Chapter 4

Methodology in comparative studies

Outline

In Chapter 3 the relationship between metatheory, methodology and method was examined. Following Dervin (2003:136-137) and Pickard (2007:xv-xvii) I proposed to consider methodology as the bridge between *metatheory*, the general higher-level assumptions (also referred to as paradigms or world views) that underlie researchers' work, and *method*, the specific practical procedures they use in collecting, analyzing and interpreting data. This chapter deals with methodology in the broad sense outlined there. Ragin (1987:165) put it this way:

> …social science methodology does not concern mere technique; it concerns the relationship between thinking and researching. The key concern here is the impact of the organization of the investigation and the structure of the data analysis on how the investigator thinks about the subject.

While there has been little recent reflection on the methodological aspects of comparative librarianship, there has been ongoing rethinking and discussion in other comparative social science fields, such as in comparative education (Kelly *et al*. 1982:509-511; Raivola 1986; Crossley 2002, Cowen 2007), comparative ethics (Lewis 2000); comparative history (Skocpol & Somers (1980), comparative politics (Ragin 1987; Pennings *et al*. 1999; Landman 2008), comparative social policy (Jones 1985; Mabbett & Bolderson 1999; Kennett 2001), and comparative social research generally (Hantrais 2009) as well as in cross-cultural studies such as cross-cultural social work (Tran 2009), among many others. Thus this chapter draws heavily on methodological writings in these comparative fields. In this I follow in the footsteps of Foskett (1977) who provided the LIS profession with an overview of comparative studies in other disciplines at a time when there was much new interest in comparative librarianship. In some of these disciplines which are richer in theory than LIS there is much emphasis on the development and testing of more wide-ranging, higher-level theory than is usual in LIS. Not all the considerations set out in these texts can be readily transposed to our field, but we have much to learn from them. Where relevant, reference is also made to work on comparative librarianship, such as Simsova and MacKee (1975) and Krzys and Litton (1983).

This chapter focuses on comparative librarianship. Much of what is said here will also be relevant to non-comparative research in international librarianship or research into library and information phenomena more generally in other countries.

Comparative research

Comparison is inherent in all science, including the social sciences, where comparative research has historically played a significant role in their development as scientific disciplines. However, there is little agreement in the social sciences on the question whether the comparative method should be considered a distinct subfield (as suggested by terms such as comparative education or comparative politics) or as a methodology. Many comparative methodology texts present at least a brief discussion of this issue (e.g. Hantrais 2009:5-9; Pennings *et al*.1999: 21-26). In an influential article on comparative politics, Lijphart (1971:682) situated the comparative method as a basic method in its own right, alongside the experimental, statistical and case study methods. Sartori (1991:243) stated categorically that comparative politics is a "field characterized by a method". However, this did not end the disagreement as to the status of the comparative method. Kelly *et al*. (1982:511-515) discussed in some detail the question whether comparative education is a method or an area of content. More recently, Mabbett and Bolderson (1999:34) stated that "many of the issues surrounding the theories and methods in comparative work are not exclusive to cross-national studies… There is no distinct social science 'cross-national method' although such research highlights some of the issues in making scientific as opposed to impressionistic comparisons". The idea that comparative social science is no different from any other form of social science and that it does not have any unique methodological issues is attractive from a positivist perspective because it suggests that all social sciences use basically the same methods and because it underlines the 'scientific' nature of comparative social science (cf. Ragin 1987:2).

However, Ragin (1987:1-6) points to significant differences between the orientations of most comparativists and most 'noncomparativists'. These differences have methodological implications. The distinctive orientation of comparative social science is that it is concerned with what he calls "large macrosocial units", a term he uses to refer to countries, nations and other larger political entities. Although all social scientists claim to study societies or things that happen in society, most do not feel the need to define the macrosocial units within which their research is conducted and they are not much concerned with the properties of these units. They can take their existence for granted. This is different for comparativists, because they compare macrosocial units as such:

> At a very general level, comparativists are interested in identifying the similarities and differences among macrosocial units. This knowledge provides the key to understanding, explaining and interpreting diverse historical outcomes and processes and their significance for current institutional arrangements. Cross-societal similarities and differences… constitute the most significant feature of the social landscape, and, consequently, these researchers have an unmistakable preference for explanations that cite macrosocial phenomena… Most comparativists… are interested in the cases themselves, their different historical experiences in particular, not simply in relations between variables characterizing broad categories of cases. (p.6)

Similarly, Pennings *et al*. (1999:50) argue that comparisons are made across political and social systems that are defined in relation to territorial space. Arnove *et al*. (1982:5) discuss disagreement in comparative education on whether sub-units of national systems can be utilized as units of comparison in addition to the national systems themselves, and whether these can be compared at different points in time. There are advantages and disadvantages to selecting countries as 'comparators' (the units being compared). One disadvantage is that sometimes within-country differences are obscured, since in some national units, e.g. post-unification Germany, internal diversity may be greater than the diversity observed when comparing countries with one another, e.g. Germany with other EU countries (Hantrais 2009:54). Lijphart (1975:166-167) has critically discussed the issue of "whole-nation bias" and the arguments for and against the focus on countries. A wide-ranging and conceptually rich discussion of the concept 'nation' is found in Galtung (1982).

In this chapter I follow the approach that emphasizes comparisons between territorially distinct macrosocial units, i.e. international (or cross-national) comparisons. However, much of the discussion is also relevant to comparisons of cultural, societal or linguistic groups that are distributed within or across countries. I further adopt the point of perspective that comparative studies are

sufficiently distinct to justify considering the comparative method at the level of methodology as defined above.

Terminology

Before we look more closely at comparative methodology, it is helpful to clarify some key terms. A useful way to start is to consider a data matrix as depicted in Table 4.1:

Table 4.1: Data matrix for six public libraries (hypothetical data)

		Variables			
		A: Population served	B: Number of registered users	C: Number of books in stock	D: Number of loans per year
Observations	Library 1	8,100	5,887	17,600	33,245
	Library 2	18,700	12,465	31,900	68,432
	Library 3	4,100	2,345	8,600	13,911
	Library 4	23,100	9,855	38,100	71,313
	Library 5	14,700	8,288	25,500	68,113
	Library 6	7,500	3,853	12,250	23,911

Table 4.1 presents a data matrix containing a set of data on six public libraries. The libraries are the *observations*, also referred to as the *units of observation*. (Units of observation may sometimes be referred to as cases. To avoid confusion this is not advisable here, as will become clear later.) Each observation occupies a row. The number of observations is often abbreviated using the capital letter N. Here N=6. For each library four categories of information have been collected. These categories are the *variables*, sometimes referred to as *units of variation*. Each variable occupies a column. The number of variables is sometimes abbreviated using the capital letter K. Here K=4. At the intersection of an observation and a variable we find a data *value* (or data point).Thus for Library 3 the value for the number of registered users (Variable B) is found at cell B3, namely 2.345. This data matrix has 6x4=24 data values. All this will be familiar to users of Excel or other spreadsheets. Note that there are sometimes missing values, and that values are not necessarily numeric. Variables may be at different levels (or scales) of measurement, as routinely described in most LIS methodology texts, e.g. Connaway & Powell (2010:65-66).

Any phenomenon can be studied at various *levels of analysis*. For example, if information literacy education is studied, we could investigate aspects of such education at the level of countries, provinces, school districts, or individual schools, classes, teachers or students. At each level of analysis, different *units of analysis* might be appropriate. The unit of analysis refers to the type of entity or object that is studied. For example, in Table 4.1, the unit of analysis is libraries. Table 4.2 lists some levels of analysis with a selection of appropriate units of analysis for a hypothetical study of education for information literacy.

