Replication materials for “Islam and Mass Preferences towards Foreign Direct Investment in Tunisia”

2021-01-22

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README

The file `vignettes/jepsr.Rmd` contains code to replicate all results in the paper and appendix.

- See R Markdown below for how to run this file.

Required packages

In addition to additional included code (see below), this file requires the following R packages:

- broom
- cjoint
- dplyr
- ggplot2
- haven
- here
- knitr
- lmtest
- margins
- ordinal
- purrr
- qdap
- reshape2
- readr
- stringr
- tidyr
- tidyselect

Please make sure you have up-to-date versions of these packages.

This code also relies on projects under development, which are included within `vignettes/data`.

- `wickr` extends `broom` (https://broom.tidymodels.org/) for summarizing models.
- `galaxy` builds regression tables from `wickr` summaries.

The main file includes code to load the additional files in `vignettes/data`.

R Markdown

The file is in R Markdown format. This format produces structured reports with code built in.

Code in R Markdown files is organized into chunks. Each chunk looks something like

````
```{r hello, eval=TRUE, include=TRUE}
cat("Hello, world!\n")
```
````

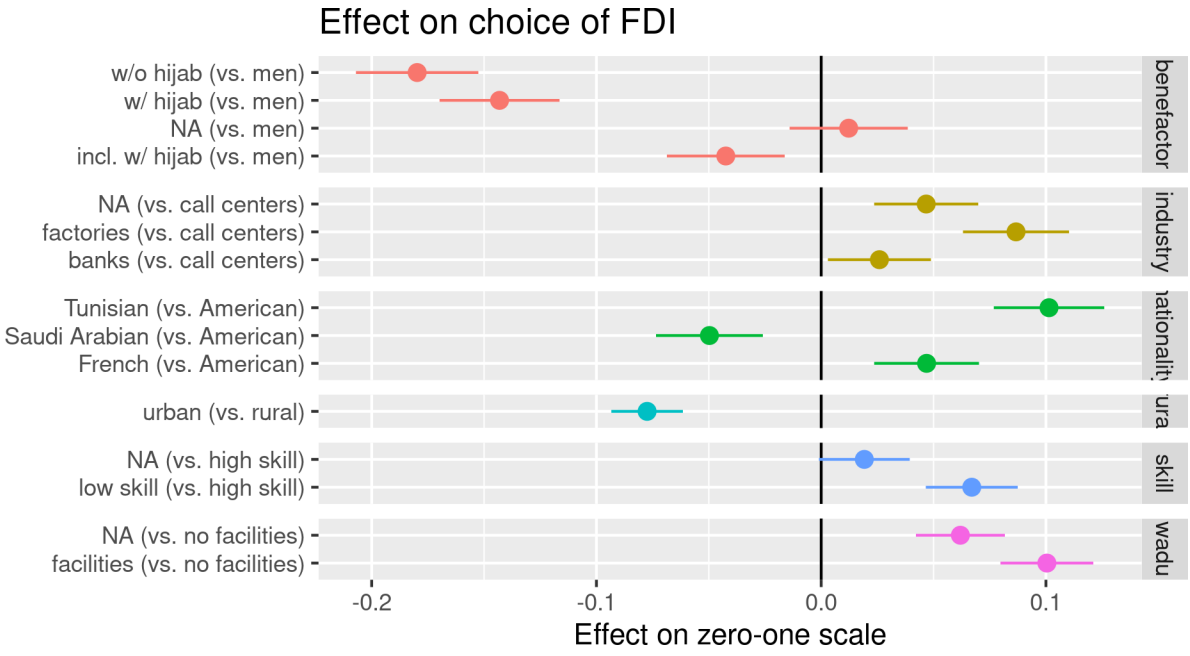
Run the chunks in the order presented in the file to create the output.

- If using RStudio, you can click the play icon on each chunk to run all statements in the chunk.
- Clicking the "Knit" button in RStudio will prepare a complete PDF from the file.
- You can also copy and paste statements from a chunk into the R console.
- Chunks marked with `eval=FALSE` are not run (though they were run to prepare the document).

