

Evaluation of the BFI10 Personality Inventory with New Zealand

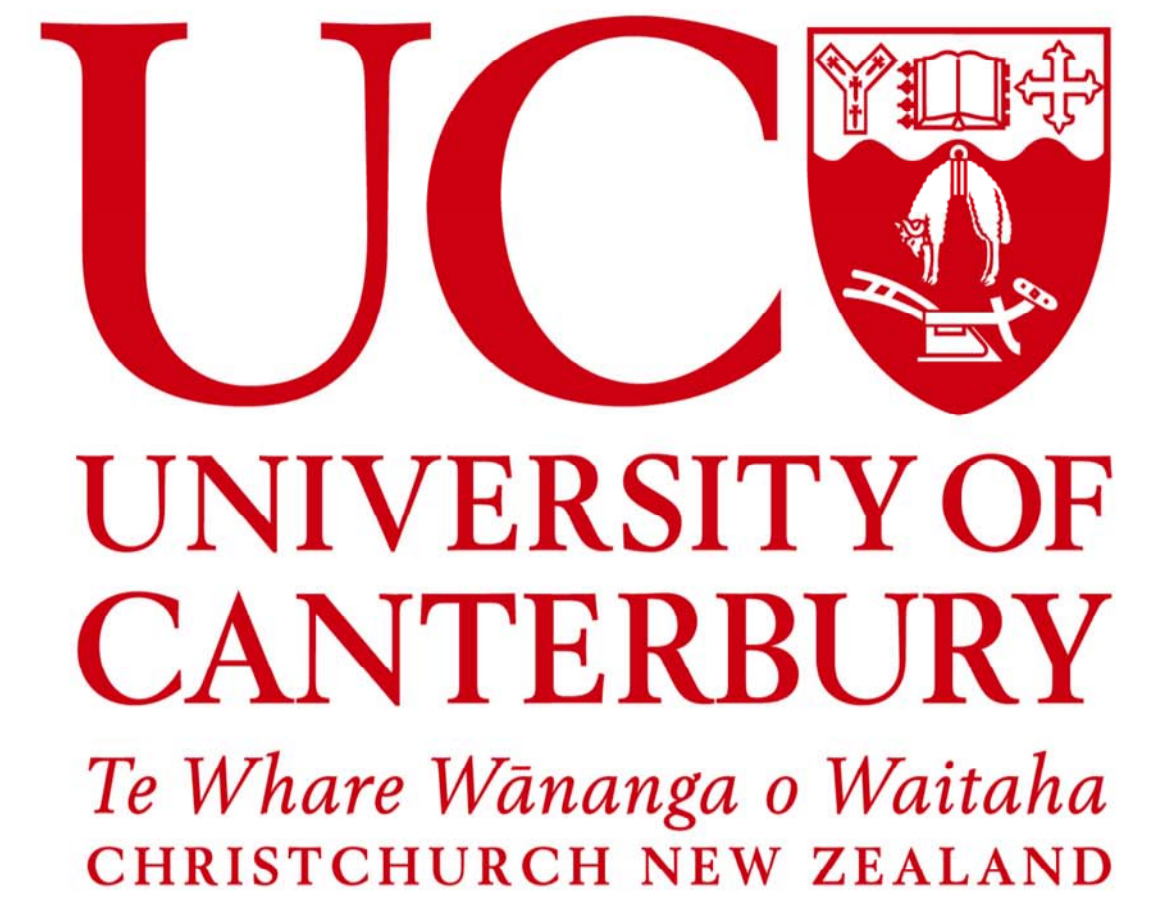
University Students: Failing Psychometric Tests

Gavin T. L. Brown (*The University of Auckland & Umeå Universitet*)

Valerie A. Sotardi (*University of Canterbury*)

