Published in final edited form as:

Ann Am Acad Pol Soc Sci. 2016 ; 666(1): 28–45. doi:10.1177/0002716216650629.

The Potential and Limitations of Cross-Context Comparative Research on Migration

Fernando Riosmena

Associate Professor at the Population Program and the Geography Department at the University of Colorado at Boulder. His research looks at the role of U.S. immigration policy and social, economic, and environmental conditions in sending communities on the migration dynamics between Latin America and the United States

Abstract

This article is an overview of household survey approaches for the comparative study of international migration dynamics. Focusing on differences in the drivers of international mobility at different times and places, I highlight the problems of obtaining data with adequate representation across time periods and geographies, and discuss a broad constellation of prospective and retrospective approaches, paying particular attention to the migration ethnosurvey. I place this methodology within a broader constellation of prospective and retrospective data collection techniques, briefly describing the advantages and disadvantages of each and summarizing the commonalities and differences of ethnosurvey approaches adopted around the world. In particular, I discuss the potential and limitations of cross-context research and suggest post hoc case selection and other adjustments to ameliorate problems. I conclude with ideas about how case and sample selection can help to bolster migration studies in the future.

Keywords

international migration; migration; ethnosurvey; survey research; survey methods

Theory validation and refinement as well as policy evaluation require systematic empirical work that encompasses a broad range of conditions in which migration is—and is not—produced (Fitzgerald 2012). Because the circumstances in which international movement occurs seem to differ in some important ways across the globe (see Massey et al. 1998), contextual disparities may be fertile ground to test the range of migration theories and how they interact in different settings. This contextual dependence underscores the significance of empirical work across spatiotemporal scales that takes advantage of historical and cross-national variation in the drivers of mobility (see Clark, Hatton, and Williamson 2004, 2007; Donato and Gabaccia 2015; Fitzgerald and Cook-Martin 2014; Hatton and Williamson 1998; Fussell 2010; Fussell and Massey 2004; Garip 2012; Lindstrom and López Ramírez 2010; Massey and Sana 2003; Riosmena 2009).

Direct correspondence to Fernando Riosmena, Institute of Behavioral Science, Suite 463, 1440 15th St., 483 UCB, Boulder, CO 80309-0483, Fernando.Riosmena@colorado.edu.

The general ideas contained in this article were presented at the conference “The Ethnosurvey in Global Context” at Vanderbilt University in January 2015.

Given the contemporary boom in individual/household survey data collection (despite ever-present challenges to migration measurement; see Beauchemin 2014; Raymer et al. 2008; Rogers, Little, and Raymer 2010), it is arguably more possible now than ever to perform cross-context comparative empirical research. Although data collection efforts have indeed fueled explicit cross-local and cross-national comparative studies, this research has mostly contrasted flows emanating from within the same world region, namely Latin America and the Caribbean (e.g., Clark et al. 2004; Donato and Leon, forthcoming; Fussell 2010; Fussell and Massey 2004; Lindstrom and López-Ramírez 2010; Massey, Fischer, and Capoferro 2006; Massey and Sana 2003; Riosmena 2010), though also more recently in sub-Saharan Africa (e.g., Beauchemin et al. 2015; Castagnone et al. 2015; Toma and Vause 2014).

While a relatively small body of cross-regional comparative studies have examined the causes of migration in different settings (Liu, Riosmena, and Creighton 2015; Massey, Kalter, and Pren 2008), more comparative research based on strategically chosen cases and strong research designs is necessary if we are to build a clear understanding of why the drivers of migration vary across places at a particular point in time, or why they diverge over time within particular places (for similar arguments on the understanding of the migration-development nexus, see Escobar et al. 2006; Iskander 2015). To build accurate theoretical models for evidence-based policy formulation, it is necessary not only to document differences in the drivers across periods and places, but more importantly to explain the reasons why the structural factors of migration are different across contexts and at different stages in the migration process.

As shown throughout this volume, over the last two decades relatively comparable household survey data have been collected using the “ethnosurvey” approach in particular communities located in China, Poland, Senegal, Ghana, the Congo, Bangladesh, and in Mexico, Guatemala, El Salvador, Nicaragua, Costa Rica, Puerto Rico, the Dominican Republic, Haiti, Paraguay, Peru, Ecuador, and Colombia. This approach blends survey methods with more in-depth qualitative interview styles to gather data in specific sending communities and foreign destinations, a centerpiece of its methodology being the compilation of retrospective life histories for both migrants and nonmigrants.

Thanks to such data, scholars are increasingly able to advance systematic understandings of migration by directly contrasting and comparing how relevant individuals, families, households, and communities operate across carefully selected cases that generate different migratory outcomes. Although ethnosurvey methods hold much promise for migration research, comparative work using them highlights many methodological challenges, in some cases adding complications to those already prevalent in noncomparative research. Awareness of these problems and taking the appropriate counter-measures when designing research projects are necessary to avoid reaching incorrect conclusions, such as when cross-context differences in migration are taken to represent real differences in migrator dynamics.

Prior scholarship has discussed both the potential and limitations of applying survey and –to a lesser extent– other methods in comparative cross-national studies of migration, including issues of case selection (Fitzgerald 2012), data collection methods (Beauchemin and González-Ferrer 2011), and overall research design (Beauchemin 2014). This article

contributes to this body of work by discussing the analytical challenges involved in comparing individual- and household-level survey data across settings. My aim is to provide a set of general guiding principles for a posteriori decisions about case selection, sample construction, and other adjustments that become necessary when datasets from different settings are combined. I also offer guidance for a priori case selection and data gathering choices that cross-context comparative researchers should bear in mind in future studies. These lessons do not apply solely to cross-national or inter-regional research, but also to the study of migration to or from different sending or destination communities within the same country. As should be relatively clear, these reflections do not pertain exclusively to studies using ethnosurvey approaches but apply to any data collection effort aiming at describing and explaining the drivers of migration in different settings, and to retrospective data collection efforts in particular. I nonetheless pay specific attention to the ethnosurvey studies discussed throughout this volume, given that they represent perhaps the most promising avenue for direct cross-context comparative analysis.

