Determinants of Protest Participation in the Arab Uprisings:

Grievances and Opportunities in Egypt and Tunisia

APPENDIX

Table A1: Impact of Grievances and Opportunities on Protest Participation (Full Models)

	Protest Participation					
	Egypt	Tunisia	Egypt	Tunisia	Egypt	Tunisia
	(1)	(2)	(3)	(4)	(5)	(6)
Grievances	0.139	0.236**			0.071	0.272**
	(0.101)	(0.074)			(0.118)	(0.084)
Economic Grievances			0.084	0.257*		
			(0.132)	(0.113)		
Political Grievances			0.211	0.218*		
			(0.149)	(0.101)		
Opportunity	0.348*	-0.045	0.331*	-0.039	0.337*	-0.100
	(0.158)	(0.115)	(0.159)	(0.117)	(0.158)	(0.129)
Grievances * Opportunity					0.139	0.068
					(0.120)	(0.073)
Age	-0.015	-0.053***	-0.015	-0.053***	-0.015	-0.054***
	(0.011)	(0.012)	(0.011)	(0.012)	(0.011)	(0.012)
Female	-0.797*	-1.601***	-0.778*	-1.607***	-0.802*	-1.602***
	(0.332)	(0.270)	(0.333)	(0.271)	(0.333)	(0.270)
College Education	0.184	-0.067	0.175	-0.068	0.167	-0.080
	(0.310)	(0.276)	(0.310)	(0.276)	(0.310)	(0.276)
Employed	0.462	0.081	0.465	0.087	0.464	0.085
	(0.310)	(0.235)	(0.310)	(0.236)	(0.309)	(0.235)
Urban	0.395	0.393	0.382	0.396	0.400	0.408
	(0.271)	(0.257)	(0.271)	(0.257)	(0.271)	(0.258)
Interest in Politics	0.100	-0.023	0.109	-0.018	0.089	-0.033
	(0.385)	(0.278)	(0.385)	(0.278)	(0.385)	(0.278)
Follow News	0.582*	0.590***	0.568*	0.589***	0.596**	0.593***
	(0.228)	(0.170)	(0.228)	(0.170)	(0.229)	(0.170)
Membership	0.212	1.383**	0.220	1.377**	0.191	1.397**

	(0.358)	(0.473)	(0.358)	(0.474)	(0.358)	(0.474)
Trust	-0.418	-0.131	-0.448	-0.129	-0.420	-0.149
	(0.275)	(0.239)	(0.280)	(0.239)	(0.275)	(0.240)
Religiosity	0.237	-0.019	0.260	-0.016	0.232	-0.015
	(0.258)	(0.178)	(0.261)	(0.178)	(0.259)	(0.178)
Support Democracy	0.071	0.041	0.070	0.041	0.076	0.040
	(0.054)	(0.046)	(0.055)	(0.046)	(0.054)	(0.046)
Internet Use	0.194*	0.122	0.196*	0.126	0.198*	0.120
	(0.089)	(0.077)	(0.089)	(0.078)	(0.089)	(0.077)
Constant	-5.348***	-1.702*	-5.332***	-1.707*	-5.446***	-1.724*
	(0.956)	(0.705)	(0.958)	(0.705)	(0.962)	(0.706)
N	944	697	944	697	944	697
Log Likelihood	-237.143	-276.583	-236.986	-276.524	-236.659	-276.021
AIC	504.287	583.166	505.972	585.048	505.317	584.043

+ p<0.1; * p<0.05; ** p<0.01; *** p<0.001

Table A2: Impact of Grievances and Opportunities on Protest Participation (Additional Controls)

