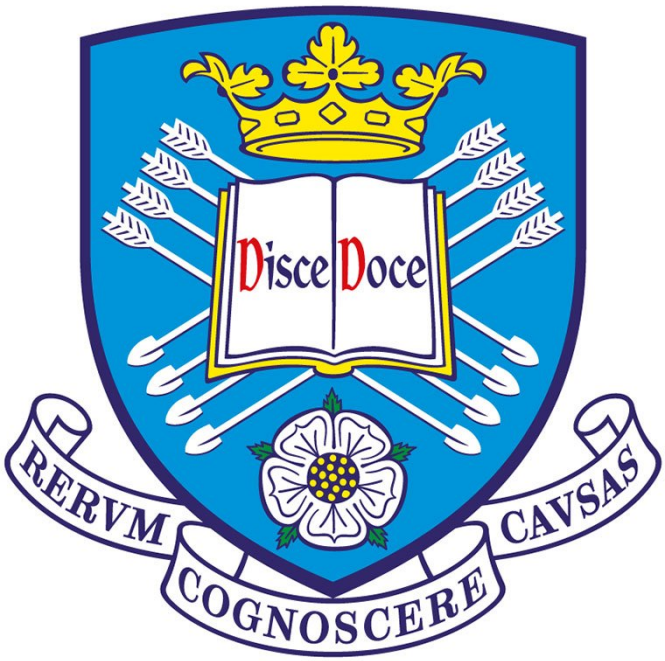

Constructing a Reliable and Valid Measure of Multidimensional Poverty
Appendices
Volume Two

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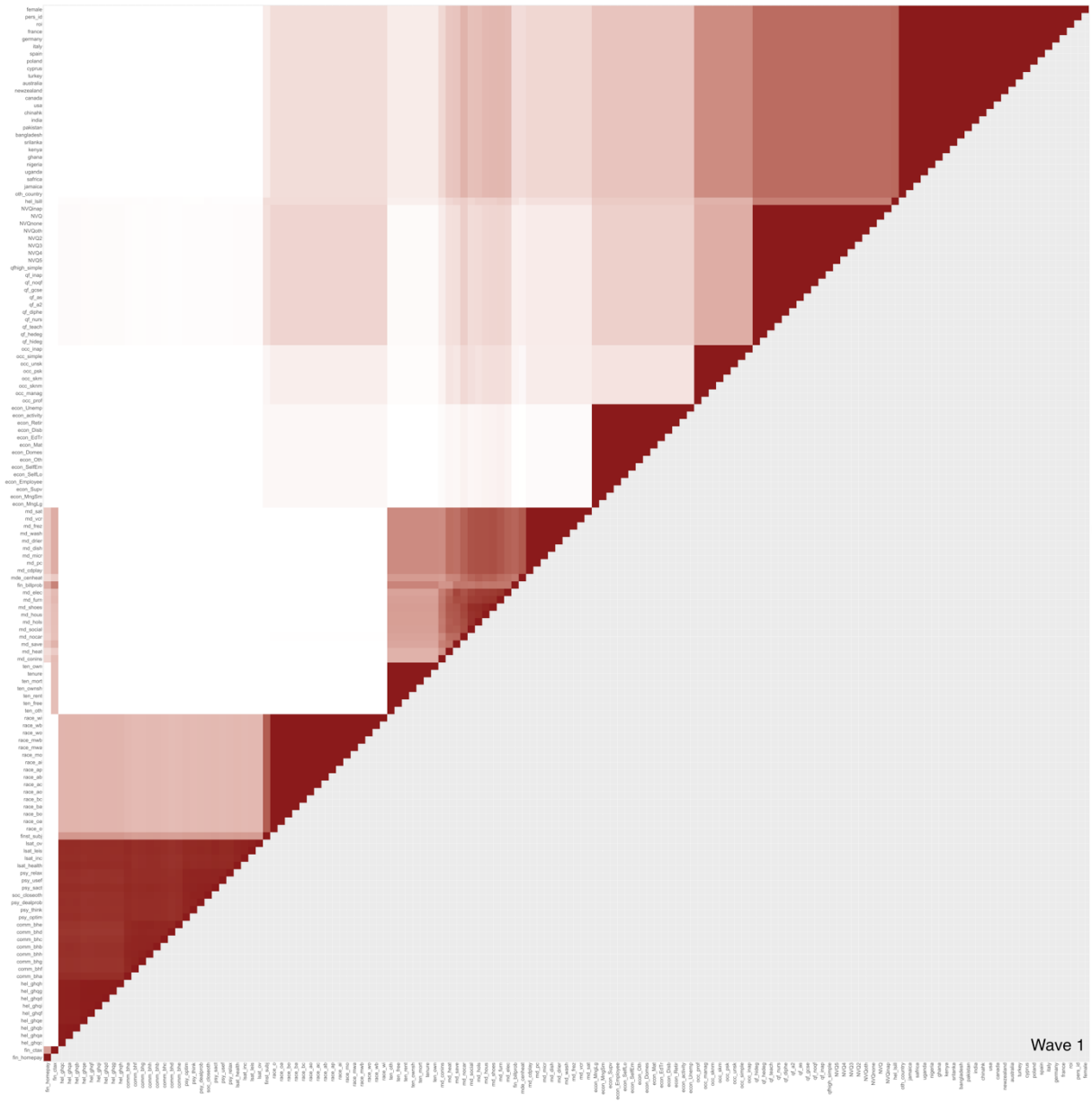
Department of Sociological Studies

May 2019

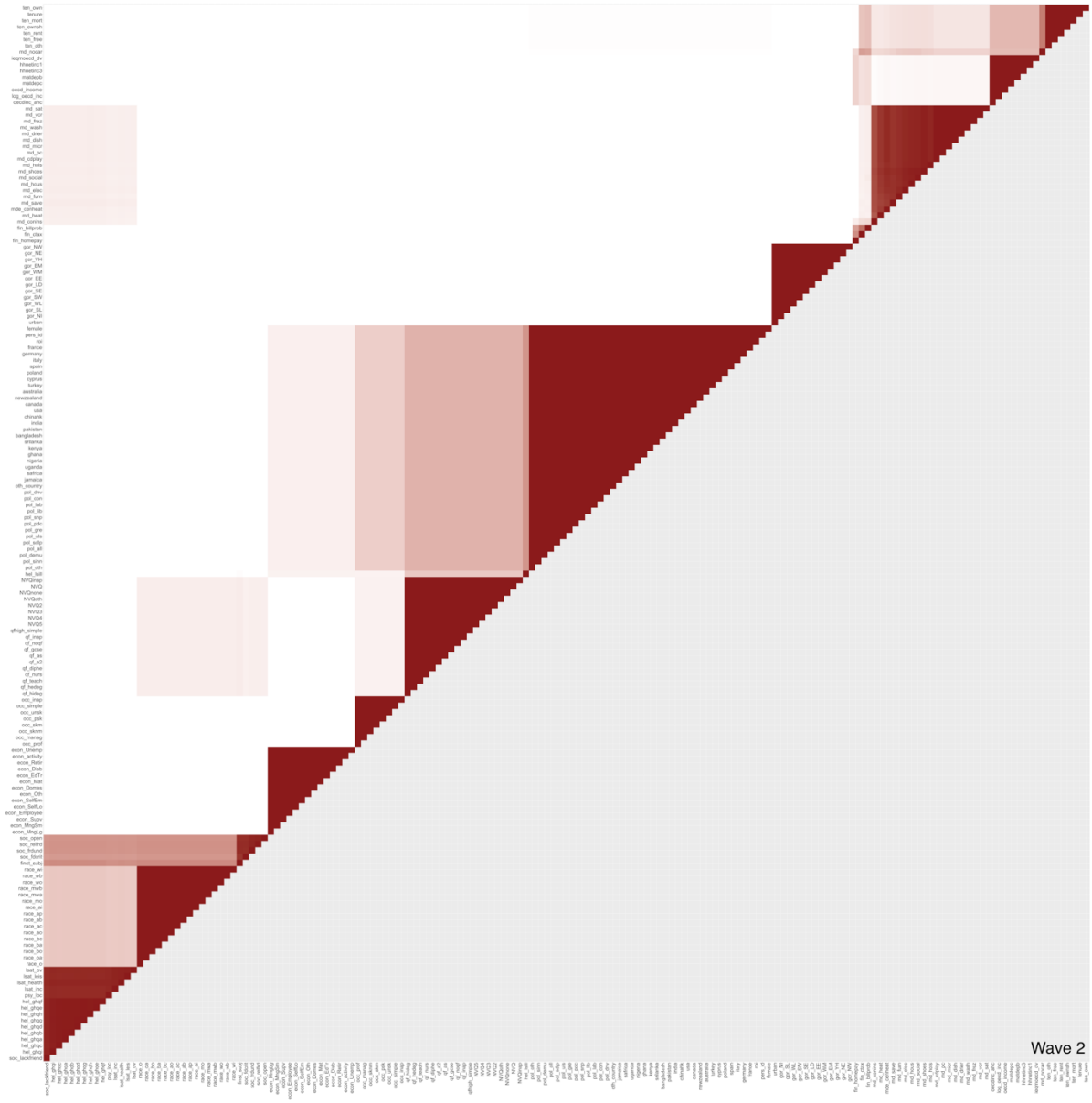
Appendix 1: Missing Data Clustered Correlation Plots

The following plots demonstrate not missing at random patterns in each wave of the variables used from Understanding Society.

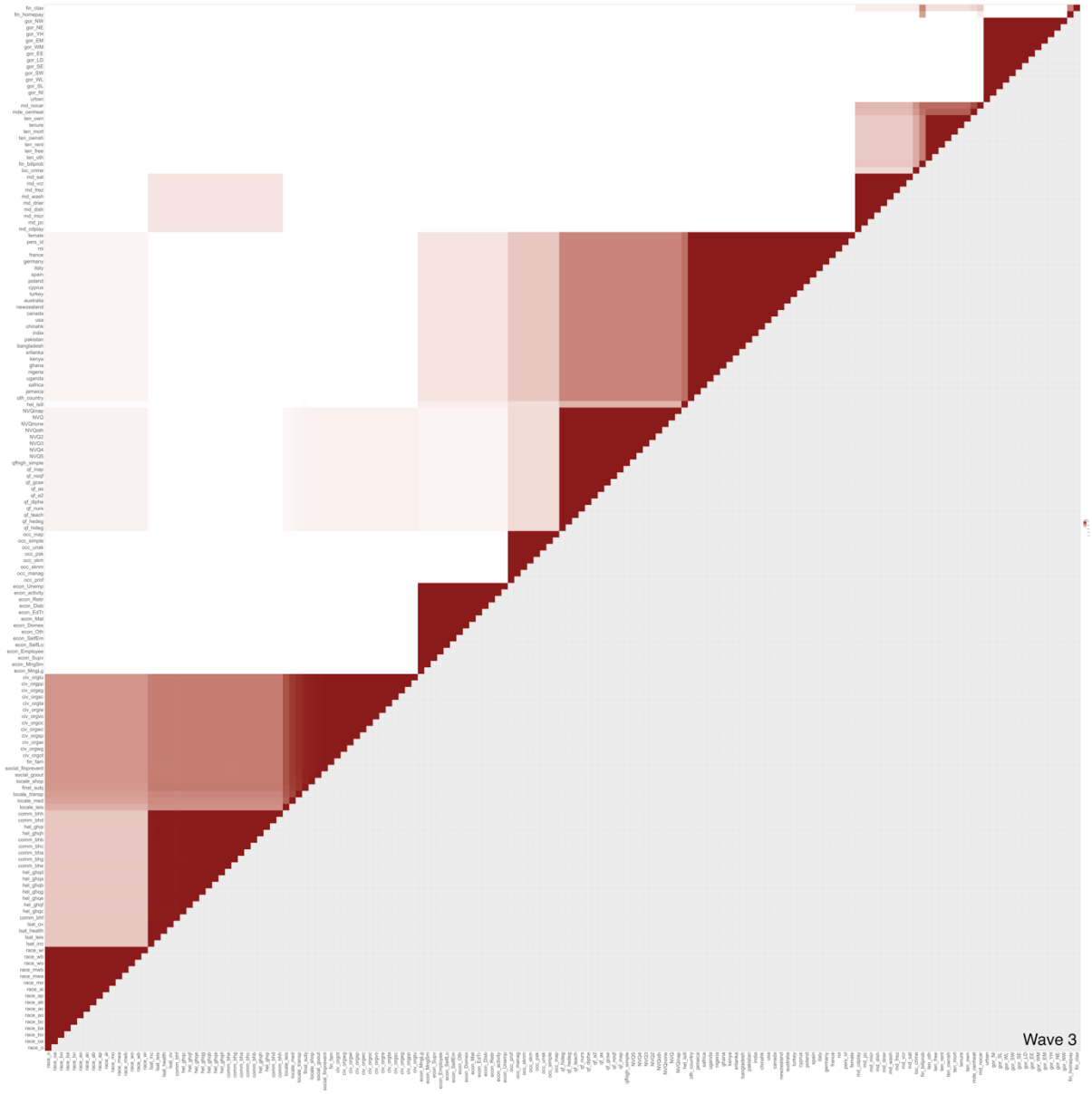
A1.1 Wave 1 Missing Data Correlation Plot



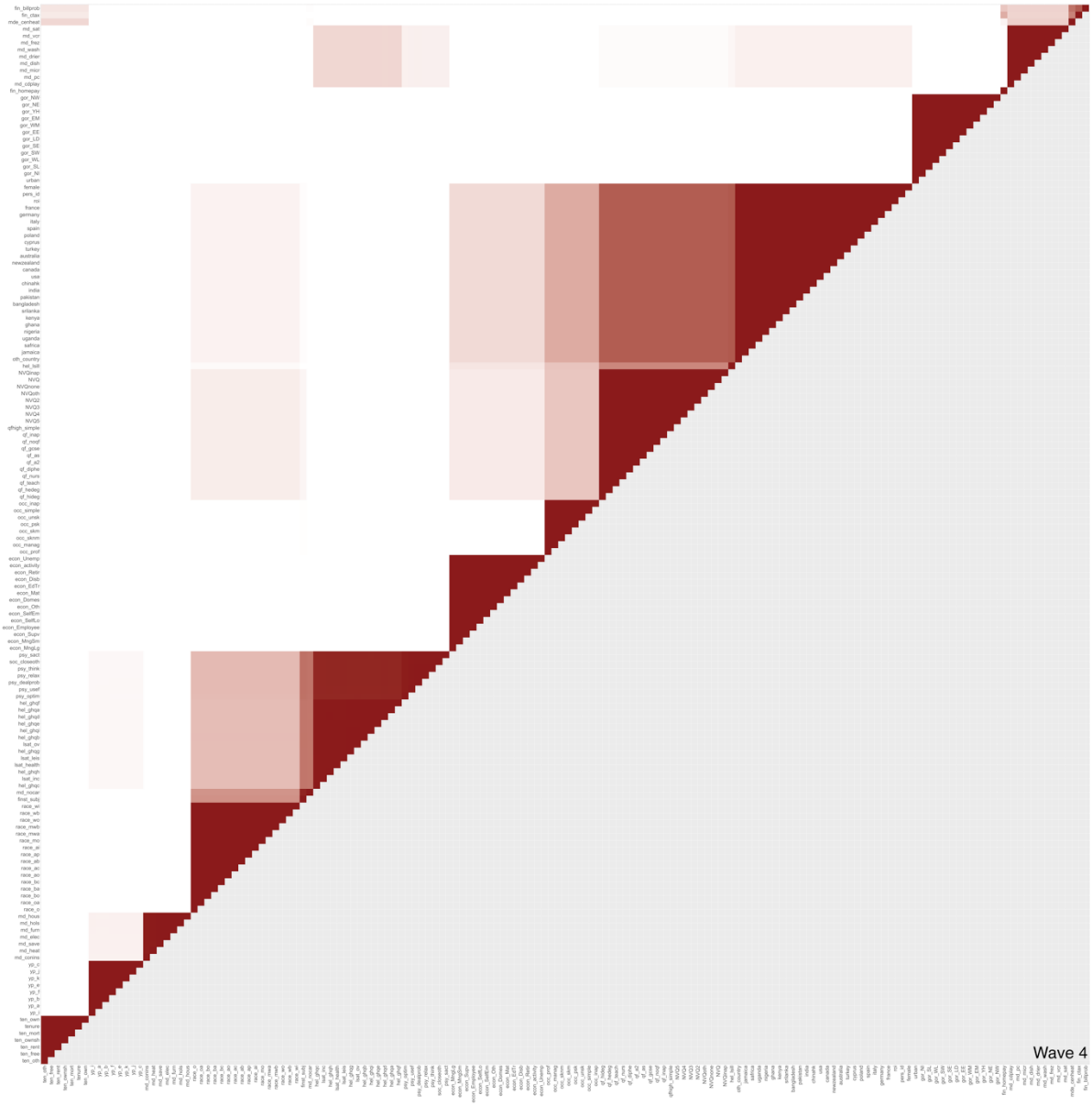
A1.2 Wave 2 Missing Data Correlation Plot



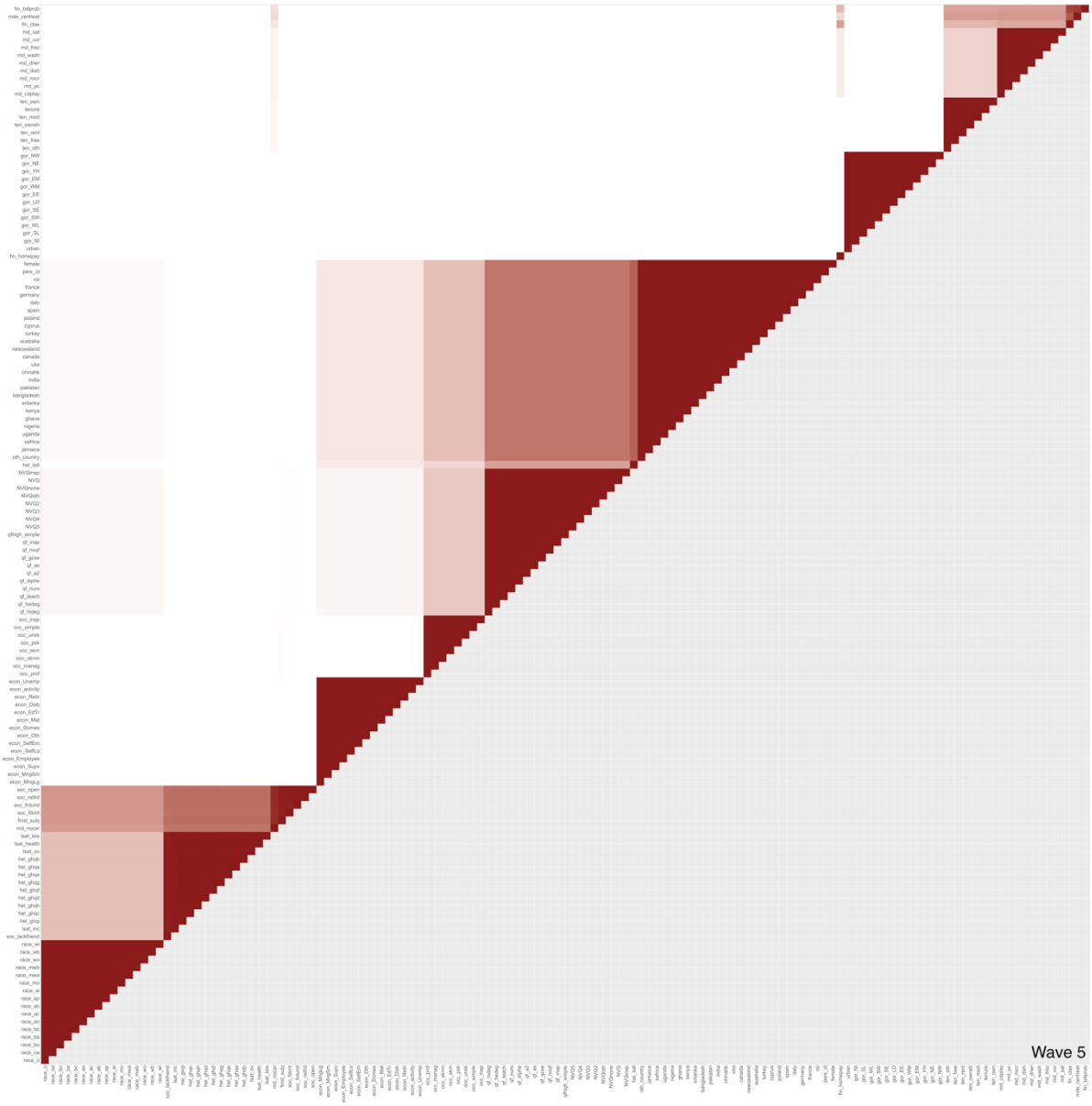
A1.3 Wave 3 Missing Data Correlation Plot



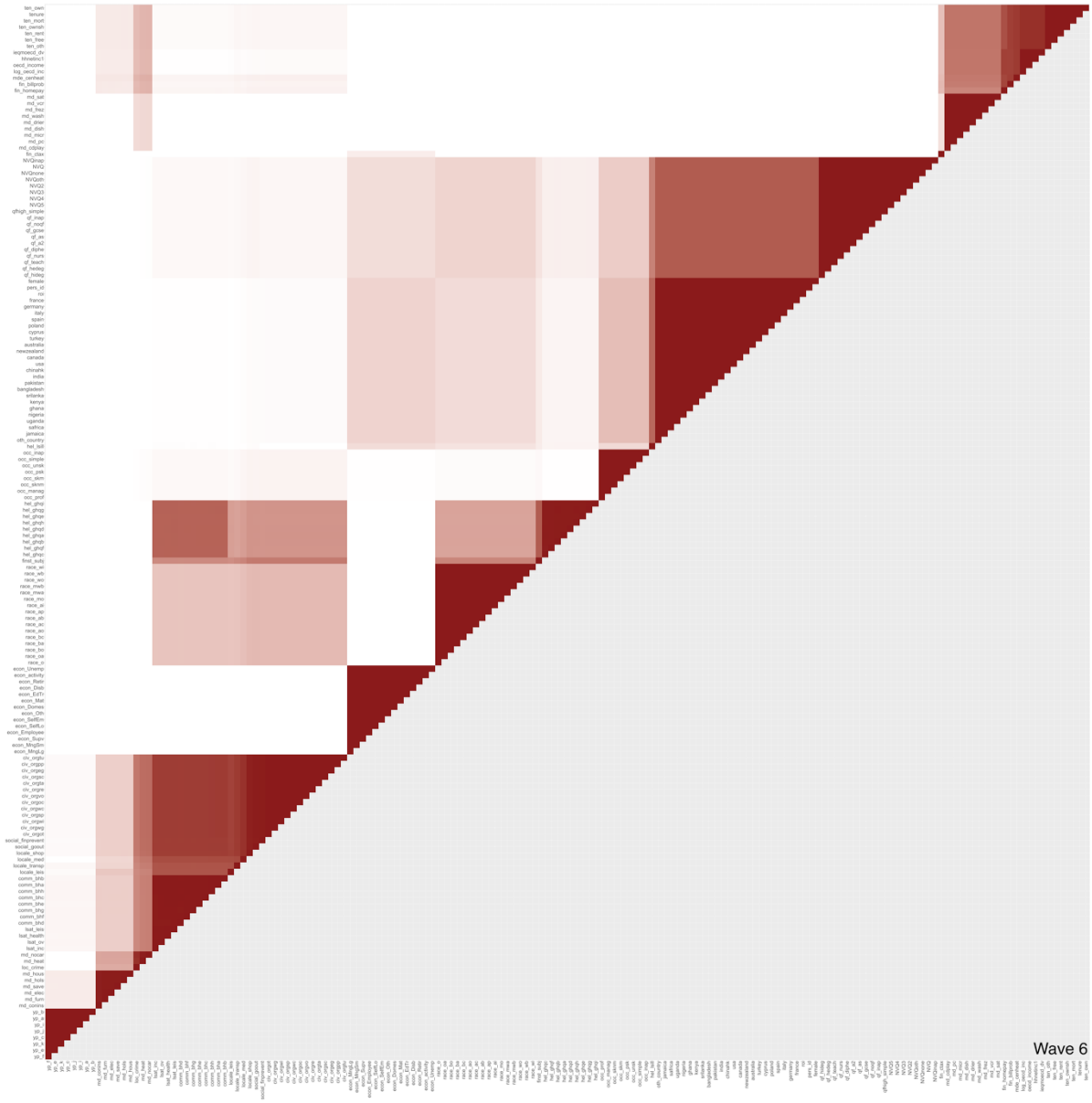
A1.4 Wave 4 Missing Data Correlation Plot



A1.5 Wave 5 Missing Data Correlation Plot



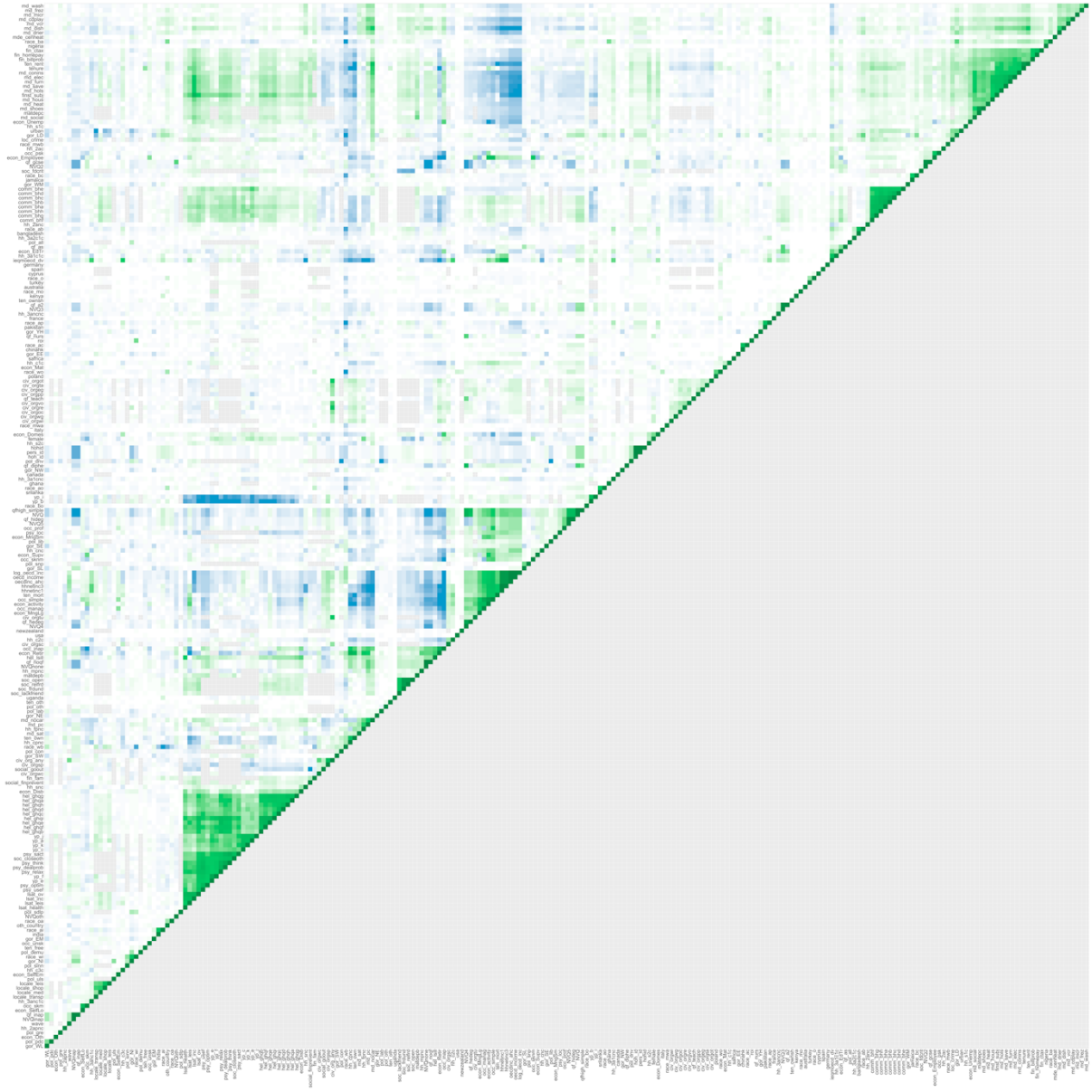
A1.6 Wave 6 Missing Data Correlation Plot



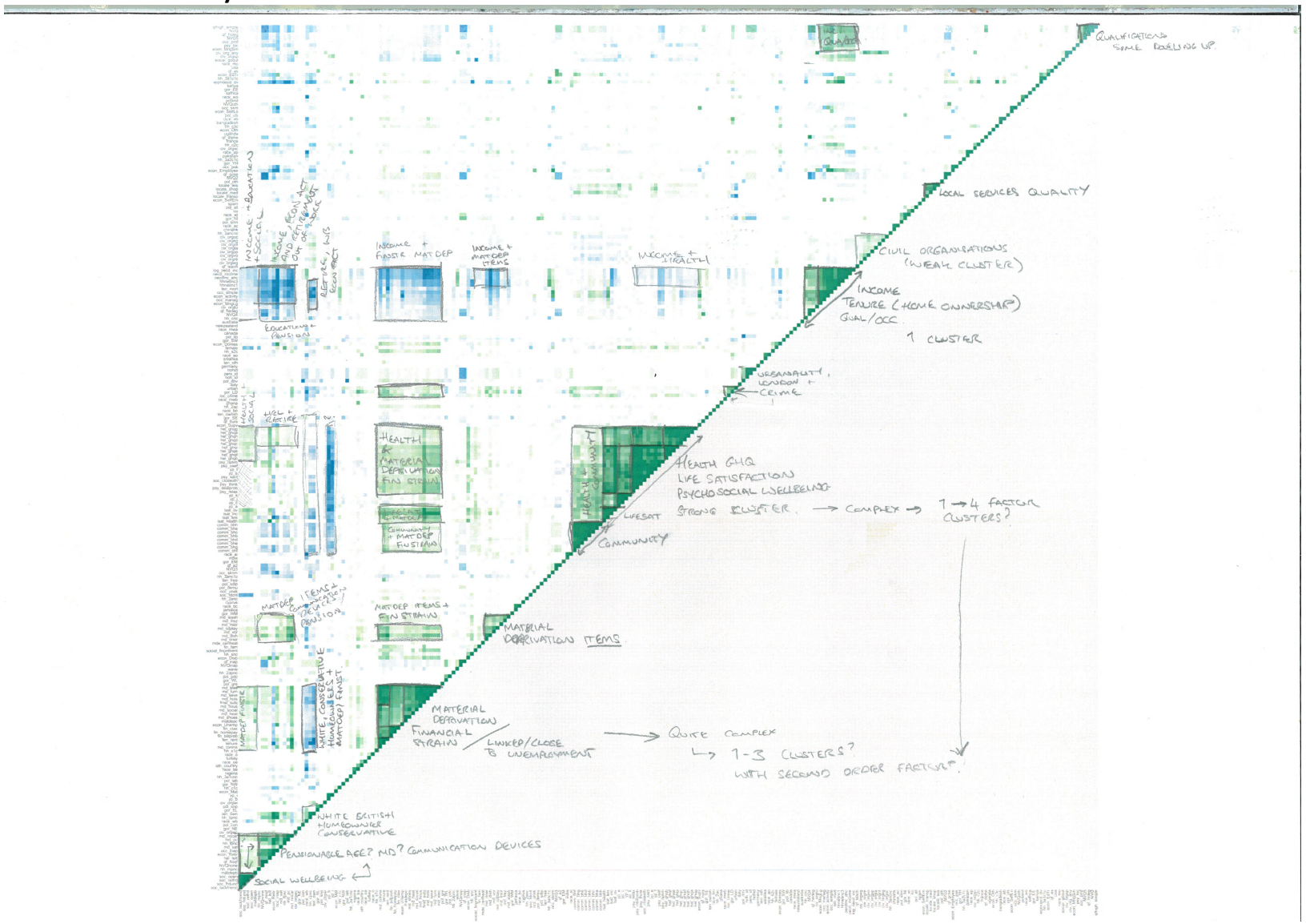
Appendix 2: Hierarchically Clustered Correlation Plot Showing Underlying Factors

The following plot shows the full correlation matrix used in the exploratory analysis findings, found in Chapter 4 of the thesis.

A2.1: Unannotated Hierarchically Clustered Correlation Plot

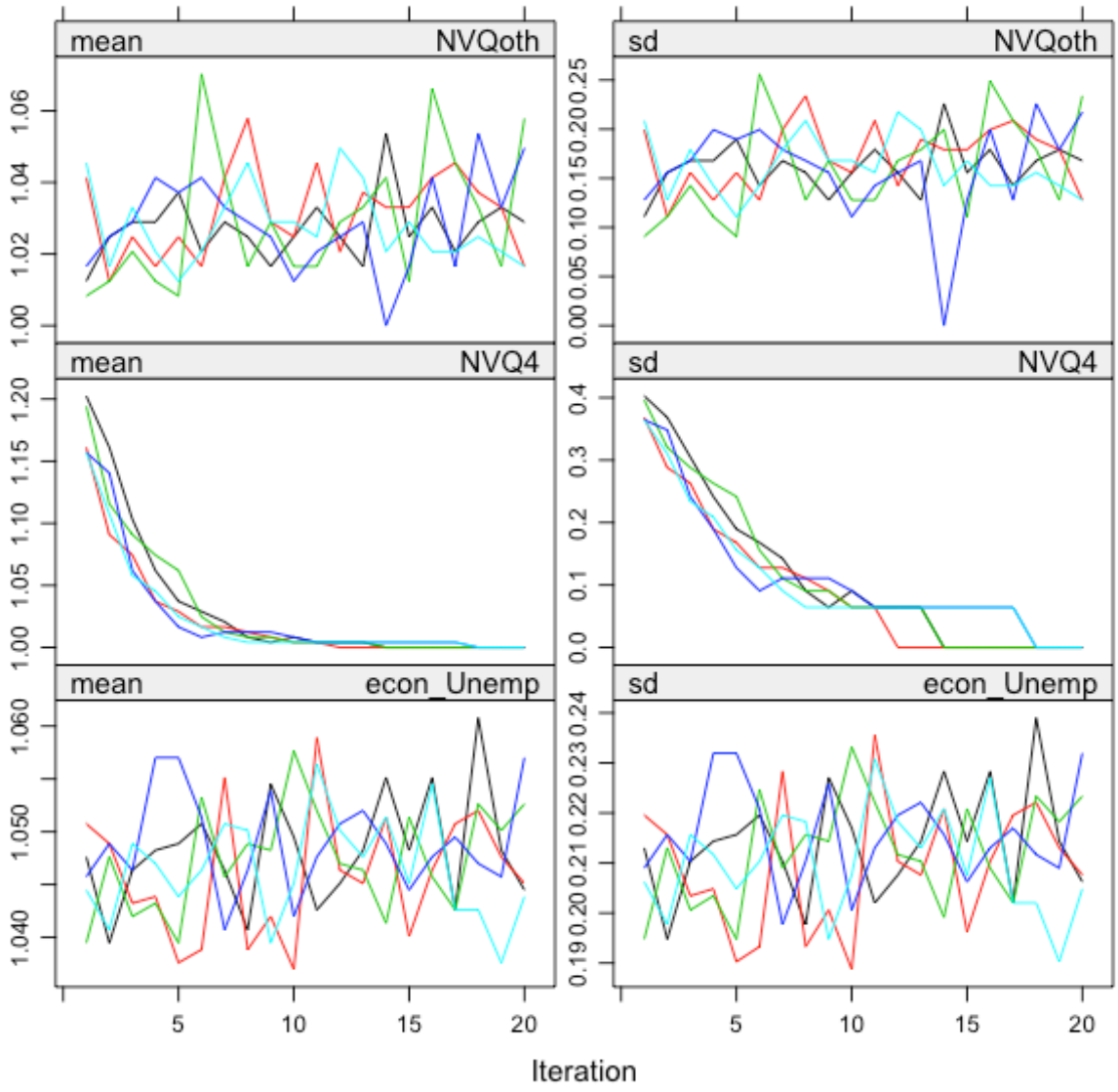


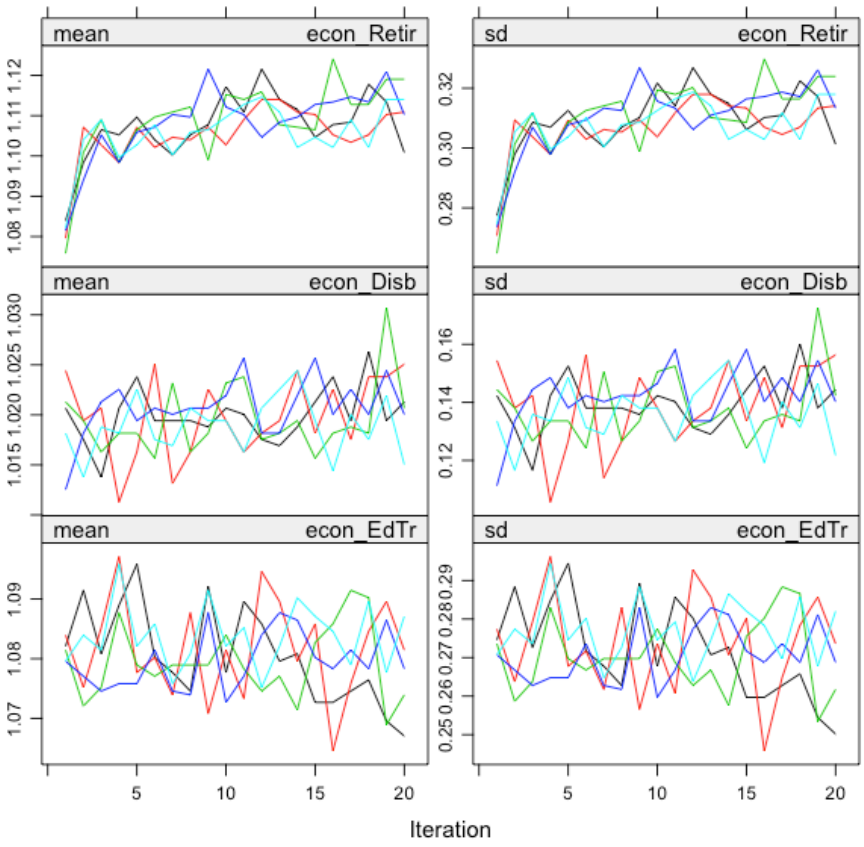
A2.2: Annotated Hierarchically Clustered Correlation Plot