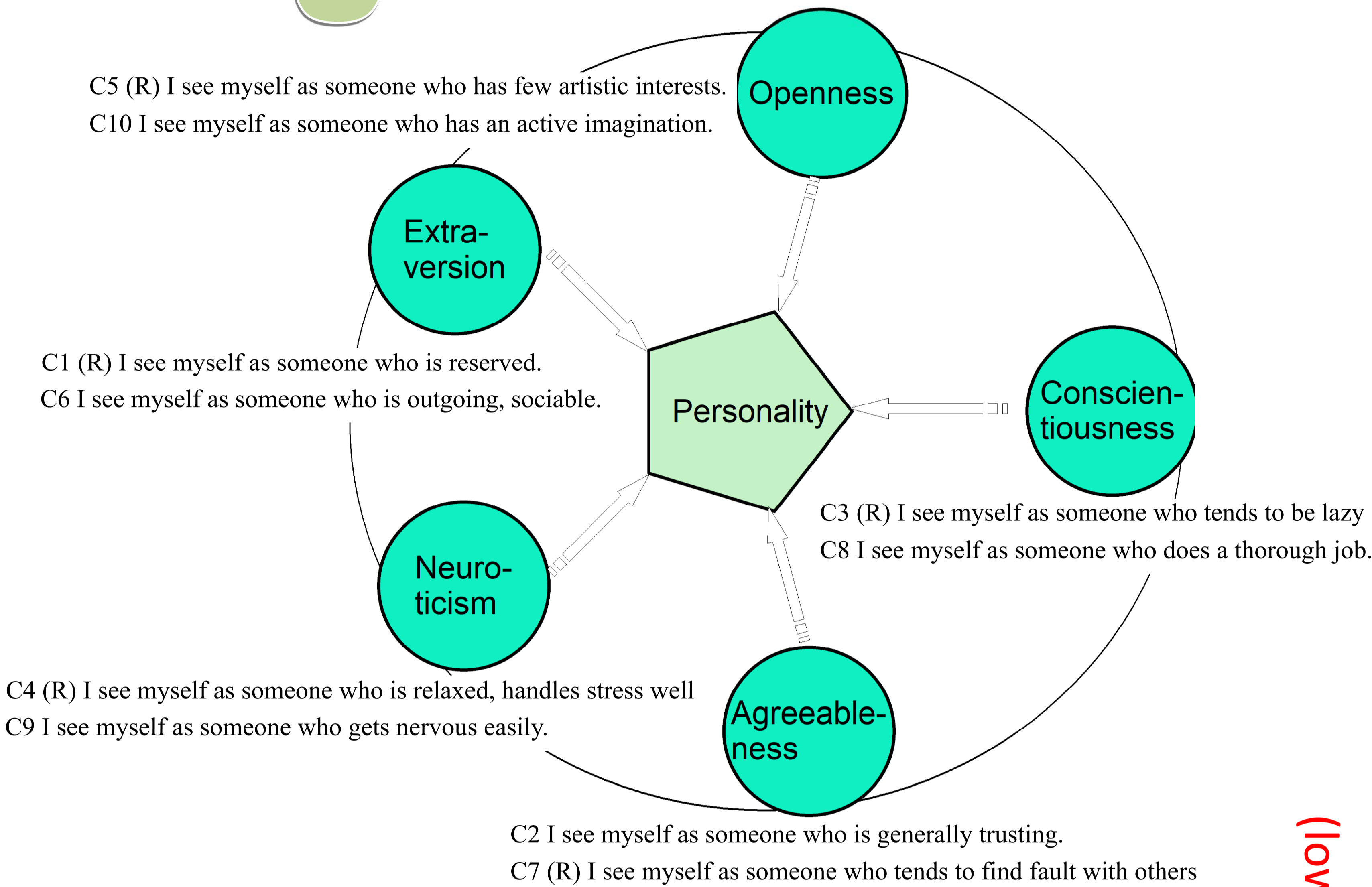
International Congress on Psychological Science,

Paris March 2019



Big Five BFI10

Participants



Demographic Variable	Study	
	1	2
Location in New Zealand	Auckland	Christchurch
<i>N</i>	298	231
% Female	87	75
% Undergraduate 1st Year	67	100
% Majority Ethnicity (Pākeha / NZ European)	42	79
Age in years <i>M</i> (<i>SD</i>)	27 (9)	21 (7)
Power 1-β (α = .05) to detect linear regressions >.18	.91	.83