	Protest Participation			
	Egypt	Tunisia	Egypt	Tunisia
	(1)	(2)	(3)	(4)
Grievances	-0.074	0.220*		
	(0.144)	(0.088)		
Economic Grievances			-0.023	0.244+
			(0.177)	(0.133)
Political Grievances			-0.160	0.202+
			(0.228)	(0.118)
Opportunity	0.401+	-0.186	0.422+	-0.181
	(0.225)	(0.134)	(0.229)	(0.136)
Income	-0.0002	-0.0001	-0.0002	-0.0001
	(0.0002)	(0.0004)	(0.0002)	(0.0004)
Friends Protested	2.935***	2.023***	2.949***	2.022***
	(0.426)	(0.331)	(0.428)	(0.331)
Sharia Support	0.043	-0.060	0.036	-0.060
	(0.191)	(0.171)	(0.191)	(0.171)
Gradual Change	0.264	-0.201	0.246	-0.202
	(0.225)	(0.151)	(0.226)	(0.152)
Age	-0.004	-0.055***	-0.004	-0.055***
	(0.014)	(0.014)	(0.014)	(0.014)
Female	-1.374**	-1.663***	-1.397**	-1.669***
	(0.507)	(0.311)	(0.509)	(0.312)
College Education	-0.191	0.139	-0.172	0.139
	(0.440)	(0.321)	(0.441)	(0.320)
Employed	1.399**	0.138	1.410**	0.143
	(0.519)	(0.314)	(0.520)	(0.314)
Interest in Politics	-0.245	-0.308	-0.250	-0.302
	(0.595)	(0.336)	(0.593)	(0.337)
Follow News	0.606+	0.490*	0.608+	0.490*
	(0.320)	(0.204)	(0.320)	(0.204)
Membership	-0.674	1.231*	-0.683	1.227*
	(0.462)	(0.561)	(0.464)	(0.563)

Trust	-0.579	0.010	-0.559	0.013
	(0.374)	(0.276)	(0.377)	(0.276)
Religiosity	0.073	0.095	0.053	0.097
	(0.328)	(0.216)	(0.331)	(0.217)
Support Democracy	0.120^{+}	0.057	0.123^{+}	0.058
	(0.071)	(0.055)	(0.071)	(0.055)
Urban	-0.449	0.437	-0.447	0.443
	(0.389)	(0.296)	(0.389)	(0.298)
Internet Use	0.311*	-0.044	0.311*	-0.040
	(0.123)	(0.091)	(0.123)	(0.093)
Constant	-8.475***	-1.772^{+}	-8.408***	-1.781^{+}
	(1.767)	(1.006)	(1.767)	(1.008)
N	583	565	583	565
Log Likelihood	-122.884	-206.321	-122.690	-206.272
AIC	283.769	450.642	285.380	452.543

+ p<0.1; * p<0.05; ** p<0.01; *** p<0.001

Table A3: Impact of Grievances and Opportunities on Protest Participation on Web

	Online Protest Participation			
	Egypt	Tunisia	Egypt	Tunisia
	(1)	(2)	(3)	(4)
Grievances	0.094	0.201*		
	(0.140)	(0.080)		
Economic Grievances			0.103	0.116
			(0.178)	(0.124)
Political Grievances			0.082	0.265*
			(0.202)	(0.108)
Opportunity	0.468*	-0.053	0.471*	-0.075
	(0.210)	(0.120)	(0.212)	(0.123)
Age	-0.073***	-0.078***	-0.073***	-0.077***
	(0.018)	(0.013)	(0.018)	(0.013)
Female	-1.387**	-0.426+	-1.390**	-0.408+
	(0.429)	(0.244)	(0.431)	(0.245)
College Education	1.507***	1.085***	1.509***	1.074***
	(0.359)	(0.248)	(0.360)	(0.248)
Employed	-0.111	-0.410	-0.110	-0.414
	(0.403)	(0.251)	(0.403)	(0.252)
Interest in Politics	0.298	0.244	0.297	0.219
	(0.541)	(0.294)	(0.541)	(0.296)
Follow News	0.772*	0.448*	0.775*	0.448*
	(0.304)	(0.180)	(0.305)	(0.180)
Membership	1.090**	0.690	1.088**	0.710
	(0.409)	(0.533)	(0.409)	(0.534)
Trust	-0.354	0.330	-0.348	0.319
	(0.359)	(0.254)	(0.365)	(0.254)
Religiosity	0.119	-0.156	0.115	-0.165
	(0.344)	(0.189)	(0.346)	(0.190)
Support Democracy	0.025	-0.048	0.025	-0.047
	(0.067)	(0.051)	(0.067)	(0.051)
Gradual Change	0.152	-0.417**	0.149	-0.408**
	(0.207)	(0.140)	(0.210)	(0.141)
Urban	0.301	0.814**	0.300	0.799**
	(0.337)	(0.290)	(0.337)	(0.290)
Constant	-4.490**	1.250	-4.488**	1.178

	(1.450)	(0.834)	(1.450)	(0.838)
N	908	550	908	550
Log Likelihood	-143.376	-242.094	-143.347	-241.604
AIC	316.753	514.187	318.695	515.208

