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 that create 5 figures and 7 tables in the paper, and 22 figures and 58 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`	`https://search.gesis.org/research_data/ZA5956`	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_mi` `nority_survey_20` `10_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_REPLICATIO` `N_DATASET.dta`	-	`british_electi` `on_study_ethni` `c_minority_sur` `vey_2010_data_` `anon` after running `EMBES_original` `_and_additiona` `lvariables.do`	Yes
`SCIP_UK_W1.dta`	-	`ZA5956_uk_wave` `1_v1-0-0.dta` after running `SCIP_variables` `_UK.do`	Yes
`SCIP_NL_W1.dta`	-	`ZA5956_nl_wave` `1_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")
  - `Himsc` (5.1-1)
  - `ggpubr` (0.6.6)
  - `rlang` (1.1.2)
  - `MNLpred` (0.0.8)
  - `nnet` (7.3-17)
  - `dplyr` (1.1.3)

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)
- 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 27/6/2024 and it took 3.12 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 27/6/2024 and it took 17.06 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: `Plot` » `Export` with `.pdf` as chosen option.
Figure 2, panel (a)	04_analysis/ paper_otput.r	420	fig2_pa.pdf	-
Figure 2, panel (b)	04_analysis/ paper_otput.r	742	fig2_pb.pdf	-
Figure 3, panel (a)	04_analysis/ paper_otput.r	956	fig3_pa.pdf	-

Figure/Table #	Program	Line Number	Output file	Note
Figure 3, panel (b)	04_analysis/ paper_otput.r	1277	fig3_pb.pdf	-
Table 1	04_analysis/ paper_otput.r	1576	-	`TeX` output is available in `R Studio` console.
Table 2	04_analysis/ paper_otput.r	1802	-	`TeX` output is available in `R Studio` console.
Table 3	04_analysis/ paper_otput.r	2055	-	`TeX` output is available in `R Studio` console.
Table 4	04_analysis/ paper_otput.r	2279	-	`TeX` output is available in `R Studio` console.
Table 5	04_analysis/ paper_otput.r	2536	-	`TeX` output is available in `R Studio` console.
Table 6	04_analysis/ paper_otput.r	2760	-	`TeX` output is available in `R Studio` console.
Figure 4, panel (a)	04_analysis/ paper_otput.r	2941	fig4_pa.pdf	-
Figure 4, panel (b)	04_analysis/ paper_otput.r	3138	fig4_pb.pdf	-
Table 7	04_analysis/ paper_otput.r	3259 and 3364	-	`TeX` output in the form of two tables is available in `R Studio` console. Final table with all 4 models was assembled using `ChatGPT`
Figure 5, panel (a)	04_analysis/ paper_otput.r	3414	fig5_pa.pdf	-
Figure 5, panel (b)	04_analysis/ paper_otput.r	3472	fig5_pb.pdf	-
Table 1	04_analysis/ appendix_otput.r	100	-	`TeX` output is available in `R Studio` console.

Figure/Table #	Program	Line Number	Output file	Note
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.
Table 2	04_analysis/ appendix_otput.r	254	-	`TeX` output is available in `R Studio` console.
Table 3	04_analysis/ appendix_otput.r	381	-	`TeX` output is available in `R Studio` console.
Table 4	04_analysis/ appendix_otput.r	474	-	`TeX` output is available in `R Studio` console.
Table 5	04_analysis/ appendix_otput.r	599	-	`TeX` output is available in `R Studio` console.
Table 6	04_analysis/ appendix_otput.r	658	-	`TeX` output is available in `R Studio` console.
Table 7	04_analysis/ appendix_otput.r	687	-	`TeX` output is available in `R Studio` console.
Table 8	04_analysis/ appendix_otput.r	741	-	`TeX` output is available in `R Studio` console.
Table 9	04_analysis/ appendix_otput.r	770	-	`TeX` output is available in `R Studio` console.
Table 10	04_analysis/ appendix_otput.r	826	-	`TeX` output is available in `R Studio` console.
Table 11	04_analysis/ appendix_otput.r	855	-	`TeX` output is available in `R Studio` console.
Table 12	04_analysis/ appendix_otput.r	1286	-	`TeX` output is available in `R Studio` console.
Table 13	04_analysis/ appendix_otput.r	1717	-	`TeX` output is available in `R Studio` console.

