

EDLD 651 Final Project: Discriminatory Experiences, Chronic Strain, Social  
Connectedness, and Psychological Wellbeing Among Individuals With Marginalized Sexual  
Orientations

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Author Note

Data for this project was taken from Project STRIDE: Stress, Identity and Mental  
Health. (Meyer, Ilan H., Dohrenwend, Bruce Philip, Schwartz, Sharon, Hunter, Joyce, and  
Kertzner, Robert M. Project STRIDE: Stress, Identity, and Mental Health, New York City,  
2004-2005. Ann Arbor, MI: Inter-university Consortium for Political and Social Research  
[distributor], 2018-11-28. <https://doi.org/10.3886/ICPSR35525.v2>)

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## Abstract

15 This will be an abstract.

16 *Keywords:* keywords

17 Word count: X

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## Introduction

Inherent to living with a marginalized identity is the excess stress that accompanies stigma-related experiences and discriminatory conditions (Frost et al., 2013). An extensive body of literature demonstrates that chronic exposure to stress compromises physical and mental health (see Thotis, 2010, for a review), and ultimately elevates susceptibility to a myriad of physiological and psychiatric disorders (Mohd, 2008). It is not surprising, then, that individuals who identify as gay, bisexual, lesbian, and queer (LGBQ) experience higher rates of psychopathology than their heterosexual counterparts, including substance use disorders (Green & Feinstein, 2012), eating disorders (Parker & Harriger, 2020), deliberate self-injury (King et al., 2008), suicidality, and suicide attempts (Haas et al., 2011). The term “minority stress” has been used to describe the phenomenon of elevated mental health concerns resulting from the societal stigmatization of LGBQ sexual orientation status (Meyer, 1995). The link between minority stress and poor health outcomes may be direct, such that discriminatory experiences lead to increased cortisol (Korous et al., 2017) and cardiovascular reactivity (Panza et al., 2019). However, minority stress may also impact health indirectly through the cognitive burden, strain, and behavioral coping strategies that are required to navigate marginalization (Meyer et al., 2008). Given that morbidity and mortality is intimately tied to social and interpersonal conditions, researchers have come to recognize the importance of relationships and support (Cohen, 2004; Pescosolido, 2011). Social connectedness, which refers to the sense of subjective belonging that people feel in relation to individuals and groups of others, is considered a pivotal factor in individual and population-level health (Haslam et al., 2015). Burgeoning evidence indicates that, among individuals with marginalized identities, connection with others who are

marginalized for the same characteristic may mitigate detrimental stress responses (Austin et al., 2016). Indeed, social connectedness is associated with positive health outcomes and has been found to buffer the negative effects of discrimination and perceived stress among many groups of marginalized individuals (Kim & Fredriksen-Goldsen, 2016; Liao et al., 2016; Liu et al., 2019; Wang et al., 2012). Yet, social connectedness is markedly overlooked in research examining the health of LGBTQ individuals. Thus, the purpose of the current study was to examine the longitudinal relationships between discriminatory experiences, chronic strain, social connectedness, and psychological wellbeing among LGBTQ individuals.

## Methods

### Participants

Project STRIDE participants included individuals who had been residing in New York City for a minimum of two years, self-identified as lesbian, gay, bisexual (LGB), or straight, and self-identified as White, Black, or Latino [**projectstride**].

