Data Supplements

TABLE 2: Means, standard deviations, skew and kurtosis values for 10-item D-FAW

Well-being scale	Range	Mean	Standard deviation	Skew	Kurtosis
Sample 1 (SE: 0.15 Skew; 0.31 Kurtosis)					
AC (N=253)	5.00	3.81	1.23	-0.57	-.82
AP (N=253)	5.00	3.82	1.05	-0.14	-.39
BE (N=254)	5.00	4.30	1.29	-0.59	-.59
TV (N=251)	5.00	3.70	1.06	-0.02	-.27
DP (N=252)	5.00	4.22	1.10	-0.66	.08
Sample 2 (SE: 0.06 Skew; 0.12 Kurtosis)					
AC (N=1794)	5.00	3.69	1.07	-0.26	-0.34
AP (N=1794)	5.00	3.70	1.03	-0.18	-0.44
BE (N=1794)	5.00	4.04	1.06	-0.48	-0.09
TV (N=1794)	5.00	3.64	1.02	-0.20	-0.44
DP (N=1794)	5.00	3.94	1.07	-0.33	-0.35
Sample 3 (SE: 0.13 Skew; 0.26 Kurtosis)					
AC (N=340)	4.50	4.04	0.95	-0.30	-0.39
AP (N=340)	4.50	4.24	0.87	-0.38	-0.13
BE (N=340)	4.00	4.45	0.88	-0.51	-0.19
TV (N=340)	4.50	3.96	0.90	-0.39	-0.36
DP (N=340)	4.50	4.30	0.96	-0.54	-0.09
Sample 4 (SE: 0.15 Skew; 0.29 Kurtosis)					
AC (n=284/N=36)	5.00	3.99	1.19/0.92	-0.29	-0.49
AP (n=284/ N=36)	5.00	4.39	1.15/0.91	-0.81	0.26
BE (n=284/ N=36)	5.00	4.80	0.80/0.56	-1.11	2.76
TV (n=284/ N=36)	5.00	4.01	1.13/0.86	-0.38	-0.30
DP (n=284/ N=36)	5.00	4.70	1.05/0.76	-1.16	1.45
Sample 5 (SE: 0.10 Skew; 0.20 Kurtosis)					
AC (n=570/N=39)	5.00	4.36	1.09/0.84	0.68	-0.26
AP (n=569/ N=39)	4.50	4.44	0.97/0.73	0.75	0.11
BE (n=570/ N=39)	5.00	4.32	0.97/0.74	-0.44	-0.32
TV (n=571/ N=39)	5.00	3.79	1.06/0.80	-0.06	-0.42
DP (n=570/ N=39)	5.00	4.74	0.98/0.72	-1.04	0.67
Sample 6 (SE: 0.08 Skew; 0.16 Kurtosis)					
AC (n=927/N=98)	5.00	4.48	1.02/0.57	-0.55	-0.03
AP (n=923/ N=98)	4.50	4.71	0.95/0.59	-0.78	0.22
BE (n=921/ N=98)	5.00	4.40	0.96/0.47	-0.51	-0.07
TV (n=925/ N=98)	4.50	3.74	1.01/0.49	-0.19	-0.26
DP (n=922/ N=98)	5.00	4.88	0.90/0.41	-0.93	0.55

Note: n/N given is the minimum overall; all scales are scored in the positive direction so that a high score indicates positive well-being; data from multi-level samples (4, 5 and 6) is provided at level-1; For samples 4-6 standard deviations (SDs) are reported for level-1 and then level-2 data, with level-2 SDs calculated by taking the SD for each individual's set of level-1data and then averaging these across N cases at level-2.

