README file for “**Managerial Quality and Productivity Dynamics**”

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This document describes the instructions for: (1) accessing the datasets used in the manuscript, (2) the program files used to replicate the analysis of this study, (3) steps to replicate results, and (4) brief description of each program file. The program files replicate not just the tables and figures in the main paper, but also all tables and figures in the online appendices.

1. **Data Availability and Provenance Statement**

The data used in this study were provided to us by the firm partner (Shahi Exports Pvt. Ltd., 2018) on an exclusive and proprietary basis.

We have entered into a data-sharing agreement with the firm to allow access to the de-identified data upon request for replication purposes. Please email datarequest@shahi.co.in to submit a request. Once the request for replication data is received, we can share the anonymized data after the requester signs an agreement with the firm that the data will not be shared further and will be used only for the replication purpose.

We obtained two types of data which we combined to generate the analysis file:

(1) Administrative data containing information about production and productivity by line. We process this data to produce "Data\_FirstStage\_Feb25\_2018\_NTF.dta".

(2) Responses to survey from line supervisors. The survey dataset is call “SupervisorSurvey\_cleanwithproperline”.

1. **Code Description**

We organized our codes into four folders:

* **“Data processing”** contains the scripts necessary to create the main databases of our analysis.
* **“Stata scrips”** contains the scripts run in STATA software that replicates the descriptive analysis, and part of the model estimation.
* **“Matlab scrips”** contains the scripts run in MATLAB software that replicates the model estimation, and robustness analysis of the main empirical analysis.

To run all scrips in STATA format you must install following packages: labmask and outreg2. You can install them as follows:

* For labmask package:

net from <http://www.stata-journal.com/software/sj8-2/>

net install gr0034

* For outreg2:

ssc install outreg2

3. **Steps**

1. Please use the file “Raw data processing.do” to create the data for the first stage for the dynamic model “Residuals\_AllUnits\_Nl2.”
2. Please use the file “File\_Stage.m” to estimate the AKM model or first stage (“Boot\_Residuals\_AllUnits500\_Nl2”)
3. Please use the file “Synthetic database.do” to create the synthetic data set for the second stage (Residuals\_AllUnits\_Learning\_Cb\_500\_Nl2(a b and c)). This file uses data created in “Manager Quality Measures.do.” Please export these files to Matlab (Residuals\_AU\_ Learning\_Cb\_500\_NL2)
4. Please use the file “Full model estimation.m” to estimate the Latent Factor model (Table 4), CES function (Table 5), and simulation of the model (Tables 6 and 7).
5. Repeat steps 1-4 for the static and shrinkage model.

4. **Guide**

Brief guide to program files inside **“Data processing”**.

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| **Raw data processing** | Process data to use in model estimation |
| **Manager Quality Measures** | Process the survey information to obtain the managerial quality measures used in the analysis and described in the appendix. |
| **Synthetic database** | Process the synthetic database produced to estimate equation 5 of the paper. |

Brief guide to scripts inside **“Stata scrips”**

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| **Descriptive statistics** | Replicate descriptive statistic tables (1, 2 and A6). You can find the figures of table 1 in line 122, table 2 in line 318, and table 3 in line 360. |
| **Figures for papers** | Replicates figures presented in the paper except figure 7, figure A4, and figure A9. You can find figure 1 in line 39, figure 2 in lines 130-135, figure 3 in lines 161-171 and 204-211, figure 4 in line 393, figure 5 in lines 476-483, figure 6 in lines 561 and 566, figure A1 in lines 657-664, 686-693, 714-721, 742-749, 769-776, figure A2 in lines 891-895, figure A3 in lines 966-971, figure A5 in line 1022, figure A6 in line 1031 and figure A7 in line 1040. |
| **Linear and Non-Linear regressions of Experience** | Replicates regressions of table 3. You can obtain the estimates from lines 54, 58, 91-92 and 99-100. |
| **Match Effect** | Replicates table A3. You can find the figures of table in line 110. |
| **Sorting order and management characteristics** | Replicates tables A2. You can obtain the estimates in line 51. |
| **Ratio Long Short Orders** | Replicates figure 7. You can find figure 7 in lines 29-35. |

Brief guide to scripts inside **“Matlab scrips”**

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| **Correlation\_Factors** | Replicates table A4. You can find the figures of table A4 in line 50. |
| **First\_Stage** | Estimates AKM models corresponding to step 1 of the empirical strategy. |
| **Full\_model\_estimation** | Estimates step 2 and step 3 of the empirical strategy (Tables 4, ,5, 6, 7, A7 and A8). You can find the figures of table 4 in line 699, of table 5 in lines 702-706, of table 6 in lines 956-957 and 962-963, of table 7 in lines 1209 and 1213, of table A7 in lines 958-959 and 964-965, and table A8 in lines 1210 and 2014. |
| **Full\_model\_estimation\_static** | Estimate static version of the model Line. You can find additional figures of table 5 in lines 495-496 and table A10 in lines 1040-1041. |
| **Monte\_Carlo** | Estimates Monte Carlo procedure. You cand find figures of table A5 in lines 168-172 and 353-358. |
| **Residuals** | Produce figure A4. You can find figure A4 in lines 34-43. |
| **First\_Stage\_Shrinkage** | Estimates AKM model applying Shrinkage correction. |
| **Full model estimation\_Shr** | Produce Table A9 and A10. You can find figures of table A9 in line 702 and table A10 in lines 705-709. |
| **Simulation** | Reproduce figure A9. You can find figure A9 in lines 39-40. |
| **Auxiliary Files** | This folder contain auxiliary MATLAB scrip files used in full model estimation. |

**References**

Shahi Exports Pvt Ltd. (2018). Production lines and supervisors. Unpublished Data Set, (accessed January 2018).