### Material

### Procedure

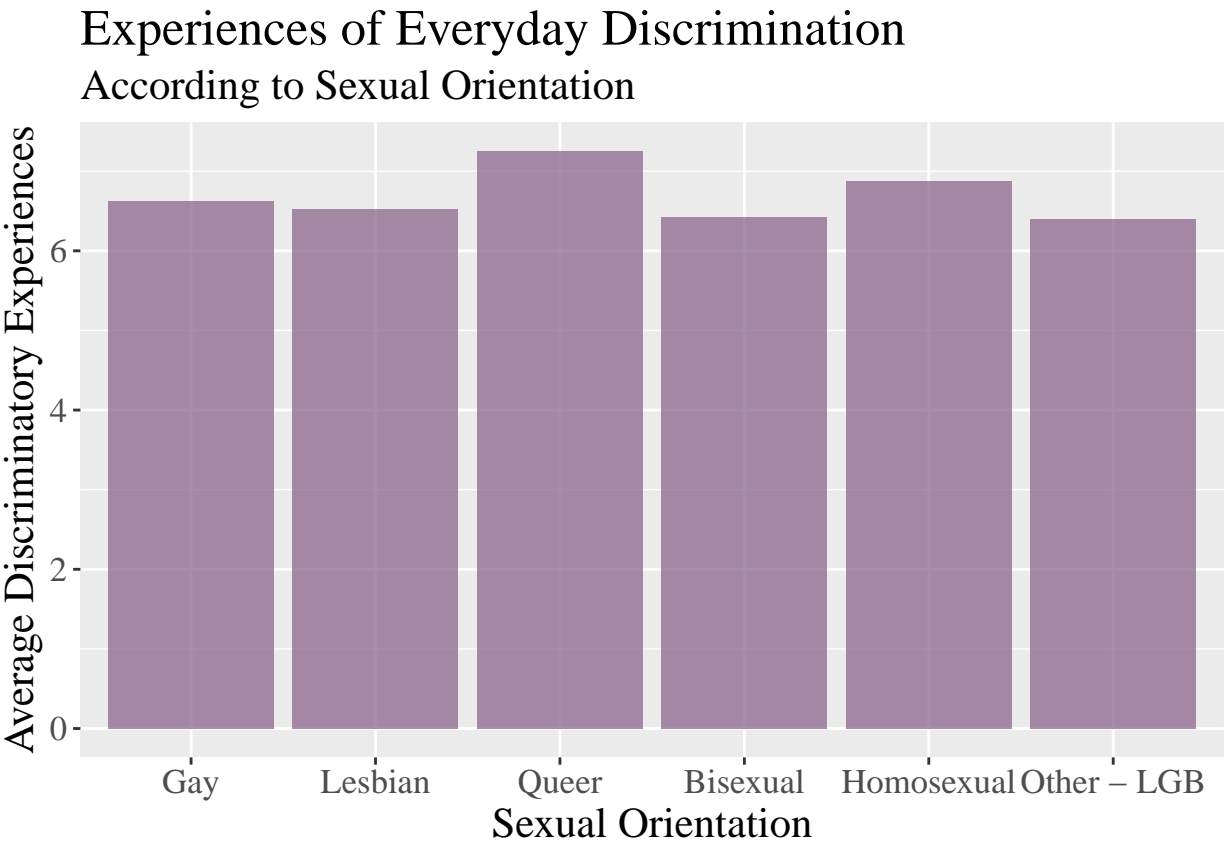
### Data analysis

We used R [Version 4.0.3; 12] and the R-packages *apaTables* [Version 2.0.5; 15], *dplyr* [Version 1.0.2; 23], *forcats* [Version 0.5.0; 17], *gdtools* [Version 0.2.2; 6], *ggiraphExtra* [Version 0.3.0; 10], *ggplot2* [Version 3.3.2; 18], *haven* [Version 2.3.1; 22], *janitor* [Version 2.0.1; 5], *knitr* [Version 1.30; 25], *lavaan* [Version 0.6.7; 14, 9], *lavaanPlot* [Version 0.5.1; 9], *lm.beta* [Version 1.5.1; 2], *papaja* [Version 0.1.0.9997; 1], *probemod* [Version 0.2.1; 16], *psych* [Version 2.0.9; 13], *purrr* [Version 0.3.4; 7], *qwraps2* [Version 0.5.0; 4], *readr* [Version 1.3.1; 21], *rio* [Version 0.5.16; 3], *rockchalk* [Version 1.8.144; 8], *stringr* [Version 1.4.0; 19], *tibble*

[Version 3.0.4; 11], *tidyr* [Version 1.1.2; 20], and *tidyverse* [Version 1.3.0; 24] for all our analyses.

