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Behavioral, Attitudinal and Sociodemographic Characteristics of Gender Identity

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This document is our final report for the applied statistics project titled "Behavioral, Attitudinal and Sociodemographic Characteristics of Gender Identity". References will be frequently made to two papers published by the American Sociological Association: "Scaling Up: Representing Gender Diversity in Survey Research", by Magliozzi & al. and "Gender and Health: Beyond Binary Categorical Measurement", by Hart & al. In the following pages, the reader will find a presentation and an interpretation of the main results we obtained. All our models were coded in R.

To shorten the passage, some of those less interesting and non-significant variables in the tables are dropped. Running the R code in the appendix will show the complete table. Besides, due to our unfamiliarity to LaTeX, many blank spaces appear in the passage, so our paper is a little bit longer than 20 pages. Hope it does not cause any further problems.

Contents

1 Preface

1.1 Motivation

Gender is an important variable in studies of social behaviors. In our everyday life, individuals almost automatically make their own assessments of others' gender in order to navigate through the social world. However, the binary and traditional perception of gender is being challenged today. Being aware of the complexity of the concept "gender", we decided to focus more on the theme of gender identity. The main object of our research is to study the differences in behavior and social attitudes caused by people's perception of their gender.

The naive treatment of the gender variable in social surveys consists in defining two distinct categories: "masculine" and "feminine". However, this treatment has certain limits. Surveys carried out using such a process were quickly criticized for not reflecting the diversity of the population, since other groups such as transgender people were not taken into account. To remedy this, some questionnaires increase the number of categories available. Although this new method allows for a more faithful representation of the population, it raises a statistical problem. Indeed, the population of some groups are often too small to be able to serve as a support for further analyzes. Therefore, the number of categories proposed has to be reasonable despite remaining disparities between individuals within each group. For example, the addition of the "transgender" category allows for more diversity, but two transgender individuals, one of whom would rather identify as "woman" and the other rather as "man" will be grouped together whereas it is likely that they have many divergent traits. This kind of variations can actually be found even among cisgender men or women (a cisgender being defined as a person who assimilate his (her) current gender with the one he (she) was assigned at birth) since gender identity depends on personal perceptions. Hence, rather than fixed categories, it seems more judicious to consider gender to be a continuum of possibilities. To solve these problems in social surveys, it is possible to integrate gradual measures of femininity and masculinity in the form of scales in order to better reflect the diversity of genders and to refine the models of inequalities concerned.

This idea of gender scales as well as their use in statistical surveys was developed by the authors of two articles which we took as references: "Scaling Up: Representing Gender Diversity in Survey Research", by Magliozzi & al. and "Gender and Health: Beyong Binary Categorical Measurement", by Hart & al. The aim of the first paper is to introduce the gender scales and show their utility in addressing social inequalities through the example of marital status. The second one apply this method to the prediction of health for cisgender men and women.

Both articles are based on the same survey, the "Alternative Gender Measures Survey" (AGMS), which was carried out online in 2014 and concerned the adult population of the United States. In this database, gender is measured in two ways: first by a four options question with the categories "Woman", "Man", "Transgender" and "A gender not listed here" and then also by means of two independent scales providing a femininity and a masculinity score in seven points ("Not at All" or 0, then scores from 1 to 5, and "Very" or 6). These two variables are "self-rated" meaning that their value is based on the respondent's own judgement. Thus, we will also label them "first order" gender scales. Another version of these scales is available and will be referred to as "reflected appraisal gender scales" or "third order" gender scales. This time, the variables are obtained with the respondent's rating of how other people perceive their femininity and masculinity. These two kind of scales will later be compared through their predicting power in regressions. Thus we will be able to see which point of view prevails in the prediction of health: will it be the respondent's own evaluation of his gender or his opinion of how the society sees him?

Besides, using the self-rated gender scales, we derived a measure of *Self-rated gender non-conformity* defined as a binary variable equal to 1 for women (men) who consider themselves to be more masculine (feminine) than feminine (masculine). In a similar manner we also obtained the variable *Reflected appraisal gender nonconformity* based on the reflected gender scales.

In addition to these variables, the data also include a wide range of socio-demographic information on respondents such as age, education, and many more.

Our project of applied statistics will develop in three stages. First, we will study the results obtained by the authors in the two articles and try to reproduce them in order to familiarize ourselves with the survey. This will give us the opportunity to check for the robustness of the models used to predict health and discuss them according to the results. Eventually, we will conduct our own analysis on a variable source of gender inequalities which we had to choose. As the World Health Organization writes on their website, *"gender is a critical determinant of mental health and mental illness"* and *"gender differences occur particularly in the rates of common mental disorders - depression, anxiety and somatic complaints. These disorders, in which women predominate, affect approximately 1 in 3 people in the community and constitute a serious public health problem"* (for more details, see https://www.who.int/mental_health/prevention/genderwomen/en/). Since our data contains a measure of respondents' mental health, we decided to work on it for the third part of our project.

1.2 First Glance on the Data

On the basis of self-rated gender scales, we defined a polarization score which corresponds to the absolute value of the difference between the respondent's degrees of femininity and masculinity. For example, an individual who replied "Not at All" on his femininity scale and "Very" on his masculinity scale will have a score of 6. We further distinguished those who have a polarization score equal to 6 from those whose score is lower.

To show the difference between sex at birth and the degrees of masculinity and femininity, we have drawn their distribution according to sex as shown below.

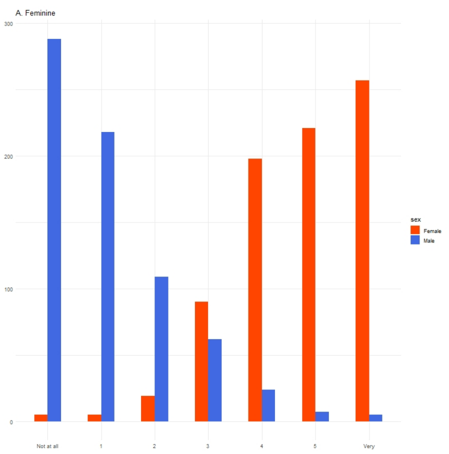

Figure 1: Distribution of Femininity

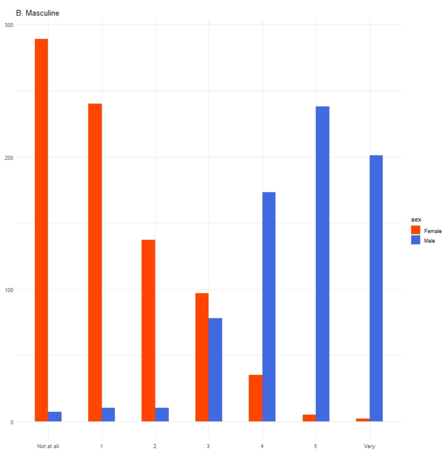

Figure 2: Distribution of Masculinity

Red (blue) : female (male) at birth

We found a fairly clear correspondence between sex at birth and degrees of masculinity and femininity. The graphs show, for example, that the majority of female respondents at birth have a high femininity score. Many are, moreover, those who also have a low degree of masculinity. However, we cannot overlook individuals who have opposite characteristics.

Then, we produced descriptive statistics to understand the links at stake. The results are listed in the table following. We can see that for individuals who were born as women, the

"Very" modality of the polarization score includes 24% of the respondents. However, their average femininity score is only 4.71 (standard deviation of 1.20), their average masculinity score of 1.22 (standard deviation of 1.23) and the average polarization score is only 3.65. This shows that it is reasonable and necessary to consider gender as a complex concept, since gender cannot be represented by a simple dichotomous choice between "feminine" and "masculine".

Index	Not at All	1	2	3	4	5	Very	Mean	SD
Polarisation(F)	8.0	8.0	11.0	18.0	18.0	12.0	24.0	3.65	1.89
Femininity(F)	0.6	0.7	2.5	11.4	25.0	27.8	31.9	4.71	1.20
Masculinity(F)	35.9	29.8	17.0	12.0	4.3	0.6	0.2	1.22	1.23
Polarisation(H)	7.0	6.0	13.0	15.0	21.0	14.0	23.0	3.74	1.82
Femininity(H)	40.4	30.4	15.2	8.8	3.5	1.0	0.7	1.10	1.24
Masculinity(H)	1.0	1.4	1.4	10.9	24.1	33.2	28.0	4.68	1.20

Table 1: Distribution of the polarisation score (percentage)

The gradient scale of gender allowed us to focus on the parameters that are related to respondents' gender identification. More precisely, we have looked into the relation between the polarisation of gender and several socio-demographic variables such as *region*, *age*, etc.

We chose to pick the indicator function of strongest polarization as a binary dependent variable, which means we note it as 1 if the polarization level is equal to 6, otherwise we note it as 0. Similarly, we considered every socio-demographic variables we selected as dummy independent variables. For example, for *South*, we note the variable as 1 if the respondent is living in the south of the US or we note it as 0 in all other cases. Then we did simple linear regressions of the strong polarization on every single binary socio-demographic variable. In the following table, we got the percentage of the strongly polarized persons in each group as well as the p values of t-tests from the regressions.

Table 2: Socio-demographic variables and polarization level

	Very polarized (%)	p value	Number of observations
Gender			
Cisgender	23.9	0.45	1514
Transgender	12.5		8
Sex at birth			
Female	24.3	0.63	805
Male	23.3		717
Region			
South	27.3*	0.015	571
West	23.0	0.638	374
Midwest	18.6*	0.014	312
Northeast	24.0	0.951	262
Age			
Over 30	27.7***	0	812
30 and younger	19.5		709
Sexual orientation			
Heterosexual or straight	26.0***	0	1375
Gay, lesbian, homosexual or bisexual	4.1		147
Self-identified race			
White	22.3**	0.003	1237
Black	48.5***	0	101
All other responses	20.7	0.278	184
Party affiliation			
Democrat	25.7	0.164	619
Republican	30.8**	0.004	263
Independent	18.6***	0	580
All other responses	25.0	0.831	60
Total	23.9		1522

Note: $^{*}p<0.05$; $^{**}p<0.01$; $^{***}p<0.001$

From Table 2 , we can see that a larger proportion of cisgender individuals have a high polarization level in comparison with transgender people. On the other hand, the highly polarized indicator has no significant relation with neither gender nor sex at birth. Nevertheless, significant relations appear between other variables in the table. If we look at *Region*, for example, we find that respondents living in the southern United States are significantly more likely to have a very high polarization level than those living elsewhere. There are also disparities in modalities for *Race* and *Party affiliation*. Faced with such results, one might think that it reflects the impact of cultural differences on the polarization level. Besides, the respondent's age and sexual orientation also seem to have a role to play in determining the polarisation level. In fact, respondents over the age of 30 more often have a high polarization level and the relation is strongly significant. However, it is difficult to say whether this trend is due to the difference between generations over time or to the process of aging itself. As for sexual orientation, it shows that the proportion of high polarization level is much higher in heterosexuals than in others.

Note that for some variables, there is a fairly huge difference in terms of sample size between groups.

2 Gender Scales, Marital Status, and Health

2.1 Marital Status

Before we started our analysis on the relation between gender and health, we studied the relation between the polarization level and marital status as a first application. The introduction of gender scales in surveys makes it possible to use more precise models and to better account for disparities. In our case, we were interested in the marital status of the respondents (married or unmarried). We considered two regression models for this variable. First, we performed a logistic regression of marital status on a series of socio-demographic variables close to that used to obtain Table 3. To highlight the importance of the scales of masculinity and femininity, we then regressed marital status on both the high polarization indicator and the previous socio-demographic variables.

Table 3: Marital status and socio-demographic variables

	Without gender polarization	z value	With gender polarization	z value
Gender polarization				
Very polarized			1.565***	3.305
Sex *(ref: Female)*				
Male	0.528***	-5.433	0.524***	-5.478
Region (ref: South)				
Midwest	0.886	-0.777	0.904	-0.647
Northeast	0.703*	-2.075	0.701*	-2.088
West	0.855	-1.053	0.864	-0.983
Education	1.116***	5.203	1.120***	5.350
Age	1.035***	6.675	1.033***	6.337
Sexual orientation *(ref: Heterosexual)*				
Gay, lesbian, homosexual or bisexual	0.437***	-3.709	0.475***	-3.307
Party affiliation				
Independent	1.342*	2.23	1.378*	2.416
Republican	2.508***	5.672	2.473***	5.563
Other responses	0.905	-0.304	0.895	-0.338
Constant	0.048***	-7.896	0.042***	-8.124

Note: *p<0.05; **p<0.01; ***p<0.001

The two regressions highlight the significant impact of sex at birth, sexual orientation and party affiliation on marital status. It is therefore less common for individuals in the Gay, lesbian, homosexual or bisexual group to be married than heterosexual individuals, since homosexual marriage had not yet been legalized everywhere at the time of data collection. Conversely, Republicans get married more often than Democrats. One might think it is due to a more conservative way of thinking.

The introduction of the polarization indicator in the second regression shows that individuals with a higher polarization level are more often married than others. In addition, the link between this variable and marital status is significant, which suggests that the first regression omitted an important explanatory variable to be taken into account in analyzes of marital status. On the other hand, the meaning of the causal link is not known: a higher polarization level could lead to marriage, or else marriage could accentuate gender identification.

2.2 Gender and Health

Our data set has a three-level variable which represents the respondent's own evaluation on his (her) health situation. This variable will be referred to as "self-rated health" and has the levels “poor, fair”, “good”, and “excellent”, noted 1, 2 and 3, respectively. We will use it as our outcome variable.

2.2.1 Comparisons of different predictors

Table 21 shows the results of the regression in which we take self-rated gender scales as predictors and self-rated health as dependent variable in both cisgender women and cisgender men's cases.

The first three models are about women's case, they respectively include self-rated femininity, self-rated masculinity, and both. Model 1a shows that self-rated femininity has a significant positive effect on self-rated health scale for women while the model 2a shows that self-rated masculinity has no significant effect. When the model includes both self-rated femininity and self-rated masculinity, it is still the effect of the former one which overweights the effect of the latter one (which is always not significant) as the model 3a tells us. The model 1a and model 3a have a very close R square, but the model 1a fits better since the BIC and AIC criterions are smaller.

The three models on the right side are about men's case. Model 1b shows that men's self-rated femininity has a significant negative effect on their self-rated health scale (the coefficient is not significant in the article) while model 2b shows a positive effect of their self-rated masculinity. When we take the two independent variables into account, model 3b reveals a more powerful effect of self-rated masculinity. Besides, model 2b is a better than model 3b since it has smaller BIC and AIC.

In general, for both cisgender women and cisgender men, the self-rated scale of their own gender is the better predictor of their self-rated health scale.

Table 4: Self-rated Gender Scales as Predictors of Self-rated Health

	Cisgender Women			*Cisgender Men*		
	Model 1a	Model 2a	Model 3a	Model 1b	Model 2b	Model 3b
Self-rated femininity	0.047*		0.055*	−0.042*		0.007
	(0.019)		(0.023)	(0.020)		(0.022)
Self-rated masculinity		−0.017	0.014		0.110***	0.114***
		(0.019)	(0.023)		(0.020)	(0.023)
Constant	1.348***	1.581***	1.291***	1.360***	0.813***	0.786***
	(0.175)	(0.158)	(0.200)	(0.169)	(0.184)	(0.202)
Observations	795	795	795	713	713	713
R^2	0.071	0.064	0.071	0.065	0.097	0.097
Adjusted R^2	0.054	0.048	0.053	0.046	0.079	0.078
AIC	1,471.812	1,477.088	1,473.461	1,371.347	1,346.710	1,348.599
BIC	1,546.666	1,551.941	1,552.993	1,444.459	1,419.822	1,426.280

Note: *p<0.05; **p<0.01; ***p<0.001

Seeing that self-rated gender scales can be useful to predict self-rated health, we wondered if the same kind of effect could be found regarding the reflected appraisal gender scales, and in this case which variable is a better predictor. To find out, we compared the two kind of scales by running four regression models. The results in table 5 show a clear distinction between cisgender women and cisgender men.

The regression model 1a only includes reflected appraisal femininity as independent variable whereas model 2a includes both self-rated femininity and reflected appraisal femininity. From model 1a, we can see that reflected appraisal femininity has a positive link with self-rated health and that this relation is very significant (p value smaller than 0.01). However, when we add self-rated femininity, reflected appraisal femininity remains significant, which is by the way not the case in the article, but the coefficient for self-rated femininity is close to zero and non significant. This result can be compared to those of model 1a in table 21 and we understand that in the case of cisgender women, reflected appraisal femininity has a better predictive power

Table 5: Comparing Self-rated and Reflected Appraisal Gender Scales as Predictors of Self-rates Health

	Cisgender Women		*Cisgender Men*	
	Model 1a	Model 2a	Model 1b	Model 2b
Reflected appraisal femininity	0.062**	0.063*		
	(0.020)	(0.031)		
Self-rated femininity		−0.001		
’		(0.030)		
Reflected appraisal masculinity			0.096***	0.027
			(0.020)	(0.032)
Self-rated masculinity				0.089**
				(0.032)
Constant	1.255***	1.256***	0.894***	0.792***
	(0.179)	(0.180)	(0.184)	(0.186)
Observations	795	795	713	713
R^2	0.076	0.076	0.088	0.098
Adjusted R^2	0.059	0.058	0.069	0.078
AIC	1467.594	1469.593	1353.931	1347.987
BIC	1542.447	1549.125	1427.042	1425.668

Note: *p<0.05; **p<0.01; ***p<0.001

Models include control variables omitted in this table. See appendix for detailed regressions.

on self-rated health. Besides, the BIC and AIC of model 1a are smaller than those of model 2a, meaning that model 1a fits better. It seems that when they are reporting their health situation, cisgender women are more influenced by how they think other people see their gender than their own opinion on it.

Models 1b and 2b are similar to models 1a and 2a but are ran for cisgender men only. This time, we can see from model 1b that reflected appraisal masculinity is positively and significantly related to self-rated health but when we add self-rated masculinity in model 2b, the link between reflected appraisal and health is no longer significant whereas the coefficient for self-rated masculinity becomes significant. The BIC and AIC indicate also that model 2b is better. Thus, for cisgender men, self-rated masculinity has more predictive power on self-rated health than reflected appraisal masculinity. The situation is therefore opposed to women's, their own point of view matters more.

In any case, it appears that gender scales are strongly linked to self-rated health. No matter whether it is self-rated or reflected, femininity has a positive impact on self-rated health for cisgender women and masculinity on cisgender men. This is why we wanted to know what happens for people who are gender non-conforming, in other words women who are more masculine than feminine or men who are more feminine than masculine. Like for the gender scales, we have two points of view available for this notion : self-rated nonconformity and reflected appraisal nonconformity. We used these two variables and their interaction term to run regressions for cisgender women and for cisgender men as presented in table 6.