+ p<0.1; * p<0.05; ** p<0.01; *** p<0.001

Figure A1: Predicted Probabilities of Grievances and Opportunities on Protest (with Non-Significant Models)

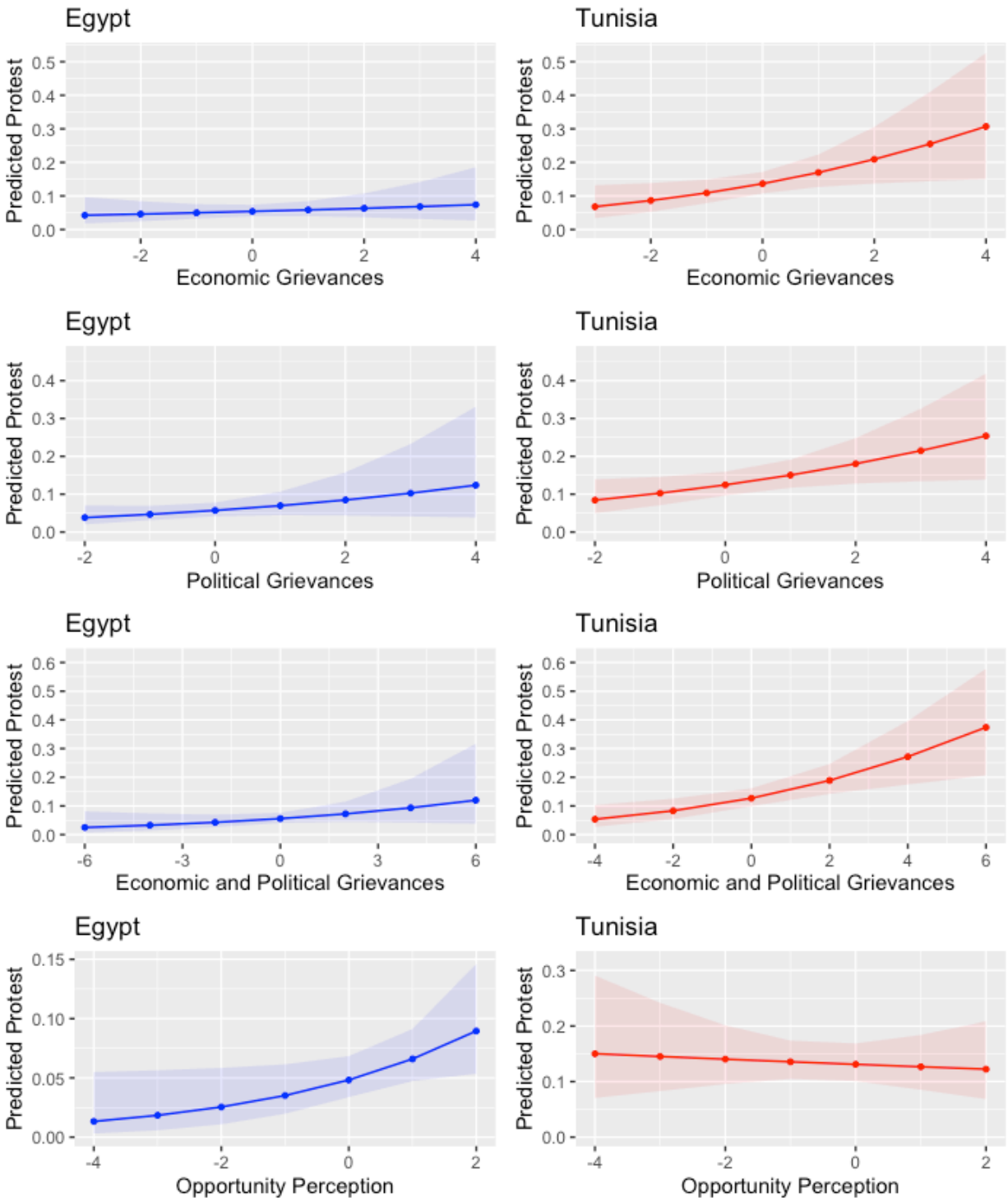

Table A4: Opportunity Perceptions in Egypt (Full Models)

