

## Latent Class Analysis Results

Latent class analysis (LCA) was undertaken on baseline data (prior to randomisation) on responses (yes/no) to motives/goals in volunteering for the personalised nutrition intervention. Taking the diagonal probability value of 0.8 for class membership, LCA identified a three-class solution with three clear ordered levels of responses to goal items, with an entropy value of 0.671. The LO-MENDELLE-RUBIN ADJUSTED LRT TEST for 3 vs 4 classes indicated that the addition of a 4-classes would not be a statistically significant improvement (P-Value = 0.3041).

Class 1 indicated High goal orientation (30%); with class 2. showing a Moderate goal orientation (54%); and the final class comprising a group of individuals with Low goal orientation (17%). The % are based on the final class count and proportions for the latent classes. In class 1 (High goal orientation), four of the seven items had scale probabilities of over 95%, with the remaining three estimates having values of 63%, 57% & 65%. In class 2 (moderate goal orientation) none of the estimated class probabilities exceeded those in the first class. Goals selected were assigned 1, otherwise 0 and is represented in the LCA within Category 2 (see Supplementary Table 1 below). In class 3 the item responses were again all lower than in the previous class. Based on a 3-class model for the seven 'I want variables' BCH weights were obtained from within the LCA. This was so that the LCA information could be used as predictors within the model (N=1607, using MLR).

**Supplementary Table 1** – Results of Latent Class Analysis of Goal Responses. Class Counts and Proportions Latent Classes (labelled according to estimates in output below)

1	476	0.29620 – 30% High Goal Orientation
2	865	0.53827 – 53% Moderate Goal Orientation
3	266	0.16553 – 17% Low Goal Orientation

RESULTS IN PROBABILITY SCALE

Two-Tailed

Estimate S.E. Est./S.E. P-Value

Latent Class 1 Estimates (below) imply that this is the high goal orientation class

IWANTK1R

Category 1	0.020	0.015	1.303	0.192
Category 2	0.980	0.015	65.265	0.000

IWANTL2R

Category 1	0.372	0.031	12.195	0.000
Category 2	0.628	0.031	20.571	0.000

IWANT4R

Category 1	0.432	0.037	11.571	0.000
Category 2	0.568	0.037	15.196	0.000

IWANT5R

Category 1	0.035	0.024	1.418	0.156
Category 2	0.965	0.024	39.443	0.000

IWANT6R

Category 1	0.026	0.021	1.248	0.212
Category 2	0.974	0.021	46.516	0.000

IWANT7R

Category 1	0.347	0.033	10.406	0.000
Category 2	0.653	0.033	19.554	0.000

IWANT8R

Category 1	0.011	0.024	0.464	0.642
Category 2	0.989	0.024	40.526	0.000

Latent Class 2 Estimates (below) imply that this is the moderate goal orientation class

IWANTK1R

Category 1	0.213	0.018	11.779	0.000
Category 2	0.787	0.018	43.562	0.000

IWANTL2R

Category 1	0.519	0.022	23.776	0.000
Category 2	0.481	0.022	22.031	0.000
IWANT4R				
Category 1	0.813	0.020	40.206	0.000
Category 2	0.187	0.020	9.231	0.000
IWANT5R				
Category 1	0.393	0.041	9.702	0.000
Category 2	0.607	0.041	14.979	0.000
IWANT6R				
Category 1	0.443	0.037	12.021	0.000
Category 2	0.557	0.037	15.104	0.000
IWANT7R				
Category 1	0.675	0.023	29.812	0.000
Category 2	0.325	0.023	14.379	0.000
IWANT8R				
Category 1	0.451	0.030	15.141	0.000
Category 2	0.549	0.030	18.403	0.000

Latent Class 3 Estimates (below) imply that this is the low goal orientation class

IWANTK1R				
Category 1	0.507	0.059	8.624	0.000
Category 2	0.493	0.059	8.394	0.000
IWANTL2R				
Category 1	0.800	0.038	20.908	0.000
Category 2	0.200	0.038	5.226	0.000
IWANT4R				
Category 1	0.965	0.019	51.477	0.000
Category 2	0.035	0.019	1.863	0.062
IWANT5R				
Category 1	1.000	0.000	0.000	1.000
Category 2	0.000	0.000	0.000	1.000
IWANT6R				

Category 1	0.964	0.035	27.242	0.000
Category 2	0.036	0.035	1.016	0.309
IWANT7R				
Category 1	0.877	0.030	29.089	0.000
Category 2	0.123	0.030	4.095	0.000
IWANT8R				
Category 1	0.821	0.051	15.937	0.000
Category 2	0.179	0.051	3.486	0.000

Note: Category 1 represents data scored as 0. Category 2 represents data scored as 1, and where response to the goal item was positive.