Model 1a shows us that self-rated non-conformity has little and non-significant impact on self-rated health for women. However, when we add reflected appraisal non-conformity in the model, this variable is significantly associated with worse reported health. Thus we understand that reflected appraisal of gender non-conformity has more impact on reported health than self rated non-conformity. However, model 3a shows that gender non-conformity does not always have a negative effect on reported health: a woman who considers herself to be gender non-conforming and thinks that other people agree with her will tend to report better health since

Table 6: Comparing Self-rated and reflected Appraisal Gender Nonconformity as Predictors of Self-rated Health

	Cisgender Women			*Cisgender Men*		
	Model 1a	Model 2a	Model 3a	Model 1b	Model 2b	Model 3b
Self-rated nonconformity	−0.003	0.095	−0.078	−0.240	−0.091	−0.156
	(0.115)	(0.123)	(0.153)	(0.131)	(0.142)	(0.176)
Reflected appraisal nonconformity		−0.253*	−0.374**		−0.344**	−0.390**
		(0.111)	(0.128)		(0.127)	(0.148)
Self-rated nonconformity x Reflected appraisal nonconformity			0.485			0.184
			(0.254)			(0.299)
Constant	1.552***	1.550***	1.571***	1.312***	1.313***	1.310***
	(0.155)	(0.155)	(0.155)	(0.166)	(0.165)	(0.165)
Observations	795	795	795	713	713	713
R^2	0.063	0.070	0.074	0.064	0.073	0.074
Adjusted R^2	0.047	0.052	0.055	0.045	0.053	0.052
AIC	1477.905	1474.634	1472.919	1372.559	1367.146	1368.756
BIC	1552.758	1554.166	1557.129	1445.671	1444.827	1451.007

Note: *p<0.05; **p<0.01; ***p<0.001

Models include control variables omitted in this table. See appendix for detailed regressions.

the coefficient in the regression is positive and sufficient to counterbalance the one for reflected appraisal. However, we found that this coefficient is not significant unlike in the article.

The situation is similar when we consider cisgender men. In model 1b, we see that self-rated gender non conformity has a negative impact on self-rated health but it is not significant. However, the association between reflected appraisal and self-rated health is strongly significant in model 2b. For model 3b, we can see that the interaction term is positive but not significant while the coefficient for reflected appraisal remains strongly significant. Besides, model 2b has smaller AIC and BIC which indicates better fit. Thus we find that reflected appraisal non-conformity is more strongly related to worse self-rated health than self-rated non-conformity.

2.2.2 Including control variables for survey condition

After running the models in the article "Gender and Health: Beyond Binary Categorical Measurement", we were rather surprised to find simultaneously different coefficients and p values. After a while, we realised that the reason of this deviation was that we forgot to include some control variables in our regression models. These variables are referred to as "controls for survey condition". The three of them will be named in this report: *Position of modules sex and gender in the survey*, *Position of gender scales* and *Position of the first order scales compared to third order scales.* In fact, the order of some questions in the survey was randomized and kept in memory by these variables in order to see if their position had an impact on the report of health by the respondents. *Position of modules sex and gender in the survey* indicates the position of these two groups of questions in the survey (0 if after *cohort*, 1 if after *sexsex18*); *Position of gender scales* equals to 0 if the scales are shown after the sex and categorical gender items, and 1 if they are shown before; and finally Position of the first order scales compared to third order scales equals to 0 if the first order scales are shown after the third order scales, and 1 if they are shown before.

By including these variables, we found the same results as in the paper regarding the coefficient and their significance. This means that the position of modules about gender in the survey does have an impact.

In table 7, one can notice that the introduction of controls variables made self-rated femininity lose its significance in model 1b for cisgender men.

Table 7: Self-rated Gender Scales as Predictors of Self-rated Health (including controls for survey condition)

	Cisgender Women			*Cisgender Men*		
	Model 1a	Model 2a	Model 3a	Model 1b	Model 2b	Model 3b
Self-rated femininity	0.045*		0.055*	−0.039		0.011
	(0.019)		(0.023)	(0.020)		(0.022)
Self-rated masculinity		−0.014	0.018		0.109***	0.114***
		(0.019)	(0.023)		(0.020)	(0.023)
Position of modules sex and gender in the survey	−0.053	−0.057	−0.051	0.094	0.086	0.087
	(0.051)	(0.051)	(0.051)	(0.053)	(0.052)	(0.052)
Position of gender scales	−0.111*	−0.110*	−0.114**	0.038	0.038	0.038
	(0.043)	(0.043)	(0.043)	(0.047)	(0.046)	(0.046)
Position of the first order scales compared to third order scales	−0.027	−0.028	−0.027	−0.085	−0.089	−0.090
	(0.043)	(0.043)	(0.043)	(0.047)	(0.046)	(0.046)
Constant	1.459***	1.680***	1.385***	1.351***	0.820***	0.780***
	(0.180)	(0.162)	(0.204)	(0.171)	(0.187)	(0.204)
Observations	795	795	795	713	713	713
R^2	0.080	0.074	0.081	0.075	0.106	0.107
Adjusted R^2	0.060	0.054	0.060	0.052	0.084	0.083
AIC	1469.411	1474.602	1470.809	1370.037	1345.298	1347.051
BIC	1558.299	1563.491	1564.376	1456.858	1432.118	1438.441

Note: *p<0.05; **p<0.01; ***p<0.001

Models include control variables omitted in this table. See appendix for detailed regressions.

Survey conditions also have an influence on the regression models we used to compared self-rated gender and reflected appraisal gender as predictors of health. In fact, we can see in table 5 that the coefficient for *Reflected appraisal femininity* in model 2a for cisgender women is significant, with a p value equal to 0.04209. But when the condition variables are took into account, this p value jumps to 0.08033 in the regression presented in table 8.

Previously, we found in table 6 model 1a that the coefficient for *Self-rated nonconformity* is close to zero and negative. After including the controls for survey condition in table 8, even if this coefficient is still not significant and close to zero, it becomes positive. Thus, the inclusion of survey conditions inverses the interpretation that one can make about the link between self-rated nonconformity and self-rated health.

Besides, the interaction term between *Self-rated nonconformity* and *Reflected appraisal nonconformity* is significant in table 8 with a p value equal to 0.04594.

Therefore, we concluded that the position of the gender modules in the survey has an important role to play.

Moreover, we can see in table 7, 8 and 9 that for all the models, the position of the gender scales in the survey (before or after the sex and categorical gender items) has a significant negative association with self-rated health for cisgender women. This means that if the scales are presented before the sex and categorical gender items in the survey (equivalent to *Position of gender scales* = 1), a cisgender woman tends to report worse health. On the contrary, the effect of *Position of gender scales* is positive for cisgender men but not significant. This shows again a difference in behavior between men and women.

Table 8: Comparing Self-rated and Reflected Appraisal Gender Scales as Predictors of Self-rated Health (including controls for survey condition)

	Cisgender Women		*Cisgender Men*	
	Model 1a	Model 2a	Model 1b	Model 2b
Reflected appraisal femininity	0.058**	0.054		
	(0.020)	(0.031)		
Self-rated femininity		0.004		
		(0.030)		
Reflected appraisal masculinity			0.095***	0.028
			(0.021)	(0.032)
Self-rated masculinity				0.087**
				(0.032)
Position of modules sex and gender in the survey	−0.055	−0.055	0.085	0.085
	(0.051)	(0.051)	(0.053)	(0.052)
Position of gender scales	−0.102*	−0.102*	0.054	0.043
	(0.043)	(0.043)	(0.047)	(0.047)
Position of the first order scales compared to third order scales	−0.022	−0.023	−0.088	−0.088
	(0.043)	(0.043)	(0.047)	(0.046)
Constant	1.373***	1.371***	0.885***	0.795***
	(0.186)	(0.186)	(0.187)	(0.189)
Observations	795	795	713	713
R^2	0.084	0.084	0.098	0.107
Adjusted R^2	0.064	0.063	0.076	0.084
AIC	1466.294	1468.276	1352.059	1346.517
BIC	1555.182	1561.843	1438.879	1437.906

Note: *p<0.05; **p<0.01; ***p<0.001

Models include control variables omitted in this table. See appendix for detailed regressions.

Table 9: Comparing Self-rated and Reflected Appraisal Gender Nonconformity as Predictors of Self-rated Health (including controls for survey condition)

	Cisgender Women			*Cisgender Men*		
	Model 1a	Model 2a	Model 3a	Model 1b	Model 2b	Model 3b
Self-rated nonconformity	0.009	0.099	−0.082	−0.231	−0.074	−0.124
	(0.115)	(0.123)	(0.152)	(0.131)	(0.141)	(0.176)
Reflected appraisal nonconformity		−0.233*	−0.360**		−0.361**	−0.396**
		(0.111)	(0.128)		(0.127)	(0.148)
Self-rated nonconformity x Reflected appraisal nonconformity			0.507*			0.142
			(0.253)			(0.298)
Position of modules sex and gender in the survey	−0.055	−0.055	−0.057	0.098	0.107*	0.106*
	(0.051)	(0.051)	(0.051)	(0.053)	(0.053)	(0.053)
Position of gender scales	−0.113**	−0.108*	−0.110*	0.037	0.035	0.035
	(0.043)	(0.043)	(0.043)	(0.047)	(0.047)	(0.047)
Position of the first order scales compared to third order scales	−0.029	−0.023	−0.024	−0.088	−0.090	−0.089
	(0.043)	(0.043)	(0.043)	(0.047)	(0.047)	(0.047)
Constant	1.657***	1.649***	1.673***	1.309***	1.310***	1.308***
	(0.160)	(0.159)	(0.160)	(0.169)	(0.168)	(0.168)
Observations	795	795	795	713	713	713
R^2	0.074	0.079	0.084	0.074	0.084	0.085
Adjusted R^2	0.054	0.058	0.061	0.051	0.061	0.060
AIC	1475.104	1472.605	1470.516	1370.746	1364.511	1366.279
BIC	1563.992	1566.172	1568.761	1457.566	1455.901	1462.238

Note: *p<0.05; **p<0.01; ***p<0.001

Models include control variables omitted in this table. See appendix for detailed regressions.

3 Robustness check for the Models in "Gender and Health"

By reading the article, we noticed that the authors valued a lot the significance of the coefficients and based a great part of their interpretations on it. However, all the regression models conducted in the paper start by splitting the data into two separate samples: cisgender women and cisgender men. Consequently, each regression is ran over only more or less half of the data available. Besides, the authors chose to use ordinary least squares regressions despite the fact that the variable for self-rated health is discrete and has only three levels. Hence, we thought it is necessary to complete some robustness checks of the previously obtained results by running regressions using firstly the whole sample, and then using ordinal logistic regressions which might be more appropriate here.

3.1 Involving the Whole sample

We wanted to test whether similar results can be found with this method and thus see whether the significance is due to sub-sampling. To run the regressions, we created a binary variable *Cisgender woman* which takes the value 1 if the respondent is a cisgender woman and 0 if his is not, that is if he is a cisgender man. Then, we added it in our models as well as its interaction terms with the independent variables and conducted the regressions with the whole sample.

For the models initially presented in table 7, we obtained with our new approach table 10. We can see that in model 1, the coefficient before *Self-rated femininity* is negative meaning that in average, having a highest score of femininity lowers health by 0.042 points but if the respondent is a cisgender woman, the interaction term between *Self-rated femininity* and *Cisgender woman* shows that she will also in average report health that is 0.085 points higher than cisgender men. Thus, the difference between the two shows that for a cisgender woman, being more feminine is associated with better health and we find a relation similar to the one depicted in table 7. We can also notice that the significance is here preserved. For model 2, we find similar results and significance of the coefficient is also preserved. However in model 3, although the coefficients are similar, we lose the significance of the variable *Self-rated femininity* among cisgender women but the interaction term between *Cisgender woman* and *Self-rated masculinity* is significant. The interaction terms between *Cisgender woman* and the scales express the difference between cisgender women and cisgender men regarding the influence of each gender scale on self-rated health. We see here that they are significant which somehow justify the sub-sampling.

As for models 1a and 2a originally presented in table 8 and corresponding here to table 11, we found similar relations between the independent variables and self-rated health and their significance is preserved. Moreover in both models the coefficients before the interaction term between *Reflected appraisal femininity* and *Cisgender woman* are significant, showing again the distinction between cisgender women and cisgender men.

Finally, we produced table 12 which corresponds to table 8. Again, we see no important change in the direction of the relations but this time the coefficients of the interaction terms are all non significant. This means that we cannot reject the null hypothesis that these coefficients are equal to zero when standard thresholds are used. More explicitly, gender nonconformity does not have an impact on health that is significantly different for cisgender women compared to cisgender men. So in this case separating cisgender women and cisgender men in two sub-samples may not be so legitimate.

Table 10: Self-rated Gender Scales as Predictors of Self-rated Health (interaction term with the fact of being a cisgender woman)

	Model 1	Model 2	Model 3
Self-rated femininity	−0.042*		0.010
	(0.019)		(0.021)
Self-rated masculinity		0.106***	0.112***
		(0.020)	(0.022)
Cisgender woman	−0.193*	0.571***	0.316
	(0.098)	(0.102)	(0.177)
Self-rated femininity x Cisgender woman	0.085**		0.044
	(0.027)		(0.032)
Self-rated masculinity x Cisgender woman		−0.122***	−0.096**
		(0.028)	(0.032)
Constant	1.521***	0.983***	0.947***
	(0.117)	(0.144)	(0.163)
Observations	1,508	1,508	1,508
R^2	0.064	0.077	0.080
Adjusted R^2	0.052	0.065	0.067

Note: *p<0.05; **p<0.01; ***p<0.001

Models include control variables omitted in this table. See appendix for detailed regressions.

Table 11: Comparing Self-rated and Reflected Appraisal Gender Scales as Predictors of Self-rated Health (interaction term with the fact of being a cisgender woman)

	Model 1	Model 2
Reflected appraisal femininity	−0.057**	−0.056
	(0.020)	(0.031)
Self-rated femininity		−0.001
		(0.030)
Cisgender woman	−0.273**	−0.273**
	(0.101)	(0.105)
Reflected appraisal femininity x Cisgender woman	0.113***	0.113*
	(0.028)	(0.044)
Cisgender woman x Self-rated femininity		0.001
		(0.043)
Constant	1.531***	1.531***
	(0.117)	(0.118)
Observations	1,508	1,508
R^2	0.068	0.068
Adjusted R^2	0.056	0.055

Note: *p<0.05; **p<0.01; ***p<0.001

Models include control variables omitted in this table. See appendix for detailed regressions.

Table 12: Comparing Self-rated and Reflected Appraisal Gender Nonconformity as Predictors of Self-rated Health (interaction term with the fact of being a cisgender woman)

	Model 1	Model 2	Model 3
Self-rated nonconformity	−0.238	−0.081	−0.137
	(0.128)	(0.139)	(0.172)
Reflected appraisal nonconformity		−0.361**	−0.400**
		(0.125)	(0.144)
Self-rated nonconformity x Reflected appraisal nonconformity			0.157
			(0.291)
Cisgender woman	0.042	0.041	0.045
	(0.034)	(0.034)	(0.034)
Self-rated nonconformity x Cisgender woman	0.259	0.191	0.062
	(0.171)	(0.185)	(0.230)
Cisgender woman x Reflected appraisal nonconformity		0.136	0.044
		(0.166)	(0.191)
Self-rated nonconformity x Cisgender woman x Reflected appraisal nonconformity			0.356
			(0.388)
Constant	1.472***	1.470***	1.478***
	(0.115)	(0.115)	(0.115)
Observations	1,508	1,508	1,508
R^2	0.060	0.068	0.071
Adjusted R^2	0.048	0.055	0.056

Note: *p<0.05; **p<0.01; ***p<0.001

Models include control variables omitted in this table. See appendix for detailed regressions.

3.2 Ordinal Logistic Regression Models

In this part, we still include control variables for survey condition and take the same sub-samples (grouped as cisgender men and cisgender women) as what we have done before to see the significance of the association between gender and self-rated health, and here we just replace the multiple linear regressions by ordinal logistic regressions. We will still use our three-level self rated health variable (as a reminder the levels are “poor, fair”, “good”, and “excellent”, and noted 1, 2 and 3) and the same independent variables as in tables 7 to 9

Tables 13 to 15 represent the results we got and show comparable significance for gender coefficients as in our previous work. Regarding the comparison between self-rated femininity and masculinity as predictors of health level in table 13, we got that cisgender women with higher femininity have better odds to have a higher self-rated health, and femininity is more important than masculinity. Similarly, model 1a shows a better goodness of fit (lower AIC and BIC). So in model 1a, we would say that for a one unit increase in self-rated femininity, we expect a 0.155 increase in the expected value of self-rated health on the log odds scale, given all of the other variables in the model are held constant. There is not much change for cisgender men compared to previous work.

As for comparing the effect of self-rated and reflected appraisal gender scales on health level (table 14), we got that, for cisgender women, the effect of reflected appraisal gender scale is more significant than the self-rated one and model 1a also shows a better goodness of fit and a more precise prediction. While for cisgender men, the self-rated one is the better predictor for self-rated health and model 2b, which includes both self-rated and reflected gender scale, fits better than model 1b according to AIC and BIC.

From table 15, we can see how self-rated and reflected gender nonconformity impact the model. The result and analysis is quite similar as before, we can conclude that reflected appraisal non-conformity is more strongly related to worse self-rated health than self-rated non-conformity.

Table 13: Ordinal Logistic Regressions for Self-rated Gender Scales as Predictors of Self-rated Health

	Cisgender Women			*Cisgender Men*		
	Model 1a	Model 2a	Model 3a	Model 1b	Model 2b	Model 3b
Self-rated femininity	0.155*		0.185*	−0.126		0.055
	(0.065)		(0.077)	(0.065)		(0.077)
Self-rated masculinity		−0.046	0.056		0.384***	0.413***
		(0.064)	(0.077)		(0.064)	(0.077)
Observations	795	795	795	713	713	713
Akaike Inf. Crit.	1,455.237	1,460.454	1,456.718	1,349.417	1,321.825	1,323.251
Bayesian Inf. Crit.	1,544.126	1,549.342	1,550.285	1,436.237	1,408.645	1,414.640

Note: *p<0.05; **p<0.01; ***p<0.001

Models include control variables omitted in this table. See appendix for detailed regressions.

Table 14: Ordinal Logistic Regressions for Comparing Self-rated and Reflected Appraisal Gender Scales as Predictors of Self-rated Health

	Cisgender Women		*Cisgender Men*	
	Model 1a	Model 2a	Model 1b	Model 2b
Reflected appraisal femininity	0.197**	0.186		
	(0.066)	(0.105)		
Self-rated femininity		0.014		
		(0.103)		
Reflected appraisal masculinity			0.330***	0.097
			(0.061)	(0.097)
Self-rated masculinity				0.310**
				(0.102)
Observations	795	795	713	713
Akaike Inf. Crit.	1,452.122	1,454.104	1,329.759	1,322.953
Bayesian Inf. Crit.	1,541.011	1,547.671	1,416.579	1,414.343
Note:			*p<0.05; **p<0.01; ***p<0.001	

Models include control variables omitted in this table. See appendix for detailed regressions.

Table 15: Ordinal Logistic Regressions for Comparing Self-rated and Reflected Appraisal Gender Nonconformity as Predictors of Self-rated Health

	Cisgender Women			*Cisgender Men*		
	Model 1a	Model 2a	Model 3a	Model 1b	Model 2b	Model 3b
Self-rated nonconformity	0.008	0.305	−0.289	−0.759	−0.250	−0.433
	(0.406)	(0.449)	(0.560)	(0.406)	(0.449)	(0.560)
Reflected appraisal nonconformity		−0.811*	−1.219**		−1.139**	−1.270**
		(0.404)	(0.472)		(0.404)	(0.472)
Self-rated nonconformity x Reflected appraisal nonconformity			1.708			0.512
			(0.939)			(0.939)
Observations	795	795	795	713	713	713
Akaike Inf. Crit.	1,460.973	1,458.205	1,456.283	1,350.017	1,343.950	1,345.653
Bayesian Inf. Crit.	1,549.862	1,551.771	1,554.528	1,436.837	1,435.339	1,441.612
Note:				*p<0.05; **p<0.01; ***p<0.001		

Models include control variables omitted in this table. See appendix for detailed regressions.