TABLE 3: Bayesian fit and convergent statistics for different models

Model Number	Fit Statistics	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6
1. Single factor Overall Well-being: OWB	PSR PPC DIC Loadings	= 1.01 = p < .01 = 7912.46 +	= 1.02 = p < .01 = 53210.77 +	= 1.01 = p < .01 = 9127.95 +	= 1.02 = p < .01 = 7300.67 +	= 1.01 = p < .01 = 14876.29 ? (17/18)	= 1.02 = p < .01 = 19182.73 +
2. Single factor with response bias factors	PSR PPC DIC Loadings	1.04 = p < .01 = 7746.91 -	= 1.02 = p < .01 = 51474.95 --	**This model would not converge even after increasing convergence criterion from .01 to .05**	= 1.02 = ns (p >.05) = 7173.86 ? (17/18)	**This model would not converge even after increasing convergence criterion from .01 to .05**	**This model would not converge even after increasing convergence criterion from .01 to .05**
3. Two factor NA = AC, AP and DP PA = TV and BE and DP	PSR PPC DIC Loadings	= 1.01 = p < .01 = 7820.04 +	= 1.02 = p < .01 = 52827.49 +	= 1.01 = p < .01 = 9058.48 +	= 1.02 = p < .01 = 7272.7 ? (17/20)	= 1.02 = p < .01 = 14560.64 ? (19/20)	= 1.02 = p < .01 = 19016.07 +
4. Two factor with response bias factors	PSR PPC DIC Loadings	= 1.02 = p > .10 = 7722.45 ? (11/12)	= 1.02 = p < .01 = 51396.77 -	= 1.02 = ns (p > .20) = 8831.59 ? 6/8	= 1.02 = ns (p > .13) = 7162.65 +	= 1.02 = p < .05 = 14397.32 ? (19/20)	= 1.02 = p < .01 = 18893.87 ? (18/20)
5. Discrete first-order factors AC, AP, BE, TV and DP	PSR PPC DIC Loadings	= 1.01 = p < .01 = 7814.21 +	= 1.02 = p < .01 = 52524.69 +	= 1.02 = p < .01 = 9046.34 +	= 1.02 = p < .01 = 7260.04 +	= 1.02 = p < .01 = 14523.66 ? (9/10)	= 1.02 = p < .01 = 19016.07 +
6. Discrete first-order factors with response bias factors	PSR PPC DIC Loadings	= 1.02 = p > .15 = 7726.82 +	= 1.02 = p < .01 = 51416.18 +	= 1.02 = p < .05 = 8845.68 =	= 1.02 = ns (p > .15) = 7145.43 +	= 1.02 = p < .05 = 14394.31 +	= 1.02 = p < .01 = 18875.76 +
7. Discrete first-order factors loading onto one second order factor AC, AP, BE, TV and DP; OWB	PSR PPC DIC Loadings	= 1.02 = p < .01 = 7863.83 +	(C) = 1.08 = p < .01 = 52934.6 +	= 1.02 = p < .01 = 9103.26 +	= 1.02 = p < .01 = 7291.54 +	= 1.02 = p < .01 = 14799.81 ? (19/20)	= 1.02 = p < .01 = 19150.24 +
8.. Discrete first-order factors loading onto one second order	PSR PPC DIC Loadings	= 1.02 = p < .01	= 1.02 = p < .01 = 51403.91 --	= 1.02 = ns (p > .08) = 8842.54	= 1.02 = ns (p >	= 1.02 = p < .01 = 14405.03 -	= 1.02 = p < .01 = 18896.25 --

factor with response bias factors		= 7748.71 ?		+	.11) = 7158.08 ? (8/10)		
9. Discrete first-order factors for PA items and single NA factor BE, TV and DP and NA	PSR PPC DIC Loadings	= 1.01 = p < .01 = 7818.11 +	= 1.02 = p < .01 = 52563.47 +	= 1.01 = p < .01 = 9045.25 +	= 1.02 = p < .01 = 7257.25 +	= 1.02 = p < .01 = 14565.82 ? (11/12)	= 1.02 = p < .01 = 19025.05 +
10. Discrete first-order factors for PA items and single NA factor with response bias factors	PSR PPC DIC Loadings	= 1.02 = p < .05 = 7730.38 ?	**This model would not converge even after increasing convergence criterion from .01 to .05**	**This model would not converge even after increasing convergence criterion from .01 to .05**	= 1.02 = ns (p > .18) = 7147.93 ? (11/12)	= 1.02 = p < .05 = 14398.58 ? (10/12)	= 1.02 = p < .01 = 1888.83 ? (11/12)
11. Discrete first-order factors for NA items and single PA factor AC, AP and DP and PA	PSR PPC DIC Loadings	= 1.02 = p < .01 = 7813.26 +	= 1.02 = p < .01 = 526189.13 +	= 1.01 = p < .01 = 9063.16 +	= 1.02 = p < .01 = 7256.16 ? (11/12)	= 1.02 = p < .01 = 14530.06 +	= 1.02 = p < .01 = 19012.81 +
12. Discrete first-order factors for NA items and single PA factor with response bias factors	PSR PPC DIC Loadings	= 1.02 = ns (p > .48) = 7713.03 ? 5/6	= 1.02 = p < .01 = 51366.50 ? (5/6)	= 1.02 = ns (p > .20) = 8835.52 ? (4/6)	= 1.02 = ns (p > .16) = 7152.49 ? (11/12)	= 1.02 = p < .05 = 14394.78 ? (11/12)	= 1.02 = p < .01 = 18870.16 ?(11/12)
13. Discrete first order factors loading onto two second order factors AC, AP, BE, TV and DP PA (with DP) and NA (with DP)	PSR PPC DIC Loadings	= 1.02 = p < .01 = 7817.48 +	= 1.02 = p < .01 = 52647.37 +	= 1.02 = p < .01 = 9063.79 +	= 1.02 = p < .01 = 7265.95 ? (11/12)	= 1.02 = p < .01 = 14560.95 +	= 1.02 = p < .01 = 19026.07 +
14. Discrete first order factors loading onto two second order factors with response bias factors	PSR PPC DIC Loadings	= 1.02 = ns (p > .05) = 7731.51	= 1.02 = p < .01 = 51407.42 -	= 1.02 = p < .01 = 8850.50 ? (8/9)	= 1.02 = ns (p > .20) = 7146.56 ? (17/18)	= 1.02 = p < .05 = 14399.64 ? (16/18)	= 1.02 = p < .01 = 18902.02 -

KEY: "C" = (next to PSR) indicates convergence criteria increased to get model to run to conclusion; "+" = All substantive loadings (within- and between- if appropriate) in hypothesized direction and p < .05; "?" (n) = All substantive loadings (within- and between- if appropriate) in hypothesized direction and most p < .05 – numbers in brackets is number of sig loadings/number of potential substantive significant loadings; "-" = Some loadings non-significant in opposite direction; "--"

