

We propose a novel additive mean residual life model to examine the effects of observable and latent risk factors on the mean residual life function of interest in the presence of right censoring. We use the factor analysis to characterize the latent risk factors on the basis of multiple observed variables. We develop a borrow-strength estimation procedure that incorporates asymptotically distribution-free generalized least square method and corrected estimating equation approach. We establish the asymptotic properties of the proposed estimators. We conduct simulations to evaluate the finite sample performance of the proposed method. The application to the study on chronic kidney disease for type 2 diabetic patients reveals insights into the prevention of such common diabetic complication.