4 Gender and Mental Health

Since gender affects people's physical health, we also believe that our mental health is impacted by gender. In the dataset, mental health was measured by how many days in the past 30 days have one suffered from mental problems, so a higher value leads to worse mental conditions. Firstly, we drew the densities of mental health separating men and women in the figure 3.

The two curves present an asymmetry and the one for men seems to be more concentrated on the left (small values). More precisely, we found an average of 6.75 and a standard error of 8.76 for women and an average and an standard error of 6.05 and 9.06 for men. This inspires us to go further.

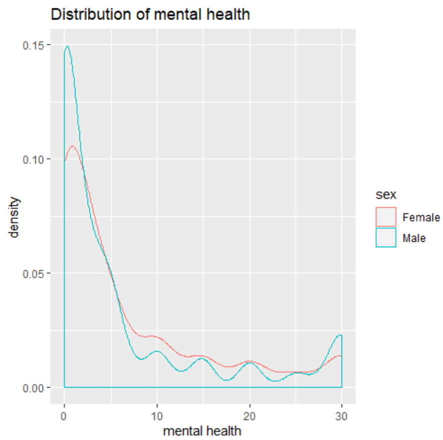

Figure 3: Distribution of the variable

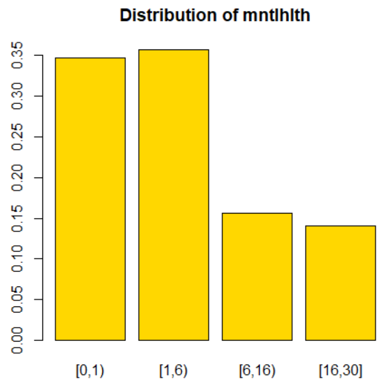

Figure 4: Breaks of the variable

4.1 Separating the whole sample

Our first idea is to use tobit regressions since the variable for mental health can be seen as a continuous bounded variable. In fact, another way to treat this variable is to break it into several intervals and apply discrete models, just like what we did for physical health. We found out that most of the values were distributed around 0, 10, 15, 20, 25, and 30, which can also be found out from the figure of distribution above.

We also took survey conditions into the regression module. As what we did previously, we separated men and women from the whole data and tried to find out whether self-rated masculinity and self-rated femininity have significant influences towards mental health. The results of the tobit regression are shown in table 24. The first three rows are the results for the sub-database for women. The first model is considered to be the best-fitted, since it has the smallest AIC and BIC. And as for the sub-database for men, the second model is better-fitted among the three. We conclude that in general, both women's femininity and men's masculinity have a negative effect on the variable (which means a positive effect on their mental health), but men's masculinity has a stronger effect. We can also find some other interesting results from the table. There is a significant negative link between being bisexual and mental health in the regression only in the sub-database of women. There is also a significant, but this time positive, correlation between being married and mental health for women. On the other hand, we find income to be significantly associated with mental health only in the sub-database for men. This might be due to the different social responsibilities that women and men play in the modern society. Generally, women get mentally healthier if they are engaged in a marriage, while the happiness of men could come from their income. Being a bisexual woman may lead to worse mental health, but it is not the case for men. We feel that it is possible that generally bisexual women are suffering from greater social pressure.

We have also applied simple linear regression models using the transformed mental health variable. We found similar results in table 25 as what we found earlier.

Also, still using tobit regression models, we tried to figure out whether it is self-rated gender scales which affects individual's mental health or rather reflected appraisal gender scales. To do this, we made Table 32, where models with only self-rated femininity or masculinity can be find in Table 25. We find out that, although in Table 32, model 1a and model 2a shows significant effects of reflected appraisal femininity or masculinity, when combining them with self-rated

Table 16: Self-rated Gender Scales as Predictors of Mental Health (Tobit regression)

	Cisgender Women			*Cisgender Men*		
	Model 1a	Model 2a	Model 3a	Model 1b	Model 2b	Model 3b
Self-rated femininity	−1.224**		−1.439**	1.417**		0.675
	(0.399)		(0.482)	(0.488)		(0.540)
Self-rated masculinity		0.433	−0.386		−2.029***	−1.714**
		(0.404)	(0.486)		(0.506)	(0.564)
Age	−0.055	−0.054	−0.061	−0.158*	−0.152*	−0.145*
	(0.040)	(0.041)	(0.040)	(0.062)	(0.062)	(0.062)
Income	−0.175	−0.207	−0.179	−0.572***	−0.547**	−0.544**
	(0.135)	(0.136)	(0.135)	(0.168)	(0.167)	(0.166)
Bisexual (ref = straight)	5.317**	5.780***	5.453***	4.700	4.593	4.095
	(1.634)	(1.649)	(1.642)	(3.347)	(3.301)	(3.322)
Married	−2.713**	−2.836**	−2.732**	−0.013	0.291	0.374
	(0.954)	(0.959)	(0.954)	(1.440)	(1.434)	(1.434)
Constant	18.411***	12.316***	20.000***	11.842**	22.935***	20.466***
	(3.742)	(3.389)	(4.241)	(4.331)	(4.761)	(5.149)
Observations	795	795	795	713	713	713
Log Likelihood	−2,253.776	−2,257.908	−2,253.460	−1,812.660	−1,808.849	−1,808.068
Wald Test	58.964***	50.651***	59.669***	59.328***	67.040***	68.470***
	(df = 17)	(df = 17)	(df = 18)	(df = 17)	(df = 17)	(df = 18)

Note: *p<0.05; **p<0.01; ***p<0.001

Models include control variables omitted in this table. See appendix for detailed regressions.

femininity or masculinity, their coefficients' absolute values drop drastically towards 0, while self-rated variables' absolute values remains statistically significant. Thus, in both cases of cisgender women and cisgender men, how a cisgender individual determine his/her gender is more strongly associated with his/her self-rated mental health.

Another possible factor in the aspect of gender that may affect people's mental health is people's gender nonconformity. But as for in Table 17, neither self-rated nonconformity nor reflected appraisal gender nonconformity are significant in the regression models. Thus, we do not believe that these two factors have an effect towards mental health.

4.2 Using the whole sample

Furthermore, we completed our analysis by computing models using the whole sample to see the effect of one's gender on his/her mental health level. We believe that tobit regression is a better model in this situation, so we applied it to try to find out the effects of masculinity and femininity on mental health.

As shown in Table 18, although self-rated femininity and masculinity are both significant in model 1 and model 2, when we combined them with each other in model 3, self-rated femininity does not keep its significance like self-rated masculinity does. Thus, we conclude that it is self-rated masculinity that has a positive effect to mental health. A higher level of self-rated masculinity usually leads to better self-rated mental health. Meanwhile, aging up, higher level of education, more income, being involved in a successful marriage and having strong self-rated femininity (masculinity) as a cisgender woman (man) all significantly lead to higher mental health levels, while being bisexual has a significantly negative effect on individual's self-rated mental health.

We also made Table 19 to see whether it is self-rated femininity or reflected appraisal

Table 17: Comparing Self-rated and Reflected Appraisal Gender Nonconformity as Predictors of Mental Health (Tobit Regressions)

	Cisgender Women			*Cisgender Men*		
	Model 1a	Model 2a	Model 3a	Model 1b	Model 2b	Model 3b
Self-rated nonconformity	−1.448	−1.554	2.819	5.026	3.029	3.769
	(2.380)	(2.525)	(3.095)	(3.189)	(3.496)	(4.388)
Reflected appraisal nonconformity		0.289	3.380		4.335	4.852
		(2.294)	(2.615)		(3.129)	(3.634)
Age	−0.064	−0.064	−0.061	−0.180**	−0.178**	−0.178**
	(0.040)	(0.040)	(0.040)	(0.062)	(0.062)	(0.062)
Income	−0.226	−0.225	−0.208	−0.598***	−0.591***	−0.590***
	(0.135)	(0.136)	(0.135)	(0.168)	(0.168)	(0.168)
Bisexual	6.186***	6.192***	6.011***	6.236	6.248	6.202
	(1.633)	(1.634)	(1.629)	(3.314)	(3.310)	(3.314)
Married	−2.867**	−2.867**	−2.760**	−0.341	−0.274	−0.253
	(0.958)	(0.958)	(0.955)	(1.439)	(1.437)	(1.438)
Self-rated nonconformity :Reflected appraisal nonconformity			−12.801*			−2.025
			(5.304)			(7.267)
Constant	13.186***	13.196***	12.542***	13.666**	13.648**	13.670**
	(3.329)	(3.330)	(3.326)	(4.283)	(4.275)	(4.275)
Observations	795	795	795	713	713	713
Log Likelihood	−2,258.298	−2,258.290	−2,255.368	−1,815.638	−1,814.683	−1,814.644
Wald Test	49.984***	49.996***	55.872***	53.554***	55.520***	55.594***
	(df = 17)	(df = 18)	(df = 19)	(df = 17)	(df = 18)	(df = 19)

Note: *p<0.05; **p<0.01; ***p<0.001

Models include control variables omitted in this table. See appendix for detailed regressions.

Table 18: Self-rated Gender Scales as Predictors of Self-rated Mental Health Using the Entire Sample (Tobit Regressions)

	Model 1	Model 2	Model 3
Self-rated femininity	1.384**		0.591
	(0.432)		(0.488)
Self-rated masculinity		−1.991***	−1.710***
		(0.450)	(0.509)
Cisgender woman	9.453***	−7.532**	1.986
	(2.183)	(2.314)	(3.972)
Age	−0.094**	−0.090**	−0.092**
	(0.034)	(0.035)	(0.035)
Education	−0.288*	−0.291*	−0.289*
	(0.139)	(0.139)	(0.138)
Income	−0.327**	−0.331**	−0.316**
	(0.105)	(0.105)	(0.104)
Bisexual	5.593***	5.859***	5.546***
	(1.514)	(1.515)	(1.515)
Married	−1.816*	−1.769*	−1.671*
	(0.807)	(0.807)	(0.805)
Self-rated femininity x Cisgender woman	−2.572***		−1.993**
	(0.616)		(0.713)
Self-rated masculinity x Cisgender woman		2.470***	
		(0.631)	
Cisgender woman x Self-rated masculinity			1.393
			(0.731)
Constant	9.440***	20.344***	18.242***
	(2.667)	(3.292)	(3.715)
Observations	1,508	1,508	1,508
Log Likelihood	−4,080.684	−4,079.216	−4,074.836
Wald Test	108.390***	111.177***	119.910***
	(df = 19)	(df = 19)	(df = 21)

Note: *p<0.05; **p<0.01; ***p<0.001

Models include control variables omitted in this table. See appendix for detailed regressions.

femininity that has a significant effect on women's mental health. Again, the absolute value of the coefficient of reflected appraisal femininity drops quickly towards 0 after self-rated femininity is introduced in the model. Thus, we conclude that how a woman determines her gender is more strongly associated with her self-rated mental health.

Table 19: Comparing Self-rated and Reflected Appraisal Gender Scales as Predictors of Self-rated Mental Health Using the Entire Sample (Tobit regressions)

	Model 1	Model 2
Reflected appraisal femininity	1.265**	0.414
	(0.451)	(0.695)
Cisgender woman	8.567***	9.822***
	(2.259)	(2.345)
Self-rated femininity		1.082
		(0.666)
Age	−0.093**	−0.092**
	(0.034)	(0.034)
Education	−0.284*	−0.289*
	(0.139)	(0.139)
Income	−0.341**	−0.328**
	(0.105)	(0.105)
Bisexual (ref = straight)	5.963***	5.616***
	(1.509)	(1.515)
Married	−1.905*	−1.811*
	(0.807)	(0.807)
Reflected appraisal femininity x Cisgender woman	−2.299***	−0.636
	(0.638)	(0.985)
Cisgender woman x Self-rated femininity		−2.105*
		(0.953)
Constant	9.842***	9.322***
	(2.677)	(2.684)
Observations	1,508	1,508
Log Likelihood	−4,082.903	−4,080.457
Wald Test	104.061***	108.848***
	(df = 19)	(df = 21)
Note:	*p<0.05; **p<0.01; ***p<0.001	

Models include control variables omitted in this table. See appendix for detailed regressions.

Again in Table 20, we tried to find out if self-rated nonconformity or reflected appraisal nonconformity can be another factor that affects mental health. However, in those three regression models, we did not find any significance regarding this two variables. This tells us that gender nonconformity is not a significant predictor of one's mental health.

5 Conclusion

We might sum up our works as follows.

Firstly, in order to obtain an intuitive understanding of the data and reveal the motivation, we perform some descriptive statistics of the gender scale, gender polarization and socio-demographic variables.

Secondly, we follow the tracks of the original articles. We examine the relation between marital status and gender polarization level by performing regressions of marital status on

Table 20: Comparing Self-rated and Reflected Appraisal Gender Nonconformity as Predictors of Self-rated Mental Health Using the Entire Sample (Tobit Regressions)

	Model 1	Model 2	Model 3
Self-rated nonconformity	4.754	2.741	3.340
	(2.888)	(3.164)	(3.965)
Cisgender woman	2.607***	2.693***	2.570***
	(0.765)	(0.773)	(0.774)
Reflected appraisal nonconformity		4.409	4.778
		(2.825)	(3.257)
Age	−0.108**	−0.107**	−0.105**
	(0.034)	(0.034)	(0.034)
Education	−0.262	−0.267	−0.277*
	(0.139)	(0.139)	(0.139)
Income	−0.364***	−0.360***	−0.351***
	(0.105)	(0.105)	(0.105)
Bisexual (ref = straight)	6.574***	6.584***	6.383***
	(1.510)	(1.509)	(1.509)
Married	−2.052*	−2.030*	−1.953*
	(0.807)	(0.807)	(0.806)
Self-rated nonconformity x Reflected appraisal nonconformity			−1.533
			(6.542)
Self-rated nonconformity x Cisgender woman	−6.394	−4.546	−0.461
	(3.832)	(4.164)	(5.164)
Cisgender woman x Reflected appraisal nonconformity		−3.827	
		(3.721)	
Reflected appraisal nonconformity x Cisgender woman			−0.854
			(4.275)
Self-rated nonconformity x Reflected appraisal nonconformity x Cisgender woman			−12.102
			(8.701)
Constant	11.229***	11.173***	10.902***
	(2.620)	(2.620)	(2.616)
Observations	1,508	1,508	1,508
Log Likelihood	−4,087.864	−4,086.629	−4,083.740
Wald Test	94.298***	96.790***	102.601***
	(df = 19)	(df = 21)	(df = 23)

Note: *p<0.05; **p<0.01; ***p<0.001

Models include control variables omitted in this table. See appendix for detailed regressions.

socio-demographic variables and with or without gender polarization. Notably, we found that individuals with a higher degree of gender polarization are more often married than than those with lower polarization.

Then we examine how gender may influence self-rated health in three ways using different predictors, namely self-rated gender scales, using both self-rated and reflected-appraisal gender scales, and using self-rated and reflected-appraisal gender non-conformity. We also added the experience control variables to our former models to see whether these factors will influence our results. We found that for both cisgender women and cisgender men a higher score on the self-rated gender scale corresponding to their own gender is associated with better reported health. Besides, there is a difference between men and women since other people's point of view on their gender have more predictive power for women but it is the contrary for men. As for gender non-conforming people, they may often report worse health but it is not the case when their perception of gender matches other people's point of view.

Then we notice there exists some points to refine in the model. The author of the original article has used the ordinary linear regression and separated the data into two subgroups, cisgender men and cisgender women. We replace the original regression methods by ordinal logistic regression without changing the rest of the models since the dependent variable, i.e. the self-rated health is an ordered categorical variable. And for robustness, we refine the model by conducting the regressions using the whole sample. Globally, we found similar results as before.

Finally, we follow the similar paths as before to treat the relation between gender and mental health, but using tobit regressions considering the characteristics of this different variable. This time, we found interesting links between some of the socio-demographic variables and mental health. These links are different for men and women which suggests a difference in behavior. Moreover, the more a cisgender women feels feminine, the healthier she tends to be mentally. And a similar result can be found with men and their score of masculinity. As for gender non-conformity, we did not find significant link between the fact of being gender non-conforming and mental health.

A Tables

We list here the 3 complete tables with all the control variables in Section 2.2.1.

Table 21: Self-rated Gender Scales as Predictors of Self-rated Health, complete table

	Cisgender Women			*Cisgender Men*		
	Model 1a	Model 2a	Model 3a	Model 1b	Model 2b	Model 3b
Self-rated femininity	0.047*		0.055*	−0.042*		0.007
	(0.019)		(0.023)	(0.020)		(0.022)
Self-rated masculinity		−0.017	0.014		0.110***	0.114***
		(0.019)	(0.023)		(0.020)	(0.023)
Age	−0.004	−0.004	−0.003	−0.003	−0.004	−0.004
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Education	0.022**	0.022**	0.021**	0.040***	0.041***	0.041***
	(0.008)	(0.008)	(0.008)	(0.009)	(0.009)	(0.009)
Income	0.019**	0.020**	0.019**	0.012	0.010	0.010
	(0.006)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Bisexual (ref = straight)	−0.217**	−0.234**	−0.222**	−0.243	−0.197	−0.202
	(0.080)	(0.081)	(0.081)	(0.140)	(0.136)	(0.138)
Gay, lesbian, homosexual (ref = straight)	0.194	0.165	0.183	−0.048	−0.009	−0.011
	(0.126)	(0.128)	(0.128)	(0.127)	(0.124)	(0.125)
Married	0.057	0.061	0.057	−0.009	−0.033	−0.032
	(0.046)	(0.046)	(0.046)	(0.058)	(0.057)	(0.057)
Black (ref = all else)	−0.031	−0.013	−0.029	0.199	0.139	0.140
	(0.103)	(0.103)	(0.103)	(0.134)	(0.132)	(0.132)
White (ref = all else)	0.075	0.077	0.078	0.118	0.132	0.132
	(0.074)	(0.074)	(0.074)	(0.076)	(0.075)	(0.075)
Hispanic origin	0.173	0.170	0.176	0.118	0.089	0.089
	(0.096)	(0.096)	(0.096)	(0.084)	(0.083)	(0.083)
Born in the US	−0.058	−0.057	−0.058	0.027	0.011	0.012
	(0.101)	(0.101)	(0.101)	(0.109)	(0.107)	(0.107)
Northeast (ref = Midwest)	0.064	0.060	0.064	−0.022	−0.023	−0.022
	(0.073)	(0.074)	(0.073)	(0.075)	(0.073)	(0.073)
South (ref = Midwest)	−0.020	−0.007	−0.021	−0.035	−0.030	−0.030
	(0.059)	(0.059)	(0.059)	(0.066)	(0.065)	(0.065)
West (ref = Midwest)	0.067	0.071	0.066	−0.103	−0.101	−0.101
	(0.065)	(0.065)	(0.065)	(0.071)	(0.070)	(0.070)
Constant	1.348***	1.581***	1.291***	1.360***	0.813***	0.786***
	(0.175)	(0.158)	(0.200)	(0.169)	(0.184)	(0.202)
Observations	795	795	795	713	713	713
R^2	0.071	0.064	0.071	0.065	0.097	0.097
Adjusted R^2	0.054	0.048	0.053	0.046	0.079	0.078
Residual Std. Error	0.604 (df = 780)	0.606 (df = 780)	0.604 (df = 779)	0.626 (df = 698)	0.615 (df = 698)	0.615 (df = 697)
F Statistic	4.234*** (df = 14; 780)	3.837*** (df = 14; 780)	3.971*** (df = 15; 779)	3.476*** (df = 14; 698)	5.351*** (df = 14; 698)	4.995*** (df = 15; 697)

