

## Socio-economic and technological aspects of mental health of older persons: the role of strong and weak ties in Ghana

### Appendixes

#### Appendix 1: Correlation analyses

**Table 1: Spearman's Correlation analysis of variables included in the study**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
1. Mental health	1																			
2. Age	-.042	1																		
3. Urban	.091	.008	1																	
4. Region of residence	.101*	.143**	.180**	1																
5. Sex	-.060	-.077	.056	.004	1															
6. Educational attainment	.187**	-.242**	-.150**	-.221**	-.078	1														
7. Marital status	-.135**	.027	-.033	-.083	.109*	-.092	1													
8. Employment status	-.192**	.145**	-.013	.042	.128*	-.145**	.044	1												
9. Household Size	-.107*	.123*	.018	.411**	-.048	-.175**	-.090	.094	1											
10. Monthly Income/Stipend	-.064	-.191**	-.197**	-.223**	-.160*	.208**	-.067	-.262**	-.015	1										
11. Ethnicity	-.225**	.042	-.062	.687**	.062	-.207**	-.033	.067	.387**	-.137	1									
12. Religion	-.054	.043	.014	.201**	-.174**	-.137**	-.073	-.090	.253**	.002	.232**	1								
13. Mobile phone use	.187**	-.075	-.092	-.199**	-.056	.195**	-.160**	-.144**	-.102*	.101	-.196**	-.194**	1							

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
14. TV use	.160**	-.119 *	-.107 *	-.396 **	.039	.257 **	-.045	-.146 **	-.106 *	.180 *	-.377 **	-.056	.498 **	1					
15. Radio	.098*	-.157 **	-.074 *	-.126 *	-.058	.179 **	-.051	-.183 **	-.020	.122	-.072	.026	.205 **	.492 **	1				
16. Overall ICT (Phone, TV, Radio)	.192**	-.151 **	-.119 *	-.316 **	-.030	.273 **	-.109 *	-.203 **	-.099 *	.173 *	-.284 **	-.095	.729 **	.870 **	.722 **	1			
17. Socioeconomic status	.234**	-.063	-.032	-.061	-.057	.257 **	-.122 *	-.057	.008	-.019	-.144 **	-.073	.076	.198 **	.250 **	.225 **	1		
18. Bonding social capital	.093*	-.035	-.024	.036	-.025	.026	-.138 **	.056	.059	.001	.034	-.142 **	.017	.027	.132 **	.074	.029	1	
19. Bridging social capital	.119**	-.082	.001	.004	-.021	-.013	-.090	.032	.040	.104	.014	-.062	.000	.039	.145 **	.078	.050	.651 **	1

\*Correlation is significant at the 0.05 level (2-tailed) \*\*Correlation is significant at the 0.01 level (2-tailed)

**Appendix 2: Robustness tests for the role of social capital in the relationship between ICT use, socio-economic status and mental health by ordinal logistics regression**

**Table 2: The role of social capital in the relationship between ICT use, socio-economic status and mental health by ordinal logistics regression**

		Model 1		Model 2		Model 3		Model 4	
		Estimate (95% Confidence Interval)	Adjusted odds ratio	Estimate (95% Confidence Interval)	Adjusted odds ratio	Estimate (95% Confidence Interval)	Adjusted odds ratio	Estimate (95% Confidence Interval)	Adjusted odds ratio
<b>Age</b>	50-59	0.550* (0.035, 1.065)	1.733	0.576* (.041, 1.110)	1.779	0.638* (0.102,1.174)	1.893	0.609* (0.070, 1.148)	1.839
	60-64	0.442 (-0.095, 0.980)	1.556	0.510 (-0.038, 1.058)	1.665	0.573* (0.025, 1.121)	1.774	0.591* (0.038, 1.144)	1.806
	65+(ref)								
<b>Sex</b>	Male	0.068 (-0.293, 0.428)	1.070	-0.009 (-0.375, 0.358)	0.991	0.025 (-0.341, 0.391)	1.025	-0.002 (-0.387, 0.347)	0.98
	Female (ref)								
<b>Educational attainment</b>	Primary school	0.307 (-0.175, 0.789)	1.359	0.169 (-0.316, 0.655)	1.184	0.267 (-0.216, 0.750)	1.306	0.124 (-0.363, 0.611)	1.132
	MLSC	0.569* (0.016, 1.122)	1.766	0.361 (-0.199, 0.922)	1.434	0.537 (-0.016, 1.091)	1.710	0.330 (-0.231, 0.891)	1.391
	O'Level	0.229 (-0.568, 1.026)	1.257	-0.040 (-0.847, 0.768)	0.961	0.206 (-0.590, 1.003)	1.228	-0.073 (-0.880, 0.734)	0.929
	A"Level	-0.192 (-1.251, 0.867)	0.825	-0.354 (-1.418, 0.711)	0.702	-0.295 (-1.356, 0.766)	0.745	-0.466 (-1.532, 0.601)	0.628
	Vocational/Technical	1.606* (0.004, 3.208)	4.983	1.635* (0.028, 3.241)	5.130	1.622* (0.017, 3.228)	5.063	1.589 (-0.021, 3.199)	4.899

