**Proposal**

**Summary**

South Korean society is rapidly entering an aging society. As a result, seniors continue to participate in the labour market, and often engage in educational programs to further develop their workplace skills. The objective of this study is to identify how demographic, organizational and learning factors affect South Korean senior workers’ skill usage and proficiency scores. Identifying what aspects of senior workers affect their skill use is a critical research issue because it will help Human Resource officers to develop training programs.

**Data**

The primary data set was obtained from the open source of the Programme for the International Assessment of Adult Competencies (PIAAC). The data were collected from 24 countries between August 2011 and March 2012, and each country drew a representative sample of individuals aged from 16 to 65 years old. These data were collected from questionnaires that measured two key cognitive skills: literacy and numeracy. Based on the research purpose, employers aged 50-65 year-old on the private sector in South Korea are included.

Dependent variables*:*

Skill usage for work: the frequency that numeracy/literacy skills are applied

These variables are calculated by taking the average of related sub-items. These sub-items are measured by likert scale: 1,2,3,4,5(from strongly disagree to strongly agree)

Proficiency test scores: the average test score of numeracy/literacy **(Continuous)**

Explanatory variable*:*

1)  Demographic factors: Age, gender, education level, full/par-time, etc.

2)  Organizational contexts: work flexibility, learning opportunity

3)  Learning/Education: active learning strategies, participation in education, number of hours of participation, etc.

See details in “VariableDescription.txt”

**Analysis Outline**

Explanatory analysis

1. overall understanding of the dataset
   1. statistical summary
   2. some plots / graphs for visualization
2. identify potentially important variables
   1. check correlation between the response variable and explanatory variables
   2. perform ANOVA and t-test to do group comparison

Research questions for 450

1. how demographic, organizational, and learning factors affect senior workers numeracy skills (measured by numeracy test score)
2. how demographic, organizational, and learning factors affect senior workers literacy skills (measured by literacy test score)

Same methods for both of these questions

* 1. Stepwise AIC using linear model
  + check two things beforehand
    - normality assumption
    - correlation between explanatory variables
  + pick the model by AIC value
  + model diagnostic (Adjusted R^2, goodness of fit)
  1. Lasso (possible?)

Result might be the intersection of variables picked by AIC and lasso united with possible important variables obtained from univariate test

Research questions for 550

\*\*\*To be added\*\*\*