Supplementary information for "Bike attitudes predict behaviour change, more than vice versa: A Norwegian quasi-replication of Kroesen and colleagues (2017)".

1. Ordered probit comparing

To see whether applying ordered probit modelling on the two behavioural outcomes has a considerable impact on our model, we present two models with and without this. See Figure 1a for the results. We see that the effect sizes on T2 bicycle use are somewhat higher in the model using ordered probit. Other than this, the models seem to be functionally identical.

Figure 1a:
Models using, and not using an ordered probit modelling of both "Bicycle use" measures. Unstandardized effect sizes. All background variables affect all variables in both models.

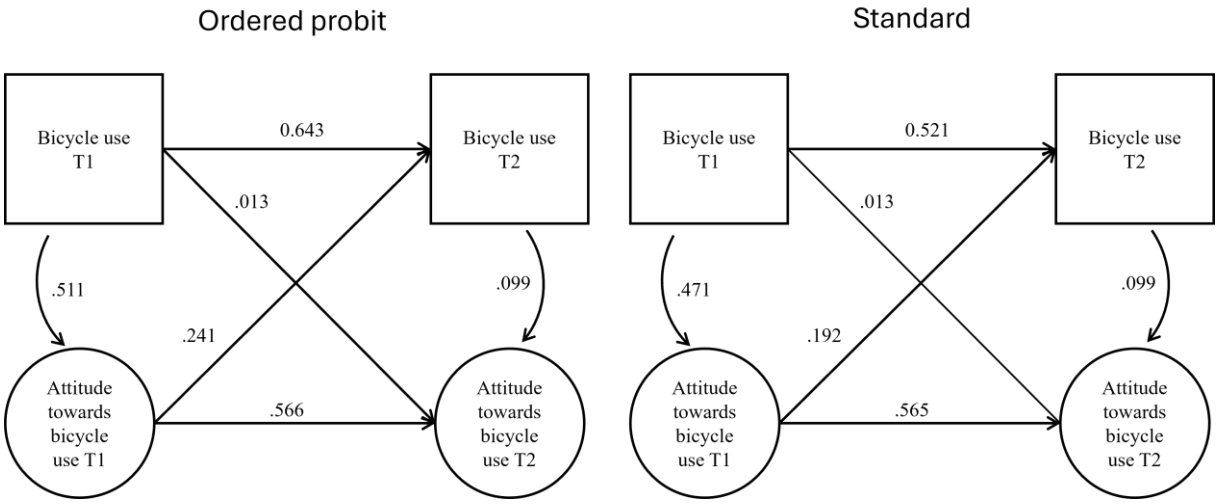

Figure 1a: Models using, and not using an ordered probit modelling of both "Bicycle use" measures. Unstandardized effect sizes. All background variables affect all variables in both models.

2. Alternative SEM models

Because our travel data was collected as continuous variables, and not categorical, it could be argued that for the purposes of analysing the data, and not replicating research, it is more appropriate to treat the data as continuous. Additionally, as far as we are aware, it is more common to construct the attitude measure as a latent variable derived from individual attitude items, and not fix the error term of a summarized scale. Therefore, we also present our findings in an alternative SEM model, reported

here. In this model, the attitudinal measure is constructed from the attitudinal items, included in the model as latent variables. Due to the high skewness of the bicycle use data (2.4 for T1 and 2.2 for T2), a square root transformation was applied. See figure 2a below.

Generally, the model is similar to the one reported in the main paper. However, note that we do not find a statistically significant association between T1 bicycle use and T2 attitudes. Additionally, because this model does not apply the Huber/White/sandwich estimator, more commonly known as robust standard errors, the model outputs more model fit estimators. Based on the RMSEA score of .16, the model does not fit the data well. However, the coefficient of determination (CD) is considerably higher than the main model, suggesting the data better fit this setup.

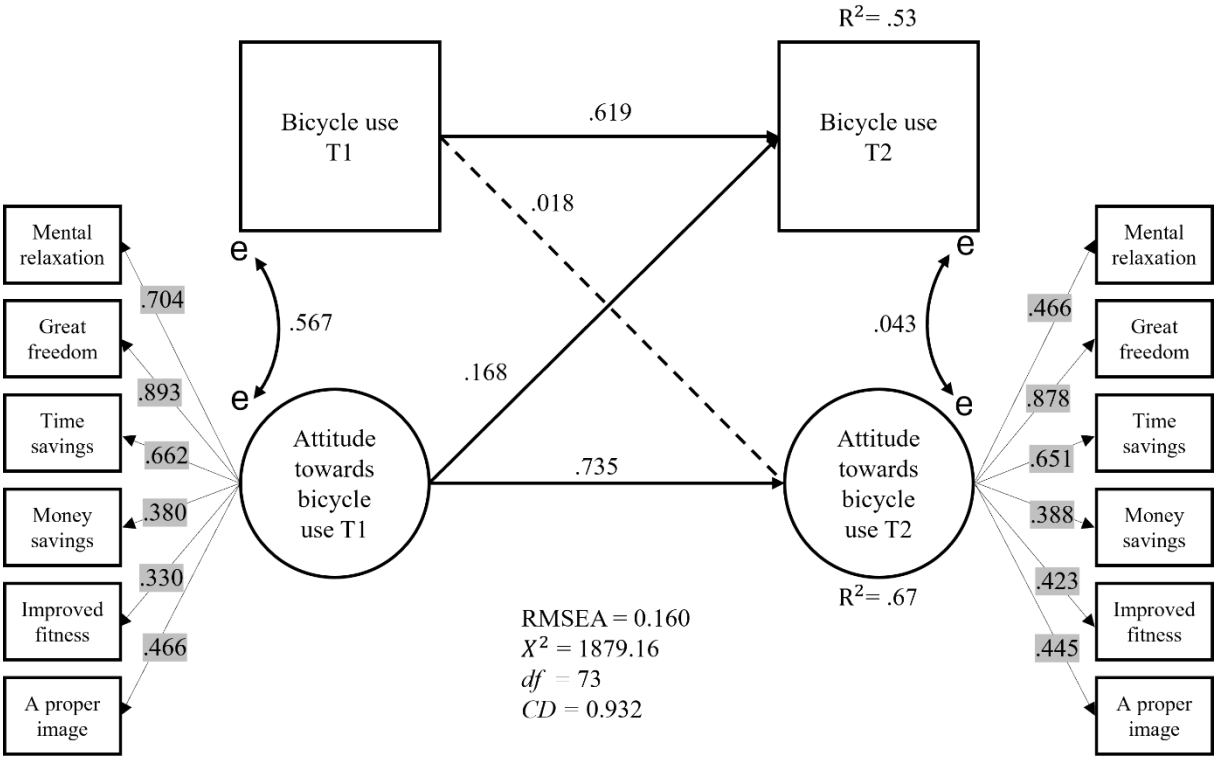

Figure 2a: Alternative model of the data, using the bicycle use data as a continuous measure, and not a categorized. Additionally, the attitude measure is constructed as a latent variable derived from individual attitude items. Standardized effect sizes.