Note: *p<0.05; **p<0.01; ***p<0.001

Table 22: Comparing self-rated and reflected appraisal gender scales as predictors of self-rated health, complete table

	Cisgender Women		*Cisgender Men*	
	Model 1a	Model 2a	Model 1b	Model 2b
Reflected appraisal femininity	0.062***	0.063**		
	(0.020)	(0.031)		
Self-rated femininity		−0.001		
		(0.030)		
Reflected appraisal masculinity			0.096***	0.027
			(0.020)	(0.032)
Self-rated masculinity				0.089***
				(0.032)
Age	−0.004**	−0.004**	−0.004	−0.004*
	(0.002)	(0.002)	(0.002)	(0.002)
Education	0.023***	0.023***	0.041***	0.041***
	(0.008)	(0.008)	(0.009)	(0.009)
Income	0.019***	0.019***	0.010	0.010
	(0.006)	(0.006)	(0.007)	(0.007)
Bisexual (ref = straight)	−0.213***	−0.213***	−0.228*	−0.197
	(0.080)	(0.080)	(0.137)	(0.137)
Gay, lesbian, homosexual (ref = straight)	0.219*	0.219*	0.014	0.004
	(0.127)	(0.127)	(0.126)	(0.125)
Married	0.059	0.059	−0.016	−0.031
	(0.045)	(0.046)	(0.057)	(0.057)
Black (ref = all else)	−0.018	−0.018	0.115	0.125
	(0.103)	(0.103)	(0.133)	(0.133)
White (ref = all else)	0.087	0.087	0.107	0.126*
	(0.073)	(0.074)	(0.075)	(0.075)
Hispanic origin	0.174*	0.174*	0.101	0.089
	(0.095)	(0.096)	(0.083)	(0.083)
Born in the US	−0.051	−0.051	0.017	0.011
	(0.100)	(0.101)	(0.108)	(0.107)
Northeast (ref = Midwest)	0.070	0.070	−0.014	−0.021
	(0.073)	(0.073)	(0.074)	(0.073)
South (ref = Midwest)	−0.018	−0.018	−0.025	−0.028
	(0.059)	(0.059)	(0.066)	(0.065)
West (ref = Midwest)	0.068	0.068	−0.100	−0.100
	(0.065)	(0.065)	(0.070)	(0.070)
Constant	1.255***	1.256***	0.894***	0.792***
	(0.179)	(0.180)	(0.184)	(0.186)
Observations	795	795	713	713
R^2	0.076	0.076	0.088	0.098
Adjusted R^2	0.059	0.058	0.069	0.078
Residual Std. Error	0.603 (df = 780)	0.603 (df = 779)	0.618 (df = 698)	0.615 (df = 697)
F Statistic	4.553*** (df = 14; 780)	4.244*** (df = 15; 779)	4.795*** (df = 14; 698)	5.039*** (df = 15; 697)
BIC	1542.447	1549.125	1427.042	1425.668
AIC	1467.594	1469.593	1353.931	1347.987
Note:				*p<0.1; **p<0.05; ***p<0.01

Table 23: Comparing self-rated and reflected appraisal gender nonconformity as predictors of self-rated health complete table

	Cisgender Women			*Cisgender Men*		
	Model 1a	Model 2a	Model 3a	Model 1b	Model 2b	Model 3b
Self-rated nonconformity	−0.003	0.095	−0.078	−0.240*	−0.091	−0.156
	(0.115)	(0.123)	(0.153)	(0.131)	(0.142)	(0.176)
Reflected appraisal nonconformity		−0.253**	−0.374***		−0.344***	−0.390***
		(0.111)	(0.128)		(0.127)	(0.148)
Age	−0.003*	−0.003*	−0.004*	−0.002	−0.002	−0.002
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Education	0.021**	0.022***	0.022***	0.039***	0.040***	0.040***
	(0.008)	(0.008)	(0.008)	(0.009)	(0.009)	(0.009)
Income	0.021***	0.020***	0.020***	0.013*	0.013*	0.012*
	(0.007)	(0.006)	(0.006)	(0.007)	(0.007)	(0.007)
Bisexual (ref = straight)	−0.246***	−0.252***	−0.243***	−0.290**	−0.290**	−0.286**
	(0.080)	(0.080)	(0.080)	(0.138)	(0.137)	(0.137)
Gay, lesbian, homosexual (ref = straight)	0.140	0.192	0.167	−0.076	−0.037	−0.029
	(0.129)	(0.131)	(0.131)	(0.126)	(0.126)	(0.127)
Married	0.064	0.064	0.060	−0.001	−0.006	−0.007
	(0.046)	(0.046)	(0.046)	(0.058)	(0.057)	(0.057)
Black (ref = all else)	−0.006	0.0005	−0.024	0.213	0.205	0.213
	(0.103)	(0.103)	(0.104)	(0.133)	(0.133)	(0.134)
White (ref = all else)	0.082	0.084	0.069	0.109	0.110	0.113
	(0.074)	(0.074)	(0.074)	(0.076)	(0.076)	(0.076)
Hispanic origin	0.173*	0.191**	0.195**	0.121	0.126	0.129
	(0.096)	(0.096)	(0.096)	(0.084)	(0.083)	(0.084)
Born in the US	−0.057	−0.043	−0.036	0.024	0.033	0.036
	(0.101)	(0.101)	(0.101)	(0.109)	(0.109)	(0.109)
Northeast (ref = Midwest)	0.059	0.061	0.062	−0.013	−0.014	−0.016
	(0.074)	(0.073)	(0.073)	(0.075)	(0.074)	(0.074)
South (ref = Midwest)	−0.004	−0.007	−0.011	−0.033	−0.039	−0.040
	(0.059)	(0.059)	(0.059)	(0.066)	(0.066)	(0.066)
West (ref = Midwest)	0.072	0.073	0.066	−0.102	−0.102	−0.102
	(0.065)	(0.065)	(0.065)	(0.071)	(0.071)	(0.071)
Self-rated nonconformity x Reflected appraisal nonconformity			0.485*			0.184
			(0.254)			(0.299)
Constant	1.552***	1.550***	1.571***	1.312***	1.313***	1.310***
	(0.155)	(0.155)	(0.155)	(0.166)	(0.165)	(0.165)
Observations	795	795	795	713	713	713
R^2	0.063	0.070	0.074	0.064	0.073	0.074
Adjusted R^2	0.047	0.052	0.055	0.045	0.053	0.052
Residual Std. Error	0.607 (df = 780)	0.605 (df = 779)	0.604 (df = 778)	0.626 (df = 698)	0.623 (df = 697)	0.624 (df = 696)
F Statistic	3.776*** (df = 14; 780)	3.889*** (df = 15; 779)	3.886*** (df = 16; 778)	3.385*** (df = 14; 698)	3.674*** (df = 15; 697)	3.465*** (df = 16; 696)
BIC	1552.758	1554.166	1557.129	1445.671	1444.827	1451.007
AIC	1477.905	1474.634	1472.919	1372.559	1367.146	1368.756
Note:						*p<0.1; **p<0.05; ***p<0.01

Table 24: Tobit regressions for Self-rated Gender Scales as Predictors of Mental Health

	Cisgender Women			*Cisgender Men*		
	Model 1a	Model 2a	Model 3a	Model 1b	Model 2b	Model 3b
Self-rated femininity	-1.224^{**}		-1.439^{**}	1.417^{**}		0.675
	(0.399)		(0.482)	(0.488)		(0.540)
Self-rated masculinity		0.433	-0.386		-2.029^{***}	-1.714^{**}
		(0.404)	(0.486)		(0.506)	(0.564)
Age	-0.055	-0.054	-0.061	-0.158^{*}	-0.152^{*}	-0.145^{*}
	(0.040)	(0.041)	(0.040)	(0.062)	(0.062)	(0.062)
Education	-0.259	-0.250	-0.245	-0.370	-0.391	-0.395
	(0.172)	(0.174)	(0.173)	(0.230)	(0.229)	(0.229)
Income	-0.175	-0.207	-0.179	-0.572^{***}	-0.547^{**}	-0.544^{**}
	(0.135)	(0.136)	(0.135)	(0.168)	(0.167)	(0.166)
Bisexual (ref = straight)	5.317^{**}	5.780^{***}	5.453^{***}	4.700	4.593	4.095
	(1.634)	(1.649)	(1.642)	(3.347)	(3.301)	(3.322)
Gay, lesbian, homosexual (ref = straight)	-3.236	-2.421	-2.921	-0.370	-0.680	-0.897
	(2.702)	(2.738)	(2.731)	(3.057)	(3.035)	(3.035)
Married	-2.713^{**}	-2.836^{**}	-2.732^{**}	-0.013	0.291	0.374
	(0.954)	(0.959)	(0.954)	(1.440)	(1.434)	(1.434)
Black (ref = all else)	-1.790	-2.197	-1.875	-4.221	-3.355	-3.291
	(2.192)	(2.203)	(2.193)	(3.565)	(3.545)	(3.546)
White (ref = all else)	0.999	0.953	0.901	3.202	2.872	2.978
	(1.526)	(1.539)	(1.529)	(1.914)	(1.897)	(1.898)
Hispanic origin	0.233	0.329	0.134	-2.906	-2.459	-2.396
	(1.967)	(1.981)	(1.970)	(2.136)	(2.123)	(2.122)
Born in the US	1.295	1.300	1.282	-1.124	-0.926	-0.818
	(2.094)	(2.105)	(2.092)	(2.820)	(2.793)	(2.793)
Northeast (ref = Midwest)	-1.502	-1.398	-1.497	2.215	2.145	2.184
	(1.525)	(1.533)	(1.524)	(1.846)	(1.832)	(1.831)
South (ref = Midwest)	-0.923	-1.271	-0.906	0.603	0.481	0.476
	(1.229)	(1.230)	(1.228)	(1.645)	(1.634)	(1.632)
West (ref = Midwest)	-0.635	-0.777	-0.608	1.601	1.567	1.528
	(1.345)	(1.351)	(1.343)	(1.755)	(1.742)	(1.741)
Position of modules sex and gender in the survey	-0.928	-0.822	-0.981	1.082	1.130	1.187
	(1.070)	(1.076)	(1.071)	(1.318)	(1.308)	(1.308)
Position of gender scales	0.473	0.463	0.537	-2.131	-2.080	-2.102
	(0.903)	(0.911)	(0.906)	(1.168)	(1.160)	(1.159)
Position of the first order scales compared to third order scales	-1.137	-1.111	-1.133	-0.807	-0.662	-0.727
	(0.902)	(0.907)	(0.901)	(1.170)	(1.161)	(1.162)
Constant	18.411^{***}	12.316^{***}	20.000^{***}	11.842^{**}	22.935^{***}	20.466^{***}
	(3.742)	(3.389)	(4.241)	(4.331)	(4.761)	(5.149)
Observations	795	795	795	713	713	713
Log Likelihood	$-2,253.776$	$-2,257.908$	$-2,253.460$	$-1,812.660$	$-1,808.849$	$-1,808.068$
Wald Test	58.964^{***}	50.651^{***}	59.669^{***}	59.328^{***}	67.040^{***}	68.470^{***}
	(df = 17)	(df = 17)	(df = 18)	(df = 17)	(df = 17)	(df = 18)

Note: $^{*}p<0.05$; $^{**}p<0.01$; $^{***}p<0.001$

Table 25: Linear regressions for Self-rated Gender Scales as Predictors of Mental Health

	Dependent variable:					
	Mental health(Female)]			Mental health(Male)		
	(1)	(2)	(3)	(4)	(5)	(6)
Self-rated femininity	-0.108^{***}		-0.118^{***}	0.086^{***}		0.038
	(0.031)		(0.038)	(0.032)		(0.036)
Self-rated masculinity		0.049	−0.018		-0.128^{***}	-0.110^{***}
		(0.032)	(0.038)		(0.033)	(0.037)
Age	-0.006^{**}	-0.006^{*}	-0.007^{**}	-0.012^{***}	-0.012^{***}	-0.011^{***}
	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)	(0.004)
Education	−0.012	−0.012	−0.011	−0.022	−0.023	−0.023
	(0.013)	(0.014)	(0.014)	(0.015)	(0.015)	(0.015)
Income	−0.013	−0.015	−0.013	-0.035^{***}	-0.033^{***}	-0.033^{***}
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
Bisexual (ref = straight)	0.394^{***}	0.427^{***}	0.401^{***}	0.301	0.289	0.261
	(0.131)	(0.133)	(0.132)	(0.225)	(0.222)	(0.224)
Gay, lesbian, homosexual (ref = straight)	−0.297	−0.247	−0.281	−0.024	−0.046	−0.060
	(0.207)	(0.211)	(0.210)	(0.204)	(0.203)	(0.203)
Married	-0.210^{***}	-0.220^{***}	-0.212^{***}	0.027	0.044	0.049
	(0.075)	(0.075)	(0.075)	(0.093)	(0.093)	(0.093)
Black (ref = all else)	−0.122	−0.156	−0.124	−0.203	−0.150	−0.147
	(0.169)	(0.170)	(0.170)	(0.215)	(0.215)	(0.215)
White (ref = all else)	0.094	0.093	0.090	0.211^{*}	0.192	0.197
	(0.120)	(0.121)	(0.121)	(0.122)	(0.122)	(0.122)
Hispanic origin	0.011	0.022	0.007	−0.156	−0.132	−0.129
	(0.157)	(0.158)	(0.157)	(0.135)	(0.134)	(0.134)
Born in the US	0.065	0.064	0.064	−0.122	−0.114	−0.109
	(0.165)	(0.166)	(0.165)	(0.176)	(0.175)	(0.175)
Northeast (ref = Midwest)	−0.150	−0.142	−0.149	0.151	0.148	0.151
	(0.120)	(0.120)	(0.120)	(0.120)	(0.119)	(0.119)
South (ref = Midwest)	−0.078	−0.107	−0.077	0.056	0.051	0.051
	(0.097)	(0.097)	(0.097)	(0.107)	(0.106)	(0.106)
West (ref = Midwest)	−0.080	−0.092	−0.079	0.115	0.114	0.113
	(0.106)	(0.107)	(0.106)	(0.114)	(0.114)	(0.114)
Position of modules sex and gender in the survey	-0.144^{*}	−0.134	-0.147^{*}	0.074	0.077	0.081
	(0.083)	(0.084)	(0.084)	(0.086)	(0.085)	(0.085)
Position of gender scales	0.031	0.027	0.034	-0.125^{*}	-0.125^{*}	-0.126^{*}
	(0.071)	(0.071)	(0.071)	(0.076)	(0.076)	(0.076)
Position of the first order scales compared to third order scales	−0.038	−0.035	−0.037	−0.093	−0.084	−0.088
	(0.071)	(0.071)	(0.071)	(0.076)	(0.076)	(0.076)
Constant	3.261^{***}	2.707^{***}	3.337^{***}	2.664^{***}	3.357^{***}	3.217^{***}
	(0.294)	(0.267)	(0.334)	(0.276)	(0.305)	(0.333)
Observations	795	795	795	713	713	713
R^2	0.076	0.064	0.076	0.081	0.091	0.093
Adjusted R^2	0.056	0.044	0.055	0.059	0.069	0.069
Residual Std. Error	0.986	0.992	0.987	1.006	1.000	1.000
F Statistic	3.745^{***}	3.150^{***}	3.546^{***}	3.609^{***}	4.097^{***}	3.932^{***}
Note:						*p<0.1; **p<0.05; ***p<0.01

In addition to ordinal logistic regression, we have done the same analysis as in Section 3.2, but by logistic regressions and multinomial regressions (including controls for survey). The results (26,27,28 for logistic regression, 29,30,31 for multinomial regressions) are listed here as reference.

Table 26: Self-rated Gender Scales as Predictors of Self-rated Health by logistic regression

	Cisgender Women			*Cisgender Men*		
	Model 1a	Model 2a	Model 3a	Model 1b	Model 2b	Model 3b
Self-rated femininity	0.160* (0.077)		0.180* (0.092)	−0.072 (0.073)		0.092 (0.085)
Self-rated masculinity		−0.063 (0.078)	0.038 (0.094)		0.346*** (0.078)	0.389*** (0.088)
Age	−0.016* (0.008)	−0.016* (0.008)	−0.016* (0.008)	−0.008 (0.009)	−0.013 (0.009)	−0.012 (0.009)
Education	0.095** (0.036)	0.093* (0.036)	0.094* (0.037)	0.129*** (0.038)	0.140*** (0.039)	0.139*** (0.039)
Income	0.070* (0.030)	0.074* (0.030)	0.070* (0.030)	0.041 (0.027)	0.031 (0.027)	0.031 (0.027)
Bisexual (ref = straight)	−0.813** (0.292)	−0.861** (0.293)	−0.829** (0.295)	−1.381** (0.480)	−1.217* (0.480)	−1.290** (0.486)
Gay, lesbian, homosexual (ref = straight)	0.045 (0.509)	−0.036 (0.516)	0.008 (0.518)	0.095 (0.492)	0.236 (0.493)	0.209 (0.495)
Married	0.312 (0.194)	0.329 (0.193)	0.315 (0.194)	0.325 (0.236)	0.234 (0.240)	0.248 (0.240)
Black (ref = all else)	−0.364 (0.405)	−0.302 (0.403)	−0.357 (0.405)	0.572 (0.516)	0.342 (0.522)	0.344 (0.522)
White (ref = all else)	0.148 (0.301)	0.154 (0.301)	0.158 (0.302)	0.435 (0.283)	0.474 (0.287)	0.483 (0.287)
Hispanic origin	0.515 (0.472)	0.495 (0.471)	0.521 (0.473)	0.367 (0.344)	0.253 (0.347)	0.266 (0.348)
Born in the US	0.037 (0.451)	0.058 (0.450)	0.036 (0.451)	0.295 (0.446)	0.200 (0.450)	0.215 (0.451)
Northeast (ref = Midwest)	−0.033 (0.299)	−0.051 (0.298)	−0.034 (0.299)	0.199 (0.296)	0.216 (0.301)	0.223 (0.302)
South (ref = Midwest)	0.011 (0.241)	0.053 (0.240)	0.009 (0.241)	0.006 (0.257)	0.024 (0.260)	0.023 (0.260)
West (ref = Midwest)	0.343 (0.280)	0.366 (0.280)	0.341 (0.280)	−0.064 (0.271)	−0.051 (0.275)	−0.056 (0.276)
Position of modules sex and gender in the survey	−0.207 (0.208)	−0.223 (0.207)	−0.200 (0.208)	0.317 (0.216)	0.298 (0.219)	0.303 (0.219)
Position of gender scales	−0.192 (0.181)	−0.187 (0.181)	−0.200 (0.182)	0.068 (0.183)	0.074 (0.186)	0.070 (0.186)
Position of the first order scales compared to third order scales	0.053 (0.180)	0.053 (0.179)	0.053 (0.180)	−0.274 (0.183)	−0.289 (0.186)	−0.298 (0.187)
Constant	−0.681 (0.755)	0.120 (0.689)	−0.835 (0.846)	−1.036 (0.685)	−2.641*** (0.762)	−2.973*** (0.824)
Observations	795	795	795	713	713	713
Log Likelihood	−389.301	−391.128	−389.219	−371.750	−362.106	−361.504
AIC	814.603	818.257	816.439	779.500	760.212	761.008
AUC	0.6791	0.6702	0.6792	0.6681	0.6922	0.6939