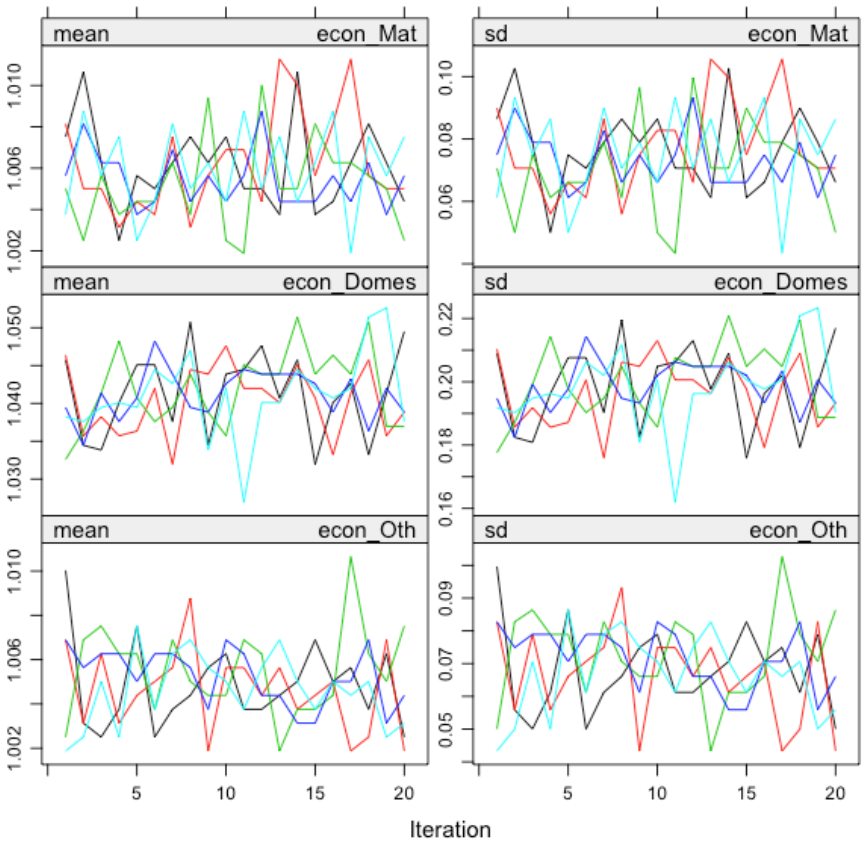


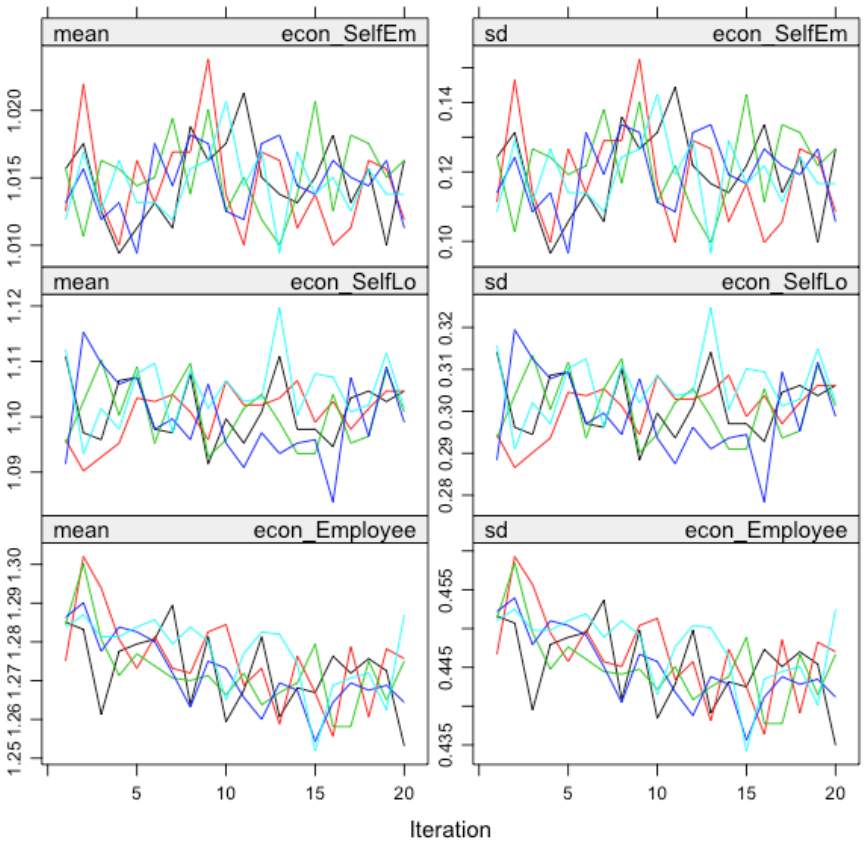
Appendix 3: Multiple Imputation by Chained Equations Convergence Plots

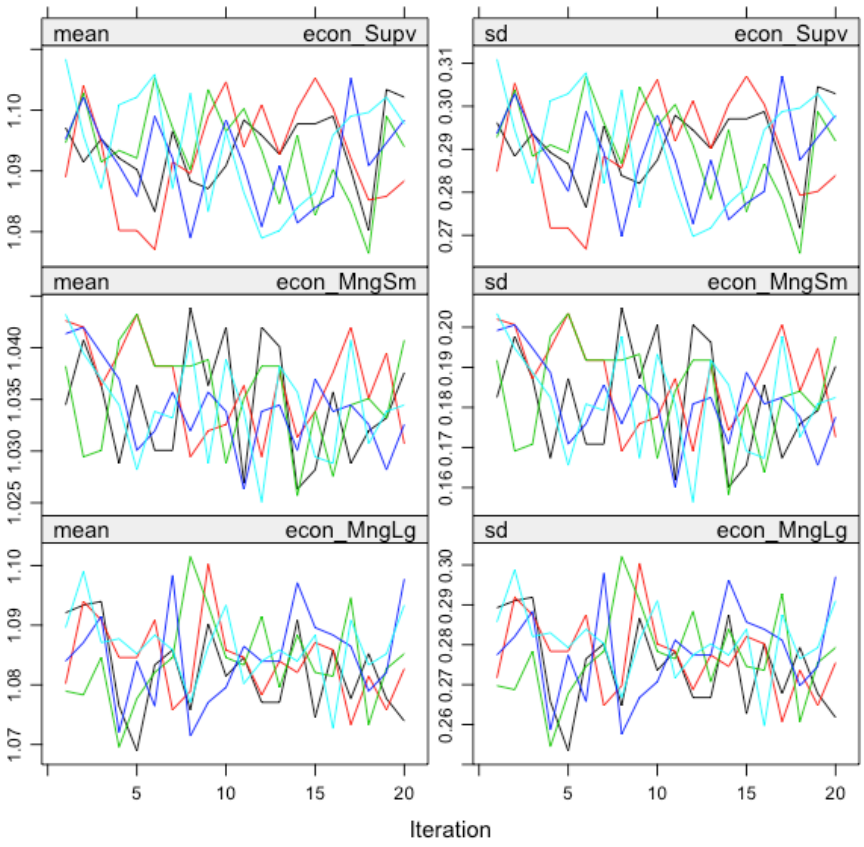
The following demonstrate which variables met the common criteria for convergence in multiple imputation, and which did not.

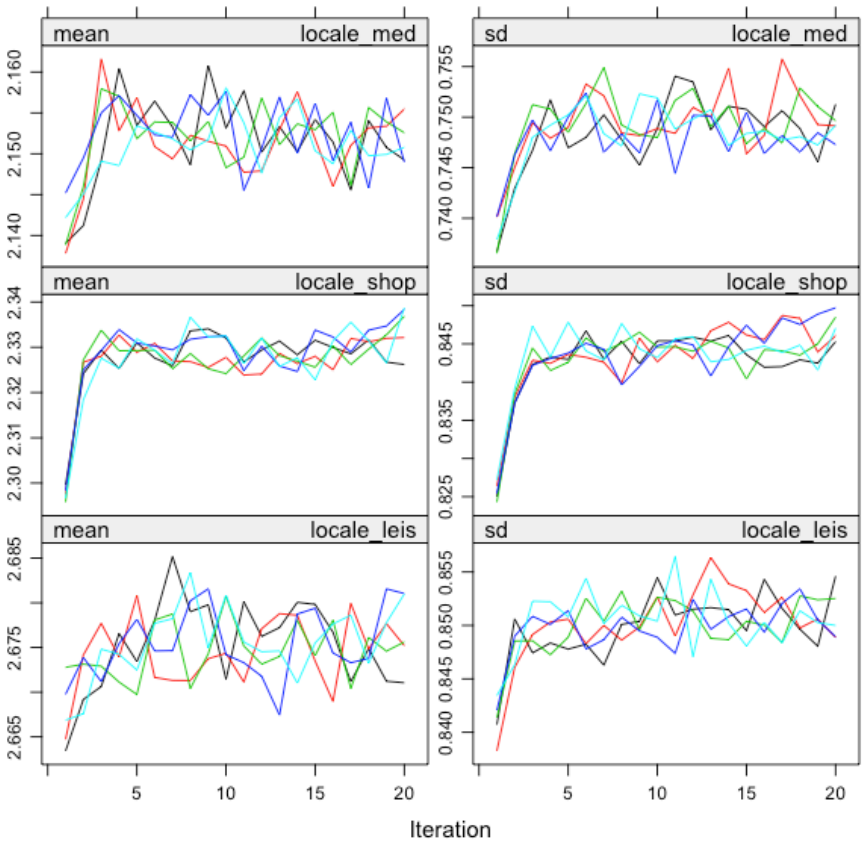


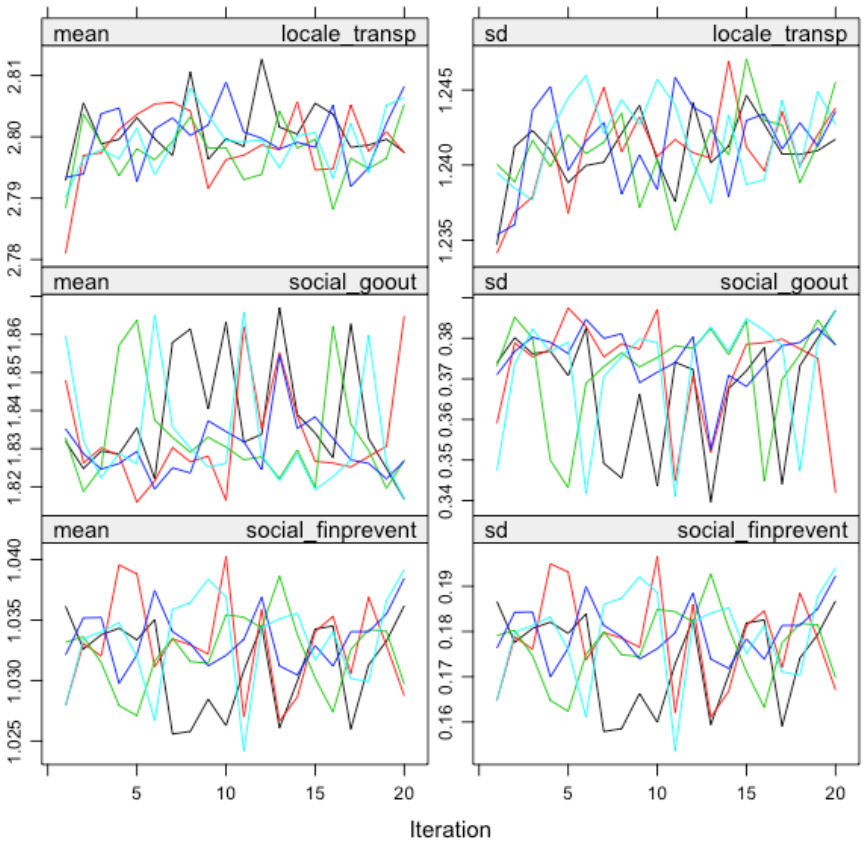

mean
econ_Retir
sd
econ_Retir
mean
econ_Disb
sd
econ_Disb
mean
econ_EdTr
sd
econ_EdTr
Iteration


mean
econ_Mat
sd
econ_Mat
mean
econ_Domes
sd
econ_Domes
mean
econ_Oth
sd
econ_Oth
Iteration


mean
econ_SelfEm
sd
econ_SelfEm
mean
econ_SelfLo
sd
econ_SelfLo
mean
econ_Employee
sd
econ_Employee
Iteration


mean
econ_Supv
sd
econ_Supv
mean
econ_MngSm
sd
econ_MngSm
mean
econ_MngLg
sd
econ_MngLg
Iteration


mean
locale_med
sd
locale_med
mean
locale_shop
sd
locale_shop
mean
locale_leis
sd
locale_leis
2.160
2.150
2.140
0.755
0.750
0.745
0.740
2.34
2.33
2.32
2.31
2.30
0.845
0.835
0.825
2.685
2.675
2.665
0.855
0.850
0.845
0.840
5
10
15
20
Iteration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sd
locale_transp
mean
social_goout
sd
social_goout
mean
social_finprevent
sd
social_finprevent
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2.80
2.79
2.78
1.245
1.240
1.235
1.86
1.85
1.84
1.83
1.82
0.38
0.37
0.36
0.35
0.34
1.040
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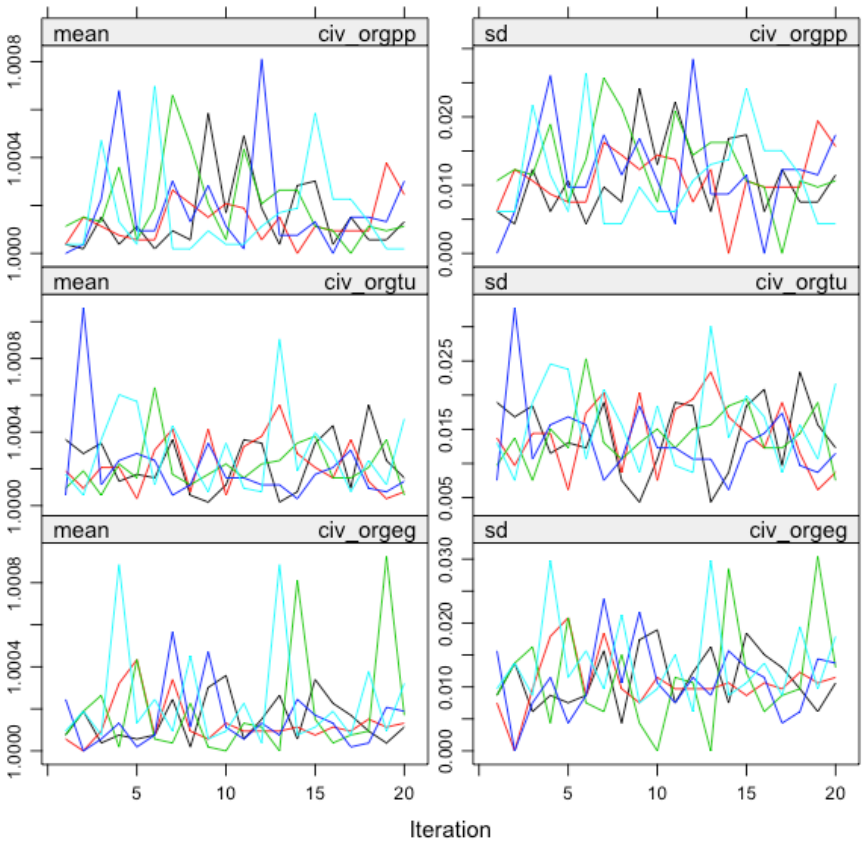
1.030
1.025
0.19
0.18
0.17
0.16
5
10
15
20
Iteration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civ_orgpp
sd
civ_orgpp
mean
civ_orgtu
sd
civ_orgtu
mean
civ_orgeg
sd
civ_orgeg
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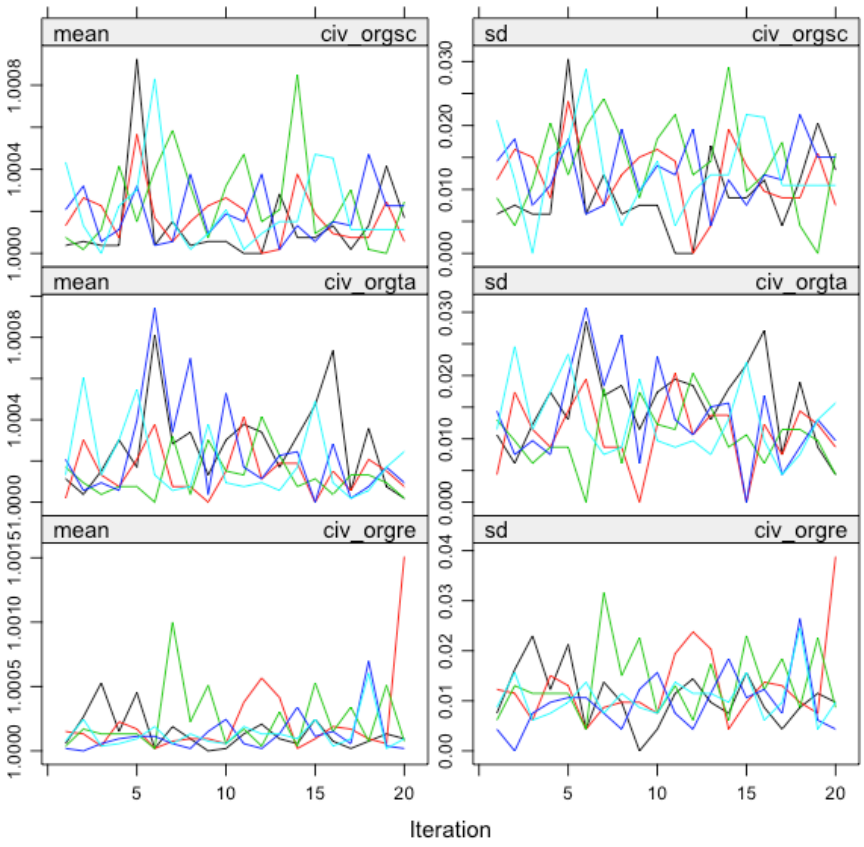
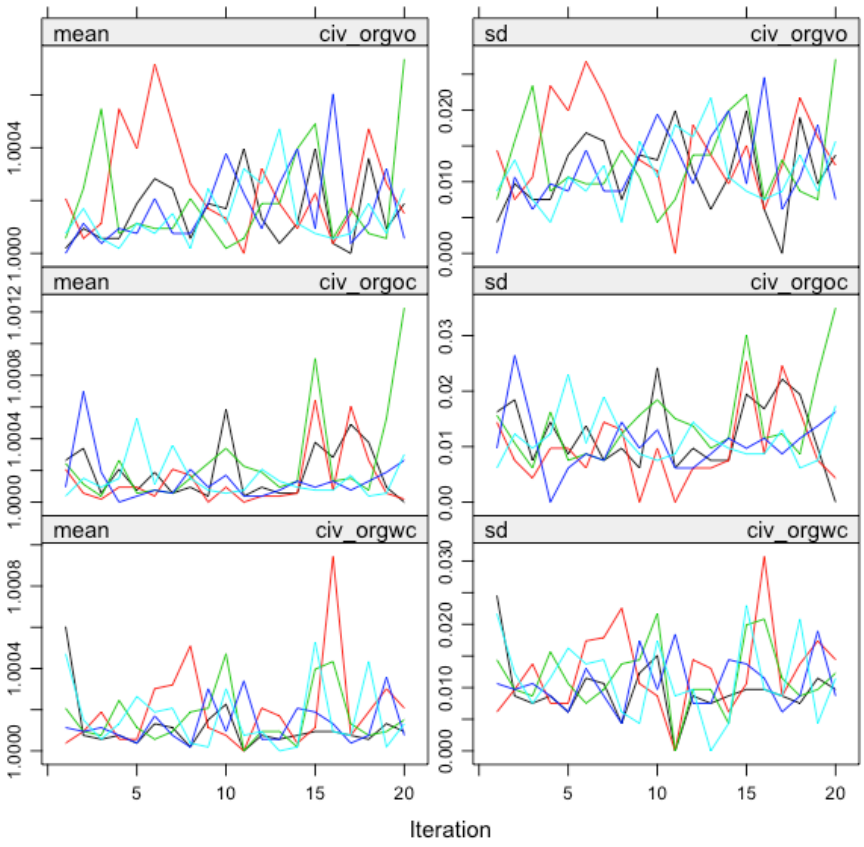
1.0004
1.0008
0.000
0.010
0.020
0.005
0.015
0.025
0.030
5
10
15
20
Iteration


mean
civ_orgsc
sd
civ_orgsc
mean
civ_orgta
sd
civ_orgta
mean
civ_orgre
sd
civ_orgre
1.0000
1.0004
1.0008
1.0005
1.0010
1.0015
0.000
0.010
0.020
0.030
0.00
0.01
0.02
0.03
0.04
5
10
15
20
Iteration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civ_orgvo
mean
civ_orgoc
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civ_orgoc
mean
civ_orgwc
sd
civ_orgwc
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1.0004
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0.01
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0.03
0.030
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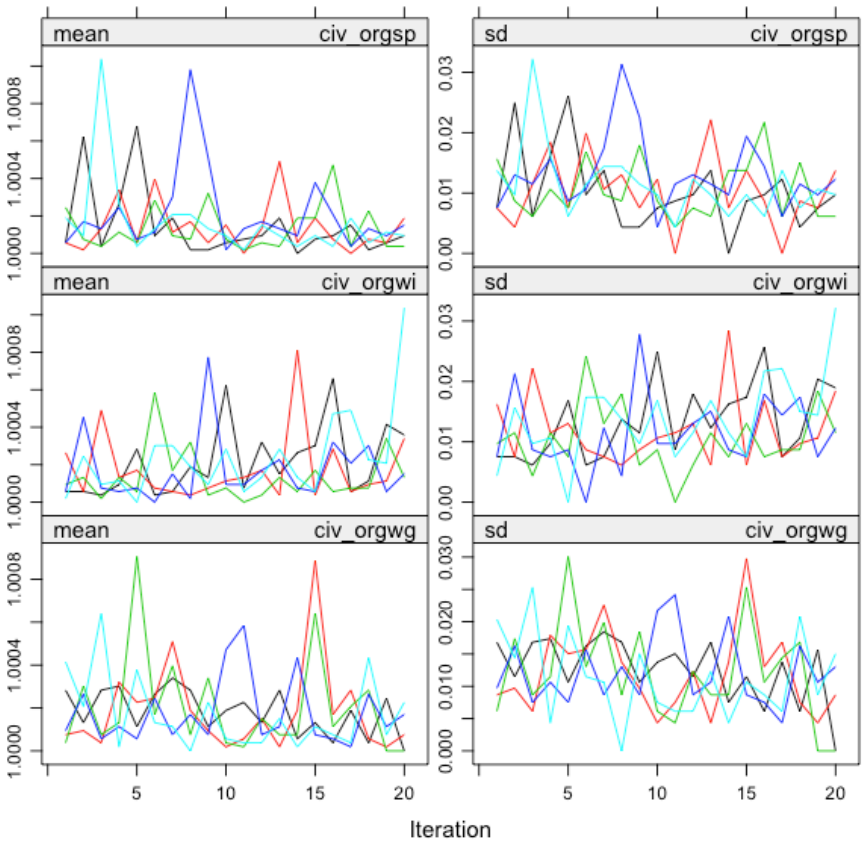
20
Iteration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civ_orgwi
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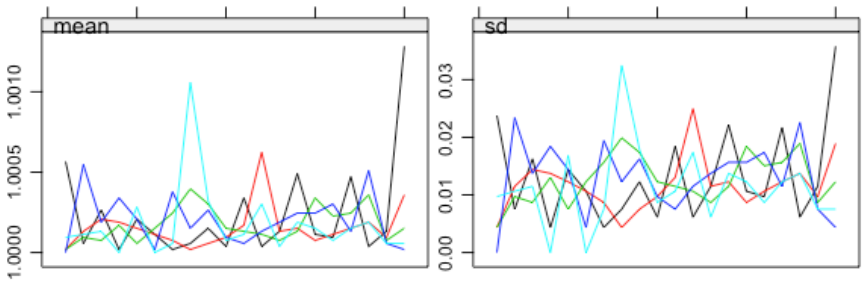
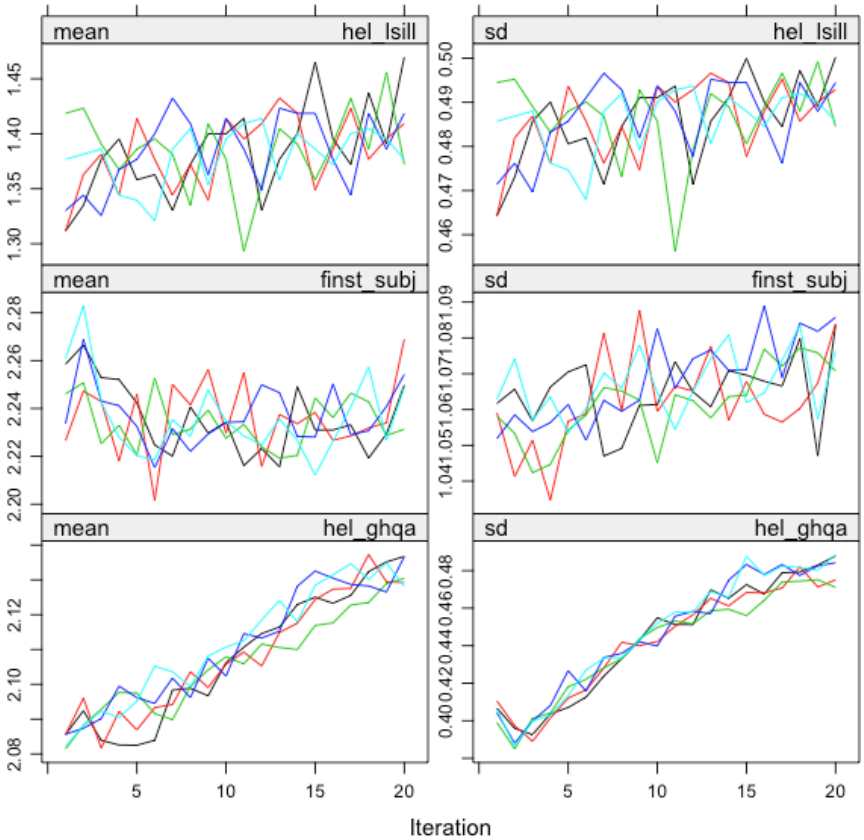
20
Iteration



Iteration



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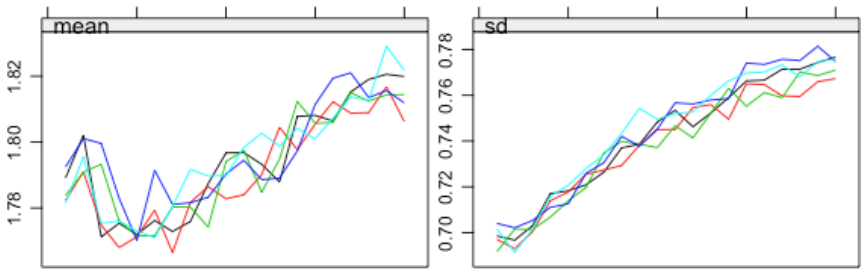
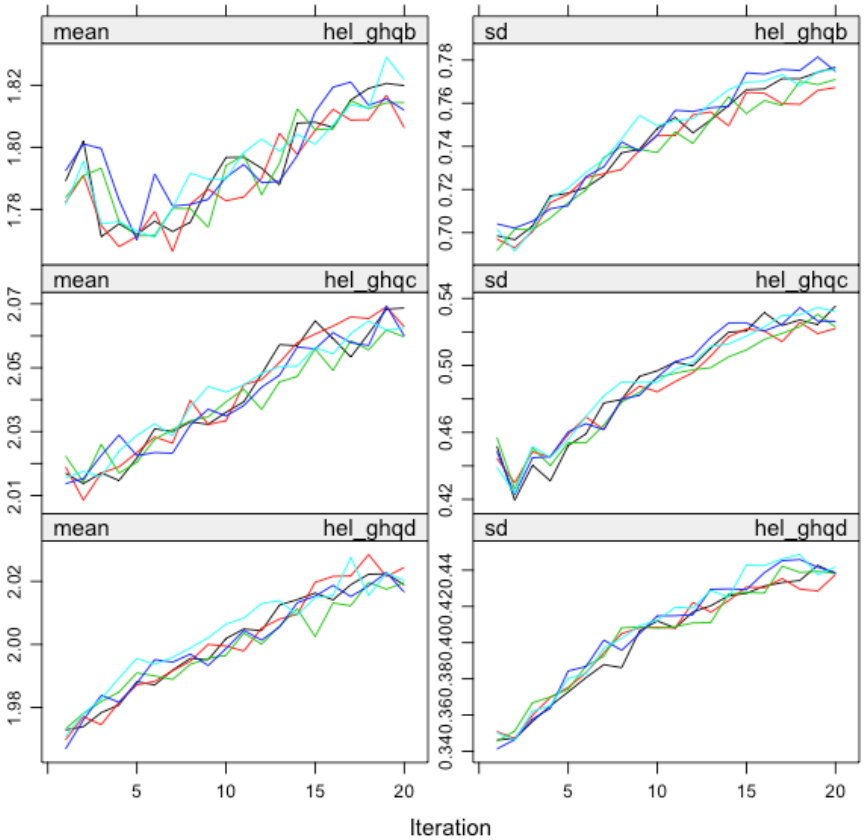
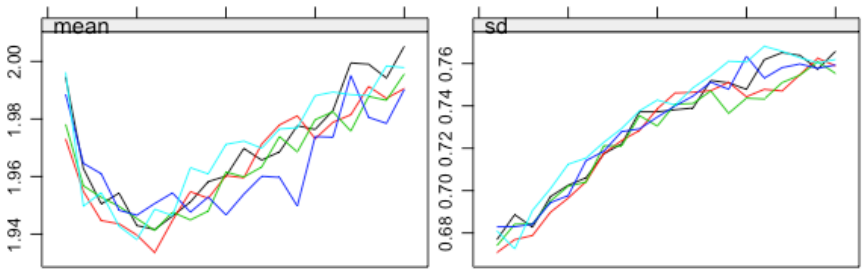


Iteration



Iteration



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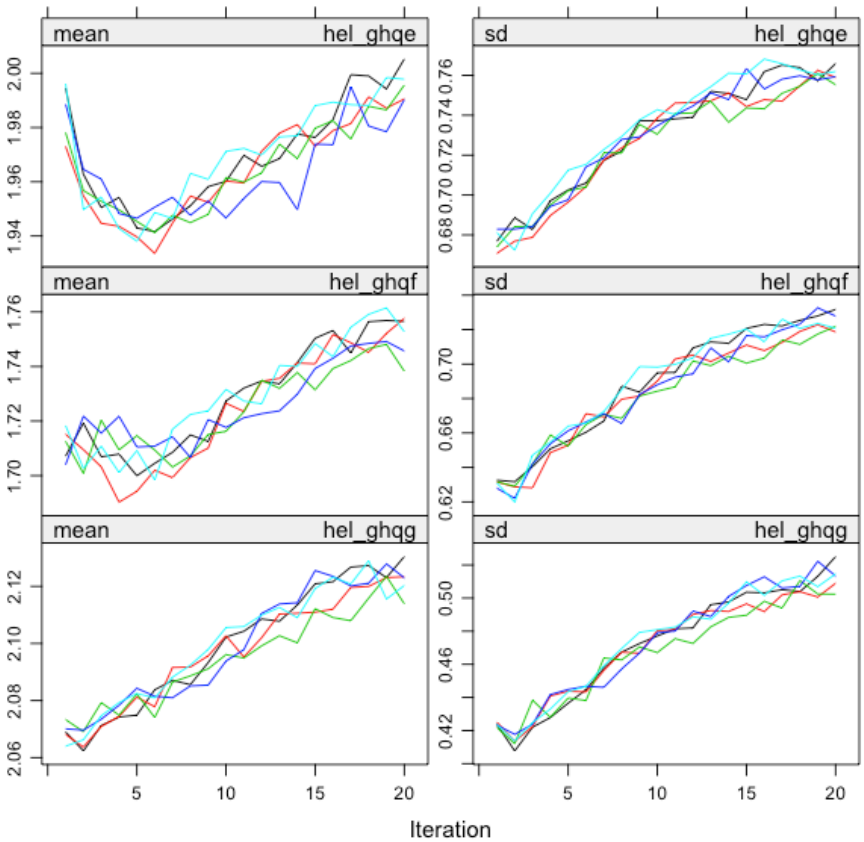
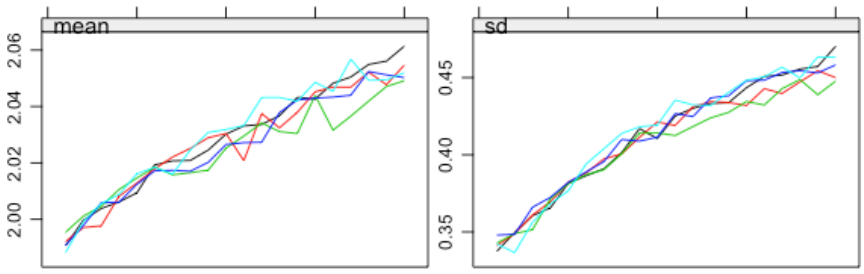
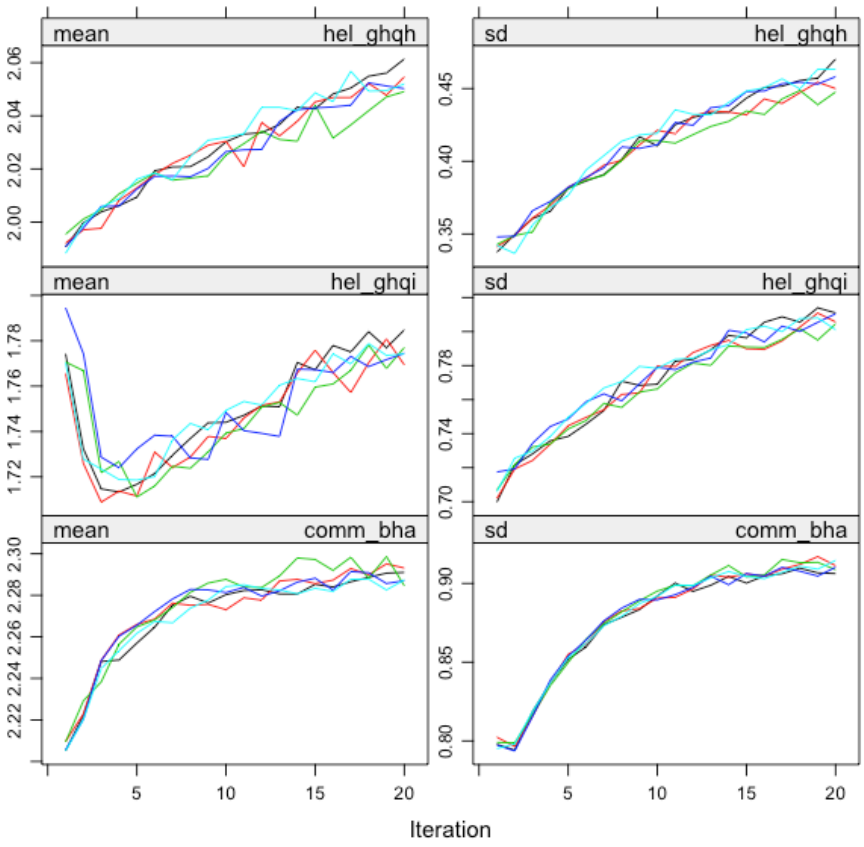