= No loadings significant or some loadings significant in opposite direction. Two response bias factors were fitted– one for positively valenced items and one for negatively valenced items

TABLE 4: Descriptive statistics for 20-item PANAS

Scale	Range	Mean	Standard deviation (level 1/level 2)	Skew	Kurtosis
PANAS PA (n=574/ N=39)	5.00	2.94	.83/.74	-.31	.29
PANAS NA (n=575/ N=39)	3.30	1.29	.42/.69	1.49	3.87

Note: Level-2 standard deviations (SDs) are calculated by taking the SD for each individual's set of level-1data and then averaging these across N=39 cases at level-2.

TABLE 5: Within- and between-person multi-level alpha reliabilities for D-FAW

Scale	Within-person alpha	Between-person alpha	Alpha, estimated through SPSS (within-person)
AC	.55	.46	.67
AP	.59	.78	.55
DP	.59	.76	.66
BE	.49	.43	.59
TV	.50	.24	.31
NA (AC+AP)	.74	.81	.80
PA (BE+TV)	.67	.57	.66
NA + DP	.79*	.87*	.85
PA + DP	.75*	.80*	.80

* Model not identified

TABLE 6: Predicting PANAS factors of AWB with factors of 10-item D-FAW

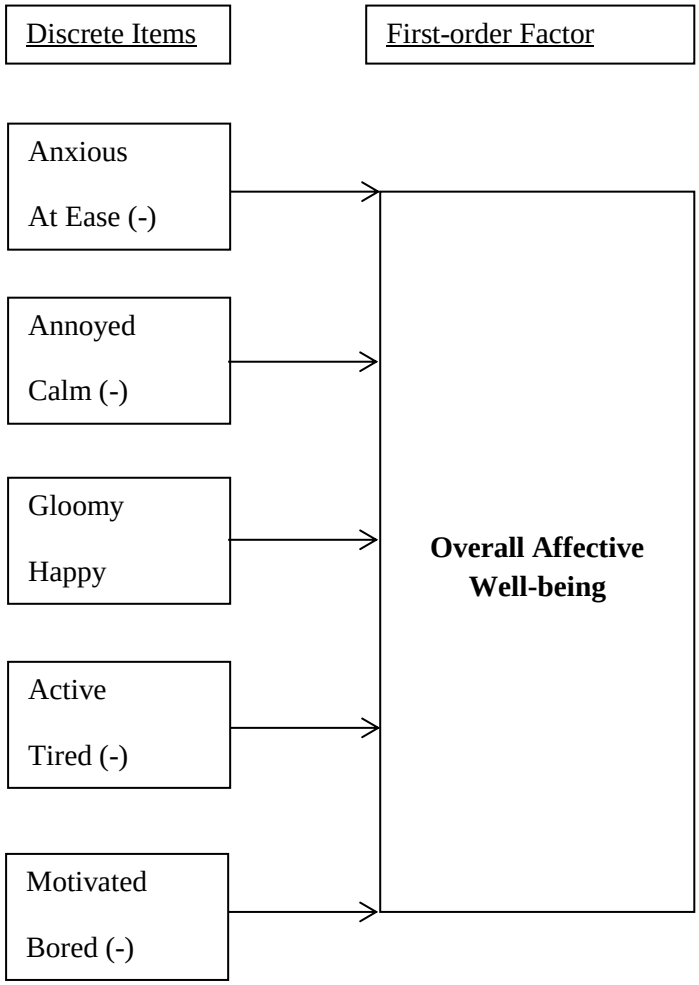
Model 1: Predicting PANAS NA			
Variable	Null (2-level)	Step 1	Step 2
Intercept	.001 (.099)	.044 (.102)	.043 (.102)
Fixed Effects			
AC		.454 (.038)**	.491 (.037)**
AP		.172 (.041)**	.225 (.038)**
DP		-.141 (.039)**	*removed*
Level one variance (within-person)	.670 (.041)**	.301 (.019)**	.309 (.019)**
Level two variance (between-person)	.335 (.087)**	.382 (.092)**	.381 (.092)**
2* log likelihood	1460.538 (N=566)	1024.804 (N=556)	1037.476 (N=556)
Chi-squared difference in model fit		435.74 (3df)**	12.68 (1df)**
		From null	From Step 1

Model 2: Predicting PANAS PA			
Variable	Null (2-level)	Step 1	Step 2
Intercept	.002 (.104)	.035 (.105)	.034 (.105)
Fixed Effects			
BE		.431 (.032)**	.502 (.030)**
TV		.266 (.030)**	.301 (.030)**
DP		.167 (.032)**	*removed*
Level one variance (within-person)	.636 (.039)**	.200 (.012)**	.211 (.013)**
Level two variance (between-person)	.375 (.096)**	.411 (.097)**	.410 (.097)**
2* log likelihood	1437.056 (N=566)	814.532 (N=556)	841.793 (N=556)
Chi-squared difference in model fit		622.524 (3df)**	27.261 (1df)**
		From Null	From Step 1