Note: *p<0.05; **p<0.01; ***p<0.001

Table 27: Comparing self-rated and reflected appraisal gender scales as predictors of self-rated health by logistic regression

	Cisgender Women		*Cisgender Men*	
	Model 1a	Model 2a	Model 1b	Model 2b
Reflected appraisal femininity	0.226** (0.079)	0.244* (0.123)		
Self-rated femininity		−0.022 (0.121)		
Reflected appraisal masculinity			0.279*** (0.078)	0.021 (0.124)
Self-rated masculinity				0.330** (0.122)
Age	−0.018* (0.008)	−0.018* (0.008)	−0.011 (0.009)	−0.013 (0.009)
Education	0.100** (0.037)	0.100** (0.037)	0.136*** (0.039)	0.140*** (0.039)
Income	0.068* (0.030)	0.069* (0.030)	0.033 (0.027)	0.031 (0.027)
Bisexual (ref = straight)	−0.791** (0.292)	−0.795** (0.293)	−1.307** (0.473)	−1.216* (0.480)
Gay, lesbian, homosexual (ref = straight)	0.171 (0.517)	0.168 (0.517)	0.305 (0.497)	0.245 (0.495)
Married	0.323 (0.194)	0.326 (0.194)	0.288 (0.238)	0.235 (0.240)
Black (ref = all else)	−0.324 (0.404)	−0.316 (0.406)	0.305 (0.526)	0.331 (0.527)
White (ref = all else)	0.198 (0.302)	0.203 (0.303)	0.403 (0.285)	0.470 (0.288)
Hispanic origin	0.531 (0.475)	0.531 (0.475)	0.294 (0.345)	0.251 (0.347)
Born in the US	0.052 (0.453)	0.055 (0.453)	0.242 (0.451)	0.200 (0.450)
Northeast (ref = Midwest)	−0.009 (0.300)	−0.009 (0.300)	0.234 (0.299)	0.217 (0.301)
South (ref = Midwest)	0.022 (0.241)	0.025 (0.242)	0.048 (0.259)	0.027 (0.260)
West (ref = Midwest)	0.354 (0.281)	0.357 (0.281)	−0.044 (0.273)	−0.050 (0.275)
Position of modules sex and gender in the survey	−0.210 (0.208)	−0.211 (0.209)	0.294 (0.218)	0.298 (0.219)
Position of gender scales	−0.155 (0.182)	−0.152 (0.182)	0.124 (0.185)	0.078 (0.187)
Position of the first order scales compared to third order scales	0.077 (0.180)	0.079 (0.181)	−0.276 (0.185)	−0.288 (0.186)
Constant	−1.127 (0.790)	−1.118 (0.791)	−2.348** (0.759)	−2.661*** (0.772)
Observations	795	795	713	713
Log Likelihood	−387.342	−387.325	−365.746	−362.092
AIC	810.684	812.650	767.492	762.184
AUC	0.6831	0.6829	0.6834	0.6923

Note: *p<0.05; **p<0.01; ***p<0.001

Table 28: Comparing self-rated and reflected appraisal gender nonconformity as predictors of self-rated health by logistic regression

	Cisgender Women			*Cisgender Men*		
	Model 1a	Model 2a	Model 3a	Model 1b	Model 2b	Model 3b
Self-rated nonconformity	−0.129	0.297	−0.190	−0.522	0.013	−0.137
	(0.441)	(0.484)	(0.581)	(0.456)	(0.517)	(0.652)
Reflected appraisal nonconformity		-1.064^{*}	-1.341^{**}		-1.156^{**}	-1.246^{*}
		(0.415)	(0.463)		(0.441)	(0.506)
Age	-0.015^{*}	-0.016^{*}	-0.016^{*}	−0.007	−0.007	−0.007
	(0.008)	(0.008)	(0.008)	(0.009)	(0.009)	(0.009)
Education	0.090^{*}	0.095^{**}	0.098^{**}	0.127^{***}	0.132^{***}	0.132^{***}
	(0.036)	(0.036)	(0.037)	(0.038)	(0.039)	(0.039)
Income	0.076^{*}	0.070^{*}	0.069^{*}	0.042	0.041	0.040
	(0.030)	(0.030)	(0.030)	(0.027)	(0.027)	(0.027)
Bisexual (ref = straight)	-0.897^{**}	-0.927^{**}	-0.905^{**}	-1.465^{**}	-1.459^{**}	-1.453^{**}
	(0.290)	(0.292)	(0.293)	(0.476)	(0.473)	(0.473)
Gay, lesbian, homosexual (ref = straight)	−0.102	0.148	0.085	0.043	0.212	0.233
	(0.514)	(0.535)	(0.536)	(0.489)	(0.502)	(0.507)
Married	0.341	0.336	0.324	0.339	0.321	0.317
	(0.193)	(0.194)	(0.195)	(0.235)	(0.236)	(0.237)
Black (ref = all else)	−0.273	−0.243	−0.312	0.595	0.561	0.581
	(0.401)	(0.403)	(0.408)	(0.516)	(0.517)	(0.520)
White (ref = all else)	0.172	0.191	0.150	0.411	0.414	0.424
	(0.300)	(0.303)	(0.306)	(0.284)	(0.286)	(0.287)
Hispanic origin	0.505	0.612	0.626	0.373	0.371	0.380
	(0.471)	(0.480)	(0.482)	(0.344)	(0.344)	(0.345)
Born in the US	0.057	0.134	0.149	0.277	0.320	0.329
	(0.451)	(0.459)	(0.461)	(0.447)	(0.451)	(0.452)
Northeast (ref = Midwest)	−0.055	−0.049	−0.041	0.219	0.216	0.213
	(0.298)	(0.301)	(0.301)	(0.296)	(0.298)	(0.298)
South (ref = Midwest)	0.054	0.045	0.038	0.009	−0.005	−0.010
	(0.240)	(0.242)	(0.242)	(0.257)	(0.258)	(0.258)
West (ref = Midwest)	0.362	0.369	0.351	−0.061	−0.062	−0.062
	(0.280)	(0.281)	(0.282)	(0.271)	(0.273)	(0.273)
Position of modules sex and gender in the survey	−0.215	−0.209	−0.214	0.322	0.370	0.368
	(0.207)	(0.208)	(0.209)	(0.215)	(0.219)	(0.219)
Position of gender scales	−0.199	−0.177	−0.187	0.067	0.061	0.059
	(0.180)	(0.181)	(0.182)	(0.183)	(0.184)	(0.184)
Position of the first order scales compared to third order scales	0.050	0.080	0.075	−0.275	−0.285	−0.284
	(0.179)	(0.181)	(0.181)	(0.183)	(0.184)	(0.184)
Self-rated nonconformity xReflected appraisal nonconformity			1.239			0.378
			(0.961)			(1.047)
Constant	0.028	−0.012	0.045	−1.105	−1.115	−1.123
	(0.678)	(0.682)	(0.686)	(0.674)	(0.677)	(0.677)
Observations	795	795	795	713	713	713
Log Likelihood	−391.409	−388.236	−387.406	−371.595	−368.251	−368.186
AIC	818.817	814.471	814.812	779.190	774.502	776.373
AUC	0.6686	0.6733	0.6756	0.6671	0.6725	0.6728
Note:						$^{*}p<0.05$; $^{**}p<0.01$; $^{***}p<0.001$

Table 29: Self-rated Gender Scales as Predictors of Self-rated Health, Multinomial Logit Model, "fair/poor" as reference

	Cisgender Women						*Cisgender Men*					
	model 1a		*model 2a*		*model 3a*		*model 1b*		*model 2b*		*model 3b*	
	good	excellent	good	excellent	good	excellent	good	excellent	good	excellent	good	excellent
Self-rated femininity	0.140	0.240*			0.151	0.305*			−0.033	−0.232*	0.109	0.033
	(0.082)	(0.107)			(0.093)	(0.120)			(0.075)	(0.112)	(0.087)	(0.128)
Self-rated masculinity			−0.062	−0.063	0.023	0.110	0.292***	0.598***			0.343***	0.608***
			(0.084)	(0.111)	(0.095)	(0.126)	(0.080)	(0.123)			(0.090)	(0.140)
Age (years)	−0.016	−0.019	−0.016	−0.018	−0.016	−0.017	−0.010	−0.022	−0.006	−0.016	−0.009	−0.021
	(0.010)	(0.013)	(0.010)	(0.013)	(0.010)	(0.013)	(0.010)	(0.013)	(0.010)	(0.013)	(0.010)	(0.013)
Education(years)	0.089*	0.119*	0.087*	0.115*	0.088*	0.115*	0.115**	0.231***	0.103**	0.213***	0.114**	0.230***
	(0.039)	(0.050)	(0.039)	(0.050)	(0.039)	(0.050)	(0.040)	(0.051)	(0.040)	(0.050)	(0.040)	(0.051)
Income (in $10,000s)	0.059*	0.108**	0.063*	0.115**	0.060*	0.110**	0.025	0.056	0.034	0.066	0.025	0.056
	(0.028)	(0.036)	(0.028)	(0.036)	(0.028)	(0.036)	(0.028)	(0.036)	(0.028)	(0.035)	(0.028)	(0.036)
Bisexual (ref = straight)	−0.729	−1.229	−0.765	−1.342	−0.739	−1.269	−1.603**	−0.191	−1.774**	−0.392	−1.693**	−0.220
	(0.606)	(0.755)	(0.594)	(0.745)	(0.608)	(0.755)	(0.563)	(0.649)	(0.565)	(0.648)	(0.570)	(0.657)
Gay/lesbian/homosexual	−0.264	0.844	−0.325	0.661	−0.289	0.752	0.318	−0.177	0.192	−0.378	0.287	−0.178
	(0.513)	(0.685)	(0.514)	(0.681)	(0.514)	(0.686)	(0.499)	(0.760)	(0.498)	(0.755)	(0.501)	(0.763)
Married	0.322	0.273	0.336	0.298	0.324	0.280	0.352	−0.252	0.444	−0.129	0.370	−0.241
	(0.236)	(0.310)	(0.236)	(0.310)	(0.237)	(0.311)	(0.245)	(0.321)	(0.242)	(0.316)	(0.246)	(0.321)
Black	−0.427	−0.086	−0.376	−0.003	−0.424	−0.070	0.249	0.686	0.453	0.957	0.248	0.678
	(0.529)	(0.724)	(0.535)	(0.723)	(0.532)	(0.729)	(0.540)	(0.690)	(0.534)	(0.682)	(0.540)	(0.690)
White	0.078	0.466	0.082	0.467	0.085	0.490	0.430	0.699	0.399	0.594	0.440	0.701
	(0.307)	(0.410)	(0.309)	(0.409)	(0.307)	(0.411)	(0.294)	(0.415)	(0.291)	(0.407)	(0.295)	(0.415)
Hispanic origin	0.367	0.998*	0.345	0.973*	0.369	1.021*	0.185	0.515	0.288	0.663	0.198	0.524
	(0.349)	(0.449)	(0.350)	(0.449)	(0.350)	(0.451)	(0.356)	(0.441)	(0.354)	(0.435)	(0.357)	(0.441)
Born outside the United States	0.126	−0.356	0.147	−0.330	0.124	−0.350	0.228	0.099	0.322	0.178	0.246	0.108
	(0.439)	(0.595)	(0.442)	(0.591)	(0.440)	(0.595)	(0.458)	(0.611)	(0.455)	(0.606)	(0.459)	(0.612)
Northeast	−0.145	0.333	−0.163	0.312	−0.146	0.332	0.319	−0.148	0.305	−0.159	0.327	−0.147
	(0.306)	(0.404)	(0.306)	(0.402)	(0.306)	(0.404)	(0.310)	(0.394)	(0.305)	(0.387)	(0.311)	(0.395)
South	0.027	−0.069	0.062	0.007	0.025	−0.076	0.071	−0.120	0.058	−0.150	0.070	−0.125
	(0.271)	(0.358)	(0.270)	(0.357)	(0.271)	(0.358)	(0.268)	(0.339)	(0.266)	(0.334)	(0.269)	(0.340)
West	0.339	0.374	0.359	0.400	0.337	0.370	0.074	−0.540	0.067	−0.540	0.070	−0.544
	(0.290)	(0.381)	(0.290)	(0.380)	(0.291)	(0.382)	(0.284)	(0.378)	(0.280)	(0.372)	(0.284)	(0.379)
Position of modules sex and gender in the survey	−0.186	−0.295	−0.202	−0.313	−0.181	−0.275	0.253	0.440	0.269	0.474	0.257	0.436
	(0.219)	(0.288)	(0.218)	(0.286)	(0.219)	(0.288)	(0.225)	(0.284)	(0.222)	(0.279)	(0.225)	(0.284)
Position of gender scales	−0.080	−0.653*	−0.074	−0.650*	−0.085	−0.672**	0.034	0.221	0.027	0.205	0.029	0.215
	(0.195)	(0.255)	(0.194)	(0.254)	(0.195)	(0.255)	(0.190)	(0.253)	(0.188)	(0.248)	(0.191)	(0.253)
Position of the first order scales compared to third order scales	0.107	−0.175	0.109	−0.180	0.107	−0.180	−0.236	−0.472	−0.223	−0.427	−0.247	−0.471
	(0.195)	(0.255)	(0.194)	(0.254)	(0.195)	(0.256)	(0.191)	(0.254)	(0.189)	(0.250)	(0.192)	(0.254)
Constant	−0.718	−3.098***	−0.008	−1.918	−0.809	−3.562**	−2.366**	−6.493***	−1.056	−3.392***	−2.755**	−6.570***
	(0.716)	(0.927)	(0.793)	(1.027)	(0.863)	(1.127)	(0.780)	(1.103)	(0.705)	(0.916)	(0.843)	(1.214)
Akaike Inf. Crit.	1,471.404	1,471.404	1,476.214	1,476.214	1,474.612	1,474.612	1,340.313	1,340.313	1,363.469	1,363.469	1,342.541	1,342.541

Note: *p<0.05; **p<0.01; ***p<0.001

Table 30: Comparing Self-rated and Reflected Appraisal Gender Scales as Predictors of Self-rated Health, Multinomial Logit Model, "fair/poor" as reference

	Cisgender Women				*Cisgender Men*			
	model 1a		*model 2a*		*model 1b*		*model 2b*	
	good	excellent	good	excellent	good	excellent	good	excellent
Reflected appraisal femininity	0.208*	0.305**	0.236	0.278				
	(0.086)	(0.112)	(0.133)	(0.171)				
Self-rated femininity			−0.036	0.030				
			(0.127)	(0.164)				
Reflected appraisal masculinity					0.222**	0.537***	−0.018	0.202
					(0.080)	(0.120)	(0.127)	(0.180)
Self-rated masculinity							0.307*	0.443*
							(0.126)	(0.182)
Age (years)	−0.017	−0.020	−0.017	−0.020	−0.009	−0.021	−0.010	−0.023
	(0.010)	(0.013)	(0.010)	(0.013)	(0.010)	(0.013)	(0.010)	(0.013)
Education(years)	0.094*	0.124*	0.094*	0.124*	0.111**	0.229***	0.115**	0.233***
	(0.039)	(0.050)	(0.039)	(0.050)	(0.040)	(0.051)	(0.040)	(0.051)
Income (in $10,000s)	0.058*	0.108**	0.058*	0.108**	0.028	0.057	0.025	0.055
	(0.028)	(0.036)	(0.028)	(0.036)	(0.028)	(0.035)	(0.028)	(0.036)
Bisexual (ref = straight)	−0.705	−1.219	−0.712	−1.209	−1.696**	−0.295	−1.609**	−0.156
	(0.595)	(0.748)	(0.601)	(0.754)	(0.558)	(0.640)	(0.564)	(0.648)
Gay/lesbian/homosexual	−0.135	0.973	−0.140	0.975	0.368	−0.061	0.307	−0.084
	(0.517)	(0.689)	(0.518)	(0.690)	(0.502)	(0.771)	(0.502)	(0.764)
Married	0.332	0.293	0.336	0.290	0.401	−0.168	0.350	−0.239
	(0.237)	(0.310)	(0.238)	(0.311)	(0.243)	(0.319)	(0.245)	(0.321)
Black	−0.395	−0.025	−0.382	−0.031	0.231	0.549	0.254	0.597
	(0.532)	(0.725)	(0.532)	(0.726)	(0.543)	(0.695)	(0.544)	(0.696)
White	0.124	0.528	0.132	0.525	0.370	0.566	0.432	0.666
	(0.308)	(0.411)	(0.308)	(0.411)	(0.293)	(0.412)	(0.295)	(0.416)
Hispanic origin	0.384	1.007*	0.384	1.009*	0.219	0.573	0.181	0.520
	(0.351)	(0.450)	(0.352)	(0.451)	(0.355)	(0.439)	(0.357)	(0.441)
Born outside the United States	0.140	−0.329	0.145	−0.332	0.268	0.125	0.227	0.089
	(0.439)	(0.595)	(0.439)	(0.596)	(0.459)	(0.611)	(0.458)	(0.611)
Northeast	−0.124	0.363	−0.123	0.360	0.336	−0.084	0.320	−0.126
	(0.307)	(0.405)	(0.307)	(0.405)	(0.308)	(0.391)	(0.310)	(0.394)
South	0.035	−0.050	0.040	−0.055	0.096	−0.081	0.074	−0.111
	(0.272)	(0.358)	(0.272)	(0.358)	(0.268)	(0.339)	(0.269)	(0.340)
West	0.349	0.391	0.352	0.390	0.084	−0.517	0.075	−0.532
	(0.291)	(0.382)	(0.291)	(0.382)	(0.282)	(0.377)	(0.284)	(0.379)
Position of modules sex and gender in the survey	−0.189	−0.304	−0.190	−0.302	0.251	0.423	0.255	0.421
	(0.219)	(0.288)	(0.220)	(0.289)	(0.224)	(0.283)	(0.225)	(0.285)
Position of gender scales	−0.045	−0.607*	−0.041	−0.608*	0.076	0.288	0.031	0.241
	(0.196)	(0.255)	(0.196)	(0.256)	(0.190)	(0.253)	(0.192)	(0.254)
Position of the first order scales compared to third order scales	0.130	−0.150	0.133	−0.148	−0.222	−0.468	−0.235	−0.476
	(0.195)	(0.256)	(0.196)	(0.256)	(0.190)	(0.253)	(0.191)	(0.254)
Constant	−1.162	−3.569***	−1.145	−3.580***	−2.077**	−6.180***	−2.360**	−6.689***
	(0.721)	(0.934)	(0.722)	(0.935)	(0.779)	(1.083)	(0.791)	(1.119)
Akaike Inf. Crit.	1,467.640	1,467.640	1,471.410	1,471.410	1,346.533	1,346.533	1,342.403	1,342.403

Note: *p<0.05; **p<0.01; ***p<0.001

Table 31: Comparing Self-rated and Reflected Appraisal Gender Nonconformity as Predictors of Self-rated Health, Multinomial Logit Model, "fair/poor" as reference

