Title: An assessment of Bert N. Bakker's "Need for Cognition as a moderator of Party Cues" (2019)
Date: 18-11-2022
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Course: Experimentation in the Social Sciences

The Verification of the Findings of Bakker (2019)

When the P value is greater than .05, it means that no effect was observed in this case. A hypothesis can only be regarded as significant if the P value is less than (<) 0.05. By implementing a linear regression model for food irradiation on cue condition as the dependent variable and reversing the variables by recoding, the tables in Appendix B and C were realized. The regression standardized residuals are normally distributed, since the 95% are between -2 and 2 and can therefore be considered usual (Appendix C). Based on the table mentioned in the document by Bakker (2019) in Appendix A, the results seem to be slightly different. This is due to the fact that Bert has rounded his findings. By comparing the R squared for column 1, we can deduct that the document has .14 and I have found .02. Nevertheless, the findings both can be considered similar, for example the output is considered as low R-squared values.

Firstly, a linear regression model was implemented in order with the support for food irradiation as the dependent variable and the party cues as independent variable and the need for cognition as the covariate. This is portrayed in column 1. The party cues represent if the participant's inparty or out-party supported food irradiation. In Bakker (2019) the regression model had a significant negative effect of out-party cues on support for food irradiation in comparison to no cue condition ($b = -.07$, $P < .01$, $SE = .03$). This indicates a decrease of support of the ban by .07 points on a scale from 0 to 1. In contrast to the out-party cues, the effect of in-party cue was not significantly significant.

In the replication, participants decreased their support for food irradiation by -.068 (in the document it is -.07). This means that when the party does not identify to the supported policy in relation to when no party supports the policy (Appendix B). The table also shows that there was no statistical significance of the in-party on the policy support. In this case, we shall round up our finding and consider the -.07 utilized by Bakker (2019). Furthermore, a second linear regression was conducted with an interaction effect between NfC and in-party cues and out-party cues. In this model, the no party cue condition is a reference category, which is portrayed in column 2. The findings show again a negative significant effect between NfC and the out-party cue ($b = -.04$, $P < .01$, $SE = .18$). Participants with a higher NfC display less support after observing out-party cues in comparison to no party cues.

This is apparent, because the results both point out (replication and document) that besieged the constant is the Out-Party Cue the only variable that is considered significant (-.07). This output emphasizes that whilst the out party supports the policy of the ban, others seem to be less supportive of the policy. However, the R^2 are different between the document ($R^2 = .14$) and my findings ($R^2 = .16$). Therefore, the dataset provided may be different to the one used in Bakker (2019). Additionally, the research does not support the evidence for the alternative hypothesis that reliance on party cues is higher for those who are lower in the need for cognition. Consequently, Bakker (2019) found that those higher on NfC are less supportive when out-party cue was present. Hence, H1 can be rejected and H2 is partly supported, since the interaction existed among people higher on NfC in out-party condition. The replication shall be considered of the purpose of this research as successful.

The Robustness of the Findings

In order to conduct a test on the robustness of the findings, the replication that is produced shall be considered as successfully reproduced. Consequently, I can conduct a multiverse analysis to test different analytical choices that are compared to test the robustness of a finding (Nuijten et al., 2018). Robustness tests whether our assumptions are true. This is derived from the test that checks either that the initial assumption is true or whether our results would change if the assumption is rejected.

In this research, to explore the effect of high education on the support of the ban. Consequently, a linear regression model is used in order to test the covariate of the question that is mentioned in the document for hs: “What is the highest level of school you have completed or the highest degree you have received?” to test the robustness. This shall be conducted in a similar fashion as Bakker (2019), by looking at the R^2 and the significant levels.

The R^2 is a statistical measure of a regression model that describes the proportion of variance in the dependent variable that is explained by the independent variable. Therefore, it shows the goodness of fit between 0 and 1. The regression model is considered to be significant ($R^2 = .036$), this also entails for out-party cues (-.397). The analysis assumes that the higher the school education one has had, the lower the support of the ban. If the results were not significant, then my outcome displayed the fact that the lower the school education one has experienced, the higher the support of the ban.

As Appendix D portrays, the P-value of the predictor “What is the highest level of school you have completed or the highest degree you have received?” is significant ($P = .005$) with a R^2 of .036. Hence, we find the implication that on higher education one has experienced, the lower the support of the ban. In this case, 3.6% of the variation in the output is explained by the input variable, which can be considered low. The significant negative effect of education level on the support of the ban shows that there is less support towards the ban. The goodness of fit is therefore supported.

However, the linear regression model portrays the study result is limited to this dataset as stated by the R^2. Therefore it will be intriguing to test other variables as well, such as income: “What is your total household income?”. Furthermore, I would implore using the adjusted R^2 rather than R^2, since it has the ability to provide a more accurate view of the correlation between variables. This research implemented the experimental design of Bakker (2019), this is the reason R^2 is implemented for the current robustness test. Finally, the reproducible syntax can be found in Appendix E.

Bibliography

Bakker, B. N. (2019). Need for Cognition as a moderator of Party Cues. *The Journal of Politics*, *80*(4), 1311–1325. https://doi.org/10.1086/698928

Nuijten, M. B., Bakker, M., Maassen, E., & Wicherts, J. M. (2018). Verify original results through reanalysis before replicating. *Behavioral and Brain Sciences*, *41*, e143. https://doi.org/10.1017/S0140525X18000791

Appendices

Appendix A: Results by Bakker (2019)

Table 1. Results of the statistical tests

	1	2
In-party Cue	.03	.07
	(.03)	(.10)
Out-party Cue	-.07*	.18
	(.03)	(.11)
Need for Cognition (NfC)	-.03	.10
	(.07)	(.11)
In-party X NfC		-.07
		(.17)
Out-party X NfC		-.40*
		(.18)
Constant	.53*	.45*
	(.05)	(.07)
N	803	803
R2	.14	.16

Note: unstandardized regression coefficients. *p<.05

Appendix B: Reproduction Results by Bakker (2019)

Column 1:

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	95.0% Confidence Interval for B Lower Bound	95.0% Confidence Interval for B Upper Bound
1	(Constant)	.534	.046		11.671	.000	.444	.624
	inparty	.033	.025	.052	1.332	.183	-.015	.081
	outparty	-.068	.025	-.106	-2.695	.007	-.117	-.018
	scaleNfC_Analysis	-.030	.071	-.015	-.427	.670	-.171	.110

a. Dependent Variable: Supportoftheban

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.140[a]	.020	.016	.29085

a. Predictors: (Constant), scaleNfC_Analysis, outparty, inparty

b. Dependent Variable: Supportoftheban

Column 2:

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	95.0% Confidence Interval for B Lower Bound	95.0% Confidence Interval for B Upper Bound
1	(Constant)	.456	.068		6.737	.000	.323	.588
	inparty	.074	.102	.119	.733	.464	-.125	.274
	outparty	.175	.108	.272	1.615	.107	-.038	.387
	scaleNfC_Analysis	.101	.110	.050	.917	.359	-.115	.317
	InParty_NFC	-.067	.170	-.064	-.396	.692	-.400	.266
	OutParty_NFC	-.402	.175	-.394	-2.304	.021	-.745	-.060

a. Dependent Variable: Supportoftheban

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.163[a]	.027	.020	.29019

a. Predictors: (Constant), OutParty_NfC, scaleNfC_Analysis, inparty, InParty_NfC, outparty

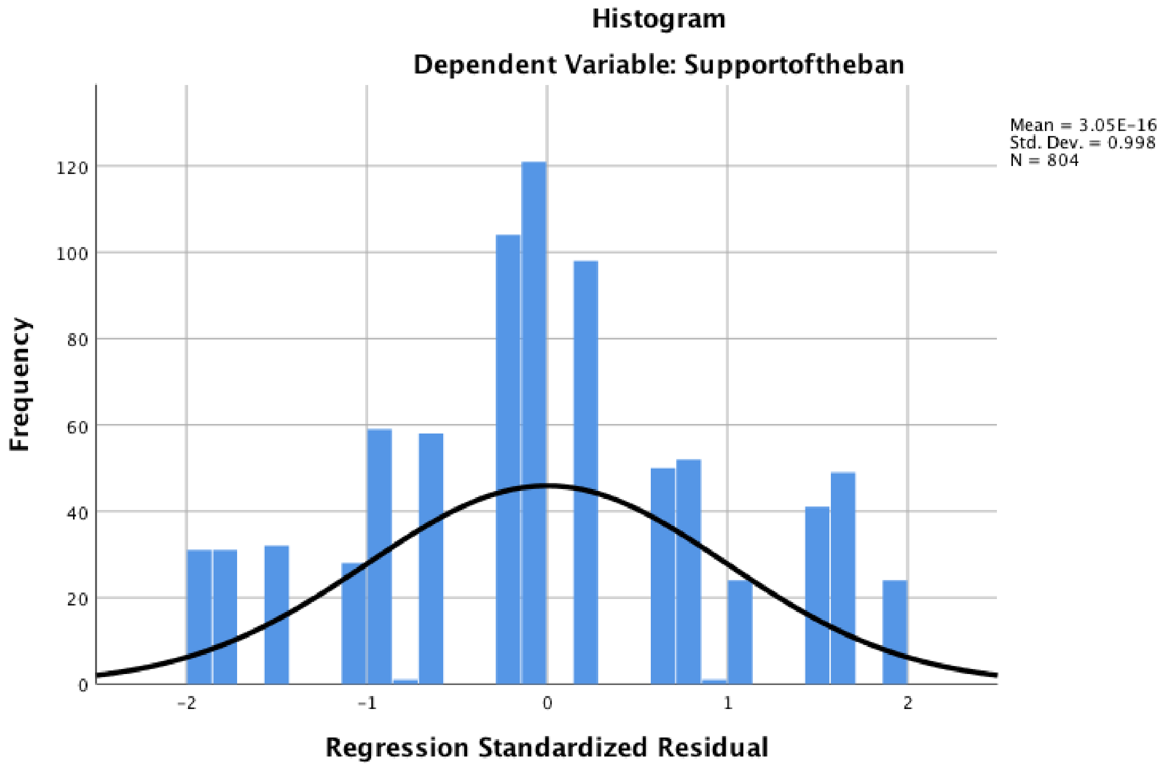
b. Dependent Variable: Supportoftheban

Table: Results of the statistical tests		
	1	**2**
In-party	**.033**	**.074**
	(.025)	**(.102)**

Out-party	**-.068***	**-.175**
	(.025)	**(.108)**
Need for Cognition (NfC)	**-.030**	**.101**
	(.071)	**(.110)**
Inparty_NfC		**-.067**
		(.170)
Outparty_NfC		**-.402***
		(.175)
Constant	**.534***	**.456***
	(.046)	**(.068)**
N	**803**	**803**
R^2	**.020**	**.027**

Note: unstandardized regression coefficients * = P<.05

Appendix C: Histogram Regression Standardized Residual



Appendix D: Robustness Education

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	95.0% Confidence Interval for B Lower Bound	95.0% Confidence Interval for B Upper Bound
1	(Constant)	.518	.071		7.300	.000	.378	.657
	inparty	.082	.101	.131	.809	.419	-.117	.281
	outparty	.175	.108	.273	1.626	.104	-.036	.386
	scaleNfC_Analysis	.124	.110	.061	1.133	.257	-.091	.340
	InParty_NfC	-.075	.169	-.071	-.444	.657	-.406	.257
	OutParty_NfC	-.397	.174	-.389	-2.285	.023	-.739	-.056
	What is the highest level of school you have completed or the highest degree you have received?	-.019	.007	-.098	-2.792	.005	-.033	-.006

a. Dependent Variable: Supportoftheban

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.480	6	.413	4.951	.000[b]
	Residual	66.548	797	.083		
	Total	69.028	803			

a. Dependent Variable: Supportoftheban

b. Predictors: (Constant), What is the highest level of school you have completed or the highest degree you have received?, inparty, scaleNfC_Analysis, outparty, InParty_NfC, OutParty_NfC

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.190[a]	.036	.029	.28896

a. Predictors: (Constant), What is the highest level of school you have completed or the highest degree you have received?, inparty, scaleNfC_Analysis, outparty, InParty_NfC, OutParty_NfC

b. Dependent Variable: Supportoftheban

Robustness test: “What is the highest level of school you have completed or the highest degree you have received”	
In-party	**.082**
	(.101)
Out-Party	**.175**
	(.108)

Need for Cognition	**.124**
	(.110)
Inparty_NfC	**-.075**
	(.169)
Out-party_NfC	**-.397***
	(.174)
Highest Education	**-.019***
	(.007)
Constant	**.518***
	(.071)
N	**803**
R^2	**(.036)**

Note: unstandardized regression coefficients * = P<.05

Appendix E: Syntax reproduction results by Bakker (2019)

```
* Encoding: UTF-8.

*create new variable for treatment indicator*

COMPUTE treatment=1.
IF (NFC_ReplicationKam_DO_T_Control = 2) treatment=1.
IF (NFC_ReplicationKam_DO_T_DemProp_RepOp = 2) treatment=2.
IF (NFC_ReplicationKam_DO_T_RepProp_DemOp = 2) treatment=3.
EXECUTE.

*Partisanship*

COMPUTE partisanship=99.
IF (pid2 = 1) partisanship=1.
IF (pid2 = 2) partisanship=2.
IF (pid4 = 2) partisanship=3.
IF (pid4 = 3) partisanship=4.
IF (pid4 = 1) partisanship=5.
IF (pid3 = 2) partisanship=6.
IF (pid3 = 1) partisanship=7.
EXECUTE.

missing values partisanship (99).

*Inparty dummy

COMPUTE inparty=99.
```

```
IF ((partisanship<4 & treatment=2) | (partisanship>4 & treatment=3)) inparty=1.
IF ((partisanship<4 & treatment=3) | (partisanship>4 & treatment=2) | (treatment=1)) inparty=0.
EXECUTE.

*Outparty dummy

COMPUTE outparty=99.
IF ((partisanship<4 & treatment=3) | (partisanship>4 & treatment=2)) outparty=1.
IF ((partisanship<4 & treatment=2) | (partisanship>4 & treatment=3) | (treatment=1)) outparty=0.
EXECUTE.

missing values inparty outparty (99).

*Variables reversed from SupportIrradiation to Supportoftheban

DATASET ACTIVATE DataSet1.
RECODE SupportIrradiation (5=0) (4=0.25) (3=0.5) (2=0.75) (1=1) INTO Dependant_Variable_SofB.
VARIABLE LABELS  Dependant_Variable_SotB 'Supportoftheban'.
EXECUTE.

RECODE NfC_3 (5=1) (4=2) (3=3) (2=4) (1=5) INTO NfC3_Reversed.
EXECUTE.

RECODE NfC_4 (5=1) (4=2) (3=3) (2=4) (1=5) INTO NfC4_Reversed.
EXECUTE.

RECODE NfC_5 (5=1) (4=2) (3=3) (2=4) (1=5) INTO NfC5_Reversed.
EXECUTE.

RECODE NfC_7 (5=1) (4=2) (3=3) (2=4) (1=5) INTO NfC7_Reversed.
EXECUTE.

RECODE NfC_8 (5=1) (4=2) (3=3) (2=4) (1=5) INTO NfC8_Reversed.
EXECUTE.

RECODE NfC_9 (5=1) (4=2) (3=3) (2=4) (1=5) INTO NfC9_Reversed.
EXECUTE.

RECODE NfC_12 (5=1) (4=2) (3=3) (2=4) (1=5) INTO NfC12_Reversed.
EXECUTE.

RECODE NfC_16 (5=1) (4=2) (3=3) (2=4) (1=5) INTO NfC16_Reversed.
EXECUTE.

RECODE NfC_17 (5=1) (4=2) (3=3) (2=4) (1=5) INTO NfC17_Reversed.
EXECUTE.

COMPUTE scaleNfC_Analysis=(NFC3_Reversed + NfC4_Reversed + NfC9_Reversed + NfC12_Reversed +
NfC16_Reversed + NfC17_Reversed + NfC5_Reversed + NfC7_Reversed + NfC8_Reversed + NfC_1 + NfC_2
+ NfC_6 + NfC_10 + NfC_11 + NfC_13 + NfC_14 + NfC_15 + NfC_18) / 18.
EXECUTE.
```

```
COMPUTE scaleNfC_Analysis=(scaleNfC-1)/4.
EXECUTE.

FREQUENCIES VARIABLES=scaleNfC_Analysis
  /ORDER=ANALYSIS.

COMPUTE InParty_NFC=scaleNfC_Analysis * inparty.
EXECUTE.

COMPUTE OutParty_NFC=scaleNfC_Analysis * outparty.
EXECUTE.
```

*Statistical Tests of Regression models: Replication and Robustness output, regressing support for food irradiation on cue condition and the Need for Cognition

```
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS CI(95) R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT Dependant_Varariable_SotB
  /METHOD=ENTER inparty outparty scaleNfC_Analysis
  /SCATTERPLOT=(*ZRESID ,*ZPRED)
  /RESIDUALS HISTOGRAM(ZRESID).

REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS CI(95) R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT Dependant_Varariable_SotB
  /METHOD=ENTER inparty outparty scaleNfC_Analysis InParty_NfC OutParty_NfC hs
  /SCATTERPLOT=(*ZRESID ,*ZPRED)
  /RESIDUALS HISTOGRAM(ZRESID).

FREQUENCIES VARIABLES=scaleNfC
  /ORDER=ANALYSIS.
```