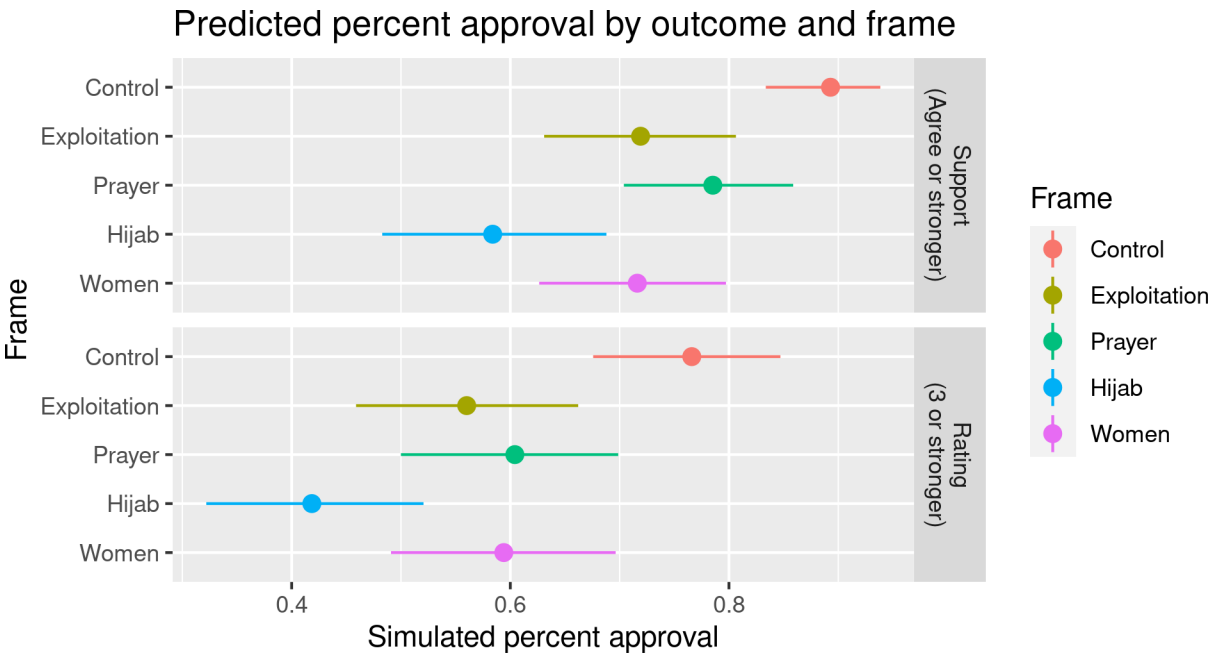
Please see https://rmarkdown.rstudio.com/lesson-1.html for complete instructions on R Markdown.

Paper

Experimental Design I (Conjoint)



Experimental Design II (Vignettes)



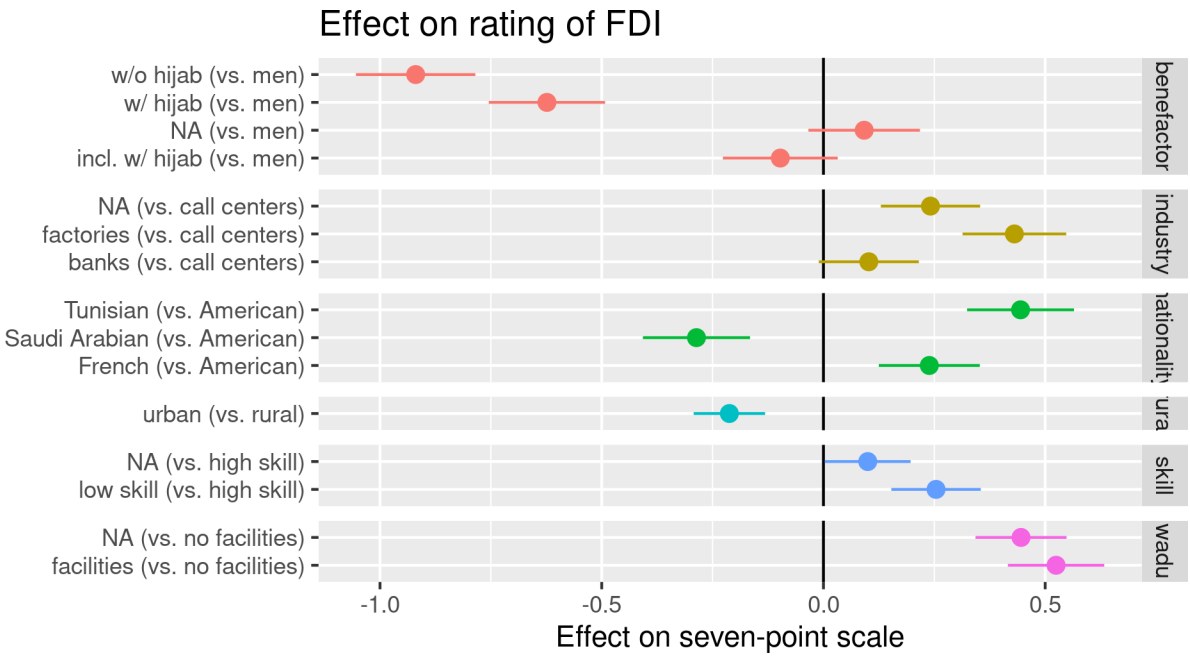
Scale medians (footnote in text)