	Cisgender Women						*Cisgender Men*					
	model 1a		*model 2a*		*model 3a*		*model 1b*		*model 2b*		*model 3b*	
	good	excellent	good	excellent	good	excellent	good	excellent	good	excellent	good	excellent
Self-rated nonconformity	−0.203 (0.524)	0.167 (0.695)	0.229 (0.579)	0.567 (0.754)	−0.121 (0.723)	−0.394 (0.922)	−0.334 (0.461)	−1.755 (1.080)	0.124 (0.518)	−0.989 (1.123)	0.025 (0.664)	−0.905 (1.168)
Reflected appraisal nonconformity			-1.092^{*} (0.537)	−0.992 (0.684)	-1.252^{*} (0.633)	-1.746^{*} (0.795)			-0.984^{*} (0.446)	-2.411^{*} (1.089)	-1.048^{*} (0.515)	-2.295^{*} (1.103)
Self-rated nonconformity × reflected appraisal nonconformity					0.823 (1.235)	2.456 (1.618)					0.259 (1.057)	-10.604^{***} (0.00001)
Age (years)	−0.015 (0.010)	−0.017 (0.013)	−0.016 (0.010)	−0.017 (0.013)	−0.016 (0.010)	−0.018 (0.013)	−0.005 (0.009)	−0.013 (0.013)	−0.005 (0.009)	−0.013 (0.013)	−0.005 (0.009)	−0.013 (0.013)
Education (years)	0.084^{*} (0.039)	0.112^{*} (0.050)	0.090^{*} (0.039)	0.117^{*} (0.050)	0.091^{*} (0.039)	0.121^{*} (0.050)	0.102^{**} (0.040)	0.210^{***} (0.050)	0.107^{**} (0.040)	0.217^{***} (0.050)	0.107^{**} (0.040)	0.217^{***} (0.050)
Income (in $10,000s)	0.065^{*} (0.028)	0.118^{***} (0.036)	0.059^{*} (0.028)	0.112^{**} (0.036)	0.058^{*} (0.028)	0.109^{**} (0.036)	0.035 (0.028)	0.069^{*} (0.035)	0.034 (0.028)	0.068 (0.035)	0.034 (0.028)	0.068 (0.035)
Bisexual (ref = straight)	−0.796 (0.592)	−1.411 (0.738)	−0.827 (0.590)	−1.440 (0.736)	−0.811 (0.594)	−1.380 (0.739)	-1.807^{**} (0.559)	−0.678 (0.636)	-1.803^{**} (0.556)	−0.652 (0.640)	-1.797^{**} (0.557)	−0.653 (0.640)
Gay, lesbian, homosexual (ref = straight)	−0.368 (0.512)	0.505 (0.677)	−0.119 (0.510)	0.739 (0.679)	−0.152 (0.517)	0.655 (0.685)	0.165 (0.496)	−0.522 (0.749)	0.314 (0.508)	−0.279 (0.768)	0.329 (0.512)	−0.282 (0.770)
Married	0.349 (0.235)	0.304 (0.308)	0.343 (0.236)	0.300 (0.309)	0.334 (0.237)	0.278 (0.310)	0.448 (0.241)	−0.092 (0.315)	0.432 (0.242)	−0.119 (0.317)	0.429 (0.242)	−0.119 (0.317)
Black	−0.347 (0.532)	0.023 (0.718)	−0.320 (0.532)	0.059 (0.717)	−0.368 (0.535)	−0.072 (0.725)	0.466 (0.535)	1.027 (0.681)	0.436 (0.535)	1.048 (0.683)	0.450 (0.539)	1.049 (0.685)
White	0.099 (0.310)	0.491 (0.410)	0.116 (0.310)	0.517 (0.411)	0.088 (0.312)	0.434 (0.414)	0.381 (0.292)	0.541 (0.408)	0.385 (0.294)	0.569 (0.410)	0.391 (0.295)	0.572 (0.410)
Hispanic origin	0.357 (0.349)	0.979^{*} (0.447)	0.465 (0.351)	1.079^{*} (0.449)	0.477 (0.353)	1.123^{*} (0.451)	0.291 (0.354)	0.675 (0.434)	0.287 (0.354)	0.716 (0.435)	0.292 (0.355)	0.716 (0.436)
Born outside the United States	0.146 (0.444)	−0.319 (0.591)	0.225 (0.442)	−0.244 (0.591)	0.231 (0.443)	−0.225 (0.599)	0.305 (0.455)	0.153 (0.606)	0.346 (0.459)	0.219 (0.611)	0.352 (0.460)	0.222 (0.611)
Northeast	−0.166 (0.306)	0.314 (0.402)	−0.163 (0.307)	0.320 (0.403)	−0.153 (0.308)	0.320 (0.404)	0.318 (0.306)	−0.106 (0.387)	0.314 (0.308)	−0.120 (0.389)	0.312 (0.308)	−0.119 (0.389)
South	0.060 (0.270)	0.027 (0.357)	0.050 (0.271)	0.020 (0.358)	0.047 (0.271)	−0.009 (0.360)	0.058 (0.266)	−0.127 (0.333)	0.045 (0.267)	−0.169 (0.336)	0.042 (0.268)	−0.168 (0.336)
West	0.353 (0.291)	0.405 (0.380)	0.358 (0.292)	0.415 (0.381)	0.347 (0.292)	0.363 (0.382)	0.068 (0.280)	−0.533 (0.372)	0.066 (0.281)	−0.534 (0.374)	0.065 (0.281)	−0.533 (0.374)
Position of modules sex and gender in the survey	−0.195 (0.218)	−0.302 (0.286)	−0.190 (0.219)	−0.295 (0.287)	−0.194 (0.220)	−0.304 (0.287)	0.270 (0.222)	0.497 (0.278)	0.318 (0.225)	0.552 (0.282)	0.316 (0.225)	0.553 (0.282)
Position of gender scales	−0.084 (0.194)	-0.673^{**} (0.254)	−0.062 (0.195)	-0.652^{*} (0.255)	−0.071 (0.196)	-0.666^{**} (0.255)	0.028 (0.188)	0.197 (0.248)	0.022 (0.189)	0.194 (0.250)	0.020 (0.189)	0.192 (0.250)
Position of the first order scales compared to third order scales	0.105 (0.194)	−0.181 (0.254)	0.136 (0.195)	−0.152 (0.255)	0.132 (0.195)	−0.153 (0.256)	−0.219 (0.189)	−0.454 (0.249)	−0.229 (0.190)	−0.465 (0.251)	−0.229 (0.190)	−0.467 (0.251)
Constant	−0.091 (0.707)	-2.034^{*} (0.909)	−0.128 (0.710)	-2.081^{*} (0.912)	−0.088 (0.711)	-1.960^{*} (0.916)	−1.079 (0.694)	-3.626^{***} (0.904)	−1.091 (0.696)	-3.679^{***} (0.910)	−1.096 (0.697)	-3.680^{***} (0.910)
Akaike Inf. Crit.	1,476.283	1,476.283	1,473.827	1,473.827	1,474.598	1,474.598	1,364.583	1,364.583	1,359.324	1,359.324	1,362.965	1,362.965

Note: $^{*}p<0.05$; $^{**}p<0.01$; $^{***}p<0.001$

Table 32: Comparing Self-rated and reflected Appraisal Gender Scales as Predictors of Mental Health (tobit regressions)

	Cisgender Women		*Cisgender Men*	
	Model 1a	Model 2a	Model 1b	Model 2b
Reflected appraisal femininity	−1.070**	−0.241		
	(0.411)	(0.644)		
Self-rated femininity		−1.043		
		(0.626)		
Reflected appraisal masculinity			−1.825***	−0.587
			(0.513)	(0.803)
Self-rated masculinity				−1.580*
				(0.795)
Age	−0.054	−0.054	−0.156*	−0.150*
	(0.040)	(0.040)	(0.062)	(0.062)
Income	−0.188	−0.174	−0.551***	−0.544**
	(0.135)	(0.135)	(0.167)	(0.167)
Bisexual	5.502***	5.299**	5.173	4.606
	(1.634)	(1.635)	(3.293)	(3.297)
Married	−2.823**	−2.724**	0.010	0.271
	(0.954)	(0.955)	(1.432)	(1.434)
Constant	18.335***	18.812***	21.906***	23.476***
	(3.887)	(3.892)	(4.772)	(4.819)
Observations	795	795	713	713
Log Likelihood	−2,255.095	−2,253.706	−1,810.550	−1,808.582
Wald Test	56.320***	59.099***	63.449***	67.506***
	(df = 17)	(df = 18)	(df = 17)	(df = 18)

Note: *p<0.05; **p<0.01; ***p<0.001

Models include control variables omitted in this table. See appendix for detailed regressions.

B Code in R

```
#### The environment ####
rm(list = ls())
setwd("D:/2019-2020 ENSAE Paris/2019-2020 2eme semestre/StatApp")

library(grid)
library(vcd)
library(ggplot2)


#### Pretreatments of the data ####

agms <- read.csv("AGMS.csv")

agms <- agms[agms$surveytime >= 270,]

ord <- c("Not at all", "1", "2", "3", "4", "5", "Very")
ord <- factor(1:length(ord), labels = ord)

agms$firstord_fem <- factor(agms$firstord_fem, levels = levels(ord))
agms$firstord_masc <- factor(agms$firstord_masc, levels = levels(ord))
agms$thirdord_fem <- factor(agms$thirdord_fem, levels = levels(ord))
agms$thirdord_masc <- factor(agms$thirdord_masc, levels = levels(ord))

is.na(agms$sexornt) <- agms$sexornt == ""
ord_sexornt <- c("Bisexual", "Gay, lesbian, homosexual", "Heterosexual, straight")
ord_sexornt <- factor(1:length(ord_sexornt), labels = ord_sexornt)
agms$sexornt <- factor(agms$sexornt, levels = levels(ord_sexornt))

is.na(agms$sex) <- agms$sex == ""
ord_sex <- c("Female", "Male")
ord_sex <- factor(1:length(ord_sex), labels = ord_sex)
agms$sex <- factor(agms$sex, levels = levels(ord_sex))

is.na(agms$region_gss) <- agms$region_gss == ""
ord_region_gss <- c("Midwest", "Northeast", "South", "West")
ord_region_gss <- factor(1:length(ord_region_gss), labels = ord_region_gss)
agms$region_gss <- factor(agms$region_gss, levels = levels(ord_region_gss))

```

```r
is.na(agms$prtypref) <- agms$prtypref == ""
ord_prtypref <- c("Democrat", "Independent", "Other", "
    Republican")
ord_prtypref <- factor(1:length(ord_prtypref), labels = ord_
    prtypref)
agms$prtypref <- factor(agms$prtypref, levels = levels(ord_
    prtypref))


is.na(agms$hispanic_binary) <- agms$hispanic_binary == ""
ord_hispanic <- c("no", "yes")
ord_hispanic <- factor(1:length(ord_hispanic), labels = ord_
    hispanic)
agms$hispanic_binary <- factor(agms$hispanic_binary, levels =
     levels(ord_hispanic))

agms = na.omit(agms)

#### Attach to the data ####

attach(agms)

#### Figure 2 : the distributions of firstord_fem and
    firstord_masc ####

jpeg(filename = "Feminie.jpeg", height = 800, width = 800,
    quality = 100)
ggplot(agms, mapping = aes(x = firstord_fem, fill = sex)) +
  geom_bar(stat = "count", width = 0.5,position = 'dodge') +
  scale_fill_manual(values = c('#FF4500','#4169E1')) +
  labs(title = "A. Feminine", x = '', y = '') +
  theme_minimal()
dev.off()

jpeg(filename = "Masculine.jpeg", height=800, width=800,
    quality = 100)
ggplot(agms, mapping = aes(x = firstord_masc, fill = sex)) +
  geom_bar(stat = "count",width = 0.5,position = 'dodge') +
  scale_fill_manual(values = c('#FF4500','#4169E1')) +
  labs(title = "B. Masculine", x = '', y = '') +
  theme_minimal()
dev.off()


#### Table 1 : reform the data ####

fem_num <- as.numeric(firstord_fem) - 1
masc_num <- as.numeric(firstord_masc) - 1
pol_num <- abs(fem_num - masc_num)

ind_fem <- sex == "Female"
```

```r
ind_mal <- sex == "Male"

table1 <- as.data.frame(matrix(0, 6, 9))
row.names(table1) <- c("Polarization_female", "Feminine_female", "Masculine_female",
                       "Polarization_male", "Feminine_male", "Masculine_male")
colnames(table1) <- c("Not at All", "1", "2", "3", "4", "5", "Very", "Mean", "Standard Deviation")

#### Filling Table 1 ######

table1[1, 1:7] <- round(as.numeric(table(pol_num[ind_fem])) / sum(as.numeric(table(pol_num[ind_fem]))), 2) * 100
table1[1, 8] <- round(mean(pol_num[ind_fem]), 2)
table1[1, 9] <- round(sd(pol_num[ind_fem]), 2)

table1[2, 1:7] <- round(as.numeric(table(fem_num[ind_fem])) / sum(as.numeric(table(fem_num[ind_fem]))), 3) * 100
table1[2, 8] <- round(mean(fem_num[ind_fem]), 2)
table1[2, 9] <- round(sd(fem_num[ind_fem]), 2)

table1[3, 1:7] <- round(as.numeric(table(masc_num[ind_fem])) / sum(as.numeric(table(masc_num[ind_fem]))), 3) * 100
table1[3, 8] <- round(mean(masc_num[ind_fem]), 2)
table1[3, 9] <- round(sd(masc_num[ind_fem]), 2)

table1[4, 1:7] <- round(as.numeric(table(pol_num[ind_mal])) / sum(as.numeric(table(pol_num[ind_mal]))), 2) * 100
table1[4, 8] <- round(mean(pol_num[ind_mal]), 2)
table1[4, 9] <- round(sd(pol_num[ind_mal]), 2)

table1[5, 1:7] <- round(as.numeric(table(fem_num[ind_mal])) / sum(as.numeric(table(fem_num[ind_mal]))), 3) * 100
table1[5, 8] <- round(mean(fem_num[ind_mal]), 2)
table1[5, 9] <- round(sd(fem_num[ind_mal]), 2)

table1[6, 1:7] <- round(as.numeric(table(masc_num[ind_mal])) / sum(as.numeric(table(masc_num[ind_mal]))), 3) * 100
table1[6, 8] <- round(mean(masc_num[ind_mal]), 2)
table1[6, 9] <- round(sd(masc_num[ind_mal]), 2)

#### Table 1 : result ####

sink("table1.txt")
print(table1)

sink()


#### Table 2 : reform the data ####
```

```
fem_num <- as.numeric(firstord_fem) - 1
masc_num <- as.numeric(firstord_masc) - 1
pol_num <- abs(fem_num - masc_num)
ind_pol_num <- pol_num == 6

#### Table 2 : computing ####

## Gender

ind_cis <- cisgender == "yes"
ind_tran <- cisgender == "no"
numpol_gen_cis <- as.numeric(table(pol_num[ind_cis])["6"])
numpol_gen_tran <- as.numeric(table(pol_num[ind_tran])["6"])
sum_gen_cis <- sum(as.numeric(table(pol_num[ind_cis])))
sum_gen_tran <- sum(as.numeric(table(pol_num[ind_tran])))

relation1 <- lm(ind_pol_num ~ ind_cis)

## Sex at birth

ind_fem <- sex == "Female"
ind_mal <- sex == "Male"
numpol_sex_fem <- as.numeric(table(pol_num[ind_fem])["6"])
numpol_sex_mal <- as.numeric(table(pol_num[ind_mal])["6"])
sum_sex_fem <- sum(as.numeric(table(pol_num[ind_fem])))
sum_sex_mal <- sum(as.numeric(table(pol_num[ind_mal])))

relation3 <- lm(ind_pol_num ~ ind_fem)

## Region

ind_S <- region_gss == "South"
ind_W <- region_gss == "West"
ind_MW <- region_gss == "Midwest"
ind_NE <- region_gss == "Northeast"

numpol_reg_S <- as.numeric(table(pol_num[ind_S])["6"])
numpol_reg_W <- as.numeric(table(pol_num[ind_W])["6"])
numpol_reg_MW <- as.numeric(table(pol_num[ind_MW])["6"])
numpol_reg_NE <- as.numeric(table(pol_num[ind_NE])["6"])
sum_reg_S <- sum(as.numeric(table(pol_num[ind_S])))
sum_reg_W <- sum(as.numeric(table(pol_num[ind_W])))
sum_reg_MW <- sum(as.numeric(table(pol_num[ind_MW])))
sum_reg_NE <- sum(as.numeric(table(pol_num[ind_NE])))



relation5 <- lm(ind_pol_num ~ ind_S)
relation6 <- lm(ind_pol_num ~ ind_W)
relation7 <- lm(ind_pol_num ~ ind_MW)
```

```r
relation8 <- lm(ind_pol_num ~ ind_NE)


## Education

ind_coldegree <- coldegree == "yes"
ind_nocoldegree <- coldegree == "no"
numpol_edu_coldegree <- as.numeric(table(pol_num[ind_coldegree])["6"])
numpol_edu_nocoldegree <- as.numeric(table(pol_num[ind_nocoldegree])["6"])
sum_edu_coldegree <- sum(as.numeric(table(pol_num[ind_coldegree])))
sum_edu_nocoldegree <- sum(as.numeric(table(pol_num[ind_nocoldegree])))

relation9 <- lm(ind_pol_num ~ ind_coldegree)

## Age

ind_over30 <- (age > 30)
ind_30andyounger <- (age <= 30)
numpol_age_over30 <- as.numeric(table(pol_num[ind_over30])["6"])
numpol_age_30andyounger <- as.numeric(table(pol_num[ind_30andyounger])["6"])
sum_age_over30 <- sum(as.numeric(table(pol_num[ind_over30])))
sum_age_30andyounger <- sum(as.numeric(table(pol_num[ind_30andyounger])))

relation11 <- lm(ind_pol_num ~ ind_over30)

## Sexual orientation

ind_St <- sexornt == "Heterosexual, straight"
ind_notS <- sexornt == "Bisexual" | sexornt == "Gay, lesbian, homosexual"
numpol_sexornt_St <- as.numeric(table(pol_num[ind_St])["6"])
numpol_sexornt_notS <- as.numeric(table(pol_num[ind_notS])["6"])
sum_sexornt_St <- sum(as.numeric(table(pol_num[ind_St])))
sum_sexornt_notS <- sum(as.numeric(table(pol_num[ind_notS])))

relation13 <- lm(ind_pol_num ~ ind_St)

## Hispanic origin

ind_Hp <- hispanic_binary == "yes"
ind_notHp <- hispanic_binary == "no"
numpol_HpOrigin_Hp <- as.numeric(table(pol_num[ind_Hp])["6"])
```

```r
numpol_HpOrigin_notHp <- as.numeric(table(pol_num[ind_notHp])
    ["6"])
sum_HpOrigin_Hp <- sum(as.numeric(table(pol_num[ind_Hp])))
sum_HpOrigin_notHp <- sum(as.numeric(table(pol_num[ind_notHp
    ])))

relation15 <- lm(ind_pol_num ~ ind_Hp)

## Self-identified race

ind_wh <- race_gss == "White"
ind_bl <- race_gss == "Black"
ind_othR <- race_gss == "Another race(s)"

numpol_race_wh <- as.numeric(table(pol_num[ind_wh])["6"])
numpol_race_bl <- as.numeric(table(pol_num[ind_bl])["6"])
numpol_race_othR <- as.numeric(table(pol_num[ind_othR])["6"])
sum_race_wh <- sum(as.numeric(table(pol_num[ind_wh])))
sum_race_bl <- sum(as.numeric(table(pol_num[ind_bl])))
sum_race_othR <- sum(as.numeric(table(pol_num[ind_othR])))

relation16 <- lm(ind_pol_num ~ ind_wh)
relation17 <- lm(ind_pol_num ~ ind_bl)
relation18 <- lm(ind_pol_num ~ ind_othR)


## Party affiliation

ind_demo <- prtypref == "Democrat"
ind_repu <- prtypref == "Republican"
ind_inde <- prtypref == "Independent"
ind_othp <- prtypref == "Other"

numpol_prty_demo <- as.numeric(table(pol_num[ind_demo])["6"])
numpol_prty_repu <- as.numeric(table(pol_num[ind_repu])["6"])
numpol_prty_inde <- as.numeric(table(pol_num[ind_inde])["6"])
numpol_prty_othp <- as.numeric(table(pol_num[ind_othp])["6"])
sum_prty_demo <- sum(as.numeric(table(pol_num[ind_demo])))
sum_prty_repu <- sum(as.numeric(table(pol_num[ind_repu])))
sum_prty_inde <- sum(as.numeric(table(pol_num[ind_inde])))
sum_prty_othp <- sum(as.numeric(table(pol_num[ind_othp])))

relation19 <- lm(ind_pol_num ~ ind_demo)
relation20 <- lm(ind_pol_num ~ ind_repu)
relation21 <- lm(ind_pol_num ~ ind_inde)
relation22 <- lm(ind_pol_num ~ ind_othp)


## Total

numpol <- as.numeric(table(pol_num)["6"])
```

```
sum_pol <- sum(as.numeric(table(pol_num)))

#### Filling Table 2 ####

table2 <- as.data.frame(matrix(0, 24, 4))

row.names(table2) <- c("Cisgender", "Transgender", "Female", "Male","South", "West", "Midwest", "Northeast",
                       "College degree", "No college degree", "Over 30", "30 and younger", "Heterosexual or straight",
                       "Gay, lesbian, homosexual, or bisexual", "Hispanic", "Not Hispanic", "White",
                       "Black or African American", "All other_responses_race", "Democrat", "Republican", "Independent",
                       "All other_responses_party", "Total")

colnames(table2) <- c("Percentage Very Polarized", "p-value", "", "N")


tab2_col1 <- c(round(numpol_gen_cis / sum_gen_cis, 3) * 100,
               round(numpol_gen_tran / sum_gen_tran, 3) * 100,
               round(numpol_sex_fem / sum_sex_fem, 3) * 100,
               round(numpol_sex_mal / sum_sex_mal, 3) * 100,
               round(numpol_reg_S / sum_reg_S, 3) * 100,
               round(numpol_reg_W / sum_reg_W, 3) * 100,
               round(numpol_reg_MW / sum_reg_MW, 3) * 100,
               round(numpol_reg_NE / sum_reg_NE, 3) * 100,
               round(numpol_edu_coldegree / sum_edu_coldegree, 3) * 100,
               round(numpol_edu_nocoldegree / sum_edu_nocoldegree, 3) * 100,
               round(numpol_age_over30 / sum_age_over30, 3) * 100,
               round(numpol_age_30andyounger / sum_age_30andyounger, 3) * 100,
               round(numpol_sexornt_St / sum_sexornt_St, 3) * 100,
               round(numpol_sexornt_notS / sum_sexornt_notS, 3) * 100,
               round(numpol_HpOrigin_Hp / sum_HpOrigin_Hp, 3) * 100,
               round(numpol_HpOrigin_notHp / sum_HpOrigin_notHp, 3) * 100,
               round(numpol_race_wh / sum_race_wh, 3) * 100,
               round(numpol_race_bl / sum_race_bl, 3) * 100,
```

```
                    round(numpol_race_othR / sum_race_othR, 3) * 100,
                    round(numpol_prty_demo / sum_prty_demo, 3) * 100,
                    round(numpol_prty_repu / sum_prty_repu, 3) * 100,
                    round(numpol_prty_inde / sum_prty_inde, 3) * 100,
                    round(numpol_prty_othp / sum_prty_othp, 3) * 100,
                    round(numpol / sum_pol, 3) * 100)

tab2_col2 <- c(summary(relation1)$coef[2,4],
                    "",
                    summary(relation3)$coef[2,4],
                    "",
                    summary(relation5)$coef[2,4],
                    summary(relation6)$coef[2,4],
                    summary(relation7)$coef[2,4],
                    summary(relation8)$coef[2,4],
                    summary(relation9)$coef[2,4],
                    "",
                    summary(relation11)$coef[2,4],
                    "",
                    summary(relation13)$coef[2,4],
                    "",
                    summary(relation15)$coef[2,4],
                    "",
                    summary(relation16)$coef[2,4],
                    summary(relation17)$coef[2,4],
                    summary(relation18)$coef[2,4],
                    summary(relation19)$coef[2,4],
                    summary(relation20)$coef[2,4],
                    summary(relation21)$coef[2,4],
                    summary(relation22)$coef[2,4],
                    "")

tab2_col2 <- round(as.numeric(tab2_col2), 3)
tab2_col2[is.na(tab2_col2)] <- ""

p_value <- tab2_col2
is.na(p_value) <- tab2_col2 == ""

p_value[is.na(p_value)] <- 1

p2star <- function(p) {
  symnum(p, cutpoints = c(0, 0.001, 0.01, 0.05, 1), symbols = c('***', '**', '*', ''), na = NA)
}

star <- as.character(p2star(as.numeric(p_value)))
```

```
tab2_col4 <- c(sum_gen_cis,
               sum_gen_tran,
               sum_sex_fem,
               sum_sex_mal,
               sum_reg_S,
               sum_reg_W,
               sum_reg_MW,
               sum_reg_NE,
               sum_edu_coldegree,
               sum_edu_nocoldegree,
               sum_age_over30,
               sum_age_30andyounger,
               sum_sexornt_St,
               sum_sexornt_notS,
               sum_HpOrigin_Hp,
               sum_HpOrigin_notHp,
               sum_race_wh,
               sum_race_bl,
               sum_race_othR,
               sum_prty_demo,
               sum_prty_repu,
               sum_prty_inde,
               sum_prty_othp,
               sum_pol
               )

table2[ ,1] <- tab2_col1
table2[ ,2] <- tab2_col2
table2[ ,3] <- star
table2[ ,4] <- tab2_col4


#### Table2 : result ####

sink("table2.txt")
print(table2)

sink()


#### Table3 : reform the data ####

ind_very_polarized = pol_num == 6

ornt <- sexornt
levels(ornt) <- c("Gay, lesbian, homosexual or bisexual", "Gay, lesbian, homosexual or bisexual", "Straight")

sex <- relevel(sex, "Female")
region_gss <- relevel(region_gss, "South")
```

```r
race_gss <- relevel(race_gss, "White")
prtypref <- relevel(prtypref, "Democrat")
ornt <- relevel(ornt, "Straight")

## reg 1

reg1 <- glm(formula = married ~  sex + region_gss + educ +
    age + ornt + hispanic_binary + race_gss + prtypref ,
            family = binomial)
# summary(reg1)

odds1 <- exp(summary(reg1)$coef[,1])
odds1 <- as.matrix(odds1)
odds1_round <- round(odds1, 3)

z1 = summary(reg1)$coef[,3]
z1 = as.matrix(z1)
z1_round <- round(z1, 3)

p_odds1 <- c(as.numeric(summary(reg1)$coef[,4]))
p_odds1 <- c(p_odds1[2:14], p_odds1[1])

tab3_col1 <- c("", odds1_round[2:14], odds1_round[1])
tab3_col2 <- c("", z1_round[2:14], z1_round[1])
tab3_col3 <- c("", as.character(p2star(as.numeric(p_odds1))))


## reg 2


reg2 <- glm(formula = married ~  ind_very_polarized + sex +
    region_gss + educ + age + ornt + hispanic_binary + race_gss
     + prtypref ,
            family = binomial)


odds2 <- exp(summary(reg2)$coef[,1])
odds2 <- as.matrix(odds2)
odds2_round <- round(odds2, 3)

z2 <- summary(reg2)$coef[,3]
z2 <- as.matrix(z2)
z2_round <- round(z2, 3)

p_odds2 <- c(as.numeric(summary(reg2)$coef[,4]))
p_odds2 <- c(p_odds2[2:15], p_odds2[1])

tab3_col4 <- c(odds2_round[2:15], odds2_round[1])
tab3_col5 <- c(z2_round[2:15], z2_round[1])
tab3_col6 <- as.character(p2star(as.numeric(p_odds2)))

