1) When the reference distribution is known, the formulae in Section 2.2 can be used to convert any estimator of $F$ and $f$ into an estimator of $G$ or $g$. From an estimation viewpoint only, give three reasons why the direct estimation of $G$ or $g$ is preferred. As an example, consider the case where both the reference and comparison distributions are very right-skewed in a similar manner.

2) Use the definition of the quasirelative data to show that

$$G_{n,m}(r) = \frac{1}{m} \sum_{j=1}^{m} \mathbb{I}(Q_j \leq r) \quad 0 < r < 1.$$


Briefly summarize the comparison you see. What aspects of comparison of earnings are clear from the plot of log-earnings and what are clear from the relative comparison.

4) Find a pair of distributions from your own interests which you wish to compare. Plot the densities and the relative densities. Briefly comment on how useful the nonparametric estimate is in your case.