Table 4.2: Levels and units of analysis in a study of information literacy education

Levels of analysis	Units of analysis
Country	Countrywide policies, curricula, syllabi, materials, standards; total resources; aggregate student performance measures; international rankings
Province, School District	Provincial or district-wide policies, curricula, syllabi, materials, standards; total resources; aggregate student performance measures; national rankings
School	Classes in which instruction is given; number of hours of instruction; number of teachers certified to give instruction; types of materials used; aggregate student performance measures; provincial or district rankings
Student	Class in which enrolled, number of hours instruction received; performance on tests

Note that a picture at a higher level of analysis may be built up by aggregating data from a lower level. For example, the test scores of all the individual students in Grade 5 may be summarized using measures of central tendency (mean, median etc.) and dispersion (range, standard deviation etc.) by class, school, school

district, province or country. At each higher level we get further from the nitty-gritty detail and some information is sacrificed for the bigger picture.

Confusion about levels of analysis can lead to *aggregate fallacies* or 'wrong level' fallacies, which result from making inferences about units of analysis at one level based on observations of units of analysis at another level (Hantrais 2009:55). This can happen in particular when data are collected about individual persons and about territorial units such as countries. There are two kinds of aggregate fallacy. The *ecological fallacy* occurs when we make inferences about individuals on the basis of data about larger units, for example, inferring that Jessica, a student at Central High, has a low level of information literacy skills because the curriculum used in her school's school district has been rated as sub-standard. Variables measured at different levels of analysis may look the same, but are often not. In this example, information literacy skill has been measured at the individual level while the quality of the curriculum has been measured at a higher level. The opposite of the ecological fallacy is called the *individualistic fallacy*. For example, it would be inappropriate to arrive at conclusions about the school district's curriculum for information literacy simply on the basis of test scores from Jessica's class at Central High. Further examples are found in comparative social sciences texts, such as Landman (2008:43) and Hantrais (2009:55).

In comparative studies it is particularly important to be clear about the levels and units of analysis. Thus in a comparative study of public libraries in different countries, we could use data collected at various levels:

- individual library users (e.g. their attitudes to libraries, frequency of use, number of books borrowed per year)
- individual librarians (qualifications, salaries, length of service, etc.)
- individual libraries (population served, number of registered users, etc.)
- library consortia or districts (number of libraries, holdings in union catalog, volume of resource sharing, management software used, etc.)
- countries (total population and area, number of libraries, total registered users in all the libraries, national library legislation and policies, etc.)

Table 4.3 illustrates that data collected at more than one level can be used in a comparison of countries.

Table 4.3: Data matrix for six countries (hypothetical data)

		Variables			
		A: Population x 1,000,000	B: Number of public libraries	C: Number of books in public libraries x 1,000,000	D: Number of loans p.a. by public libraries x 1,000,000
Observations	Country 1	12.4	687	27.2	89.8
	Country 2	53.5	865	32.6	108.4
	Country 3	2.8	17	0.1	0.1
	Country 4	14.1	858	32.5	103.7
	Country 5	87.1	2282	150.5	312.8
	Country 6	8.6	113	2.8	3.9

Here the observations are countries, and for each country only one data value is given for each variable. In columns B, C and D data on each country's public libraries are presented. The level of analysis in Table 4.3, where countries are compared, is different from that in Table 4.1, where libraries are compared. Table 4.3 presents data about the libraries in each country. The data in column B represent a simple count of the number of libraries in each country. These are country-level data. The data in columns C and D are aggregated data based on statistics that would have been kept in each individual library and would have been reported in surveys or statistical returns to yield the information depicted in Table 4.1. Note that the detail provided there is lost in Table 4.3.

In Table 4.4 a comparison between two countries is depicted. For each country there is a data matrix as in Table 4.1.

Table 4.4: comparison of two countries

Country P						Country Q					
		Variables						Variables			
		A	B	C	D			A	B	C	D
Observations (e.g. libraries)	1					Observations (e.g. libraries)	1				
	2						2				
	3						3				
	4						4				
	5						5				
	6						6				
	7						7				

The two countries are referred to as *cases* or 'comparators' (Hantrais 2009). Each case has seven observations. Is N=2 or N=14? Opinions differ on this point. Some authorities use N to refer to the number of cases (so that N=2), thus they use the term 'small-N' studies to refer to studies of a small number of countries and 'large-N' studies to refer to studies covering many countries. These expressions are frequently seen in the literature. Others, e.g. Landman (2008) and Gerring (2007) use N to refer to the number of observations (so that N=14). Differences in the terminology used by various writers can lead to confusion. Pennings *et al.*(1999:10-11) discuss the distinction between cases and observations in some detail. Ultimately, in their view, it depends on the research question. If the research question concerns:

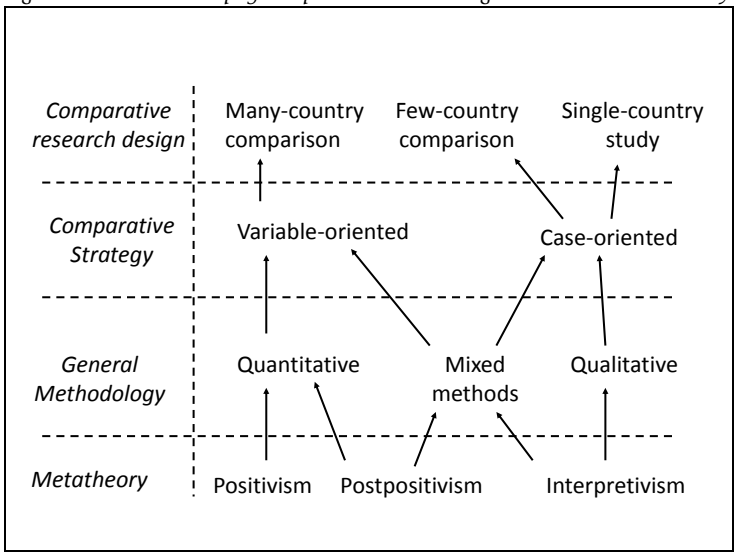
- an international comparison (comparison of countries), the number of cases is identical to the number of countries included (In Figure 4.3: N=6)
- a cross-national comparison (where in each country a number of units such as libraries or library systems might be studied), the number of cases is defined by the units of observation (In Figure 4.4: N=14)
- a comparison of change over time, where data for each country are reported at more than one point in time, then the time-units included indicate the number of cases, e.g. two countries at four points in time: eight cases.

The upshot is that, in reading comparative methodology texts or evaluating comparative studies, one should be aware that comparativists do not always agree on terminology.

Quantitative and qualitative methodologies

Pickard (2007:xvi) echoes a fairly common standpoint that there are only two basic methodologies: quantitative and qualitative. The choice between these two is the highest level methodological decision. The metatheoretical assumptions discussed in the previous chapter have a strong influence on this methodological choice. Quantitative methodology is usually associated with a positivist and post-positivist metatheoretical stance, and qualitative methodology with an interpretivist or allied metatheoretical stance (cf. Hantrais 2009:57-59). Figure 4-A depicts the relationship between the three main metatheoretical positions that were discussed in the previous chapter and methodological choices in comparative studies. To remain within the iceberg metaphor, the diagram should be read from the bottom (the metatheoretical level) upwards. Roughly following the levels distinguished by Pickard (2007), the methodological level has been divided into three sublevels, those of general methodology, comparative strategy, and comparative research design.

