**JASA ACS Reproducibility Initiative - Author Contributions Checklist Form**

The purpose of the Author Contributions Checklist (ACC) Form is to document the artifacts associated with a manuscript (e.g., code and data supporting the computational findings), and describe how to reproduce the findings. The final version of this document will be included as online supplemental material with the published paper and referenced in the abstract.

As of Sept. 1, 2016, the ACC Form must be included with all submissions to JASA ACS.

This document is the template that will be provided to authors; please replace the (non-bold) text below that provides guidance on how to fill out each item with the actual information for your manuscript.

## Data

**Abstract (Mandatory)**

UK Biobank is a national and international health resource following the health and well-being of 500,000 volunteer participants and provides health information, which does not identify them, to approved researchers in the UK and overseas, from academia and industry. It aims to improve the prevention, diagnosis and treatment of a wide range of serious and life-threatening illnesses – including cancer, heart diseases, stroke and more.

**Availability (Mandatory)**

The data will not become publicly available. It is open only to bona-fide scientists undertaking health-related research that is in the public good. Access to the data is granted only upon application to the UK Biobank organization.

**Description (Mandatory if data available)**

Since the UK Biobank data cannot be publicly published, we provide a pseudo-dataset, similar to the datasets generated for the simulation studies. The code for the generation of such datasets is also provided separately as an R code.

**Optional Information (complete as necessary)**

Unique identifier / DOI

## Code

**Abstract (Mandatory)**

We uploaded several code files:

Codes for data generation: available for 3 kinds of frailty distributions (Gamma – the main simulations, and Inverse Gaussian and Positive Stable – for sensitivity analysis). During data generation, users may determine their preferred parameters.

Codes for data analysis:

One cpp file is provided for loading the required functions into the main estimation procedure, and another R code for the main estimation procedure. The dataset is inserted into the estimating wrapper function, with instructions of usage provided within the code itself and in the Readme file.

**Description (Mandatory)**

The code is written in R. MIT license.

Github repository: https://github.com/nirkeret/frailty-LTRC

Required libraries:

* "survival" (Requires R (>= 3.4.0))
* "Rcpp"
* "parallel" (if one wants to perform parallel computation)
* "Brobdingnag" (Requires R (≥ 2.13.0)
* "statmod" (for sampling from the inverse Gaussian distribution, requires R (≥ 3.0.0))

**Optional Information (complete as necessary)**

A part of the code (the computation intensive part) can be parallelized to several cores in order to save computation time.

## Instructions for Use

**Reproducibility (Mandatory)**

All tables in the Simulation Study section can be reproduced (main results and sensitivity analysis).

In order to reproduce a table, datasets should be generated with the corresponding parameters. Results were mostly collected under seeds 1-100. In order to reproduce a table, 100 datasets, using seeds 1-100 should be generated, and then inserted to the estimation function.

It may take 3-5 hours to analyze a single 5000 observation dataset if no parallelization is used. Each bootstrap round will require about the same amount of time. If a higher tolerance for convergence is chosen, less time will be required (the default tolerance is 0.001 and the procedure stops when , or when 100 iterations have been performed.

**Replication (Optional)**

How to use software in other settings (or links to such information, e.g., R package vignettes, demos or other examples)

## Notes

Other relevant information, in particular how reviewers can access the data and code if not yet made publicly available.