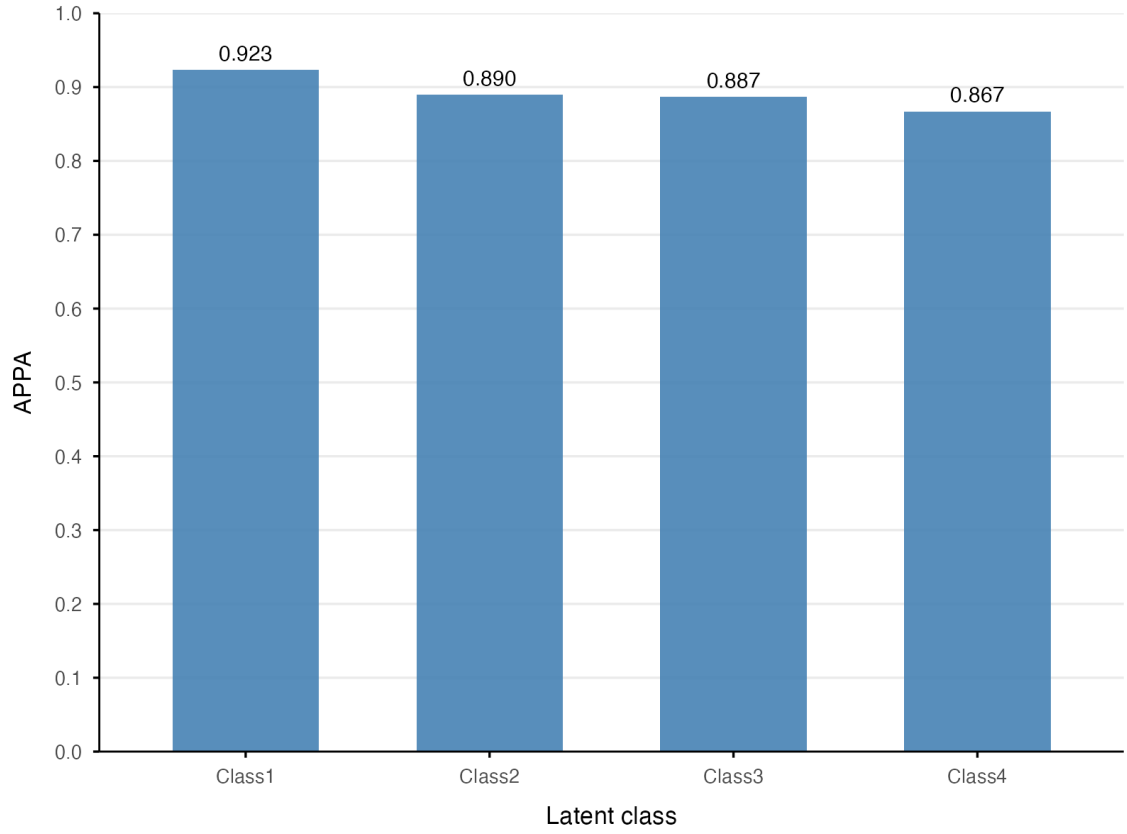
Table S1. Model fit indices for latent class analysis (LCA) models with one to seven latent classes.

K	Log-likelihood	No. of parameters	AIC	BIC	SABIC	Entropy
1	-3311.84	21	6666	6743	6677	–
2	-3199.27	43	6485	6644	6507	0.78
3	-3141.20	65	6412	6653	6447	0.75
4	-3097.59	87	6369	6691	6415	0.81
5	-3066.98	109	6352	6756	6410	0.87
6	-3041.42	131	6345	6830	6415	0.85
7	-3015.87	153	6338	6904	6419	0.89

Note. Reported indices include the log-likelihood, number of estimated parameters, Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), sample-size adjusted BIC (SABIC), and entropy. Lower values of AIC, BIC, and SABIC indicate better model fit, while higher entropy values indicate clearer class separation. Entropy is not defined for the one-class model.

Figure S1. Average posterior probability of assignment (APPA) for each latent class in the four-class latent class analysis model.



APPA represents the mean posterior probability that individuals are correctly assigned to their most likely latent class. An APPA value of 0.70 or higher is generally considered indicative of acceptable classification quality. In the present model, all latent classes demonstrated APPA values exceeding 0.85, indicating good classification accuracy and clear separation between latent classes.

Table S2. Table S2. Results of the bootstrap likelihood ratio test (BLRT) comparing latent class models with K and K–1 classes.

Model comparison	LR statistic	Bootstrap replications (target)	Valid replications	Failed replications	*p*-value
1 vs 2	225.0	200	200	0	0.005
2 vs 3	116.0	200	200	0	0.005
3 vs 4	87.2	200	200	0	0.005
4 vs 5	61.2	200	200	0	0.005
5 vs 6	52.1	200	197	3	0.116
6 vs 7	49.0	200	200	0	0.189

The likelihood ratio (LR) statistic reflects the improvement in model fit when adding one additional class. P-values were estimated based on 200 bootstrap replications. A significant p-value ($p < 0.05$) indicates that the model with K classes provides a statistically better fit than the model with K–1 classes.