How Social Mobility is Modeled and Measured

Florencia Torche

Modeling and measuring mobility:
The basics (of a conventional approach)

Mobility captures the strength and pattern of association between parents' socioeconomic standing and (adult) children's socioeconomic standing.

- Socioeconomic standing measured by: Social class, occupational status, annual earnings, hourly wage, total family income .

- Modeling of strength and pattern of association depends on measure of socioeconomic standing used.

- "Parents and children" used to mean "father and son" – now extending to women (mothers and daughters) and family.

- Focus is bivariate association, but important extensions attempt to capture correlates and mediators of the mobility process.

Occupation-based measures of socioeconomic standing.

Social class:

-   Variables needed: Job title, industry, employment status, supervisory status, number of supervisees, firm size, industry.

-   Methods: Log-linear and log-multiplicative models for the mobility table (can be formulated as CLM to include continuous covariates).

-   Pattern of association: Non-linearities embedded in definition of class, captured by a battery of log-linear models.

-   Measure of "permanent wellbeing" believed to be successfully accomplished by single-time measures, given "occupational maturity" (this may be incorrect -- see Pine 2012).

-   Retrospective report of parental information by adult children seen as (relatively) reliable.

Occupation-based measures of socioeconomic standing.

Occupational status (Occupational education/earnings):

- Variables needed: Job title.

- Methods: Regression analysis, structural equation formulations.

- Pattern of association: Non-linearities usually not measured or theorized.

- Measure of "permanent wellbeing" obtained by adjustment of measurement error in variables using multiple indicators. Not much research on whether change driven by reporting error or real fluctuation, or extent to which change in occupation involves change in status.

- Retrospective report of parental information by adult children seen as (relatively) reliable.

Economic measures of socioeconomic standing

Individual earnings, hourly wage, total family income:

- Variables needed: Annual earnings, weeks and hours worked, all types of income from all family members (need to define family unit).

- Methods: Intergenerational elasticity and correlation.

- Pattern of association: Non-linearities captured by transition probabilities across quantiles, spline and weighted polynomial regression, quantile regression.

- Measure of "permanent wellbeing": Attained by averaging over multiple years to reduce measurement error (more years than we used to think!); and by measuring *both* parents' and children's economic standing around age 40 so to minimize age-related errors in variables and life-cycle bias (Additional data requirements).

If interested in collecting economic measures of wellbeing for parents…

- Impossible to obtain adequate information about parental economic standing from retrospective reports by adult children.
- If economic mobility will be addressed:
  A) Use alternative methodological strategies:
    - Two-sample instrumental variable or "synthetic parents" if parental socioeconomic standing information not available in primary sample but available in another sample, and "linking variables" are available.
    - Direct merging of datasets.
  B) Rely on panel survey.

Consistence across types of mobility

- Different conclusions between occupation-based measures of mobility and economic measures of mobility. In particular, discrepancies in country rankings and in trends over time.

- Discrepancies expected to the extent that different indicators measure different dimensions of wellbeing.

- But we usually operate under the (implicit) assumption that they capture the same latent concept. To the extent that they capture different phenomena, we have not agreed on what these phenomena are.

- Collect information on all these measures in full detail.

Absolute and relative measures of mobility

- Analysis of class mobility distinguishes structural mobility (disparities in the marginals of the mobility table assuming symmetrical association) and "social fluidity" (net intergenerational association).

- Regression analysis of occupational status, earnings, and income mobility captures structural mobility by means of change in the intercept and relative mobility by elasticity and correlation.

- Both approaches focus on relative mobility

- Relative mobility addresses question "how does attainment depend on social origins" but varies in importance over time and context (sometimes "people live in the margins").

Sibling correlations

- Decomposition of variance approach: Sibling correlation is the ratio of the variance of the family effect to the sum of the individual and family effect variances.

- Sibling correlation is "broader" than intergenerational association because any family and community attribute shared by siblings affects it. But it does not include genetic differences, temporal variability in family structure, birth order, differential parental treatment, etc.

- Studies exploiting geographically clustered data find neighborhood to play a very small to insignificant role in the siblings correlation.

Sibling correlations, measurement issues

- Same measurement caveats as in measure of intergenerational association (measurement error, life-cycle bias, age-related error in variables).

- Contemporaneous measures (no need to wait for a generation) but it requires interviewing sibling to obtain measures of economic standing.

The unit of analysis of mobility: Individuals or families?

- Class perspective: Family is unit of stratification but mobility has mostly been measured by male head of household (although some studies use "joint" or "dominance" approach).

- Economic perspective: Traditional Becker-Tomas model initially interpreted to hold at the individual level, but recently extended to family.

- Measuring mobility at family level has pushed consideration of assortative mating, intra-household decisions about labor market participation, direct intergenerational transfers of assets (may even offset labor-market based mobility dynamics).

- Focus on the family triggered by attempt to study women, but findings indicate family level processes may be equally relevant for men and women.

Unit of analysis: Individuals and families

- Reconsideration of question about relevant UA of mobility: Collection of individual attributes vs. family-level variables?
- If nothing else, this suggests need to measure individual socioeconomic attributes of each member of the household's "primary economic unit" in both generations (In "traditional" families: father/mother and husband/wife).
- Collect detailed information about family structure and change over time in both generations (or, at least, family roster in both generations).
- (One step further: In order to address processes of intergenerational reproduction, prospective survey starting with parental generation).

Capturing the process of mobility: Mechanisms

- Simplest formulation of mobility is strictly bivariate (not minor feat).

- Much research on mediators, including a myriad of variables such as: Educational attainment (now institution, field of study), wealth, cognitive skills, personality, family structure, number of siblings, significant others' influences, etc.

- Attempt to understand "mechanisms" in mobility process is important. However, structural parameters in models with "indirect effects" do not capture causal effects of interest.

Purposes of a mobility survey

- Is the main objective of the survey to ascertain a bivariate association well and capture trends over time? (a "monitoring/descriptive" purpose).

- Or do is it to estimate a complete model of the "mobility process"? (an "explanatory" purpose).

  - Data requirements are very different in terms of variables needed, sample size, even representativeness of the sample.

Comparing mobility across groups

- If one important objective of the survey is to monitor mobility across different groups of the population:
>   Blacks/ Whites/ Hispanics
>   Immigrants/ natives
>   Birth cohorts

- Data requirements are very different in terms of: Sample size, even representativeness of the sample.

- And, traditional approaches such as regression analysis do not capture differences across subgroups with respect to the entire distribution.