Figure/Table #	Program	Line Number	Output file	Note
Table 14	04_analysis/ appendix_otput.r	2127	-	TeX output is available in R Studio console.
Figure 2	04_analysis/ appendix_otput.r	2204	match_fig1.pdf	-
Figure 3	04_analysis/ appendix_otput.r	2294	match_fig2.pdf	-
Figure 4	04_analysis/ appendix_otput.r	2384	match_fig3.pdf	-
Table 15	04_analysis/ appendix_otput.r	2550	-	TeX output is available in R Studio console.
Figure 5	04_analysis/ appendix_otput.r	2705	bplot.ge.sd.c.pdf	-
Table 16	04_analysis/ appendix_otput.r	2832	-	TeX output is available in R Studio console.
Figure 6	04_analysis/ appendix_otput.r	2987	bplot.ge.pd.c.pdf	-
Table 17	04_analysis/ appendix_otput.r	3123	-	TeX output is available in R Studio console.
Figure 7	04_analysis/ appendix_otput.r	3277	bplot.ge.sd.s.pdf	-
Table 18	04_analysis/ appendix_otput.r	3397	-	TeX output is available in R Studio console.
Figure 8	04_analysis/ appendix_otput.r	3551	bplot.ge.pd.s.pdf	-
Table 19	04_analysis/ appendix_otput.r	3698	-	TeX output is available in R Studio console.
Figure 9	04_analysis/ appendix_otput.r	3853	bplot.le.sd.c.pdf	-
Table 20	04_analysis/ appendix_otput.r	3983	-	TeX output is available in R Studio console.
Figure 10	04_analysis/ appendix_otput.r	4138	bplot.le.pd.c.pdf	-
Table 21	04_analysis/ appendix_otput.r	4274	-	TeX output is available in R Studio console.

Figure/Table #	Program	Line Number	Output file	Note
Figure 11	04_analysis/ appendix_otput.r	4428	bplot.le.sd.s.pdf	-
Table 22	04_analysis/ appendix_otput.r	4548	-	TeX output is available in R Studio console.
Figure 12	04_analysis/ appendix_otput.r	4700	bplot.le.pd.s.pdf	-
Table 23	04_analysis/ appendix_otput.r	4852	-	TeX output is available in R Studio console.
Figure 13	04_analysis/ appendix_otput.r	5007	bplot.ebe.sd.c.pdf	-
Table 24	04_analysis/ appendix_otput.r	5131	-	TeX output is available in R Studio console.
Figure 14	04_analysis/ appendix_otput.r	5286	bplot.ebe.pd.c.pdf	-
Table 25	04_analysis/ appendix_otput.r	5432	-	TeX output is available in R Studio console.
Figure 15	04_analysis/ appendix_otput.r	5586	bplot.ebe.sd.s.pdf	-
Table 26	04_analysis/ appendix_otput.r	5700	-	TeX output is available in R Studio console.
Figure 16	04_analysis/ appendix_otput.r	5854	bplot.ebe.pd.s.pdf	-
Table 27	04_analysis/ appendix_otput.r	6095	-	TeX output is available in R Studio console.
Table 28	04_analysis/ appendix_otput.r	6299	-	TeX output is available in R Studio console.
Table 29	04_analysis/ appendix_otput.r	6526	-	TeX output is available in R Studio console.
Table 30	04_analysis/ appendix_otput.r	6730	-	TeX output is available in R Studio console.
Table 31	04_analysis/ appendix_otput.r	6956	-	TeX output is available in R Studio console.