	Protest Participation		Opportunity Perception
	Both Countries	Both Countries	Egypt
	(1)	(2)	(3)
Grievances	0.249***	0.218***	
	(0.074)	(0.059)	
Opportunity Perception	0.103	-0.064	
	(0.093)	(0.115)	
Egypt	-0.992***	-1.097***	
	(0.204)	(0.213)	
Grievances * Egypt	-0.079		
	(0.120)		
Opportunity Perception * Egypt		0.447*	
		(0.193)	
Follow News	0.539***	0.561***	0.142**
	(0.134)	(0.135)	(0.050)
Follow on Internet			0.117*
			(0.052)
Follow on TV			-0.052
			(0.042)
Follow on Press			0.003
			(0.024)
Follow on Radio			-0.046
			(0.028)
Age	-0.035***	-0.036***	0.001
	(0.008)	(0.008)	(0.002)
Female	-1.298***	-1.341***	0.308***
	(0.205)	(0.205)	(0.075)
College Education	0.065	0.064	0.024
	(0.202)	(0.203)	(0.086)
Employed	0.155	0.182	-0.100
	(0.182)	(0.182)	(0.073)
Membership	0.697*	0.704*	0.109
	(0.276)	(0.275)	(0.108)
Trust	-0.308+	-0.281	0.017
	(0.178)	(0.178)	(0.061)
Religiosity	0.020	0.024	0.116+

	(0.143)	(0.144)	(0.060)
Support Democracy	0.053	0.057+	0.030*
	(0.035)	(0.035)	(0.013)
Gradual Change	-0.009	-0.011	0.061+
	(0.101)	(0.099)	(0.034)
Urban	0.369*	0.373*	-0.008
	(0.184)	(0.185)	(0.063)
Internet Use	0.162**	0.151**	-0.062
	(0.057)	(0.057)	(0.049)
Interest in Politics	0.083	0.071	-0.002
	(0.221)	(0.222)	(0.080)
Constant	-2.410***	-2.494***	-0.634*
	(0.640)	(0.640)	(0.279)
N	1,606	1,606	892
R^2			0.077
Log Likelihood	-511.727	-509.501	

+ p<0.1; * p<0.05; ** p<0.01; *** p<0.001

Figure A2: Opportunity Perception among Egyptians based on Different Sources of Information