DP = Daniels' measure of Depression-Pleasure (happy, gloomy: reversed); AC = Daniels' measure of Anxiety-Comfort (anxious, at ease: reversed); AP = Daniels' measure of Angry-Placid (annoyed, calm: reversed). DP = BE = Daniels' measure of Bored-Enthusiastic (motivated, bored: reversed); TV = Daniels' measure of Tired-Vigour (active, tired: reversed). Standard errors are shown in brackets. * = p< .05; ** = p< .01

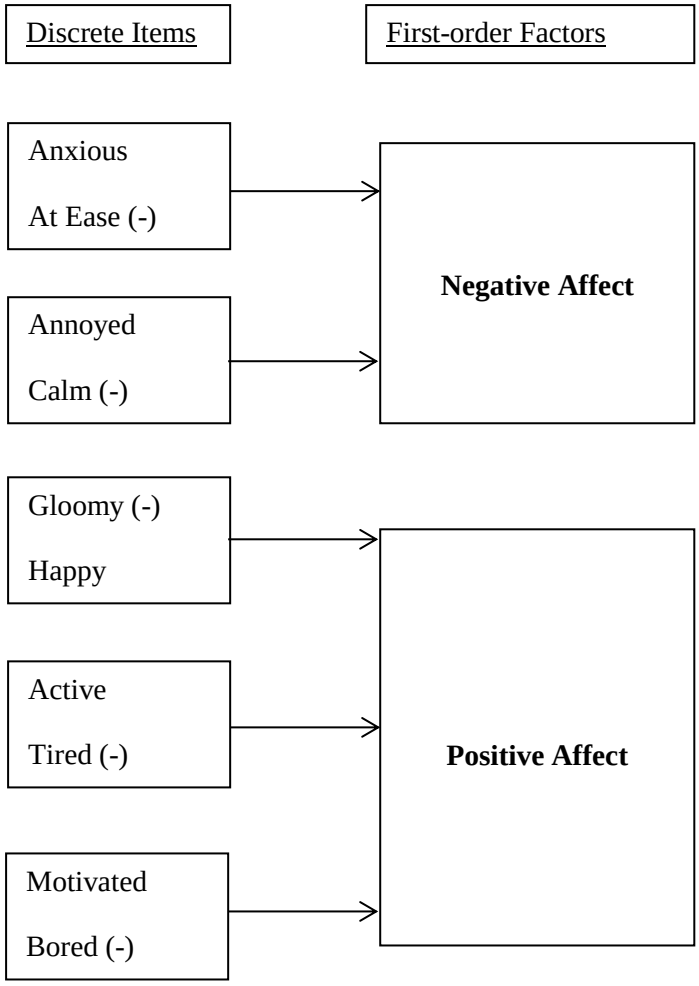
Figures 2a-g**:** Factor structures tested for in 10-item D-FAW (and the models represented)

Figure 2a: The first order single factor structure of D-FAW (Models 1* and 2**)



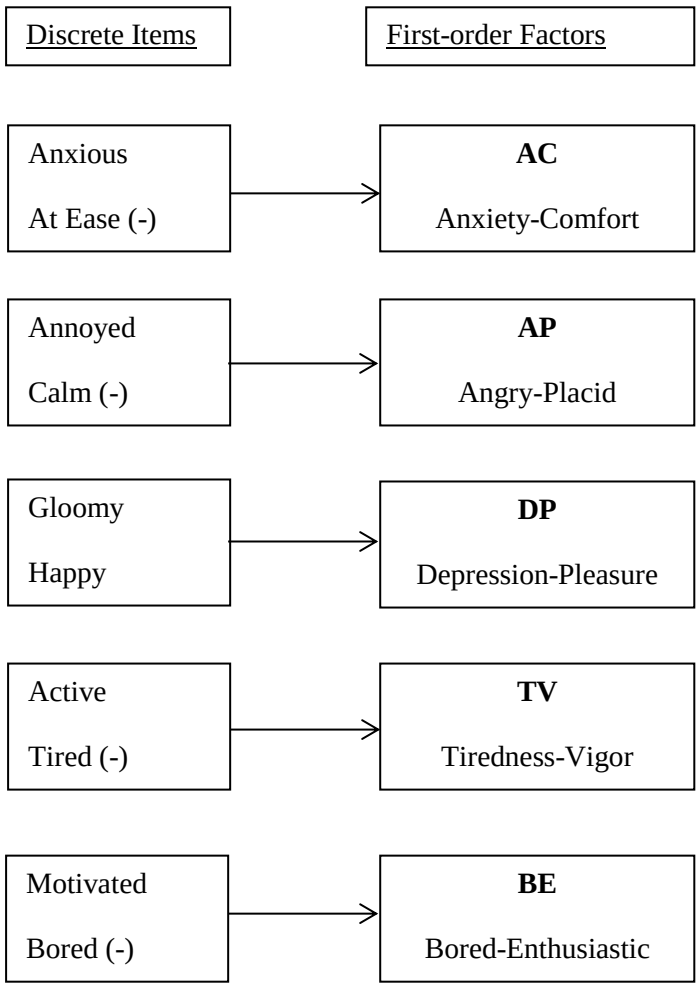
*without response bias factors; **with response bias factors