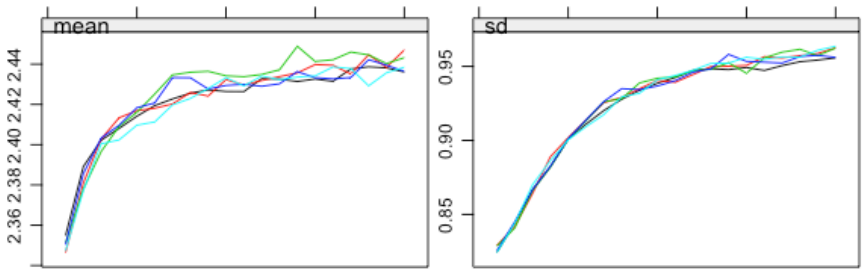
Iteration



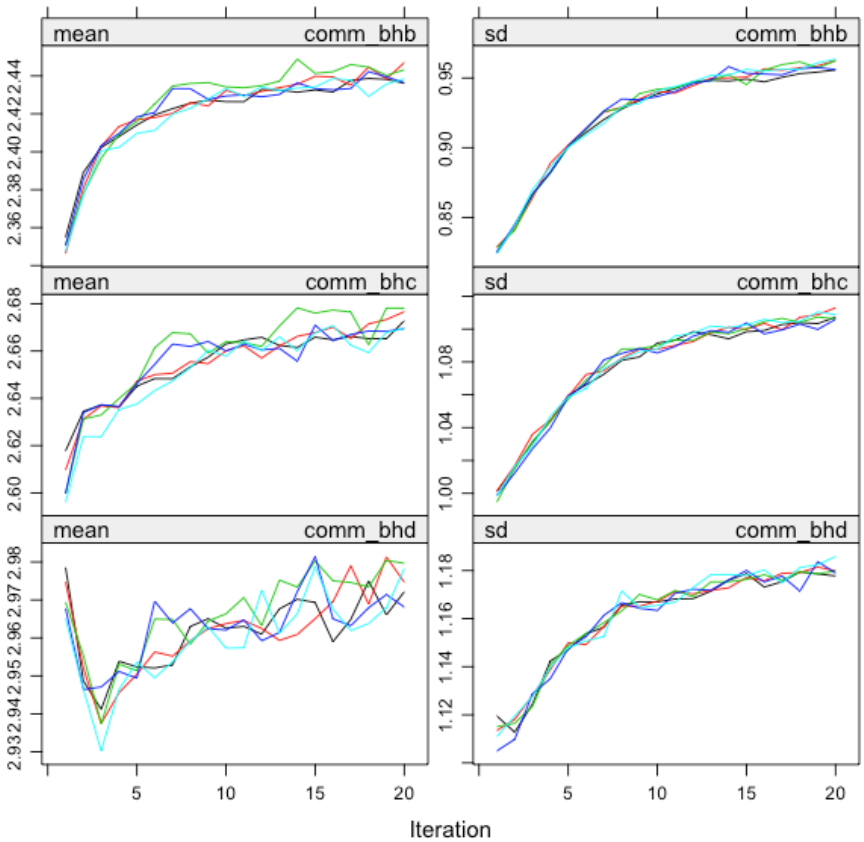
Iteration



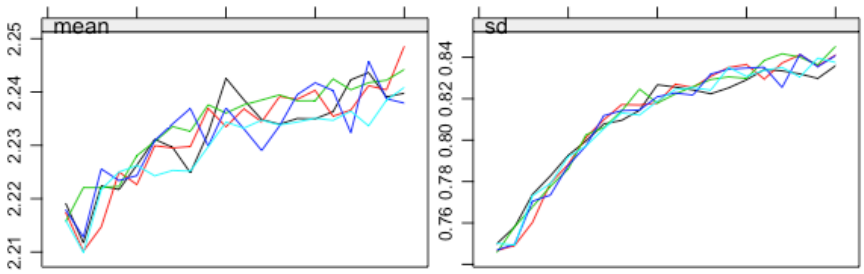
Iteration



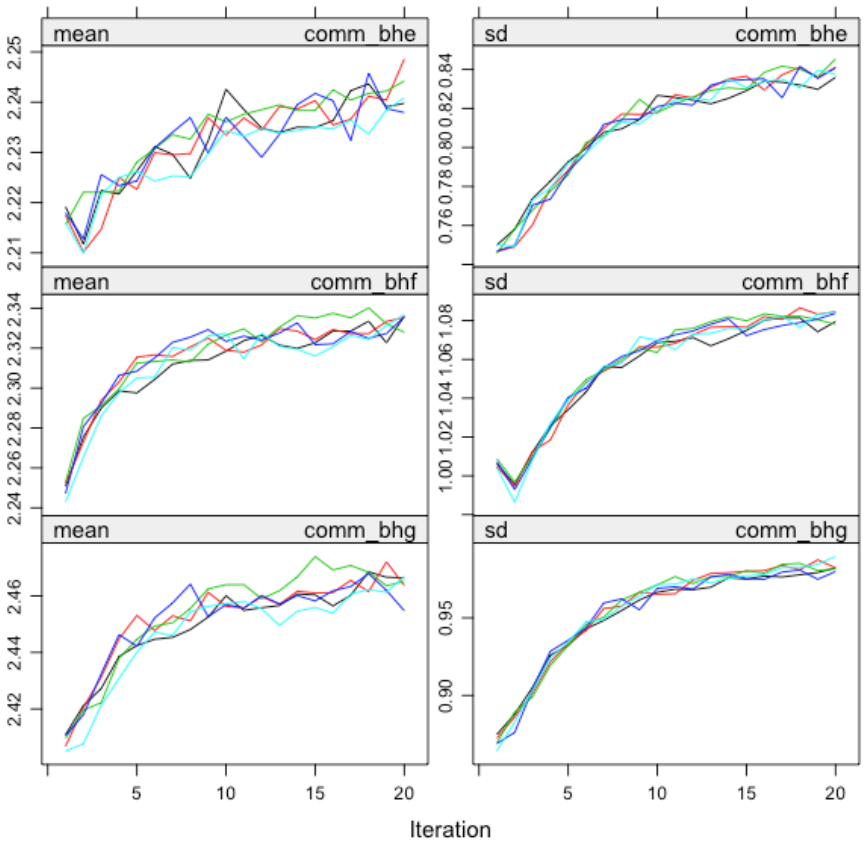
Iteration



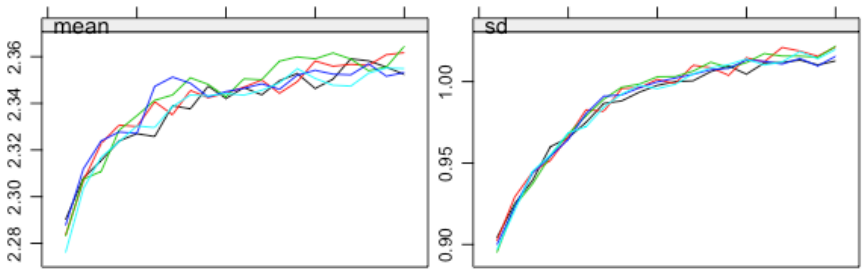
Iteration



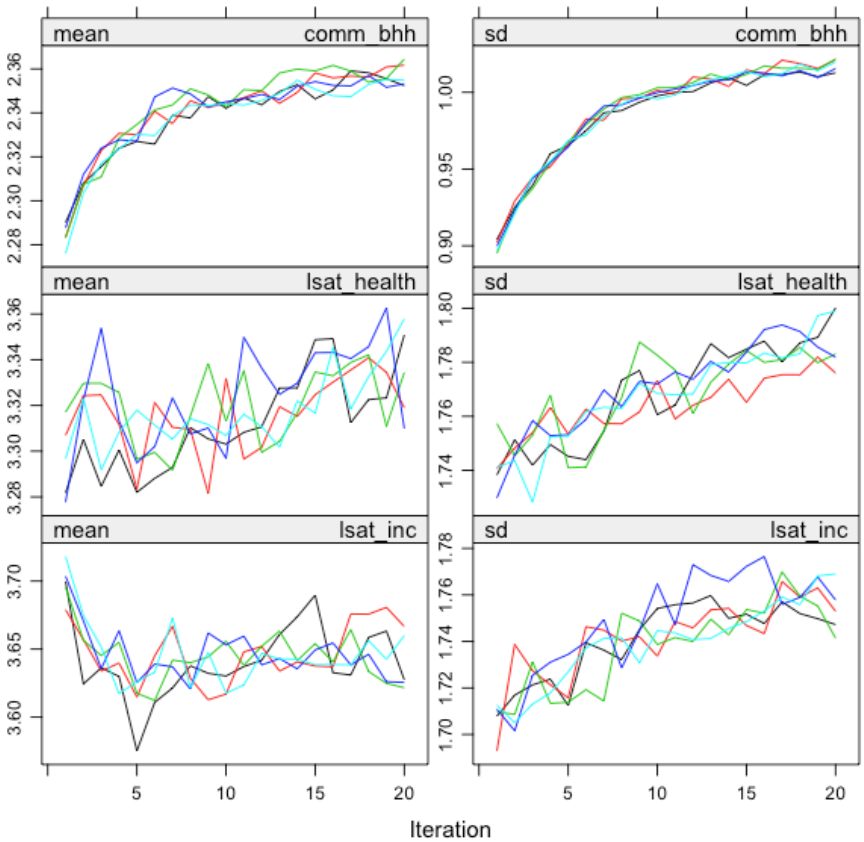
Iteration



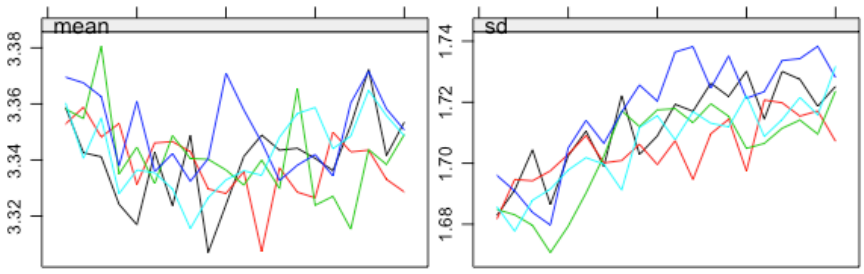
Iteration



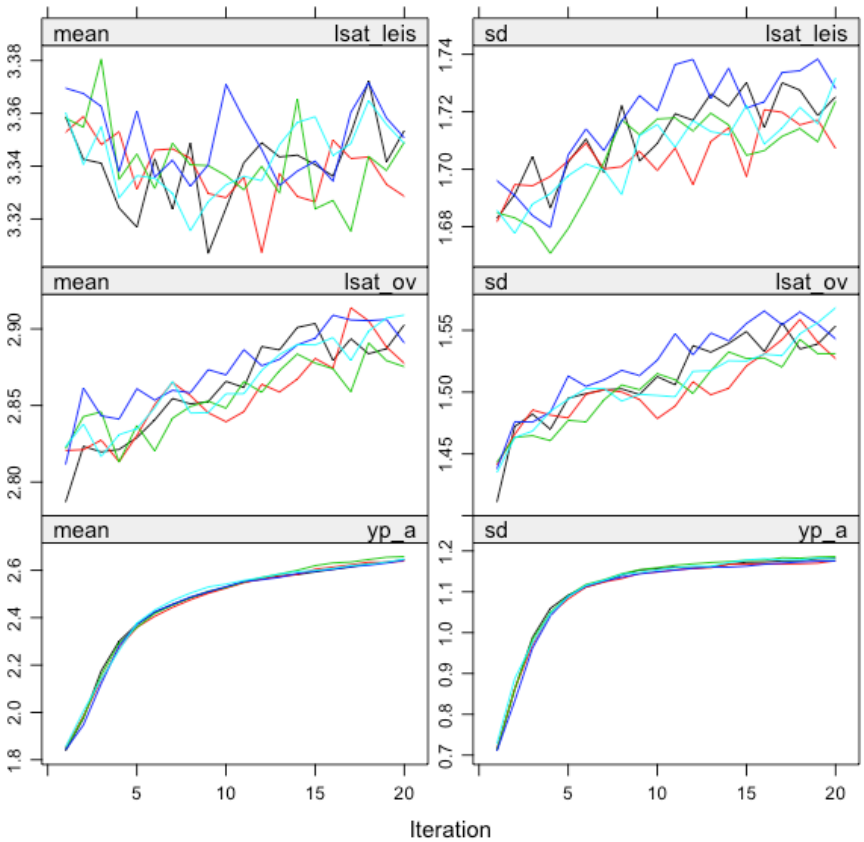
Iteration



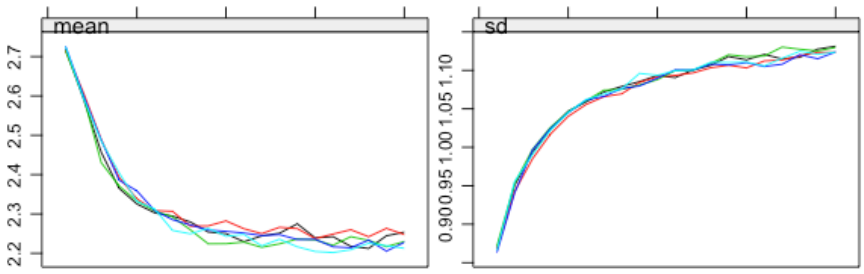
Iteration



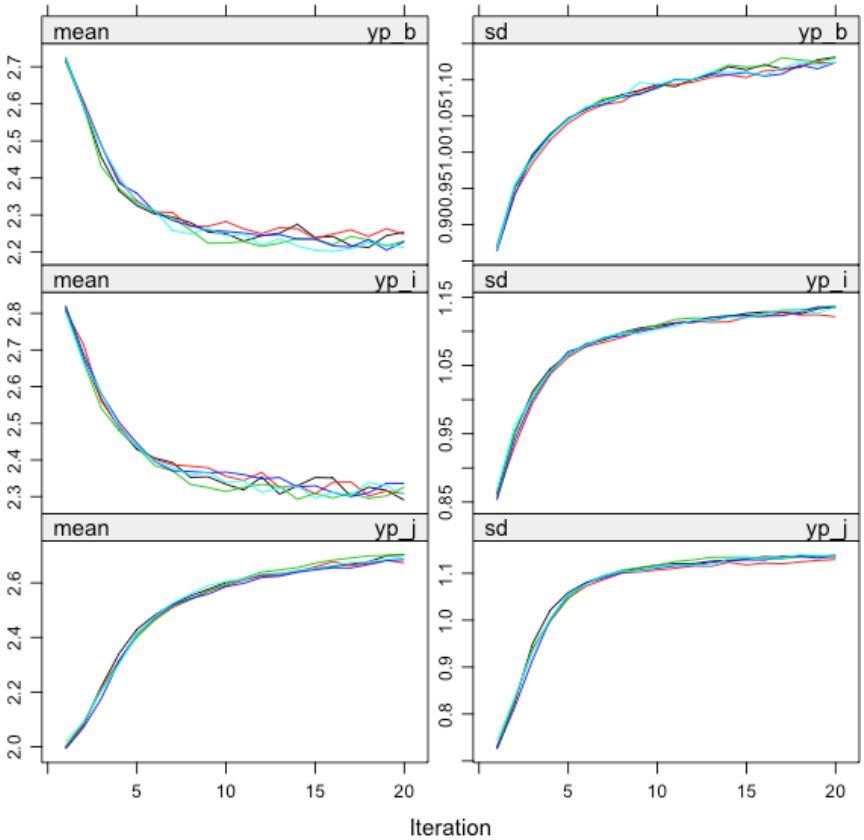
Iteration



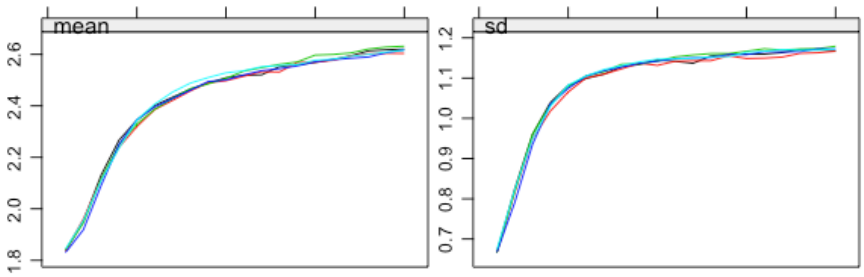
Iteration



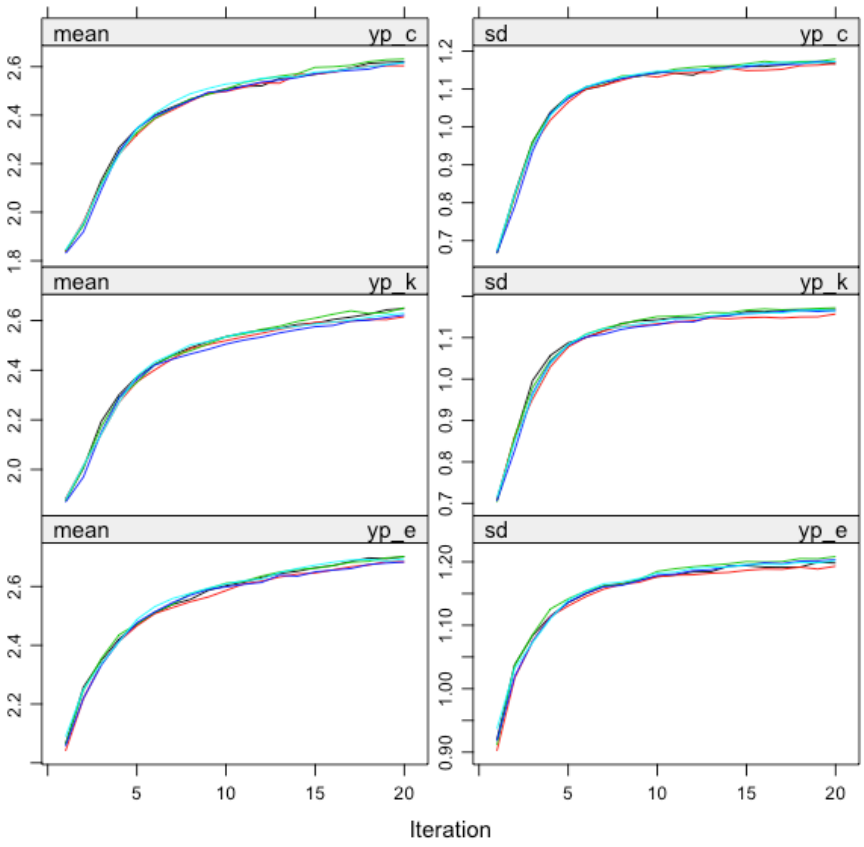
Iteration



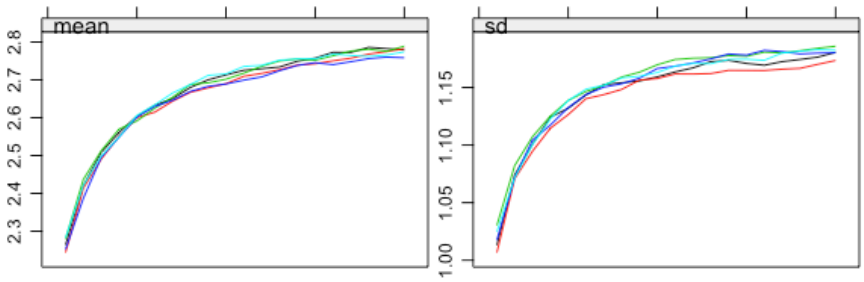
Iteration



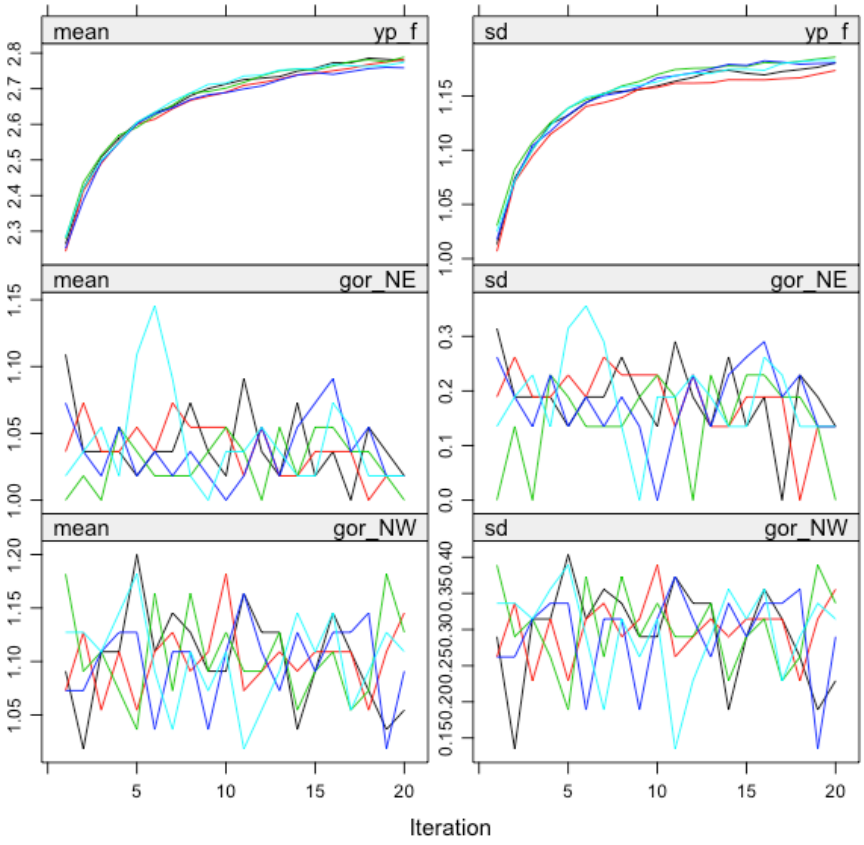
Iteration



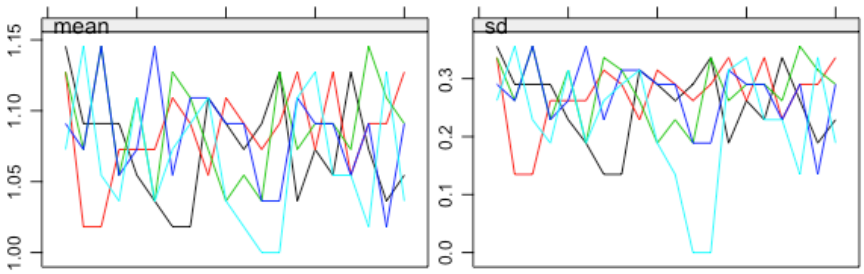
Iteration



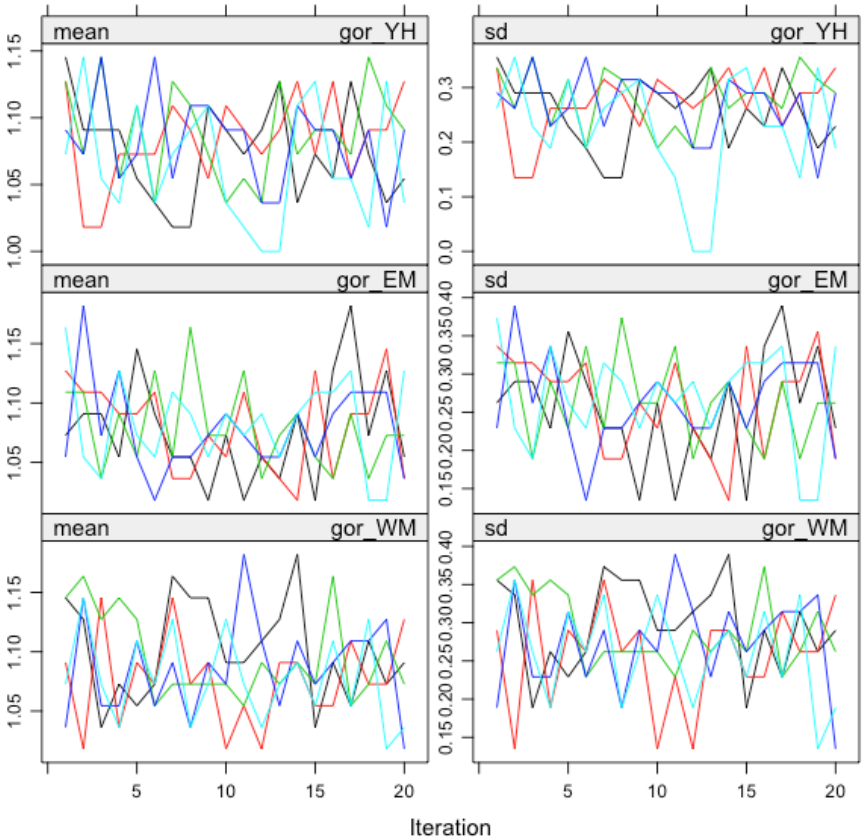
Iteration



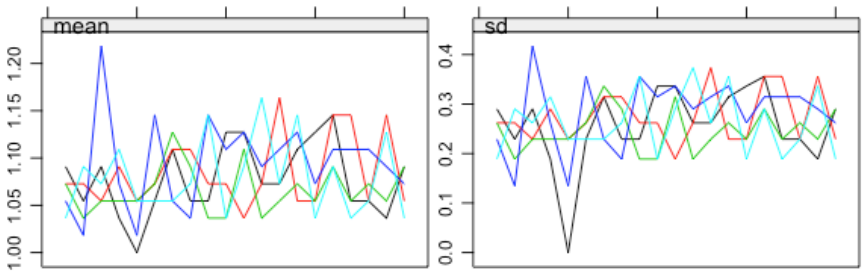
Iteration



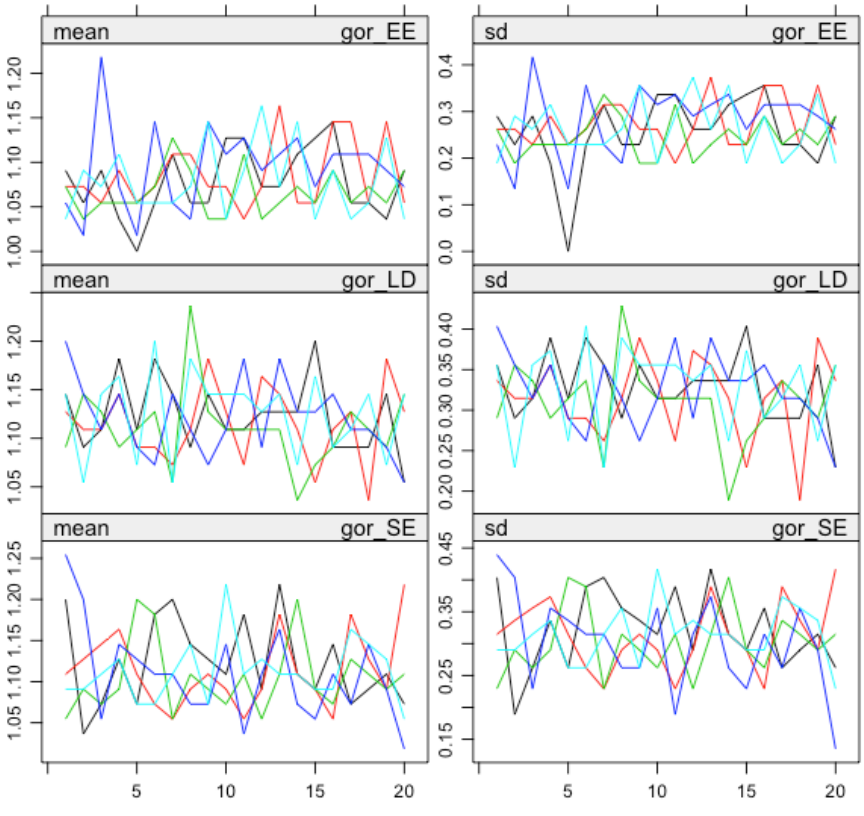
Iteration



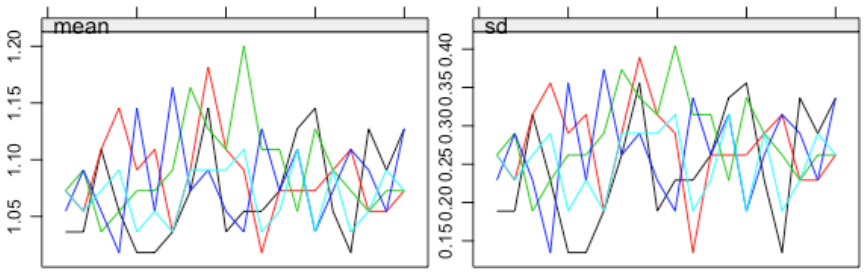
Iteration



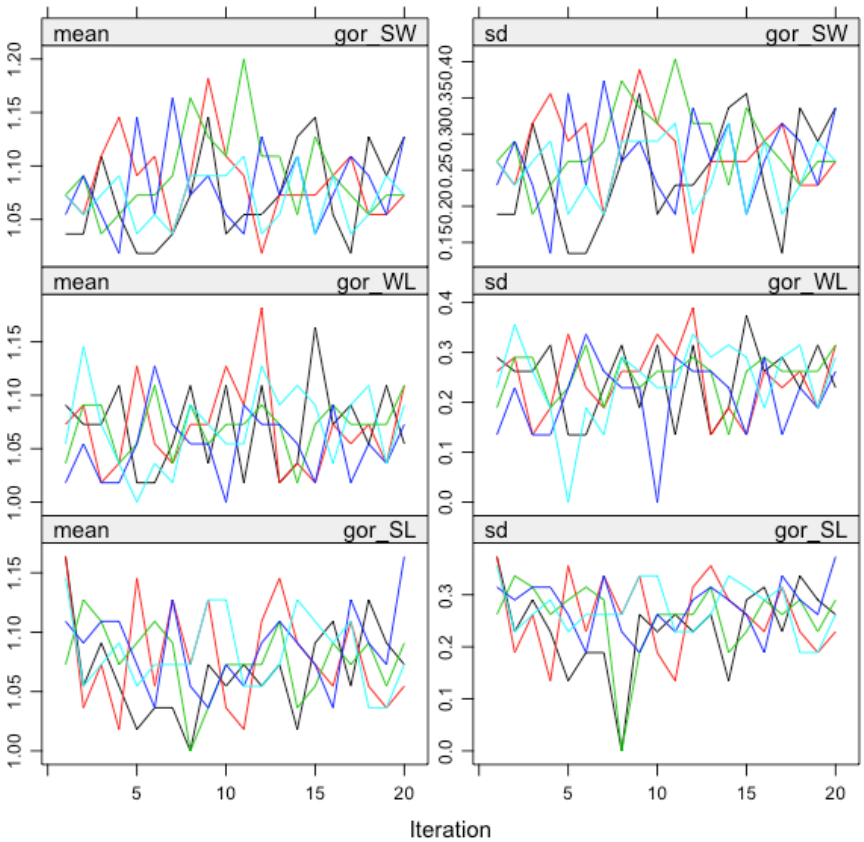
Iteration



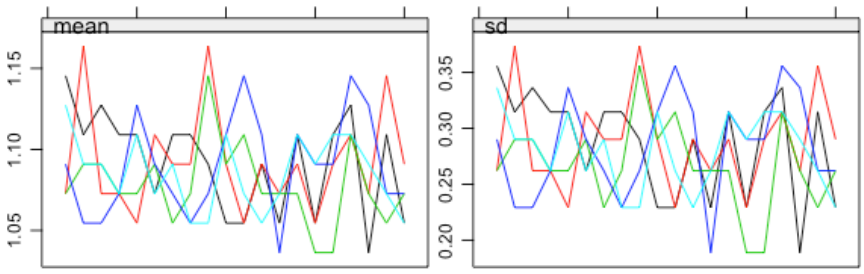
Iteration



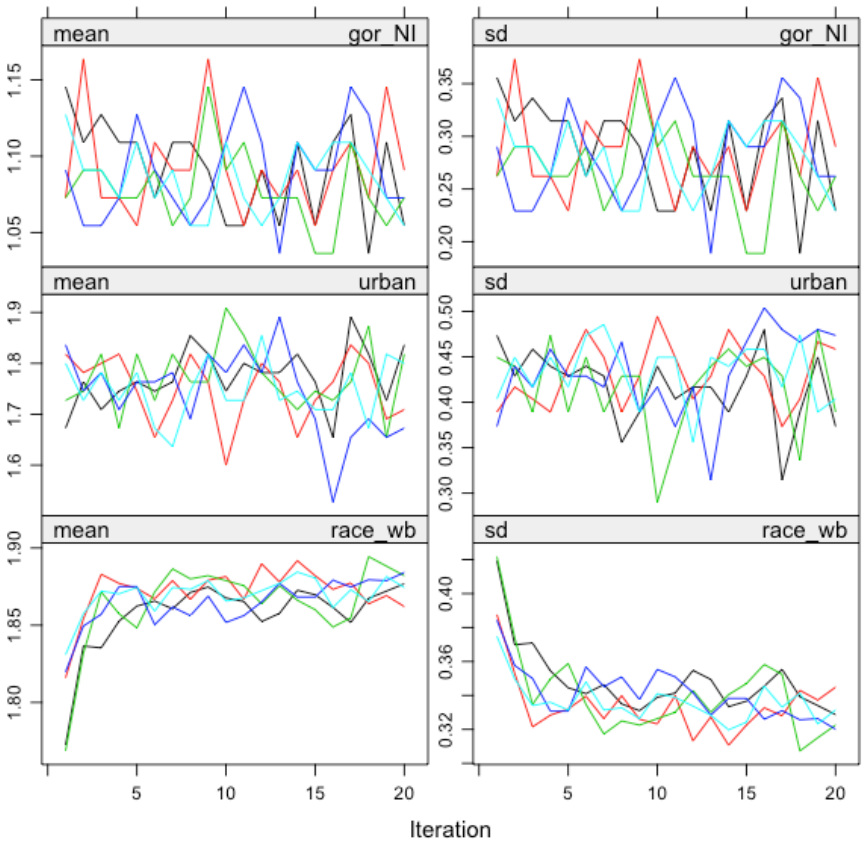
Iteration



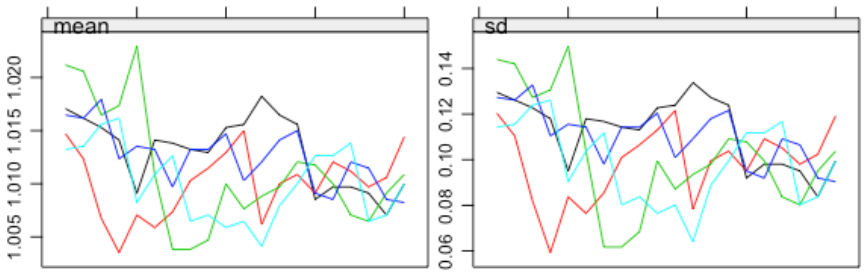
Iteration



Iteration



Iteration



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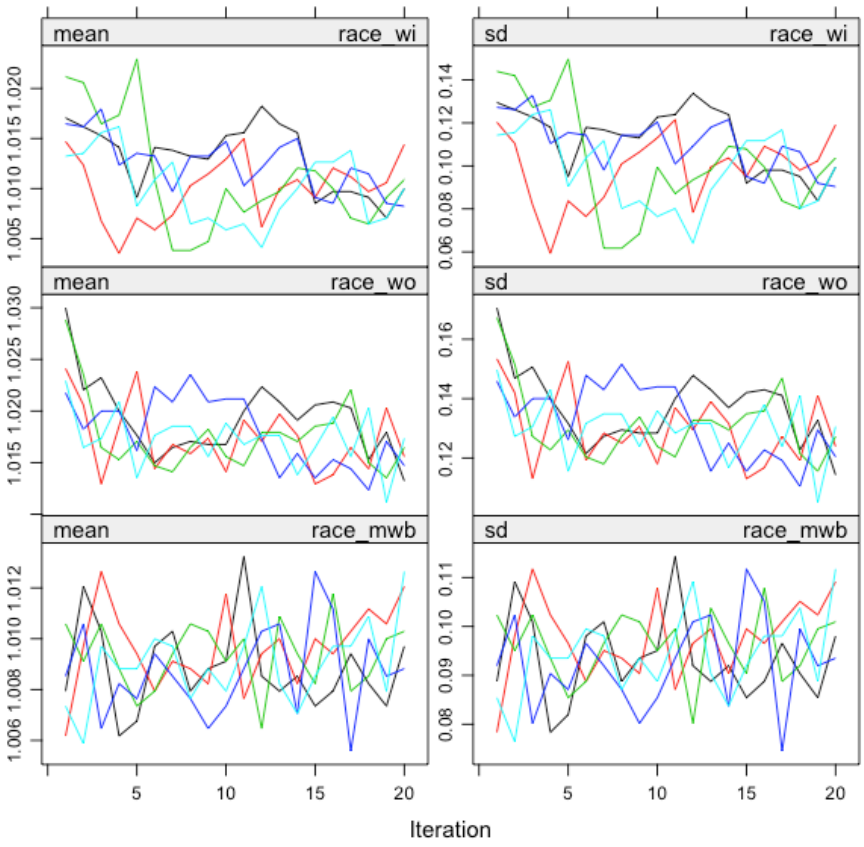

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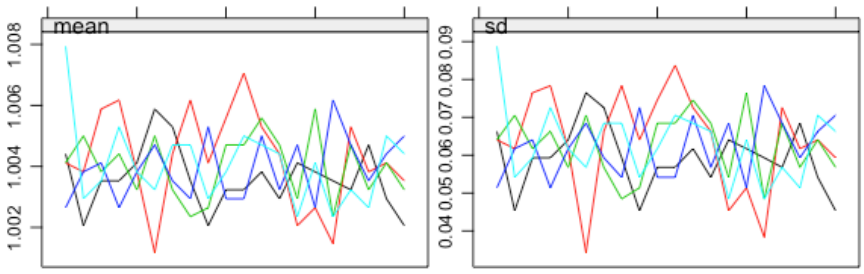

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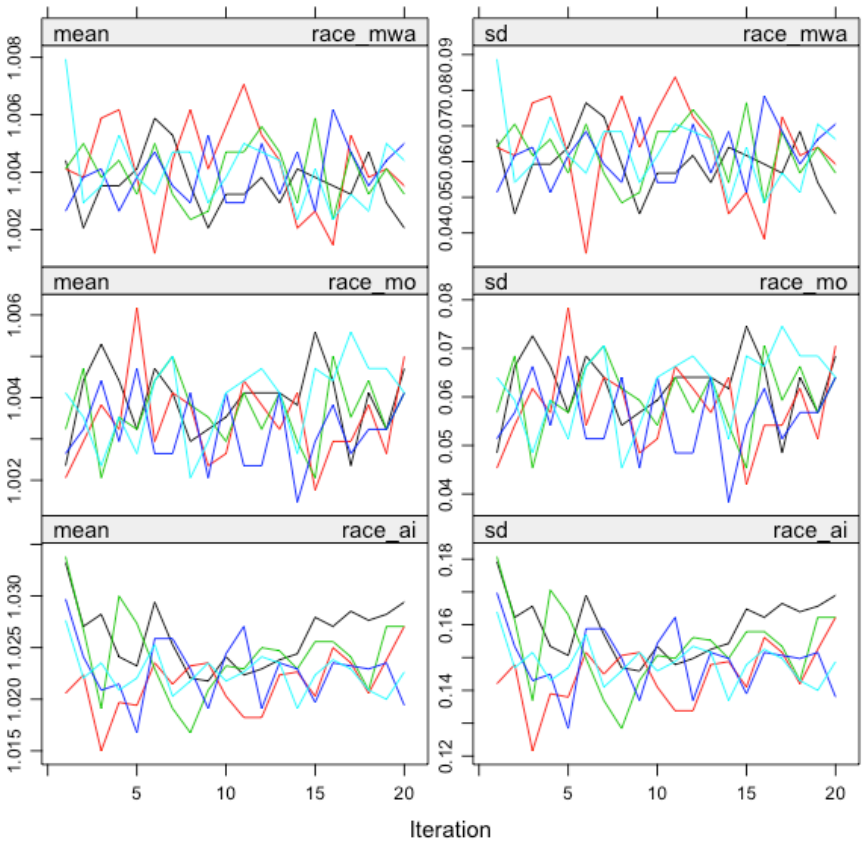

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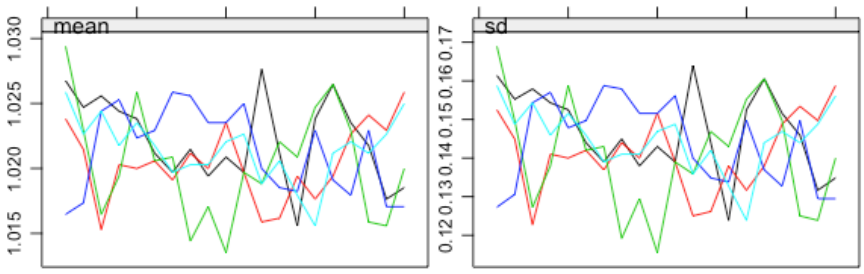

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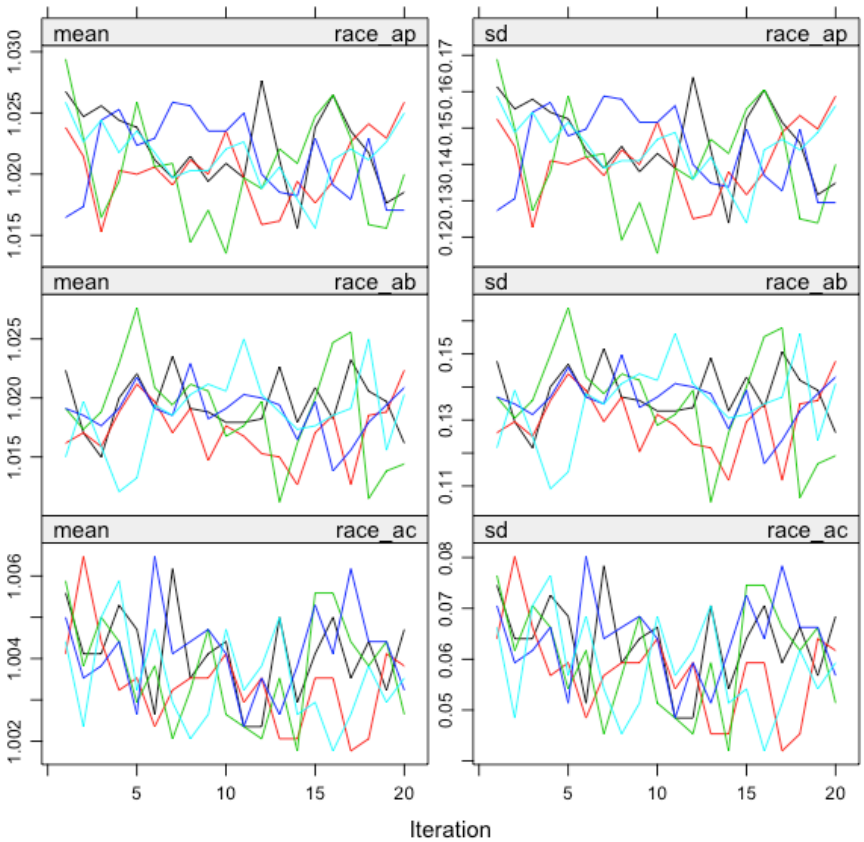

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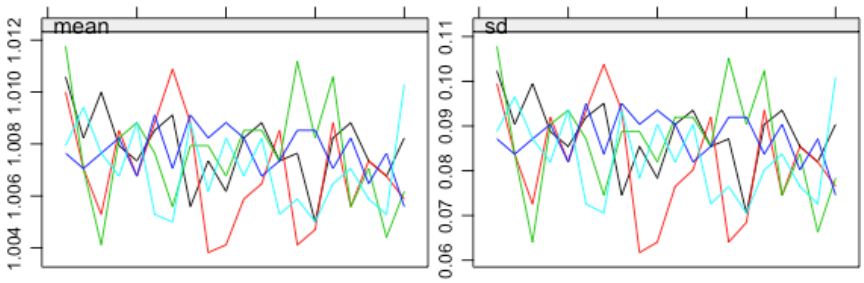