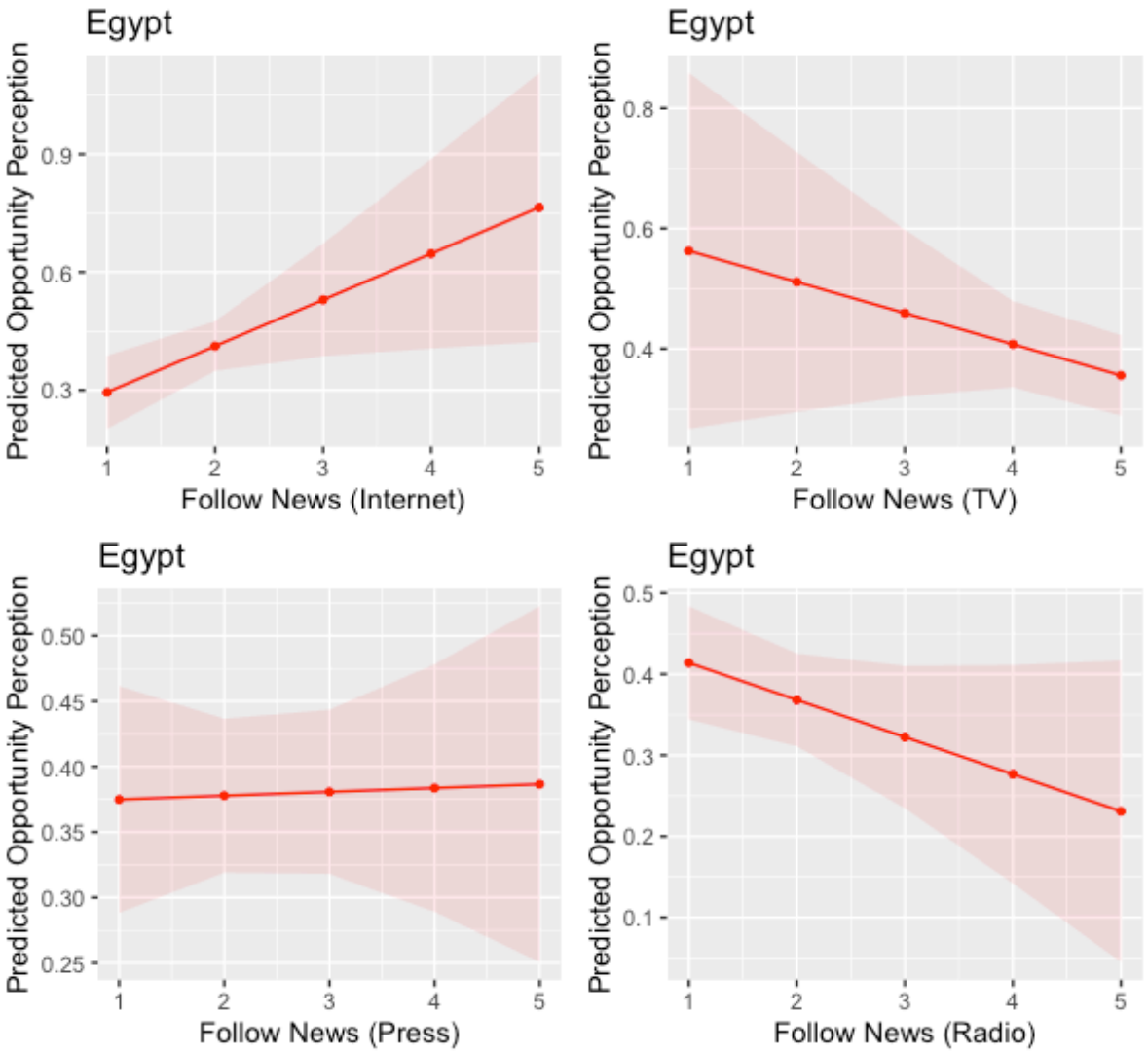

Table A5: Causal Mediation Analysis Results

Table A5a: Effect of Grievances on Protest Participation, Mediated through Opportunities

	Egypt (Mean)	Tunisia (Mean)
Average Causal Mediation Effect (ACME)	0.0020**	-0.0002
Average Direct Effect (ADE)	0.0095	0.0322**
Total Effect	0.0115	0.0321**
Proportion Mediated	0.1770	-0.0050

Note: $^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Table A5b: Effect of Opportunities on Protest Participation, Mediated through Grievances

	Egypt (Mean)	Tunisia (Mean)
Average Causal Mediation Effect (ACME)	0.0014	0.0028
Average Direct Effect (ADE)	0.0250*	-0.0045
Total Effect	0.0263	-0.0017
Proportion Mediated	0.0534	1.6700

Note: $^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Causal mediation analysis helps to understand if there is a causal mediator between the independent and dependent variables. If a factor mediates from the independent variable to the dependent variable, the average causal mediation effect (ACME) is statistically significant. If there is a direct effect from the independent variable to dependent variable, then the average direct effect (ADE) is significant. The relationship can be described as below diagram.

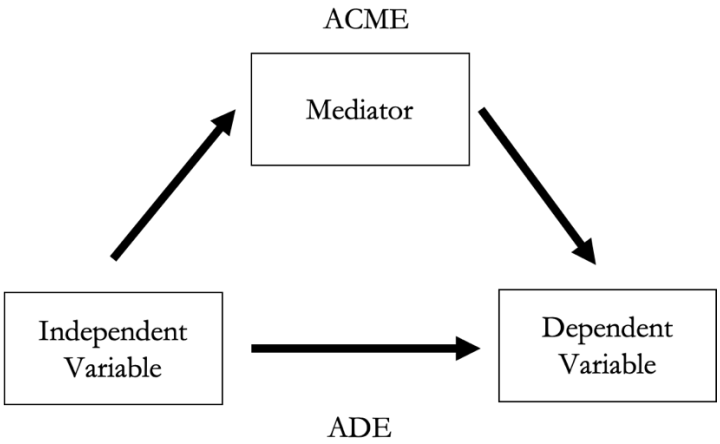

Table A5 shows the causal mediation for grievances and opportunities in Egypt and Tunisia. In any model, if both ADE and ACME are significant, we can argue that independent variable significantly affects the dependent variable with the mediation of the mediator variable and build a causal argument by incorporating both variables in the same model.

The results first support the findings in Table 2 in the main manuscript. Average direct effects (ADE) show that grievances in Tunisia and opportunities in Egypt have significant direct effects on protest participation. On the other hand, opportunities in Tunisia and grievances in Egypt do not have significant average direct effects.