Scale	Median	At or above
Rating	3	57.1%
Support	Agree	73.4%

Appendix

Experimental Design I (Conjoint)

Additional main result



Covariate analyses

Gender

Differences by Gender in effect on rating

Attribute	Level	Group 1	Group 2	Difference	SE	z	p
benefactor	incl. w/ hijab	Male	Female	-0.4944	0.1288	-3.837	0.0001
benefactor	NA	Male	Female	-0.3902	0.1248	-3.126	0.0018
benefactor	w/ hijab	Male	Female	-0.3233	0.1317	-2.456	0.0141
benefactor	w/o hijab	Male	Female	-0.3495	0.1353	-2.584	0.0098
nationality	Tunisian	Male	Female	0.2036	0.1211	1.681	0.0927

Differences by Gender in effect on choice

Attribute	Level	Group 1	Group 2	Difference	SE	z	p
benefactor	incl. w/ hijab	Male	Female	-0.0996	0.0262	-3.801	0.0001
benefactor	NA	Male	Female	-0.1203	0.0262	-4.588	0.0000
benefactor	w/ hijab	Male	Female	-0.0906	0.0269	-3.370	0.0008
benefactor	w/o hijab	Male	Female	-0.1156	0.0274	-4.225	0.0000
rural	urban	Male	Female	0.0339	0.0160	2.122	0.0338

Religiosity

Differences by Religiosity in effect on rating

Attribute	Level	Group 1	Group 2	Difference	SE	z	p
benefactor	w/o hijab	Hardly	Somewhat	0.3098	0.1655	1.872	0.0612
industry	factories	Devoutly	Somewhat	0.3867	0.1447	2.672	0.0075
industry	NA	Devoutly	Somewhat	0.3151	0.1366	2.307	0.0211
industry	NA	Hardly	Somewhat	0.2946	0.1405	2.097	0.0360
rural	urban	Devoutly	Hardly	-0.2701	0.1130	-2.389	0.0169
rural	urban	Hardly	Somewhat	0.1768	0.0997	1.772	0.0764

Differences by Religiosity in effect on choice

Attribute	Level	Group 1	Group 2	Difference	SE	z	p
benefactor	w/o hijab	Hardly	Somewhat	0.0628	0.0340	1.848	0.0646
nationality	French	Hardly	Somewhat	0.0546	0.0293	1.861	0.0627
nationality	Tunisian	Hardly	Somewhat	0.0569	0.0303	1.877	0.0605
rural	urban	Devoutly	Hardly	-0.0406	0.0224	-1.816	0.0694