	Model 1		Model 2		Model 3		Model 4	
	Estimate (95% Confidence Interval)	Adjusted odds ratio	Estimate (95% Confidence Interval)	Adjusted odds ratio	Estimate (95% Confidence Interval)	Adjusted odds ratio	Estimate (95% Confidence Interval)	Adjusted odds ratio
Tertiary	1.274** (0.368, 2.179)	3.575	1.121** (0.203, 2.039)	3.068	1.236** (0.327, 2.145)	3.442	1.034* (0.112, 1.956)	2.812
Postgraduate	1.010 (-0.854, 2.875)	2.746	1.071 (-0.795, 2.937)	2.919	1.163 (-0.702, 3.029)	3.199	1.229 (-0.638, 3.097)	3.418
Never been to school (ref)								
<b>Region of residence</b>								
Ashanti	-0.333 (-0.806, 0.140)	0.717	-0.532* (-1.022, -0.043)	0.587	-0.292 (-0.765, 0.182)	0.747	-0.498* (-0.989, -0.007)	0.607
Greater Accra	-0.381 (-1.006, 0.243)	0.682	-0.731* (-1.374, -0.088)	0.481	-0.289 (-0.918, 0.341)	0.749	-0.625 (-1.275, .025)	0.535
Eastern Region	3.248*** (2.648, 3.848)	25.739	3.142*** (2.540, 3.743)	23.150	3.380*** (2.771, 3.990)	29.37	3.279*** (2.664, 3.894)	26.549
Upper East (ref)								
<b>Employment status</b>								
Full time employee	0.794* (0.106, 1.483)	2.212	0.680 (-0.021, 1.381)	1.973	0.927** (0.235, 1.620)	2.527	0.829* (0.123, 1.536)	2.291
Part-time employee	0.943* (.143, 1.743)	2.568	0.809* (0.004, 1.615)	2.245	1.042* (0.238, 1.846)	2.835	0.898* (0.089, 1.708)	2.454
Self-employed	0.160 (-0.336, 0.656)	1.174	0.134 (-0.365, 0.632)	1.143	0.107 (-0.390, 0.603)	1.113	0.102 (-0.397, 0.602)	1.107
Pension/retired	0.499 (-0.109, 1.107)	1.647	0.340 (-.280, .959)	1.404	0.410 (-0.201, 1.021)	1.507	0.306 (-0.316, 0.928)	1.358
Student	-0.333 (-2.454, 1.788)	0.717	-0.656 (-2.786, 1.475)	0.518	0.076 (-2.062, 2.214)	1.079	-0.273 (-2.424, 1.878)	0.761
Housewife	-0.798 (-1.769, 0.173)	0.450	-0.770 (-1.742, 0.202)	0.4630	-0.860 (-1.831, 0.111)	0.423	-0.825 (-1.797, 0.147)	0.438
Unemployed (ref)				1				
<b>Socio-economic status</b>			0.103* (0.016, 0.190)	1.108			0.112* (0.025, 0.199)	1.119
<b>ICT Use (index)</b>			0.258**	1.294			0.241**	1.272

	Model 1		Model 2		Model 3		Model 4	
	Estimate (95% Confidence Interval)	Adjusted odds ratio	Estimate (95% Confidence Interval) (0.095, 0.420)	Adjusted odds ratio	Estimate (95% Confidence Interval)	Adjusted odds ratio	Estimate (95% Confidence Interval) (0.077, 0.404)	Adjusted odds ratio
<b>Bonding social capital</b>					0.232*** (0.090, 0.373)	1.261	0.226** (0.083, 0.469)	1.254
<b>Bridging social capital</b>					0.147* (0.079, 0.311)	1.158	0.116 (-0.494, 0.056)	1.123
<i>Nagelkerke Pseudo R-Square</i>	0.350		0.388		0.368		0.398	

Notes: \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$

- Model 1 = Sociodemographic correlates of mental health
- Model 2 = Model 1 + the independent variables (SES and ICT use)
- Model 3 = Model 1 + the moderators (social capital)
- Model 4 = Model 1, + model 2 + model 3