Figure 2b: The first order two-factor structure of D-FAW (Models 3* and 4**)



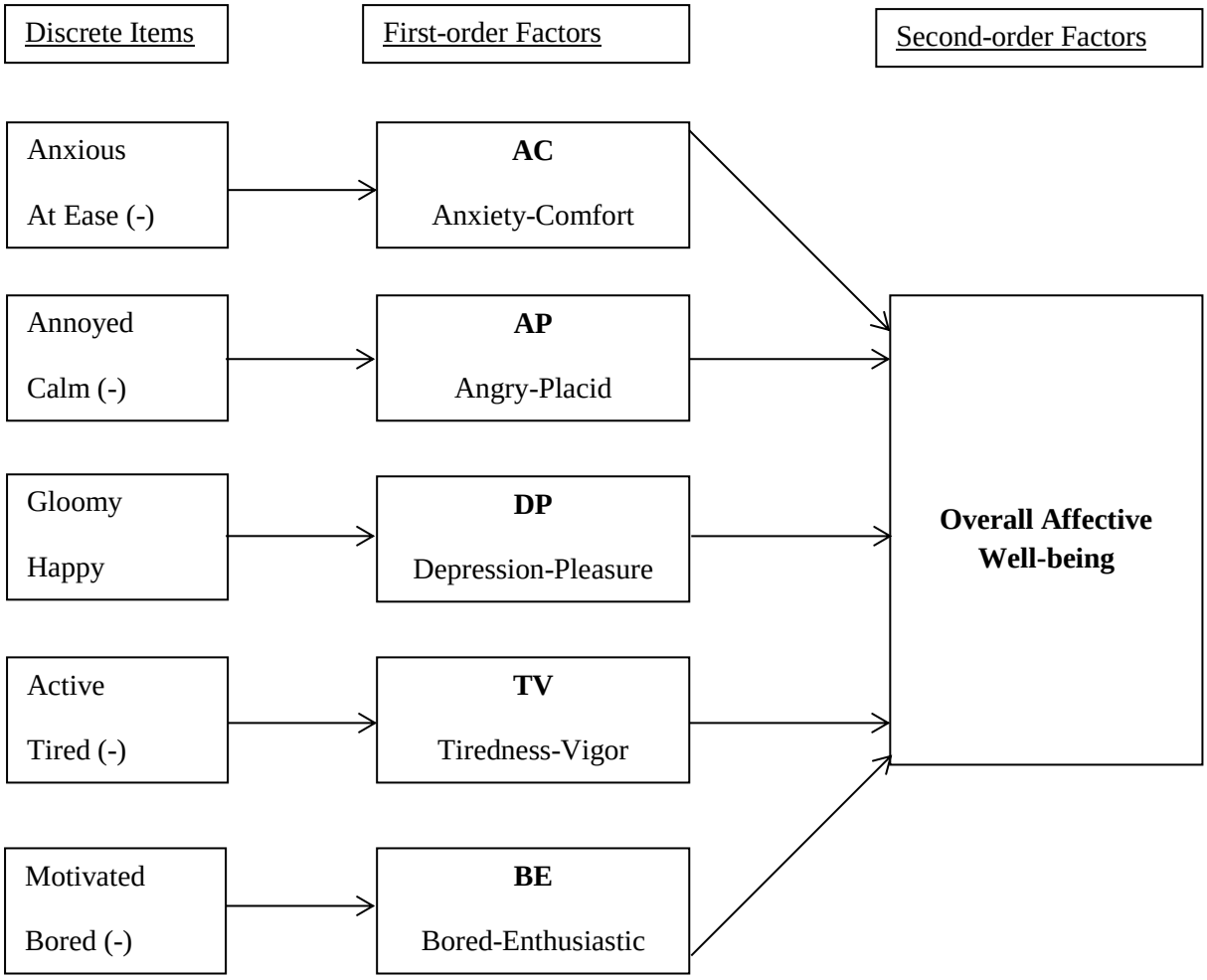
*without response bias factors; **with response bias factors

Figure 2c: The first order five-factor structure of D-FAW (Models 5* and 6**)