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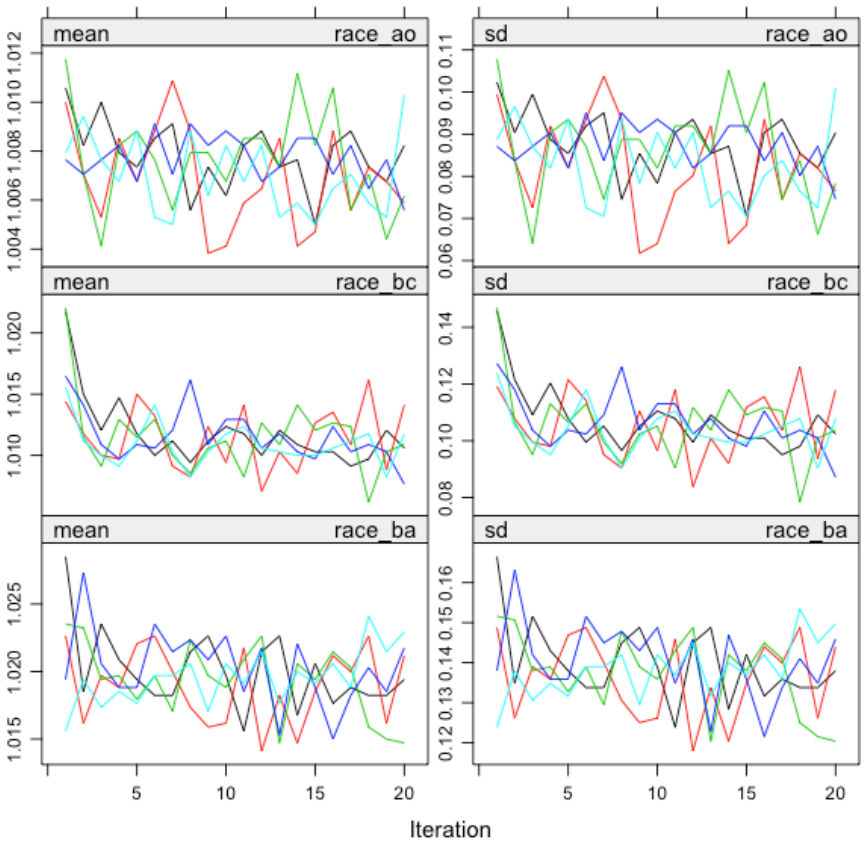

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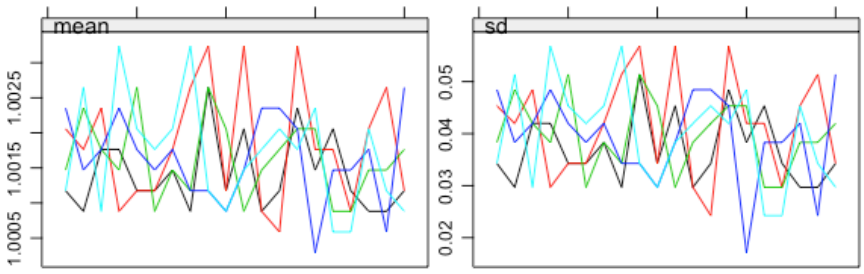

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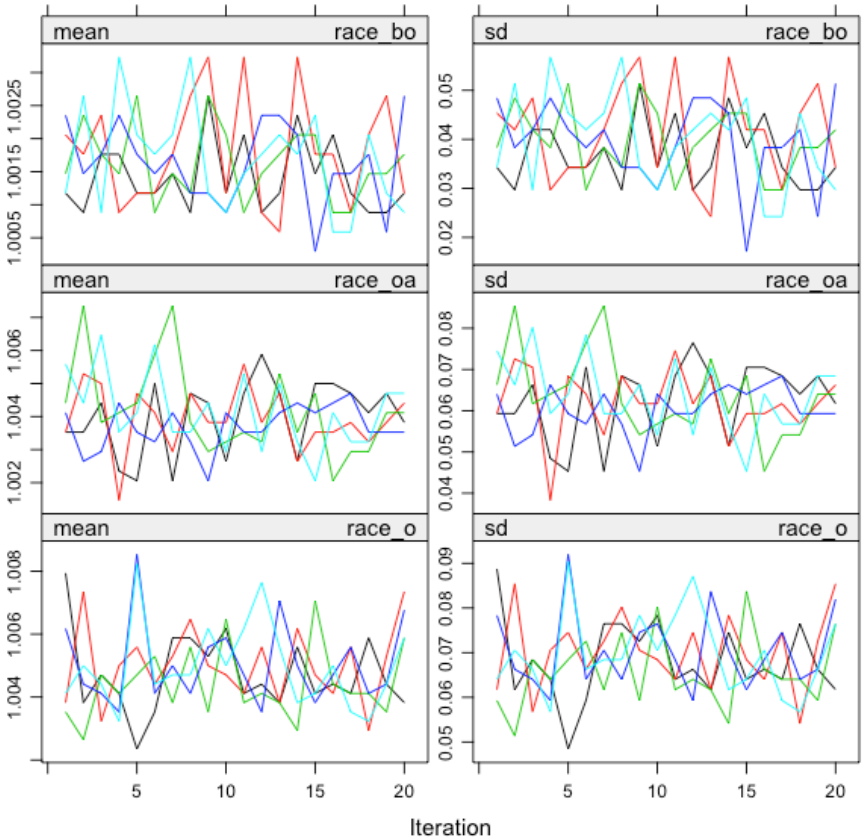

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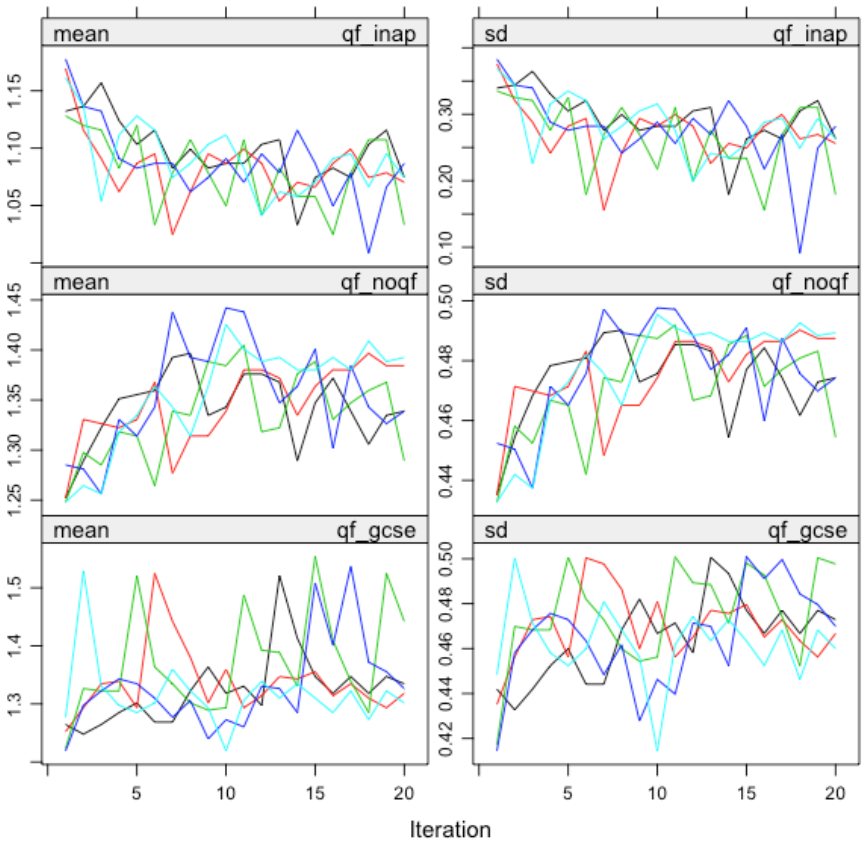
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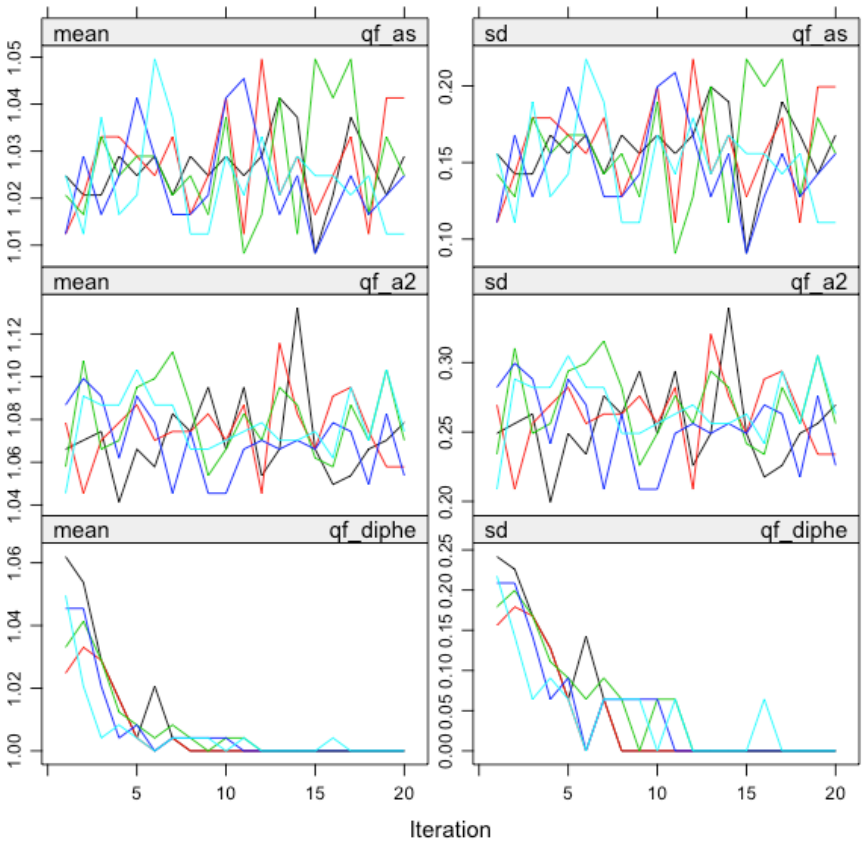
qf_inap
sd
qf_inap
mean
qf_noqf
sd
qf_noqf
mean
qf_gcse
sd
qf_gcse
Iteration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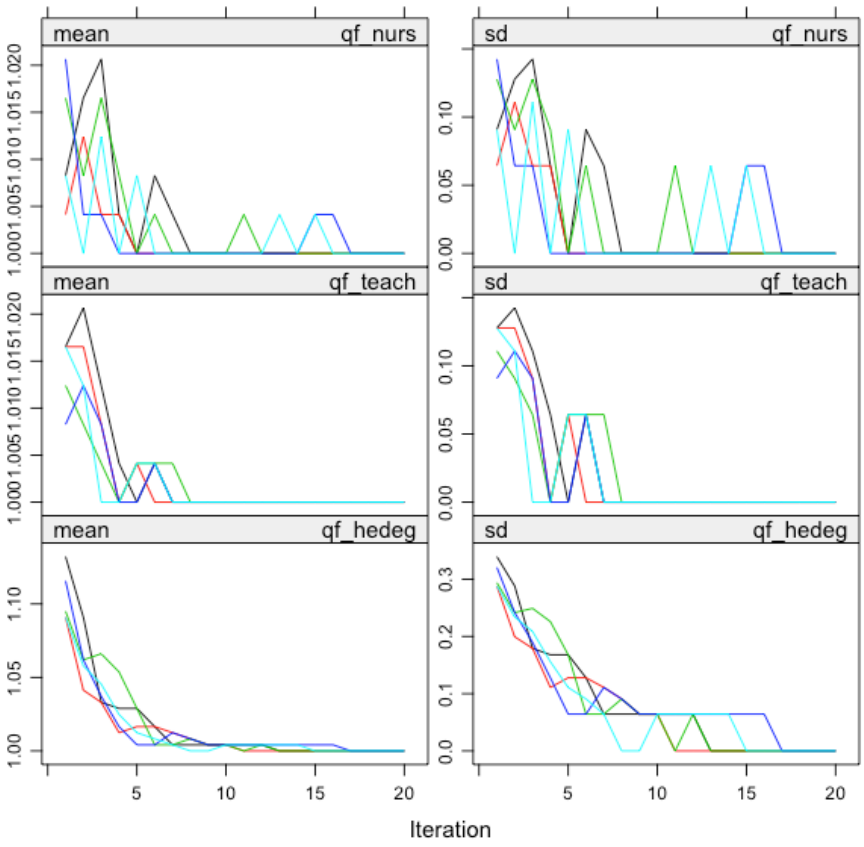
qf_as
mean
qf_a2
sd
qf_a2
mean
qf_diphe
sd
qf_diphe
Iteration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sd
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qf_teach
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qf_teach
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qf_hedeg
sd
qf_hedeg
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0.00
0.05
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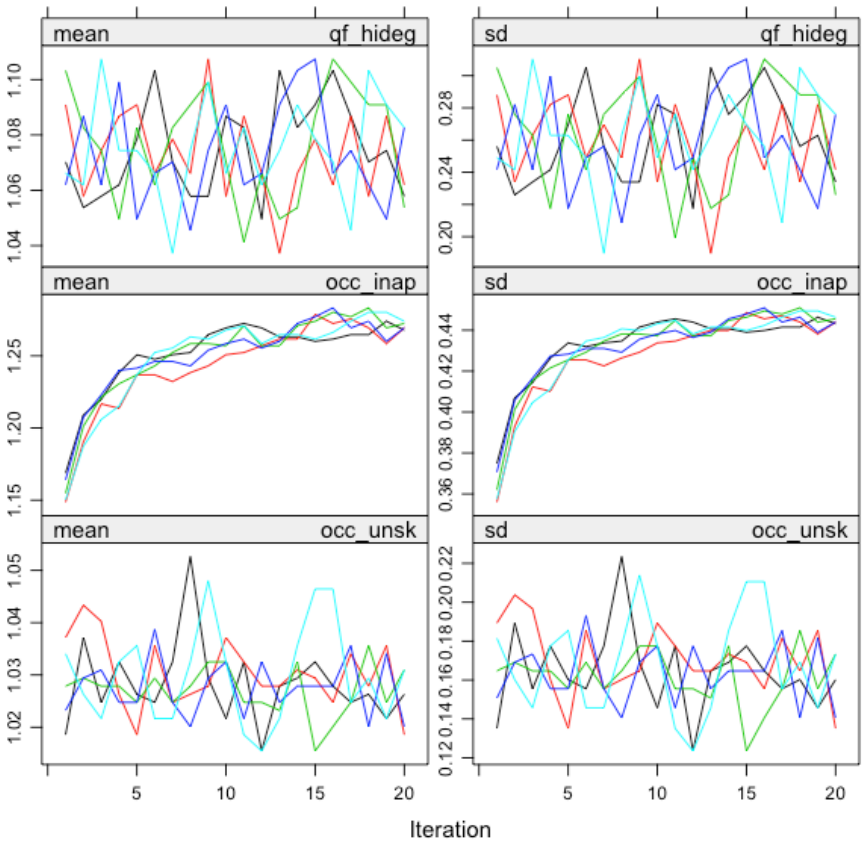
1.05
1.10
0.0
0.1
0.2
0.3
5
10
15
20
Iteration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qf_hideg
sd
qf_hideg
mean
occ_inap
sd
occ_inap
mean
occ_unsk
sd
occ_unsk
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1.06
1.08
1.10
0.20
0.24
0.28
1.15
1.20
1.25
0.36
0.38
0.40
0.42
0.44
1.02
1.03
1.04
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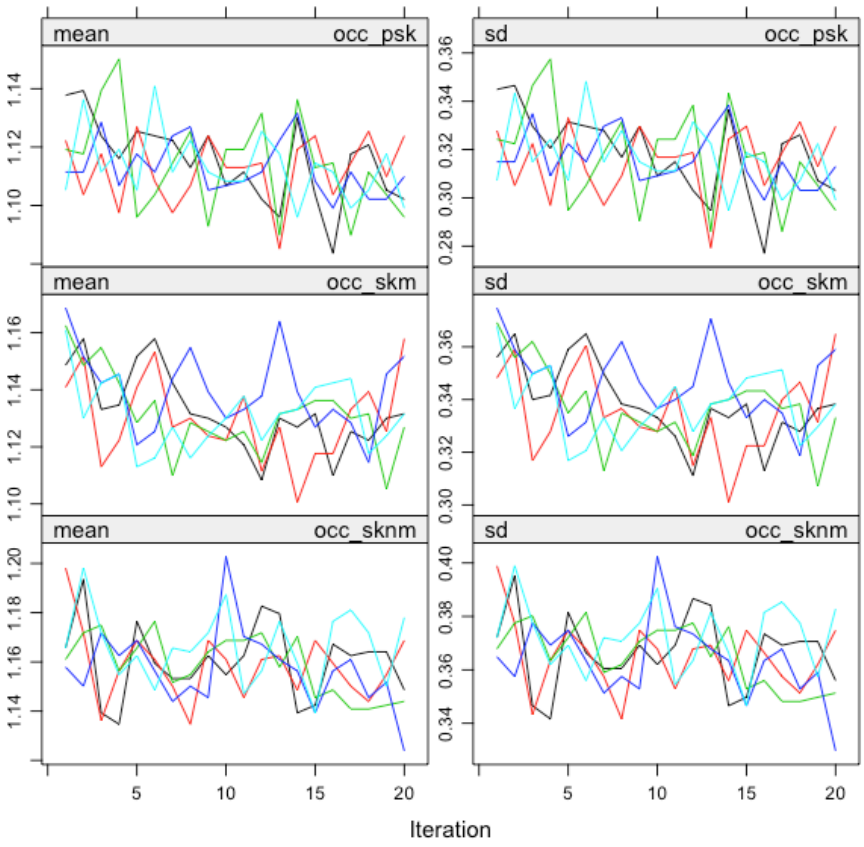
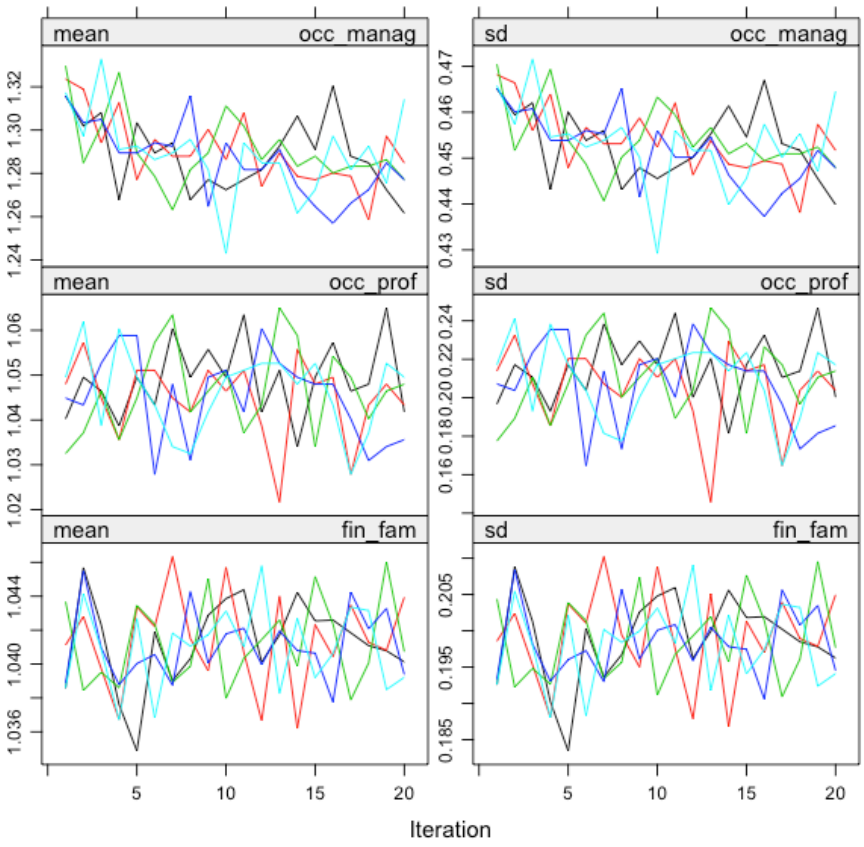
0.22
5
10
15
20
Iteration


mean
occ_psk
sd
occ_psk
mean
occ_skm
sd
occ_skm
mean
occ_sknm
sd
occ_sknm
Iteration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occ_manag
mean
occ_prof
sd
occ_prof
mean
fin_fam
sd
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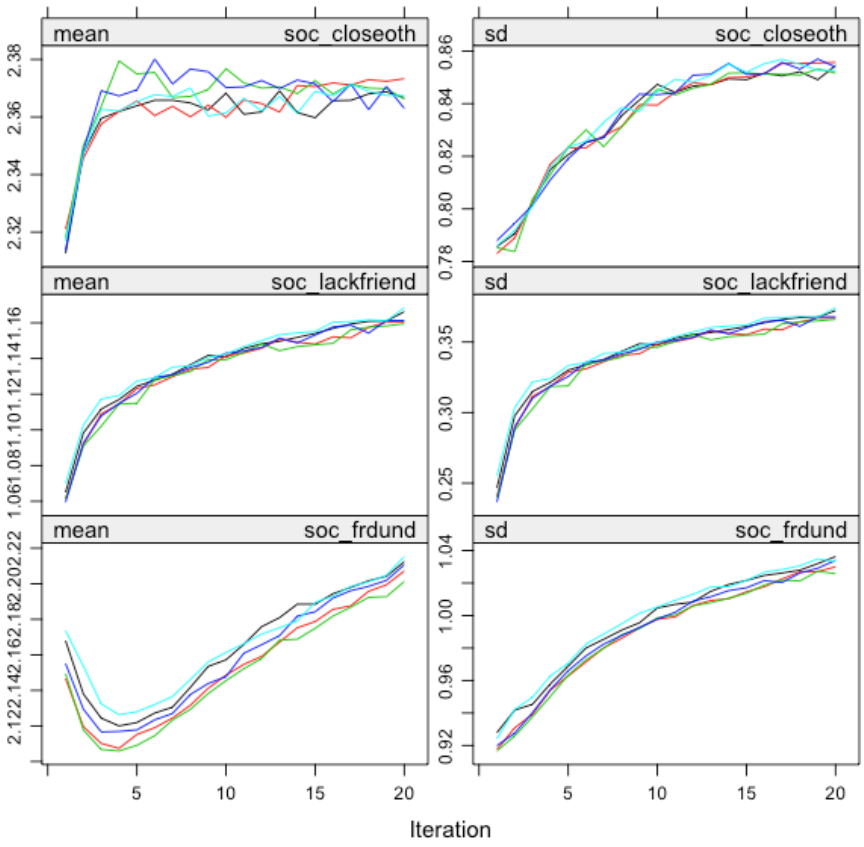
Iteration