Figure 4-A: Relationship of comparative methodological choices to metatheory



Quantitative vs. qualitative

In most general social science research methods texts, including texts in LIS, the majority of chapters are devoted to quantitative methods, with the emphasis on the formulation of hypotheses, operationalization of concepts, measurement (a metaphor derived from the physical sciences), the development of instruments (a similar metaphor), the design of experiments or surveys, sampling, and the statistical testing of hypotheses. In such texts quantitative methods are regarded as the standard or default approach. Often a single chapter is devoted to qualitative (or naturalistic or ethnographic) methodology. We may find here that qualitative approaches are subsumed under a positivist methodology. This seems to be the case in the political science texts of Pennings *et al*. (1999) and Landman (2008). Landman considers what he calls "conceptual description" to be the first "objective" (where 'objective' refers to a step, activity or procedure) in a process leading to quantitatively conceived hypothesis testing and prediction (p.7). In comparative education positivism inspired a drive for the use of educational data from a large number of countries, on the assumption that large-scale studies would be more 'scientifically' reliable. However, as a counter-trend this period saw a move towards more interpretivist methodology, including phenomenology and ethnography, in comparative education (Hayhoe & Mundy 2008:10-13). The trend towards more use of qualitative methodology is also visible in other social science disciplines

In their introduction to the *Handbook of qualitative research*, Denzin and Lincoln (1994:3-4) offer the following definition of qualitative research:

> Qualitative research is an interdisciplinary, transdisciplinary, and sometimes counterdisciplinary field. It crosscuts the humanities and the social and physical sciences. Qualitative research is many things at the same time. It is multiparadigmatic in focus. Its practitioners are sensitive to the value of the multimethod approach. They are committed to the naturalistic perspective, and to the interpretive understanding of human experience. At the same time the field is inherently political and shaped by multiple ethical and political positions.
>
> Qualitative research embraces two tensions at the same time. On the one hand it is drawn to a broad, interpretive, postmodern, feminist, and critical sensibility. On the other hand, it is drawn to more narrowly defined positivist, postpositivist, humanistic, and naturalistic conceptions of human experience and its analysis (pp.3-4).

From the overview given by Denzin and Lincoln in their introduction, a picture emerges of an extremely diverse methodology with a confusing array of competing paradigms.

Many texts (e.g. Mouton & Marais 1990:160-162; Cresswell 2009:12-17; Hantrais 2009:98) present tables contrasting quantitative and qualitative methodology. It is hardly necessary to add to this discussion, but for the convenience of the reader, Table 4.5 summarizes some important characteristics. Terms used in the table and not encountered in Chapter 3, are explained in the course of this chapter.

Table 4.5: Characteristics of quantitative and qualitative methodology

Characteristic	Quantitative	Qualitative
Metatheory	Positivist, Postpositivist	Interpretivist
Nature of reality	Singular, stable, independent of observer; external reality	Multifarious, culturally determined, socially constructed; holistic reality,
Relation of investigator to what is studied	External, observing from outside; in artificial setting	In the study setting, observing from within; in real-life setting
Relation to social phenomenon	Neutral Empirical	Engaged Normative
Research aim	Nomothetic; hypothesis testing; generalizing	Idiographic; hypothesis generating; contextualizing
Strategies	Structured, theory-derived variables identified beforehand; controls; operationalization & measurement	Unstructured, open-ended, theory developed during research; concepts that are rich in meaning
Typical methods	Experiments, surveys	Participant observation, case studies
Criteria for judging research	Validity & reliability; objectivity	Credibility, transferability, dependability; authenticity

There is a huge literature discussing the pros and cons of quantitative versus qualitative approaches. It is routinely dealt with in current social science research methodology texts. It is also reflected in debates among comparativists about the respective merits of large surveys in many countries, in-depth comparisons of few countries, and single-country case studies – an issue to be discussed in the next section.

Mixed methods

Hantrais (2009:59, 103-108) points out that the quantitative/qualitative divide may have been exaggerated and that for many researchers it is no longer so important. In recent years there has been a greater acceptance of 'methodological pluralism' in the social sciences generally and in comparative studies specifically. The use of multiple methods or *mixed methods* is now covered in many research methods texts (e.g. Mason 1996; Teddlie and Tashakkori 2003) and the topic has also been addressed in LIS (Cresswell 2009; Pashaeizad 2009). Hantrais (2009: 109-113)) deals specifically with multiple methods in comparative social research, distinguishing between three approaches:

- Triangulation: two or more different research strategies are used to investigate the same phenomenon so that findings or insights from one strategy can be corroborated by the other(s); specifically quantitative and qualitative approaches are used in parallel.
- Facilitation: more than one approach is used, but one of them is dominant and different techniques may be used sequentially (for example a qualitative study to generate hypotheses before a quantitative study is undertaken).
- Complementarity: different approaches are integrated rather than used in parallel or sequentially, as when researchers shift repeatedly from the one to the other.

While the quantitative and qualitative methodologies are complementary and while there are advantages to combining them, there is a risk that the results will be irreconcilable. In general it seems that one of the two dominates and the other is secondary and supplements it (Ragin 1987:69-78). Problems can arise when mixed methods are used by researchers who are insufficiently aware of the metatheoretical implications of the methods they are using. Mason (1996:79) advises that "a researcher must think strategically about the integration of multiple methods, rather than piecing them together in an *ad hoc* and eclectic way." This implies that the researcher must be aware of the ontological, epistemological and other assumptions underlying their methodology.

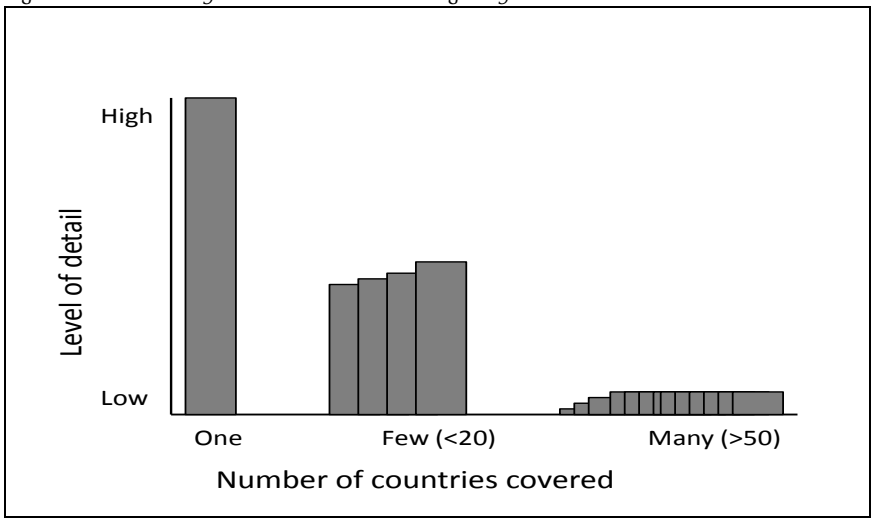
Comparative strategy

One of the most prominent issues discussed in comparative methodology texts in the social sciences is the question of how many cases (where cases refer mostly to countries) should be studied. In fact, the distinction between studies with many countries (often referred to as large-N studies) and those with few countries (often referred to as small-N studies) has given rise to a major typological division of comparative social science research. For example, Lijphart (1971:683-684) distinguished between the statistical, comparative and case study methods. By the latter Lijphart meant single case studies. By the "statistical" method he meant quantitative comparative research using large amounts of data. For Lijphart the crucial difference between the statistical method and the comparative method was that the latter uses fewer cases – too few for the statistical control that can be exercised in the analysis of survey data. His point of departure is essentially positivistic. It accepts the experimental method as the norm which other methods try to approximate. Similarly, Landman (2008:26) adopts a three-part division of comparative studies into "comparing many countries, comparing few countries, and single-country studies".

