Supplementary Tables

Table A1: Descriptive statistics by wave

Variable	Wave 1 (2009/10)		Wave 2 (2013/14)		Wave 3 (2018)	
	Mean	SD	Mean	SD	Mean	SD
happy	0.72	0.45	0.74	0.44	0.77	0.42
trans_unhap12			0.67	0.47		
trans_unhap23					0.68	0.47
trans_hap12			0.23	0.42		
trans_hap23					0.21	0.41
tr_unhap_panel			0.67	0.47	0.68	0.47
tr_hap_panel			0.23	0.42	0.21	0.41
rural	0.60	0.49	0.61	0.49	0.62	0.49
female	0.32	0.47	0.33	0.47	0.37	0.48
age	48.16	16.71	51.27	16.18	49.14	18.81
age_square	2599	1786	2890	1814	2769	1943
education_any_level	0.66	0.47	0.68	0.47	0.72	0.45
healthy	0.65	0.48	0.56	0.50	0.67	0.47
Christian	0.67	0.47	0.68	0.47	0.70	0.46
akan	0.47	0.50	0.44	0.50	0.45	0.50
married_con	0.34	0.47	0.36	0.48	0.41	0.49
paid work	0.22	0.41	0.17	0.37	0.17	0.38
farm	0.34	0.47	0.32	0.47	0.34	0.47
nonfarm	0.17	0.37	0.23	0.42	0.18	0.38
housework	0.05	0.22	0.08	0.28	0.07	0.25
unemployed	0.08	0.27	0.03	0.16	0.02	0.14
not_labourmkt	0.14	0.35	0.18	0.39	0.22	0.42
hhsize	3.77	2.49	3.59	2.21	3.35	2.26
hh_child_u5	0.35	0.48	0.28	0.45	0.25	0.44
hh_over_60	0.29	0.45	0.33	0.47	0.34	0.47
female_power	0.76	0.16	0.73	0.13	0.72	0.13
asset_index	0.00	2.54	0.04	2.36	0.00	3.06
asset_square	6.45	15.87	5.58	11.91	9.36	275.40
adulteq_exp_real	233.51	187.08	261.09	196.84	227.62	174.75
adulteq_square	89521	148178	106907	185468	82341	152656
SN_Total	15.99	22.82	22.76	21.73	19.72	15.98
ma_fe_ratio	0.99	0.90	1.00	0.84	0.99	0.81
time_use_T	3.73	3.42	3.61	3.46	3.89	3.74
time_square	25.64	41.42	24.99	43.31	29.12	47.60
laddercommunity_dummy	0.39	0.49	0.38	0.49	0.42	0.49
ladderghana_dummy	0.32	0.47	0.16	0.37	0.31	0.46

Table A2: Determinants of status of happiness – logit and random effect logit regressions