mean
soc_closeoth
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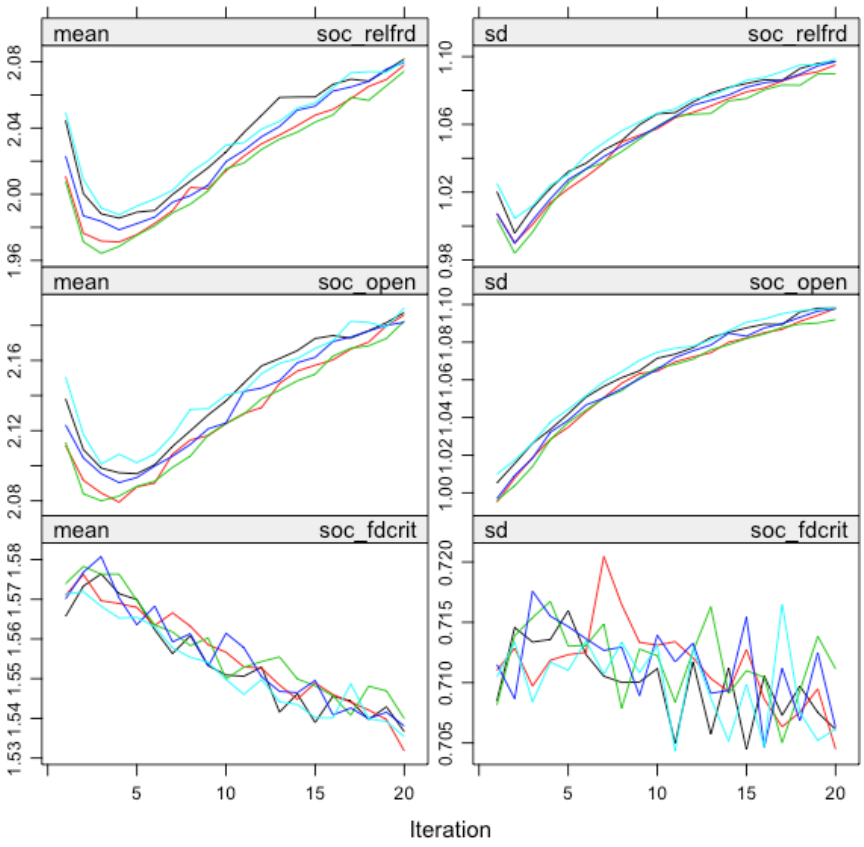
soc_closeoth
mean
soc_lackfriend
sd
soc_lackfriend
mean
soc_frdund
sd
soc_frdund
Iteration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sd
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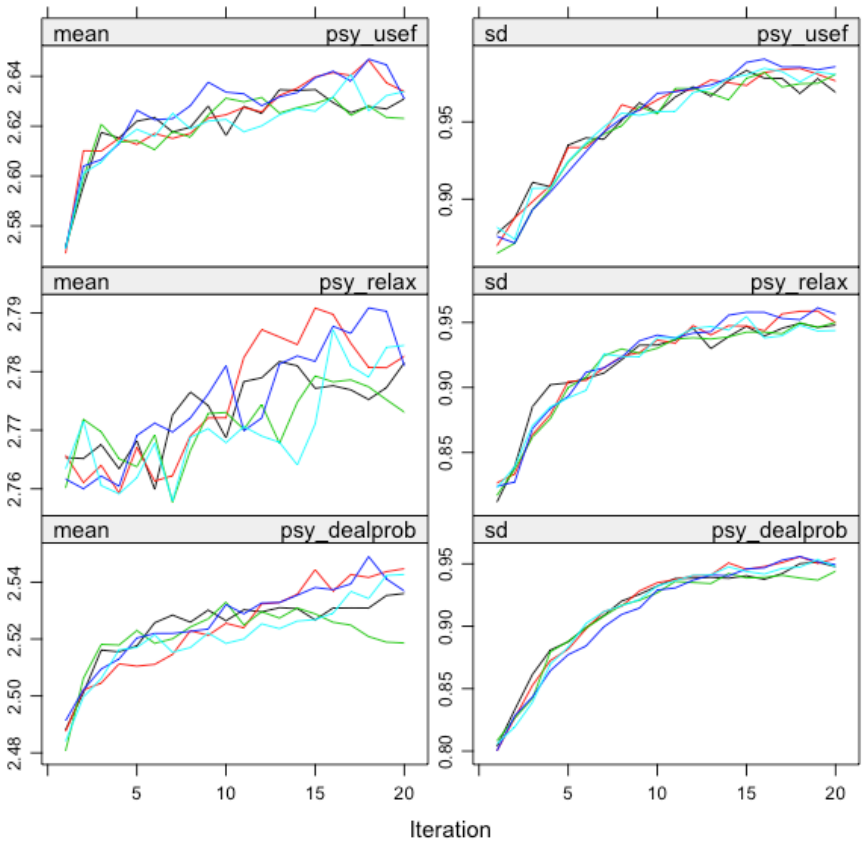
Iteration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sd
psy_usef
mean
psy_relax
sd
psy_relax
mean
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sd
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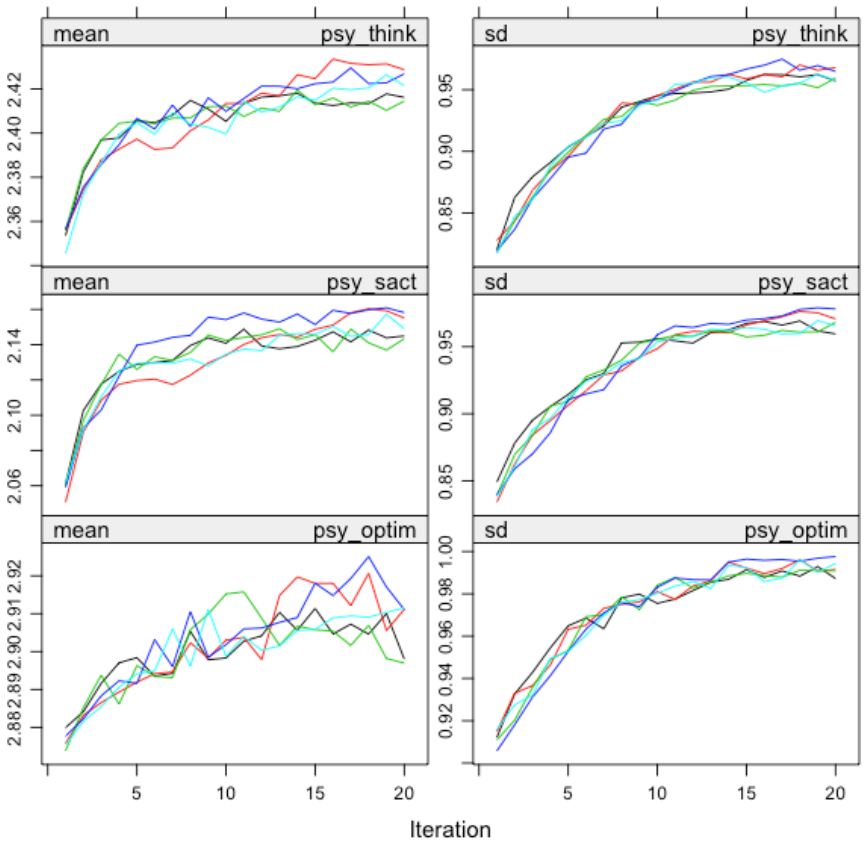
Iteration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psy_think
sd
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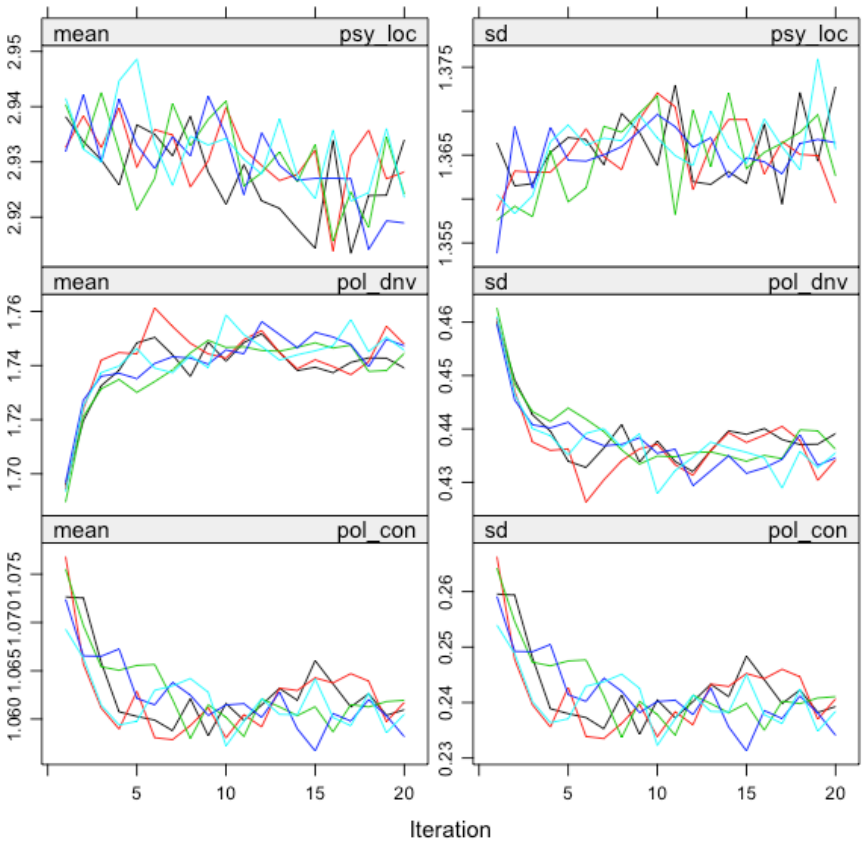
mean
psy_sact
sd
psy_sact
mean
psy_optim
sd
psy_optim
Iteration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pol_dnv
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pol_dnv
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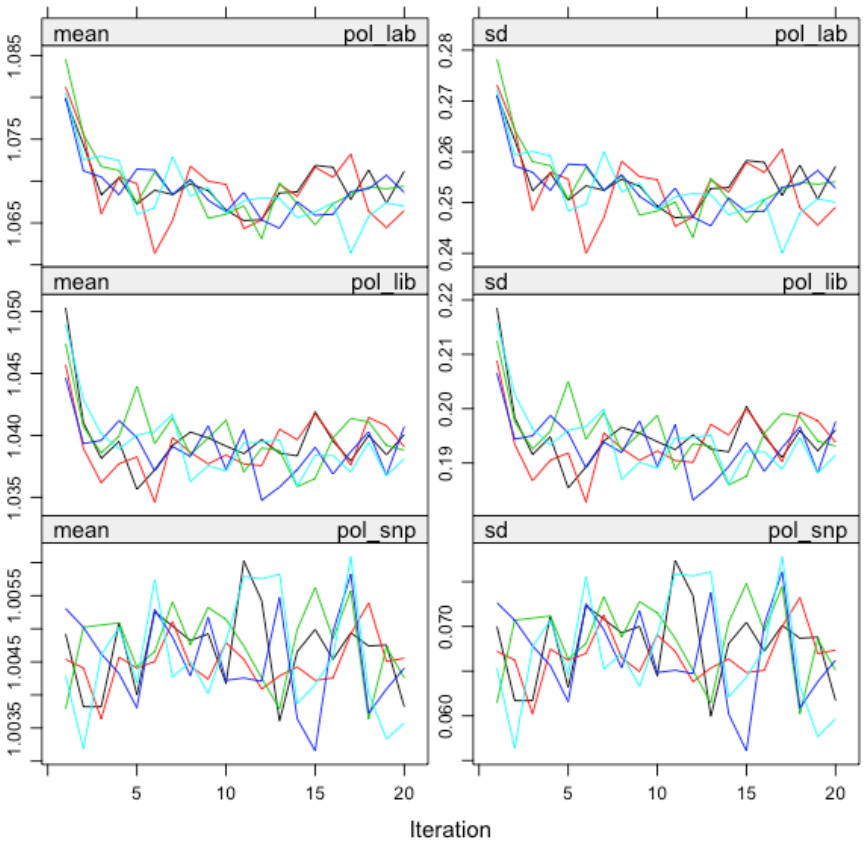
Iteration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pol_lab
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pol_lib
sd
pol_lib
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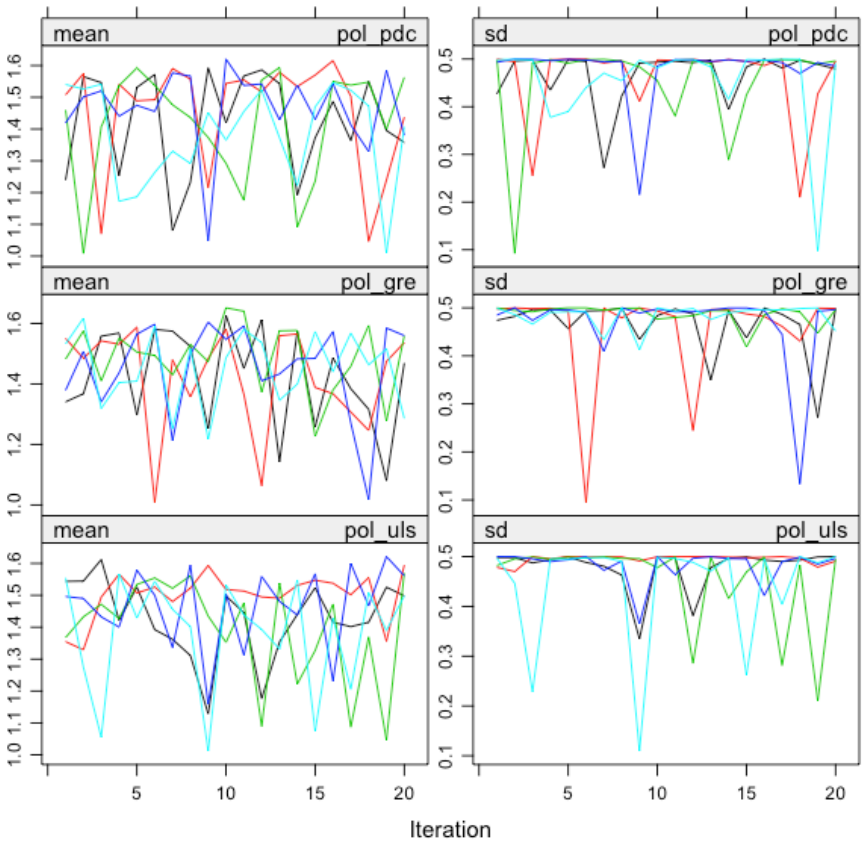
pol_snp
sd
pol_snp
Iteration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sd
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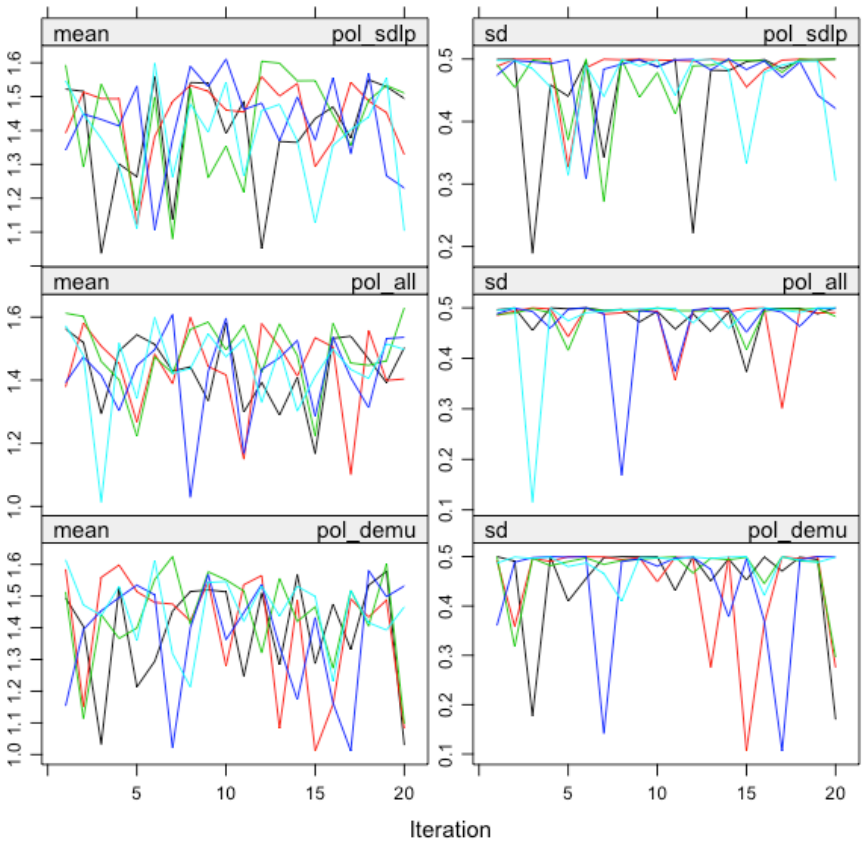
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pol_sdlp
mean
pol_all
sd
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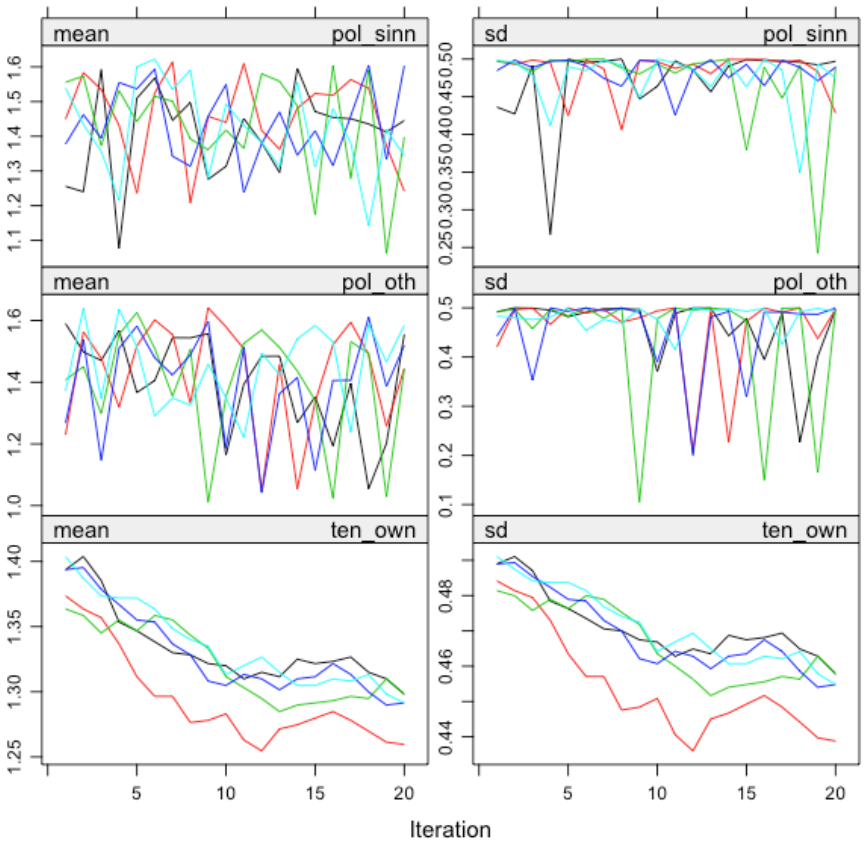
mean
pol_demu
sd
pol_demu
Iteration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sd
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sd
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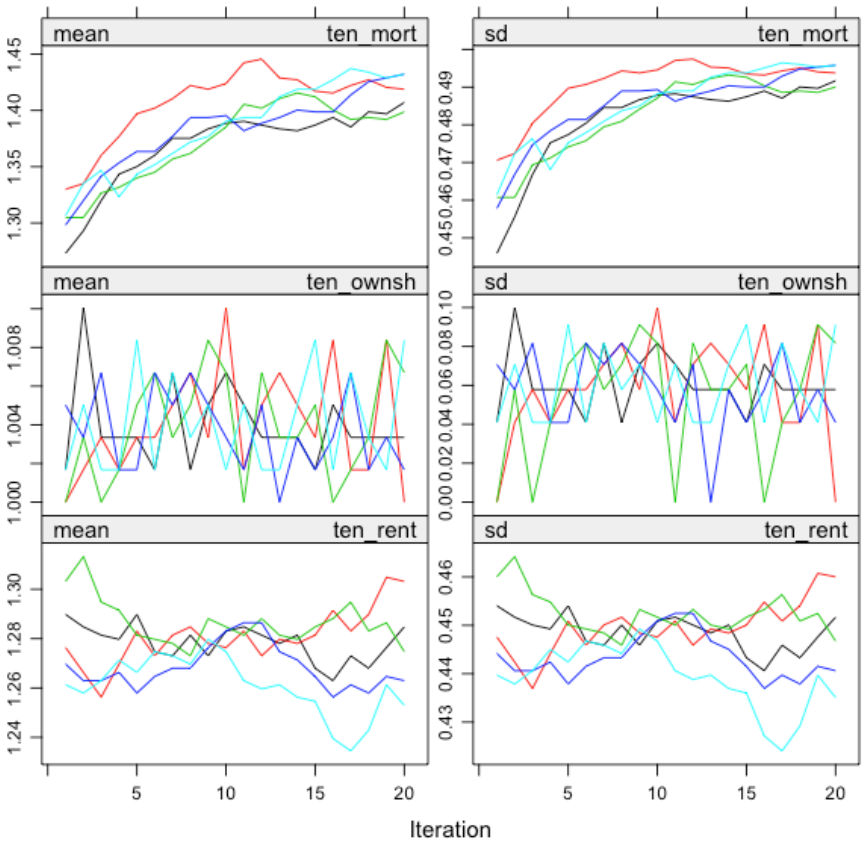
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ten_mort
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ten_ownsh
sd
ten_ownsh
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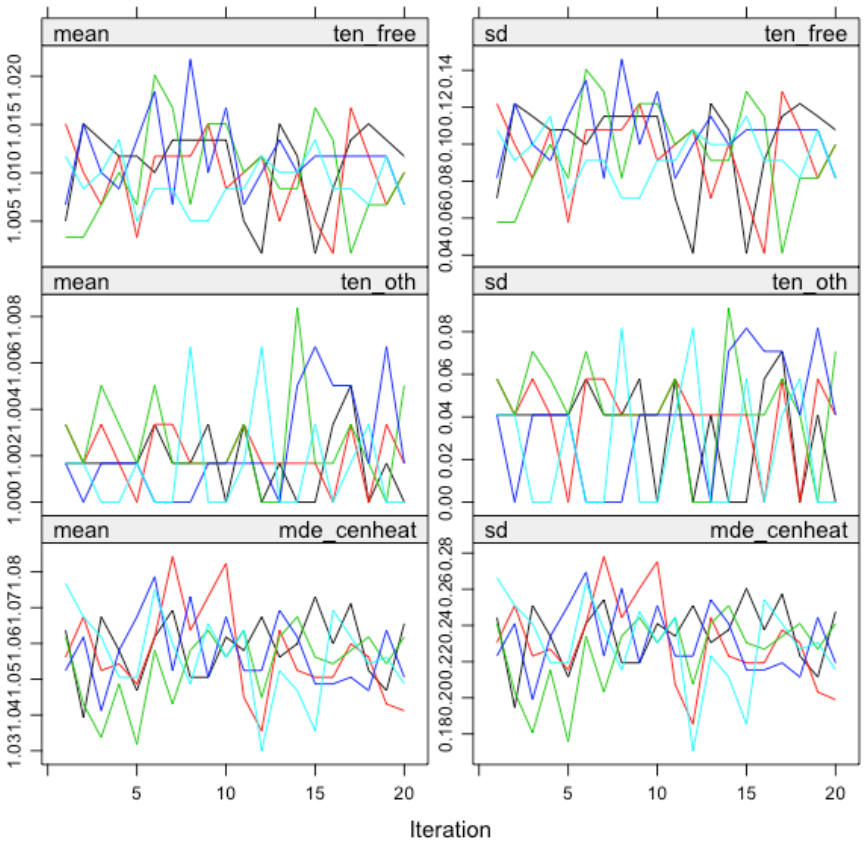
ten_rent
sd
ten_rent
Iteration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sd
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sd
ten_oth
mean
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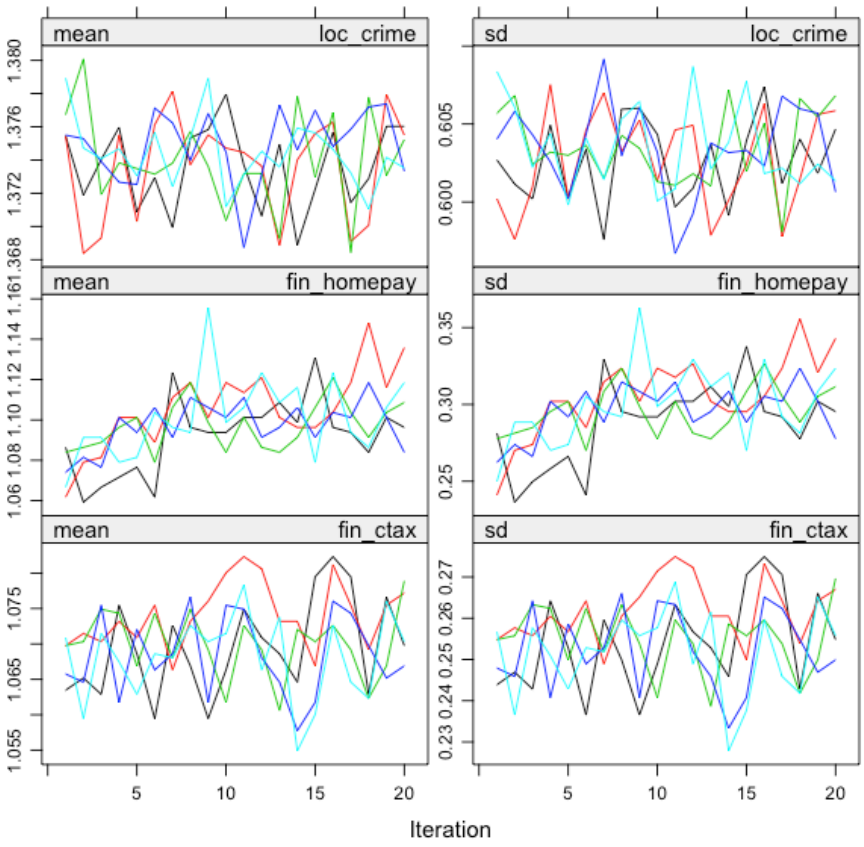
sd
mde_cenheat
Iteration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sd
loc_crime
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fin_homepay
sd
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mean
fin_ctax
sd
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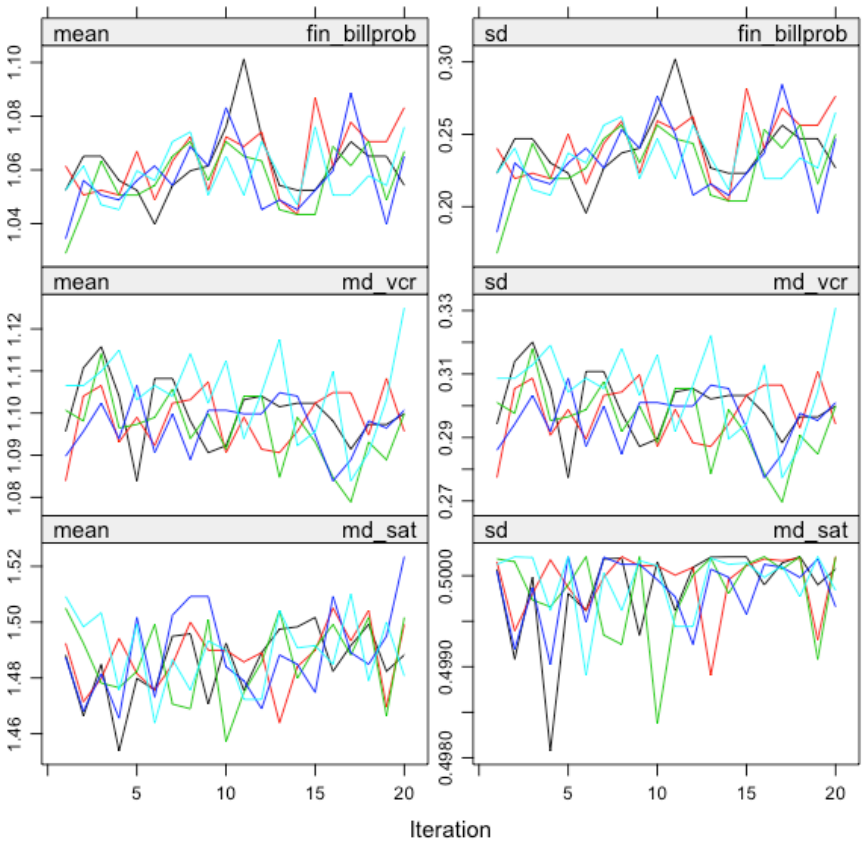
Iteration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fin_billprob
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sd
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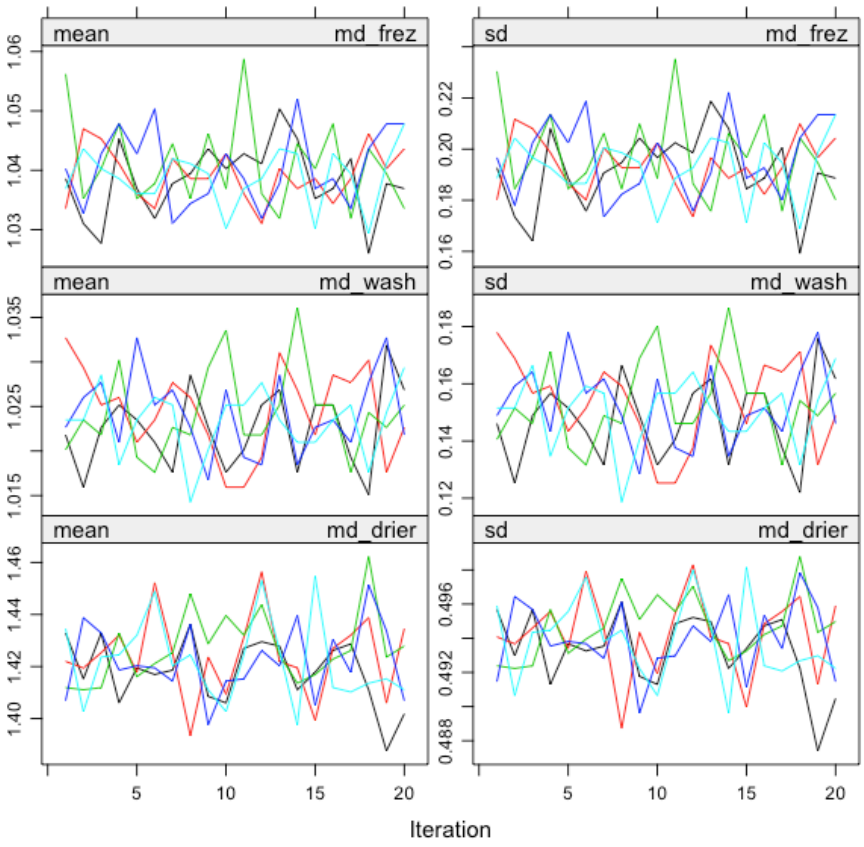
Iteration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sd
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mean
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sd
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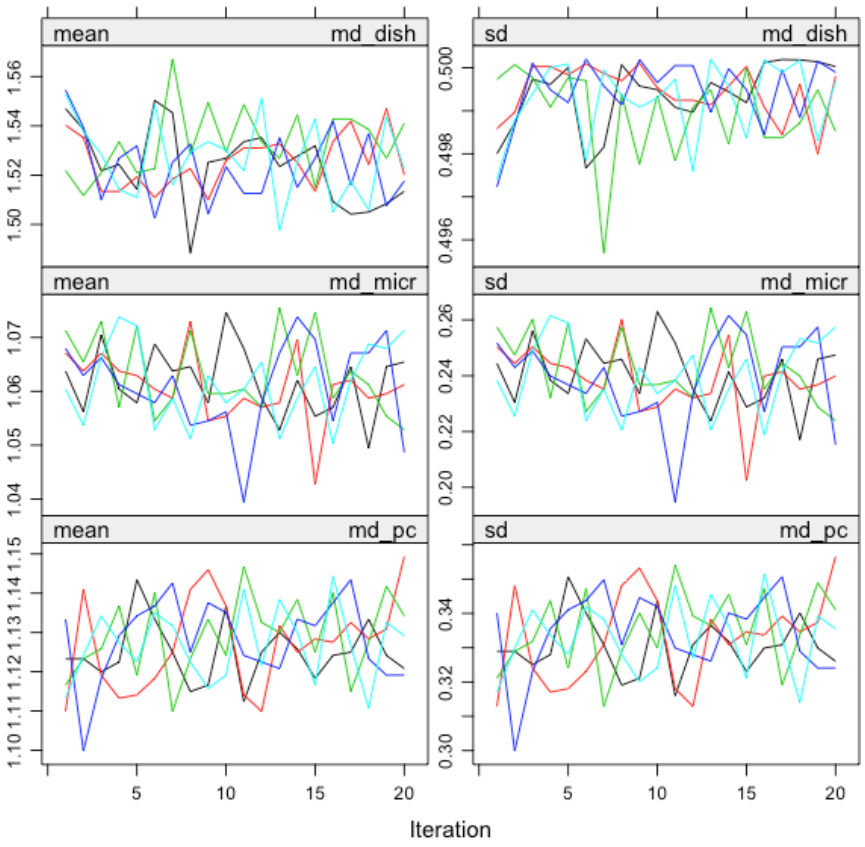
Iteration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md_dish
mean
md_micr
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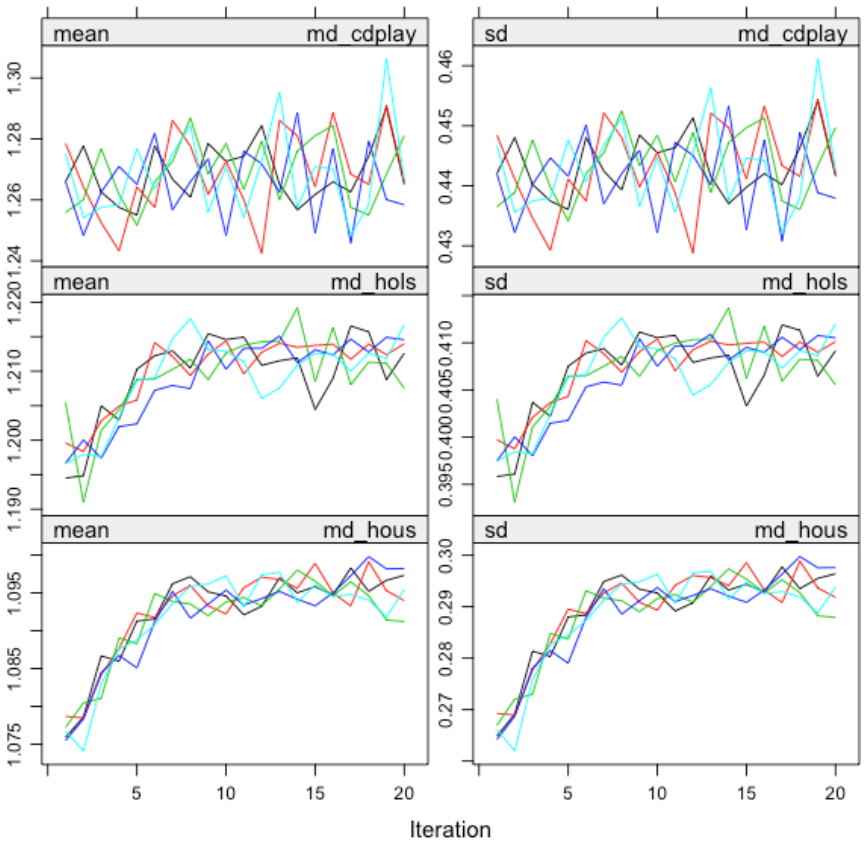
mean
md_pc
sd
md_pc
Iteration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sd
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sd
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mean
md_hous
sd
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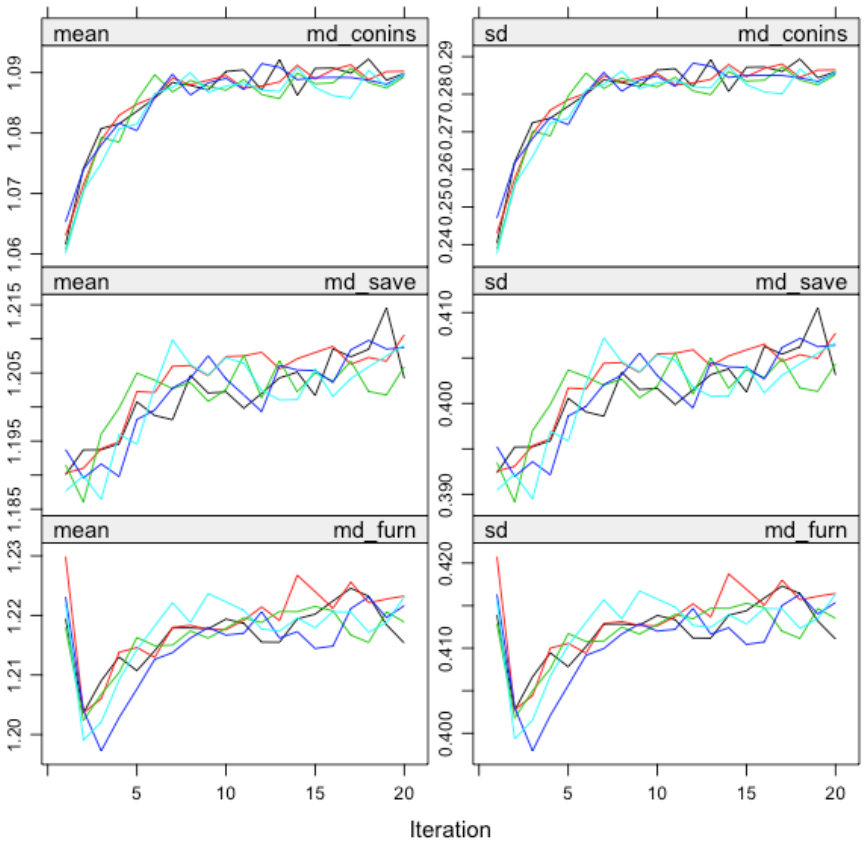
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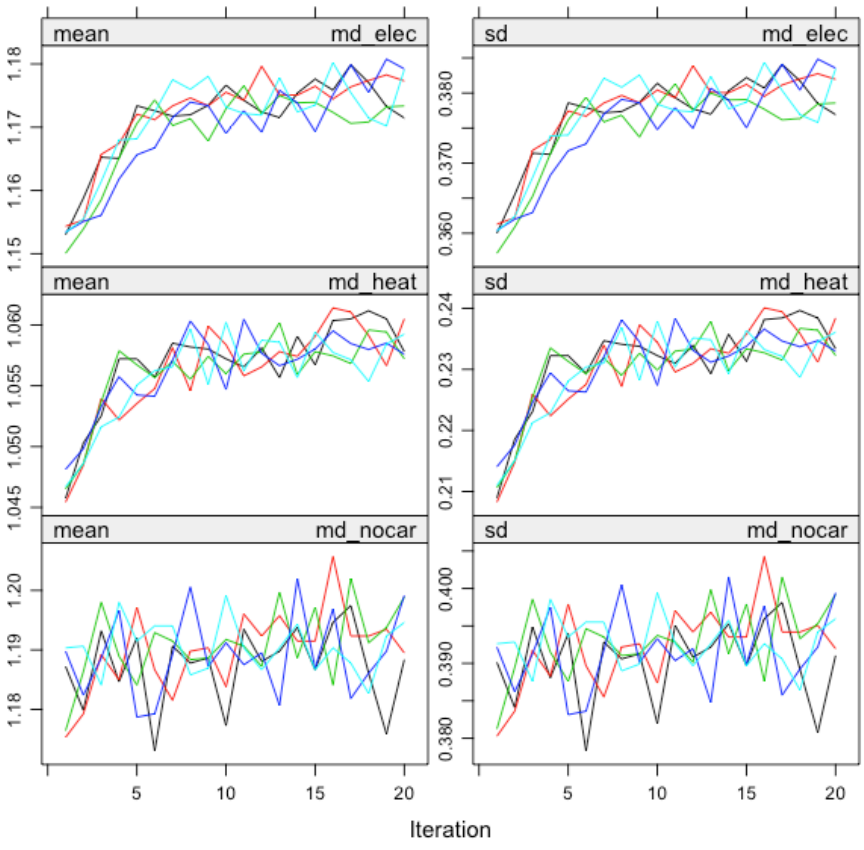
Iteration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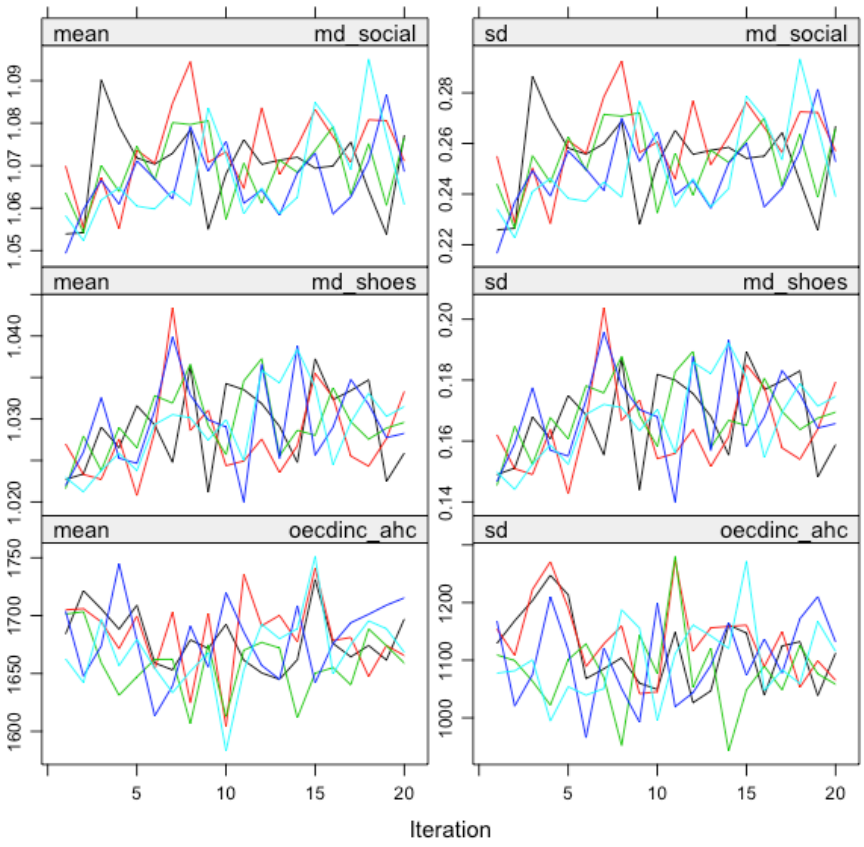
Iteration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md_social
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md_shoes
sd
md_shoes
mean
oecdinc_ahc
sd
oecdinc_ahc
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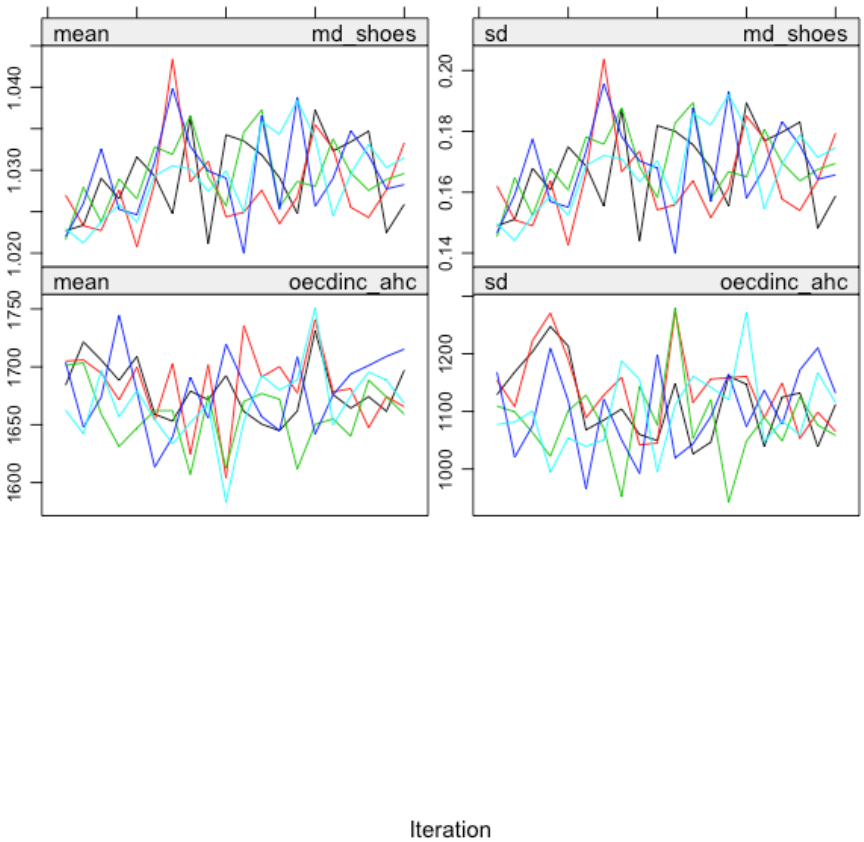
0.14 0.16 0.18 0.20
1600 1650 1700 1750
1000 1100 1200
5 10 15 20
Iteration


mean
md_shoes
sd
md_shoes
mean
oecdinc_ahc
sd
oecdinc_ahc
1.020 1.030 1.040
0.14 0.16 0.18 0.20
1600 1650 1700 1750
1000 1100 1200
Iteration

Appendix 4: Full Tables for Invariance Testing for each Factor

Appendix 4.1.1: Invariance testing fit statistics comparisons for 'Financial Strain' dimension									
	CFI	**Fit**	**TLI**	**Fit**	**RMSEA**	**Fit**	**WRMR**	**Fit**	**$\Delta\chi^2$, df**
Configural invariance									
Listwise deletion	*Unable to calculate because of N = 0 when listwise deletion is used*								
MICE 1	.986	***	.949	***	.071	**	12.094		
MICE 2	.984	***	.940	***	.078	**	13.149		
MICE 3	.985	***	.944	***	.076	**	12.747		
MICE 4	.986	***	.948	***	.072	**	12.275		
MICE 5	.987	***	.951	***	.070	**	11.867		
FIML	*Unable to calculate because of N = 0*								
6 wave metric invariance									
Listwise deletion	*Unable to calculate because of N = 0 when listwise deletion is used*								
MICE 1	.988	***	.982	***	.042	***	13.555		648.7, 25, p<.05
MICE 2	.987	***	.980	***	.045	***	14.431		606, 25, p<.05
MICE 3	.987	***	.981	***	.044	***	14.155		650, 25, p<.05
MICE 4	.988	***	.982	***	.042	***	13.595		593, 25, p<.05
MICE 5	.989	***	.983	***	.041	***	13.261		603, 25, p<.05
FIML	*Unable to calculate because of N = 0*								
3+3 wave metric invariance									
Listwise deletion	*Unable to calculate because of N = 0 when listwise deletion is used*								
MICE 1	.989	***	.982	***	.043	***	12.797		303.2, 20, p<.05
MICE 2	.987	***	.979	***	.046	***	13.792		297, 20, p<.05
MICE 3	.987	***	.979	***	.046	***	13.884		521, 20, p<.05
MICE 4	.989	***	.982	***	.043	***	12.819		237, 20, p<.05
MICE 5	.989	***	.982	***	.042	***	12.541		284, 20, p<.05
FIML	*Unable to calculate because of N = 0*								

2+2+2 wave metric invariance								
Listwise deletion	*Unable to calculate because of N = 0 when listwise deletion is used*							
MICE 1	.989	***	.978	***	.046	***	12.640	234, 15, p<.05
MICE 2	.987	***	.975	***	.050	***	13.711	259, 15, p<.05
MICE 3	.987	***	.976	***	.050	***	13.621	401, 15, p<.05
MICE 4	.989	***	.979	***	.046	***	12.667	170, 15, p<.05
MICE 5	.989	***	.979	***	.045	***	12.389	218, 15, p<.05
FIML	*Unable to calculate because of N = 0*							
6 wave strong invariance								
Listwise deletion	*Unable to calculate because of N = 0 when listwise deletion is used*							
MICE 1	.978	***	.982	***	.043	***	17.701	3046, 30, p<.05
MICE 2	.977	***	.981	***	.044	***	18.334	3009, 30, p<.05
MICE 3	.978	***	.981	***	.044	***	18.161	3044, 30, p<.05
MICE 4	.978	***	.981	***	.043	***	17.82	3124, 30, p <.05
MICE 5	.979	***	.982	***	.042	***	17.574	3131, 30, p <.05
FIML	*Unable to calculate because of N = 0*							
3+3 wave strong invariance								
Listwise deletion	*Unable to calculate because of N = 0 when listwise deletion is used*							
MICE 1	.984	***	.984	***	.040	***	15.078	1496, 24, p<.05
MICE 2	.982	***	.982	***	.042	***	15.964	1522, 24, p<.05
MICE 3	.982	***	.982	***	.042	***	16.025	1507, 24, p<.05
MICE 4	.984	***	.984	***	.040	***	15.124	1516, 24, p<.05
MICE 5	.984	***	.984	***	.039	***	14.934	1549, 24, p<.05
FIML	*Unable to calculate because of N = 0*							
2+2+2 wave strong invariance								

Listwise deletion	*Unable to calculate because of N = 0 when listwise deletion is used*							
MICE 1	.986	***	.983	***	.041	***	13.946	818, 18, p<.05
MICE 2	.984	***	.981	***	.044	***	14.945	834, 18, p<.05
MICE 3	.985	***	.981	***	.044	***	14.859	824, 18, p<.05
MICE 4	.986	***	.983	***	.041	***	13.972	819, 18, p<.05
MICE 5	.987	***	.984	***	.041	***	13.739	832, 18, p<.05
FIML	*Unable to calculate because of N = 0*							
6 wave full invariance								
Listwise deletion	*Unable to calculate because of N = 0 when listwise deletion is used*							
MICE 1	.963	***	.976	***	.049	***	23.940	4461, 21, p<.05
MICE 2	.962	***	.975	***	.050	***	24.608	4618, 21, p<.05
MICE 3	.963	***	.976	***	.050	***	24.469	4609, 21, p<.05
MICE 4	.964	***	.976	***	.049	***	23.954	4399, 21, p<.05
MICE 5	.963	***	.976	***	.049	***	24.094	4665, 21, p<.05
FIML	*Unable to calculate because of N = 0*							
3+3 wave full invariance								
Listwise deletion	*Unable to calculate because of N = 0 when listwise deletion is used*							
MICE 1	.970	***	.977	***	.048	***	21.375^{+}	3682, 18, p<.05
MICE 2	.968	***	.976	***	.050	***	22.255	3866, 18, p<.05
MICE 3	.969	***	.976	***	.050	***	22.309	3850, 18, p<.05
MICE 4	.970	***	.977	***	.048	***	21.443	3695, 18, p<.05
MICE 5	.971	***	.978	***	.047	***	21.141	3580, 18, p<.05
FIML	*Unable to calculate because of N = 0*							
2+2+2 wave full invariance								
Listwise deletion	*Unable to calculate because of N = 0 when listwise deletion is used*							
MICE 1	.972	***	.974	***	.051	***	20.476	3331, 15, p<.05

MICE 2	.970	***	.972	***	.053	***	21.420	3491, 15, p<.05
MICE 3	.971	***	.972	***	.053	***	21.380	3486, 15, p<.05
MICE 4	.972	***	.974	***	.051	***	20.516	3343, 15, p<.05
MICE 5	.973	***	.974	***	.051	***	20.410	3372, 15, p<.05
FIML	*Unable to calculate because of N = 0*							

Key = *** Excellent fit ** Good fit * Adequate fit (based on Kenny 2014)

Appendix 4.1.2: Best invariance model (most time invariant model with good fit statistics)

Financial Strain Dimension

Listwise deletion	
MICE 1	6 Wave Full Invariance
MICE 2	6 Wave Full Invariance
MICE 3	6 Wave Full Invariance
MICE 4	6 Wave Full Invariance
MICE 5	6 Wave Full Invariance
FIML	

Appendix 4.1.3: Standardised factor item loadings for competing invariance models (with fixed loadings over different spans of time) – Financial Strain Dimension

	6 Wave Model Factor Loadings (Best fitting model)						3+3 Wave Model Factor Loadings (Best fitting model)						
Factor Loadings	**LW**	**Imp1**	**Imp2**	**Imp3**	**Imp4**	**Imp5**	**FIML**	**LW**	**Imp1**	**Imp2**	**Imp3**	**Imp4**	**Imp5**	**FIML**
		Full	Full	Full	Full	Full			Full	Full	Full	Full	Full	
Fin_homepay		.795	.794	.795	.795	.876			0.871	0.889	0.838	0.857	0.814	
Fin_ctax		.997	.998	.997	.997	.981			0.99	0.99	0.996	0.991	0.996	
Fin_billproblem		.701	.692	.696	.700	.679			0.666	0.653	0.66	0.661	0.683	
Fin_subjective		.840	.858	.851	.841	.843			0.858	0.871	0.884	0.87	0.843	
Log_oecd_inc		-.384	-.376	-.376	-.384	-.369			-0.364	-0.394	-0.365	-0.353	-0.377	
Fin_homepay									0.841	0.837	0.816	0.859	0.793	
Fin_ctax									0.984	0.981	0.994	0.986	0.995	
Fin_billproblem									0.691	0.684	0.691	0.686	0.718	
Fin_subjective									0.854	0.867	0.88	0.866	0.837	
Log_oecd_inc									-0.384	-0.405	-0.365	-0.367	-0.388	

	2+2+2 Wave Model Factor Loadings (Best fitting model)						1+1+1+1+1+1 Wave Model Factor Loadings (Configural Model)						
Factor Loadings	**LW**	**Imp1**	**Imp2**	**Imp3**	**Imp4**	**Imp5**	**FIML**	**LW**	**Imp1**	**Imp2**	**Imp3**	**Imp4**	**Imp5**	**FIML**
		Full	Full	Full	Full	Full			Conf	Conf	Conf	Conf	Conf	
Fin_homepay		0.85	0.84	0.867	0.842	0.864			0.733	0.731	0.728	0.729	0.732	
Fin_ctax		0.992	0.996	0.992	0.993	0.991			0.571	0.573	0.583	0.565	0.552	
Fin_billproblem		0.659	0.645	0.643	0.659	0.658			0.707	0.707	0.71	0.709	0.714	
Fin_subjective		0.863	0.898	0.877	0.87	0.856			0.747	0.754	0.752	0.748	0.738	
Log_oecd_inc		-0.366	-0.361	-0.365	-0.369	-0.363			-0.432	-0.433	-0.432	-0.437	-0.438	
Fin_homepay		0.869	0.845	0.877	0.87	0.862			0.712	0.711	0.706	0.711	0.708	
Fin_ctax		0.984	0.993	0.986	0.986	0.981			0.535	0.541	0.546	0.54	0.527	
Fin_billproblem		0.68	0.671	0.669	0.678	0.677			0.772	0.768	0.767	0.773	0.77	
Fin_subjective		0.858	0.894	0.871	0.865	0.848			0.718	0.726	0.726	0.719	0.71	
Log_oecd_inc		-0.375	-0.367	-0.367	-0.369	-0.387			-0.449	-0.447	-0.449	-0.446	-0.454	
Fin_homepay		0.842	0.83	0.846	0.843	0.833			0.672	0.675	0.677	0.671	0.667	
Fin_ctax		0.989	0.994	0.987	0.99	0.987			0.459	0.464	0.472	0.458	0.455	