Unemployment, among respondents under 40

			rating		choice	
	level	baseline	Average Effect	Difference	Average Effect	Difference
(Intercept)	TRUE	FALSE		−0.082		0.028
				(0.263)		(0.050)
benefactor	incl. w/ hijab	men	−0.067	0.116	−0.024	−0.024
			(0.080)	(0.207)	(0.016)	(0.041)
	NA	men	0.080	0.326	0.030	0.018
			(0.077)	(0.207)	(0.016)	(0.044)
	w/ hijab	men	−0.598***	0.099	−0.127***	−0.028
			(0.080)	(0.208)	(0.016)	(0.043)
	w/o hijab	men	−0.911***	−0.056	−0.169***	0.011
			(0.080)	(0.207)	(0.017)	(0.045)
industry	banks	call centers	0.072	−0.075	0.037**	−0.039
			(0.067)	(0.175)	(0.014)	(0.037)
	factories	call centers	0.548***	0.189	0.106***	0.011
			(0.071)	(0.170)	(0.014)	(0.035)
	NA	call centers	0.243***	−0.002	0.050***	0.009
			(0.069)	(0.174)	(0.014)	(0.035)
nationality	French	American	0.164*	0.228	0.034*	0.032
			(0.069)	(0.186)	(0.014)	(0.039)
	Saudi Arabian	American	−0.332***	−0.038	−0.056***	−0.010
			(0.071)	(0.167)	(0.015)	(0.038)
	Tunisian	American	0.385***	−0.017	0.084***	0.014
			(0.072)	(0.187)	(0.015)	(0.039)
rural	urban	rural	−0.216***	0.081	−0.087***	0.005
			(0.049)	(0.126)	(0.010)	(0.025)
skill	low skill	high skill	0.238***	−0.037	0.077***	−0.059
			(0.062)	(0.178)	(0.013)	(0.033)
	NA	high skill	0.096	−0.089	0.024	−0.050
			(0.059)	(0.157)	(0.012)	(0.031)
wadu	facilities	no facilities	0.553***	−0.108	0.117***	0.005
			(0.065)	(0.164)	(0.013)	(0.033)
	NA	no facilities	0.441***	−0.129	0.070***	0.011
			(0.062)	(0.175)	(0.012)	(0.032)
n			970	970	981	981