Results

Preliminary Analyses



stridy (N = 360)	
Everyday Discrimination	
min	0
median	7
max	8
mean (sd)	6.59 ± 1.86
Chronic Strain	
min	1

	stridy (N = 360)
median	1.67
max	3
mean (sd)	1.71 $\pm$ 0.55
<b>Psychological Wellbeing</b>	
min	3
median	5.56
max	7
mean (sd)	5.47 $\pm$ 0.79
<b>Social Connectedness</b>	
min	1.38
median	3.38
max	4
mean (sd)	3.29 $\pm$ 0.51

	Other -					
	Gay (N = 160)	Lesbian (N = 104)	Queer (N = 12)	Bisexual (N = 63)	Homosexual (N = 16)	LGB (N = 5)

**Everyday****Discrimination**

min	0	0	5	0	0	5
median	7	7	7	7	8	6
max	8	8	8	8	8	8
mean (sd)	6.63 $\pm$ 1.72	6.52 $\pm$ 1.99	7.25 $\pm$ 0.87	6.43 $\pm$ 2.13	6.88 $\pm$ 2.03	6.40 $\pm$ 1.14

	Gay (N = 160)	Lesbian (N = 104)	Queer (N = 12)	Bisexual (N = 63)	Homosexual LGB (N = 16)	Other - (N = 5)
<b>Chronic Strain</b>						
min	1	1	1	1	1	1.33
median	1.67	1.67	1.5	2	1.33	2
max	3	3	3	2.67	1.67	2.67
mean (sd)	1.65 ± 0.53	1.77 ± 0.58	1.64 ± 0.61	1.88 ± 0.51	1.35 ± 0.26	1.87 ± 0.56
<b>Psychological Wellbeing</b>						
min	3	3.41	4.29	3.18	3.12	3.88
median	5.62	5.53	6.03	5.24	5.74	5.12
max	7	6.82	7	6.82	6.59	5.76
mean (sd)	5.51 ± 0.79	5.53 ± 0.70	5.75 ± 0.78	5.24 ± 0.85	5.47 ± 1.01	4.95 ± 0.72
<b>Social Connectedness</b>						
min	1.38	2.12	3.25	1.88	2.62	2.12
median	3.25	3.38	3.44	3.12	3.5	2.75
max	4	4	4	4	3.88	3.75
mean (sd)	3.26 ± 0.54	3.41 ± 0.45	3.51 ± 0.25	3.14 ± 0.51	3.38 ± 0.40	2.95 ± 0.71

## Primary Analyses

A multiple regression analysis was conducted to examine the effects of discriminatory experiences, chronic strain, social connectedness on psychological wellbeing among LGBTQ individuals. When all variables were entered into the model, discriminatory experiences was negatively associated with psychological wellbeing,  $\hat{\beta}_1 = -0.05, SE(\hat{\beta}_1) = -0.11, t(356) = -2.14, p = .03$ . Likewise, consistent with hypothesis 2, chronic strain was significantly negatively associated with psychological wellbeing,  $\hat{\beta}_2 = -0.29, SE(\hat{\beta}_2) = -0.20, t(356) = -3.91, p < .001$ . Consistent with hypothesis 3, social connectedness was significantly positively associated with psychological wellbeing,  $\hat{\beta}_3 = 0.24, SE(\hat{\beta}_3) = 0.15, t(356) = 2.99, p < .001$ . Taken together, all three predictors explained approximately 7.7% of the variance in psychological wellbeing,  $F(3, 356) = 9.90, p < .001, R^2 = .077$ .

```
Call: lm(formula = perwellb_2 ~ 1 + dis_d_total + chr_gen_2 + connect, data =
stridy)
```

```
Residuals: Min 1Q Median 3Q Max -2.35394 -0.45205 0.06373 0.59705 1.47574
```

```
Coefficients: Estimate Standardized Std. Error t value Pr(>|t|)
```

```
(Intercept) 5.48365 0.00000 0.32914 16.661 < 2e-16 dis_d_total -0.04643  
-0.10911 0.02167 -2.142 0.032837
```

```
chr_gen_2 -0.28802 -0.19891 0.07375 -3.905 0.000113 * connect 0.23789
```

```
0.15251 0.07945 2.994 0.002944 ** — Signif. codes: 0 ‘0.001’ 0.01 ‘’ 0.05 ‘.’ 0.1 ‘.’ 1
```

```
Residual standard error: 0.7633 on 356 degrees of freedom Multiple R-squared: 0.077,  
Adjusted R-squared: 0.06922 F-statistic: 9.9 on 3 and 356 DF, p-value: 2.764e-06
```