Independent variables	(1)	(3)	(4)	(6)	(7)	(9)
	Full sample		Non-poor		Poor	
	Logit	Re	Logit	Re	Logit	Re
rural	-0.125**	-0.149**	-0.201***	-0.227***	0.287**	0.313**
	(0.055)	(0.065)	(0.061)	(0.070)	(0.130)	(0.142)
female	-0.184***	-0.217***	-0.191***	-0.220***	-0.163	-0.175
	(0.063)	(0.073)	(0.071)	(0.081)	(0.154)	(0.167)
age	-0.024***	-0.024***	-0.022**	-0.023**	-0.038**	-0.039**
	(0.008)	(0.009)	(0.010)	(0.011)	(0.017)	(0.018)
age_squared	0.000***	0.000**	0.000**	0.000**	0.000**	0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
education_any	-0.118**	-0.119*	-0.092	-0.084	-0.178	-0.193
	(0.058)	(0.067)	(0.069)	(0.078)	(0.111)	(0.121)
vhealthy	0.532***	0.562***	0.558***	0.591***	0.436***	0.462***
	(0.050)	(0.055)	(0.057)	(0.063)	(0.100)	(0.108)
Christian	-0.037	-0.032	-0.020	-0.017	-0.069	-0.071
	(0.056)	(0.064)	(0.066)	(0.075)	(0.104)	(0.113)
akan	-0.177***	-0.194***	-0.190***	-0.204***	-0.088	-0.088
	(0.049)	(0.056)	(0.055)	(0.062)	(0.110)	(0.120)
married_con	-0.180***	-0.204***	-0.160**	-0.180**	-0.276*	-0.304*
	(0.059)	(0.066)	(0.066)	(0.073)	(0.144)	(0.156)
farm	0.019	0.014	0.009	0.004	0.161	0.168
	(0.071)	(0.079)	(0.080)	(0.087)	(0.169)	(0.183)
nonfarm	-0.008	-0.023	-0.054	-0.066	0.245	0.257
	(0.074)	(0.085)	(0.080)	(0.089)	(0.207)	(0.227)
housework	-0.153	-0.163	-0.166	-0.168	0.029	0.013
	(0.103)	(0.112)	(0.113)	(0.121)	(0.257)	(0.277)
unemployed	0.234*	0.218	-0.097	-0.116	0.765***	0.795***
	(0.134)	(0.146)	(0.163)	(0.177)	(0.255)	(0.277)
not_labourmkt	-0.126	-0.156*	-0.191**	-0.210**	0.113	0.110
	(0.082)	(0.091)	(0.092)	(0.100)	(0.193)	(0.206)
hhsize	0.001	0.003	-0.005	-0.001	0.012	0.011
	(0.013)	(0.014)	(0.016)	(0.018)	(0.021)	(0.023)
hh_child_u5	0.096	0.106	0.170**	0.167**	-0.095	-0.091
	(0.062)	(0.068)	(0.074)	(0.081)	(0.116)	(0.126)
hh_over_60	0.191***	0.192**	0.242***	0.257***	0.059	0.060
	(0.074)	(0.082)	(0.090)	(0.098)	(0.132)	(0.144)
female_power	0.270*	0.321**	0.235	0.290	0.367	0.385
	(0.151)	(0.163)	(0.182)	(0.198)	(0.274)	(0.294)
asset_index	0.105***	0.105***	0.105***	0.106***	0.108**	0.110*
	(0.014)	(0.016)	(0.015)	(0.017)	(0.054)	(0.057)
asset_squared	-0.001***	-0.001***	-0.001***	-0.001***	0.010	0.010
	(0.000)	(0.000)	(0.000)	(0.000)	(0.020)	(0.020)
adulteq_exp_real	0.000	0.000	0.000	0.000	-0.024	-0.027
	(0.000)	(0.000)	(0.001)	(0.001)	(0.017)	(0.018)
adulteq_squared	-0.000	-0.000	-0.000	-0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
SN_Total	0.005***	0.005***	0.006***	0.006***	0.004*	0.004*
	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)
ma_fe_ratio	-0.046*	-0.049	-0.069**	-0.074**	0.006	0.006
	(0.026)	(0.031)	(0.032)	(0.036)	(0.047)	(0.051)
time_use_T	0.003	0.008	0.006	0.011	-0.002	-0.001
	(0.017)	(0.019)	(0.020)	(0.022)	(0.035)	(0.038)
time_squared	0.002	0.002	0.002	0.002	0.001	0.001
	(0.001)	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)
laddercommunity_dummy	0.153***	0.162***	0.185***	0.199***	0.051	0.056
	(0.050)	(0.055)	(0.058)	(0.064)	(0.099)	(0.105)
ladderghana_dummy	0.005	-0.001	0.042	0.039	-0.070	-0.079
	(0.055)	(0.061)	(0.065)	(0.071)	(0.107)	(0.114)
wave_2 (2013/2014)	0.148***	0.165***	0.087	0.095	0.404***	0.423***
	(0.054)	(0.058)	(0.062)	(0.067)	(0.117)	(0.122)
wave_3 (2018)	0.215***	0.239***	0.216***	0.237***	0.235*	0.257**
	(0.056)	(0.060)	(0.065)	(0.069)	(0.120)	(0.127)
lnsig2u		-0.604***		-0.695***		-1.059*
		(0.150)		(0.202)		(0.625)
Constant	1.352***	1.469***	1.285***	1.386***	2.376***	2.593***
	(0.288)	(0.327)	(0.340)	(0.385)	(0.864)	(0.921)
Observations	11,628	11,628	8,865	8,865	2,763	2,763
Number of ppid		4,839		4,345		1,975
chi2	478.4	427.1	398.7	357.5	125.3	107.1
p	0	0	0	0	0	1.35e-10
r2_p	0.0383		0.0427		0.0411	