How many countries?

Generally, a study of a single country can be very intensive and conducted in considerable detail, but the more countries there are, the less intensively each one will be studied. This is illustrated in Figure 4-B, in which I have used Landman's (2008:26) categories for the number of countries dealt with.

Figure 4-B: Number of countries studied and degree of detail



This depiction suggest that comparative studies lie on a continuum and that the major differences between studies at the two ends lie in the number of countries covered and the degree of detail provided about each. Landman (2008:26) indicates that the continuum can also be looked at from another angle: the level of abstraction. The more countries are included in the study, the higher the level of abstraction (Landman 2008:26). Abstraction here refers to the concepts used. This is an issue that will be dealt with later in this chapter. Nevertheless, Landman (2008) insists that all comparative studies (regardless of the number of cases) are "grounded in one logic of inference" (p.45), which is part of a program of hypothesis testing (p.7, 9), theory building and prediction. If this implies that there is a single ontological and epistemological basis for all comparative research, such a view appears to be an over-simplification. This is suggested by the two exhibits that follow, which illustrate how a putative relationship between public libraries and democracy might be investigated using quantitative and qualitative methodologies.

EXHIBIT 4-I: Quantitative comparative study of the relationship between democracy and free public libraries

The hypothesis is that there is a direct relationship between a *democratic form of government* in a country and the *prevalence of free public libraries*. Once we have clarity on the two variables (in italics), they need to be operationalized. For the first variable, we might use a typology borrowed from political science which could (for example) enable us to divide the countries of the world into a number of basic categories ranging from fully democratic to dictatorship, using an appropriate index or classification that has already been devised by political scientists. We can operationalize the second variable by using a set of indicators such as the following.

- Number of public libraries related to country's population, e.g. mean population per public library
- Percentage of population who are registered members of public libraries
- Mean number of books borrowed from public libraries per capita

The data on the library conditions in the countries can be collected from sources such as UNESCO statistical yearbook.
We then perform statistical tests on the data to see whether there is a significant relationship between the two variables. If the null hypothesis (that there is *no* significant relationship) is rejected, the substantive hypothesis (that there *is* a direct relationship between the two variables) is supported.
We report our findings in a rather dry scientific report in which the text is supplemented by tables and graphs.

The research suggested in Exhibit 4-I can be done without leaving one's desk. It is not necessary to get close to the context. This research would enable us to make fairly confident general statements about the relationships between democracy and free public libraries. However, because we have had to specify the variables of interest beforehand, there is a danger that we may have overlooked other variables, e.g. degree of industrialization, strength of labor unions, literacy level, population density, per capita GDP, etc., which might also influence the relationship. If relevant variables are omitted, the relationship shown by the data may be spurious.

EXHIBIT 4-II: Qualitative comparative study of the relationship between democracy and free public libraries

We have no formal variables or hypothesis in mind when we start. We select two or three countries, e.g. Egypt, France and Colombia, study the available literature on the public libraries, their history, legislation, funding, current statistics on their status, also public library rules, curricula of courses on public library work and textbooks prescribed for this topic in used in library schools… We visit websites, including websites of pro-democracy organizations and www.humanrightsdata.com. Then we travel to these countries, and in each of them visit a number of public libraries, observe their collections and use during opening hours, conduct interviews with library staff and users, as well as with some senior government officials, labor union officials, democracy activists, office bearers of the national library associations, professors of LIS, professors of political science and other experts who are knowledgeable about the constitutions and politics of the countries, etc. As we do this, we write up notes describing what we observe and recording the insights we gain, including variables and possible hypotheses that we discover as we reflect on our observations. We discover and obtain more literature and documentation to study back home. Back home, while doing the additional reading and writing up our notes on the visit, we correspond further by e-mail with contacts in the countries to fill in gaps or clarify things we may have misunderstood.
Finally, we write a report describing the interactions and relationships that we uncovered. The text of our report will be embellished using interesting quotations from informants and descriptions of conditions and events we observed.

The study outlined in Exhibit 4-II may prove to be quite a messy and time-consuming exercise, and it is possible that it may not turn out quite the way it was anticipated. The researcher will discover a huge range of factors and influences that she had not thought of before visiting the countries. She would gain an excellent understanding of how these various factors may have influenced the establishment, development and current status of libraries. She would find that these are configured rather differently in each of the three countries, and that it is quite difficult to write all this up in a lucid, comprehensible and insightful report. However, if she succeeded it could make fascinating reading and convey an in-depth understanding of public librarianship in the three countries. Although we would not have much confidence that the pattern or patterns detected are also applicable in other countries, the study would suggest relationships that might fruitfully be studied in other countries, or that might be tested in a study such as that suggested in Exhibit 4-I. An early example of an in-depth study, albeit based largely on published literature and statistical data, was a comparison by Hassenforder (1967) of public library development in France, the United States and Great Britain, which yielded striking insights into the social and other conditions that favor public library development.

Variable-oriented vs. case-oriented strategies

The two exhibits illustrate the differences between what Ragin (1987) has called variable-oriented and case-oriented studies, in which quantitative and qualitative methods respectively are applied in comparative studies. These orientations refer to more dimensions than merely the number of cases.

Typically, in *variable-oriented studies* many countries are studied. The focus is on a limited number of variables, which are abstracted and removed from the concrete reality and context of the countries that are studied by means of simplifying assumptions. As Ragin says, the approach tends to "eliminate complexity instead of deciphering it" (p.xiv). Formal hypotheses stating universal relationships, the use of operational definitions and emphasis on quantitative data obtained by means of 'measurement' and the use of 'instruments' combine to distance the researcher from the phenomenon that is studied. All this reflects an underlying positivist ontology and epistemology.

In *case-oriented studies* a single country or a small number of countries is studied. The focus is on the individual country in its historical specificity and its full context. Each case is considered as a whole, taking into account the total configuration or constellation of factors and conditions. Ragin (1987:20) emphasizes the need to unravel the "multiple conjunctural causation" that characterizes social phenomena:

> …social phenomena are complex and difficult to unravel not because there are too many variables affecting them … but because different causally relevant conditions can combine in a variety of ways to produce a given outcome. In short, it is the combinatorial, and often complexly combinatorial, nature of social causation that makes the problem of identifying order-in-complexity demanding (p.26).

This embrace of complexity and the use of 'thick description' rather than statistics in case-oriented studies reflect a greater affinity for interpretivist metatheory. However, the two approaches have complementary strengths and they may meet in mixed methods studies in the grey area between the two extremes.

Comparative research designs

In this section we consider how the mainly qualitative case-oriented approach and the mainly quantitative variable-oriented approach are manifested in the three main comparative research designs: single-country studies, many-country comparisons, and few-country comparisons.