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

Table 6: Average component effects and conditional differences by employment

Unemployment, among male respondents under 40

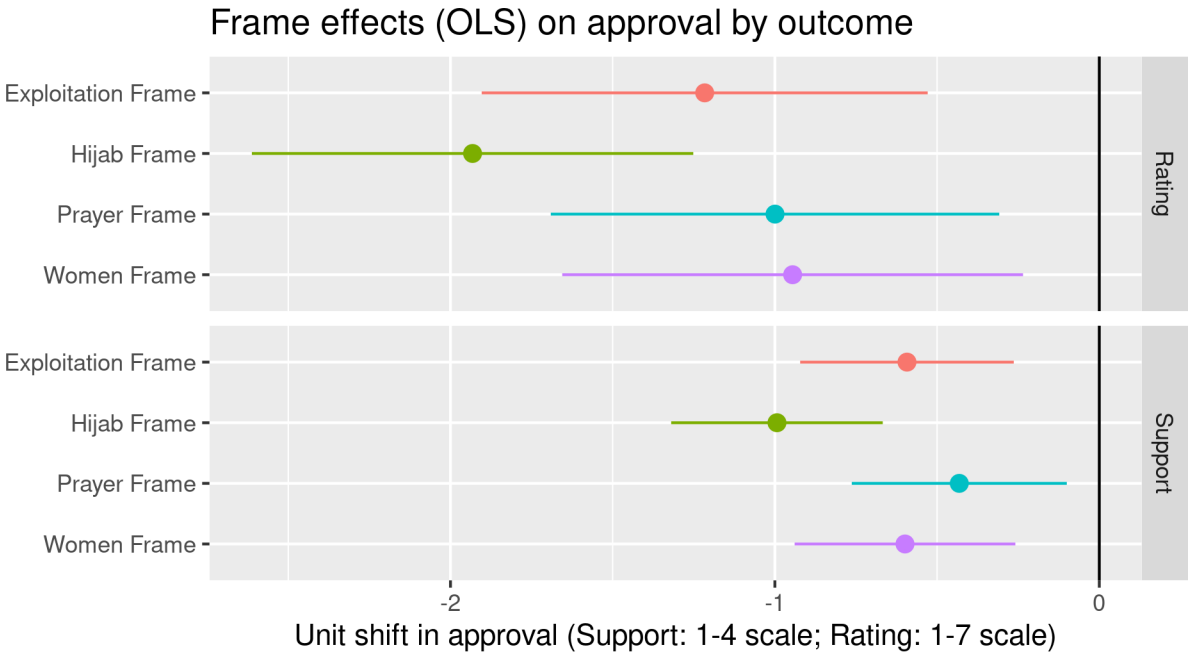
			rating		choice	
	level	baseline	Average Effect	Difference	Average Effect	Difference
(Intercept)	TRUE	FALSE		−0.189		−0.007
				(0.360)		(0.072)
benefactor	incl. w/ hijab	men	−0.273*	0.283	−0.082***	−0.015
			(0.114)	(0.275)	(0.022)	(0.055)
	NA	men	−0.081	0.366	−0.036	0.056
			(0.109)	(0.269)	(0.023)	(0.060)
	w/ hijab	men	−0.700***	0.051	−0.172***	−0.022
			(0.110)	(0.265)	(0.022)	(0.057)
	w/o hijab	men	−1.017***	−0.179	−0.230***	0.039
			(0.109)	(0.262)	(0.023)	(0.056)
industry	banks	call centers	0.059	0.097	0.027	0.024
			(0.093)	(0.227)	(0.019)	(0.048)
	factories	call centers	0.449***	0.029	0.095***	−0.001
			(0.099)	(0.229)	(0.020)	(0.051)
	NA	call centers	0.152	−0.050	0.042*	−0.032
			(0.091)	(0.241)	(0.020)	(0.048)
nationality	French	American	0.101	0.340	0.018	0.013
			(0.093)	(0.248)	(0.020)	(0.057)
	Saudi Arabian	American	−0.324**	−0.134	−0.056**	−0.052
			(0.099)	(0.226)	(0.020)	(0.051)
	Tunisian	American	0.472***	0.031	0.091***	0.023
			(0.098)	(0.241)	(0.021)	(0.052)
rural	urban	rural	−0.190**	0.126	−0.061***	0.016
			(0.066)	(0.163)	(0.013)	(0.036)
skill	low skill	high skill	0.217*	−0.096	0.078***	−0.041
			(0.086)	(0.226)	(0.018)	(0.046)
	NA	high skill	0.159*	−0.244	0.020	−0.049
			(0.080)	(0.193)	(0.017)	(0.040)
wadu	facilities	no facilities	0.533***	−0.218	0.114***	0.018
			(0.091)	(0.208)	(0.017)	(0.045)
	NA	no facilities	0.440***	0.011	0.079***	0.058
			(0.086)	(0.245)	(0.016)	(0.045)
n			517	517	522	522

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

Table 7: Average component effects and conditional differences by employment

Experimental Design II (Vignettes)

OLS estimates



Tables

Ordered Logit

	level	Rating	Support	Rating	Support
Frame	Exploitation Frame	-0.821^{**}	-1.044^{***}	-0.974^{**}	-1.213^{***}
		(0.265)	(0.275)	(0.295)	(0.305)
	Hijab Frame	-1.442^{***}	-1.650^{***}	-1.580^{***}	-1.842^{***}
		(0.264)	(0.279)	(0.290)	(0.307)
	Prayer Frame	-0.772^{**}	-0.909^{**}	-0.797^{**}	-0.843^{**}
		(0.267)	(0.280)	(0.293)	(0.308)
	Women Frame	-0.689^{*}	-1.097^{***}	-0.834^{**}	-1.235^{***}
		(0.275)	(0.289)	(0.299)	(0.315)
Age	...			0.013	0.014
				(0.007)	(0.007)
Education	BA or higher			−0.090	−0.063
				(0.227)	(0.233)
	Secondary			−0.212	−0.411
				(0.234)	(0.238)
Gender	Female			0.285	0.491^{*}
				(0.190)	(0.197)
Income	High Income			0.115	−0.044
				(0.190)	(0.192)
Religiosity	Hardly religious			0.252	0.265
				(0.268)	(0.277)
	Somewhat religious			0.196	0.101
				(0.199)	(0.205)
Rural	Urban			0.188	0.109
				(0.218)	(0.228)
AIC		1697.197	1226.379	1471.452	1063.711
n		504	504	438	439
Note:					* p < 0.05; ** p < 0.01; *** p < 0.001