Fin_billproblem	0.703	0.684	0.707	0.689	0.724	0.806	0.8	0.797	0.804	0.805
Fin_subjective	0.854	0.892	0.868	0.863	0.843	0.709	0.718	0.715	0.712	0.7
Log_oecd_inc	-0.382	-0.381	-0.362	-0.379	-0.387	-0.462	-0.458	-0.462	-0.464	-0.467
Fin_homepay						0.63	0.635	0.64	0.628	0.62
Fin_ctax						0.485	0.496	0.504	0.487	0.481
Fin_billproblem						0.806	0.799	0.797	0.803	0.808
Fin_subjective						0.719	0.727	0.727	0.72	0.709
Log_oecd_inc						-0.483	-0.478	-0.476	-0.484	-0.489
Fin_homepay						0.681	0.679	0.682	0.684	0.676
Fin_ctax						0.547	0.557	0.57	0.555	0.543
Fin_billproblem						0.799	0.79	0.79	0.795	0.798
Fin_subjective						0.718	0.726	0.727	0.719	0.71
Log_oecd_inc						-0.495	-0.493	-0.488	-0.493	-0.5
Fin_homepay						0.717	0.658	0.694	0.719	0.716
Fin_ctax						0.473	0.415	0.441	0.485	0.506
Fin_billproblem						0.8	0.787	0.778	0.793	0.815
Fin_subjective						0.71	0.729	0.729	0.717	0.697
Log_oecd_inc						-0.449	-0.46	-0.409	-0.448	-0.442

Appendix 4.2.1: Invariance testing fit statistics comparisons for 'Material Deprivation 1 (Consumption)' dimension

	CFI	Fit	TLI	Fit	RMSEA	Fit	WRMR	Fit	$\Delta\chi^2$, df
Configural invariance									
Listwise deletion	*Unable to calculate because of N = 0*								
MICE 1	.992	***	.989	***	.041	***	13.335		
MICE 2	.992	***	.990	***	.039	***	12.903		
MICE 3	.993	***	.990	***	.040	***	13.046		
MICE 4	.992	***	.990	***	.040	***	13.036		
MICE 5	.992	***	.989	***	.040	***	13.208		
FIML	*Unable to calculate because of N = 0*								
6 wave metric invariance									
Listwise deletion	*Unable to calculate because of N = 0*								
MICE 1	.996	***	.996	***	.025	***	13.903		260, 45, p<.05
MICE 2	.996	***	.996	***	.024	***	13.470		252, 45, p<.05
MICE 3	.996	***	.996	***	.024	***	13.736		311, 45, p<.05
MICE 4	.996	***	.996	***	.024	***	13.569		239, 45, p<.05
MICE 5	.996	***	.996	***	.024	***	13.744		253, 45, p<.05
FIML	*Unable to calculate because of N = 0*								
3+3 wave metric invariance									
Listwise deletion	*Unable to calculate because of N = 0*								
MICE 1	.996	***	.996	***	.026	***	13.735		182, 36, p<.05
MICE 2	.996	***	.996	***	.025	***	13.162		116, 36, p<.05
MICE 3	.996	***	.996	***	.025	***	13.453		183, 36, p<.05
MICE 4	.996	***	.996	***	.025	***	13.288		114, 36, p<.05
MICE 5	.996	***	.996	***	.025	***	13.620		186, 36, p<.05
FIML	*Unable to calculate because of N = 0*								
2+2+2 wave metric invariance									

Listwise deletion	*Unable to calculate because of N = 0*							
MICE 1	.996	***	.995	***	.028	***	13.760	193, 27, p<.05
MICE 2	.996	***	.995	***	.027	***	13.268	161, 27, p<.05
MICE 3	.996	***	.995	***	.027	***	13.552	227, 27, p<.05
MICE 4	.996	***	.995	***	.027	***	13.428	175, 27, p<.05
MICE 5	.996	***	.995	***	.027	***	13.428	171, 27, p<.05
FIML	*Unable to calculate because of N = 0*							
6 wave full invariance								
Listwise deletion	*Unable to calculate because of N = 0*							
MICE 1	.996	***	.996	***	.024	***	14.941	993, 36, p<.05
MICE 2	.996	***	.996	***	.024	***	14.723	1173, 36, p<.05
MICE 3	.996	***	.996	***	.024	***	14.838	1044, 36, p<.05
MICE 4	.996	***	.996	***	.024	***	14.613	976, 36, p<.05
MICE 5	.996	***	.996	***	.024	***	14.851	1046, 36, p<.05
FIML	*Unable to calculate because of N = 0*							
3+3 wave full invariance								
Listwise deletion	*Unable to calculate because of N = 0*							
MICE 1	.996	***	.996	***	.025	***	14.207	484, 63, p<.05
MICE 2	.996	***	.996	***	.024	***	13.637	397, 63, p<.05
MICE 3	.996	***	.996	***	.024	***	13.889	461, 63, p<.05
MICE 4	.996	***	.996	***	.024	***	13.767	398, 63, p<.05
MICE 5	.996	***	.996	***	.024	***	14.123	502, 63, p<.05
FIML	*Unable to calculate because of N = 0*							
2+2+2 wave full invariance								
Listwise deletion	*Unable to calculate because of N = 0*							
MICE 1	.996	***	.995	***	.027	***	14.074	402, 45, p<.05
MICE 2	.996	***	.996	***	.026	***	13.614	376, 45, p<.05

MICE 3	.996	***	.996	***	.026	***	13.885	449, 45, p<.05
MICE 4	.996	***	.996	***	.026	***	13.752	382, 45, p<.05
MICE 5	.996	***	.996	***	.026	***	13.923	384, 45, p<.05
FIML	*Unable to calculate because of N = 0*							

Key = *** Excellent fit ** Good fit * Adequate fit (Kenny 2014)

Appendix 4.2.2. Best invariance model (most time invariant model with good fit statistics)
Material Deprivation
(Consumption) Dimension

Listwise deletion	
MICE 1	6 Wave Full Invariance
MICE 2	6 Wave Full Invariance
MICE 3	6 Wave Full Invariance
MICE 4	6 Wave Full Invariance
MICE 5	6 Wave Full Invariance
FIML	

Appendix 4.2.3: Standardised factor item loadings for competing invariance models (with fixed loadings over different spans of time) – Material Deprivation (Consumption) Dimension

	6 Wave Model Factor Loadings (Best fitting model)						3+3 Wave Model Factor Loadings (Best fitting model)						
Factor Loadings	**LW**	**Imp1**	**Imp2**	**Imp3**	**Imp4**	**Imp5**	**FIML**	**LW**	**Imp1**	**Imp2**	**Imp3**	**Imp4**	**Imp5**	**FIML**
		Full	Full	Full	Full	Full								
md_hols		0.776	0.777	0.778	0.778	0.777			0.783	0.786	0.784	0.785	0.783	
md_hous		0.744	0.745	0.748	0.747	0.749			0.754	0.754	0.759	0.756	0.756	
md_conins		0.765	0.766	0.768	0.765	0.765			0.765	0.765	0.766	0.766	0.764	
md_save		0.824	0.824	0.825	0.824	0.824			0.827	0.828	0.828	0.828	0.827	
md_furn		0.946	0.946	0.945	0.945	0.945			0.945	0.944	0.945	0.945	0.944	
md_elec		0.934	0.935	0.933	0.934	0.934			0.933	0.933	0.933	0.934	0.933	
md_heat		0.58	0.585	0.587	0.584	0.589			0.585	0.587	0.589	0.589	0.593	

md_shoes		0.729	0.721	0.727	0.724	0.737		0.738	0.731	0.736	0.735	0.743	
md_social		0.717	0.708	0.703	0.711	0.721		0.723	0.72	0.717	0.721	0.727	
md_hols								0.766	0.763	0.768	0.767	0.769	
md_hous								0.732	0.734	0.734	0.736	0.74	
md_conins								0.763	0.766	0.769	0.764	0.767	
md_save								0.822	0.819	0.821	0.818	0.82	
md_furn								0.947	0.948	0.946	0.947	0.947	
md_elec								0.938	0.939	0.936	0.937	0.937	
md_heat								0.571	0.582	0.584	0.578	0.585	
md_shoes								0.71	0.698	0.705	0.7	0.723	
md_social								0.707	0.687	0.68	0.696	0.708	

	2+2+2 Wave Model Factor Loadings (Best fitting model)						**1+1+1+1+1+1 Wave Model Factor Loadings (Configural Model)**						
Factor Loadings	**LW**	**Imp1**	**Imp2**	**Imp3**	**Imp4**	**Imp5**	**FIML**	**LW**	**Imp1**	**Imp2**	**Imp3**	**Imp4**	**Imp5**	**FIML**
		Full	Full	Full	Full	Full			Conf	Conf	Conf	Conf	Conf	
md_hols		0.781	0.781	0.785	0.782	0.784			0.791	0.792	0.792	0.792	0.792	
md_hous		0.757	0.758	0.754	0.758	0.755			0.756	0.757	0.757	0.757	0.757	
md_conins		0.758	0.758	0.754	0.758	0.755			0.759	0.759	0.759	0.759	0.76	
md_save		0.827	0.827	0.826	0.827	0.826			0.824	0.824	0.824	0.824	0.824	
md_furn		0.943	0.943	0.945	0.943	0.944			0.943	0.943	0.943	0.943	0.943	
md_elec		0.931	0.931	0.931	0.932	0.932			0.929	0.929	0.929	0.929	0.929	
md_heat		0.587	0.588	0.589	0.587	0.588			0.588	0.587	0.587	0.586	0.587	
md_shoes		0.737	0.738	0.732	0.738	0.735			0.733	0.733	0.733	0.733	0.733	
md_social		0.72	0.721	0.716	0.72	0.716			0.713	0.714	0.714	0.714	0.713	
md_hols		0.776	0.78	0.775	0.779	0.774			0.777	0.777	0.777	0.777	0.777	
md_hous		0.734	0.733	0.743	0.738	0.743			0.75	0.751	0.751	0.75	0.75	
md_conins		0.774	0.776	0.774	0.775	0.768			0.748	0.748	0.749	0.749	0.748	
md_save		0.822	0.823	0.825	0.823	0.823			0.826	0.826	0.825	0.825	0.825	
md_furn		0.942	0.942	0.942	0.942	0.943			0.946	0.946	0.946	0.946	0.946	
md_elec		0.933	0.935	0.933	0.934	0.933			0.938	0.938	0.938	0.938	0.938	
md_heat		0.584	0.587	0.593	0.592	0.599			0.591	0.593	0.592	0.592	0.593	

md_shoes	0.742	0.723	0.737	0.733	0.756	0.734	0.733	0.733	0.735	0.733
md_social	0.719	0.708	0.701	0.711	0.731	0.718	0.718	0.718	0.717	0.718
md_hols	0.766	0.763	0.769	0.768	0.769	0.779	0.788	0.782	0.786	0.779
md_hous	0.74	0.742	0.744	0.744	0.747	0.749	0.748	0.762	0.752	0.755
md_conins	0.768	0.77	0.775	0.768	0.772	0.79	0.788	0.793	0.79	0.782
md_save	0.824	0.819	0.823	0.82	0.82	0.823	0.827	0.828	0.828	0.825
md_furn	0.945	0.945	0.946	0.944	0.946	0.942	0.941	0.942	0.942	0.942
md_elec	0.938	0.938	0.938	0.938	0.939	0.936	0.937	0.936	0.937	0.935
md_heat	0.561	0.576	0.579	0.571	0.581	0.581	0.586	0.591	0.592	0.604
md_shoes	0.721	0.714	0.708	0.713	0.725	0.765	0.744	0.763	0.757	0.777
md_social	0.715	0.691	0.677	0.702	0.709	0.735	0.727	0.713	0.729	0.752
md_hols						0.771	0.769	0.77	0.769	0.771
md_hous						0.709	0.71	0.71	0.713	0.719
md_conins						0.755	0.762	0.756	0.757	0.753
md_save						0.817	0.816	0.816	0.813	0.816
md_furn						0.944	0.944	0.941	0.943	0.942
md_elec						0.933	0.934	0.93	0.932	0.93
md_heat						0.59	0.592	0.595	0.591	0.593
md_shoes						0.712	0.694	0.713	0.701	0.736
md_social						0.695	0.681	0.682	0.684	0.707
md_hols						0.772	0.765	0.774	0.771	0.775
md_hous						0.754	0.747	0.76	0.757	0.762
md_conins						0.782	0.779	0.793	0.774	0.786
md_save						0.825	0.818	0.823	0.819	0.821
md_furn						0.942	0.941	0.94	0.942	0.942
md_elec						0.937	0.935	0.934	0.936	0.936
md_heat						0.573	0.591	0.593	0.578	0.594
md_shoes						0.739	0.735	0.733	0.72	0.747
md_social						0.733	0.698	0.694	0.715	0.722
md_hols						0.756	0.757	0.761	0.761	0.759
md_hous						0.722	0.734	0.724	0.728	0.727
md_conins						0.75	0.76	0.763	0.762	0.761

md_save	0.82	0.818	0.822	0.818	0.817
md_furn	0.948	0.949	0.948	0.947	0.948
md_elec	0.941	0.943	0.941	0.94	0.941
md_heat	0.544	0.557	0.558	0.56	0.561
md_shoes	0.701	0.691	0.689	0.708	0.706
md_social	0.692	0.683	0.657	0.684	0.697

Appendix 4.3.1: Invariance testing fit statistics comparisons for 'Material Deprivation 2 (Commodities)' dimension									
	CFI	**Fit**	**TLI**	**Fit**	**RMSEA**	**Fit**	**WRMR**	**Fit**	**$\Delta\chi^2$, df**
Configural invariance									
Listwise deletion	.955	**	.937	**	.047	***	16.099		
MICE 1	.951	**	.932	**	.049	***	17.195		
MICE 2	.952	**	.932	**	.049	***	17.163		
MICE 3	.951	**	.932	**	.049	***	17.208		
MICE 4	.952	**	.932	**	.049	***	17.187		
MICE 5	.952	**	.932	**	.049	***	17.183		
FIML	.952	**	.933	**	.048	***	16.966		
6 wave metric invariance									
Listwise deletion	.968	***	.966	***	.035	***	16.738		418, 40, p<.05
MICE 1	.966	***	.964	***	.036	***	17.717		362, 40, p<.05
MICE 2	.966	***	.964	***	.035	***	17.700		372, 40, p<.05
MICE 3	.966	***	.964	***	.036	***	17.747		373, 40, p<.05
MICE 4	.966	***	.964	***	.036	***	17.724		372, 40, p<.05
MICE 5	.966	***	.964	***	.036	***	17.712		366, 40, p<.05
FIML	.967	***	.965	***	.035	***	17.417		311, 40, p<.05
3+3 wave metric invariance									
Listwise deletion	.968	***	.964	***	.036	***	16.363		172, 32, p<.05
MICE 1	.965	***	.961	***	.037	***	17.543		240, 32, p<.05
MICE 2	.965	***	.961	***	.037	***	17.527		251, 32, p<.05
MICE 3	.965	***	.961	***	.037	***	17.546		233, 32, p<.05
MICE 4	.965	***	.962	***	.037	***	17.533		239, 32, p<.05
MICE 5	.965	***	.961	***	.037	***	17.547		251, 32, p<.05
FIML	.966	***	.962	***	.037	***	17.276		213, 32, p<.05
2+2+2 wave metric invariance									

Listwise deletion	.966	***	.961	***	.037	***	16.235	89, 24, p<.05
MICE 1	.964	***	.958	***	.039	***	17.392	135, 24, p<.05
MICE 2	.964	***	.958	***	.039	***	17.379	148, 24, p<.05
MICE 3	.963	***	.957	***	.039	***	17.423	148, 24, p<.05
MICE 4	.964	***	.958	***	.039	***	17.400	147, 24, p<.05
MICE 5	.964	***	.958	***	.039	***	17.395	146, 24, p<.05
FIML	.964	***	.958	***	.038	***	17.157	131, 24, p<.05
6 wave full invariance								
Listwise deletion	.962	***	.967	***	.034	***	18.175	1628, 32, p<.05
MICE 1	.959	***	.964	***	.036	***	19.475	2116, 32, p<.05
MICE 2	.959	***	.964	***	.036	***	19.459	2115, 32, p<.05
MICE 3	.959	***	.964	***	.036	***	19.504	2119, 32, p<.05
MICE 4	.959	***	.964	***	.036	***	19.466	2097, 32, p<.05
MICE 5	.959	***	.964	***	.036	***	19.464	2109, 32, p<.05
FIML	.962	***	.967	***	.034	***	18.164	1613, 32, p<.05
3+3 wave full invariance								
Listwise deletion	.965	***	.967	***	.034	***	17.103	805, 25, p<.05
MICE 1	.962	***	.964	***	.036	***	18.456	1065, 24, p<.05
MICE 2	.962	***	.964	***	.036	***	18.437	1060, 24, p<.05
MICE 3	.962	***	.963	***	.036	***	18.481	1092, 24, p<.05
MICE 4	.962	***	.964	***	.036	***	18.449	1068, 24, p<.05
MICE 5	.962	***	.964	***	.036	***	18.457	1062, 24, p<.05
FIML	.962	***	.964	***	.036	***	18.294	1174, 24, p<.05
2+2+2 wave full invariance								
Listwise deletion	.965	***	.963	***	.036	***	16.603	393, 16, p<.05
MICE 1	.962	***	.960	***	.037	***	17.839	512, 16, p<.05
MICE 2	.962	***	.961	***	.037	***	17.821	506, 16, p<.05

MICE 3	.962	***	.960	***	.037	***	17.883	527, 16, p<.05
MICE 4	.962	***	.961	***	.037	***	17.837	500, 16, p<.05
MICE 5	.962	***	.961	***	.037	***	17.831	499, 16, p<.05
FIML	.963	***	.961	***	.037	***	17.659	569, 16, p<.05

Key = *** Excellent fit ** Good fit * Adequate fit (Kenny 2014)

Appendix 4.3.2. Best invariance model (most time invariant model with good fit statistics)	
Material Deprivation (Commodities) Dimension	
Listwise deletion	6 Wave Full Invariance
MICE 1	6 Wave Full Invariance
MICE 2	6 Wave Full Invariance
MICE 3	6 Wave Full Invariance
MICE 4	6 Wave Full Invariance
MICE 5	6 Wave Full Invariance
FIML	6 Wave Full Invariance

Appendix 4.3.3: Standardised factor item loadings for competing invariance models (with fixed loadings over different spans of time) – Material Deprivation 2 (Commodities) Dimension

	6 Wave Model Factor Loadings (Best fitting model)							3+3 Wave Model Factor Loadings (Best fitting model)						
Factor Loadings	**LW Full**	**Imp1 Full**	**Imp2 Full**	**Imp3 Full**	**Imp4 Full**	**Imp5 Full**	**FIML Full**	**LW Full**	**Imp1 Full**	**Imp2 Full**	**Imp3 Full**	**Imp4 Full**	**Imp5 Full**	**FIML Full**
md_nocar	0.728	0.722	0.721	0.721	0.722	0.721	0.724	0.719	0.721	0.722	0.722	0.721	0.721	0.72
md_vcr	0.605	0.613	0.613	0.613	0.613	0.614	0.62	0.63	0.629	0.63	0.63	0.629	0.629	0.631
md_frez	0.519	0.525	0.526	0.524	0.525	0.525	0.532	0.523	0.524	0.524	0.523	0.524	0.523	0.525
md_wash	0.739	0.728	0.726	0.727	0.727	0.728	0.738	0.75	0.745	0.745	0.747	0.747	0.743	0.748
md_drier	0.546	0.548	0.547	0.548	0.548	0.548	0.552	0.559	0.557	0.557	0.558	0.557	0.557	0.559
md_dish	0.712	0.709	0.71	0.709	0.71	0.709	0.709	0.719	0.717	0.715	0.716	0.717	0.718	0.718
md_pc	0.684	0.68	0.679	0.68	0.679	0.68	0.679	0.677	0.678	0.677	0.678	0.678	0.678	0.677
md_cdplay	0.57	0.58	0.581	0.581	0.581	0.58	0.581	0.594	0.594	0.594	0.594	0.593	0.593	0.594
md_nocar								0.744	0.725	0.723	0.724	0.724	0.723	0.733
md_vcr								0.575	0.6	0.599	0.6	0.6	0.601	0.609
md_frez								0.504	0.52	0.522	0.52	0.522	0.522	0.533
md_wash								0.722	0.705	0.707	0.707	0.706	0.707	0.72
md_drier								0.532	0.539	0.538	0.538	0.539	0.539	0.546
md_dish								0.709	0.703	0.702	0.702	0.704	0.703	0.7
md_pc								0.688	0.675	0.674	0.677	0.677	0.677	0.674
md_cdplay								0.535	0.563	0.565	0.563	0.563	0.564	0.565

	2+2+2 Wave Model Factor Loadings (Best fitting model)							1+1+1+1+1+1 Wave Model Factor Loadings (Configural Model)						
Factor Loadings	**LW Full**	**Imp1 Full**	**Imp2 Full**	**Imp3 Full**	**Imp4 Full**	**Imp5 Full**	**FIML Full**	**LW Conf**	**Imp1 Conf**	**Imp2 Conf**	**Imp3 Conf**	**Imp4 Conf**	**Imp5 Conf**	**FIML Conf**
md_nocar	0.714	0.714	0.715	0.714	0.715	0.715	0.714	0.706	0.708	0.708	0.706	0.708	0.707	0.708
md_vcr	0.64	0.641	0.641	0.641	0.641	0.641	0.643	0.659	0.662	0.663	0.662	0.662	0.662	0.665
md_frez	0.536	0.539	0.539	0.538	0.539	0.538	0.539	0.544	0.545	0.544	0.544	0.544	0.544	0.545
md_wash	0.755	0.753	0.753	0.738	0.753	0.752	0.754	0.751	0.751	0.754	0.755	0.753	0.752	0.755
md_drier	0.568	0.565	0.566	0.568	0.566	0.566	0.568	0.582	0.579	0.581	0.581	0.58	0.58	0.582
md_dish	0.721	0.719	0.718	0.715	0.72	0.719	0.719	0.712	0.709	0.71	0.71	0.71	0.71	0.71
md_pc	0.669	0.669	0.669	0.667	0.669	0.669	0.668	0.658	0.658	0.658	0.657	0.656	0.656	0.657
md_cdplay	0.604	0.603	0.603	0.605	0.603	0.603	0.604	0.623	0.621	0.622	0.622	0.62	0.62	0.621

md_nocar	0.727	0.726	0.724	0.725	0.726	0.725	0.728	0.725	0.731	0.731	0.73	0.73	0.731	0.73
md_vcr	0.601	0.598	0.598	0.598	0.6	0.6	0.602	0.618	0.618	0.616	0.617	0.617	0.617	0.622
md_frez	0.502	0.498	0.499	0.497	0.5	0.498	0.503	0.524	0.525	0.525	0.522	0.524	0.522	0.526
md_wash	0.74	0.734	0.734	0.718	0.731	0.731	0.739	0.752	0.747	0.75	0.752	0.75	0.749	0.754
md_drier	0.537	0.533	0.533	0.534	0.533	0.533	0.538	0.556	0.551	0.554	0.555	0.554	0.553	0.554
md_dish	0.714	0.713	0.712	0.707	0.712	0.712	0.711	0.713	0.712	0.71	0.711	0.713	0.712	0.712
md_pc	0.694	0.695	0.694	0.693	0.694	0.695	0.691	0.679	0.682	0.682	0.682	0.681	0.681	0.682
md_cdplay	0.555	0.557	0.557	0.558	0.559	0.557	0.556	0.592	0.587	0.592	0.592	0.59	0.589	0.589
md_nocar	0.758	0.73	0.73	0.729	0.731	0.729	0.74	0.741	0.745	0.743	0.745	0.745	0.745	0.745
md_vcr	0.563	0.602	0.601	0.601	0.6	0.601	0.611	0.605	0.601	0.599	0.6	0.601	0.601	0.607
md_frez	0.489	0.52	0.522	0.519	0.52	0.522	0.534	0.477	0.471	0.472	0.47	0.471	0.471	0.476
md_wash	0.703	0.684	0.686	0.676	0.685	0.689	0.704	0.715	0.71	0.712	0.712	0.71	0.708	0.717
md_drier	0.528	0.542	0.542	0.543	0.543	0.543	0.549	0.538	0.535	0.535	0.535	0.535	0.533	0.537
md_dish	0.705	0.699	0.701	0.696	0.701	0.7	0.695	0.705	0.705	0.704	0.702	0.703	0.704	0.704
md_pc	0.689	0.67	0.669	0.673	0.671	0.672	0.669	0.707	0.712	0.711	0.71	0.71	0.713	0.712
md_cdplay	0.532	0.573	0.574	0.575	0.572	0.574	0.574	0.576	0.572	0.574	0.574	0.574	0.571	0.574
md_nocar								0.732	0.73	0.724	0.726	0.727	0.727	0.737
md_vcr								0.595	0.594	0.593	0.594	0.596	0.598	0.603
md_frez								0.531	0.524	0.526	0.522	0.527	0.522	0.533
md_wash								0.713	0.704	0.709	0.705	0.706	0.707	0.712
md_drier								0.539	0.53	0.531	0.531	0.531	0.531	0.538
md_dish								0.7	0.7	0.697	0.695	0.697	0.696	0.695
md_pc								0.698	0.699	0.696	0.695	0.697	0.698	0.696
md_cdplay								0.545	0.546	0.548	0.55	0.549	0.547	0.547
md_nocar								0.752	0.744	0.745	0.741	0.744	0.745	0.757
md_vcr								0.57	0.566	0.562	0.562	0.56	0.562	0.571
md_frez								0.526	0.517	0.521	0.516	0.522	0.519	0.528
md_wash								0.693	0.683	0.687	0.69	0.688	0.688	0.696
md_drier								0.54	0.536	0.534	0.535	0.536	0.534	0.542
md_dish								0.717	0.717	0.716	0.716	0.717	0.716	0.715
md_pc								0.711	0.705	0.704	0.708	0.707	0.708	0.706
md_cdplay								0.541	0.539	0.54	0.539	0.535	0.538	0.54

md_nocar	0.773	0.736	0.733	0.736	0.738	0.734	0.741
md_vcr	0.535	0.622	0.621	0.621	0.621	0.621	0.64
md_frez	0.45	0.527	0.528	0.527	0.524	0.53	0.551
md_wash	0.66	0.641	0.647	0.646	0.64	0.647	0.665
md_drier	0.518	0.551	0.552	0.554	0.553	0.554	0.56
md_dish	0.69	0.672	0.673	0.67	0.673	0.671	0.663
md_pc	0.691	0.657	0.652	0.658	0.656	0.656	0.656
md_cdplay	0.529	0.608	0.611	0.609	0.608	0.61	0.61

Appendix 4.4.1: Invariance testing fit statistics comparisons for 'Social Isolation (Personal Relationships)' dimension									
	CFI	**Fit**	**TLI**	**Fit**	**RMSEA**	**Fit**	**WRMR**	**Fit**	**$\Delta\chi^2$, df**
Configural invariance									
Listwise deletion	*Unable to calculate because of N = 0*								
MICE 1	1.000	***	1.000	***	.021	***	9.110		
MICE 2	1.000	***	1.000	***	.020	***	8.435		
MICE 3	1.000	***	1.000	***	.020	***	8.727		
MICE 4	1.000	***	1.000	***	.020	***	8.567		
MICE 5	1.000	***	1.000	***	.020	***	8.730		
FIML	*Unable to calculate because of N = 0*								
6 wave metric invariance									
Listwise deletion	*Unable to calculate because of N = 0*								
MICE 1	1.000	***	1.000	***	.022	***	11.036		439, 15, p<.05
MICE 2	1.000	***	1.000	***	.020	***	10.206		374, 15, p<.05
MICE 3	1.000	***	1.000	***	.021	***	10.837		468, 15, p<.05
MICE 4	1.000	***	1.000	***	.021	***	10.407		395, 15, p<.05
MICE 5	1.000	***	1.000	***	.021	***	10.557		399, 15, p<.05
FIML	*Unable to calculate because of N = 0*								
3+3 wave metric invariance									
Listwise deletion	*Unable to calculate because of N = 0*								
MICE 1	1.000	***	1.000	***	.022	***	11.736		538, 16, p<.05
MICE 2	1.000	***	1.000	***	.021	***	10.779		443, 16, p<.05
MICE 3	1.000	***	1.000	***	.022	***	11.564		566, 16, p<.05
MICE 4	1.000	***	1.000	***	.021	***	10.996		467, 16, p<.05
MICE 5	1.000	***	1.000	***	.021	***	11.164		475, 16, p<.05
FIML	*Unable to calculate because of N = 0*								

2+2+2 wave metric invariance								
Listwise deletion	*Unable to calculate because of N = 0*							
MICE 1	1.000	***	1.000	***	.023	***	11.321	444, 12, p<.05
MICE 2	1.000	***	1.000	***	.020	***	9.985	281, 12, p<.05
MICE 3	1.000	***	1.000	***	.022	***	10.834	405, 12, p<.05
MICE 4	1.000	***	1.000	***	.021	***	10.548	372, 12, p<.05
MICE 5	1.000	***	1.000	***	.021	***	10.533	341, 12, p<.05
FIML	*Unable to calculate because of N = 0*							
6 wave full invariance								
Listwise deletion	*Unable to calculate because of N = 0*							
MICE 1	1.000	***	1.000	***	.024	***	14.640	1151, 16, p<.05
MICE 2	1.000	***	1.000	***	.022	***	13.515	975, 16, p<.05
MICE 3	1.000	***	1.000	***	.023	***	14.188	1044, 16, p<.05
MICE 4	1.000	***	1.000	***	.023	***	13.663	975, 16, p<.05
MICE 5	1.000	***	1.000	***	.023	***	13.692	947, 16, p<.06
FIML	*Unable to calculate because of N = 0*							
3+3 wave full invariance								
Listwise deletion	*Unable to calculate because of N = 0*							
MICE 1	1.000	***	1.000	***	.024	***	14.486	1259, 28, p<.05
MICE 2	1.000	***	1.000	***	.022	***	13.409	1079, 28, p<.05
MICE 3	1.000	***	1.000	***	.024	***	14.176	1241, 28, p<.05
MICE 4	1.000	***	1.000	***	.022	***	13.438	1064, 28, p<.05
MICE 5	1.000	***	1.000	***	.022	***	13.423	1033, 28, p<.05
FIML	*Unable to calculate because of N = 0*							
2+2+2 wave full invariance								
Listwise deletion	*Unable to calculate because of N = 0*							

MICE 1	1.000	***	1.000	***	.021	***	11.868	159, 8, p<.05
MICE 2	1.000	***	1.000	***	.019	***	10.419	111, 8, p<.05
MICE 3	1.000	***	1.000	***	.020	***	11.184	97, 8, p<.05
MICE 4	1.000	***	1.000	***	.020	***	10.927	103, 8, p<.05
MICE 5	1.000	***	1.000	***	.020	***	10.992	124, 8, p<.05
FIML	*Unable to calculate because of N = 0*							

Key = *** Excellent fit ** Good fit * Adequate fit (Kenny 2014)

Table 4.4.2. Best invariance model (most time invariant model with good fit statistics)
Social Isolation Dimension

Listwise deletion	6 Wave Full Invariance
MICE 1	6 Wave Full Invariance
MICE 2	6 Wave Full Invariance
MICE 3	6 Wave Full Invariance
MICE 4	6 Wave Full Invariance
MICE 5	6 Wave Full Invariance
FIML	6 Wave Full Invariance

Table 4.4.3 : Standardised factor item loadings for competing invariance models (with fixed loadings over different spans of time) – Social Isolation (Personal Relationships) Dimension

	6 Wave Model Factor Loadings (Best fitting model)							3+3 Wave Model Factor Loadings (Best fitting model)						
Factor Loadings	**LW Full**	**Imp1 Full**	**Imp2 Full**	**Imp3 Full**	**Imp4 Full**	**Imp5 Full**	**FIML Full**	**LW Full**	**Imp1 Full**	**Imp2 Full**	**Imp3 Full**	**Imp4 Full**	**Imp5 Full**	**FIML Full**
soc_frdund		0.908	0.908	0.909	0.908	0.909			0.91	0.91	0.909	0.91	0.91	
soc_relfrd		0.943	0.943	0.942	0.942	0.942			0.944	0.945	0.943	0.944	0.943	
soc_open		0.953	0.954	0.953	0.953	0.953			0.952	0.953	0.952	0.953	0.952	
soc_fdcrit		-0.279	-0.286	-0.28	-0.289	-0.285			-0.305	-0.305	-0.303	-0.308	-0.308	
soc_frdund									0.908	0.908	0.908	0.907	0.908	
soc_relfrd									0.942	0.942	0.942	0.942	0.942	
soc_open									0.953	0.953	0.952	0.953	0.953	
soc_fdcrit									-0.294	-0.291	-0.297	-0.292	-0.294	

	2+2+2 Wave Model Factor Loadings (Best fitting model)							1+1+1+1+1+1 Wave Model Factor Loadings (Configural Model)						
Factor Loadings	**LW Full**	**Imp1 Full**	**Imp2 Full**	**Imp3 Full**	**Imp4 Full**	**Imp5 Full**	**FIML Full**	**LW Conf**	**Imp1 Conf**	**Imp2 Conf**	**Imp3 Conf**	**Imp4 Conf**	**Imp5 Conf**	**FIML Conf**
soc_frdund		0.911	0.912	0.911	0.91	0.913			0.91	0.907	0.906	0.904	0.906	
soc_relfrd		0.945	0.947	0.946	0.946	0.945			0.941	0.943	0.939	0.941	0.94	
soc_open		0.952	0.954	0.953	0.953	0.952			0.95	0.951	0.949	0.951	0.949	
soc_fdcrit		-0.312	-0.314	-0.312	-0.317	-0.315			-0.291	-0.285	-0.28	-0.288	-0.285	
soc_frdund		0.906	0.906	0.904	0.906	0.905			0.915	0.916	0.916	0.915	0.915	
soc_relfrd		0.94	0.939	0.938	0.939	0.938			0.949	0.95	0.951	0.95	0.951	
soc_open		0.951	0.951	0.95	0.951	0.95			0.954	0.955	0.955	0.955	0.954	
soc_fdcrit		-0.289	-0.286	-0.29	-0.285	-0.294			-0.332	-0.338	-0.341	-0.341	-0.34	
soc_frdund		0.908	0.909	0.908	0.908	0.91			0.904	0.905	0.905	0.908	0.906	
soc_relfrd		0.944	0.944	0.944	0.944	0.944			0.94	0.94	0.938	0.94	0.94	
soc_open		0.953	0.954	0.952	0.953	0.953			0.951	0.95	0.949	0.95	0.95	
soc_fdcrit		-0.296	-0.294	-0.297	-0.296	-0.292			-0.294	-0.285	-0.28	-0.288	-0.293	

soc_frdund	0.91	0.907	0.908	0.905	0.905
soc_relfrd	0.937	0.94	0.94	0.939	0.939
soc_open	0.949	0.95	0.949	0.95	0.949
soc_fdcrit	-0.294	-0.284	-0.296	-0.283	-0.296
soc_frdund	0.915	0.913	0.912	0.912	0.912
soc_relfrd	0.947	0.949	0.948	0.948	0.948
soc_open	0.954	0.955	0.954	0.954	0.954
soc_fdcrit	-0.305	-0.305	-0.308	-0.305	-0.304
soc_frdund	0.905	0.906	0.906	0.904	0.909
soc_relfrd	0.942	0.941	0.941	0.94	0.941
soc_open	0.95	0.95	0.948	0.95	0.951
soc_fdcrit	-0.298	-0.285	-0.287	-0.287	-0.283

Appendix 4.5.1: Invariance testing fit statistics comparisons for 'Civic Participation' dimension									
	CFI	**Fit**	**TLI**	**Fit**	**RMSEA**	**Fit**	**WRMR**	**Fit**	**$\Delta\chi^2$, df**
Configural invariance									
Listwise deletion	*Unable to calculate because of N = 0*								
MICE 1	.956	**	.974	***	.045	***	13.805		
MICE 2	.955	**	.973	***	.045	***	14.003		
MICE 3	.955	**	.973	***	.045	***	13.960		
MICE 4	.955	**	.973	***	.045	***	13.950		
MICE 5	.953	**	.972	***	.046	***	14.077		
FIML	*Unable to calculate because of N = 0*								
6 wave metric invariance									
Listwise deletion	*Unable to calculate because of N = 0*								
MICE 1	.960	**	.984	***	.035	***	16.682		Singular matrix
MICE 2	.960	**	.984	***	.035	***	16.827		580, 15, p<.05
MICE 3	.960	**	.984	***	.035	***	16.817		586, 15, p<.05
MICE 4	.960	**	.984	***	.035	***	16.794		583, 15, p<.05
MICE 5	.958	**	.983	***	.035	***	16.933		Singular Matrix
FIML	*Unable to calculate because of N = 0*								
3+3 wave metric invariance									
Listwise deletion	*Unable to calculate because of N = 0*								
MICE 1	.958	**	.982	***	.037	***	16.717		596, 12, p<.05
MICE 2	.958	**	.982	***	.037	***	16.853		586, 12, p<.05
MICE 3	.958	**	.982	***	.037	***	16.827		588, 12, p<.05
MICE 4	.958	**	.982	***	.037	***	16.804		585, 12, p<.05
MICE 5	.958	**	.982	***	.037	***	16.796		586, 12, p<.05
FIML	*Unable to calculate because of N = 0*								

2+2+2 wave metric invariance								
Listwise deletion	*Unable to calculate because of N = 0*							
MICE 1	.960	**	.982	***	.037	***	15.857	408, 9, p<.05
MICE 2	.960	**	.981	***	.038	***	15.991	397, 9, p<.05
MICE 3	.960	**	.981	***	.038	***	15.974	401, 9, p<.05
MICE 4	.960	**	.981	***	.038	***	15.950	398, 9, p<.05
MICE 5	.958	**	.981	***	.038	***	16.082	404, 9, p<.05
FIML	*Unable to calculate because of N = 0*							
6 wave full invariance								
Listwise deletion	*Unable to calculate because of N = 0*							
MICE 1	.949	**	.984	***	.035	***	19.041	1007, 12, p<.05
MICE 2	.949	**	.984	***	.035	***	19.036	948, 12, p<.05
MICE 3	.948	**	.984	***	.035	***	19.203	1029, 12, p<.05
MICE 4	.947	**	.983	***	.036	***	19.378	1119, 12, p<.05
MICE 5	.946	**	.983	***	.036	***	19.342	1043, 12, p<.05
FIML	*Unable to calculate because of N = 0*							
3+3 wave full invariance								
Listwise deletion	*Unable to calculate because of N = 0*							
MICE 1	.950	**	.982	***	.037	***	18.413	713, 9, p<.05
MICE 2	.950	**	.982	***	.037	***	18.471	684, 9, p<.05
MICE 3	.949	**	.982	***	.037	***	18.561	735, 9, p<.05
MICE 4	.949	**	.982	***	.037	***	18.568	747, 9, p<.05
MICE 5	.948	**	.982	***	.037	***	18.632	719, 9, p<.05
FIML	*Unable to calculate because of N = 0*							
2+2+2 wave full invariance								
Listwise deletion	*Unable to calculate because of N = 0*							
MICE 1	.960	**	.984	***	.035	***	16.152	113, 6, p<.05