Single-country studies (case studies)

There has long been controversy about whether single-country studies (case studies proper) should be considered to be comparative studies. This is also

reflected in the literature of comparative librarianship, e.g. in the difference of opinion between Danton (1973:46-52) and Krzys and Litton (1983:27-29) on the one hand, who reject single-country studies as being comparative, and Collings (1971) and Simsova and Mackee (1975:30-32) on the other, who accept them. In political science Sartori (1991:252) insisted that the single case investigation "cannot be subsumed under the comparative *method* (though it may have comparative merit)" (Sartori's emphasis).On the other hand, Landman (2008:28) states that

> …a single-country study is considered comparative if it uses concepts that are applicable to other countries, and/or seeks to make larger inferences that stretch beyond the original country used in the study (p.28)

Even if a case study does not itself constitute comparative research, good descriptions of individual cases are useful as raw material for comparisons, or as the first step in a comparative study (cf. Landman 2008:5). Lijphart (1971: 691-693) described the "scientific status of the case study method [as] somewhat ambiguous" (p.691), but distinguished six types of case studies on the basis of their potential contributions to theory development in political science. From having been treated with some suspicion, the case study is making a comeback. A very thorough and lucid overview of the case study is found in Gerring's (2007) chapter in the *Oxford handbook of comparative politics*. He suggests that there is a growth in interest in case study research design, possibly a movement away from the variable-centered approach due to a number of factors, including growing discontent with "cross-case observational research" (many-country comparisons) and an epistemological shift away from the positivist model of explanation. However, the case study is still viewed "with extreme circumspection". Paradoxically, Gerring (2007:93) points out that while case studies have taught us a great deal, not much is understood about the case study method.

Gerring (2007:94-95) defines a *case* as "a spatially delimited phenomenon (a unit) observed at a single point in time or over some period in time. It comprises the sort of phenomena that an inference attempts to explain" (p.94). This implies that the case is selected or delimited on account of its potential explanatory value. In comparative politics the nation-state is the dominant type of case, but other social and political units or institutions can also be chosen (pp.94-5).A *case study* is "the intensive study of a single case for the purpose of understanding a larger class of cases (a population)", while *case study research* may include several cases. The number of cases is limited by the extent to which they can be investigated intensively. At a given point such intensive study is no longer possible, and the emphasis of a study will shift from the individual case to a sample of cases. Gerring refers to such a study as a "cross-case study" and he sees case studies and cross-case studies as lying on a continuum (Gerring 2007:95). It should be noted that when Gerring discusses case studies, his discussion is not limited to single cases.

A key decision in single-country studies concerns the selection of countries. Countries may be selected simply because the researcher is familiar with them or has access to them, because they have not yet been studied, or, because they are seen as being important in relation to other cases or studies. Thus countries may be chosen because they are considered to be representative of a category or group of countries, exceptional, or counterfactual. Much depends on whether the country is chosen for purposes of generating or testing hypotheses.

If case studies are used as a substitute for experimentation with the intention of testing hypotheses, comparativists may seek *counterfactuals*, situations in which the conditions that supposedly gave rise to the phenomenon or situation being studied are absent. Counterfactuals can be theoretical and imaginary, or real cases, where the required counterfactual situation exists naturally (Landman 2008:14-15). To take an example from LIS: In a text widely used in 'foundations' courses introducing American students to library and information science, Richard Rubin (2004:260) identified three "prerequisite conditions… for libraries to prosper": centralization, economic growth, and political stability. A country with thriving libraries but lacking one or more of these prerequisite conditions, does not conform to the expectations generated by Rubin's theory and would constitute a counterfactual to challenge it.

In surveys of many countries, deviant or 'outlier' countries, which do not fit the general pattern, may be identified. Such countries may be chosen for more

intensive study to determine why they do not conform to the theory. Thus single-country studies can be used to confirm or infirm accepted theory and to provide insights for refining it (cf. Landman 2008:87-89).

Countries may also be chosen because particular characteristics are present in them to an extreme degree, because the case appears to it lend itself to the study of causal mechanisms, or because a policy of interest has been implemented there. On the other hand, a country may be chosen because it is thought to be representative of a group or category of countries. This raises the question of classifications or typologies of countries, which is briefly discussed under few-country comparisons below.

Case studies are particularly useful for generating hypotheses, exploring phenomena, determining causal relationships, tracing causal mechanisms or pathways, offering in-depth insights, and dealing with heterogeneous entities. Ontologically speaking, "case study researchers tend to have a 'lumpy' vision of the world: they see countries, communities and persons as highly individualized phenomena" (Gerring 2007:98-109). While this suggests an affinity for interpretivist metatheory, Gerring (2007:115-116) points out that case studies may take on many forms and can be used within any paradigm.

Many-country comparisons

Many-country studies are also referred to in the literature as survey studies, cross-sectional studies, cross-case research or large-N studies. The methodology is usually quantitative and typically involves multivariate analysis, i.e. simultaneous statistical analysis of data collected on more than one variable. Use of qualitative methods in analysis of many-country comparisons is unusual because "a richer level of information" is needed, including "deep history", which would be difficult to collect and analyze if large numbers of countries are involved (Landman 2008:52).

Ontological assumptions underlying many-country comparisons are that countries can be seen as units, that the features being compared can be measured, that these features are sufficiently similar, and that variations in features in one country are largely independent of variations of the same features in other countries. The latter assumption is referred to as 'unit independence'. Vast differences between countries call into question the assumption that their features are comparable. For example, in 2010 the smallest member of the United Nations, Nauru, had a population of under 10.000, while that of the most populous UN member, China, was estimated at 1,3 billion. The assumption of unit independence can also be questioned (Landman 2008:52-54). It is possible that some of the cases are not independent of one another. This is referred to as 'Galton's problem': a relationship empirically determined between presumed independent variables P, Q and R and a dependent variable Y within three countries A, B and C may result from the fact that country A influenced countries B and C, rather than from causal relationship between the independent variables P, Q and R and the dependent variable Y. Thus the causal relationship was not within-country but across countries (cf. Lijphart 1975:171). Globalization further calls into question the assumption of unit independence, particularly in the case of smaller countries which are highly susceptible to outside influences, such as those exercised by western education and media.

Nevertheless, many-country comparisons lend themselves to the formal testing of hypotheses. When hypotheses are to be tested, a relationship holds between the number of variables and the number of cases. The more variables that may exert a potential influence on the phenomenon under investigation, the more cases are needed to test all the possible combinations of several variables. As an example, let us assume that we wished to test the hypothesis that the integration of school media centers in the school curriculum is more advanced in English-speaking countries where school media specialists are formally certified and are required to have dual qualifications in library science and education, than in other countries where there is no formal certification and dual qualifications are not required. Here we have one dependent variable (degree of integration of the media center in the curriculum), and three independent variables: language of country, presence or absence of formal certification, and qualification requirement (single or dual). Simplistically, to test the relationship formally we would need a three-dimensional

contingency table as in Table 4.6:

Table 4.6: Contingency table for three independent variables

Independent variables			Dependent variable: Degree of integration of School Media Center in Curriculum			
Language	Certification	Single/dual qualification	None	Low	Med	High
English	Yes	Single				
		Dual				
	No	Single				
		Dual				
Other	Yes	Single				
		Dual				
	No	Single				
		Dual				

Using dichotomous variables as here, we need a minimum of 2x2x2=8 cases to control for all possible conditions. Failing that, there would not be enough degrees of freedom for a statistically valid test. If we allowed more values per independent variable (e.g. for Language: English, French, Spanish, Other) we would need more cases (4x2x2=16). If we added another dichotomous variable (e.g. Governance of education system: centralized or decentralized) we would need 4x2x2x2=32 cases to avoid having lots of empty cells and not enough degrees of freedom. Thus many-country (large-N) comparisons are needed for performing valid statistical tests.

