0.33	1
PA4	0.70	0.49	0.51	1
PA5	0.75	0.56	0.44	1

	PC1
SS loadings	3.01
Proportion Var	0.60

Mean item complexity = 1

Test of the hypothesis that 1 component is sufficient.

The root mean square of the residuals (RMSR) is 0.1

with the empirical chi square 109.93 with prob < 4.2e-22

Fit based upon off diagonal values = 0.96> pca_willingness

Principal Components Analysis

Call: principal(r = data_standardized_willingness, nfactors = 1, scores = TRUE)

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```
Standardized loadings (pattern matrix) based upon correlation matrix
     PC1   h2   u2 com
WTB1 0.89 0.80 0.20   1
WTB2 0.91 0.84 0.16   1
WTB3 0.91 0.83 0.17   1

                PC1
SS loadings    2.46
Proportion Var 0.82

Mean item complexity =  1
Test of the hypothesis that 1 component is sufficient.

The root mean square of the residuals (RMSR) is  0.09
 with the empirical chi square  25.42  with prob <  NA

Fit based upon off diagonal values = 0.98>
> data$PC_Attitudes <- pca_attitudes$scores
> data$PC_Willingness <- pca_willingness$scores
> data$PCAt <-as.numeric(data$PC_Attitudes)
> data$PCWill <-as.numeric(data$PC_Willingness)
>
> # Kruskal-Wallis Test
> kw_test_attitudes <- kruskal.test(PCAt ~ Pub, data = data)
> kw_test_willingness <- kruskal.test(PCWill ~ Pub, data = data)
>
> # Convert Pub to a factor if it's not already
> data$Pub <- as.factor(data$Pub)
```

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```
>
> # Dunn's test for attitudes
> dunn_test_attitudes <- dunn.test(x = data$PCAt, g = data$Pub, method = "bonferroni")
  Kruskal-Wallis rank sum test

data: x and group
Kruskal-Wallis chi-squared = 21.3127, df = 4, p-value = 0


                           Comparison of x by group
                                 (Bonferroni)
Col Mean-|
Row Mean |        Alt        Bio    Control        Ego
---------+--------------------------------------------
     Bio |   1.931282
         |     0.2672
         |
 Control |   4.339686   2.331670
         |    0.0001*     0.0986
         |
     Ego |   2.858277   0.892723  -1.445608
         |    0.0213*     1.0000     0.7414
         |
     Hed |   3.348065   1.298132  -1.123112   0.375738
         |    0.0041*     0.9712     1.0000     1.0000

alpha = 0.05
Reject Ho if p <= alpha/2
```

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```
>

> # Dunn's test for willingness

> dunn_test_willingness <- dunn.test(x = data$PCWill, g = data$Pub, method =
"bonferroni")

  Kruskal-Wallis rank sum test


data: x and group

Kruskal-Wallis chi-squared = 15.2108, df = 4, p-value = 0



                           Comparison of x by group

                                (Bonferroni)