MICE 2	.959	**	.984	***	.035	***	16.269	107, 6, p<.05
MICE 3	.959	**	.984	***	.035	***	16.273	115, 6, p<.05
MICE 4	.959	**	.984	***	.035	***	16.260	119, 6, p<.05
MICE 5	.957	**	.983	***	.036	***	16.372	112, 6, p<.05
FIML	*Unable to calculate because of N = 0*							

Key = *** Excellent fit ** Good fit * Adequate fit (Kenny 2014)

Appendix 4.5.2. Best invariance model (most time invariant model with good fit statistics)

Civic Participation Dimension	
Listwise deletion	
MICE 1	6 Wave Full Invariance
MICE 2	6 Wave Full Invariance
MICE 3	6 Wave Full Invariance
MICE 4	6 Wave Full Invariance
MICE 5	6 Wave Full Invariance
FIML	

Appendix 4.5.3: Standardised factor item loadings for competing invariance models (with fixed loadings over different spans of time) – Civic Participation Dimension

	6 Wave Model Factor Loadings (Best fitting model)							3+3 Wave Model Factor Loadings (Best fitting model)						
Factor Loadings	**LW**	**Imp1**	**Imp2**	**Imp3**	**Imp4**	**Imp5**	**FIML**	**LW**	**Imp1**	**Imp2**	**Imp3**	**Imp4**	**Imp5**	**FIML**
	Full	**Full**	**Full**	**Full**	**Full**	**Full**	**Full**	**Full**	**Full**	**Full**	**Full**	**Full**	**Full**	**Full**
civ_orgsum		.807	.807	.808	.808	.803			.809	.813	.811	.812	.809	
civ_orgvo		.932	.932	.932	.932	.930			.922	.924	.922	.924	.923	
pol_dnv		-.002	-.008	-.010	-.006	-.002			-.004	-.011	-.017	-.013	-.003	
civ_orgsum									.808	.812	.810	.811	.807	
civ_orgvo									.929	.931	.930	.930	.923	
pol_dnv									.000	-.005	-.001	.000	-.001	

	2+2+2 Wave Model Factor Loadings (Best fitting model)							1+1+1+1+1+1 Wave Model Factor Loadings (Configural Model)						
Factor Loadings	**LW**	**Imp1**	**Imp2**	**Imp3**	**Imp4**	**Imp5**	**FIML**	**LW**	**Imp1**	**Imp2**	**Imp3**	**Imp4**	**Imp5**	**FIML**
	Full	**Full**	**Full**	**Full**	**Full**	**Full**	**Full**	**Conf**	**Conf**	**Conf**	**Conf**	**Conf**	**Conf**	**Conf**
civ_orgsum		0.801	0.799	0.8	0.799	0.797			0.791	0.787	0.788	0.787	0.786	
civ_orgvo		0.927	0.926	0.927	0.926	0.926			0.939	0.938	0.937	0.937	0.938	
pol_dnv		-0.006	-0.015	-0.015	-0.015	-0.008			0.017	-0.003	-0.005	-0.007	0.014	
civ_orgsum		0.825	0.824	0.824	0.824	0.821			0.82	0.818	0.818	0.818	0.816	
civ_orgvo		0.925	0.924	0.924	0.924	0.923			0.927	0.925	0.925	0.925	0.926	
pol_dnv		0	-0.005	-0.013	-0.005	0.004			-0.025	-0.028	-0.025	-0.029	-0.028	
civ_orgsum		0.817	0.817	0.817	0.817	0.815			0.844	0.841	0.842	0.841	0.84	
civ_orgvo		0.923	0.923	0.922	0.922	0.918			0.906	0.902	0.903	0.903	0.905	
pol_dnv		0	-0.003	0.002	0.001	0			0.002	0.003	-0.017	-0.003	0.012	
civ_orgsum									0.809	0.806	0.806	0.807	0.804	
civ_orgvo									0.924	0.922	0.923	0.922	0.921	
pol_dnv									0	-0.012	-0.007	-0.003	-0.005	
civ_orgsum									0.819	0.815	0.816	0.816	0.814	
civ_orgvo									0.918	0.917	0.916	0.916	0.915	

pol_dnv	0.004	-0.001	-0.007	-0.011	0.011
civ_orgsum	0.825	0.822	0.822	0.822	0.821
civ_orgvo	0.914	0.912	0.912	0.912	0.905
pol_dnv	-0.003	-0.005	0.011	0.02	-0.006

Appendix 4.6.1: Invariance testing fit statistics comparisons for 'Psychosocial Strain – Anxiety/Depression' dimension									
	CFI	**Fit**	**TLI**	**Fit**	**RMSEA**	**Fit**	**WRMR**	**Fit**	**$\Delta\chi^2$, df**
Configural invariance									
Listwise deletion	*Unable to calculate because of N = 0*								
MICE 1	.981	***	.987	***	.075	*	32.687		
MICE 2	.981	***	.986	***	.076	*	33.196		
MICE 3	.979	***	.985	***	.079	*	34.825		
MICE 4	.981	***	.986	***	.076	*	33.225		
MICE 5	.981	***	.986	***	.075	*	32.718		
FIML	*Unable to calculate because of N = 0*								
6 wave metric invariance									
Listwise deletion	*Unable to calculate because of N = 0*								
MICE 1	.987	***	.992	***	.056	**	33.039		294, 30, p<.05
MICE 2	.987	***	.992	***	.057	**	33.609		349, 30, p<.05
MICE 3	.985	***	.991	***	.060	**	35.280		404, 30, p<.05
MICE 4	.987	***	.992	***	.057	**	33.627		341, 30, p<.05
MICE 5	.987	***	.992	***	.056	**	33.018		254, 30, p<.05
FIML	*Unable to calculate because of N = 0*								
3+3 wave metric invariance									
Listwise deletion	*Unable to calculate because of N = 0*								
MICE 1	.987	***	.992	***	.058	**	32.968		235, 24, p<.05
MICE 2	.986	***	.992	***	.059	**	33.487		246, 24, p<.05
MICE 3	.985	***	.991	***	.062	**	35.140		280, 24, p<.05
MICE 4	.986	***	.991	***	.059	**	33.503		237, 24, p<.05
MICE 5	.986	***	.992	***	.058	**	32.895		152, 24, p<.05
FIML	*Unable to calculate because of N = 0*								
2+2+2 wave metric invariance									

Listwise deletion	*Unable to calculate because of N = 0*							
MICE 1	.986	***	.991	***	.061	**	32.952	220, 18, p<.05
MICE 2	.985	***	.991	***	.062	**	33.551	297, 18, p<.05
MICE 3	.984	***	.990	***	.065	**	35.197	328, 18, p<.05
MICE 4	.985	***	.991	***	.062	**	33.535	261, 18, p<.05
MICE 5	.985	***	.991	***	.061	**	32.918	169, 18, p<.05
FIML	*Unable to calculate because of N = 0*							
6 wave full invariance								
Listwise deletion	*Unable to calculate because of N = 0*							
MICE 1	.987	***	.994	***	.052	**	33.623	1062, 24, p<.05
MICE 2	.987	***	.993	***	.052	**	33.988	705, 24, p<.05
MICE 3	.986	***	.993	***	.055	**	35.663	753, 24, p<.05
MICE 4	.987	***	.993	***	.052	**	34.166	1012, 24, p<.05
MICE 5	.987	***	.993	***	.052	**	33.514	915, 23, p<.05
FIML	*Unable to calculate because of N = 0*							
3+3 wave full invariance								
Listwise deletion	*Unable to calculate because of N = 0*							
MICE 1	.987	***	.993	***	.054	**	33.099	237, 18, p<.05
MICE 2	.987	***	.993	***	.055	**	33.559	134, 18, p<.05
MICE 3	.985	***	.992	***	.057	**	35.250	216, 18, p<.05
MICE 4	.986	***	.993	***	.055	**	33.663	299, 18, p<.05
MICE 5	.987	***	.993	***	.054	**	33.020	231, 18, p<.05
FIML	*Unable to calculate because of N = 0*							
2+2+2 wave full invariance								
Listwise deletion	*Unable to calculate because of N = 0*							
MICE 1	.986	***	.992	***	.058	**	33.037	155, 12, p<.05
MICE 2	.986	***	.992	***	.059	**	33.616	123, 12, p<.05

MICE 3	.984	***	.991	***	.061	**	35.246	97, 12, p<.05
MICE 4	.986	***	.992	***	.059	**	33.594	112, 12, p<.05
MICE 5	.986	***	.992	***	.058	**	32.983	120, 12, p<.05
FIML	*Unable to calculate because of N = 0*							

Key = *** Excellent fit ** Good fit * Adequate fit (Kenny 2014)

Appendix 4.6.2. Best invariance model (most time invariant model with good fit statistics)	
Psychosocial Strain – Anxiety/Depression Dimension	
Listwise deletion	
MICE 1	6 Wave Full Invariance
MICE 2	6 Wave Full Invariance
MICE 3	6 Wave Full Invariance
MICE 4	6 Wave Full Invariance
MICE 5	6 Wave Full Invariance
FIML	

Appendix 4.6.3: Standardised factor item loadings for competing invariance models (with fixed loadings over different spans of time) – Psychosocial Strain Anxiety/Depression Dimension

	6 Wave Model Factor Loadings (Best fitting model)							3+3 Wave Model Factor Loadings (Best fitting model)						
Factor Loadings	**LW Full**	**Imp1 Full**	**Imp2 Full**	**Imp3 Full**	**Imp4 Full**	**Imp5 Full**	**FIML Full**	**LW Full**	**Imp1 Full**	**Imp2 Full**	**Imp3 Full**	**Imp4 Full**	**Imp5 Full**	**FIML Full**
hel_ghqb		0.755	0.756	0.755	0.757	0.756			0.757	0.757	0.757	0.759	0.758	
hel_ghqe		0.828	0.828	0.826	0.827	0.827			0.827	0.826	0.826	0.825	0.825	
hel_ghqf		0.802	0.801	0.8	0.801	0.8			0.796	0.795	0.794	0.795	0.793	
hel_ghqi		0.856	0.854	0.856	0.856	0.859			0.855	0.854	0.855	0.856	0.859	
psy_usef		0.527	0.532	0.532	0.519	0.518			0.532	0.541	0.542	0.528	0.524	
psy_relax		0.731	0.732	0.728	0.723	0.722			0.736	0.737	0.733	0.726	0.728	
hel_ghqb									0.754	0.755	0.753	0.755	0.753	
hel_ghqe									0.828	0.829	0.826	0.827	0.827	
hel_ghqf									0.809	0.808	0.807	0.809	0.808	
hel_ghqi									0.858	0.856	0.858	0.858	0.86	
psy_usef									0.521	0.521	0.52	0.508	0.512	
psy_relax									0.727	0.727	0.723	0.721	0.715	

	2+2+2 Wave Model Factor Loadings (Best fitting model)							1+1+1+1+1+1 Wave Model Factor Loadings (Configural Model)						
Factor Loadings	**LW Full**	**Imp1 Full**	**Imp2 Full**	**Imp3 Full**	**Imp4 Full**	**Imp5 Full**	**FIML Full**	**LW Conf**	**Imp1 Conf**	**Imp2 Conf**	**Imp3 Conf**	**Imp4 Conf**	**Imp5 Conf**	**FIML Conf**
hel_ghqb		0.757	0.757	0.757	0.759	0.757			0.75	0.753	0.75	0.753	0.751	
hel_ghqe		0.827	0.827	0.826	0.826	0.826			0.825	0.824	0.823	0.824	0.823	
hel_ghqf		0.794	0.794	0.794	0.793	0.792			0.78	0.778	0.778	0.777	0.777	
hel_ghqi		0.855	0.854	0.855	0.855	0.858			0.854	0.852	0.854	0.855	0.856	
psy_usef		0.536	0.539	0.542	0.527	0.523			0.522	0.522	0.519	0.509	0.513	
psy_relax		0.736	0.735	0.733	0.726	0.728			0.73	0.729	0.723	0.717	0.724	
hel_ghqb		0.754	0.755	0.754	0.755	0.754			0.761	0.76	0.761	0.763	0.762	
hel_ghqe		0.828	0.829	0.828	0.827	0.828			0.831	0.831	0.83	0.828	0.829	
hel_ghqf		0.805	0.803	0.803	0.803	0.802			0.807	0.808	0.807	0.806	0.805	
hel_ghqi		0.857	0.856	0.858	0.858	0.859			0.856	0.855	0.855	0.856	0.859	
psy_usef		0.521	0.532	0.53	0.522	0.52			0.547	0.551	0.559	0.542	0.533	

psy_relax	0.731	0.733	0.728	0.722	0.725	0.741	0.739	0.74	0.733	0.73
hel_ghqb	0.755	0.757	0.754	0.755	0.755	0.755	0.757	0.756	0.757	0.758
hel_ghqe	0.826	0.827	0.823	0.825	0.825	0.828	0.826	0.826	0.824	0.826
hel_ghqf	0.808	0.808	0.806	0.809	0.807	0.801	0.798	0.798	0.799	0.797
hel_ghqi	0.856	0.854	0.856	0.857	0.858	0.853	0.851	0.854	0.854	0.855
psy_usef	0.522	0.524	0.522	0.507	0.511	0.523	0.545	0.541	0.531	0.526
psy_relax	0.727	0.728	0.723	0.724	0.714	0.733	0.74	0.732	0.726	0.729
hel_ghqb						0.751	0.75	0.749	0.751	0.749
hel_ghqe						0.833	0.835	0.834	0.833	0.834
hel_ghqf						0.812	0.811	0.811	0.808	0.81
hel_ghqi						0.858	0.857	0.858	0.859	0.859
psy_usef						0.519	0.516	0.515	0.511	0.513
psy_relax						0.728	0.724	0.721	0.715	0.718
hel_ghqb						0.756	0.758	0.755	0.757	0.756
hel_ghqe						0.827	0.829	0.823	0.827	0.827
hel_ghqf						0.812	0.812	0.81	0.811	0.813
hel_ghqi						0.855	0.855	0.856	0.858	0.859
psy_usef						0.535	0.535	0.532	0.514	0.513
psy_relax						0.734	0.733	0.727	0.729	0.717
hel_ghqb						0.754	0.756	0.754	0.752	0.755
hel_ghqe						0.829	0.829	0.827	0.827	0.827
hel_ghqf						0.808	0.807	0.805	0.807	0.806
hel_ghqi						0.853	0.85	0.851	0.854	0.853
psy_usef						0.51	0.513	0.512	0.5	0.51
psy_relax						0.717	0.721	0.714	0.718	0.708

Appendix 4.7.1: Invariance testing fit statistics comparisons for 'Psychosocial Strain – Social Dysfunction' dimension									
	CFI	**Fit**	**TLI**	**Fit**	**RMSEA**	**Fit**	**WRMR**	**Fit**	**$\Delta\chi^2$, df**
Configural invariance									
Listwise deletion	*Unable to calculate because of N = 0*								
MICE 1	.990	***	.992	***	.053	**	20.281		
MICE 2	.990	***	.993	***	.052	**	20.110		
MICE 3	.990	***	.993	***	.052	**	20.054		
MICE 4	.990	***	.992	***	.053	**	20.380		
MICE 5	.990	***	.992	***	.053	**	20.289		
FIML	*Unable to calculate because of N = 0*								
6 wave metric invariance									
Listwise deletion	*Unable to calculate because of N = 0*								
MICE 1	.993	***	.996	***	.040	***	21.974		716, 25, p<.05
MICE 2	.993	***	.996	***	.039	***	21.517		588, 25, p<.05
MICE 3	.993	***	.996	***	.039	***	21.660		670, 25, p<.05
MICE 4	.993	***	.996	***	.040	***	22.036		703, 25, p<.05
MICE 5	.993	***	.996	***	.039	***	21.922		690, 25, p<.05
FIML	*Unable to calculate because of N = 0*								
3+3 wave metric invariance									
Listwise deletion	*Unable to calculate because of N = 0*								
MICE 1	.992	***	.995	***	.041	***	21.658		578, 20, p<.05
MICE 2	.993	***	.996	***	.040	***	21.200		452, 20, p<.05
MICE 3	.993	***	.996	***	.040	***	21.413		564, 20, p<.05
MICE 4	.992	***	.995	***	.041	***	21.738		573, 20, p<.05
MICE 5	.992	***	.995	***	.041	***	21.647		570, 20, p<.05
FIML	*Unable to calculate because of N = 0*								
2+2+2 wave metric invariance									

Listwise deletion	*Unable to calculate because of N = 0*							
MICE 1	.992	***	.995	***	.043	***	21.590	548, 15, p<.05
MICE 2	.992	***	.995	***	.043	***	21.220	460, 15, p<.05
MICE 3	.992	***	.995	***	.043	***	21.399	557, 15, p<.05
MICE 4	.992	***	.995	***	.043	***	21.708	559, 15, p<.05
MICE 5	.992	***	.995	***	.043	***	21.613	555, 15, p<.05
FIML	*Unable to calculate because of N = 0*							
6 wave full invariance								
Listwise deletion	*Unable to calculate because of N = 0*							
MICE 1	.993	***	.997	***	.036	***	22.061	80, 20, p<.05
MICE 2	.993	***	.997	***	.035	***	21.603	78, 20, p<.05
MICE 3	.993	***	.997	***	.035	***	21.763	94, 20, p<.05
MICE 4	.993	***	.997	***	.036	***	22.139	96, 20, p<.05
MICE 5	.993	***	.997	***	.035	***	22.012	83, 20, p<.05
FIML	*Unable to calculate because of N = 0*							
3+3 wave full invariance								
Listwise deletion	*Unable to calculate because of N = 0*							
MICE 1	.993	***	.996	***	.037	***	21.703	42, 15, p<.05
MICE 2	.993	***	.996	***	.037	***	21.242	39, 15, p<.05
MICE 3	.993	***	.996	***	.037	***	21.471	53, 15, p<.05
MICE 4	.993	***	.996	***	.038	***	21.787	46, 15, p<.05
MICE 5	.993	***	.996	***	.037	***	21.708	56, 15, p<.05
FIML	*Unable to calculate because of N = 0*							
2+2+2 wave full invariance								
Listwise deletion	*Unable to calculate because of N = 0*							
MICE 1	.992	***	.996	***	.040	***	21.629	35, 10, p<.05
MICE 2	.993	***	.996	***	.040	***	21.258	34, 10, p<.05

MICE 3	.992	***	.996	***	.040	***	21.446	43, 10, p<.05
MICE 4	.992	***	.996	***	.041	***	21.755	43, 10, p<.05
MICE 5	.992	***	.996	***	.040	***	21.641	26, 10, p<.05
FIML	*Unable to calculate because of N = 0*							

Key = *** Excellent fit ** Good fit * Adequate fit (Kenny 2014)

Appendix 4.7.2. Best invariance model (most time invariant model with good fit statistics)	
Psychosocial Strain – Social Dysfunction Dimension	
Listwise deletion	
MICE 1	6 Wave Full Invariance
MICE 2	6 Wave Full Invariance
MICE 3	6 Wave Full Invariance
MICE 4	6 Wave Full Invariance
MICE 5	6 Wave Full Invariance
FIML	

Appendix 4.7.3: Standardised factor item loadings for competing invariance models (with fixed loadings over different spans of time) – Psychosocial Strain – Social Dysfunction

	6 Wave Model Factor Loadings (Best fitting model)							3+3 Wave Model Factor Loadings (Best fitting model)						
Factor Loadings	**LW Full**	**Imp1 Full**	**Imp2 Full**	**Imp3 Full**	**Imp4 Full**	**Imp5 Full**	**FIML Full**	**LW Full**	**Imp1 Full**	**Imp2 Full**	**Imp3 Full**	**Imp4 Full**	**Imp5 Full**	**FIML Full**
hel_ghqa		.712	.712	.712	.712	.710			0.717	0.717	0.715	0.716	0.713	
hel_ghqc		.707	.705	.708	.707	.705			0.696	0.695	0.698	0.697	0.694	
hel_ghqd		.779	.781	.777	.781	.776			0.772	0.775	0.771	0.774	0.771	
hel_ghqg		.752	.751	.754	.753	.753			0.751	0.749	0.752	0.751	0.752	
hel_ghqh		.762	.762	.763	.766	.764			0.761	0.762	0.762	0.766	0.764	
hel_ghqa									0.709	0.709	0.709	0.708	0.707	
hel_ghqc									0.718	0.715	0.717	0.716	0.715	
hel_ghqd									0.785	0.786	0.783	0.787	0.781	
hel_ghqg									0.754	0.755	0.756	0.756	0.756	
hel_ghqh									0.761	0.761	0.761	0.766	0.763	

	2+2+2 Wave Model Factor Loadings (Best fitting model)							1+1+1+1+1+1 Wave Model Factor Loadings (Configural Model)						
Factor Loadings	**LW Full**	**Imp1 Full**	**Imp2 Full**	**Imp3 Full**	**Imp4 Full**	**Imp5 Full**	**FIML Full**	**LW Conf**	**Imp1 Conf**	**Imp2 Conf**	**Imp3 Conf**	**Imp4 Conf**	**Imp5 Conf**	**FIML Conf**
hel_ghqa		0.725	0.723	0.72	0.723	0.719			0.71	0.712	0.705	0.708	0.703	
hel_ghqc		0.692	0.692	0.694	0.693	0.69			0.662	0.666	0.664	0.667	0.66	
hel_ghqd		0.77	0.774	0.771	0.772	0.769			0.763	0.767	0.765	0.765	0.764	
hel_ghqg		0.754	0.751	0.754	0.753	0.753			0.742	0.738	0.74	0.738	0.74	
hel_ghqh		0.765	0.765	0.767	0.77	0.768			0.76	0.76	0.761	0.761	0.763	
hel_ghqa		0.704	0.707	0.708	0.705	0.704			0.735	0.731	0.731	0.734	0.73	
hel_ghqc		0.713	0.71	0.713	0.713	0.711			0.71	0.707	0.711	0.709	0.707	
hel_ghqd		0.78	0.781	0.776	0.782	0.777			0.775	0.779	0.776	0.776	0.773	
hel_ghqg		0.75	0.751	0.755	0.753	0.753			0.762	0.76	0.763	0.763	0.763	
hel_ghqh		0.756	0.757	0.758	0.761	0.758			0.771	0.771	0.774	0.777	0.776	
hel_ghqa		0.708	0.708	0.707	0.707	0.706			0.697	0.704	0.703	0.7	0.699	
hel_ghqc		0.716	0.714	0.715	0.714	0.714			0.702	0.698	0.702	0.702	0.699	

hel_ghqd	0.786	0.788	0.785	0.788	0.783	0.775	0.775	0.771	0.776	0.774
hel_ghqg	0.753	0.752	0.753	0.753	0.753	0.747	0.745	0.751	0.75	0.749
hel_ghqh	0.761	0.762	0.761	0.766	0.763	0.754	0.756	0.756	0.759	0.757
hel_ghqa						0.708	0.709	0.711	0.709	0.706
hel_ghqc						0.72	0.717	0.717	0.719	0.715
hel_ghqd						0.782	0.783	0.779	0.783	0.778
hel_ghqg						0.756	0.758	0.761	0.759	0.76
hel_ghqh						0.763	0.761	0.764	0.767	0.764
hel_ghqa						0.715	0.714	0.711	0.713	0.711
hel_ghqc						0.724	0.721	0.723	0.724	0.722
hel_ghqd						0.792	0.794	0.792	0.795	0.791
hel_ghqg						0.763	0.762	0.763	0.763	0.763
hel_ghqh						0.773	0.775	0.773	0.778	0.776
hel_ghqa						0.701	0.703	0.702	0.703	0.701
hel_ghqc						0.705	0.705	0.702	0.702	0.701
hel_ghqd						0.775	0.777	0.774	0.776	0.771
hel_ghqg						0.745	0.744	0.744	0.746	0.745
hel_ghqh						0.751	0.752	0.751	0.756	0.752

Appendix 4.8.1: Invariance testing fit statistics comparisons for 'Psychological Strain - Control' dimension									
	CFI	**Fit**	**TLI**	**Fit**	**RMSEA**	**Fit**	**WRMR**	**Fit**	**$\Delta\chi^2$, df**
Configural invariance									
Listwise deletion	*Unable to calculate because of N = 0*								
MICE 1	.990	***	.995	***	.061	**	26.236		
MICE 2	.989	***	.994	***	.062	**	26.949		
MICE 3	.989	***	.995	***	.064	**	27.887		
MICE 4	.988	***	.994	***	.066	**	28.850		
MICE 5	.987	***	.994	***	.068	**	29.705		
FIML	*Unable to calculate because of N = 0*								
6 wave metric invariance									
Listwise deletion	*Unable to calculate because of N = 0*								
MICE 1	.991	***	.996	***	.050	***	27.691		779, 20, p<.05
MICE 2	.990	***	.996	***	.053	***	29.001		1148, 20, p<.05
MICE 3	.990	***	.996	***	.053	***	29.312		809, 20, p<.05
MICE 4	.990	***	.996	***	.054	***	29.935		637, 20, p<.05
MICE 5	.989	***	.996	***	.056	***	30.812		672, 20, p<.05
FIML	*Unable to calculate because of N = 0*								
3+3 wave metric invariance									
Listwise deletion	*Unable to calculate because of N = 0*								
MICE 1	.991	***	.996	***	.051	***	27.152		486, 16, p<.05
MICE 2	.990	***	.996	***	.053	***	28.080		623, 16, p<.05
MICE 3	.991	***	.996	***	.054	***	28.521		356, 16, p<.05
MICE 4	.990	***	.996	***	.055	***	29.293		259, 16, p<.05
MICE 5	.989	***	.996	***	.057	***	30.078		226, 16, p<.05
FIML	*Unable to calculate because of N = 0*								
2+2+2 wave metric invariance									

Listwise deletion	*Unable to calculate because of N = 0*							
MICE 1	.991	***	.996	***	.053	***	26.880	340, 12, p<.05
MICE 2	.990	***	.996	***	.055	***	28.864	502, 12, p<.05
MICE 3	.990	***	.996	***	.055	***	28.294	228, 12, p<.05
MICE 4	.990	***	.996	***	.057	***	29.248	231, 12, p<.05
MICE 5	.989	***	.995	***	.059	***	29.932	138, 12, p<.05
FIML	*Unable to calculate because of N = 0*							
6 wave full invariance								
Listwise deletion	*Unable to calculate because of N = 0*							
MICE 1	.990	***	.997	***	.048	***	29.252	1681, 16, p<.05
MICE 2	.989	***	.996	***	.050	***	30.288	1453, 16, p<.05
MICE 3	.990	***	.997	***	.050	***	30.620	1470, 16, p<.05
MICE 4	.989	***	.996	***	.052	***	31.458	1770, 16, p<.05
MICE 5	.988	***	.996	***	.053	***	32.173	1624, 16, p<.05
FIML	*Unable to calculate because of N = 0*							
3+3 wave full invariance								
Listwise deletion	*Unable to calculate because of N = 0*							
MICE 1	.990	***	.997	***	.049	***	28.309	1210, 12, p<.05
MICE 2	.990	***	.996	***	.051	***	29.070	1075, 12, p<.05
MICE 3	.990	***	.997	***	.051	***	29.551	1119, 12, p<.05
MICE 4	.990	***	.996	***	.053	***	30.561	1433, 12, p<.05
MICE 5	.989	***	.996	***	.054	***	31.340	1465, 12, p<.05
FIML	*Unable to calculate because of N = 0*							
2+2+2 wave full invariance								
Listwise deletion	*Unable to calculate because of N = 0*							
MICE 1	.991	***	.996	***	.050	***	27.118	242, 8, p<.05
MICE 2	.990	***	.996	***	.052	***	28.077	225, 8, p<.05

MICE 3	.991	***	.996	***	.053	***	28.567	289, 8, p<.05
MICE 4	.990	***	.996	***	.054	***	29.576	364, 8, p<.05
MICE 5	.989	***	.996	***	.056	***	30.421	556, 8, p<.05
FIML	*Unable to calculate because of N = 0*							

Key = *** Excellent fit ** Good fit * Adequate fit (Kenny 2014)

Appendix 4.8.2. Best invariance model (most time invariant model with good fit statistics)	
Psychosocial Strain – Control Dimension	
Listwise deletion	
MICE 1	6 Wave Full Invariance
MICE 2	6 Wave Full Invariance
MICE 3	6 Wave Full Invariance
MICE 4	6 Wave Full Invariance
MICE 5	6 Wave Full Invariance
FIML	

Appendix 4.8.3: Standardised factor item loadings for competing invariance models (with fixed loadings over different spans of time) – Psychosocial Strain - Control

	6 Wave Model Factor Loadings (Best fitting model)							3+3 Wave Model Factor Loadings (Best fitting model)						
Factor Loadings	**LW Full**	**Imp1 Full**	**Imp2 Full**	**Imp3 Full**	**Imp4 Full**	**Imp5 Full**	**FIML Full**	**LW Full**	**Imp1 Full**	**Imp2 Full**	**Imp3 Full**	**Imp4 Full**	**Imp5 Full**	**FIML Full**
psy_dealprob		.841	.828	.828	.820	.822			0.841	0.828	0.829	0.821	0.819	
psy_think		.862	.874	.882	.887	.876			0.859	0.868	0.873	0.88	0.867	
psy_sact		.739	.740	.747	.749	.753			0.738	0.737	0.743	0.749	0.752	
psy_optim		.452	.436	.441	.452	.431			0.475	0.467	0.467	0.477	0.454	
psy_dealprob									0.839	0.829	0.83	0.823	0.829	
psy_think									0.867	0.878	0.887	0.89	0.879	
psy_sact									0.74	0.742	0.752	0.75	0.757	
psy_optim									0.427	0.401	0.413	0.424	0.405	

	2+2+2 Wave Model Factor Loadings (Best fitting model)							1+1+1+1+1+1 Wave Model Factor Loadings (Configural Model)						
Factor Loadings	**LW Full**	**Imp1 Full**	**Imp2 Full**	**Imp3 Full**	**Imp4 Full**	**Imp5 Full**	**FIML Full**	**LW Conf**	**Imp1 Conf**	**Imp2 Conf**	**Imp3 Conf**	**Imp4 Conf**	**Imp5 Conf**	**FIML Conf**
psy_dealprob		0.844	0.833	0.832	0.823	0.818			0.852	0.846	0.839	0.833	0.837	
psy_think		0.859	0.868	0.873	0.882	0.869			0.864	0.872	0.876	0.881	0.877	
psy_sact		0.738	0.739	0.743	0.746	0.748			0.744	0.741	0.744	0.742	0.746	
psy_optim		0.486	0.477	0.479	0.485	0.468			0.498	0.492	0.493	0.494	0.493	
psy_dealprob		0.845	0.833	0.833	0.824	0.823			0.837	0.823	0.825	0.817	0.821	
psy_think		0.865	0.873	0.88	0.885	0.875			0.852	0.859	0.868	0.879	0.878	
psy_sact		0.738	0.74	0.746	0.749	0.752			0.732	0.738	0.742	0.751	0.751	
psy_optim		0.442	0.433	0.433	0.444	0.424			0.475	0.462	0.467	0.477	0.464	
psy_dealprob		0.828	0.817	0.82	0.813	0.828			0.834	0.82	0.823	0.812	0.818	
psy_think		0.865	0.878	0.891	0.894	0.883			0.857	0.863	0.875	0.88	0.881	
psy_sact		0.742	0.743	0.756	0.753	0.76			0.735	0.734	0.745	0.753	0.752	
psy_optim		0.423	0.391	0.408	0.423	0.397			0.451	0.447	0.441	0.458	0.451	
psy_dealprob									0.857	0.85	0.845	0.838	0.842	
psy_think									0.869	0.877	0.882	0.886	0.883	

psy_sact	0.741	0.742	0.745	0.744	0.74
psy_optim	0.432	0.42	0.423	0.428	0.431
psy_dealprob	0.831	0.823	0.824	0.817	0.822
psy_think	0.863	0.874	0.887	0.891	0.885
psy_sact	0.741	0.746	0.759	0.757	0.749
psy_optim	0.437	0.407	0.412	0.436	0.419
psy_dealprob	0.828	0.816	0.817	0.812	0.814
psy_think	0.864	0.873	0.89	0.892	0.877
psy_sact	0.741	0.744	0.756	0.755	0.751
psy_optim	0.411	0.376	0.404	0.409	0.396

Appendix 4.9.1: Invariance testing fit statistics comparisons for 'Life Satisfaction' dimension

	CFI	Fit	TLI	Fit	RMSEA	Fit	WRMR	Fit	$\Delta\chi^2$, df
Configural invariance									
Listwise deletion	*Unable to calculate because of N = 0*								
MICE 1	.988	***	.996	***	.043	***	22.886		
MICE 2	.988	***	.996	***	.042	***	22.752		
MICE 3	.989	***	.996	***	.042	***	22.768		
MICE 4	.988	***	.996	***	.042	***	22.843		
MICE 5	.988	***	.996	***	.042	***	22.675		
FIML	*Unable to calculate because of N = 0*								
6 wave metric invariance									
Listwise deletion	*Unable to calculate because of N = 0*								
MICE 1	.988	***	.997	***	.038	***	23.573		419, 20, p<.05
MICE 2	.988	***	.997	***	.038	***	23.454		427, 20, p<.05
MICE 3	.989	***	.997	***	.038	***	23.530		460, 20, p<.05
MICE 4	.989	***	.997	***	.038	***	23.420		348, 20, p<.05
MICE 5	.989	***	.997	***	.038	***	23.340		401, 20, p<.05
FIML	*Unable to calculate because of N = 0*								
3+3 wave metric invariance									
Listwise deletion	*Unable to calculate because of N = 0*								
MICE 1	.988	***	.997	***	.039	***	23.412		320, 16, p<.05
MICE 2	.988	***	.997	***	.039	***	23.283		322, 16, p<.05
MICE 3	.989	***	.997	***	.039	***	23.299		319, 16, p<.05
MICE 4	.989	***	.997	***	.039	***	23.245		242, 16, p<.05
MICE 5	.989	***	.997	***	.039	***	23.177		301, 16, p<.05
FIML	*Unable to calculate because of N = 0*								
2+2+2 wave metric invariance									

Listwise deletion	*Unable to calculate because of N = 0*							
MICE 1	.988	***	.997	***	.039	***	23.063	108, 12, p<.05
MICE 2	.988	***	.997	***	.039	***	22.949	120, 12, p<.05
MICE 3	.989	***	.997	***	.039	***	22.961	116, 12, p<.05
MICE 4	.989	***	.997	***	.039	***	22.975	80, 12, p<.05
MICE 5	.989	***	.997	***	.039	***	22.851	106, 12, p<.05
FIML	*Unable to calculate because of N = 0*							
6 wave full invariance								
Listwise deletion	*Unable to calculate because of N = 0*							
MICE 1	.988	***	.997	***	.036	***	23.821	320, 16, p<.05
MICE 2	.988	***	.997	***	.036	***	23.713	332, 16, p<.05
MICE 3	.989	***	.997	***	.036	***	23.774	311, 16, p<.05
MICE 4	.989	***	.997	***	.036	***	23.645	284, 16, p<.05
MICE 5	.988	***	.997	***	.036	***	23.646	389, 16, p<.05
FIML	*Unable to calculate because of N = 0*							
3+3 wave full invariance								
Listwise deletion	*Unable to calculate because of N = 0*							
MICE 1	.988	***	.997	***	.037	***	23.645	298, 12, p<.05
MICE 2	.988	***	.997	***	.037	***	23.537	311, 12, p<.05
MICE 3	.989	***	.997	***	.037	***	23.534	296, 12, p<.05
MICE 4	.989	***	.997	***	.037	***	23.457	266, 12, p<.05
MICE 5	.988	***	.997	***	.037	***	23.470	370, 12, p<.05
FIML	*Unable to calculate because of N = 0*							
2+2+2 wave full invariance								
Listwise deletion	*Unable to calculate because of N = 0*							
MICE 1	.988	***	.997	***	.038	***	23.161	124, 8, p<.05
MICE 2	.988	***	.997	***	.038	***	23.071	153, 8, p<.05

MICE 3	.989	***	.997	***	.038	***	23.062	126, 8, p<.05
MICE 4	.989	***	.997	***	.038	***	23.070	118, 8, p<.05
MICE 5	.989	***	.997	***	.038	***	22.980	162, 8, p<.05
FIML	*Unable to calculate because of N = 0*							

Key = *** Excellent fit ** Good fit * Adequate fit (Kenny 2014)

Appendix 4.9.2. Best invariance model (most time invariant model with good fit statistics)
Life Satisfaction Dimension

Listwise deletion	
MICE 1	6 Wave Full Invariance
MICE 2	6 Wave Full Invariance
MICE 3	6 Wave Full Invariance
MICE 4	6 Wave Full Invariance
MICE 5	6 Wave Full Invariance
FIML	

Appendix 4.9.3: Standardised factor item loadings for competing invariance models (with fixed loadings over different spans of time) – Life Satisfaction

	6 Wave Model Factor Loadings (Best fitting model)							3+3 Wave Model Factor Loadings (Best fitting model)						
Factor Loadings	**LW Full**	**Imp1 Full**	**Imp2 Full**	**Imp3 Full**	**Imp4 Full**	**Imp5 Full**	**FIML Full**	**LW Full**	**Imp1 Full**	**Imp2 Full**	**Imp3 Full**	**Imp4 Full**	**Imp5 Full**	**FIML Full**
lsat_health		.630	.628	.638	.639	.631			0.636	0.636	0.647	0.646	0.637	
lsat_income		.716	.717	.731	.732	.717			0.715	0.715	0.729	0.73	0.715	
lsat_leisure		.677	.674	.681	.678	.678			0.682	0.679	0.687	0.682	0.683	
lsat_overall		.838	.838	.839	.839	.842			0.842	0.842	0.843	0.843	0.846	
lsat_health									0.62	0.618	0.625	0.628	0.622	
lsat_income									0.717	0.719	0.732	0.732	0.717	
lsat_leisure									0.67	0.666	0.673	0.671	0.67	
lsat_overall									0.837	0.838	0.838	0.839	0.841	

	2+2+2 Wave Model Factor Loadings (Best fitting model)							1+1+1+1+1+1 Wave Model Factor Loadings (Configural Model)						
Factor Loadings	**LW Full**	**Imp1 Full**	**Imp2 Full**	**Imp3 Full**	**Imp4 Full**	**Imp5 Full**	**FIML Full**	**LW Conf**	**Imp1 Conf**	**Imp2 Conf**	**Imp3 Conf**	**Imp4 Conf**	**Imp5 Conf**	**FIML Conf**
lsat_health		0.64	0.64	0.651	0.65	0.642			0.638	0.639	0.648	0.649	0.639	
lsat_income		0.721	0.721	0.735	0.735	0.721			0.723	0.721	0.732	0.735	0.722	
lsat_leisure		0.691	0.689	0.695	0.69	0.692			0.69	0.687	0.695	0.689	0.692	
lsat_overall		0.846	0.845	0.846	0.845	0.849			0.844	0.843	0.846	0.844	0.849	
lsat_health		0.621	0.619	0.627	0.629	0.621			0.64	0.641	0.653	0.651	0.645	
lsat_income		0.71	0.711	0.727	0.727	0.711			0.72	0.721	0.737	0.734	0.718	
lsat_leisure		0.668	0.667	0.673	0.671	0.672			0.691	0.687	0.693	0.689	0.689	
lsat_overall		0.836	0.836	0.837	0.837	0.84			0.848	0.847	0.849	0.848	0.852	
lsat_health		0.622	0.62	0.629	0.631	0.624			0.625	0.622	0.633	0.634	0.625	
lsat_income		0.718	0.719	0.732	0.733	0.718			0.704	0.705	0.72	0.722	0.706	
lsat_leisure		0.663	0.659	0.667	0.664	0.664			0.656	0.657	0.664	0.663	0.662	
lsat_overall		0.834	0.834	0.835	0.836	0.838			0.833	0.832	0.834	0.834	0.838	
lsat_health									0.615	0.614	0.619	0.622	0.617	
lsat_income									0.717	0.72	0.735	0.732	0.718	

lsat_leisure	0.679	0.675	0.68	0.678	0.679
lsat_overall	0.841	0.841	0.842	0.841	0.846
lsat_health	0.618	0.615	0.624	0.626	0.621
lsat_income	0.708	0.71	0.721	0.725	0.709
lsat_leisure	0.662	0.658	0.661	0.663	0.66
lsat_overall	0.841	0.842	0.842	0.842	0.847
lsat_health	0.622	0.622	0.629	0.631	0.626
lsat_income	0.731	0.732	0.745	0.745	0.728
lsat_leisure	0.665	0.658	0.67	0.665	0.664
lsat_overall	0.828	0.827	0.831	0.83	0.832

Appendix 4.10.1: Invariance testing fit statistics comparisons for 'Environment (Local Services)' dimension

	CFI	Fit	TLI	Fit	RMSEA	Fit	WRMR	Fit	$\Delta\chi^2$, df
Configural invariance									
Listwise deletion	*Unable to calculate because of N = 0*								
MICE 1	.991	***	.994	***	.028	***	11.175		
MICE 2	.992	***	.995	***	.027	***	10.634		
MICE 3	.991	***	.995	***	.027	***	10.885		
MICE 4	.992	***	.995	***	.027	***	10.818		
MICE 5	.991	***	.995	***	.027	***	10.874		
FIML	*Unable to calculate because of N = 0*								
6 wave metric invariance									
Listwise deletion	*Unable to calculate because of N = 0*								
MICE 1	.990	***	.995	***	.025	***	12.359		360, 20, p<.05
MICE 2	.991	***	.996	***	.024	***	11.906		370, 20, p<.05
MICE 3	.991	***	.996	***	.024	***	12.052		346, 20, p<.05
MICE 4	.991	***	.996	***	.024	***	11.915		322, 20, p<.05
MICE 5	.990	***	.996	***	.025	***	12.226		404, 20, p<.05
FIML	*Unable to calculate because of N = 0*								
3+3 wave metric invariance									
Listwise deletion	*Unable to calculate because of N = 0*								
MICE 1	.991	***	.996	***	.025	***	11.828		194, 16, p<.05
MICE 2	.992	***	.996	***	.024	***	11.289		186, 16, p<.05
MICE 3	.991	***	.996	***	.024	***	11.568		198, 16, p<.05
MICE 4	.992	***	.996	***	.024	***	11.453		183, 16, p<.05
MICE 5	.991	***	.996	***	.025	***	11.718		247, 16, p<.05
FIML	*Unable to calculate because of N = 0*								
2+2+2 wave metric invariance									

Listwise deletion	*Unable to calculate because of N = 0*							
MICE 1	.991	***	.995	***	.025	***	11.425	73, 12, p<.05
MICE 2	.992	***	.996	***	.024	***	10.906	76, 12, p<.05
MICE 3	.992	***	.996	***	.024	***	11.124	68, 12, p<.05
MICE 4	.992	***	.996	***	.024	***	11.095	79, 12, p<.05
MICE 5	.992	***	.996	***	.024	***	11.215	98, 12, p<.05
FIML	*Unable to calculate because of N = 0*							
6 wave full invariance								
Listwise deletion	*Unable to calculate because of N = 0*							
MICE 1	.989	***	.996	***	.025	***	13.528	549, 16, p<.05
MICE 2	.990	***	.996	***	.024	***	13.027	506, 16, p<.05
MICE 3	.989	***	.996	***	.024	***	13.283	565, 16, p<.05
MICE 4	.989	***	.996	***	.024	***	13.248	608, 16, p<.05
MICE 5	.988	***	.996	***	.025	***	13.623	654, 16, p<.05
FIML	*Unable to calculate because of N = 0*							
3+3 wave full invariance								
Listwise deletion	*Unable to calculate because of N = 0*							
MICE 1	.990	***	.996	***	.024	***	12.557	322, 12, p<.05
MICE 2	.991	***	.996	***	.023	***	11.975	289, 12, p<.05
MICE 3	.990	***	.996	***	.024	***	12.341	335, 12, p<.05
MICE 4	.991	***	.996	***	.023	***	12.250	342, 12, p<.05
MICE 5	.990	***	.996	***	.024	***	12.566	372, 12, p<.05
FIML	*Unable to calculate because of N = 0*							
2+2+2 wave full invariance								
Listwise deletion	*Unable to calculate because of N = 0*							
MICE 1	.991	***	.996	***	.024	***	11.846	177, 8, p<.05
MICE 2	.992	***	.996	***	.023	***	11.237	132, 8, p<.05

MICE 3	.992	***	.996	***	.023	***	11.437	127, 8, p<.05
MICE 4	.992	***	.996	***	.023	***	11.490	161, 8, p<.05
MICE 5	.991	***	.996	***	.024	***	11.548	137, 8, p<.05
FIML	*Unable to calculate because of N = 0*							

Key = *** Excellent fit ** Good fit * Adequate fit (Kenny 2014)

Appendix 4.10.2. Best invariance model (most time invariant model with good fit statistics)	
Environment – Local Services Dimension	
Listwise deletion	
MICE 1	6 Wave Full Invariance
MICE 2	6 Wave Full Invariance
MICE 3	6 Wave Full Invariance
MICE 4	6 Wave Full Invariance
MICE 5	6 Wave Full Invariance
FIML	

Appendix 4.10.3: Standardised factor item loadings for competing invariance models (with fixed loadings over different spans of time) – Environment – Local Services

	6 Wave Model Factor Loadings (Best fitting model)							3+3 Wave Model Factor Loadings (Best fitting model)						
Factor Loadings	**LW Full**	**Imp1 Full**	**Imp2 Full**	**Imp3 Full**	**Imp4 Full**	**Imp5 Full**	**FIML Full**	**LW Full**	**Imp1 Full**	**Imp2 Full**	**Imp3 Full**	**Imp4 Full**	**Imp5 Full**	**FIML Full**
locale_med		.434	.436	.431	.435	.432			0.426	0.427	0.426	0.429	0.425	
locale_shops		.820	.826	.825	.824	.819			0.82	0.827	0.825	0.826	0.821	
locale_leis		.664	.662	.661	.664	.664			0.65	0.649	0.648	0.652	0.651	
locale_transp		.380	.383	.382	.384	.380			0.372	0.373	0.375	0.375	0.371	
locale_med									0.442	0.445	0.438	0.442	0.439	
locale_shops									0.816	0.822	0.819	0.82	0.815	
locale_leis									0.683	0.679	0.679	0.679	0.681	
locale_transp									0.388	0.395	0.392	0.395	0.39	

	2+2+2 Wave Model Factor Loadings (Best fitting model)							1+1+1+1+1+1 Wave Model Factor Loadings (Configural Model)						
Factor Loadings	**LW Full**	**Imp1 Full**	**Imp2 Full**	**Imp3 Full**	**Imp4 Full**	**Imp5 Full**	**FIML Full**	**LW Conf**	**Imp1 Conf**	**Imp2 Conf**	**Imp3 Conf**	**Imp4 Conf**	**Imp5 Conf**	**FIML Conf**
locale_med		0.422	0.424	0.422	0.426	0.419			0.418	0.424	0.422	0.421	0.422	
locale_shops		0.82	0.831	0.828	0.828	0.821			0.823	0.832	0.828	0.826	0.825	
locale_leis		0.645	0.641	0.64	0.645	0.644			0.639	0.644	0.64	0.642	0.642	
locale_transp		0.362	0.362	0.364	0.362	0.357			0.355	0.357	0.363	0.353	0.349	
locale_med		0.438	0.438	0.433	0.437	0.438			0.424	0.423	0.42	0.428	0.413	
locale_shops		0.813	0.821	0.818	0.821	0.813			0.817	0.824	0.825	0.826	0.821	
locale_leis		0.669	0.667	0.665	0.668	0.671			0.652	0.644	0.645	0.654	0.646	
locale_transp		0.386	0.392	0.389	0.391	0.388			0.369	0.368	0.366	0.371	0.365	
locale_med		0.448	0.451	0.444	0.447	0.443			0.439	0.437	0.437	0.437	0.439	
locale_shops		0.811	0.819	0.817	0.817	0.81			0.809	0.815	0.813	0.815	0.813	
locale_leis		0.692	0.687	0.686	0.684	0.69			0.668	0.667	0.667	0.669	0.669	
locale_transp		0.395	0.4	0.399	0.401	0.398			0.396	0.396	0.398	0.4	0.4	
locale_med									0.433	0.436	0.426	0.433	0.433	

locale_shops	0.818	0.825	0.82	0.824	0.817
locale_leis	0.667	0.666	0.665	0.669	0.667
locale_transp	0.375	0.386	0.379	0.383	0.375
locale_med	0.435	0.437	0.429	0.431	0.428
locale_shops	0.816	0.821	0.82	0.818	0.816
locale_leis	0.678	0.671	0.673	0.671	0.671
locale_transp	0.383	0.389	0.391	0.395	0.385
locale_med	0.454	0.458	0.452	0.455	0.452
locale_shops	0.807	0.813	0.809	0.811	0.808
locale_leis	0.707	0.706	0.708	0.704	0.708
locale_transp	0.406	0.409	0.405	0.406	0.408

Appendix 4.11.1: Invariance testing fit statistics comparisons for 'Psychosocial Strain' Second Order dimension

	CFI	Fit	TLI	Fit	RMSEA	Fit	WRMR	Fit	$\Delta\chi^2$, df
Configural invariance									
Listwise deletion	*Unable to calculate because of N = 0*								
MICE 1	.944		.957	***	.080	*	40.571		
MICE 2	.943		.956	***	.081		41.057		
MICE 3	.941		.954	***	.084		42.630		
MICE 4	.941		.955	***	.083		42.184		
MICE 5	.943		.956	***	.080	*	40.740		
FIML	*Unable to calculate because of N = 0*								
6 wave metric invariance									
Listwise deletion	*Unable to calculate because of N = 0*								
MICE 1	.976	***	.982	***	.052	***	41.157		513, 17, p<.05
MICE 2	.975	***	.981	***	.053	***	41.604		488, 17, p<.05
MICE 3	.974	***	.980	***	.055	***	43.126		463, 17, p<.05
MICE 4	.974	***	.980	***	.055	***	42.747		525, 17, p<.05
MICE 5	.975	***	.981	***	.053	***	41.229		438, 17, p<.05
FIML	*Unable to calculate because of N = 0*								
3+3 wave metric invariance									
Listwise deletion	*Unable to calculate because of N = 0*								
MICE 1	.973	***	.980	***	.055	***	41.130		496, 14, p<.05
MICE 2	.973	***	.979	***	.055	***	41.572		466, 14, p<.05
MICE 3	.971	***	.978	***	.057	***	43.101		446, 14, p<.05
MICE 4	.972	***	.978	***	.057	***	42.707		494, 14, p<.05
MICE 5	.972	***	.979	***	.055	***	41.219		435, 14, p<.05
FIML	*Unable to calculate because of N = 0*								
2+2+2 wave metric invariance									

Listwise deletion	*Unable to calculate because of N = 0*							
MICE 1	.970	***	.978	***	.058	***	41.040	426, 11, p<.05
MICE 2	.970	***	.977	***	.058	***	41.482	393, 11, p<.05
MICE 3	.968	***	.976	***	.061	***	43.026	383, 11, p<.05
MICE 4	.968	***	.976	***	.060	**	42.619	421, 11, p<.05
MICE 5	.969	***	.977	***	.058	***	41.156	386, 11, p<.05
FIML	*Unable to calculate because of N = 0*							
6 wave full invariance								
Listwise deletion	*Unable to calculate because of N = 0*							
MICE 1	.977	***	.983	***	.051	***	41.579	915, 12, p<.05
MICE 2	.976	***	.982	***	.051	***	41.992	856, 12, p<.05
MICE 3	.975	***	.981	***	.053	***	43.558	979, 12, p<.05
MICE 4	.975	***	.981	***	.053	***	43.273	1185, 12, p<.05
MICE 5	.976	***	.982	***	.051	***	41.753	1141, 12, p<.05
FIML	*Unable to calculate because of N = 0*							
3+3 wave full invariance								
Listwise deletion	*Unable to calculate because of N = 0*							
MICE 1	.975	***	.981	***	.053	***	41.391	564, 9, p<.05
MICE 2	.974	***	.981	***	.054	***	41.825	556, 9, p<.05
MICE 3	.973	***	.980	***	.056	***	43.412	704, 9, p<.05
MICE 4	.973	***	.980	***	.056	***	43.089	859, 9, p<.05
MICE 5	.973	***	.980	***	.054	***	41.650	936, 9, p<.05
FIML	*Unable to calculate because of N = 0*							
2+2+2 wave full invariance								
Listwise deletion	*Unable to calculate because of N = 0*							
MICE 1	.972	***	.979	***	.056	***	41.065	56, 6, p<.05
MICE 2	.971	***	.978	***	.057	***	41.511	63, 6, p<.05

MICE 3	.970	***	.977	***	.059	***	43.067	95, 6, p<.05
MICE 4	.970	***	.977	***	.059	***	42.664	101, 6, p<.05
MICE 5	.971	***	.978	***	.057	***	41.235	172, 6, p<.05
FIML	*Unable to calculate because of N = 0*							

Key = *** Excellent fit ** Good fit * Adequate fit (Kenny 2014)

Appendix 4.11.2. Best invariance model (most time invariant model with good fit statistics) **Second order psychosocial strain dimension**	
Listwise deletion	
MICE 1	6 Wave Full Invariance
MICE 2	6 Wave Full Invariance
MICE 3	6 Wave Full Invariance
MICE 4	6 Wave Full Invariance
MICE 5	6 Wave Full Invariance
FIML	

Appendix 4.11.3: Standardised factor item loadings for competing invariance models (with fixed loadings over different spans of time) – Psychosocial Strain

	6 Wave Model Factor Loadings (Best fitting model)							3+3 Wave Model Factor Loadings (Best fitting model)						
Factor Loadings	**LW Full**	**Imp1 Full**	**Imp2 Full**	**Imp3 Full**	**Imp4 Full**	**Imp5 Full**	**FIML Full**	**LW Full**	**Imp1 Full**	**Imp2 Full**	**Imp3 Full**	**Imp4 Full**	**Imp5 Full**	**FIML Full**
psycn		.822	.820	.823	.811	.800			.825	.823	.825	.815	.801	
psyad		1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	
psysd		.744	.743	.738	.737	.743			.743	.741	.739	.735	.741	
psycn									.818	.816	.820	.807	.799	
psyad									1.00	1.00	1.00	1.00	1.00	
psysd									.747	.745	.739	.739	.745	

	2+2+2 Wave Model Factor Loadings (Best fitting model)							1+1+1+1+1+1 Wave Model Factor Loadings (Configural Model)						
Factor Loadings	**LW Full**	**Imp1 Full**	**Imp2 Full**	**Imp3 Full**	**Imp4 Full**	**Imp5 Full**	**FIML Full**	**LW Conf**	**Imp1 Conf**	**Imp2 Conf**	**Imp3 Conf**	**Imp4 Conf**	**Imp5 Conf**	**FIML Conf**
psycn		0.828	0.826	0.827	0.818	0.804			0.833	0.833	0.829	0.819	0.807	
psyad		1	1	1	1	1			1	1	1	1	1	
psysd		0.743	0.741	0.738	0.736	0.741			0.719	0.719	0.716	0.713	0.72	
psycn		0.825	0.824	0.826	0.815	0.803			0.822	0.82	0.823	0.812	0.793	
psyad		1	1	1	1	1			1	1	1	1	1	
psysd		0.744	0.743	0.741	0.739	0.744			0.765	0.761	0.758	0.757	0.761	
psycn		0.81	0.808	0.814	0.799	0.791			0.817	0.817	0.819	0.806	0.79	
psyad		1	1	1	1	1			1	1	1	1	1	
psysd		0.746	0.744	0.736	0.737	0.743			0.743	0.742	0.738	0.736	0.742	
psycn									0.839	0.834	0.841	0.837	0.836	
psyad									1	1	1	1	1	
psysd									0.742	0.741	0.742	0.739	0.742	
psycn									0.813	0.814	0.814	0.801	0.79	

psyad	1	1	1	1	1
psysd	0.76	0.758	0.75	0.752	0.757
psycn	0.804	0.802	0.809	0.79	0.781
psyad	1	1	1	1	1
psysd	0.735	0.734	0.724	0.725	0.733

Appendix 4.12.1: Invariance testing fit statistics comparisons for 'Financial Pressure' Second Order dimension

	CFI	Fit	TLI	Fit	RMSEA	Fit	WRMR	Fit	$\Delta\chi^2$, df
Configural invariance									
Listwise deletion	*Unable to calculate because of N = 0*								
MICE 1	.962	**	.964	***	.040	***	23.756		
MICE 2	.962	**	.964	***	.040	***	23.810		
MICE 3	.961	**	.963	***	.040	***	23.998		
MICE 4	.962	**	.964	***	.040	***	23.723		
MICE 5	.961	**	.964	***	.040	***	23.833		
FIML	*Unable to calculate because of N = 0*								
6 wave metric invariance									
Listwise deletion	*Unable to calculate because of N = 0*								
MICE 1	.968	**	.970	***	.036	***	22.887		101, 10, p<.05
MICE 2	.968	**	.970	***	.036	***	22.948		89, 10, p<.05
MICE 3	.968	**	.970	***	.037	***	23.192		83, 10, p<.05
MICE 4	.969	**	.970	***	.036	***	22.855		88, 10, p<.05
MICE 5	.969	**	.970	***	.036	***	22.908		55, 10, p<.05
FIML	*Unable to calculate because of N = 0*								
3+3 wave metric invariance									
Listwise deletion	*Unable to calculate because of N = 0*								
MICE 1	.968	***	.969	***	.036	***	22.853		50, 8, p<.05
MICE 2	.968	***	.969	***	.037	***	22.912		36, 8, p<.05
MICE 3	.967	***	.969	***	.037	***	23.151		20, 8, p<.05
MICE 4	.968	***	.970	***	.036	***	22.813		26, 8, p<.05
MICE 5	.968	***	.969	***	.036	***	23.540		23, 8, p<.05
FIML	*Unable to calculate because of N = 0*								
2+2+2 wave metric invariance									

Listwise deletion	*Unable to calculate because of N = 0*							
MICE 1	.967	***	.968	***	.037	***	22.843	35, 6, p<.05
MICE 2	.967	***	.968	***	.037	***	22.909	32, 6, p<.05
MICE 3	.966	***	.968	***	.038	***	23.156	29, 6, p<.05
MICE 4	.967	***	.969	***	.037	***	22.816	30, 6, p<.05
MICE 5	.967	***	.969	***	.037	***	22.885	21, 6, p<.05
FIML	*Unable to calculate because of N = 0*							
6 wave full invariance								
Listwise deletion	*Unable to calculate because of N = 0*							
MICE 1	.968	***	.970	***	.036	***	23.180	1108, 12, p<.05
MICE 2	.968	***	.970	***	.036	***	23.235	1088, 12, p<.05
MICE 3	.968	***	.970	***	.036	***	23.441	951, 12, p<.05
MICE 4	.968	***	.970	***	.036	***	23.146	1098, 12, p<.05
MICE 5	.968	***	.970	***	.036	***	23.217	1168, 12, p<.05
FIML	*Unable to calculate because of N = 0*							
3+3 wave full invariance								
Listwise deletion	*Unable to calculate because of N = 0*							
MICE 1	.968	***	.970	***	.036	***	22.930	289, 9, p<.05
MICE 2	.968	***	.970	***	.036	***	22.986	279, 9, p<.05
MICE 3	.967	***	.969	***	.037	***	23.209	224, 9, p<.05
MICE 4	.968	***	.970	***	.036	***	22.886	278, 9, p<.05
MICE 5	.968	***	.970	***	.036	***	22.971	322, 9, p<.05
FIML	*Unable to calculate because of N = 0*							
2+2+2 wave full invariance								
Listwise deletion	*Unable to calculate because of N = 0*							
MICE 1	.967	***	.969	***	.037	***	22.879	136, 6, p<.05
MICE 2	.967	***	.969	***	.037	***	22.941	123, 6, p<.05

MICE 3	.966	***	.968	***	.037	***	23.187	116, 6, p<.05
MICE 4	.967	***	.969	***	.037	***	22.851	133, 6, p<.05
MICE 5	.967	***	.969	***	.037	***	22.923	145, 6, p<.05
FIML	*Unable to calculate because of N = 0*							

Key = *** Excellent fit ** Good fit * Adequate fit (Kenny 2014)

Appendix 4.12.2. Best invariance model (most time invariant model with good fit statistics)	
Financial Pressure Second Order Dimension	
Listwise deletion	
MICE 1	6 Wave Full Invariance
MICE 2	6 Wave Full Invariance
MICE 3	6 Wave Full Invariance
MICE 4	6 Wave Full Invariance
MICE 5	6 Wave Full Invariance
FIML	

Appendix 4.12.3: Standardised factor item loadings for competing invariance models (with fixed loadings over different spans of time) – Financial Pressure														
	6 Wave Model Factor Loadings (Best fitting model)							3+3 Wave Model Factor Loadings (Best fitting model)						
Factor Loadings	**LW**	**Imp1**	**Imp2**	**Imp3**	**Imp4**	**Imp5**	**FIML**	**LW**	**Imp1**	**Imp2**	**Imp3**	**Imp4**	**Imp5**	**FIML**
	Full	**Full**	**Full**	**Full**	**Full**	**Full**	**Full**	**Full**	**Full**	**Full**	**Full**	**Full**	**Full**	**Full**
finstr		.999	.999	.999	.999	.999			0.999	0.999	0.999	0.999	0.999	
matdep1 (consumption)		.880	.883	.879	.880	.882			0.884	0.888	0.882	0.885	0.885	
matdep2 (commodities)		.554	.555	.560	.557	.555			0.559	0.558	0.561	0.559	0.558	
finstr									0.999	0.999	0.999	0.999	0.999	
matdep1 (consumption)									0.875	0.879	0.87	0.875	0.878	
matdep2 (commodities)									0.547	0.552	0.559	0.553	0.551	

	2+2+2 Wave Model Factor Loadings (Best fitting model)							1+1+1+1+1+1 Wave Model Factor Loadings (Configural Model)						
Factor Loadings	**LW**	**Imp1**	**Imp2**	**Imp3**	**Imp4**	**Imp5**	**FIML**	**LW**	**Imp1**	**Imp2**	**Imp3**	**Imp4**	**Imp5**	**FIML**
	Full	**Full**	**Full**	**Full**	**Full**	**Full**	**Full**	**Conf**	**Conf**	**Conf**	**Conf**	**Conf**	**Conf**	**Conf**
finstr		0.999	0.999	0.999	0.999	0.999			0.999	0.999	0.999	0.999	0.999	
matdep1 (consumption)		0.885	0.889	0.881	0.885	0.885			0.894	0.897	0.891	0.894	0.894	
matdep2 (commodities)		0.563	0.563	0.566	0.564	0.563			0.569	0.571	0.572	0.571	0.57	
finstr		0.999	0.999	0.999	0.999	0.999			0.999	0.999	0.999	0.999	0.999	
matdep1 (consumption)		0.878	0.882	0.875	0.878	0.881			0.884	0.887	0.881	0.885	0.885	
matdep2 (commodities)		0.553	0.552	0.558	0.555	0.553			0.558	0.558	0.56	0.558	0.557	
finstr		0.999	0.999	0.999	0.999	0.999			0.999	0.999	0.999	0.999	0.999	
matdep1 (consumption)		0.875	0.879	0.87	0.874	0.879			0.878	0.883	0.877	0.881	0.883	
matdep2 (commodities)		0.542	0.55	0.557	0.55	0.547			0.548	0.545	0.552	0.549	0.547	
finstr									0.999	0.999	0.999	0.999	0.999	
matdep1 (consumption)									0.875	0.877	0.869	0.874	0.877	
matdep2 (commodities)									0.554	0.555	0.56	0.557	0.556	
finstr									0.999	0.999	0.999	0.999	0.999	

matdep1 (consumption)	0.874	0.874	0.87	0.871	0.876
matdep2 (commodities)	0.556	0.561	0.561	0.559	0.552
finstr	0.999	0.999	0.999	0.999	0.999
matdep1 (consumption)	0.868	0.874	0.863	0.87	0.872
matdep2 (commodities)	0.528	0.539	0.555	0.543	0.545

Appendix 4.13.1: Invariance testing fit statistics comparisons for third order 'Multidimensional Poverty' factor									
	CFI	**Fit**	**TLI**	**Fit**	**RMSEA**	**Fit**	**WRMR**	**Fit**	**$\Delta\chi^2$, df**
Configural invariance									
Listwise deletion	*Unable to calculate because of N = 0*								
MICE 1	.920		.926	*	.051	***	34.630		
MICE 2	.920		.926	*	.051	***	34.749		
MICE 3	.920		.926	*	.052	***	35.148		
MICE 4	.919		.925	*	.052	***	35.172		
MICE 5	Model not identified								
FIML	*Unable to calculate because of N = 0*								
6 wave metric invariance									
Listwise deletion	*Unable to calculate because of N = 0*								
MICE 1	.939		.944	**	.045	***	34.760		461, 25, p<.05
MICE 2	.939		.944	**	.045	***	34.845		344, 25, p<.05
MICE 3	.939		.944	**	.045	***	35.273		454, 25, p<.05
MICE 4	.938		.943	**	.045	***	35.281		393, 25, p<.05
MICE 5	Model not identified								
FIML	*Unable to calculate because of N = 0*								
3+3 wave metric invariance									
Listwise deletion	*Unable to calculate because of N = 0*								
MICE 1	.937		.942	**	.046	***	34.741		391, 20, p<.05
MICE 2	.936		.941	**	.046	***	34.825		271, 20, p<.05
MICE 3	.936		.941	**	.046	***	35.247		359, 20, p<.05
MICE 4	.936		.941	**	.046	***	35.254		297, 20, p<.05
MICE 5	Model not identified								
FIML	*Unable to calculate because of N = 0*								

2+2+2 wave metric invariance							
Listwise deletion	*Unable to calculate because of N = 0*						
MICE 1	.934	.939	**	.047	***	34.683	187, 15, p<.05
MICE 2	.933	.939	**	.047	***	34.781	113, 15, p<.05
MICE 3	.933	.939	**	.047	***	35.190	156, 15, p<.05
MICE 4	.933	.938	**	.047	***	35.213	148, 15, p<.05
MICE 5	Model not identified						
FIML	*Unable to calculate because of N = 0*						
6 wave full invariance							
Listwise deletion	*Unable to calculate because of N = 0*						
MICE 1	.941	.945	**	.044	***	34.737	
MICE 2	.941	.946	**	.044	***	34.820	
MICE 3	.941	.945	**	.045	***	35.245	
MICE 4	.940	.945	**	.045	***	35.249	
MICE 5	Model not identified						
FIML	*Unable to calculate because of N = 0*						
3+3 wave full invariance							
Listwise deletion	*Unable to calculate because of N = 0*						
MICE 1	.936	.941	**	.046	***	34.662	
MICE 2	.936	.941	**	.046	***	34.747	
MICE 3	.936	.941	**	.046	***	35.175	
MICE 4	.935	.940	**	.046	***	35.172	
MICE 5	Model not identified						
FIML	*Unable to calculate because of N = 0*						
2+2+2 wave full invariance							
Listwise deletion	*Unable to calculate because of N = 0*						
MICE 1	.934	.939	**	.047	***	34.493	

MICE 2	.933	.938	**	.047	***	34.597
MICE 3	.934	.939	**	.047	***	35.004
MICE 4	.934	.939	**	.047	***	35.010
MICE 5	Model not identified					
FIML	*Unable to calculate because of N = 0*					

Key = *** Excellent fit ** Good fit * Adequate fit (Kenny 2014)

Appendix 4.13.2. Best invariance model (most time invariant model with good fit statistics)
Multidimensional Poverty

Listwise deletion	
MICE 1	6 Wave Full Invariance
MICE 2	6 Wave Full Invariance
MICE 3	6 Wave Full Invariance
MICE 4	6 Wave Full Invariance
MICE 5	Would not converge
FIML	

Appendix 4.13.3. Standardised factor item loadings for competing invariance models (with fixed loadings over different spans of time) – Multidimensional Poverty

	6 Wave Model Factor Loadings (Best fitting model)							3+3 Wave Model Factor Loadings (Best fitting model)						
Factor Loadings	**LW Full**	**Imp1 Full**	**Imp2 Full**	**Imp3 Full**	**Imp4 Full**	**Imp5 Full**	**FIML Full**	**LW Full**	**Imp1 Full**	**Imp2 Full**	**Imp3 Full**	**Imp4 Full**	**Imp5 Full**	**FIML Full**
finstr (financial strain)		.954	.956	.945	.938				.953	.956	.945	.937		
matdep1 (consumption)		.662	.671	.665	.667				.672	.680	.676	.678		
matdep2 (commodities)		.332	.338	.336	.333				.335	.340	.336	.333		
psyst (psychosocial strain)		.573	.569	.576	.576				.569	.567	.575	.575		
lsat (life satisfaction)		.875	.872	.877	.876				.877	.875	.880	.879		
finstr (financial strain)									.954	.956	.945	.939		
matdep1 (consumption)									.650	.660	.652	.652		
matdep2 (commodities)									.329	.336	.337	.333		
psyst (psychosocial strain)									.577	.572	.576	.578		
lsat (life satisfaction)									.872	.869	.874	.873		

	2+2+2 Wave Model Factor Loadings (Best fitting model)							1+1+1+1+1+1 Wave Model Factor Loadings (Configural Model)						
Factor Loadings	**LW Full**	**Imp1 Full**	**Imp2 Full**	**Imp3 Full**	**Imp4 Full**	**Imp5 Full**	**FIML Full**	**LW Conf**	**Imp1 Conf**	**Imp2 Conf**	**Imp3 Conf**	**Imp4 Conf**	**Imp5 Conf**	**FIML Conf**
finstr (financial strain)		.954	.956	.945	.938				0.954	0.989	0.946	0.938		
matdep1 (consumption)		.677	.684	.680	.681				0.686	0.692	0.688	0.689		
matdep2 (commodities)		.331	.337	.331	.328				0.324	0.331	0.322	0.321		
psyst (psychosocial strain)		.577	.571	.583	.582				0.561	0.561	0.566	0.565		
lsat (life satisfaction)		.885	.883	.888	.886				0.88	0.875	0.882	0.882		
finstr (financial strain)		.955	.956	.947	.939				0.956	0.99	0.946	0.939		
matdep1 (consumption)		.656	.665	.658	.662				0.675	0.683	0.679	0.679		
matdep2 (commodities)		.347	.349	.347	.344				0.342	0.35	0.345	0.34		
psyst (psychosocial strain)		.567	.566	.573	.574				0.589	0.586	0.595	0.594		
lsat (life satisfaction)		.862	.862	.866	.866				0.883	0.879	0.886	0.884		
finstr (financial strain)		.953	.954	.943	.938				0.954	0.989	0.945	0.936		
matdep1 (consumption)		.646	.657	.651	.648				0.653	0.667	0.66	0.666		
matdep2 (commodities)		.318	.327	.331	.326				0.344	0.348	0.345	0.341		

psyst (psychosocial strain)	.575	.570	.571	.574	0.555	0.558	0.563	0.565
lsat (life satisfaction)	.875	.872	.877	.876	0.861	0.858	0.865	0.866
finstr (financial strain)					0.957	0.99	0.948	0.941
matdep1 (consumption)					0.657	0.664	0.655	0.657
matdep2 (commodities)					0.346	0.349	0.346	0.343
psyst (psychosocial strain)					0.583	0.581	0.586	0.587
lsat (life satisfaction)					0.869	0.864	0.871	0.871
finstr (financial strain)					0.954	0.989	0.944	0.936
matdep1 (consumption)					0.647	0.652	0.646	0.64
matdep2 (commodities)					0.346	0.349	0.349	0.342
psyst (psychosocial strain)					0.58	0.581	0.577	0.585
lsat (life satisfaction)					0.872	0.867	0.872	0.874
finstr (financial strain)					0.951	0.988	0.94	0.936
matdep1 (consumption)					0.639	0.656	0.65	0.65
matdep2 (commodities)					0.287	0.305	0.311	0.305
psyst (psychosocial strain)					0.572	0.565	0.568	0.567
lsat (life satisfaction)					0.877	0.871	0.879	0.878

Appendix 5 Fornell Larcker full including imputations for correlations

Appendix 5.1 Fornell-Larcker Validity Testing for Final Poverty Dimensions

Model fit statistics	Imputation 1	Imputation 2	Imputation 3	Imputation 4	Imputation 5	Mean Fit
CFI:	0.969	0.968	0.968	0.968	0.968	0.968
TLI:	0.971	0.971	0.97	0.97	0.971	0.971
RMSEA:	0.032	0.032	0.033	0.033	0.032	0.032
WRMR:	26.394	26.509	27.055	26.936	26.461	26.671

Correlation estimates		Imputation 1	Imputation 2	Imputation 3	Imputation 4	Imputation 5	Mean R	R-squared	Factor	Factor AVE	Discrim. Valid? From
FINSTR.WITH	MATDEP1:	0.955	0.955	0.947	0.953	0.961	0.954	0.910	FINSTR	0.597	No
FINSTR.WITH	MATDEP2:	0.67	0.67	0.674	0.671	0.676	0.672	0.452	FINSTR	0.597	Yes
FINSTR.WITH	PSYCN:	0.341	0.339	0.338	0.334	0.323	0.335	0.112	FINSTR	0.597	Yes
FINSTR.WITH	PSYSD:	0.251	0.251	0.253	0.252	0.253	0.252	0.064	FINSTR	0.597	Yes
FINSTR.WITH	PSYAD:	0.381	0.377	0.381	0.377	0.381	0.379	0.144	FINSTR	0.597	Yes
FINSTR.WITH	LSAT:	0.62	0.618	0.618	0.612	0.619	0.617	0.381	FINSTR	0.597	Yes
MATDEP1.WITH	FINSTR	0.955	0.955	0.947	0.953	0.961	0.954	0.910	MATDEP1	0.619	No
MATDEP1.WITH	MATDEP2:	0.428	0.432	0.433	0.432	0.429	0.431	0.186	MATDEP1	0.619	Yes
MATDEP1.WITH	PSYCN:	0.261	0.262	0.259	0.257	0.251	0.258	0.067	MATDEP1	0.619	Yes
MATDEP1.WITH	PSYSD:	0.19	0.188	0.19	0.189	0.191	0.190	0.036	MATDEP1	0.619	Yes
MATDEP1.WITH	PSYAD:	0.297	0.298	0.297	0.295	0.298	0.297	0.088	MATDEP1	0.619	Yes
MATDEP1.WITH	LSAT:	0.445	0.454	0.457	0.459	0.448	0.453	0.205	MATDEP1	0.619	Yes
MATDEP2.WITH	FINSTR:	0.67	0.67	0.674	0.671	0.676	0.672	0.452	MATDEP2	0.413	No
MATDEP2.WITH	MATDEP1:	0.428	0.432	0.433	0.432	0.429	0.431	0.186	MATDEP2	0.413	Yes
MATDEP2.WITH	PSYCN:	0.095	0.099	0.098	0.095	0.097	0.097	0.009	MATDEP2	0.413	Yes
MATDEP2.WITH	PSYSD:	0.092	0.095	0.097	0.096	0.094	0.095	0.009	MATDEP2	0.413	Yes

MATDEP2.WITH	PSYAD:	0.083	0.085	0.087	0.083	0.084	0.084	0.007	MATDEP2	0.413	Yes
MATDEP2.WITH	LSAT:	0.143	0.145	0.148	0.146	0.143	0.145	0.021	MATDEP2	0.413	Yes
PSYCN.WITH	FINSTR:	0.341	0.339	0.338	0.334	0.323	0.335	0.112	PSYCN	0.551	Yes
PSYCN.WITH	MATDEP1:	0.261	0.262	0.259	0.257	0.251	0.258	0.067	PSYCN	0.551	Yes
PSYCN.WITH	MATDEP2:	0.095	0.099	0.098	0.095	0.097	0.097	0.009	PSYCN	0.551	Yes
PSYCN.WITH	PSYSD:	0.594	0.588	0.582	0.574	0.575	0.583	0.339	PSYCN	0.551	Yes
PSYCN.WITH	PSYAD:	0.829	0.829	0.834	0.822	0.808	0.824	0.680	PSYCN	0.551	No
PSYCN.WITH	LSAT:	0.548	0.545	0.544	0.537	0.521	0.539	0.291	PSYCN	0.551	Yes
PSYSD.WITH	FINSTR:	0.251	0.251	0.253	0.252	0.253	0.252	0.064	PSYSD	0.552	Yes
PSYSD.WITH	MATDEP1:	0.19	0.188	0.19	0.189	0.191	0.190	0.036	PSYSD	0.552	Yes
PSYSD.WITH	MATDEP2:	0.092	0.095	0.097	0.096	0.094	0.095	0.009	PSYSD	0.552	Yes
PSYSD.WITH	PSYCN:	0.594	0.588	0.582	0.574	0.575	0.583	0.339	PSYSD	0.552	Yes
PSYSD.WITH	PSYAD:	0.754	0.754	0.753	0.751	0.753	0.753	0.567	PSYSD	0.552	No
PSYSD.WITH	LSAT:	0.458	0.457	0.46	0.463	0.459	0.459	0.211	PSYSD	0.552	Yes
PSYAD.WITH	FINSTR:	0.381	0.377	0.381	0.377	0.381	0.379	0.144	PSYAD	0.572	Yes
PSYAD.WITH	MATDEP1:	0.297	0.298	0.297	0.295	0.298	0.297	0.088	PSYAD	0.572	Yes
PSYAD.WITH	MATDEP2:	0.083	0.085	0.087	0.083	0.084	0.084	0.007	PSYAD	0.572	Yes
PSYAD.WITH	PSYCN:	0.829	0.829	0.834	0.822	0.808	0.824	0.680	PSYAD	0.572	No
PSYAD.WITH	PSYSD:	0.754	0.754	0.753	0.751	0.753	0.753	0.567	PSYAD	0.572	Yes
PSYAD.WITH	LSAT:	0.613	0.612	0.614	0.614	0.612	0.613	0.376	PSYAD	0.572	Yes
LSAT.WITH	FINSTR:	0.62	0.618	0.618	0.612	0.619	0.617	0.381	LSAT	0.522	Yes
LSAT.WITH	MATDEP1:	0.445	0.454	0.457	0.459	0.448	0.453	0.205	LSAT	0.522	Yes
LSAT.WITH	MATDEP2:	0.143	0.145	0.148	0.146	0.143	0.145	0.021	LSAT	0.522	Yes
LSAT.WITH	PSYCN:	0.548	0.545	0.544	0.537	0.521	0.539	0.291	LSAT	0.522	Yes

LSAT.WITH	PSYSD:	0.458	0.457	0.46	0.463	0.459	0.459	0.211	LSAT	0.522	Yes
LSAT.WITH	PSYAD:	0.613	0.612	0.614	0.614	0.612	0.613	0.376	LSAT	0.522	Yes