However, there are limitations. The number of variables that can be included in a statistical model is quite limited. There are around 220 countries and inhabited territories, of which some 30 have fewer than 100.000 inhabitants. Statistical data may not be available from all of them. Data may be out-of-date or unreliable. Some countries may be disqualified from the study for other reasons. The problem is exacerbated when the study population is limited by other criteria, for example, if we decided to limit the study to democratic countries. To ensure that we obtain enough cases for our statistical analyses we would be tempted to 'stretch' the concept of democracy by using an operational criterion that would not exclude too many countries. Thus we might decide that a country is considered to be democratic if its current leader was elected in a general election, regardless of the fact that such elections are often rigged.

Since the total number of countries is relatively small and this number tends to be further reduced by the factors just mentioned, comparativists do not commonly select countries by means of sampling. Instead, all the countries that satisfy given criteria or belong to defined types and for which data are available, tend to be included. Sampling may, however, be used in comparative studies in which more numerous sub-national units (e.g. provinces, counties) constitute the cases. Of course, sampling may be used *within* cases if data are collected at a lower level of analysis. For example, the libraries in Table 4.4 could have been selected using random sampling even if the countries were selected purposively.

In statistically-oriented many-country comparisons there may also be problems relating to the validity and reliability of measures used in comparisons. An example would be per capita GDP, which says nothing about the distribution of income, or literacy rate, which is measured differently in different countries. The dichotomous variables that were used in the example depicted in Table 4.6 illustrate a measure taken to prevent the occurrence of empty cells. However, dichotomizing this variable holds a threat to the validity of the study: by characterizing certification as either 'certification' or 'no certification', no cognizance is taken of different forms or procedures of certification, which may be germane to the relationships being investigated. To use the distinction discussed in the previous section, many-country comparisons are essentially variable-oriented. Cases are disaggregated into variables. Variables are measured, but a major weakness of quantitative many-country comparisons is that variables tend to be conceptualized and measured at a shallow level. We can determine with some degree of confidence that relationships exist between the variables, but this may not tell us very much about the nature of the relationships (cf. Lijphart 1975; Ragin 1987).

Few-country comparisons

In terms of the number of cases being compared, few-country comparisons are found on the continuum between single-country studies and many-country comparisons. The countries can be as few as two. Two or three appear to be the most prevalent number in recent comparative studies in LIS. The deciding factor, however, is not so much the number of countries, but the methodological approach.

Various terms are used for studies comprising a small number of cases. For some authors (e.g. Lijphart 1971, 1975) this is "the comparative method"; he also refers to the "comparative-cases strategy" (Lijphart 1975:163). Ragin (1987: 34-52) places it under the rubric of "case-oriented comparative methods". Smelser (1976, quoted in Ragin 1987:31) refers to it as the "method of systematic comparative illustration", 'illustration' suggesting that it is an adjunct method, not suited for the serious task of testing hypotheses. Indeed, the terminology often reflects the methodological orientation (quantitative/qualitative) of the writer. Quantitatively-oriented authorities tend to see a few-country comparison as a less desirable or watered-down version of studies using larger numbers of cases, and they emphasize methods of compensating for its perceived weakness by approximating the inferential value of many-country comparisons as far as possible (e.g. Landman 2008). Lijphart (1975), who has identified a number of advantages of few-country comparisons in relation to many-country comparisons, nevertheless sees them as a "method of testing hypothesized relationships among variables" (p.164), using the same logic as many-country comparisons with the difference that countries are carefully selected to compensate for the inability to sample from a large population.

On the other hand, qualitatively-oriented authorities tend to consider few-country comparisons on their own terms as insight-generating, in-depth studies of cases as wholes and as opportunities to study multiple and conjunctural causation. This is more aligned with interpretivist metatheory. Thus they adopt the case-oriented approach as described by Ragin (1987:35):

> The goals of case-oriented investigation often are both historically interpretive and causally analytic. Interpretive work … attempts to account for significant historical outcomes or sets of comparable outcomes or processes by piecing evidence together in a manner sensitive to historical chronology and offering limited historical generalizations which are sensitive to context. Thus, comparativists who use case-oriented strategies often want to understand or interpret specific cases because of their intrinsic value. Most, but not all, case-oriented work is also causal-analytic. This companion goal is to produce limited generalizations concerning the causes of theoretically defined categories of empirical phenomena … common to a set of cases.

What this implies is that the case is of interest in itself and not merely as a bearer of a set of variables, and that relationships within a case are of at least as much interest as the generalized relationships among variables across cases. Because in few-country comparisons the comparativist studies the selected countries in depth and is closer to the data, the problems of comparability and concept stretching (referred to above in connection with many-country comparisons) are alleviated: appropriate countries can be chosen, and richer, multidimensional, less abstract concepts can be employed. Furthermore, considerable attention can be paid to unraveling complex relationships, including relationships of multiple and conjunctural causation, within each country, and over time. As Ragin (1987:23-26) has pointed out, the complexity of social phenomena is not only a function of the many causes that may be responsible for a given effect. It also derives from the effects of conjunctures, where a particular combination of factors has to be in place or in sequence before a given effect can occur. The depth of analysis makes for a high level of internal validity. On the other hand, despite the considerable investment in time and resources needed for such in-depth studies, their findings cannot readily be applied to develop broad generalizations explaining phenomena in countries not studied – hence their external validity is low compared to that of many-country comparisons.

A critical question in few-country comparisons, as it is in single-country studies, is which countries to select. In few-country studies the countries are not selected by

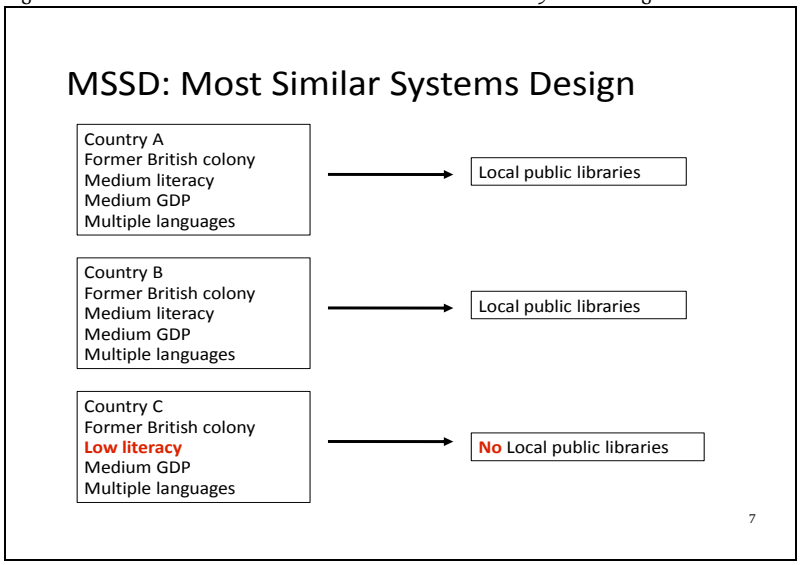
sampling. Instead they are carefully selected for the purpose of the study (Ragin 1987:15). Selection of countries for single-country studies was touched on earlier. Principles applied there are relevant here as well, but additional factors come into play when we consider few-country comparisons. It is intuitively obvious that there is little point in comparing entities that are so different that hardly any commonality can be found (e.g. Nauru and China). Neither would it be useful to compare entities that are so similar that little difference of interest can be found. When countries are selected for comparison, they should be comparable in respect of the phenomenon or theory that is primary interest in the study. Sartori (1991:246) has stated that entities to be compared should have both shared and non-shared attributes. They should be at the same time "similar" and "incomparable".