Descriptive Statistics

Scale & Item	Study 1			Study 2		
	<i>M</i>	<i>SD</i>	<i>r²</i>	<i>M</i>	<i>SD</i>	<i>r²</i>
I. Extraversion	$\lambda^2=.56$; <i>M</i> =3.92; <i>SD</i> =1.09			$\alpha=.67$; <i>M</i> =3.02; <i>SD</i> =1.08		
C1 (R)	3.20	1.47	0.41	2.60	1.27	0.49
C6	4.63	1.13		3.43	1.24	
II. Agreeableness	$\lambda^2=.33$; <i>M</i> =4.67; <i>SD</i> =0.91			$\alpha=.31$; <i>M</i> =3.73; <i>SD</i> =0.88		
C2	5.21	0.92	0.21	4.2	1.05	0.18
C7 (R)	4.11	1.38		3.26	1.24	
III. Conscientiousness	$\lambda^2=.45$; <i>M</i> =4.46; <i>SD</i> =1.00			$\alpha=.54$; <i>M</i> =3.49; <i>SD</i> =0.94		
C3 (R)	3.87	1.46	0.31	3.00	1.33	0.40
C8	5.03	0.99		3.97	0.89	
IV. Neuroticism	$\lambda^2=.44$; <i>M</i> =2.37; <i>SD</i> =1.09			$\alpha=.70$; <i>M</i> =2.50; <i>SD</i> =1.10		
C4 (R)	3.06	1.28	0.28	2.74	1.34	0.55
C9	4.03	1.43		2.26	1.17	
V. Openness	$\lambda^2=.12$; <i>M</i> =4.26; <i>SD</i> =0.99			$\alpha=.20$; <i>M</i> =4.51; <i>SD</i> =0.90		
C5 (R)	3.46	1.63	-0.07	3.07	1.33	0.11
C10	5.05	1.01		3.95	1.09	

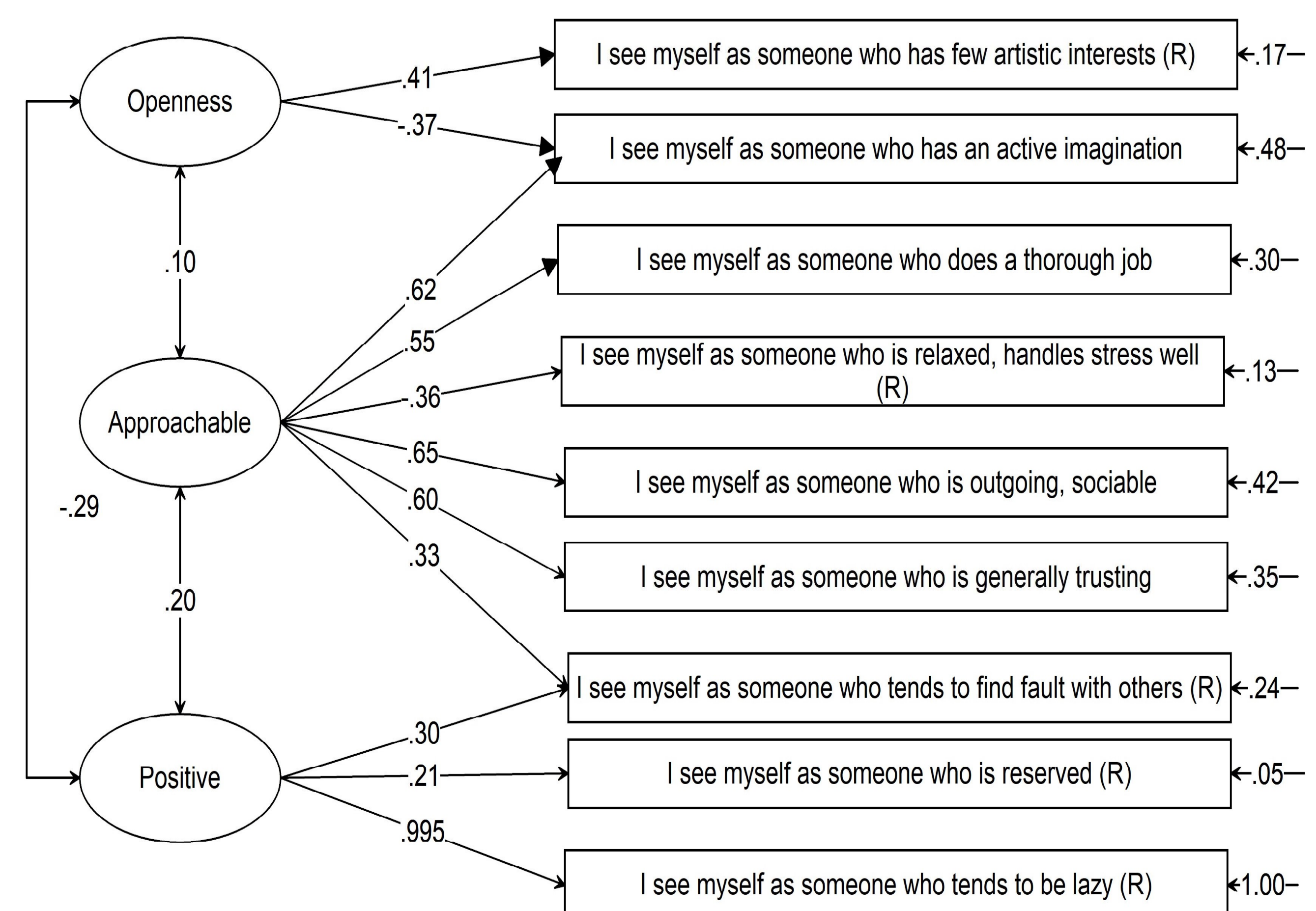
Note: *r*=Pearson correlation between pair of items in each factor.