**Table 2 Continued**

		<b>Model 5</b>		<b>Model 6</b>		<b>Model 7</b>	
		<b>Estimate (95% Confidence Interval)</b>	<b>Adjusted odds ratio</b>	<b>Estimate (95% Confidence Interval)</b>	<b>Adjusted odds ratio</b>	<b>Estimate (95% Confidence Interval)</b>	<b>Adjusted odds ratio</b>
<b>Age</b>							
	50-59	0.541* (.004, 1.077)	1.718	0.515 (-0.023, 1.054)	1.674	0.562* (0.021, 1.103)	1.754
	60-64	0.551* (-0.001, 1.103)	1.736	0.479 (-0.071, 1.030)	1.614	0.558 (0.005, 1.112)	1.747
	65+(ref)						
<b>Sex</b>							
	Male	-0.056 (-0.424, 0.312)	0.946	-0.031 (-0.400, 0.338)	0.969	-0.085 (-0.456, 0.286)	0.919
	Female (ref)						
<b>Educational attainment</b>							
	Primary school	0.168 (-0.319, 0.655)	1.183	0.161 (-0.328, 0.650)	1.175	0.094 (-0.397, 0.585)	1.099
	MLSC	0.370 (-0.195, 0.935)	1.447	0.401 (-0.161, 0.964)	1.493	0.387 (-0.181, 0.955)	1.473
	O"Level	-0.012 (-0.821, 0.797)	0.988	-0.011 (-0.821, 0.799)	0.989	-0.061 (-0.876, 0.753)	0.941
	A"Level	-0.627 (-1.699, 0.445)	0.534	-0.578 (-1.656, 0.500)	0.561	-0.734 (-1.816, 0.348)	0.479
	Vocational/Technical	1.753* (0.139, 3.367)	5.771	1.828* (0.212, 3.444)	6.221	1.732* (0.110, 3.354)	5.652
	Tertiary	1.187* (0.264, 2.109)	3.277	1.265** (0.337, 2.192)	3.543	1.204* (0.274, 2.135)	3.333
	Postgraduate	1.164 (-0.704, 3.032)	3.203	1.057 (-0.814, 2.928)	2.878	1.351 (-0.526, 3.228)	3.861
	Never been to school (ref)						
<b>Region of residence</b>							
	Ashanti	-0.513* (-1.010, -0.015)	0.599	-0.531*	0.588	-0.499*	0.607

	Model 5		Model 6		Model 7	
	Estimate (95% Confidence Interval)	Adjusted odds ratio	Estimate (95% Confidence Interval)	Adjusted odds ratio	Estimate (95% Confidence Interval)	Adjusted odds ratio
Greater Accra	-0.596 (-1.247, 0.055)	0.551	(-1.029,-0.033) -0.627 (-1.273, .018)	0.534	(-0.997, -0.002) -0.508 (-1.161, 0.145)	0.602
Eastern Region	3.447*** (2.781, 4.113)	31.406	3.120*** (2.487, 3.754)	22.646	3.433*** (2.762, 4.103)	30.969
Upper East (ref)						
<b>Employment status</b>						
Full time employee	0.782* (0.074, 1.490)	2.186	0.708* (0.004, 1.411)	2.029	0.848* (0.139, 1.558)	2.334
Part-time employee	0.918* (0.106, 1.731)	2.504	0.785 (-0.025, 1.594)	2.192	0.937* (0.120, 1.754)	2.552
Self-employed	0.140 (-0.370, 0.650)	1.150	0.143 (-0.369, 0.655)	1.154	0.113 (-0.402, 0.629)	1.119
Pension/retired	0.256 (-0.366, 0.878)	1.291	0.233 (-0.392, 0.858)	1.262	0.197 (-0.429, 0.823)	1.218
Student	-0.349 (-2.502, 1.804)	0.705	-0.555 (-2.689, 1.579)	0.574	-0.236 (-2.395, 1.924)	0.789
Housewife	-0.794 (-1.769, 0.180)	0.452	-0.788 (-1.762, 0.185)	0.454	-0.920 (-1.896, 0.056)	0.399
Unemployed (ref)						
<b>Socio-economic status</b>	0.108* (0.020, 0.235)	1.114	0.114* (0.025, 0.252)	1.121	0.127* (0.038, 0.371)	1.135
<b>ICT Use (index)</b>	0.235** (0.071, 0.399)	1.265	0.240** (0.076, 0.404)	1.272	0.230** (0.065, 0.479)	1.259
<b>Bonding social capital</b>	0.173** (0.059, 0.287)	1.189			0.257** (0.110, 0.463)	1.293
<b>Bridging social capital</b>			0.106* (0.031, 0.266)	1.112	0.097 (-0.053, 0.319)	1.101
Socio-economic status*Bonding SC	0.181 (-0.030, 0.392)	1.198			-0.018 (-0.291, 0.254)	0.982

	Model 5		Model 6		Model 7	
	Estimate (95% Confidence Interval)	Adjusted odds ratio	Estimate (95% Confidence Interval)	Adjusted odds ratio	Estimate (95% Confidence Interval)	Adjusted odds ratio
ICT Use (index) * Bonding SC	0.301** (0.084, 0.406)	1.365			0.232* (0.140, 0.435)	1.261
Socio-economic status *Bridging SC			0.264* (0.062, 0.467)	1.302	0.311** (0.051, 0.571)	1.365
ICT Use (index) * Bridging SC			-0.109 (-0.305, 0.087)	0.897	-0.040 (-0.280, 0.200)	0.961
<i>Nagelkerke Pseudo R-Square</i>	0.405		0.397		0.419	

Notes: \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$

- Model 5 = Model 1 + bonding social capital, and the interactions between bonding social capital and the independent variables (SES and ICT use)
- Model 6 = Model 1 + bridging social capital, and interactions between bridging social capital and the independent variables (SES and ICT use)
- Model 7 = Model 5 + model 6