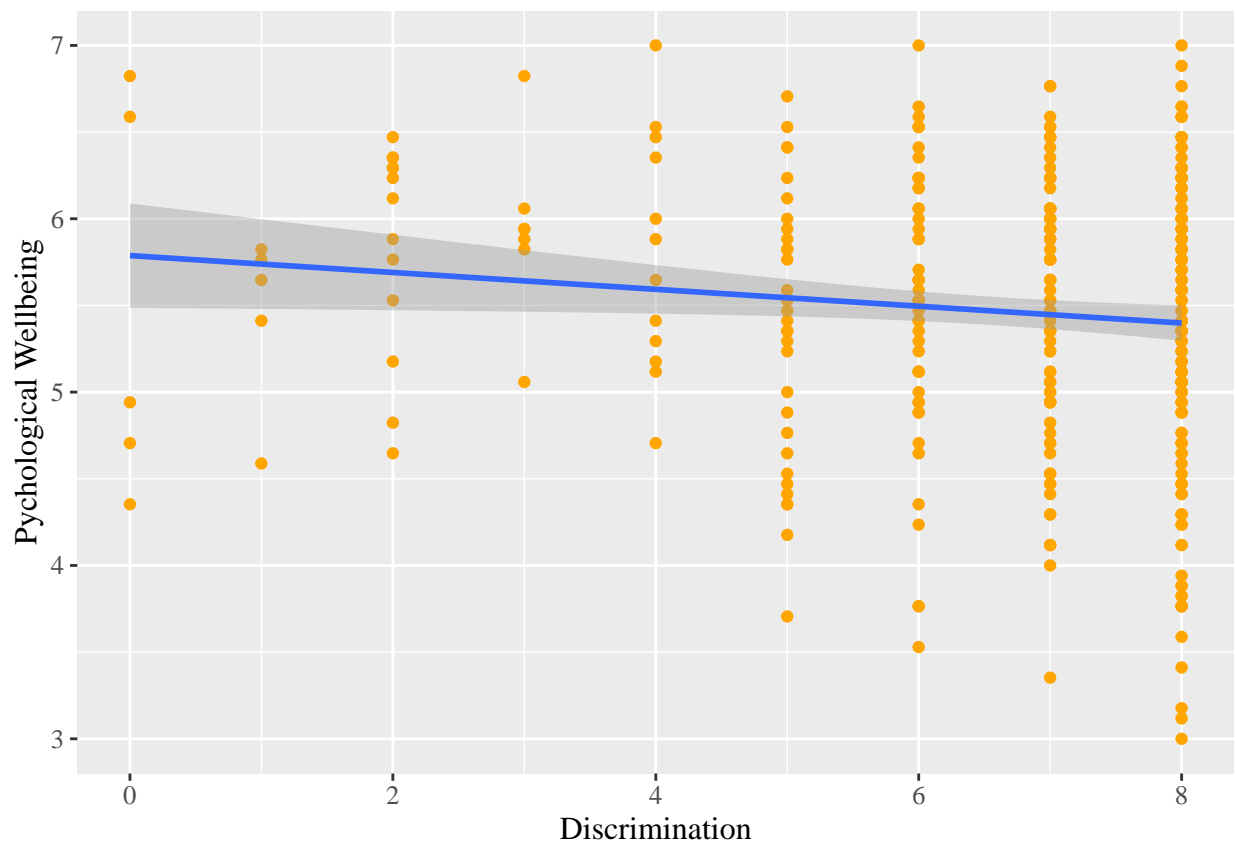
```
ANOVA results using perwellb_2 as the dependent variable
```

