Gini Coefficient

How do we measured the desired income inequality for 5 specific occupations (doctor, shop assistant, unskilled factory, chairman, cabinet minister).

Suppose two people are randomly drawn，let their income be $x_1$and x_2。then, the income of the richer one would be $M = Max\left\{x_1, x_2\right\}$， the income of another woule be $m = min\left\{x_1, x_2\right\}$. By the definition of the Lorentz curve, it can be derived that the Gini coefficient satisfies:

$$Gini = \frac{E(M) - E(m)}{E(M) + E(m)} = \frac{E(|x_1 - x_2|)}{2\,\mu}$$

Here, E(x1) = E(x2) = μ is the overall per capita income. It is used to describe the degree of dispersion of a constant positive distribution, and has scale invariance.

Based on the same principle, preferences for inequality are measured by calculating the Gini index from opinions of what each of these nine occupations should be paid (see Osberg and Smeeding 2006). Following Glasser (1962; also Dixon et al. 1987), we calculate the Gini index as follows (for each respondent i):

$$G_i = \frac{\sum_{j}^{n} = 1 \sum_{k}^{n} = 1 |x_j - x_k|}{2n^2\,\mu}$$

where x_j - x_k represents the income differences for all pairs of occupations, n is the number of occupations (there are 5 for all respondents), and μ is the mean of the respondents’ desired incomes for the five occupations. We multiply the Gini by 100 to ease interpretation of the coefficients from the statistical models.