A first step in selecting relevant countries may be to narrow the field to countries in particular regions or in particular categories, such as democratically governed countries, francophone countries, Islamic countries or developing countries. This raises the issue of classification and typologies, which is dealt with in a separate section below.

If it is intended to uncover causal relationships or conditions associated with particular developmental pathways, there are two basic design strategies for selecting countries for comparison. These strategies are related to the methods for determining causation that were formulated by the British philosopher J.S. Mill. The basic choice is between the 'Most Similar Systems Design' (MSSD), which corresponds to Mill's 'Method of Difference' and the 'Most Similar Systems Design' (MDSD) which corresponds to Mill's 'Method of Agreement' (Pennings *et al*. 1999: 43-49; Landman 2008: 70-76; Hantrais 2009:59-64).

In a *most similar systems design* (MSSD) we select countries that are very similar in all respects except in respect of the particular factor or variable of which we want to study the effect. This is illustrated in Figure 4-III.

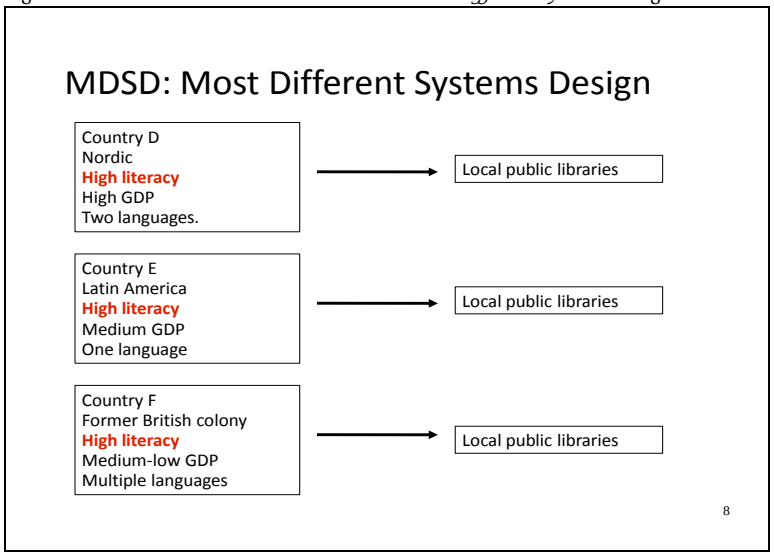
Figure 4-III: Public libraries and literature: most similar systems design



Here we are interested in the role of literacy in relation to the presence of local public libraries. By selecting countries that are very similar in respect of other characteristics (in this case, their colonial history, GDP, and number of languages spoken) we in effect control for the influence of those variables, which otherwise might have been thought to influence the presence of local public libraries. We can therefore say that *ceteris paribus* (all things being equal) there is a relationship between literacy level and the prevalence of public libraries. The *ceteris paribus* principle is important. What we are doing here is in effect to simulate the operation of experimental controls (which we cannot exercise in real life situations) by matching the countries on the variables we need to control for. Note that we did not say that literacy levels determine or cause the prevalence of public libraries. The relationship of cause and effect may well operate in both directions.

The most different systems design (MDSD) is depicted in Figure 4-IV.

Figure 4-IV: Public libraries and literature: most different systems design



In the most different systems design we take the opposite approach. We select a number of very different countries that do, however, share the phenomenon we are interested in, in this case again, the presence of local public libraries. The countries depicted in Figure 4-IV differ in respect of their cultural-linguistic groups, their GDP, and the number of languages spoken. Because local public libraries are present in spite of the differences in these factors, this suggests that there is a relationship the presence of public libraries and the one factor they do have in common, a high literacy rate. Again it is worth pointing out that we cannot say that the high literacy rate is the cause of the presence of public libraries. We can only say that there is probably a relationship between these variables.

There has been a great deal of philosophical discussion and criticism of Mill's methods and various weaknesses have been pointed out (Hantrais 2009:62-64). In the decision on a design, other factors such as the number of cases also play a role and further variants and refinements of the methods are possible (Landman 2008:70-78; Pennings *et al*. 1999:43-49).

Trade-offs between cases and variables

Earlier I referred to the trade-off between cases and variables. Essentially, in many-country comparisons (which tend to have greater inferential power in terms of the ability to generalize with confidence) it is not possible to deal with as many variables, or to deal with them in as much depth, as in few-country comparisons where we can have greater confidence that we fully understand the complex relationships, interactions and causal mechanism among variables. This raises the question as to what can be done to combine the strengths of the two designs, and specifically to increase the inferential power of few-country comparisons. Landman (2008: 27-30; 68-70; 79-82) puts much emphasis on combining quantitative and qualitative methods and on methods of statistical inference when few cases are studied. Ragin (1987) developed a method of "qualitative comparative analysis" using Boolean truth tables, which has been lucidly summarized by Landman (2008:79-81). Another approach is to multiply the number of cases by repeated measurement over time.

The time dimension

In the literature there has been some discussion as to whether the historical or diachronic perspective is appropriate in comparative studies.

In qualitative studies, the historical perspective is seen as an essential component of the detailed description that is expected. Sweeting (2005) discusses the relationship between comparative education and history of education and asserts that they complement each other. The historical dimension adds another level of complexity, as it requires the special expertise needed in finding, evaluating and utilizing primary sources, but Sweeting adds that the historical perspective can add much value in cases where

> …the characteristics of historical analysis – its concern for evidence, its tentativeness, its utilization of historical consciousness, its interest

> in provenance, agency, seminality, and significance, its interest in connections, and its distrust of teleological[1] explanations – are adopted in the process of comparing (p.40).

In quantitative studies a historical dimension may be added when the number of cases is small and researchers want to increase the number of cases for purposes of statistical validity (cf. Lijphart 1971:689).Thus in a study of eight countries, measurements taken four times at say, 5-year intervals, could be used to increase the number of cases to 32. This is called the "pooled cross-sectional time-series analysis" (Landman 2008:32). It should be noted that this is a fundamentally ahistorical approach, as it is the situations as at those points in time that are of interest (so that they are conceived as equivalent to separate countries), not the development of the situation over time. In this connection Lijphart (1975:171-172) warns against the danger of Galton's problem and "case-stretching" when using this method to increase the number of cases. Clearly, if data are repeatedly collected in respect of the same country, these 'cases' cannot be considered to be independent.

More information on the time dimension in comparative studies can be found in Pennings *et al*. (1999:49-54), who discuss the role of space and time, distinguishing between designs that are located in the time dimension only (time series and cross-sectional designs in single countries) and designs that are located in both time and space (including pooled time series designs in multiple countries).

Further design decisions

The term *level of analysis* was introduced earlier. Selecting an appropriate level of analysis is an important decision in designing a comparative study. In cross-national studies Novak (1977:12) distinguished two levels, one essentially at the national level ("the human aggregate corresponding or equivalent to a nation"), the other at the sub-national level, which can include local communities or individual human beings. Landman (2008:19-20) makes an analogous distinction between macro and the micro levels, whereas three levels, macro, meso and micro levels, are discussed by Kennett (2001:6-7) and Hantrais (2009:54-55). The decision on the level of analysis in a study is closely related to the choice between a variable-oriented and a case-oriented approach, as discussed earlier. Macro level studies tend to be variable oriented and micro level studies tend to be case-oriented.