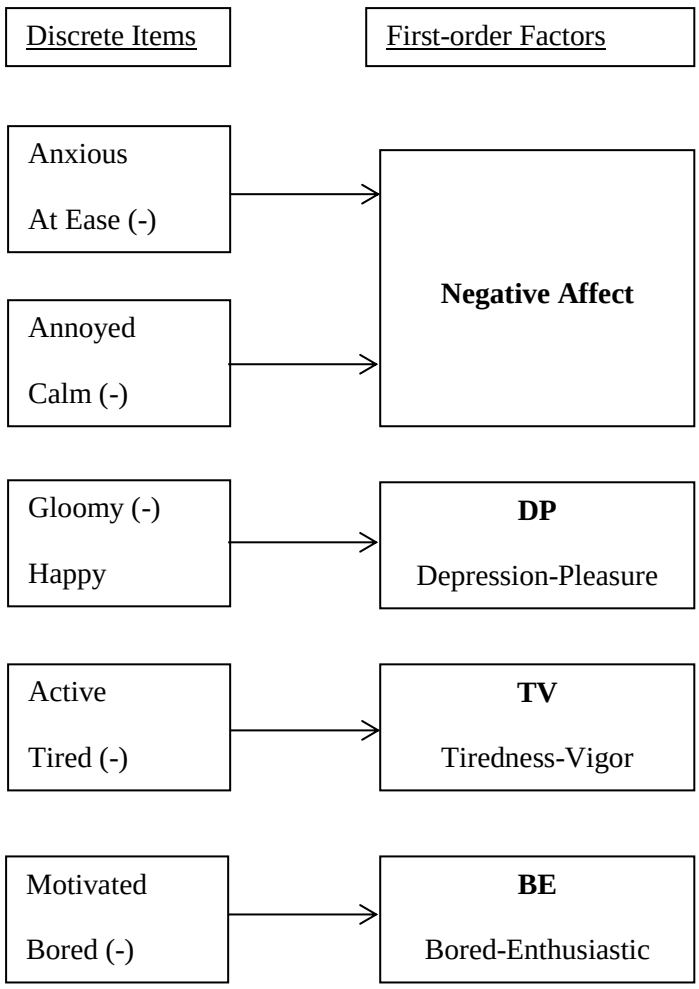
*without response bias factors; **with response bias factors

Figure 2d: The five-factor first order and single second order factor structure of D-FAW (Models 7* and 8**)



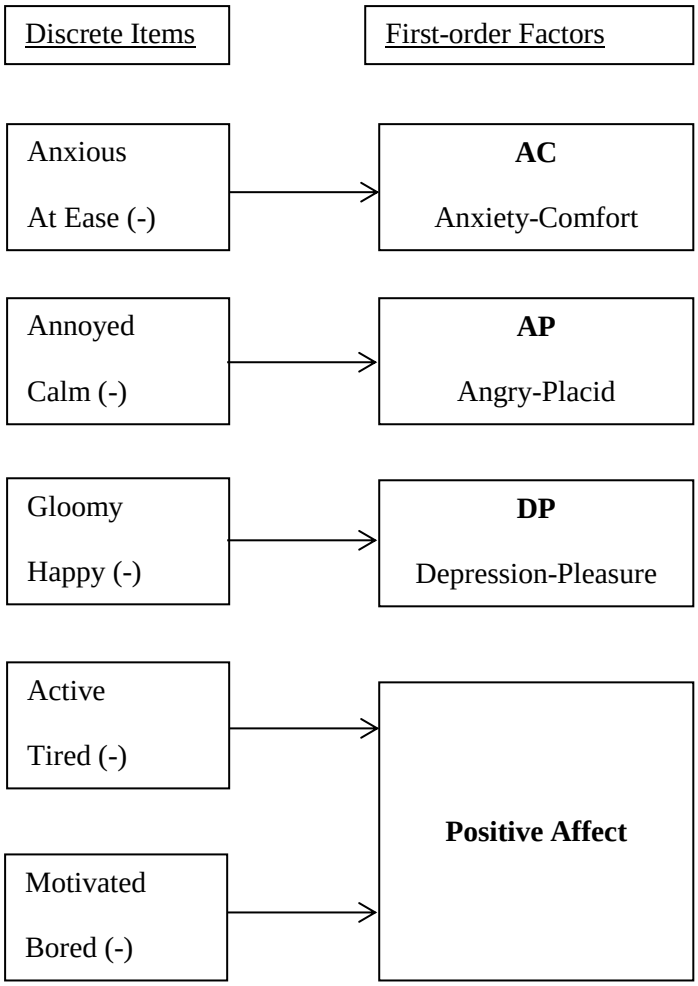
*without response bias factors; **with response bias factors

Figure 2e: The first order PA-related factors and single NA factor structure of D-FAW (Models 9* and 10**)