## BCH Model Results

### (1) without Habit Strength

data\_4a\_lca\_bch\_weights\_total\_iwant\_m2\_6\_final\_12without habit\_

#### MODEL RESULTS

		Two-Tailed			
		Estimate	S.E. Est./S.E.	P-Value	
<b>Latent Class 1:</b>					
HEISCOT6 ON					
COND		4.588	1.315	3.488	0.000
HEISCOT0		0.589	0.024	24.603	0.000
Intercepts					
HEISCOT6		21.505	1.711	12.569	0.000
Residual Variances					
HEISCOT6		56.576	2.679	21.120	0.000

### Latent Class 2:

HEISCOT6 ON					
COND		0.199	0.783	0.254	0.799
HEISCOT0		0.589	0.024	24.603	0.000
Intercepts					

HEISCOT6	23.218	1.360	17.075	0.000
Residual Variances				
HEISCOT6	56.576	2.679	21.120	0.000

**Latent Class 3:**

HEISCOT6 ON				
COND	-0.206	1.516	-0.136	0.892
HEISCOT0	0.589	0.024	24.603	0.000
Intercepts				
HEISCOT6	22.659	1.816	12.477	0.000
Residual Variances				
HEISCOT6	56.576	2.679	21.120	0.000

**Categorical Latent Variables**

Means				
C#1	2.074	0.100	5.095	0.000
C#2	2.298	0.103	12.010	0.000

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**(2) with Habit Strength**

data\_4a\_lca\_bch\_weights\_total\_iwant\_m2\_6\_final\_12

**MODEL RESULTS**

		Two-Tailed		
	Estimate	S.E.	Est./S.E.	P-Value
<b>Latent Class 1:</b>				
HEISCOT6 ON				
COND	4.638	1.297	3.577	0.000
HEISCOT0	0.548	0.026	21.155	0.000
HABITT6	1.640	0.366	4.481	0.000
HABITT6 ON				
HABITT0	0.519	0.030	17.129	0.000
HEISCOT0	0.012	0.002	5.292	0.000
HABITT0 WITH				

HEISCOT0	2.499	0.203	12.327	0.000
Means				
HEISCOT0	48.044	0.631	76.199	0.000
HABITTO	3.162	0.047	67.125	0.000
Intercepts				
HEISCOT6	17.927	1.826	9.820	0.000
HABIT6	1.083	0.134	8.060	0.000
Variances				
HEISCOT0	97.077	3.636	26.701	0.000
HABITTO	0.586	0.019	30.440	0.000
Residual Variances				
HEISCOT6	55.365	2.603	21.269	0.000
HABIT6	0.313	0.018	17.225	0.000

**Latent Class 2:**

HEISCOT6 ON				
COND	0.111	0.784	0.142	0.887
HEISCOT0	0.548	0.026	21.155	0.000
HABIT6	1.640	0.366	4.481	0.000
HABIT6 ON				
HABITTO	0.519	0.030	17.129	0.000
HEISCOT0	0.012	0.002	5.292	0.000
HABITTO WITH				
HEISCOT0	2.499	0.203	12.327	0.000
Means				
HEISCOT0	49.198	0.418	117.693	0.000
HABITTO	3.323	0.031	106.814	0.000
Intercepts				
HEISCOT6	19.649	1.568	12.528	0.000
HABIT6	1.114	0.128	8.704	0.000
Variances				
HEISCOT0	97.077	3.636	26.701	0.000

HABITT0	0.586	0.019	30.440	0.000
Residual Variances				
HEISCOT6	55.365	2.603	21.269	0.000
HABITT6	0.313	0.018	17.225	0.000
<b>Latent Class 3:</b>				
HEISCOT6 ON				
COND	-0.268	1.508	-0.177	0.859
HEISCOT0	0.548	0.026	21.155	0.000
HABITT6	1.640	0.366	4.481	0.000
HABITT6 ON				
HABITT0	0.519	0.030	17.129	0.000
HEISCOT0	0.012	0.002	5.292	0.000
HABITT0 WITH				
HEISCOT0	2.499	0.203	12.327	0.000
Means				
HEISCOT0	51.020	0.779	65.512	0.000
HABITT0	3.471	0.061	57.278	0.000
Intercepts				
HEISCOT6	18.993	1.920	9.891	0.000
HABITT6	1.104	0.142	7.803	0.000
Variances				
HEISCOT0	97.077	3.636	26.701	0.000
HABITT0	0.586	0.019	30.440	0.000
Residual Variances				
HEISCOT6	55.365	2.603	21.269	0.000
HABITT6	0.313	0.018	17.225	0.000
Categorical Latent Variables				
Means				
C#1	0.662	0.096	5.288	0.000
C#2	1.423	0.098	12.529	0.000

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