However, there are also underlying ontological beliefs affecting the decision. In political science this is referred to as the 'structure-agency' problem:

> Micro-analysts believe that the world of politics is shaped by the actions of 'structureless agents', while macro-analysts believe that the world is shaped by the unstoppable processes of 'agentless-structures' [sic] (Landman 2008:19).

Thus, in international comparisons of public library development, theorists who emphasize the role of large-scale structures and processes, such as the shifting relations of social classes, democratizing and popular educational movements and government policies, would focus on these phenomena at the macro level. On the other hand, theorists who emphasize the role of individual activity would focus at the micro level on the roles of cultural, educational and library leaders and activists, and may want to examine how they interact at the local level. In studying information service development in developing countries, macro-theorists may want to emphasize matters such as the telecommunications infrastructure, the cost of internet connectivity and government policies on the importation of IT equipment, while micro-theorists may want to examine quite closely the social and cultural interactions that take place within rural communities when telecenters are put in place there, or the ways in which more and less receptive school principals and teachers integrate the use of information sources in their curricula and classrooms.

Increasingly international comparisons are conducted at more than one level at the same time. The examples cited above illustrate that combining analysis at the two levels would provide a more balanced assessment. Multilevel studies make possible

[1] Here "teleological explanations" refers to explanations of historical events in terms of larger frameworks such as 'God's plan for our people', or 'manifest destiny'.

combinations of methodological approaches, thus providing richer sources of data and applying the principle of triangulation that was referred to earlier. In doing so, however, care must be taken not to fall into the trap of confusing the levels of analysis and committing aggregate (ecological or individualist) fallacies (Hantrais 2009:55). In this connection it is worth mentioning the effect of distance from the phenomenon being observed, as discussed by Hantrais (2009:56-57). For example, a 'long-distance' study of library development in sub-Saharan Africa undertaken from Europe or North America would reveal a much more uniform situation than a 'close-up' study looking at community libraries on the Cape Flats around Cape Town, South Africa, and rural village reading rooms in Botswana. Depending on the focus, Hantrais suggests that the research design needs to be adjusted to ensure an appropriate level of analysis and the right focus (Hantrais 2009:57).

Classification and typologies

As mentioned earlier, in comparative studies we usually need to select or group countries, or both. Classifications are developed by comparativists to group phenomena such as countries into "distinct categories with identifiable and shared characteristics" (Landman 2008:5-6). In addition to facilitating the selection of countries for study, classifications help to simplify the complexity that emerges from contextual description by grouping entities into simpler categories that can form the basis for cross-national comparisons along various dimensions, e.g. level of economic development, democracy, or type of regime (Landman 2008:5-8). Categories can be derived inductively or deductively.

Mouton and Marais (1990:137) define a typology as "a conceptual framework in which phenomena are classified in terms of characteristics that they have in common with other phenomena". The basic unit of a typology is a 'type' or (in older terminology) an 'ideal type'. As the latter term suggests, a type is constructed through a process of abstraction in which what is common to examples of that type is emphasized while incidental individual differences are ignored. The type is therefore an abstraction which is not matched exactly by any individual example or case (Mouton & Marais 1990:137). The distinction made by Knuth (1995) between "American" and "British" models of school library development approach such ideal types. In typologies phenomena are often classified in terms of more than one variable or dimension. An example from political science is Lijphart's well-known typology of democratic political systems in terms of (a) the nature of the political elite (which can be competitive and adversarial or coalescent and cooperative) and (b) the political elite (which can be homogeneous or fragmented). Applying these two variables produces a typology of four cells, as in Table 4.7, adapted from Lijphart (1968).

Table 4.7: Lijphart's typology of democratic political systems

		Political culture	
		Homogeneous	Fragmented
Elite behavior	Coalescent	Depoliticized Democracy (e.g. Nordic countries)	Consociational Democracy (e.g. Netherlands)
	Competitive	Centripetal Democracy (e.g. UK, United States)	Centrifugal Democracy (e.g. Italy)

In addition to serving purposes of exploration and explanation, such a typology can be used as a frame of reference for the collection and analysis of data (Mouton & Marais 1990:138). Ragin (1987:20) points out that such typologies are important because they set boundaries on comparability. As an example he mentions the comparability of "dependent" countries. Among developing countries, dependence takes many forms, so that one should not expect changes in the world economy to affect them all in the same way. Thus in a few-countries comparison a typology of developing countries may provide a useful framework for the selection of countries. We can adapt this example to LIS. In a study of library development in developing countries, we might be interested in including countries with different colonial backgrounds, taking into account (a) the strategy of control exercised by the colonial power (assimilation vs. paternalism and control through traditional rulers) and the extent of European settlement (significant vs. minor). This would yield the four-cell matrix presented in Table 4.8.

Table 4.8: Typology of developing countries by colonial background

		Degree of European settlement	
		Significant (Settlement by Europeans encouraged, significant European minorities present by independence)	Minor (Settlement by Europeans not encouraged, European presence limited to non-permanent officials, soldiers, missionaries, traders & other expatriates)
Strategy of control	Assimilation (Inhabitants encouraged to embrace language and culture of colonial power, becoming "Black Frenchmen" etc.)	Assimilation-settlement colony E.g. Angola, New Caledonia	Assimilation-expat colony E.g. Guinea-Bissau, Niger, Central African Republic
	Paternalism (Control exercised through traditional rulers; ethnic identities recognized, encouraged)	Paternalist-settlement colony Kenya, Namibia, South Africa, Zimbabwe	Paternalist-expat colony Gambia, Ghana, Sierra Leone, India

The matrix would be useful to a researcher planning to do research on library development in former colonies by suggesting countries to consider for inclusion or elimination. If the researcher wished to study the effects of both variables, at least four cases would have to be chosen, one from each cell. If the researcher wished to concentrate on the impact of European settlement, it would be wise to select cases from the assimilation or paternalist rows only, as this would control for the effect of the *Strategy of Control* variable by holding it constant.

Note that this typology is presented for illustrative purposes only. A researcher wishing to develop such a typology would be well-advised to first search the literature on the history, politics and government of colonial territories to find existing typologies with theoretical underpinnings before embarking on the construction of a new one. In the case of LIS we do not necessarily have to develop our own classifications. Often we can save ourselves the effort, and make our studies accessible for researchers in other disciplines, by utilizing existing classifications, such as World Bank's classifications by economic characteristics, or formal groupings of countries such as the Organization for Economic Cooperation and Development (OECD), which comprises the wealthy countries, and the African, Caribbean and Pacific (ACP) Group of States, which groups together most of the world's poorest countries. It can also be helpful to utilize typologies drawn up by economists, political scientists and other social scientists. In some cases, however, we may want to develop a typology based on LIS-related criteria. Thus in a study of public library conditions we might want to compare countries which were pioneers in the provision of free public libraries, with countries which joined this movement later, laggards, and countries that lack public libraries altogether. An interesting example is found in an article by Streatfield and Markless (2011) who, in discussing evidence-based library advocacy, divided countries into three groups according to their history of library development: (1) "ad hoc and opportunist development…"; (2) "… steady progress (in formerly or currently centralist or totalitarian states"; and (3) "countries with well-developed library services [experiencing] a descent from a more or less mythical Golden Age". If we decide to use an approach of this nature we need to develop explicit criteria so that the countries can be classified on a logical and consistent basis.

Conclusion

This brings us to the end of the second phase in the sequence metatheory–methodology–method. In the following chapter some decisions relating to methods, at the level of techniques and procedures, will be discussed.

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