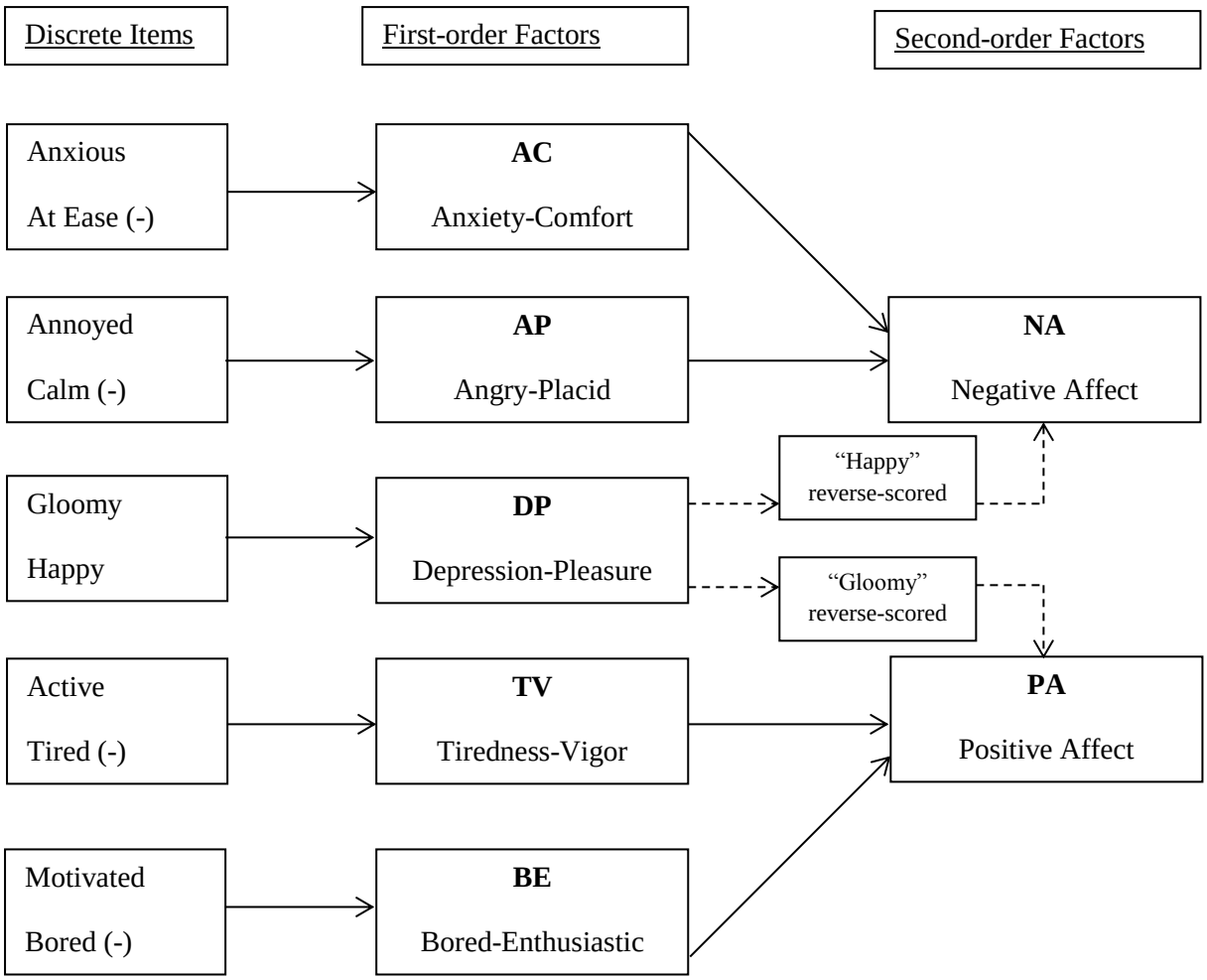
*without response bias factors; **with response bias factors

Figure 2f: The first order NA-related factors and single PA factor structure of D-FAW (Models 11* and 12**)



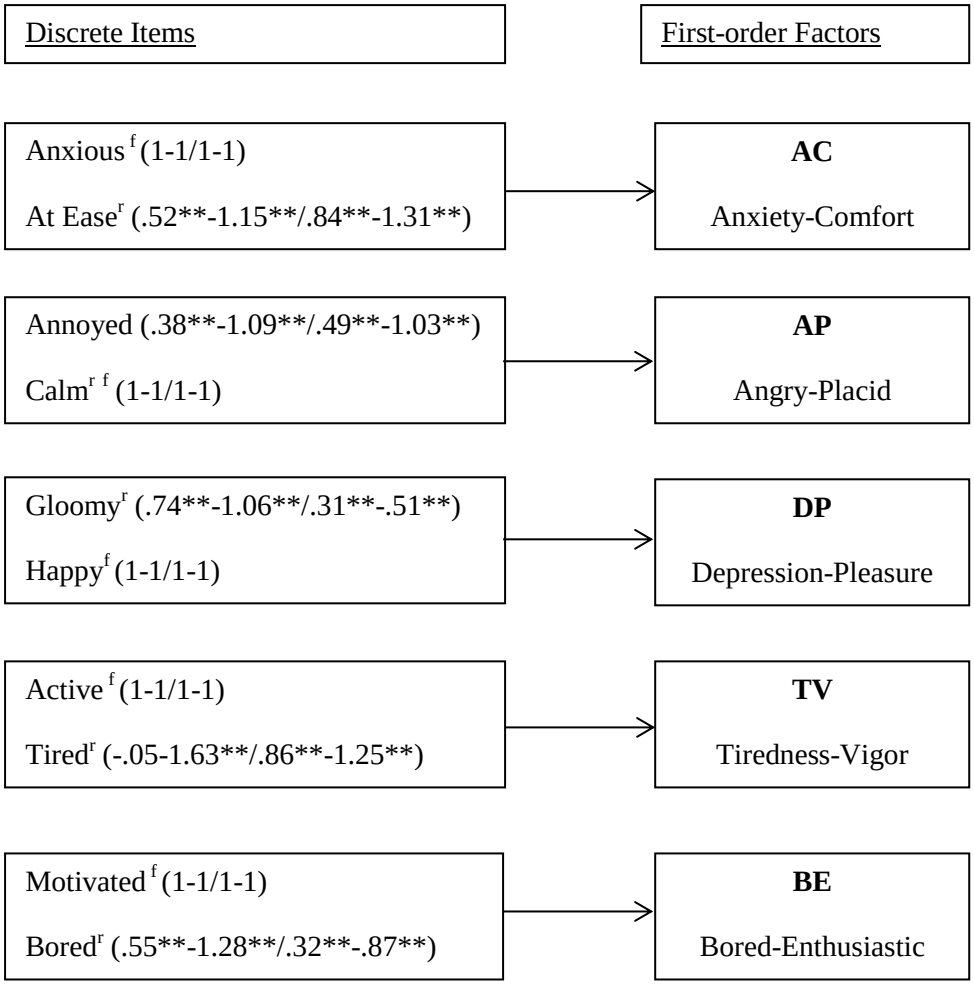
*without response bias factors; **with response bias factors