Table 8: Effects on FDI approval, ordinal model

OLS

	level	Rating	Support	Rating	Support
(Intercept)	...	5.707***	3.489***	4.752***	3.145***
		(0.232)	(0.113)	(0.600)	(0.288)
Frame	Exploitation Frame	−1.012**	−0.526***	−1.216***	−0.593***
		(0.315)	(0.154)	(0.344)	(0.165)
	Hijab Frame	−1.797***	−0.935***	−1.932***	−0.994***
		(0.314)	(0.153)	(0.340)	(0.163)
	Prayer Frame	−0.954**	−0.489**	−1.000**	−0.432**
		(0.317)	(0.155)	(0.346)	(0.166)
	Women Frame	−0.819*	−0.590***	−0.945**	−0.599***
		(0.330)	(0.161)	(0.355)	(0.170)
Age	...			0.014	0.005
				(0.008)	(0.004)
Education	BA or higher			−0.081	−0.028
				(0.277)	(0.133)
	Secondary			−0.193	−0.205
				(0.280)	(0.134)
Gender	Female			0.403	0.270*
				(0.232)	(0.111)
Income	High Income			0.084	−0.050
				(0.230)	(0.110)
Religiosity	Hardly religious			0.320	0.141
				(0.328)	(0.157)
	Somewhat religious			0.174	0.050
				(0.242)	(0.117)
Rural	Urban			0.277	0.076
				(0.265)	(0.127)
AIC		2242.023	1518.354	1957.878	1319.429
n		504	504	438	439
Note:				* p < 0.05; ** p < 0.01; *** p < 0.001	

Table 9: Effects on FDI approval, OLS model

Covariate Balance (versus Arab Barometer 4)

Age

value	conjoint	vignettes	AB4 Final Weight
18-24	0.238	0.195	16.000
25-34	0.332	0.213	24.000
35-44	0.139	0.195	20.000
45-54	0.128	0.177	17.000
55+	0.159	0.220	23.000
NA	0.005		

Education

value	conjoint	vignettes	AB4 Final Weight
Unschooled	0.031	0.057	15.000
Completed elementary	0.274	0.309	37.000
Completed secondary	0.298	0.287	29.000
College	0.391	0.346	19.000
	0.005		

Employment

value	conjoint	vignettes	AB4 Final Weight
Employed	0.504		34.000
Unemployed	0.160		17.000
NA	0.336	1.000	

Gender

value	conjoint	vignettes	AB4 Final Weight
Female	0.437	0.533	50.000
Male	0.563	0.467	50.000

Income

value	conjoint	vignettes	AB4 Final Weight
Less than DT 100	0.009	0.006	4.000
DT 101-200	0.035	0.039	11.000
DT 201-300	0.065	0.047	11.000
DT 301-400	0.087	0.093	12.000
DT 401-500	0.100	0.130	10.000
DT 501-600	0.106	0.085	6.000
DT 601-800	0.150	0.163	13.000
DT 801-1000	0.131	0.124	9.000
DT 1001-2000	0.152	0.169	10.000
DT 2000+	0.045	0.033	4.000
NA	0.121	0.110	

Urbanity

value	conjoint	vignettes	AB4 Final Weight
Rural	0.209	0.213	32.000
Urban	0.785	0.787	68.000
NA	0.005		

Covariate Balance (by vignette treatment)

Age (quartiles)

value	Control	Exploitation	Hijab	Prayer	Women	Sum
18-26	0.0472	0.0492	0.0472	0.0630	0.0453	0.2520
27-38	0.0453	0.0453	0.0453	0.0669	0.0453	0.2480
39-53	0.0453	0.0531	0.0728	0.0315	0.0492	0.2520
54-83	0.0512	0.0650	0.0512	0.0453	0.0354	0.2480
Sum	0.1890	0.2126	0.2165	0.2067	0.1752	1.0000

