**Shoes data analysis note**

The purpose of this analysis is to test potential impacts of business order mix and price on the wages and attrition rates of production line workers. We may use ordinary least square (OLS) regression as the main estimation method (or consider other methods later as needed). One major dependent variable is the average monthly wage for production workers at each of the 15 full shoes production lines (i.e. conveyors); you have previously compiled these monthly variables which I have put in the “wages” excel worksheet. The variable “avg\_pay” is one dependent.

The other dependent variable—“attrition” which is the percentage of workers that left the production line in a particular month—is the be coded from the number of “workers” variable. The calculation for each conveyor is: 100\*(workers in the previous month -workers in the current month)/workers in the previous month. Note that this calculation may produce some negative values for attrition rates; please recode the negative values into 0.

The independent variables concern product mix (e.g. the number of styles or order batches), price (main buyer price or average price), and volatility (e.g. changes in pairs from the previous month). The expectation is that more complex product mix, lower price, and higher volatility are related with lower wages and higher attrition rates for production workers.

There could be a few other variables regarding the buyer’s purchasing practices; we will decide the coding after looking at the pattern of the customer orders compiled in the first step.

I have written down calculations of potential independent variables in the codebook.