Notes: (1) Robust standard errors in parentheses; (2) *** p<0.01, ** p<0.05, * p<0.1

Table A3: multinomial logit analysis of transitions in happiness status

Independent variables	(1)	(2)	(3)	(5)	(6)	(7)
	Using many covariates			Using selected covariates		
	Happy in all 3 waves	Happy in any 2 waves	Happy in any 1 wave	Happy in all 3 waves	Happy in any 2 waves	Happy in any 1 wave
rural	0.178	0.101	0.106			
	(0.269)	(0.270)	(0.285)			
female	-0.423	-0.350	-0.110	-0.478*	-0.314	-0.140
	(0.289)	(0.288)	(0.306)	(0.263)	(0.263)	(0.279)
age	-0.030	-0.007	0.057	-0.004	0.001	0.008
	(0.044)	(0.044)	(0.048)	(0.007)	(0.007)	(0.007)
age_squared	0.000	0.000	-0.000			
	(0.000)	(0.000)	(0.000)			
education_any_l2	-0.009	0.033	0.084			
	(0.270)	(0.270)	(0.283)			
vhealthy_l2	0.763***	0.469**	0.303	0.732***	0.436**	0.308
	(0.211)	(0.211)	(0.225)	(0.207)	(0.207)	(0.222)
christian_l2	-0.164	-0.190	-0.146			
	(0.270)	(0.271)	(0.284)			
akan_l2	-0.552**	-0.504**	-0.389	-0.583***	-0.556**	-0.401*
	(0.235)	(0.236)	(0.247)	(0.226)	(0.227)	(0.238)
married_con_l2	-0.021	0.203	0.060	0.021	0.242	0.084
	(0.268)	(0.268)	(0.286)	(0.262)	(0.261)	(0.279)
farm_l2	0.547*	0.658**	0.529*	0.648**	0.741**	0.615**
	(0.297)	(0.298)	(0.316)	(0.289)	(0.291)	(0.307)
nonfarm_l2	0.382	0.486	0.226	0.427	0.528*	0.252
	(0.324)	(0.327)	(0.345)	(0.319)	(0.321)	(0.338)
housework_l2	0.257	0.155	0.302	0.330	0.233	0.242
	(0.505)	(0.504)	(0.524)	(0.490)	(0.488)	(0.507)
unemployed_l2	0.897*	0.420	-0.031	1.026**	0.467	-0.015
	(0.518)	(0.523)	(0.576)	(0.505)	(0.511)	(0.562)
not_labourmkt_l2	0.545	0.446	0.492	0.579	0.389	0.339
	(0.402)	(0.407)	(0.428)	(0.383)	(0.386)	(0.408)
hhsize_l2	-0.070	-0.043	-0.151**	-0.070	-0.046	-0.115**
	(0.056)	(0.056)	(0.062)	(0.053)	(0.053)	(0.057)
hh_child_u5_l2	0.390	0.368	0.428	0.413	0.410	0.387
	(0.253)	(0.254)	(0.276)	(0.253)	(0.254)	(0.273)
hh_over_60_l2	0.101	0.035	-0.177			
	(0.318)	(0.318)	(0.337)			
female_power_l2	-1.989***	-1.448**	-1.289*	-2.183***	-1.617**	-1.341*
	(0.702)	(0.704)	(0.751)	(0.668)	(0.671)	(0.713)
asset_index_l2	0.385***	0.258***	0.188*	0.355***	0.232***	0.159*
	(0.098)	(0.098)	(0.104)	(0.087)	(0.087)	(0.092)
asset_square	0.005	0.007	-0.003	0.011	0.013	0.002
	(0.025)	(0.025)	(0.027)	(0.026)	(0.026)	(0.027)
adulteq_exp_real_l2	-0.001	-0.000	-0.002	-0.001	-0.000	-0.002
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
c.adulteq_squared_l2	0.000	0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
SN_Total_l2	0.010**	0.010**	0.001	0.011**	0.011**	0.002
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
ma_fe_ratio_l2	-0.034	-0.068	0.060			
	(0.112)	(0.111)	(0.115)			
time_use_T_l2	0.000	0.039	0.015			
	(0.064)	(0.064)	(0.071)			
time_square	-0.002	-0.003	-0.001			
	(0.004)	(0.004)	(0.005)			
laddercommunity_dummy_l2	0.141	0.200	0.330			
	(0.220)	(0.221)	(0.233)			
ladderghana_dummy_l2	0.075	0.187	0.261			
	(0.242)	(0.242)	(0.255)			
Constant	4.484***	2.666*	0.419	3.737***	2.497***	2.048**
	(1.381)	(1.388)	(1.510)	(0.911)	(0.919)	(0.974)
Observations	2,953	2,953	2,953	3,025	3,025	3,025
chi2	317.0	317.0	317.0	289.6	289.6	289.6
p	0	0	0	0	0	0