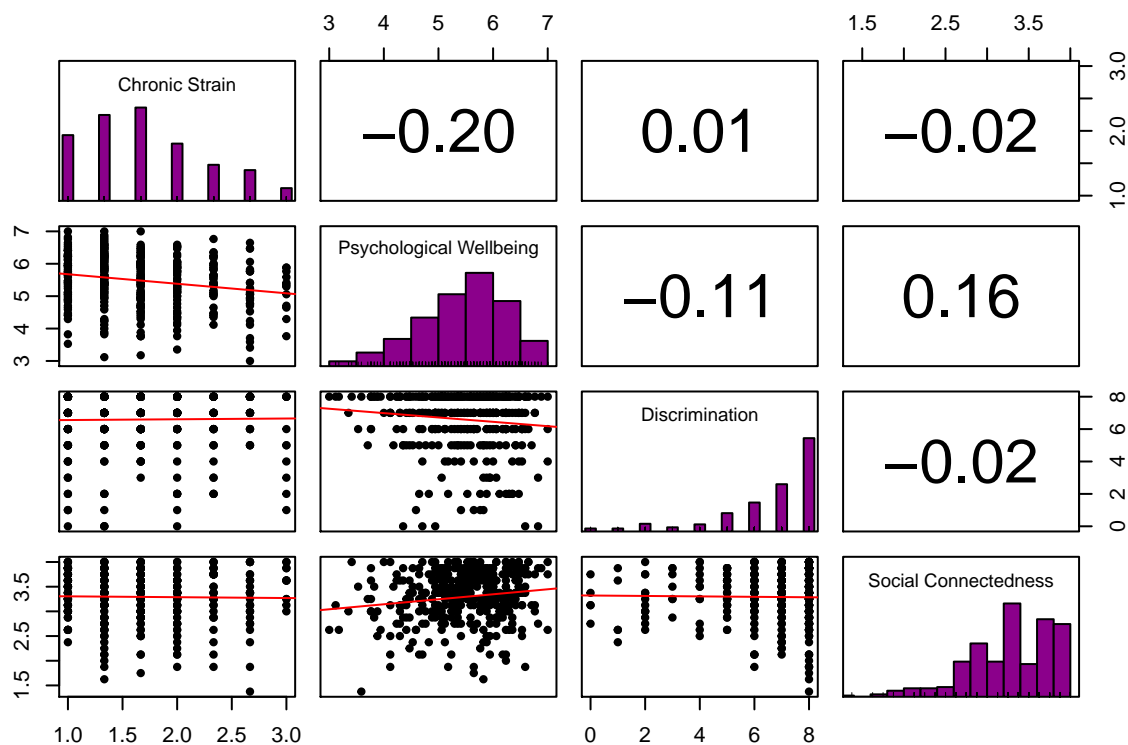
```
Predictor SS df MS F p partial_eta2 CI_90_partial_eta2 (Intercept) 161.70 1 161.70  
277.58 .000
```



97        dis\_d\_total 2.67 1 2.67 4.59 .033 .01 [.00, .04] chr\_gen\_2 8.89 1 8.89 15.25 .000 .04  
 98        [.01, .08] connect 5.22 1 5.22 8.97 .003 .02 [.00, .06] Error 207.39 356 0.58

99        Note: Values in square brackets indicate the bounds of the 90% confidence interval  
 100        for partial eta-squared





```

102 chr_gen_2 perwellb_2 dis_d_total connect chr_gen_2 1.000 -0.203 0.014 -0.019
103 perwellb_2 -0.203 1.000 -0.114 0.158 dis_d_total 0.014 -0.114 1.000 -0.016 connect -0.019
104 0.158 -0.016 1.000

