CHAPTER 10

Quantitative Methodology for Studying Families

Alan C. Acock

Quantitative Research Methods for Study of Families

Many characteristics shape the research methods of family scholars. First, families have a shared past and future (Copeland & White, 1991). Other fields study groups that have history, but few areas involve a history that is so persistently salient to everyday decisions. Second, families are both sacred and profane. The reverence we have for families challenges researchers who seek to objectify and measure them, while also recognizing the levels of violence, dishonesty, and abuse in families that expressions like "dirty linen" fail to capture. Being both sacred and profane introduces a level of privacy that is difficult to unravel.

Third, family scholars come from a variety of disciplines including anthropology, communications, counseling, demography, economics, family and consumer science, gerontology, history, human ecology, nursing, political science, psychology, social work, and sociology. Each field has its own questions, ideas, standards of proof, and methodologies. Fourth, family scholars utilize a plethora of theories and frameworks including hedonistic and exchange theories, developmental theories, critical theory, hermeneutics, self theory, role theory, symbolic interaction, systems theory, structural-functional theory, therapeutic systems theory, feminist theory, conflict theory, psychoanalytic theory, humanistic theories, and ecological theories (see, e.g., Burr, 1995). These theories point to different questions, offer different explanations, and require different standards of proof.

Fifth, family topics overlap with many content specialties. As an example, adolescent well-being overlaps with juvenile delinquency research. Family subject matter may overlap with such content areas as adolescence, counseling, deviance, drug abuse, health, nutrition, and women's studies. Each content area has a distinct literature, related theories, and methodologies for doing research. However, the theory, substantive content, and methodologies for family topics versus other related areas are difficult to separate (Bailey, 1984; Gilgun, 1992).

Sixth, although other fields of study focus on isolated individuals, family scholars study individuals embedded in family systems. Unfortunately, most methodologies available to family scholars are designed to study isolated individuals. Seventh, there is no consensus about what constitutes a family, and this chapter will not provide a new definition. The difference between traditional definitions based on legal or religious codes and more inclusive definitions based on what members do for each other is noted as a factor that influences research.

There is no single paradigm for doing research, with the result being that family scholars must be versed in multiple methodologies. Some fields have specialists in research methods, per se, who select, apply, and interpret the results of the appropriate procedures. This is rarely possible, except through collaboration, in studying families because researchers must select the most appropriate method, know how to apply procedures, and interpret results within the context of the theory, literature, and research traditions of family scholarship. Thus, all family scholars must be methodologists, and it is impossible to be a good family methodologist without being a family scholar.
Miller, Rollins, and Thomas (1982) addressed the methodological complexity of studying families. By referring to some of the characteristics we have discussed, they sought to explain the extraordinary amalgam of quantitative and qualitative methods, direct and indirect observation, experimental and survey methods, and cross-sectional and longitudinal methods. Although insufficient space is available here to detail the intricate relationship between root disciplines or specialty areas and the research methodologies used by groups of scholars, an exposition of these issues is provided by Larzelere and Klein (1987).

The unit of analysis, that is, the smallest unit about which a family scholar draws a conclusion, may be an individual (child, mother, nonresident father), a dyad (husband and wife, siblings), a family (nuclear, stem), a kinship system, a social network, a culture (Cuban immigrants to the United States), a historical cohort (Generation X, post-World War II Baby Boomers), or a historical period (colonial American family values). The outcome variable (dependent variable) in one study may be the predictor variable (cause or independent variable) in another study. For example, a researcher may want to explain how a hyperactive child influences outcomes for the family such as marital conflict, although another investigator may explain hyperactivity in children with family factors including conflict. For the first researcher the child’s hyperactivity is the independent variable (predictor), but for the second researcher it is the dependent variable (outcome).

A recurrent problem is that researchers collect data on one level of analysis and then act as if they have data on another level. Thompson and Walker (1982) illustrated this in their discussion of confusing individual data with relationship data. Although an individual (unit) may be happy about his or her marital relationship, such data are limited to the isolated individual and require information about the dyadic unit to measure relationship quality. A husband who exploits his wife may feel very good about “his” marital relationship quality, but an objective observer might describe the marital relationship quality as extremely imbalanced. Miller et al. (1982) point out that mixing levels of analysis is an area where methodology lags behind theory. Many theories conceptualize variables at the family level, or at least the dyad, but researchers often measure variables at the level of a single individual by interviewing or observing single persons within families.

The ecological fallacy involves drawing conclusions about a relationship at one level of analysis (say, the individual) level from observing a relationship at a different level of analysis (say, the family or the state). Carver and Teachman (1995) give an example of a correlation between the percentage of children in a school district from single-parent families and the percentage of children who repeat a grade. Assuming the correlation is 0.4, this means the higher the proportion of children in a school district who come from a single-parent family, the higher the proportion of children in the district who repeat a grade (see Figure 1).

It might be tempting to conclude from such a relationship that divorce leads to school problems such as repeating grades. Although this is an enticing conclusion for many conservative political activists, the data provides no evidence about who is repeating grades. It may be that school districts with a high rate of single parents have low property values and hence less is spent on the schools. Because such districts lack economic resources, there is a higher rate of school failure among all children, regardless of whether the child is from a divorced family or not.

The agenda for some scholars is understanding and providing descriptions of families as an inherently interesting topic of study. They are not especially interested in whether their research leads to improving the well-being of individuals, families, or societies. Still others seek to solve current social ills or have an ideological agenda. For example, many feminists seek to do research that can benefit people generally, the participants in a study directly, and can facilitate social change. A researcher’s agenda has major implications for research strategies and influences how participants are selected, what they are told about the study (informed consent), and how they are measured.

The Appropriate Time Frame

Data is the empirical information researchers use for drawing conclusions. For an observational study, empirical information may be the number of times a child has eye contact with a parent in a family decision meeting, while for a survey it may be self-reported depression or marital satisfaction. Research methodologies vary greatly in the time frame they use for data collection. At one end, cross-sectional designs collect data at a single point, providing snapshots of how things are at the particular moment of collection. In a 100-meter race between Joan, Ann, and Tasha, for example, one cross-sectional measurement might be 2 seconds into the race when Joan is the momentary leader. Another cross-sectional measurement might occur when the first person crosses the finish line, with Ann being the winner. A single cross-sectional measurement tells us little about the process of the race.

A longitudinal design (sometimes called a panel design) collects data at two or more points in time. In experimental and quasi-experimental designs, it is common for data to be collected twice—just before and just after an intervention. Sometimes data are collected at three points: before the intervention, shortly after the intervention, and at several months...