Education

value	Control	Exploitation	Hijab	Prayer	Women	Sum
Illiterate / no education	0.0098	0.0157	0.0079	0.0157	0.0079	0.0571
Elementary	0.0256	0.0276	0.0492	0.0197	0.0315	0.1535
Intermediate	0.0295	0.0354	0.0335	0.0315	0.0256	0.1555
Secondary	0.0709	0.0571	0.0512	0.0709	0.0374	0.2874
BA degree	0.0433	0.0492	0.0492	0.0492	0.0512	0.2421
MA degree or higher	0.0098	0.0276	0.0256	0.0197	0.0217	0.1043
Sum	0.1890	0.2126	0.2165	0.2067	0.1752	1.0000

Gender

value	Control	Exploitation	Hijab	Prayer	Women	Sum
Female	0.0945	0.1240	0.1161	0.1122	0.0866	0.5335
Male	0.0945	0.0886	0.1004	0.0945	0.0886	0.4665
Sum	0.1890	0.2126	0.2165	0.2067	0.1752	1.0000

Income

value	Control	Exploitation	Hijab	Prayer	Women	Sum
0 - 100 dinars	0.0000	0.0022	0.0022	0.0022	0.0000	0.0066
101 - 200 dinars	0.0044	0.0243	0.0088	0.0022	0.0044	0.0442
201 - 300 dinars	0.0111	0.0088	0.0133	0.0133	0.0066	0.0531
301 - 400 dinars	0.0288	0.0265	0.0221	0.0111	0.0155	0.1040
401 - 500 dinars	0.0221	0.0243	0.0332	0.0420	0.0243	0.1460
501 - 600 dinars	0.0221	0.0221	0.0243	0.0199	0.0066	0.0951
601 - 700 dinars	0.0332	0.0088	0.0177	0.0243	0.0288	0.1128
701 - 800 dinars	0.0088	0.0088	0.0221	0.0066	0.0243	0.0708
801 - 900 dinars	0.0022	0.0022	0.0000	0.0155	0.0066	0.0265
901 - 1000 dinars	0.0221	0.0221	0.0265	0.0243	0.0177	0.1128
1001 - 2000 dinars	0.0310	0.0442	0.0398	0.0354	0.0398	0.1903
More than 2000 dinars	0.0000	0.0111	0.0088	0.0088	0.0088	0.0376
Sum	0.1858	0.2058	0.2190	0.2058	0.1836	1.0000

Religiosity

value	Control	Exploitation	Hijab	Prayer	Women	Sum
Devoutly religious	0.0643	0.0643	0.0863	0.0763	0.0582	0.3494
Somewhat religious	0.0924	0.1024	0.1064	0.0944	0.0884	0.4839
Hardly religious	0.0361	0.0482	0.0201	0.0321	0.0301	0.1667
Sum	0.1928	0.2149	0.2129	0.2028	0.1767	1.0000

Rural

value	Control	Exploitation	Hijab	Prayer	Women	Sum
Rural	0.0472	0.0433	0.0433	0.0512	0.0276	0.2126
Urban	0.1417	0.1693	0.1732	0.1555	0.1476	0.7874
Sum	0.1890	0.2126	0.2165	0.2067	0.1752	1.0000

Rating

value	Control	Exploitation	Hijab	Prayer	Women	Sum
1 - Very strongly support	0.1032	0.0853	0.0556	0.0853	0.0714	0.4008
2	0.0198	0.0119	0.0159	0.0099	0.0139	0.0714
3	0.0179	0.0218	0.0159	0.0218	0.0218	0.0992
4	0.0139	0.0238	0.0278	0.0298	0.0218	0.1171
5	0.0119	0.0258	0.0298	0.0198	0.0159	0.1032
6	0.0040	0.0099	0.0159	0.0040	0.0040	0.0377
7 - Very strongly oppose	0.0119	0.0357	0.0575	0.0377	0.0278	0.1706
Sum	0.1825	0.2143	0.2183	0.2083	0.1766	1.0000

Support

value	Control	Exploitation	Hijab	Prayer	Women	Sum
Strongly Agree	0.1171	0.0794	0.0615	0.0933	0.0694	0.4206
Agree	0.0496	0.0853	0.0655	0.0575	0.0556	0.3135
Disagree	0.0040	0.0119	0.0238	0.0218	0.0159	0.0774
Strongly disagree	0.0119	0.0377	0.0675	0.0357	0.0357	0.1885
Sum	0.1825	0.2143	0.2183	0.2083	0.1766	1.0000