```

```

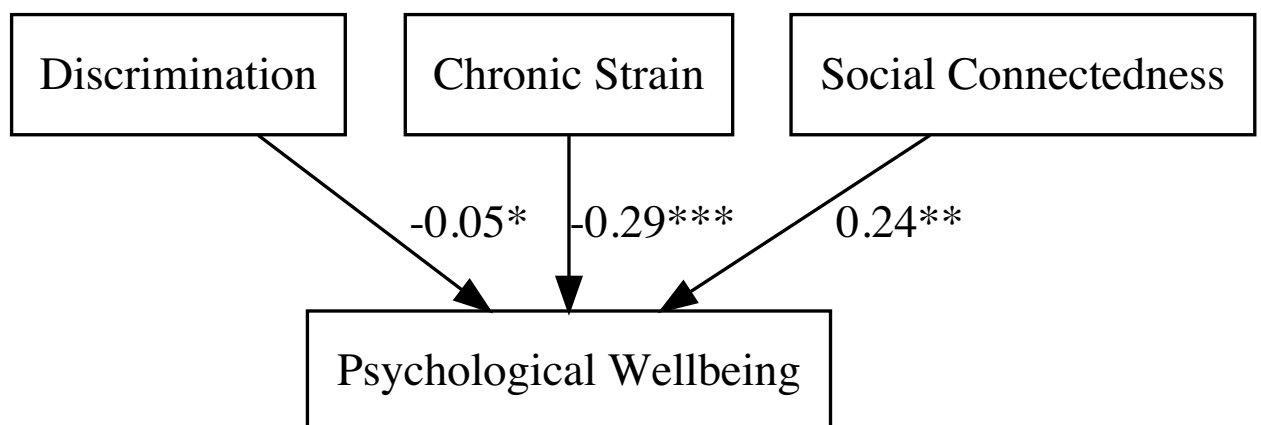
106 ## lavaan 0.6-7 ended normally after 14 iterations
107 ##
108 ## Estimator ML
109 ## Optimization method NLMINB
110 ## Number of free parameters 4
111 ##
112 ## Number of observations 360
113 ##
114 ## Model Test User Model:
115 ##
116 ## Test statistic 0.000
117 ## Degrees of freedom 0

```

```

118 ##
119 ## Parameter Estimates:
120 ##
121 ## Standard errors Standard
122 ## Information Expected
123 ## Information saturated (h1) model Structured
124 ##
125 ## Regressions:
126 ## Estimate Std.Err z-value P(>|z|)
127 ## perwellb_2 ~
128 ## dis_d_total -0.046 0.022 -2.154 0.031
129 ## chr_gen_2 -0.288 0.073 -3.927 0.000
130 ## connect 0.238 0.079 3.011 0.003
131 ##
132 ## Variances:
133 ## Estimate Std.Err z-value P(>|z|)
134 ## .perwellb_2 0.576 0.043 13.416 0.000

```



## Discussion

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## References

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CSLReferences

## References

- [1] Frederik Aust and Marius Barth. *papaja: Create APA manuscripts with R Markdown*. R package version 0.1.0.9997. 2020. URL: <https://github.com/crsh/papaja>.
- [2] Stefan Behrendt. *lm.beta: Add Standardized Regression Coefficients to lm-Objects*. R package version 1.5-1. 2014. URL: <https://CRAN.R-project.org/package=lm.beta>.
- [3] Chung-hong Chan et al. *rio: A Swiss-army knife for data file I/O*. R package version 0.5.16. 2018.
- [4] Peter DeWitt. *qwraps2: Quick Wraps 2*. R package version 0.5.0. 2020. URL: <https://CRAN.R-project.org/package=qwraps2>.
- [5] Sam Firke. *janitor: Simple Tools for Examining and Cleaning Dirty Data*. R package version 2.0.1. 2020. URL: <https://CRAN.R-project.org/package=janitor>.
- [6] David Gohel et al. *gdtools: Utilities for Graphical Rendering*. R package version 0.2.2. 2020. URL: <https://CRAN.R-project.org/package=gdtools>.
- [7] Lionel Henry and Hadley Wickham. *purrr: Functional Programming Tools*. R package version 0.3.3. 2019. URL: <https://CRAN.R-project.org/package=purrr>.
- [8] Paul E. Johnson. *rockchalk: Regression Estimation and Presentation*. R package version 1.8.144. 2019. URL: <https://CRAN.R-project.org/package=rockchalk>.
- [9] Alex Lishinski. *lavaanPlot: Path Diagrams for Lavaan Models via DiagrammeR*. R package version 0.5.1. 2018. URL: <https://CRAN.R-project.org/package=lavaanPlot>.
- [10] Keon-Woong Moon. *ggiraphExtra: Make Interactive 'ggplot2'. Extension to 'ggplot2' and 'ggiraph'*. R package version 0.3.0. 2020. URL: <https://CRAN.R-project.org/package=ggiraphExtra>.
- [11] Kirill Müller and Hadley Wickham. *tibble: Simple Data Frames*. R package version 3.0.3. 2020. URL: <https://CRAN.R-project.org/package=tibble>.

- [12] R Core Team. *R: A Language and Environment for Statistical Computing*. R Foundation for Statistical Computing. Vienna, Austria, 2020. URL: <https://www.R-project.org/>.
- [13] William Revelle. *psych: Procedures for Psychological, Psychometric, and Personality Research*. R package version 2.0.9. Northwestern University. Evanston, Illinois, 2020. URL: <https://CRAN.R-project.org/package=psych>.
- [14] Yves Rosseel. “lavaan: An R Package for Structural Equation Modeling”. In: *Journal of Statistical Software* 48.2 (2012), pp. 1–36. URL: <http://www.jstatsoft.org/v48/i02/>.
- [15] David Stanley. *apaTables: Create American Psychological Association (APA) Style Tables*. R package version 2.0.5. 2018. URL: <https://CRAN.R-project.org/package=apaTables>.
- [16] Jiat Chow Tan. *probemod: Statistical Tools for Probing Moderation Effects*. R package version 0.2.1. 2015. URL: <https://CRAN.R-project.org/package=probemod>.
- [17] Hadley Wickham. *forcats: Tools for Working with Categorical Variables (Factors)*. R package version 0.4.0. 2019. URL: <https://CRAN.R-project.org/package=forcats>.
- [18] Hadley Wickham. *ggplot2: Elegant Graphics for Data Analysis*. Springer-Verlag New York, 2016. ISBN: 978-3-319-24277-4. URL: <https://ggplot2.tidyverse.org>.
- [19] Hadley Wickham. *stringr: Simple, Consistent Wrappers for Common String Operations*. R package version 1.4.0. 2019. URL: <https://CRAN.R-project.org/package=stringr>.
- [20] Hadley Wickham and Lionel Henry. *tidyr: Tidy Messy Data*. R package version 1.0.2. 2020. URL: <https://CRAN.R-project.org/package=tidyr>.
- [21] Hadley Wickham, Jim Hester, and Romain Francois. *readr: Read Rectangular Text Data*. R package version 1.3.1. 2018. URL: <https://CRAN.R-project.org/package=readr>.

- [22] Hadley Wickham and Evan Miller. *haven: Import and Export 'SPSS', 'Stata' and 'SAS' Files*. R package version 2.3.1. 2020. URL: <https://CRAN.R-project.org/package=haven>.
- [23] Hadley Wickham et al. *dplyr: A Grammar of Data Manipulation*. R package version 1.0.2. 2020. URL: <https://CRAN.R-project.org/package=dplyr>.
- [24] Hadley Wickham et al. “Welcome to the tidyverse”. In: *Journal of Open Source Software* 4.43 (2019), p. 1686. DOI: 10.21105/joss.01686.
- [25] Yihui Xie. *Dynamic Documents with R and knitr*. 2nd. ISBN 978-1498716963. Boca Raton, Florida: Chapman and Hall/CRC, 2015. URL: <https://yihui.org/knitr/>.