```

```
#### Filling Table 3 ####

table3 <- as.data.frame(matrix(0, 15, 6))
colnames(table3) <- c("With gender polarization","z-value", " ", "Without gender polarization", "z-value", "")
row.names(table3) <- c(row.names(odds2)[2:15], row.names(odds2)[1])

table3[ ,1] <- tab3_col1
table3[ ,2] <- tab3_col2
table3[ ,3] <- tab3_col3
table3[ ,4] <- tab3_col4
table3[ ,5] <- tab3_col5
table3[ ,6] <- tab3_col6


#### Table 3 result ####
sink("table3.txt")
print(table3)

sink()

#### Table A1 : descriptive statistics ####

# Gender

ind_woman <- (woman == "woman") & (trans_indirect == 0)
ind_man <- (man == "man") & (trans_indirect == 0)
ind_trans_direct <- (trans_direct == "transgender")
ind_trans_indirect <- (trans_indirect != 0)
ind_gnlh <- (gnlh == "a gender not listed here")

# Sex

ind_fem <- (sex == "Female")
ind_mal <- (sex == "Male")
ind_inter <- (sex == "Intersex")

# Region

ind_south <- (region_gss == "South")
ind_west <- (region_gss == "West")
ind_midwest <- (region_gss == "Midwest")
ind_northeast <- (region_gss == "Northeast")

ind_married <- (posslqy == "married and living with spouse")

ind_straight <- (sexornt == "Heterosexual, straight")

ind_hispanic <- (hispanic_binary == "yes")
```

```r
# Self-identified race

ind_white <- (race_detail == "White")
ind_black <- (race_detail == "Black/AfAm")
ind_asian <- (race_detail == "Asian Indian" | race_detail == "Chinese" | race_detail == "Japanese" |
                race_detail == "Korean" | race_detail == "Filipino" | race_detail == "Other Asian" |
                race_detail == "Vietnamese")
ind_multi <- (race_detail == "Multiracial")
ind_otherrace <- (ind_white + ind_black + ind_asian + ind_multi == F)

# Party affiliation

ind_dem <- (prtypref == "Democrat")
ind_rep <- (prtypref == "Republican")
ind_indep <- (prtypref == "Independent")
ind_otherparty <- (prtypref == "Other")


#### Filling table A1 ####

tableA1 <- as.data.frame(matrix(0, 31, 1))
row.names(tableA1) <- c("Gender", "Woman", "Man", "Transgender (direct)", "Transgender (indirect)",
                        "All other responses_gender", "Sex", "Female", "Male", "Intersex", "Region",
                        "South", "West", "Midwest", "Northeast", "Education (mean in years)", "Age (mean)",
                        "Married", "Heterosexual or straight", "Hispanic origin", "Self-identified race",
                        "White", "Black or African American", "Asian", "Selected two or more",
                        "All other responses", "Party affiliation", "Democrat", "Republican",
                        "Independent", "All other responses_party")

colnames(tableA1) <- c("MTurk Sample")

value_A1 <- c(" ",
              round((sum(ind_woman)/length(sex)) * 100, 1),
              round((sum(ind_man)/length(sex)) * 100, 1),
              round((sum(ind_trans_direct)/length(sex)) * 100, 1),
```

```
                    round((sum(ind_trans_indirect)/length(sex)) * 100, 1),
                    round((sum(ind_gnlh)/length(sex)) * 100, 1),
                    " ",
                    round((sum(ind_fem)/length(sex)) * 100),
                    round((sum(ind_mal)/length(sex)) * 100),
                    round((sum(ind_inter)/length(sex)) * 100),
                    " ",
                    round((sum(na.omit(ind_south))/length(region_gss)) * 100),
                    round((sum(na.omit(ind_west))/length(region_gss)) * 100),
                    round((sum(na.omit(ind_midwest))/length(region_gss)) * 100),
                    round((sum(na.omit(ind_northeast))/length(region_gss)) * 100),
                    round(mean(educ), 1), round(mean(2014 - cohort), 1),
                    round((sum(ind_married)/length(posslqy)) * 100),
                    round((sum(ind_straight)/length(sexornt)) * 100),
                    round((sum(ind_hispanic)/length(hispanic_binary)) * 100),
                    " ",
                    round((sum(ind_white)/length(race_detail)) * 100),
                    round((sum(ind_black)/length(race_detail)) * 100),
                    round((sum(ind_asian)/length(race_detail)) * 100),
                    round((sum(ind_multi)/length(race_detail)) * 100),
                    round((sum(ind_otherrace)/length(race_detail)) * 100),
                    " ",
                    round((sum(ind_dem)/length(prtypref)) * 100),
                    round((sum(ind_rep)/length(prtypref)) * 100),
                    round((sum(ind_indep)/length(prtypref)) * 100),
                    round((sum(ind_otherparty)/length(prtypref)) * 100))

tableA1$MTurk Sample <- value_A1

#### Table A1 result ####

sink("tableA1.txt")
print(tableA1)

sink()

```

```
#### detach the data ####

detach(agms)

library(VGAM)
library(stargazer)
library(AER)


#### Pretreatments of the data ####

agms <- read.csv("AGMS.csv")

ord <- c("Not at all", "1", "2", "3", "4", "5", "Very")
ord <- factor(1:length(ord), labels = ord)

agms$firstord_fem <- factor(agms$firstord_fem, levels = levels(ord))
agms$firstord_masc <- factor(agms$firstord_masc, levels = levels(ord))
agms$thirdord_fem <- factor(agms$thirdord_fem, levels = levels(ord))
agms$thirdord_masc <- factor(agms$thirdord_masc, levels = levels(ord))


is.na(agms$sexornt) <- agms$sexornt == ""
ord_sexornt <- c("Bisexual", "Gay, lesbian, homosexual", "Heterosexual, straight")
ord_sexornt <- factor(1:length(ord_sexornt), labels = ord_sexornt)
agms$sexornt <- factor(agms$sexornt, levels = levels(ord_sexornt))

is.na(agms$sex) <- agms$sex == ""
ord_sex <- c("Female", "Male")
ord_sex <- factor(1:length(ord_sex), labels = ord_sex)
agms$sex <- factor(agms$sex, levels = levels(ord_sex))

is.na(agms$region_gss) <- agms$region_gss == ""
ord_region_gss <- c("Midwest", "Northeast", "South", "West")
ord_region_gss <- factor(1:length(ord_region_gss), labels = ord_region_gss)
agms$region_gss <- factor(agms$region_gss, levels = levels(ord_region_gss))

is.na(agms$prtypref) <- agms$prtypref == ""
```

```r
ord_prtypref <- c("Democrat", "Independent", "Other", "Republican")
ord_prtypref <- factor(1:length(ord_prtypref), labels = ord_prtypref)
agms$prtypref <- factor(agms$prtypref, levels = levels(ord_prtypref))


is.na(agms$hispanic_binary) <- agms$hispanic_binary == ""
ord_hispanic <- c("no", "yes")
ord_hispanic <- factor(1:length(ord_hispanic), labels = ord_hispanic)
agms$hispanic_binary <- factor(agms$hispanic_binary, levels = levels(ord_hispanic))


ord_income06 <- c("<$1,000", "$1,000-2,999", "$3,000-3,999", "$4,000-4,999",
                  "$5,000-5,999", "$6,000-6,999", "$7,000-7,999", "$8,000-9,999",
                  "$10,000-12,499","$12,500-14,999","$15,000-17,499","$17,500-19,999"
                  ,"$20,000-22,499","$22,500-24,999","$25,000-29,999","$30,000-34,999",
                  "$35,000-39,999","$40,000-49,999","$50,000-59,999","$60,000-74,999",
                  "$75,000-89,999","$90,000-109,999","$110,000-129,999","$130,000-149,999",
                  ">$150,000")
ord_income06 <- factor(1:length(ord_income06), labels = ord_income06)
agms$income06 <- factor(agms$income06, levels = levels(ord_income06))



agms <- agms[(agms$surveytime >= 270) & (is.na(agms$age) == F) & (is.na(agms$inc_cont) == F) &
             (is.na(agms$region_gss) == F) & (is.na(agms$thirdord_fem) == F) & (agms$cisgender == "yes"),]


agms$fem_num <- as.numeric(agms$firstord_fem) - 1
agms$third_fem_num <- as.numeric(agms$thirdord_fem) - 1
agms$masc_num <- as.numeric(agms$firstord_masc) - 1
agms$third_masc_num <- as.numeric(agms$thirdord_masc) - 1

ord_hea <- c("Poor", "Fair", "Good", "Excellent")
ord_hea <- factor(1:length(ord_hea), labels = ord_hea)
agms$health <- factor(agms$health, levels = levels(ord_hea))
```

```
agms$health_num <- as.numeric(agms$health)

ord_health <- c("fair/poor", "good", "excellent")
ord_health <- factor(1:length(ord_health), labels = ord_
    health)

agms$health_3cat <- factor(agms$health_3cat, levels = levels(
    ord_health))

agms$health_3cat <- as.numeric(agms$health_3cat)

agms$sexornt <- relevel(agms$sexornt, "Heterosexual, straight
    ")
agms$race_gss <- relevel(agms$race_gss, "Another race(s)")
agms$region_gss <- relevel(agms$region_gss, "Midwest")
agms$ind_born <- agms$born == "no"

agms$married_num <- as.numeric(agms$married) - 1

ind_white <- (agms$race_detail == "White")
ind_black <- (agms$race_detail == "Black/AfAm")

#### Table 2, 3 and 4 ####


# Cisgender women

women <- agms[agms$sex == "Female",]

attach(women)

ind_noncomformy <- (masc_num > fem_num)
ind_reflected_noncomformy <- (third_masc_num > third_fem_num)

ind_white <- race_detail == "White"
ind_black <- race_detail == "Black/AfAm"
ind_race_else <- 1 - ind_white - ind_black
ind_health_poor <- health_num == 1
ind_health_fair <- health_num == 2
ind_health_good <- health_num == 3
ind_health_excellent <- health_num == 4

ind_south <- (region_gss == "South")
ind_west <- (region_gss == "West")
ind_midwest <- (region_gss == "Midwest")
ind_northeast <- (region_gss == "Northeast")

ind_Hp <- hispanic_binary == "yes"
ind_born_outside_us <- born == "no"

ind_gay_les_homo <- sexornt == "Gay, lesbian, homosexual"
```

```
ind_bisexual <- sexornt == "Bisexual"
ind_heter_straight <- sexornt == "Heterosexual, straight"

## Table 2

apply(cbind(fem_num, masc_num,third_fem_num, third_masc_num,
    age, ind_noncomformy, ind_reflected_noncomformy, educ, inc_
    cont), 2, mean)
apply(cbind(fem_num, masc_num,third_fem_num, third_masc_num,
    age, educ, inc_cont), 2, sd)

apply(cbind(ind_health_excellent, ind_health_good, ind_health
    _fair, ind_health_poor,
            ind_gay_les_homo, ind_bisexual, ind_heter_
                straight, married_num,
            ind_white, ind_black, ind_race_else, ind_Hp, ind_
                born_outside_us, ind_northeast, ind_south, ind_
                west, ind_midwest), 2, mean)
apply(cbind(ind_health_excellent, ind_health_good, ind_health
    _fair, ind_health_poor,
            ind_gay_les_homo, ind_bisexual, ind_heter_
                straight, married_num,
            ind_white, ind_black, ind_race_else, ind_Hp, ind_
                born_outside_us, ind_northeast, ind_south, ind_
                west, ind_midwest), 2, sum)

## Table 3

# Without controls for survey condition
model3_1a <- lm(health_3cat ~ fem_num + age + educ + inc_cont
     + sexornt + married + race_gss + hispanic_binary + ind_
    born
                  + region_gss )
summary(model3_1a)
BIC(model3_1a)
AIC(model3_1a)

model3_2a <- lm(health_3cat ~ masc_num + age + educ + inc_
    cont + sexornt + married + race_gss + hispanic_binary + ind
    _born
                  + region_gss )
summary(model3_2a)
BIC(model3_2a)
AIC(model3_2a)


model3_3a <- lm(health_3cat ~ fem_num + masc_num + fem_num +
    age + educ + inc_cont + sexornt + married + race_gss +
    hispanic_binary + ind_born
                  + region_gss )
summary(model3_3a)
```

```
BIC(model3_3a)
AIC(model3_3a)

# With controls for survey condition

model3c_1a <- lm(health_3cat ~ fem_num + age + educ + inc_
    cont + sexornt + married + race_gss + hispanic_binary + ind
    _born
                    + region_gss + module_end + scales_first +
                        self_first)
summary(model3c_1a)
BIC(model3c_1a)
AIC(model3c_1a)


model3c_2a <- lm(health_3cat ~ masc_num + age + educ + inc_
    cont + sexornt + married + race_gss + hispanic_binary + ind
    _born
                    + region_gss + module_end + scales_first +
                        self_first )
summary(model3c_2a)
BIC(model3c_2a)
AIC(model3c_2a)


model3c_3a <- lm(health_3cat ~ fem_num + masc_num + fem_num +
     age + educ + inc_cont + sexornt + married + race_gss +
    hispanic_binary + ind_born
                    + region_gss + module_end + scales_first +
                        self_first)
summary(model3c_3a)
BIC(model3c_3a)
AIC(model3c_3a)

## Table 4

# Without controls for survey condition

model4_1a <- lm(health_3cat ~ third_fem_num + age + educ +
    inc_cont + sexornt + married + race_gss + hispanic_binary +
     ind_born
                    + region_gss)
summary(model4_1a)
BIC(model4_1a)
AIC(model4_1a)

model4_2a <- lm(health_3cat ~ third_fem_num + fem_num + age +
     educ + inc_cont + sexornt + married + race_gss + hispanic_
    binary + ind_born
                    + region_gss)
summary(model4_2a)
```

```r
BIC(model4_2a)
AIC(model4_2a)

# With controls for survey condition

model4c_1a <- lm(health_3cat ~ third_fem_num + age + educ +
    inc_cont + sexornt + married + race_gss + hispanic_binary +
     ind_born
                  + region_gss + module_end + scales_first + self
                    _first)
summary(model4c_1a)
BIC(model4c_1a)
AIC(model4c_1a)

model4c_2a <- lm(health_3cat ~ third_fem_num + fem_num + age
    + educ + inc_cont + sexornt + married + race_gss + hispanic
    _binary + ind_born
                   + region_gss + module_end + scales_first +
                     self_first)
summary(model4c_2a)
BIC(model4c_2a)
AIC(model4c_2a)

## Table 5

# Without controls for survey condition

model5_1a <- lm(health_3cat ~ ind_noncomformy + age + educ +
    inc_cont + sexornt + married + race_gss + hispanic_binary +
     ind_born
                   + region_gss)
summary(model5_1a)
BIC(model5_1a)
AIC(model5_1a)


model5_2a <- lm(health_3cat ~ ind_noncomformy + ind_reflected
    _noncomformy + age + educ + inc_cont + sexornt + married +
    race_gss + hispanic_binary + ind_born
                   + region_gss)
summary(model5_2a)
BIC(model5_2a)
AIC(model5_2a)

model5_3a <- lm(health_3cat ~ ind_noncomformy + ind_reflected
    _noncomformy +ind_noncomformy*ind_reflected_noncomformy +
    age + educ + inc_cont + sexornt + married + race_gss +
    hispanic_binary + ind_born
                   + region_gss)
summary(model5_3a)
BIC(model5_3a)
```

```
AIC(model5_3a)

# With controls for survey condition

model5c_1a <- lm(health_3cat ~ ind_noncomformy + age + educ +
    inc_cont + sexornt + married + race_gss + hispanic_binary
  + ind_born
                  + region_gss + module_end + scales_first +
                    self_first)
summary(model5c_1a)
BIC(model5c_1a)
AIC(model5c_1a)

model5c_2a <- lm(health_3cat ~ ind_noncomformy + ind_
   reflected_noncomformy + age + educ + inc_cont + sexornt +
   married + race_gss + hispanic_binary + ind_born
                  + region_gss + module_end + scales_first +
                    self_first)
summary(model5c_2a)
BIC(model5c_2a)
AIC(model5c_2a)

model5c_3a <- lm(health_3cat ~ ind_noncomformy + ind_
   reflected_noncomformy +ind_noncomformy*ind_reflected_
   noncomformy + age + educ + inc_cont + sexornt + married +
   race_gss + hispanic_binary + ind_born
                  + region_gss + module_end + scales_first +
                    self_first)
summary(model5c_3a)
BIC(model5c_3a)
AIC(model5c_3a)

detach(women)


# Cisgender men

men <- agms[agms$sex == "Male",]

attach(men)

ind_noncomformy <- (masc_num < fem_num)
ind_reflected_noncomformy <- (third_masc_num < third_fem_num)

ind_white <- race_detail == "White"
ind_black <- race_detail == "Black/AfAm"
ind_race_else <- 1 - ind_white - ind_black
ind_health_poor <- health_num == 1
ind_health_fair <- health_num == 2
ind_health_good <- health_num == 3
ind_health_excellent <- health_num == 4
```

```
ind_south <- (region_gss == "South")
ind_west <- (region_gss == "West")
ind_midwest <- (region_gss == "Midwest")
ind_northeast <- (region_gss == "Northeast")

ind_Hp <- hispanic_binary == "yes"
ind_born_outside_us <- born == "no"

ind_gay_les_homo <- sexornt == "Gay, lesbian, homosexual"
ind_bisexual <- sexornt == "Bisexual"
ind_heter_straight <- sexornt == "Heterosexual, straight"

## Table 2

apply(cbind(fem_num, masc_num, third_fem_num, third_masc_num,
    ind_noncomformy, ind_reflected_noncomformy, age, educ, inc
    _cont), 2, mean)
apply(cbind(fem_num, masc_num, third_fem_num, third_masc_num,
    age, educ, inc_cont), 2, sd)

apply(cbind(ind_health_excellent, ind_health_good, ind_health
   _fair, ind_health_poor,
            ind_gay_les_homo, ind_bisexual, ind_heter_
               straight, married_num,
            ind_white, ind_black, ind_race_else, ind_Hp, ind_
               born_outside_us, ind_northeast, ind_south, ind_
               west, ind_midwest), 2, mean)
apply(cbind(ind_health_excellent, ind_health_good, ind_health
   _fair, ind_health_poor,
            ind_gay_les_homo, ind_bisexual, ind_heter_
               straight, married_num,
            ind_white, ind_black, ind_race_else, ind_Hp, ind_
               born_outside_us, ind_northeast, ind_south, ind_
               west, ind_midwest), 2, sum)

## Table 3

# Without controls for survey condition

model3_1b <- lm(health_3cat ~ fem_num + age + educ + inc_cont
    + sexornt + married + race_gss + hispanic_binary + ind_
    born
                    + region_gss )
summary(model3_1b)
BIC(model3_1b)
AIC(model3_1b)

model3_2b <- lm(health_3cat ~ masc_num + age + educ + inc_
    cont + sexornt + married + race_gss + hispanic_binary + ind
    _born
```

```
                        + region_gss )
summary(model3_2b)
BIC(model3_2b)
AIC(model3_2b)

model3_3b <- lm(health_3cat ~ masc_num + fem_num + age + educ
    + inc_cont + sexornt + married + race_gss + hispanic_
    binary + ind_born
                        + region_gss )
summary(model3_3b)
BIC(model3_3b)
AIC(model3_3b)

# With controls for survey condition

model3c_1b <- lm(health_3cat ~ fem_num + age + educ + inc_
    cont + sexornt + married + race_gss + hispanic_binary + ind
    _born
                        + region_gss + module_end + scales_first +
                             self_first)
summary(model3c_1b)
BIC(model3c_1b)
AIC(model3c_1b)

model3c_2b <- lm(health_3cat ~ masc_num + age + educ + inc_
    cont + sexornt + married + race_gss + hispanic_binary + ind
    _born
                        + region_gss + module_end + scales_first +
                             self_first)
summary(model3c_2b)
BIC(model3c_2b)
AIC(model3c_2b)

model3c_3b <- lm(health_3cat ~ masc_num + fem_num + age +
    educ + inc_cont + sexornt + married + race_gss + hispanic_
    binary + ind_born
                        + region_gss + module_end + scales_first +
                             self_first)
summary(model3c_3b)
BIC(model3c_3b)
AIC(model3c_3b)



## Table 4

# Without controls for survey condition

model4_1b <- lm(health_3cat ~ third_masc_num + age + educ +
    inc_cont + sexornt + married + race_gss + hispanic_binary +
     ind_born
```

```
                    + region_gss )
summary(model4_1b)
BIC(model4_1b)
AIC(model4_1b)

model4_2b <- lm(health_3cat ~ third_masc_num + masc_num + age
    + educ + inc_cont + sexornt + married + race_gss +
    hispanic_binary + ind_born
                    + region_gss )
summary(model4_2b)
BIC(model4_2b)
AIC(model4_2b)

# With controls for survey condition

model4c_1b <- lm(health_3cat ~ third_masc_num + age + educ +
    inc_cont + sexornt + married + race_gss + hispanic_binary +
     ind_born
                    + region_gss + module_end + scales_first +
                         self_first)
summary(model4c_1b)
BIC(model4c_1b)
AIC(model4c_1b)

model4c_2b <- lm(health_3cat ~ third_masc_num + masc_num +
    age + educ + inc_cont + sexornt + married + race_gss +
    hispanic_binary + ind_born
                    + region_gss + module_end + scales_first +
                         self_first)
summary(model4c_2b)
BIC(model4c_2b)
AIC(model4c_2b)

## Table 5

# Without controls for survey condition

model5_1b <- lm(health_3cat ~ ind_noncomformy + age + educ +
    inc_cont + sexornt + married + race_gss + hispanic_binary +
     ind_born
                    + region_gss )
summary(model5_1b)
BIC(model5_1b)
AIC(model5_1b)


model5_2b <- lm(health_3cat ~ ind_noncomformy + ind_reflected
    _noncomformy + age + educ + inc_cont + sexornt + married +
    race_gss + hispanic_binary + ind_born
                    + region_gss )
summary(model5_2b)
```

```
BIC(model5_2b)
AIC(model5_2b)

model5_3b <- lm(health_3cat ~ ind_noncomformy + ind_reflected
    _noncomformy +ind_noncomformy*ind_reflected_noncomformy +
    age + educ + inc_cont + sexornt + married + race_gss +
    hispanic_binary + ind_born
                 + region_gss )
summary(model5_3b)
BIC(model5_3b)
AIC(model5_3b)

# With controls for survey condition

model5c_1b <- lm(health_3cat ~ ind_noncomformy + age + educ +
     inc_cont + sexornt + married + race_gss + hispanic_binary
    + ind_born
                 + region_gss + module_end + scales_first +
                    self_first)
summary(model5c_1b)
BIC(model5c_1b)
AIC(model5c_1b)


model5c_2b <- lm(health_3cat ~ ind_noncomformy + ind_
    reflected_noncomformy + age + educ + inc_cont + sexornt +
    married + race_gss + hispanic_binary + ind_born
                 + region_gss + module_end + scales_first +
                    self_first)
summary(model5c_2b)
BIC(model5c_2b)
AIC(model5c_2b)

model5c_3b <- lm(health_3cat ~ ind_noncomformy + ind_
    reflected_noncomformy +ind_noncomformy*ind_reflected_
    noncomformy + age + educ + inc_cont + sexornt + married +
    race_gss + hispanic_binary + ind_born
                 + region_gss + module_end + scales_first +
                    self_first)
summary(model5c_3b)
BIC(model5c_3b)
AIC(model5c_3b)



detach(men)

starcut=c(0.05, 0.01, 0.001)
stargazer(model3_1a, model3_2a, model3_3a, model3_1b, model3_
    2b, model3_3b, type="latex", star.cutoffs=starcut)
```

```
stargazer(model3c_1a, model3c_2a, model3c_3a, model3c_1b, model3c_2b, model3c_3b, type="latex", star.cutoffs=starcut)

stargazer(model4_1a, model4_2a, model4_1b, model4_2b, type="latex", star.cutoffs=starcut)
stargazer(model4c_1a, model4c_2a, model4c_1b, model4c_2b, type="latex", star.cutoffs=starcut)

stargazer(model5_1a, model5_2a, model5_3a, model5_1b, model5_2b, model5_3b, type="latex", star.cutoffs=starcut)
stargazer(model5c_1a, model5c_2a, model5c_3a, model5c_1b, model5c_2b, model5c_3b, type="latex", star.cutoffs=starcut)



#### Extension : without subsamples for cisgender women and men ####

attach(agms)

cis_women <- (sex=="Female") & (gender=="Woman")

## Table 3

model3_1w <- lm(health_3cat ~ fem_num*cis_women + age + educ + inc_cont + sexornt + married + race_gss + hispanic_binary + ind_born
                + region_gss + module_end + scales_first + self_first)
summary(model3_1w)
BIC(model3_1w)
AIC(model3_1w)

model3_2w <- lm(health_3cat ~ masc_num*cis_women + age + educ + inc_cont + sexornt + married + race_gss + hispanic_binary + ind_born
                + region_gss + module_end + scales_first + self_first)
summary(model3_2w)
BIC(model3_2w)
AIC(model3_2w)


model3_3w <- lm(health_3cat ~ fem_num*cis_women + masc_num*cis_women + age + educ + inc_cont + sexornt + married + race_gss + hispanic_binary + ind_born
                + region_gss+ module_end + scales_first + self_first )
summary(model3_3w)
BIC(model3_3w)
AIC(model3_3w)
```

```
stargazer(model3_1w, model3_2w, model3_3w, type="latex", star.cutoffs=starcut)




## Table 4

model4_1w <- lm(health_3cat ~ third_fem_num*cis_women + age + educ + inc_cont + sexornt + married + race_gss + hispanic_binary + ind_born
                     + region_gss + module_end + scales_first + self_first)
summary(model4_1w)
BIC(model4_1w)
AIC(model4_1w)

model4_2w <- lm(health_3cat ~ third_fem_num*cis_women + fem_num*cis_women + age + educ + inc_cont + sexornt + married + race_gss + hispanic_binary + ind_born
                     + region_gss + module_end + scales_first + self_first)
summary(model4_2w)
BIC(model4_2w)
AIC(model4_2w)

stargazer(model4_1w, model4_2w, type="latex", star.cutoffs=starcut)


## Table 5

ind_noncomformy <- ((masc_num < fem_num) & (cis_women==FALSE)) | ((fem_num < masc_num) & (cis_women==TRUE))
ind_reflected_noncomformy <- ((third_masc_num < third_fem_num) & (cis_women==FALSE)) | ((third_fem_num < third_masc_num) & (cis_women==TRUE))


model5_1w <- lm(health_3cat ~ ind_noncomformy*cis_women + age + educ + inc_cont + sexornt + married + race_gss + hispanic_binary + ind_born
                     + region_gss + module_end + scales_first + self_first)
summary(model5_1w)
BIC(model5_1w)
AIC(model5_1w)

model5_2w <- lm(health_3cat ~ ind_noncomformy*cis_women + ind_reflected_noncomformy*cis_women + age + educ + inc_cont +
```

```
    sexornt + married + race_gss + hispanic_binary + ind_born
                    + region_gss + module_end + scales_first +
                         self_first)
summary(model5_2w)
BIC(model5_2w)
AIC(model5_2w)

model5_3w <- lm(health_3cat ~ ind_noncomformy*cis_women + ind
    _reflected_noncomformy*cis_women +ind_noncomformy*ind_
    reflected_noncomformy*cis_women + age + educ + inc_cont +
    sexornt + married + race_gss + hispanic_binary + ind_born
                    + region_gss + module_end + scales_first +
                         self_first)
summary(model5_3w)
BIC(model5_3w)
AIC(model5_3w)


stargazer(model5_1w, model5_2w, model5_3w, type="latex", star
    .cutoffs=starcut)



#### Extension: mental health mntlhlth ####

## Histogram

hist(mntlhlth, col="gold", freq=FALSE)
detach(agms)

interv <- c(0, 0, 5, 15, 30)
attach(women)
his1 <- hist(mntlhlth, breaks=interv, plot=FALSE)
detach(women)
attach(men)
his2 <- hist(mntlhlth, breaks=interv, plot=FALSE)
detach(men)
attach(agms)
mat <- rbind(his1$counts, his2$counts)
colnames(mat) <- interv[-1]
barplot(mat, beside = TRUE, col = c("red", "blue"), cex.names
     = 0.5, las = 2, main="Histogram of mntlhlth by gender")



## tobit regressions

attach(women)

tobit3_1a <- tobit(mntlhlth~fem_num + age + educ + inc_cont +
     sexornt + married + race_gss + hispanic_binary + ind_born
```

```
                    + region_gss + module_end + scales_first +
                        self_first , right=30, dist="gaussian")
summary(tobit3_1a)

tobit3_2a <- tobit(mntlhlth~masc_num + age + educ + inc_cont
    + sexornt + married + race_gss + hispanic_binary + ind_born
                        + region_gss + module_end + scales_first +
                            self_first , right=30, dist="gaussian")
summary(tobit3_2a)

tobit3_3a <- tobit(mntlhlth~fem_num + masc_num + age + educ +
     inc_cont + sexornt + married + race_gss + hispanic_binary
    + ind_born
                        + region_gss + module_end + scales_first +
                            self_first , right=30, dist="gaussian")
summary(tobit3_3a)

detach(women)

attach(men)

tobit3_1b <- tobit(mntlhlth~fem_num + age + educ + inc_cont +
     sexornt + married + race_gss + hispanic_binary + ind_born
                        + region_gss + module_end + scales_first +
                            self_first , right=30, dist="gaussian")
summary(tobit3_1b)

tobit3_2b <- tobit(mntlhlth~masc_num + age + educ + inc_cont
    + sexornt + married + race_gss + hispanic_binary + ind_born
                        + region_gss + module_end + scales_first +
                            self_first , right=30, dist="gaussian")
summary(tobit3_2b)

tobit3_3b <- tobit(mntlhlth~fem_num + masc_num + age + educ +
     inc_cont + sexornt + married + race_gss + hispanic_binary
    + ind_born
                        + region_gss + module_end + scales_first +
                            self_first , right=30, dist="gaussian")
summary(tobit3_3b)

stargazer(tobit3_1a, tobit3_2a, tobit3_3a, tobit3_1b, tobit3_
    2b, tobit3_3b, type="latex", star.cutoffs = starcut)


## Discretization of the variable

mental <- cut(mntlhlth, breaks=c(0,1,6,16,30), include.lowest
    =TRUE, right=FALSE)
barplot(prop.table(table(mental)), col="gold")
```