After presenting this, I focus on whether any of these two factors significantly mediates for the other. Table A5a shows that opportunities are a significant mediator for grievances in Egypt (left side of the panel). In other words, people with grievances in Egypt participate in protest if/when these grievances are mediated by a perception of opportunity. However, as the average direct effect is not statistically significant, grievances all in all do not predict protest participation. This actually supports the narrative in the main manuscript. As I argue, Egyptians do have grievances as well. However, their grievances are not enough for them to take the streets. Protest participation do not vary among people with high or low levels of grievances (as seen in ADE). However, those people with grievances participate when they see an opportunity (as seen in ACME). At the end, these two factors are separate and opportunities eventually shape the outcome in Egypt.

In Tunisia, on the other hand, grievances significantly predict protest participation (ADE in the right hand-side of the panel). However, unlike in Egypt, opportunity perception does not in any way mediates for protest participation. This, once again, indicates that grievances was a determinant for which Tunisians participated, regardless of the opportunity perceptions.

In short, the causal mediation analysis supports the argument that these two factors have separate impact in Egypt and Tunisia. Particularly, it shows that Egyptians do have grievances as well; but that factor by itself is not enough to explain which Egyptians participated in protests.

Table A6: The Survey Questions Used for Analysis

		Question
DV_1	***Protest Participation***	Egypt: Did you participate in the protests against former president Hosni Mubarak between January 25 and February 11, 2011? Tunisia: Did you participate in the protests against former president Zain Al-Abdeen Ben Ali between December 17th, 2010 and January 14th, 2011?
DV_2	***Protest Participation Through Web***	Egypt: Did you support the protests against Mubarak through the internet, such as Facebook, Twitter or YouTube? Tunisia: Did you support the protests against Ben Ali through the internet, such as Facebook, Twitter or YouTube?
Opportunities	***Influence Government***	Here are a set of statements that express citizens' opinions with regard to conditions in the country. Please identify the extent of your agreement or disagreement with each of these statements: Citizens have the ability to influence government policies.
	Join NGO	Here are a set of statements that express citizens' opinions with regard to conditions in the country. Please identify the extent of your agreement or disagreement with each of these statements: Citizens can join nongovernmental organizations without fear.
	Freedom to Protest	To what extent do you think that " " is guaranteed in your country?: Freedom to participate in peaceful protests and demonstrations.
Political Grievances	***Trust to Police***	I will name a number of institutions, and I would like you to tell me to what extent you trust each of them: Public Security (the police).
	Trust to Judiciary	I will name a number of institutions, and I would like you to tell me to what extent you trust each of them: The judiciary (the courts).
	Trust to Army	I will name a number of institutions, and I would like you to tell me to what extent you trust each of them: The armed forces (the army).
Economic Grievances	***Economic Situation***	How would you evaluate the current economic situation in your country?
	Future Economy	What do you think will be the economic situation in your country during the next few years (3-5 years) compared to the current situation?
	Equal Treatment	To what extent do you feel that you are being treated equally to other citizens in your country?
	Medical Treatment	I will ask some questions about your ability to obtain certain services. Based on your actual experience, how difficult or easy is it to obtain " "?: Appropriate medical treatment in a nearby clinic or public (government) hospital.
Determinants of Opportunities	***Follow News***	To what extent do you follow political news in your country?
	Follow on Internet	In general, do you follow political news through the internet?
	Follow on TV	In general, do you follow political news through the television?

	Follow on Press	In general, do you follow political news through the daily press?
	Follow on Radio	In general, do you follow political news through the radio?
Control Variables	***Age***	Age
	Female	Gender
	College Education	Level of Education (recoded)
	Employed	Do you work?
	Urban	Urban/Rural
	Interest in Politics	In general, to what extent are you interested in politics?
	Membership	Are you a member of a professional association / trade union?
	Trust	Generally speaking, do you think most people are trustworthy or not?
	Religiosity	Do you pray daily?
	Support Democracy	Suppose there was a scale from 1-10 measuring the extent to which democracy is suitable for your country, with 1 meaning that democracy is absolutely inappropriate for your country and 10 meaning that democracy is completely appropriate for your country. To what extent do you think democracy is appropriate for your country?
	Internet Use	Do you use the internet…?