Notes: (1) Robust standard errors in parentheses; (2) *** p<0.01, ** p<0.05, * p<0.1

Table A4: Determinants of period-specific transitions in happiness status

Independent variables	(1) trans_unhap12	(2) trans_unhap12	(3) trans_unhap23	(4) trans_unhap23	(5) trans_hap12	(6) trans_hap12	(7) trans_hap23	(8) trans_hap23
rural	-0.118	-0.096	-0.337*	-0.353**	-0.064	-0.011	0.296**	0.328**
	(0.187)	(0.181)	(0.179)	(0.176)	(0.134)	(0.126)	(0.134)	(0.131)
female	-0.345		-0.125	-0.159	0.253*	0.267**	0.163	0.157
	(0.218)		(0.229)	(0.165)	(0.144)	(0.108)	(0.151)	(0.114)
age	0.004		-0.019		0.035*	0.039**	0.041**	0.050***
	(0.030)		(0.030)		(0.020)	(0.019)	(0.020)	(0.019)
age_squared	-0.000		0.000		-0.000	-0.000	-0.000	-0.000*
	(0.000)		(0.000)		(0.000)	(0.000)	(0.000)	(0.000)
education_any_l	-0.184	-0.123	-0.379*	-0.361**	0.163	0.201	0.043	
	(0.189)	(0.166)	(0.201)	(0.181)	(0.134)	(0.128)	(0.136)	
vhealthy_l	0.174	0.227	0.079	0.123	-0.145	-0.153	-0.132	-0.133
	(0.162)	(0.146)	(0.167)	(0.159)	(0.116)	(0.114)	(0.110)	(0.110)
christian_l	0.091		-0.057		0.304**	0.280**	0.124	0.138
	(0.185)		(0.187)		(0.128)	(0.122)	(0.124)	(0.119)
akan_l	-0.114		-0.770***	-0.813***	-0.047		0.387***	0.406***
	(0.159)		(0.159)	(0.153)	(0.110)		(0.115)	(0.112)
married_con_l	0.058		0.025		0.118		0.074	
	(0.196)		(0.200)		(0.135)		(0.136)	
farm_l	0.408*	0.410*	-0.199	-0.240	0.053		0.258	
	(0.223)	(0.213)	(0.263)	(0.257)	(0.149)		(0.172)	
nonfarm_l	0.550**	0.485**	-0.372	-0.415*	0.007		-0.029	
	(0.253)	(0.236)	(0.255)	(0.252)	(0.162)		(0.179)	
housework_l	0.455	0.512	0.000	-0.032	0.317		0.149	
	(0.392)	(0.377)	(0.322)	(0.313)	(0.242)		(0.227)	
unemployed_l	0.277	0.302	1.009	0.948	-0.023		0.012	
	(0.372)	(0.368)	(0.670)	(0.671)	(0.228)		(0.328)	
not_labourmkt_l	0.270	0.212	-0.071	-0.048	-0.319		0.067	
	(0.265)	(0.253)	(0.305)	(0.289)	(0.217)		(0.196)	
hhsize_l	0.058	0.048	0.015		-0.038	-0.032	0.021	