The ethnosurvey is part of a long tradition of specialized migration surveys that seek to characterize and analyze drivers of migration at the individual, household, and community levels, all of which are important in understanding human mobility (Grasmuck and Pessar 1991; Massey and Espinosa 1997) and which together constitute the central units of analysis for migration theorists (see Massey et al. 1998, p. 17–59). Nonetheless, the ethnosurvey stands out from other migration surveys because its common principles have been applied more or less uniformly around the world. Within the universe of ethnosurveys, cross-context comparative work is particularly feasible because of common standards of sample design, questionnaire construction, variable definition, and data collection. However, the use of ethnosurvey data for comparative analysis is by no means unambiguously warranted. Before discussing its possibilities and limitations, I situate the migration ethnosurvey in a constellation of other large quantitative data collection techniques for the study of migration, summarizing the main advantages and limitations of each.

Capturing the Spatiotemporal Rhythms with Migration Surveys

The rigor, scarcity, and inflexibility of prospective data on international migration

Migration cannot be captured adequately by using cross-sectional survey or enumeration approaches that deal only with the here and now. To measure migration fully, data collection methods instead need to be able to capture the spatiotemporal rhythms of migration, which is achieved using true or quasi-longitudinal designs. True longitudinal approaches require the collection of data prospectively, prior to and after an event of interest, whereas quasi-longitudinal designs generally collect data at a single point by gathering retrospective histories.ⁱ Both rely on direct or proxy retrospective accounts of past events, though the short interwave recall window in most longitudinal surveys—particularly short-term panel studies—generally yields less recall bias than purely retrospective approaches.

ⁱAs such, panel surveys may include both truly longitudinal as well as quasi-longitudinal information, with cross-sectional surveys comprising only the latter.

More important than better recall, however, is the fact that truly longitudinal approaches lessen interval censoring substantially in ways that retrospective approaches cannot, provided subjects are not lost to attrition between waves. Retrospective data collection is especially vulnerable to the loss of survey respondents from emigration, household dissolution, and family reconfiguration. Likewise, prospective longitudinal approaches allow for better and more direct measurement of premigration factors.ⁱⁱ Finally, true longitudinal data increase the possibility of using a larger set of techniques to deal with endogeneity, including the control of individual and household fixed effects. While other data collection techniques may allow for a modicum of these features, prospective approaches are likely to allow for a larger set of them and produce better quality information that is less affected by the aforementioned biases.

Nationally representative longitudinal surveys have become, in many ways, the gold standard of household data collection for a variety of topics. They are particularly powerful—and, indeed, most useful for migration studies—when they follow and collect information from individuals who move out of the original study area (for our purposes, to international locales; see Arenas et al. 2015; Goldman et al. 2014). At the very least, they need to offer the opportunity to identify the specific forms of movement that lead to a loss to follow-up to allow for the modeling of the drivers of migration, like some labor surveys do (Constant and Massey 2003; Villarreal 2014; Villarreal and Blanchard 2013).

Despite these clear potential advantages, however, longitudinal surveys around the world are oftentimes not designed to deal with many forms of spatial mobility, especially that spanning across national borders.ⁱⁱⁱ On a global or even regional basis, even in recent decades, short prospective panel data appropriate for migration studies are relatively scarce, while long-term panel surveys are virtually nonexistent. Even when existing, prospective data would thus be useful mainly for studying the drivers of specific coterminous contemporary migration flows, leaving important periods in the recent past unexplored. This further complicates the study drivers during specific stages of the migration “lifecycle” (see Jones 2013; Martin and Taylor 1996; Williamson 2015; Zelinsky 1971). Slight differences in the timing of the transition between these stages across settings are especially likely to be missed by prospective data collection methods.

Coterminous vs. stage-specific drivers of migration

The examination of the drivers of migration from-to particular places (Massey and Espinosa 1997; Massey et al. 1998) and why these drivers differ over time (Garip 2012) and across places (Massey, Fischer, and Capoferro 2006) are arguably some of the most fundamental questions in migration studies. This assessment can be approached in at least two main

ⁱⁱIn addition to these, some projects deal with internal migration across the world in similar fashion, most notably including Demographic Surveillance Systems in several developing countries. However, none of these to date follow international migrants (but indeed gather data on internal moves, e.g., Collinson et al. 2006; Kuhn 2003; VanWey 2005), though some may be able to identify them within the reasons of loss to follow-up.

ⁱⁱⁱWith few exceptions, movement out of the study area is treated as attrition rather than outcome, meaning that registration of a move, when it happens, may not lead to very detailed measurement (of e.g., specific migrant destinations). Even sophisticated long panel studies designed for (Telles and Ortiz 2008) or with clear applications (and invaluable contributions) to migration studies (Angel et al. 2010) do not quite study the causes of mobility in itself, but rather its consequences. Limitations on definitions of what is a migration trip/move, and on the windows covered in the data might also limit cross-context analysis.

ways, each yielding different substantive significance and policy relevance. Comparing the coterminous drivers of migration across places (i.e., during the same period) allows us to understand why migration rates may differ among sending nations; and why immigration policies may be more effective on particular social groups (in terms of national origin or otherwise).^{iv}

The drivers of coterminous mobility could differ across sending areas because each is at a different “stage” of migration, so it seems logical to trace these histories and more precisely understand the differences in their evolution. Given these dynamics, a somewhat different question is how the causes of initiation, take-off, maturation, or decline differ across places, each of which might have experienced these transitions during different times.^v While the cross-context, comparative study of stage-specific drivers is scarcer than that of coterminous drivers (perhaps because of the difficulty of finding appropriate data to do so), I would argue such design can further advance migration theory building and refinement in ways that the coterminous study of the drivers of mobility misses, or otherwise provides insufficient (e.g., counterfactual) proof.

The limitations and flexibility of retrospective measurement

Because the evolution of migration flows may differ considerably across communities, nations, and migratory systems, prospective data collection methods would need to rely on fortuitous timing to allow for the study a particularly relevant period or stage in the migration process across settings. The comparative study of coterminous flows at similar stages but at different points in space and time requires even nimbler research designs to obtain a reasonable representation of the migration risk set prevailing in a specific spatiotemporal context. Flexibility is thus needed to allow for the comparison of migration dynamics at different places in the same period (Garip 2012) or at a particular stage in the migration process (Lindstrom and López-Ramírez 2010). Cross-sectional retrospective designs offer more flexibility to adjust sampling and instrumentation to cover significant differences in migration dynamics across time and places (as has occurred in Mexico-U.S. migration in recent years; see Massey, Durand, and Pren 2015; Villarreal 2014).^{vi}

Despite this potential flexibility, one cannot simply collect retrospective data using conventional sampling designs and expect them to fit any and all analytic needs, ipso facto, or to offer good representation of both current and past events. The main tradeoff in

^{iv}For instance, comparative research of contemporary undocumented flows to the United States under a coterminous, contemporary lens would look at why irregular Mexican migration slowed down during the last eight years, while that from El Salvador, Honduras, and Guatemala did not (Passel, Cohn, and Gonzalez-Barrera 2013). This examination would provide nuance for several migration theories, by testing the limits or nonlinearities in cost-benefit calculations characteristic of neoclassical economics (Massey et al. 1998); or by providing empirical guidance to build a more robust institutional theory that takes into account the capacity and effectiveness of states in influencing migration flows and their selectivity (Fitzgerald and Cook-Martin 2014; Orrenius and Zavodny 2005).

^vUsing the prior example of unauthorized migration from Mexico and Central America, the research question under this approach would be to understand the differences in the take-off of flows from Honduras in the 1990s; from those from El Salvador and Guatemala in the 1980s; from those of Mexico in the 1940s, when they were “reactivated” by the Bracero Program, or even from the early 1900s, when they first took off during the “Enganche” Era (Massey, Durand, and Malone 2002).

^{vi}In addition, cross-sectional retrospective collection is much cheaper than longitudinal approaches. While this may appear to be an important advantage in high-uncertainty funding environments where seeking to renew a project and thus fund more than 2–3 waves of collection (in, say, a 10-year span, a reasonable one) may be a bit risky, finding funding to collect additional cross-sections of retrospective data over a longer span is perhaps just as difficult.

prospective versus retrospective data collection methods lies in the information that is not collected by the latter,^{vii} from individuals and households not even sampled.^{viii} This is a problem that becomes more severe the further back in time the retrospective account aims to go. This left censoring of individuals who died or left the study area before the survey year—during periods that the analyst may be interested in studying—is the most pressing problem in retrospective data collection. While some experiences lost to left censoring might be recovered through de jure sampling or proxy interviews, these techniques are unlikely to overcome most of the attrition produced by the emigration, dissolution, or dramatic reconfiguration of complete households prior to the survey date (for the case of emigration, see Hamilton and Savinar 2015). The supplementary sampling of migrant households in destinations is probably the best way to overcome the problem (Beauchemin 2012; Liang et al. 2008; Parrado, McQuiston, and Flippen 2005); but destination sampling is less commonly used in migration surveys for many important practical reasons, such as a lack of a sampling frame, and the cost and difficulty of reaching (e.g., undocumented) migrants.

Given these issues, representative surveys or even complete enumerations of a specific community will not necessarily yield a complete account of the population in times past, especially the distant past.^{ix} Quite surprisingly, statistical offices and researchers around the world still lack substantial knowledge about the past emigration of people and, especially, past reconfigurations of households and communities, rendering healthy skepticism about the usefulness unsolved. Although the potential biases might be relatively slight for some small number of years prior to the interview, we truly do not know the extent of the problem with much precision, or how biases might vary across communities, contexts, or countries. Depending on the net cumulative intensity of internal and international migration and return, and whose specific migration histories are in fact being collected, the problem likely varies in magnitude across places and thus hinders the study of particular communities in their own right, let alone in a comparative framework. These potential biases challenge cross-context comparative studies more than other forms of research. However, analyses that do not use communities or countries as units of analysis are hardly exempt from these problems.

At a national scale, statistical offices in a few countries (e.g., Burkina Faso, Senegal, and Mexico) have begun to use retrospective questions to capture the migration of members of sampled or enumerated households during some set period (usually one or five years) prior to the interview (e.g., Nawrotzki, Riosmena, and Hunter 2013). However, this approach is limited because censuses and national statistical surveys tend to collect a relatively limited amount of data, which with few exceptions are not retrospective. Thus the wide coverage granted by census surveys comes at a nontrivial cost for those interested in household-level

^{vii}Recalling the timing and sequencing of events long before interview is challenging and can be influenced by how interviewers probe on the issues (see Belli et al. 1994). People's memories tend to fail when they have made several short moves (Auriat 1991; Redstone and Massey 2004). Yet, overall, individuals do tend to remember the timing and sequencing of (arguably, most) migrations, especially in relation to other important life transitions (Smith and Thomas 2003).

^{viii}Although nonresponse (i.e., noncontact + refusal) rates are a growing concern in large-scale social science surveys (see De Heer 1999), this is not overall a major problem in most census enumerations and surveys that gather migration data, including the migration ethnosurvey (e.g., Kalter 2010, 560; Massey and Capoferro 2004, Table 1).

^{ix}Just as cross-sectional data may not provide a representative snapshot of the population of a given area in the past when used retrospectively, longitudinal data may not provide a representative snapshot of this population at future waves. However, the difference between these two types of data collection lies in that prospective approaches do allow for the possibility of adding individuals to the original sample to reach this representation (e.g., Wong et al. 2015).

analysis, though they can be used to better understand the role of aggregate-level forces (e.g., at municipal or state scale-zonings; Barrios Puente, Perez, and Gitter 2015; Feng and Oppenheimer 2012). More importantly for cross-context comparative work, the typical question about migration in the past five years (or sometimes one year) is not always asked in censuses around the world; and even when it is asked the resulting information suffers from several limitations, most notably the lack of comparable data on the experience of those who remained at points of destination.

Given the limitations of standard census and survey questions on migration, specialized retrospective surveys have been a recurrent methodological solution, offering quasi-longitudinal data to get at the reasons behind the international migration (e.g., Bohra and Massey 2009; Grasmuck and Pessar 1991; Gray and Bilsborrow 2013; Henry, Schoumaker, and Beauchemin 2004; Jones 1995, 2013; Lindstrom and Lauster 2001). In particular, the Mexican Migration Project's ethnosurvey approach has generated a continuous stream of community surveys over nearly three decades. Additional efforts using similar versions of the ethnosurvey conducted under the auspices of the Latin American Migration Project have allowed for a deeper understanding of flows to and from the Caribbean, Central America, and South America.

The resulting accumulation of data has allowed for a better understanding of the mobility of Mexican migrants to and from the United States (e.g., Massey et al. 1987; Massey, Durand, and Malone 2002; Massey, Durand, and Pren 2015; Massey and Espinosa 1997; Massey and Riosmena 2010), as well as migration between the island domains of Puerto Rico and the Dominican Republic and the U.S. mainland (and to a lesser extent Spain; migration from Nicaragua to Costa Rica and the United States; migration from Costa Rica, Haiti, Guatemala, and El Salvador to the United States [see Alvarado and Massey 2010; Donato 2010; Duany 2002; Lindstrom and López-Ramírez 2010; Lundquist and Massey 2005; Massey and Riosmena 2010; Massey and Sana 2003]; and the international movement of Peruvians, Ecuadorans, and Colombians to the United States, Europe, and elsewhere in South America [e.g., Durand and Roa, forthcoming; Massey and Capoferro 2006; Takenaka and Pren 2010]).

The general methodology of the ethnosurvey has also been the basis for collecting data on Paraguayan migration to Argentina (Parrado and Cerrutti 2003); Fujianese migration to the United States (Liang et al. 2008; Liang and Chunyu 2013); Polish-German migration (Kalter 2010; Massey et al. 2008); and international migration from Senegal, the Congo, and Ghana to Europe, as well as to other African nations (Beauchemin et al. 2015; Castagnone et al. 2015; Liu 2013; Toma and Vause 2014; Vickstrom 2014). More recently, this approach has also been used to understand migration in Bangladesh (Donato et al., this volume). As such, the migration ethnosurvey stands out for cross-context comparative purposes because it has amassed data for a considerable number of communities in several countries across the world, which has opened up new possibilities for cross-local (Fussell and Massey 2004; Lindstrom and López-Ramírez 2010; Massey, Goldring, and Durand 1994; Riosmena 2009), cross-national (Donato and León, forthcoming; Massey, Fischer, and Capoferro 2006), and, increasingly, cross-regional comparative research (Liu, Riosmena, and Creighton 2015; Massey, Kalter, and Pren 2008).

Commonalities and Differences of Migration Ethnosurveys around the World

The migration ethnosurveys done to date share many items in common. With the general methodology discussed in more detail elsewhere (e.g., Massey 1987; Massey and Zenteno 2000; Massey and Capoferro 2004), here I consider several features common to nearly all ethnosurveys that are germane to comparative research on the drivers of migration. First, each survey aims to be representative at the local level, usually within specific sending communities that are selected to represent a range of migration and urbanization conditions (e.g., Massey, Kalter, and Pren 2008). While this form of sampling – particularly if it only draws communities with no prior history of migration whatsoever – makes it difficult to estimate national-level rates, for which a census (Giorguli and Gutiérrez 2012) or nationally-representative survey (Hamilton and Savinar 2015; Villarreal 2014) are much better-suited. Nevertheless, local representation and a mix of communities jointly allow for robust comparisons across contexts, helping for instance solve whether differences in the drivers of migration across nations are related to differences in drivers across particular settings in ways that are conducive to testing and refining tenets in several migration theories (Fussell and Massey 2004; Riosmena 2009). This form of sampling also facilitates the selection of communities as case studies focused on a particular substantive interest, such as what explains the initiation of migration from particular places.

Second, all ethnosurveys include a basic sociodemographic profile and retrospective information on first and last internal and international moves for all people listed in the household roster. This may allow for more a complete representation of migratory behavior across different ages and cohorts because household rosters generally also include all children of the head regardless of their place of residence at the time of interview, which helps to reconstruct the prior history of migration in a community at a prior time point (e.g., Curran and Rivero-Fuentes 2003; Lindstrom 1996). The broad representation of age groups and cohorts and by gender also facilitates stage-specific or coterminous analyses in both present and past by covering individuals who migrate in different epochs (Donato, Durand, and Massey 1992; Donato 1993, 2010; Garip 2012; Kanaiaupuni 2000; Lindstrom 1996). The data also allow for analyses of the drivers of migration at both the household level (Hunter, Murray, and Riosmena 2013) and the family level (Liu, Riosmena, and Creighton 2015; Palloni et al. 2001). Rosters have permitted the construction of community-wide migration measures that have been instrumental in assessing the role of broader migrant networks in the migration process (Fussell 2010; Fussell and Massey 2004; Massey and Aysa-Lastra 2011; McKenzie and Rapoport 2007). These measures have also helped investigators to better understand and model the takeoff point of migration (Lindstrom and López-Ramírez 2010; Massey, Goldring, and Durand 1994).

Finally, ethnosurveys also include more detailed retrospective migration and labor histories for at least one member of the household, which can be used to analyze the drivers of migration beyond first or last trips (e.g., Massey and Espinosa 1997). More importantly, life histories allow for a deeper examination of the drivers of international mobility than is possible using household rosters alone. Histories of union formation and dissolution,

fertility, property ownership, and migration by other family members generally collected in ethnosurveys can be usefully employed either as variables of interest or controls in event history analyses (e.g., Kalter 2010; Massey and Espinosa 1997; Massey and Riosmena 2010; Massey and Aysa-Lastra 2011; Riosmena 2009).

Despite these basic commonalities, cross-context comparative research is complicated by important differences in how some data are collected, perhaps reflecting differences in the spatiotemporal evolution of migration across settings. With respect to community sampling, for example, different ethnosurveys define local representation differently. In the Migration between Africa and Europe Project (MAFE),^x the areas represented are the cities of Dakar, Senegal; Kinshasa, the Congo; and Accra and Kumasi, Ghana (Schoumaker and Mezger 2013). In contrast to the MAFE, the large city samples surveyed in the Mexican and Latin American Migration Projects (MMP and LAMP)^{xi} are only representative of specific neighborhoods within these cities (see Fussell and Massey 2004). A final difference is that the MMP and LAMP, unlike the MAFE, also collected data in smaller cities, large towns, and smaller rural places, where samples are often representative of the whole community selected via simple random sampling after own canvassing (Massey and Sana 2003). In slight contrast, the Fujianese ethnosurvey used stratified sampling in rural sending areas (Liang et al. 2008) while the Polish ethnosurvey used a multistage sampling procedure to oversample migrants in the sending communities selected (Kalter 2010).

Likewise, the size and, more importantly, structure of household rosters differ across projects because of the way each defines who is part of the household roster. For example, MMP and LAMP ethnosurveys perform a type of de jure enumeration in which the person who customarily serves as the head of household is generally counted in the roster as *head* even if he or she is outside the sending community at the time of the interview.^{xii} In contrast, the enumeration and structure in the MAFE project follows more of a de facto approach as headship is assigned to an individual residing in the household at time of the survey.^{xiii} This difference is particularly important to bear in mind when making cross-context comparisons, as it may define who the children of the head listed in the household roster are, thereby yielding differences in who is counted in the household roster in different settings. While these differences might be surmountable technically (see Liu, Riosmena, and Creighton 2015; Massey, Kalter, and Pren 2008), they should not be glossed over or assumed away.

Finally, ethnosurveys differ in terms of which individuals' detailed retrospective histories are collected. For instance, in Senegal, Ghana, and the Congo (Beauchemin and González-Ferrer 2011), as well as in Poland (Kalter 2010), they were gathered from a randomly chosen individual, whereas in Latin American and Fujianese ethnosurveys they were compiled for household heads and their spouses (e.g., Donato 2010; Liang et al. 2008;

^xSee <http://mafeproject.site.ined.fr/en/>.

^{xi}See <http://mmp.opr.princeton.edu> and <http://lamp.opr.princeton.edu>.

^{xii}This individual, who is absent due to being in the "middle" of a migration trip, is presumed to be temporarily away or, at least, still fully connected to the household and engaged with its economic survival and power structure (which may be true in settings where core family members do remain behind; Sana and Massey 2005; and other times may not be; e.g., Nobles 2013).

^{xiii}MAFE surveys also differ from most other ethnosurveys (particularly those collected over the last 15–20 years) in that they include supplementary destination-based samples collected with the goal of directly capturing the experience of individuals not interviewed in the sending country precisely because of their migration (Beauchemin 2012). In contrast the MMP-LAMP samples rely more on proxy reporting and on the notion that individuals are linked to sending areas in some fashion.

Massey, Fischer, and Capoferro 2006). A random selection of individuals ensures a clearer representation of people across age groups and stages of the life course as of the survey date, not to mention across gender and other social groups that are large proportionally. In contrast, given that heads are usually older, on average, than the general adult population, the selection of household heads provides a better representation of migration-age individuals in years prior to the interview (at least in settings with nontrivial return migration, or when destination samples are systematically collected), making it more likely to capture early stages of the migration process. Depending on the timing of transitions to adulthood (union formation in particular) and on the social rules governing family headship in different settings, sampling individuals who have become household heads by the time of the interview may actually not yield a representative cross-section of people exposed to the risk of migration in the few years preceding the survey year. Also, depending on the prevalence of marital dissolution, the life histories of spouses will be more or less representative of any particular social group, e.g., women in patriarchal systems where males are generally assigned the role, or assumed to be the household heads (as in the Mexican case).

A litany of checks and adjustments

Analysts should be aware of these nontrivial differences in research designs across ethnosurveys and how prior histories of both internal and international migration may amplify or reduce the relevance of these differences. Indeed, any study—but cross-context comparative studies in particular—should strive for accurate representation of each community and time period of interest, which may need to be achieved with different instruments or by focusing attention on specific cohorts or social groups across communities.

The differences featured here require careful case and subsample selection based both on the substantive goals of the project (Fitzgerald 2012) and an understanding of the methodological limitations inherent in retrospective data collection (see also Beauchemin 2014). Once cases and subsamples are selected, checks and adjustments for retrospective biases are needed. As Curran and Rivero-Fuentes (2003, 294–95) pointed out, logistic regression in particular may allow for the estimation of robust coefficients (but not of the true migration rate) for communities or social groups, though this likely assumes a well-specified model with trivial unobserved heterogeneity, something that is impossible to guarantee in any study. Whenever possible, checks for the robustness of findings should be implemented, for instance, by varying the retrospective window of analysis and examining effects across different communities and social groups to assess if patterns go in the expected direction. Alternatively, post hoc adjustments such as case-control/matching; or propensity score-based methods such as matching, stratification, or inverse proportional treatment weighting (e.g., Lanza, Moore, and Butera 2013) should be implemented to assess whether the drivers of migration differ when assuming a different representation of cohorts or social groups presumed to be more likely to be under-represented in the data due to left censoring. This allows for testing the robustness of regression-based approaches that assume representation of these groups is adequate.

Conclusion: An Agenda for Comparative Data Collection and Analysis

This article has provided a broad overview of the strengths and weaknesses of prospective and retrospective approaches to the measurement and understanding of migration. I placed particular emphasis on the comparative study of the drivers of international mobility, as the proper measurement and understanding of these drivers through comparative research of carefully selected cases are necessary for effective theory building and policy-making and are essential to the analysis of related phenomena such as economic development (see De Haas 2010 on the migration-development nexus). I also considered several important weaknesses of retrospective as opposed to prospective data collection methods, especially with respect to the added complications of left censoring produced by the emigration of individuals (either internationally or internally) and the dissolution and reconfiguration of households prior to the time of the survey.

Despite these weaknesses and their potential biases—the true extent of which are surprisingly unknown—retrospectively collected data from ethnosurveys have been and will continue to be quite valuable in advancing knowledge on the drivers of past migration that have not been effectively captured by prospective approaches. Retrospective data collection is particularly valuable for comparative research given the relative lack of comparable prospective data on migrants around the world, which hinders, in particular, the study of specific stages of migration in different periods and nations. Thus, I argue for the need and usefulness of retrospectively collected data for the comparative study of migration.

Although transitions between specific stages in the migration process and what drives them are a matter of some debate (cf. Jones 2013; Martin and Taylor 1996; Williamson 2015; Zelinsky 1971), most models include an initiation or take-off stage (which Lindstrom and López-Ramírez 2010 see as different from one another); a stage of maturity, with some ebb-and-flow; and given sufficient time, a declining or winding down stage (Massey 1995). The most influential review and synthesis of migration theories (Massey et al. 1998) clearly identified the theoretical mechanisms in sending and receiving societies posited to account for the initiation vs. the continuation of migratory flows. Because these mechanisms are probabilistic rather than deterministic, they should also inform when flows fail to take off and when they are likely to decline, thus arguably accounting for what has come to be known as the migration “hump.” Stage-specific analyses of the drivers of migration in different contexts would further advance theoretical understanding and place the more commonly studied differences in coterminous migration into better perspective.

Among the many retrospective data collection efforts, those using the migration ethnosurvey stand out for gathering and continuing to collect data in hundreds of communities in several countries across the globe. Because of their extensive application, the ethnosurveys covered in this volume will remain a key data source for the study of migration in the future, especially for cross-regional studies and other cross-context comparative work. Despite their large recent and past contributions and further promise, the potential biases of retrospective data are accentuated in comparative studies because of their clear need to have adequate representation across the different settings under study: differences in sampling and retrospective life history collection between ethnosurveys may limit the extent or hinder the

quality of comparative work. To deal with these challenges, sensible strategies should generally undertake community selection based on the substantive motivation behind the analysis while remaining aware of extant differences between cases. They should also identify the cohorts and social groups that best represent the period or migration stage of interest, and construct survey modules that best serve this representation. Finally, robustness checks and post-hoc adjustments, including reweighting and matching, can further bolster these examinations.

Looking forward, the challenge will be to keep migration data collection evolving to keep pace with the increasing elusiveness of human mobility and the changing nature of migration flows, while ideally keeping the current impetus toward comparative research. Retrospective data collection as part of cross-sectional or longitudinal surveys offers advantages relative to prospective approaches because of its flexibility. This plasticity is evinced in instruments such as the ethnosurvey, where the experience of many migration cohorts is captured through basic migration histories compiled for all individuals included in the household roster, in no small part because the rosters often include information for all children of the head regardless of their current location. Representation is also aided because ethnosurveys either provide proxy reporting on absent migrant members or secure émigré representation using destination-based sampling (Beauchemin 2012; Parrado, McQuiston, and Flippen 2005).

Additional flexibility can be provided by stratified sampling approaches that over-represent individuals most likely to be part of the risk set of core immigrant generations (e.g., Guveli et al. 2015) or during migration stages of particular interest. Such designs would allow a more accurate portrayal of generations, periods, or stages while also reflecting contemporary flows by drawing oversamples of older groups (including proxy reports on the deceased) and providing weights for the representation of both population and oversampled groups, greatly facilitating cross-context research and enabling theory testing and development. In addition, reconstructing the household structure during years before the survey might also provide invaluable data to evaluate the extent of left censoring biases, something that would be useful not only to migration studies but to any social science-based retrospective survey or census data. Although the challenges for comparative research are many, its contributions to the understanding of migration flows and theory refinement has been and will continue to be of very high value. Thus, we must continue developing data and methods that facilitate comparative work.

Acknowledgments

I thank all conference participants for feedback and additional ideas provided during my presentation. Finally, I acknowledge partial support for this research from a Eunice Kennedy Shriver National Institute of Child Health and Human Development research infrastructure grant, 5R24 HD066613-03, to the University of Colorado Population Center in the Institute of Behavioral Science at the University of Colorado, Boulder.

References

- Alvarado, Steven Elías, Massey, Douglas S. Search of peace: Structural adjustment, violence, and international migration. *The Annals of the American Academy of Political and Social Science*. 2010; 630(1):137–161. [PubMed: 21197383]

- Angel, Ronald J., Angel, Jacqueline L., Venegas, Carlos D., Bonazzo, Claude. Shorter stay, longer life: age at migration and mortality among the older Mexican-origin population. *Journal of Aging and Health*. 2010; 22(7):914–31. [PubMed: 20682948]
- Arenas, Erika, Goldman, Noreen, Pebley, Anne R., Teruel, Graciela. Return migration to Mexico: Does health matter? *Demography*. 2015; 52(6):1853–68. [PubMed: 26385111]
- Auriat, Nadia. Who forgets? An analysis of memory effects in a retrospective survey on migration history. *European Journal of Population*. 1991; 7(4):311–42. [PubMed: 12284885]
- Barrios Puente, Gerónimo, Perez, Francisco, Gitter, Robert J. The effect of rainfall on migration from Mexico to the U.S. *International Migration Review*. 2015; doi: 10.1111/imre.12116
- Beauchemin, Cris. Migrations between Africa and Europe: Rationale for a survey design. MAFE Methodological Note No. 5. 2012. Available from http://www.ined.fr/fichier/s_rubrique/21396/note_5_mafe_rationale_for_a_survey_design.fr.pdf
- Beauchemin, Cris. A manifesto for quantitative multi-sited approaches to international migration. *International Migration Review*. 2014; 48(4):921–38.
- Beauchemin, Cris, González-Ferrer, Amparo. Sampling international migrants with origin-based snowballing method. *Demographic Research*. 2011; 25(3):103–34.
- Beauchemin C, Nappa J, Schoumaker B, Baizan P, González-Ferrer A, Caarls K, Mazzucato V. Reunifying Versus Living Apart Together Across Borders: A Comparative Analysis of sub-Saharan Migration to Europe. I. *International Migration Review*. 2015; 49(1):173–199.
- Belli, Robert F., Stephen Lindsay, D., Gales, Maria S., McCarthy, Thomas T. Memory impairment and source misattribution in postevent misinformation experiments with short retention intervals. *Memory & Cognition*. 1994; 22(1):40–54. [PubMed: 8035684]
- Bohra, Pratikshya, Massey, Douglas S. Processes of internal and international migration from Chitwan, Nepal. *International Migration Review*. 2009; 43(3):621–51. [PubMed: 21423821]
- Castagnone, Eleanora, Nazio, Tiziana, Bartolini, Laura, Schoumaker, Bruno. Understanding transnational labour market trajectories of African-European Migrants: Evidence from the MAFE Survey. *International Migration Review*. 2015; 49(1):200–31.
- Clark, Ximena, Hatton, Timothy J., Williamson, Jeffrey G. What explains emigration out of Latin America? *World Development*. 2004; 32(11):1871–90.
- Clark, Ximena, Hatton, Timothy J., Williamson, Geoffrey G. Explaining U.S. immigration, 1971–1998. *The Review of Economics and Statistics*. 2007; 89(2):359–73.
- Collinson, Mark, Tollman, Stephen M., Kahn, Kathleen, Clark, Samuel J., Garenne, Michel. Highly prevalent circular migration: Households, mobility and economic status in rural South Africa. In: Tienda, MartaFindley, Sally E. Tollman, Stephen, Preston-Whyte, Eleanor, editors. *Africa on the move: African migration and urbanisation in comparative perspective*. Witwatersrand, South Africa: Wits University Press; 2006. p. 194–216.
- Constant, Amelie, Massey, Douglas S. Self-selection, earnings, and out-migration: A longitudinal study of immigrants to Germany. *Journal of Population Economics*. 2003; 16(4):631–53.
- Curran, Sara R., Rivero-Fuentes, Estela. Engendering migrant networks: The case of Mexican migration. *Demography*. 2003; 40(2):289–307. [PubMed: 12846133]
- De Haas, Hein. Migration and development: A theoretical perspective. *International Migration Review*. 2010; 44(1):227–64. [PubMed: 26900199]
- De Heer, Wim. International response trends: results of an international survey. *Journal of Official Statistics-Stockholm*. 1999; 15(2):129–42.
- Donato, Katharine M. Current trends and patterns in female migration: Evidence from México. *International Migration Review*. 1993; 27(4):748–71. [PubMed: 12286924]
- Donato, Katharine M. U.S. migration from Latin America: Gendered patterns and shifts. *The ANNALS of the American Academy of Social and Political Science*. 2010; 630(1):78–92.
- Donato, Katharine M., Carrico, Amanda, Sisk, Blake, Piya, Bhumika. Different but the same: How legal status affects international migration from Bangladesh. *The ANNALS of the American Academy of Political and Social Science*. 2016 (this volume).
- Donato, Katharine M., Durand, Jorge, Massey, Douglas S. Stemming the tide? Assessing the deterrent effects of the Immigration Reform and Control Act. *Demography*. 1992; 29(2):139–57. [PubMed: 1607045]

- Donato, Katharine, Gabaccia, Donna. Gender and international migration. New York, NY: Russell Sage Foundation; 2015.
- Donato, Katharine M., León, Gabriela. Educación, Género, y Migración de Colombia y México a Estados Unidos. In: Durand, Jorge, Roa, María Gertrudis, editors. Colombia en la Encrucijada: El Proyecto LAMP-Colombia sobre Migración. Cali: Universidad del Valle; Forthcoming
- Duany, Jorge. The Puerto Rican nation on the move: Identities on the island & in the United States. Chapel Hill, NC: University of North Carolina Press; 2002.
- Durand, Jorge, Roa, María Gertrudis, editors. Colombia en la Encrucijada: El Proyecto LAMP-Colombia sobre Migración. Cali: Universidad del Valle; Forthcoming
- Escobar, Agustín, Hailbronner, Kay, Martin, Philip, Meza, Liliana. Migration and development: Mexico and Turkey. *International Migration Review*. 2006; 40(3):707–18.
- Feng S, Oppenheimer M. Applying statistical models to the climate–migration relationship. *Proceedings of the National Academy of Sciences*. 2012; 109(43):E2915–E2915.
- Fitzgerald, David S. A comparativist manifesto for international migration studies. *Ethnic and Racial Studies*. 2012; 35(10):1725–40.
- Fitzgerald, David S., Cook-Martin, David. Culling the masses: The democratic origins of racist immigration policy in the Americas. Cambridge, MA: Harvard University Press; 2014.
- Fussell, Elizabeth, Massey, Douglas S. The limits to cumulative causation: International migration from Mexican urban areas. *Demography*. 2004; 41(1):151–71. [PubMed: 15074129]
- Fussell, Elizabeth. The cumulative causation of international migration in Latin America. *The ANNALS of the American Academy of Political and Social Science*. 2010; 630:162–77.
- Garip, Filiz. Discovering diverse mechanisms of migration: The Mexico-U.S. stream 1970–2000. *Population and Development Review*. 2012; 38(3):393–433.
- Giorguli, Silvia E., Gutiérrez, Edith Y. Migration et développement. De l'ambivalence à la désillusion? *Hommes et migrations*. 2012; 1296:22–33.
- Grasmuck, Sherri, Pessar, Patricia R. Between two islands: Dominican international migration. Berkeley, CA: University of California Press; 1991.
- Gray C, Bilsborrow R. Environmental influences on human migration in rural Ecuador. *Demography*. 2013; 50(4):1217–1241. [PubMed: 23319207]
- Goldman, Noreen, Pebley, Anne R., Creighton, Matthew J., Teruel, Graciela, Rubalcava, Luis N., Chung, Chang. The consequences of migration to the United States for short-term changes in the health of Mexican immigrants. *Demography*. 2014; 51(4):1159–73. [PubMed: 24788391]
- Guveli, Ayse, Ganzeboom, Harry, Platt, Lucinda, Nauck, Bernhard, Baykara-Krumme, Helen, Ero lu, ebem, Bayrakdar, Sait, Sözeri, Efe K., Spierings, Niels. Intergenerational consequences of migration: Socio-economic, family and cultural patterns of stability and change in Turkey and Europe. Basingstoke, UK: Palgrave Macmillan; 2015.
- Hamilton, Erin R., Savinar, Robin. Two sources of error in data on migration from Mexico to the United States in Mexican household-based surveys. *Demography*. 2015; 52(4):1345–55. [PubMed: 26109522]
- Hatton, Timothy J., Williamson, Jeffrey G. The age of mass migration: Causes and economic impact. New York, NY: Oxford University Press; 1998.
- Henry, Sabine, Schoumaker, Bruno, Beauchemin, Cris. The impact of rainfall on the first out-migration: A multi-level event-history analysis in Burkina Faso. *Population and Environment*. 2004; 25(5):423–60.
- Hunter, Lori M., Murray, Sheena, Riosmena, Fernando. Rainfall patterns and U.S. migration from rural Mexico. *International Migration Review*. 2013; 47(4):874–909. [PubMed: 25473143]
- Iskander, Natasha. Creative state: Forty years of migration and development policy in Morocco and Mexico. Ithaca, NY: Cornell University Press; 2015.
- Jones, Richard C. Ambivalent journey: U.S. migration and economic mobility in North-Central Mexico. Tucson, AZ: University of Arizona Press; 1995.
- Jones, Richard C. Migration stage and household income inequality: Evidence from the Valle Alto of Bolivia. *The Social Science Journal*. 2013; 50(1):66–78.

- Kalter, Frank. Social capital and the dynamics of temporary labour migration from Poland to Germany. *European Sociological Review*. 2010; 27(5):555–69.
- Kanaiaupuni, Shawn M. Reframing the migration question: An analysis of men, women, and gender in Mexico. *Social forces*. 2000; 78(4):1311–47.
- Kuhn, Randall. Identities in motion: Social exchange networks and rural-urban migration in Bangladesh. *Contributions to Indian Sociology*. 2003; 37(1–2):311–37.
- Lanza, Stephanie T., Moore, Julia E., Butera, Nicole M. Drawing causal inferences using propensity scores: A practical guide for community psychologists. *American Journal of Community Psychology*. 2013; 52(3–4):380–92. [PubMed: 24185755]
- Liang Z, Chunyu MD. Migration within China and from China to the USA: The effects of migration networks, selectivity, and the rural political economy in Fujian Province. *Population studies*. 2013; 67(2):209–223. [PubMed: 23368517]
- Liang, Zai, Chunyu, Miao David, Zhuang, Guotu, Ye, Wenzhen. Cumulative causation, market transition, and emigration from China. *American Journal of Sociology*. 2008; 114(3):706–37.
- Lindstrom, David P. Economic opportunity in Mexico and return migration from the United States. *Demography*. 1996; 33(3):357–74. [PubMed: 8875068]
- Lindstrom, David P., Lauster, Nathanael. Local economic opportunity and the competing risks of internal and U.S. migration in Zacatecas, Mexico. *International Migration Review*. 2001; 35(4):1232–56.
- Lindstrom, David P., Ramírez, Adriana López. Pioneers and followers: Migrant selectivity and the development of U.S. migration streams in Latin America. *The ANNALS of the American Academy of Political and Social Science*. 2010; 630(1):53–77. [PubMed: 24489382]
- Liu, Mao-Mei. Migrant networks and international migration: Testing weak ties. *Demography*. 2013; 50(4):1243–77. [PubMed: 23703222]
- Liu, Mao-Mei, Riosmena, Fernando, Creighton, Matthew. Family position and family networks in Mexican and Senegalese migration. Paper presented at the Annual Meetings of the Population Association of America; San Diego, CA. 2015.
- Lundquist, Jennifer H., Massey, Douglas S. Politics or economics? International migration during the Nicaraguan Contra War. *Journal of Latin American Studies*. 2005; 37(1):29–53. [PubMed: 20852719]
- Martin, Philip L., Edward Taylor, J. The anatomy of a migration hump. In: Edward Taylor, J., editor. *Development strategy, employment, and migration: Insights from models*. Paris: OECD Development Centre; 1996. p. 43–62.
- Massey, Douglas S. The ethnosurvey in theory and practice. *International Migration Review*. 1987; 21(4):1498–1522. [PubMed: 12280921]
- Massey, Douglas S., Alarcón, Rafael, Durand, Jorge, González, Humberto. *Return to Aztlan: The social process of international migration from Western Mexico*. Berkeley, CA: University of California Press; 1987.
- Massey, Douglas S., Goldring, Luin, Durand, Jorge. Continuities in transnational migration: An analysis of nineteen Mexican communities. *American Journal of Sociology*. 1994; 99(6):1492–1533.
- Massey, Douglas S. The new immigration and ethnicity in the United States. *Population and Development Review*. 1995; 21(3):631–52.
- Massey, Douglas S., Espinosa, Kristen E. What's driving Mexico-U.S. migration? A theoretical, empirical, and policy analysis. *American Journal of Sociology*. 1997; 102(4):939–99.
- Massey, Douglas S., Arango, Joaquín, Hugo, Graeme, Kouaouci, Ali, Pellegrino, Adela. *Worlds in motion: Understanding international migration at the end of the millennium*. Oxford: Oxford University Press; 1998.
- Massey, Douglas S., Zenteno, René. A validation of the ethnosurvey: The case of Mexico-U.S. migration. *International Migration Review*. 2000; 34(3):765–92.
- Massey, Douglas S., Durand, Jorge, Malone, Nolan J. *Beyond smoke and mirrors: Mexican immigration in an era of economic integration*. New York, NY: Russell Sage Foundation; 2002.
- Massey, Douglas S., Sana, Mariana. Patterns of U.S. migration from Mexico, the Caribbean, and Central America. *Migraciones Internacionales*. 2003; 2(2):5–39.

- Massey, Douglas S., Capoferro, Chiara. Measuring undocumented migration. *International Migration Review*. 2004; 38(3):1075–1102.
- Massey, Douglas S., Capoferro, Chiara. Sálvese quien pueda: Structural adjustment and emigration from Lima. *The ANNALS of the American Academy of Political and Social Science*. 2006; 606:116–27. [PubMed: 20824152]
- Massey, Douglas S., Fischer, Mary J., Capoferro, Chiara. International migration and gender in Latin America: A comparative analysis. *International Migration*. 2006; 44(5):63–91. [PubMed: 21399742]
- Massey, Douglas S., Frank Kalter, F., Pren, Karen A. Structural economic change and international migration from Mexico and Poland. *Kölner Zeitschrift für Soziologie und Sozialpsychologie*. 2008; 60(48):134–61. [PubMed: 21765550]
- Massey, Douglas S., Riosmena, Fernando. Undocumented migration from Latin America in an era of rising U.S. enforcement. *The ANNALS of the American Academy of Political and Social Science*. 2010; 630:294–321. [PubMed: 20824109]
- Massey, Douglas S., Aysa-Lastra, Maria. Social Capital and International Migration from Latin America. *International Journal of Population Research*. 2011; 2011:1–18. Article ID 834145. DOI: 10.1155/2011/834145 [PubMed: 21915379]
- Massey, Douglas S., Durand, Jorge, Pren, Karen A. Border enforcement and return migration by documented and undocumented Mexicans. *Journal of Ethnic and Migration Studies*. 2015; 41(7): 1015–40. [PubMed: 26273210]
- McKenzie, David, Rapoport, Hillel. Network effects and the dynamics of migration and inequality: theory and evidence from Mexico. *Journal of development Economics*. 2007; 84(1):1–24.
- Mexican Migration Project. The Mexican Migration Project Weights. 2012. Available from <http://mmp.opr.princeton.edu/databases/pdf/MMP%20and%20LAMP%20Weights%202012.pdf>
- Nawrotzki, Raphael J., Riosmena, Fernando, Hunter, Lori. