

## Overview

This replication package contains data and code to replicate the analysis from **Discrimination that Matters: Replication with Extensions of "Perceived Discrimination and Political Behaviour" (2020)**. Two data sources: Fisher et al. 2012 & Diehl et al. 2016. were analysed using R and Stata. Three pre-processing .do files and 2 analysis .r scripts, of which one creates 6 figures and 6 tables in the paper, and the other creates 23 figures and 79 tables in the appendix are expected to run for about 25 min. in total.

## Data Availability and Provenance Statements

- ✗ This paper does not involve analysis of external data (i.e., no data are used or the only data are generated by the authors via simulation in their code).

## Statement about Rights

- ✓ I certify that the author(s) of the manuscript have legitimate access to and permission to use the data used in this manuscript.
- ✓ I certify that the author(s) of the manuscript have documented permission to redistribute/publish the data contained within this replication package. Appropriate permission are documented in the 06\_licences folder.

## Licenses for Data

*British Election Study Ethnic Minority Survey* (Fisher et al. 2012) is to be made available to any user without the requirement for registration for download/access under a Creative Commons Attribution 4.0 International Licence. Text of the licence is available as `cca_licence.rtf` in the 06\_licences folder.

*Causes and Consequences of Socio-Cultural Integration Processes among New Immigrants in Europe (SCIP)* (Diehl et al. 2016) is listed under Category A of the GESIS Access Categories. Data under Category A are released for academic research and teaching.

## Summary of Availability

- ✓ All data are publicly available.
- ✗ Some data **cannot be made** publicly available.
- ✗ No data can be made publicly available.

## Details on each Data Source

Data.Name	Data.Files	Location	Provided	Citation
“British Election Study Ethnic Minority Survey”	british_election_study_ethnic_minority_survey_2010_data_anon	01_original_datasets	TRUE	Fisher et al. 2012
“Causes and Consequences of Socio-Cultural Integration Processes among New Immigrants in Europe (SCIP)”	ZA5956_uk_wave1_v1-0-0.dta; ZA5956_nl_wave1_v1-0-0.dta	<a href="https://search.gesis.org/research_data/ZA5956">https://search.gesis.org/research_data/ZA5956</a>	FALSE	Diehl et al. 2016

*British Election Study Ethnic Minority Survey* data was downloaded from the UK Data Service (Fisher et al. 2012). Data are available to be downloaded from the following link. Chosen file format was `.dta` (4.62MB). A copy of the data is provided as part of the replication package in folder `01_original_datasets`.

Datafile: `british_election_study_ethnic_minority_survey_2010_data_anon`

*Causes and Consequences of Socio-Cultural Integration Processes among New Immigrants in Europe (SCIP)* (Diehl et al. 2016) data was downloaded from the following link. In the section Downloads, under Datasets, the chosen file format is Stata `.zip` archive (`ZA5956_v1-0-0.dta.zip Stata (Dataset)`). Entire archive has 3.19 MB. Out of downloaded data the following files were used: `ZA5956_uk_wave1_v1-0-0.dta` & `ZA5956_nl_wave1_v1-0-0.dta` in this research. Data are not provided in this repository, but can be downloaded freely after registering with GESIS.

Datafile: `ZA5956_uk_wave1_v1-0-0.dta` (not provided)

Datafile: `ZA5956_nl_wave1_v1-0-0.dta` (not provided)

## Dataset list

Data file	Source	Notes	Provided
british_election_study_ethnic_minority_survey_2010_data_anon	UK Data Service	Public	Yes
ZA5956_uk_wave1_v1-0-0.dta	GESIS	Public	No
ZA5956_nl_wave1_v1-0-0.dta	GESIS	Public	No
EMBES_REPLICATION_DATASET.dta	-	british_election_study_ethnic_minority_survey_2010_data_anon after running EMBES_original_and_additionalvariables.do	Yes
SCIP_UK_W1.dta	-	ZA5956_uk_wave1_v1-0-0.dta after running SCIP_variables_UK.do	Yes
SCIP_NL_W1.dta	-	ZA5956_nl_wave1_v1-0-0.dta after running SCIP_variables_NL.do	Yes

## Computational requirements

### Software Requirements

- Stata: code was developed using Stata MP 17, but continued with Stata 18. The last version of code was run with Stata MP 18.
  - no particular dependencies were installed for the data cleaning process; built-in functions of Stata 17 or 18 should be sufficient for running the script.
- R 2.4.0 ("Vigorous Calisthenics")
  - Hmisc (5.1-1)
  - ggpubr (0.6.6)
  - rlang (1.1.2)
  - MNLpred (0.0.8)
  - nnet (7.3-17)
  - dplyr (1.1.3)

- `tidyr` (1.1.3)
- `ggtext` (0.1.2)
- `cobalt` (4.5.5)
- `cowplot` (1.1.1)
- `patchwork` (1.2.0)
- `ggplotify` (0.1.2)
- `gridExtra` (2.3)
- `marginalEffects` (0.19.0)
- `ROSE` (0.0-4)
- `brglm2` (0.9.2)
- `ggplot2` (3.4.4)
- `MatchIt` (4.5.5)
- `cem` (1.1.31)
- `lattice` (0.22-5)
- `stargazer` (5.2.3)
- `psych` (2.3.9)
- `RColorBrewer` (1.1-3)
- `mgcv` (1.8-40)
- `nlme` (3.1-157)
- `tile` (0.4.17)
- `simcf` (0.2.20)
- `MASS` (7.3-56)
- `tictoc` (1.2.1)
- `margins` (0.3.26)
- each R script contains the set of packages necessary for executing the script. There is no need to load a separate script in order to load the necessary packages.

## Memory and Runtime Requirements

**Summary** Approximate time needed to reproduce the analyses on a standard 2024 desktop machine:

- ☐ <10 minutes
- ☒ 10-60 minutes
- ☐ 1-2 hours
- ☐ 2-8 hours
- ☐ 8-24 hours
- ☐ 1-3 days
- ☐ 3-14 days
- ☐ > 14 days
- ☐ Not feasible to run on a desktop machine, as described below.

**Details** The code was last run on a **Apple M2 MacBook Pro with MacOS Sonoma version 14.3.1**. Total availability of unified memory is 24GB, while Macintosh HD offers 494.38 GB of space.

## Description of programs/code

- Folder `03_data_cleaning_scripts` contain three scripts that are applied to raw datasets (files in `01_original_datasets`) to create datasets used in the analysis (files in `02_working_datasets`). Three `.do` files should be run separately on their own. Script `EMBES_original_and_additional_variables.do` will create dataset `EMBES_REPLICATION_DATASET.dta` used in Study 1 and the first set of extensions in Study 2. Scripts `SCIP_variables_NL.do` and `SCIP_variables_UK.do` will create datasets `SCIP_NL_W1.dta` and `SCIP_UK_W1.dta`. that are used in the second set of extensions in Study 2.
- Folder `04_analysis_scripts` contains two scripts that are used to render all tables figures in both the paper and appendix. Script `paper_output.r` contains necessary code to recreate all figures and tables presented in the paper. Script `appendix_output.r` contains necessary code to recreate all figures and tables presented in the appendix.

## Instructions to Replicators

- Download datasets from `01_original_datasets` to your computer.
- Run scripts from `03_data_cleaning_scripts` and save created datasets on your computer. Alternatively, download already prepared files from `02_working_datasets`.
- Download and run scripts from `04_analysis_scripts` on your computer, using appropriate datasets. Save results in the appropriate folder of your choice.

## Details

- Output directories have not been set up in advance, therefore a replicator can decide how they wish to store the data, scripts and the output.
- `03_data_cleaning_scripts`
  - The order of running the scripts from `03_data_cleaning_scripts` is not important. However, they need to be run prior to either `paper_output.r` and `appendix_output.r`, unless the replicator wants to use already processed datasets from `02_working_datasets`.
  - The script `EMBES_original_and_additional_variables.do` was last run on 19/9/2024 and it took 4 min.
  - The script `SCIP_variables_NL.do` was last run on 11/10/2024 and it took 3 min.
  - The script `SCIP_variables_UK.do` was last run on 05/10/2024 and it took 3 min.
- `04_analysis_scripts`
  - The order of running the scripts is not important.
  - `paper_output.r`
    - \* This script contains R packages `tile` and `simcf` which are not available on CRAN, but can be downloaded from this link. The

- instructions indicate that `zip` archives should be downloaded and unpacked manually, while the packages should be installed as local source packages. These packages need to be installed prior to running the script.
- \* The script was last run on 9/3/2025 and it took 5.87 min to execute the code.
  - `appendix_output.r`
    - \* This script contains R packages `tile` and `simcf` which are not available on `CRAN`, but can be downloaded from this link. The instructions indicate that `zip` archives should be downloaded and unpacked manually, while the packages should be installed as local source packages. These packages need to be installed prior to running the script.
    - \* The script was last run on 9/3/2024 and it took 13.65 min. to execute the code.
  - `05_output`
    - This folder contains two subfolders:
      - \* Folder `01_paper_appendix` contains formatted `Paper document.pdf` and `Appendix.pdf` documents.
      - \* Folder `02_files` contains all files rendered from `paper_output.r` and `appendix_output.r`.

## List of tables and programs

The provided code reproduces:

- ✓ All numbers provided in text in the paper.
- ✓ All tables and figures in the paper.
- ✓ All tables and figures in the appendix.

Figure/Table #	Program	Line Number	Output file	Note
Figure 1	04_analysis/ paper_otput.r	116 and 124	-	Graphs need to be manually saved one by one, using R Studio options: <b>Plot » Export</b> with <b>.pdf</b> as chosen option.
Figure 2, panel (a)	04_analysis/ paper_otput.r	422	fig2_pa.pdf	-
Figure 2, panel (b)	04_analysis/ paper_otput.r	744	fig2_pb.pdf	-
Figure 3, panel (a)	04_analysis/ paper_otput.r	958	fig3_pa.pdf	-

Figure/Table #	Program	Line Number	Output file	Note
Figure 3, panel (b)	04_analysis/ paper_output.r	1279	fig3_pb.pdf	-
Figure 4, panel (a)	04_analysis/ paper_output.r	1491	-	fig4_pa.pdf
Figure 4, panel (b)	04_analysis/ paper_output.r	1688	-	fig4_pb.pdf
Table 1	04_analysis/ paper_output.r	1972	-	TeX output is available in R Studio console.
Table 2	04_analysis/ paper_output.r	2198	-	TeX output is available in R Studio console.
Table 3	04_analysis/ paper_output.r	2451	-	TeX output is available in R Studio console.
Table 4	04_analysis/ paper_output.r	2675	-	TeX output is available in R Studio console.
Table 5	04_analysis/ paper_output.r	2932	-	TeX output is available in R Studio console.
Table 6	04_analysis/ paper_output.r	3156	-	TeX output is available in R Studio console.
Figure 5, panel (a)	04_analysis/ paper_output.r	3376	fig5_pa.pdf	-
Figure 5, panel (b)	04_analysis/ paper_output.r	3434	fig5_pb.pdf	-
Figure 6, panel (a): upper	04_analysis/ paper_output.r	3726	fig6_pau.pdf	-
Figure 6, panel (a): lower	04_analysis/ paper_output.r	3790	fig6_pal.pdf	-
Figure 6, panel (b): upper	04_analysis/ paper_output.r	3852	fig6_pbu.pdf	-
Figure 6, panel (b): lower	04_analysis/ paper_output.r	3916	fig6_pbl.pdf	-

Figure/Table #	Program	Line Number	Output file	Note
Table 1	04_analysis/ appendix_otput.r	100	-	TeX output is available in R Studio console.
Figure 1	04_analysis/ appendix_otput.r	115	-	Graph needs to be manually saved, using R Studio options: Plot » Export with .pdf as chosen option.
Figure 2	04_analysis/ appendix_otput.r	439	-	linearity.plot.pfd
Figure 3	04_analysis/ appendix_otput.r	886	-	dffits.plot.pfd
Table 2	04_analysis/ appendix_otput.r	925	-	TeX output is available in R Studio console.
Table 3	04_analysis/ appendix_otput.r	1136	-	TeX output is available in R Studio console.
Table 4	04_analysis/ appendix_otput.r	1261	-	TeX output is available in R Studio console.
Table 5	04_analysis/ appendix_otput.r	1418	-	TeX output is available in R Studio console.
Table 6	04_analysis/ appendix_otput.r	1465	-	TeX output is available in R Studio console.
Table 7	04_analysis/ appendix_otput.r	1605	-	TeX output is available in R Studio console.
Table 8	04_analysis/ appendix_otput.r	1652	-	TeX output is available in R Studio console.
Table 9	04_analysis/ appendix_otput.r	1754	-	TeX output is available in R Studio console.
Table 10	04_analysis/ appendix_otput.r	1800	-	TeX output is available in R Studio console.
Table 11	04_analysis/ appendix_otput.r	1948	-	TeX output is available in R Studio console.



Figure/Table #	Program	Line Number	Output file	Note
Table 12	04_analysis/ appendix_otput.r	2003	-	TeX output is available in R Studio console.
Table 13	04_analysis/ appendix_otput.r	2098	-	TeX output is available in R Studio console.
Table 14	04_analysis/ appendix_otput.r	2156	-	TeX output is available in R Studio console.
Table 15	04_analysis/ appendix_otput.r	2246	-	TeX output is available in R Studio console.
Table 16	04_analysis/ appendix_otput.r	2304	-	TeX output is available in R Studio console.
Table 17	04_analysis/ appendix_otput.r	2393	-	TeX output is available in R Studio console.
Table 18	04_analysis/ appendix_otput.r	2455	-	TeX output is available in R Studio console.
Table 19	04_analysis/ appendix_otput.r	2580	-	TeX output is available in R Studio console.
Table 20	04_analysis/ appendix_otput.r	2646	-	TeX output is available in R Studio console.
Table 21	04_analysis/ appendix_otput.r	2739	-	TeX output is available in R Studio console.
Table 22	04_analysis/ appendix_otput.r	2786	-	TeX output is available in R Studio console.
Table 23	04_analysis/ appendix_otput.r	2880	-	TeX output is available in R Studio console.
Table 24	04_analysis/ appendix_otput.r	2977	-	TeX output is available in R Studio console.
Table 25	04_analysis/ appendix_otput.r	3075	-	TeX output is available in R Studio console.

Figure/Table #	Program	Line Number	Output file	Note
Figure 4	04_analysis/ appendix_otput.r	3247	bplot.ge.sd.c.pdf	-
Table 26	04_analysis/ appendix_otput.r	3357	-	TeX output is available in R Studio console.
Figure 5	04_analysis/ appendix_otput.r	3529	bplot.ge.sd.c.pdf	-
Table 27	04_analysis/ appendix_otput.r	3648	-	TeX output is available in R Studio console.
Figure 6	04_analysis/ appendix_otput.r	3819	bplot.ge.sd.s.pdf	-
Table 28	04_analysis/ appendix_otput.r	3922	-	TeX output is available in R Studio console.
Figure 7	04_analysis/ appendix_otput.r	4093	bplot.ge.pd.s.pdf	-
Table 29	04_analysis/ appendix_otput.r	4223	-	TeX output is available in R Studio console.
Figure 8	04_analysis/ appendix_otput.r	4395	bplot.le.sd.c.pdf	-
Table 30	04_analysis/ appendix_otput.r	4508	-	TeX output is available in R Studio console.
Figure 9	04_analysis/ appendix_otput.r	4680	bplot.le.pd.c.pdf	-
Table 31	04_analysis/ appendix_otput.r	4799	-	TeX output is available in R Studio console.
Figure 10	04_analysis/ appendix_otput.r	4970	bplot.le.sd.s.pdf	-
Table 32	04_analysis/ appendix_otput.r	5073	-	TeX output is available in R Studio console.
Figure 11	04_analysis/ appendix_otput.r	5242	bplot.le.pd.s.pdf	-
Table 33	04_analysis/ appendix_otput.r	5377	-	TeX output is available in R Studio console.
Figure 12	04_analysis/ appendix_otput.r	5549	bplot.ebe.sd.c.pdf	-

Figure/Table #	Program	Line Number	Output file	Note
Table 34	04_analysis/ appendix_otput.r	5656	-	TeX output is available in R Studio console.
Figure 13	04_analysis/ appendix_otput.r	5828	bplot.ebe.pd.c.pdf -	
Table 35	04_analysis/ appendix_otput.r	5957	-	TeX output is available in R Studio console.
Figure 14	04_analysis/ appendix_otput.r	6128	bplot.ebe.sd.s.pdf -	
Table 36	04_analysis/ appendix_otput.r	6225	-	TeX output is available in R Studio console.
Figure 15	04_analysis/ appendix_otput.r	6396	bplot.ebe.pd.s.pdf -	
Table 37	04_analysis/ appendix_otput.r	6620	-	TeX output is available in R Studio console.
Table 38	04_analysis/ appendix_otput.r	6824	-	TeX output is available in R Studio console.
Table 38	04_analysis/ appendix_otput.r	6824	-	TeX output is available in R Studio console.
Table 39	04_analysis/ appendix_otput.r	7051	-	TeX output is available in R Studio console.
Table 40	04_analysis/ appendix_otput.r	7255	-	TeX output is available in R Studio console.
Table 41	04_analysis/ appendix_otput.r	7481	-	TeX output is available in R Studio console.
Table 42	04_analysis/ appendix_otput.r	7683	-	TeX output is available in R Studio console.
Table 43	04_analysis/ appendix_otput.r	7930	-	TeX output is available in R Studio console.
Table 44	04_analysis/ appendix_otput.r	8146	-	TeX output is available in R Studio console.

Figure/Table #	Program	Line Number	Output file	Note
Table 45	04_analysis/ appendix_otput.r	8372	-	TeX output is available in R Studio console.
Table 46	04_analysis/ appendix_otput.r	8576	-	TeX output is available in R Studio console.
Table 47	04_analysis/ appendix_otput.r	8815	-	TeX output is available in R Studio console.
Table 48	04_analysis/ appendix_otput.r	9031	-	TeX output is available in R Studio console.
Table 49	04_analysis/ appendix_otput.r	9266	-	TeX output is available in R Studio console.
Table 50	04_analysis/ appendix_otput.r	9470	-	TeX output is available in R Studio console.
Table 51	04_analysis/ appendix_otput.r	9709	-	TeX output is available in R Studio console.
Table 52	04_analysis/ appendix_otput.r	9925	-	TeX output is available in R Studio console.
Table 53	04_analysis/ appendix_otput.r	10152	-	TeX output is available in R Studio console.
Table 54	04_analysis/ appendix_otput.r	10355	-	TeX output is available in R Studio console.
Table 55	04_analysis/ appendix_otput.r	10413	-	TeX output is available in R Studio console.
Table 56	04_analysis/ appendix_otput.r	10442	-	TeX output is available in R Studio console.
Table 57	04_analysis/ appendix_otput.r	10496	-	TeX output is available in R Studio console.
Table 58	04_analysis/ appendix_otput.r	10525	-	TeX output is available in R Studio console.

Figure/Table #	Program	Line Number	Output file	Note
Table 59	04_analysis/ appendix_otput.r	10581	-	TeX output is available in R Studio console.
Table 60	04_analysis/ appendix_otput.r	10610	-	TeX output is available in R Studio console.
Table 61	04_analysis/ appendix_otput.r	11041	-	TeX output is available in R Studio console.
Table 62	04_analysis/ appendix_otput.r	11472	-	TeX output is available in R Studio console.
Table 63	04_analysis/ appendix_otput.r	11882	-	TeX output is available in R Studio console.
Figure 16	04_analysis/ appendix_otput.r	11959	match_fig1	-
Figure 17	04_analysis/ appendix_otput.r	12049	match_fig2	-
Figure 18	04_analysis/ appendix_otput.r	12139	match_fig3	-
Table 64	04_analysis/ appendix_otput.r	12214	-	TeX output is available in R Studio console.
Table 65	04_analysis/ appendix_otput.r	12261	-	TeX output is available in R Studio console.
Table 29	04_analysis/ appendix_otput.r	6526	-	TeX output is available in R Studio console.
Figure 19	04_analysis/ appendix_otput.r	12259	rep_fig8.pdf	-
Figure 20	04_analysis/ appendix_otput.r	12381	rep_fig9.pdf	-
Table 66	04_analysis/ appendix_otput.r	12405	-	TeX output is available in R Studio console.
Table 67	04_analysis/ appendix_otput.r	12416	-	TeX output is available in R Studio console.
Table 68	04_analysis/ appendix_otput.r	12429	-	TeX output is available in R Studio console.

Figure/Table #	Program	Line Number	Output file	Note
Table 69	04_analysis/ appendix_otput.r	12440	-	<b>TeX</b> output is available in <b>R Studio</b> console.
Figure 21	04_analysis/ appendix_otput.r	12482, 12490, 12498 and 12507	-	Graphs need to be manually saved one by one, using <b>R Studio</b> options: <b>Plot » Export</b> with <b>.pdf</b> as chosen option. Final figure was assembled in <b>L<sup>A</sup>T<sub>E</sub>X</b> .
Figure 22	04_analysis/ appendix_otput.r	12544, 12552, 12560 and 12569	-	Graphs need to be manually saved one by one, using <b>R Studio</b> options: <b>Plot » Export</b> with <b>.pdf</b> as chosen option. Final figure was assembled in <b>L<sup>A</sup>T<sub>E</sub>X</b> .
Table 70	04_analysis/ appendix_otput.r	12578	-	<b>TeX</b> output is available in <b>R Studio</b> console.
Table 71	04_analysis/ appendix_otput.r	12597	-	<b>TeX</b> output is available in <b>R Studio</b> console.
Table 72	04_analysis/ appendix_otput.r	12706	-	<b>TeX</b> output is available in <b>R Studio</b> console.
Table 73	04_analysis/ appendix_otput.r	12811	-	<b>TeX</b> output is available in <b>R Studio</b> console.
Figure 23	04_analysis/ appendix_otput.r	12862 and 12917	uk_scip_2.pdf and nl_scip_2.pdf	Figure was assembled in <b>LaTeX</b> .
Table 74	04_analysis/ appendix_otput.r	13001 and 13073	-	<b>TeX</b> output is available in <b>R Studio</b> console. Final Table was assembled in <b>L<sup>A</sup>T<sub>E</sub>X</b> .

Figure/Table #	Program	Line Number	Output file	Note
Table 75	04_analysis/ appendix_otput.r	13140	-	<b>TeX</b> output is available in <b>R</b> <b>Studio</b> console.
Table 76	04_analysis/ appendix_otput.r	13236	-	<b>TeX</b> output is available in <b>R</b> <b>Studio</b> console.
Table 77	04_analysis/ appendix_otput.r	13285	-	<b>TeX</b> output is available in <b>R</b> <b>Studio</b> console.
Table 78	04_analysis/ appendix_otput.r	13377	-	<b>TeX</b> output is available in <b>R</b> <b>Studio</b> console.
Table 79	04_analysis/ appendix_otput.r	13426	-	<b>TeX</b> output is available in <b>R</b> <b>Studio</b> console.

## References

- Diehl, Claudia, Mérove Gijsberts, Ayse Güveli, Matthias Koenig, Cornelia Kristen, Marcel Lubbers, Frances McGinnity, Peter Müh-  
lau, Lucinda Platt, and Frank Van Tubergen. 2016. "Causes and  
Consequences of Socio-Cultural Integration Processes among New Im-  
migrants in Europe (SCIP)." GESIS Data Archive, Cologne. ZA5956  
Data file Version 1.0.0. DOI: <https://doi.org/10.4232/1.12341>.
- Fisher, Stephen, Anthony Heath, David Sanders, and Maria  
Sobolewska. 2012. "British Election Study Ethnic Mi-  
nority Survey, 2010." UK Data Service. SN: 6970. DOI:  
<http://doi.org/10.5255/UKDA-SN-6970-1>.
- Oskooii, Kassra A. R. 2020. "Perceived Discrimination and Political  
Behavior". *British Journal of Political Science* 50 (3): 867–892.

## Acknowledgements

The code to reproduce tables and graphs from Oskooii 2020 is avail-  
able in the Harvard Dataverse Repository of the paper and contains  
the `Disc&PolBehav_ReplicationCode.R` script and already prepared  
`EMBES_BJPS_DATA.dta` file. Scripts for data pre-processing used in the original  
paper were provided by the author, Kassra A. R. Oskooii on request. I am  
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