Problems (low scale reliability)

Alternative Models

Model	Confirmatory Factor Analysis Fit Indices							
	χ^2	<i>df</i>	χ^2/df (<i>p</i>)	CFI	Gamma _{hat}	RMSEA (90%CI)	SRMR	AIC
BFI10 Model								
Christchurch	52.77	25	2.11 (.15)	0.90	0.98	.070 (.043-.096)	0.047	112.77
Auckland	117.5	29	4.05 (.04)	0.73	0.97	.096 (.078-.115)	0.071	169.45
4 Factor PCA								
Christchurch	59.98	30	2.00 (.16)	0.90	0.98	.066 (.041-.090)	0.051	109.98
Auckland	145.5	32	4.55 (.03)	0.66	0.94	.104 (.087-.121)	0.081	191.50
3 components PCA; 9 items, 2 with dual loading								
Joint Data	58.60	23	2.55 (.11)	0.94	0.99	.053 (.036-.069)	0.046	102.60

Alternative 3 PCA (Joint data)



Conclusion

BFI 10 failed standard Classical and CFA psychometric tests

Problematic Scales: Openness, Agreeableness

Problematic Item: I see myself as someone who has few artistic interests.

Big Five **NOT** operationalized by this inventory.

Correspondence: Gavin T. L. Brown,
email:gt.brown@auckland.ac.nz

BFI10 Sources

Rammstedt, B. (2007). The 10-item Big Five Inventory: Norm values and investigation of sociodemographic effects based on a German population representative sample. *European Journal of Psychological Assessment*, 23(3), 193-201. doi:10.1027/1015-5759.23.3.193

Rammstedt, B., Goldberg, L. R., & Borg, I. (2010). The measurement equivalence of Big Five factor markers for persons with different levels of education. *Journal of Personality Research*, 44(4), 53-61. doi:10.1016/j.jrp.2009.10.005

Rammstedt, B., & John, O. P. (2007). Measuring personality in one minute or less: A 10-item short version of the Big Five Inventory in English and German. *Journal of Research in Personality*, 41(1), 203-212. doi:10.1016/j.jrp.2006.02.001

Rammstedt, B., & Kemper, C. J. (2011). Measurement equivalence of the Big Five: Shedding further light on potential causes of the educational bias. *Journal of Research in Personality*, 45(1), 121-125. doi:10.1016/j.jrp.2010.11.006