Figure/Table #	Program	Line Number	Output file	Note
Table 32	04_analysis/ appendix_otput.r	7158	-	`TeX` output is available in `R` `Studio` console.
Table 33	04_analysis/ appendix_otput.r	7405	-	`TeX` output is available in `R` `Studio` console.
Table 34	04_analysis/ appendix_otput.r	7621	-	`TeX` output is available in `R` `Studio` console.
Table 35	04_analysis/ appendix_otput.r	7847	-	`TeX` output is available in `R` `Studio` console.
Table 36	04_analysis/ appendix_otput.r	8051	-	`TeX` output is available in `R` `Studio` console.
Table 37	04_analysis/ appendix_otput.r	8290	-	`TeX` output is available in `R` `Studio` console.
Table 38	04_analysis/ appendix_otput.r	8506	-	`TeX` output is available in `R` `Studio` console.
Table 39	04_analysis/ appendix_otput.r	8741	-	`TeX` output is available in `R` `Studio` console.
Table 40	04_analysis/ appendix_otput.r	8945	-	`TeX` output is available in `R` `Studio` console.
Table 41	04_analysis/ appendix_otput.r	9184	-	`TeX` output is available in `R` `Studio` console.
Table 42	04_analysis/ appendix_otput.r	9400	-	`TeX` output is available in `R` `Studio` console.
Table 43	04_analysis/ appendix_otput.r	9627	-	`TeX` output is available in `R` `Studio` console.
Table 44	04_analysis/ appendix_otput.r	9830	-	`TeX` output is available in `R` `Studio` console.
Table 45	04_analysis/ appendix_otput.r	9914	-	`TeX` output is available in `R` `Studio` console.

Figure/Table #	Program	Line Number	Output file	Note
Table 46	04_analysis/ appendix_otput.r	10001	-	`TeX` output is available in `R Studio` console.
Table 47	04_analysis/ appendix_otput.r	10059	-	`TeX` output is available in `R Studio` console.
Table 48	04_analysis/ appendix_otput.r	10106	-	`TeX` output is available in `R Studio` console.
Figure 17	04_analysis/ appendix_otput.r	10140	rep_fig8.pdf	-
Figure 18	04_analysis/ appendix_otput.r	10226	rep_fig9.pdf	-
Table 49	04_analysis/ appendix_otput.r	10250	-	`TeX` output is available in `R Studio` console.
Table 50	04_analysis/ appendix_otput.r	10261	-	`TeX` output is available in `R Studio` console.
Table 51	04_analysis/ appendix_otput.r	10274	-	`TeX` output is available in `R Studio` console.
Table 52	04_analysis/ appendix_otput.r	10285	-	`TeX` output is available in `R Studio` console.
Figure 19	04_analysis/ appendix_otput.r	10327, 10335, 10343 and 10352	-	Graphs need to be manually saved one by one, using `R Studio` options: `Plot » Export` with `.pdf` as chosen option. Figure was assembled in `Latex`.
Figure 20	04_analysis/ appendix_otput.r	10389, 10397, 10405 and 10414	-	Graphs need to be manually saved one by one, using `R Studio` options: `Plot » Export` with `.pdf` as chosen option. Figure was assembled in `Latex`.

Figure/Table #	Program	Line Number	Output file	Note
Table 53	04_analysis/ appendix_otput.r	10423	-	`TeX` output is available in `R Studio` console.
Table 54	04_analysis/ appendix_otput.r	10442	-	`TeX` output is available in `R Studio` console.
Table 55	04_analysis/ appendix_otput.r	10545	-	`TeX` output is available in `R Studio` console.
Table 56	04_analysis/ appendix_otput.r	10644	-	`TeX` output is available in `R Studio` console.
Figure 21	04_analysis/ appendix_otput.r	10695 and 10750	uk_scip_2.pdf and nl_scip_2.pdf	Figure was assembled in `LaTeX`.
Table 57	04_analysis/ appendix_otput.r	10895	-	`TeX` output is available in `R Studio` console.
Table 58	04_analysis/ appendix_otput.r	11028	-	`TeX` output is available in `R Studio` console.
Figure 22	04_analysis/ appendix_otput.r	11085, 11149, 11211 and 11275	uk_scip_4.pdf, uk_scip_5.pdf, nl_scip_4.pdf and nl_scip_5.pdf	Figure was assembled in `LaTeX`.

References

Diehl, Claudia, Mérove Gijsberts, Ayse Güveli, Matthias Koenig, Cornelia Kristen, Marcel Lubbers, Frances McGinnity, Peter Mühlau, Lucinda Platt, and Frank Van Tubergen. 2016. "Causes and Consequences of Socio-Cultural Integration Processes among New Immigrants 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 Minority 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