

## ADDITIONAL INFORMATION ON (SIMULATION) DATA

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Table B.1: Overview on the Electronic Appendices

The codes are available on <https://github.com/s4padoer/design-estimation-business-surveys/>

Folder	File	Description
chapter2	sim_mixed_effects_regression.R	Simulation set-up described in chapter 2
chapter2	merge_mixed_effects_regression.R	Editing of the simulation results from chapter 2
chapter2	optim_lmer.R	Function doing a grid search to find the best Box-Cox/ Dual transformation with respect to the data log-likelihood
chapter3	sim_modelbased_gvf.R	Simulation set-up described in chapter 3
chapter3	merge_modelbased_gvf.R	Editing of the simulation results from chapter 3
chapter3	varfu.R	Variance estimators for SRS, StratRS and TSC. Functions doing balanced half-sampling for the quality indicator of Gershunskaya and Dorfman [2013].
chapter4	sim_density_estimation.R	Simulation set-up described in chapter 4
chapter4	merge_density_estimation.R	Editing of the simulation results from chapter 4
chapter4	merged_density_estimation.RData	Data file storing the edited simulation results from chapter 4

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Folder	File	Description
chapter4	som_simplex.cpp	C++ functions to speed up training the topographic map (Algorithm 4.3)
chapter4	som_simplex.R	R function implementing the topographic map (Algorithm 4.3)
chapter4	distributions_som_simplex.cpp	Function returning marginal and joint (and some conditional) densities based on Estimator (4.20)
application_beeps	edit_data_beeps.R	Editing of the PUM
application_beeps	beeps_pre_regression.R	Model selection and data analysis using lme4
application_beeps	beeps_regression.R	Code for running the MCEM based estimation method 100 times
application_beeps	merge_beeps_regression.R	Editing and plotting of the 100 regression estimates
application_beeps	AppliedLoans.RData	Data file storing the edited subsets of the PUM
application_beeps	lme4_regressions.RData	Data file storing the chosen regressions estimated with lme4
application_beeps	BEEPS_Panel_2002_2005_2009_19_Aug_2010.dta	Original PUM
application_beeps	worldbank_exchange_rate.csv	Official World Bank exchange rates from LCUs to US Dollar (downloaded 17 March 2020)
application_beeps	worldbank_exchange_rate_edited.csv	Exchange rates from LCUs to US Dollar edited to merge with PUM
application_beeps	beeps_density.R	Code for running 100 times Estimator 4.20 on the BEEPS PUM

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Folder	File	Description
application_beeps	beeps_pre_density.RData	Data file storing the bivariate kernel density and GMM density estimates for the bivariate total sales
application_beeps	beeps_density.RData	Data file storing all bivariate density estimates for the bivariate total sales
application_beeps	merge_beeps_density.R	Code for merging the 100 estimates of the bivariate density of total sales
lib	wmm	Self-authored R-package wmm running the weighted mixed effects model estimation