Col Mean-|

Row Mean |       Alt        Bio    Control       Ego

---------+--------------------------------------------

     Bio |   2.289425

         |    0.1103

         |

 Control |   3.485362   1.130809

         |   0.0025*     1.0000

         |

     Ego |   2.082712  -0.227398  -1.374926

         |    0.1864     1.0000     0.8458

         |

     Hed |   3.291103   0.872184  -0.296714   1.120726

         |   0.0050*     1.0000     1.0000     1.0000


alpha = 0.05
```

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```
Reject Ho if p <= alpha/2

>

> # Print the results

> print(dunn_test_attitudes)

$chi2

[1] 21.31274


$Z

 [1]  1.9312823  4.3396862  2.3316700  2.8582771  0.8927230

 [6] -1.4456082  3.3480656  1.2981323 -1.1231122  0.3757385


$P

 [1] 2.672408e-02 7.134317e-06 9.859029e-03 2.129741e-03

 [5] 1.860028e-01 7.414356e-02 4.068887e-04 9.712094e-02

 [9] 1.306949e-01 3.535557e-01


$P.adjusted

 [1] 2.672408e-01 7.134317e-05 9.859029e-02 2.129741e-02

 [5] 1.000000e+00 7.414356e-01 4.068887e-03 9.712094e-01

 [9] 1.000000e+00 1.000000e+00


$comparisons

 [1] "Alt - Bio"     "Alt - Control" "Bio - Control"

 [4] "Alt - Ego"     "Bio - Ego"     "Control - Ego"

 [7] "Alt - Hed"     "Bio - Hed"     "Control - Hed"

[10] "Ego - Hed"


> print(dunn_test_willingness)
```

```
$chi2
[1] 15.21077
$Z
 [1]  2.2894259  3.4853623  1.1308094  2.0827128 -0.2273980
 [6] -1.3749270  3.2911035  0.8721842 -0.2967149  1.1207261

$P
 [1] 0.0110273087 0.0002457356 0.1290676690 0.0186387028
 [5] 0.4100571280 0.0845770428 0.0004989760 0.1915539560
 [9] 0.3833420732 0.1312022418

$P.adjusted
 [1] 0.110273087 0.002457356 1.000000000 0.186387028 1.000000000
 [6] 0.845770428 0.004989760 1.000000000 1.000000000 1.000000000

$comparisons
 [1] "Alt - Bio"     "Alt - Control" "Bio - Control"
 [4] "Alt - Ego"     "Bio - Ego"     "Control - Ego"
 [7] "Alt - Hed"     "Bio - Hed"     "Control - Hed"
[10] "Ego - Hed"
```

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Complete results for Consumption attitudes and Willingness to consume

Principal Components Analysis

Call: principal(r = data_standardized_attitudes2, nfactors = 1, scores = TRUE)

Standardized loadings (pattern matrix) based upon correlation matrix

	PC1	h2	u2	com
CA1	0.88	0.78	0.22	1
CA2	0.89	0.80	0.20	1
CA3	0.87	0.75	0.25	1
CA4	0.80	0.64	0.36	1
CA5	0.84	0.70	0.30	1

	PC1
SS loadings	3.67
Proportion Var	0.73

Mean item complexity = 1

Test of the hypothesis that 1 component is sufficient.

The root mean square of the residuals (RMSR) is 0.07

with the empirical chi square 49.62 with prob < 1.7e-09

Fit based upon off diagonal values = 0.99> pca_willingness2

Principal Components Analysis

Call: principal(r = data_standardized_willingness2, nfactors = 1, scores = TRUE)

Standardized loadings (pattern matrix) based upon correlation matrix

	PC1	h2	u2	com
WTC1	0.92	0.85	0.15	1

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```
WTC2 0.94 0.89 0.11   1
WTC3 0.94 0.87 0.13   1

                PC1
SS loadings    2.61
Proportion Var 0.87

Mean item complexity =  1
Test of the hypothesis that 1 component is sufficient.

The root mean square of the residuals (RMSR) is  0.07
 with the empirical chi square  13.72  with prob <  NA

Fit based upon off diagonal values = 0.99>
> data$PC_Attitudes2 <- pca_attitudes2$scores
> data$PC_willingness2 <- pca_willingness2$scores
> data$PCAt2 <-as.numeric(data$PC_Attitudes2)
> data$PCWill2 <-as.numeric(data$PC_willingness2)
>
> # Kruskal-Wallis Test
> kw_test_attitudes2 <- kruskal.test(PCAt2 ~ Pub, data = data)
> kw_test_willingness2 <- kruskal.test(PCWill2 ~ Pub, data = data)
>
> kw_test_attitudes2

            Kruskal-Wallis rank sum test

data:  PCAt2 by Pub
```

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Kruskal-Wallis chi-squared = 1.5515, df = 4, p-value = 0.8175

> kw_test_willingness2

Kruskal-Wallis rank sum test

data: PCWill2 by Pub

Kruskal-Wallis chi-squared = 1.1816, df = 4, p-value = 0.8811