	(0.042)	(0.035)	(0.051)		(0.029)	(0.023)	(0.028)	
hh_child_u5_l	-0.058		-0.084		0.113		-0.151	
	(0.197)		(0.221)		(0.134)		(0.138)	
hh_over_60_l	0.129		0.208		-0.283*	-0.262*	-0.202	-0.195
	(0.233)		(0.255)		(0.165)	(0.158)	(0.166)	(0.165)
female_power_l	-0.126		0.377		0.140		0.364	
	(0.500)		(0.487)		(0.341)		(0.357)	
asset_index_l	0.086	0.092	0.147***	0.148***	-0.092**	-0.089**	-0.100***	-0.108***
	(0.063)	(0.060)	(0.057)	(0.054)	(0.038)	(0.037)	(0.036)	(0.034)
asset_square_l	0.008	0.009	0.014	0.013	0.001	-0.001	-0.002	-0.003
	(0.012)	(0.012)	(0.013)	(0.013)	(0.005)	(0.005)	(0.008)	(0.008)
adulteq_exp_real_l	0.004***	0.004**	0.001	0.001	-0.001	-0.001	0.001	0.001
	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
adulteq_squared_l	-0.000*	-0.000	-0.000	-0.000	0.000	0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
SN_Total_l	0.020***	0.023***	0.008*	0.008*	-0.011***	-0.011***	0.000	0.001
	(0.005)	(0.004)	(0.005)	(0.004)	(0.003)	(0.003)	(0.003)	(0.002)
ma_fe_ratio_l	-0.128	-0.083	-0.056		-0.001		0.027	
	(0.089)	(0.084)	(0.095)		(0.056)		(0.055)	
time_use_T_l	0.032		-0.033		-0.026		0.020	
	(0.056)		(0.065)		(0.040)		(0.035)	
c.time_use_T_l#c.time_use_T_l	-0.003		0.001		-0.000		-0.001	
	(0.004)		(0.005)		(0.003)		(0.003)	
laddercommunity_dummy_l	0.098		-0.038		0.161		-0.151	-0.139
	(0.175)		(0.175)		(0.108)		(0.114)	(0.112)
ladderghana_dummy_l	0.151		0.394		0.064		-0.307**	-0.315**
	(0.175)		(0.259)		(0.115)		(0.155)	(0.155)
Constant	-0.586	-0.721*	1.860*	1.405***	-2.374***	-2.289***	-3.691***	-3.382***
	(1.025)	(0.383)	(1.030)	(0.381)	(0.683)	(0.548)	(0.695)	(0.548)
Observations	949	970	929	934	2,519	2,617	2,688	2,688
chi2	67.80	64.39	76.14	70.12	99.65	90.74	111.3	103.6
p	3.75e-05	4.36e-08	2.47e-06	4.25e-09	5.77e-10	0	0	0
r2_p	0.0599	0.0538	0.0731	0.0688	0.0383	0.0349	0.0407	0.0377

Notes: (1) Robust standard errors in parentheses; (2) *** p<0.01, ** p<0.05, * p<0.1