Figure 2g: The D-FAW long-form factor structure applied to the 10-item short-form (Models 13* and 14**)



*without response bias factors; **with response bias factors

Figure 3: The best-fitting factor structure (Model 6) of 10-item D-FAW with unstandardized item loading ranges across the samples (Between/Within Subjects)



r Reversed coded

f Loading fixed at 1

** p < .05, * p < .01

N.B. *Please see Appendix 3 for detailed breakdown of factor loadings per sample at between and within-persons levels across all samples for Model 6. Factor loadings greater than unity are acceptable as these are unstandardized regression weights.*

Appendix 2: The long-form 30-item D-FAW (with 10-items extracted post-administration, highlighted)

In the section below, please indicate how you feel *right now, that is, at the present moment**. Please circle the most appropriate number on the 6 point scale, where 1 = not at all, to 6 = very much.

Anxious	1	2	3	4	5	6
Worried	1	2	3	4	5	6
Tense	1	2	3	4	5	6
Relaxed	1	2	3	4	5	6
Comfortable	1	2	3	4	5	6
Calm	1	2	3	4	5	6
Depressed	1	2	3	4	5	6
Miserable	1	2	3	4	5	6
Gloomy	1	2	3	4	5	6
Happy	1	2	3	4	5	6
Pleased	1	2	3	4	5	6
Cheerful	1	2	3	4	5	6
Bored	1	2	3	4	5	6
Sluggish	1	2	3	4	5	6
Dull	1	2	3	4	5	6
Enthusiastic	1	2	3	4	5	6
Optimistic	1	2	3	4	5	6
Motivated	1	2	3	4	5	6
Tired	1	2	3	4	5	6
Fatigued	1	2	3	4	5	6
Sleepy	1	2	3	4	5	6
Active	1	2	3	4	5	6
Alert	1	2	3	4	5	6
Full of energy	1	2	3	4	5	6
Angry	1	2	3	4	5	6
Annoyed	1	2	3	4	5	6
Aggressive	1	2	3	4	5	6
Placid	1	2	3	4	5	6
Patient	1	2	3	4	5	6
At ease	1	2	3	4	5	6

*this focal instruction can be amended according to time frame and context.

Appendix 3: Factor loadings from Model 6 first order model

Scale	Item	Sample 1	Sample 2	Sample 3	Sample 4†	Sample 5†	Sample 6†
AC	At ease	0.81**	1.15**	1.10**	1.03**/0.52**	0.84**/0.64**	1.31**/0.70**
	Anxious[r]	1[f]	1[f]	1[f]	1[f]/1[f]	1[f]/1[f]	1[f]/1[f]
AP	Calm	1[f]	1[f]	1[f]	1[f]/1[f]	1[f]/1[f]	1[f]/1[f]
	Annoyed[r]	0.38**	0.46**	0.38**	0.79**/0.82**	0.49**/1.09**	1.03**/0.45**
DP	Happy	1[f]	1[f]	1[f]	1[f]/1[f]	1[f]/1[f]	1[f]/1[f]
	Gloomy[r]	0.76**	0.81**	0.75*	0.51**/0.74**	0.31**/0.89**	0.37**/1.06**
BE	Motivated	1[f]	1[f]	1[f]	1[f]/1[f]	1[f]/1[f]	1[f]/1[f]
	Bored[r]	1.16**	1.17**	1.28**	0.32**/0.55**	0.62**/0.84**	0.87**/0.74**
TV	Active	1[f]	1[f]	1[f]	1[f]/1[f]	1[f]/1[f]	1[f]/1[f]
	Tired[r]	1.46**	0.12**	-0.05	0.98**/0.39**	0.86**/0.46**	1.25**/1.63**

Factor loadings from 1st order model (Model 6)
† Within factor loading / Between factor loading
[r] Reversed coded
[f] Loading fixed at 1
** p < .05, * p < .01

Appendix 4: Bayesian fit and convergence statistics for response bias factors only

	Fit Statistics	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6
Response bias factors only	PSR	= 1.02	= 1.02	= 1.02	= 1.02	= 1.02	= 1.06
	PPC	= <.01	= <.01	= < .01	= <.01	= < .01	= <.01
	DIC	=	=	= 9017.44	=	=	=
	Loadings	7872.86 ++	52263.31 ++	++	7224.85 +	14817.75 ++	19109.86 +

N.B: Comparing the results with the results reported in Table 3 reveals that a model with 2 factors representing positively-valenced items only and negatively-valenced items only affect only has less good fit than any model with response bias and substantive factors for any sample.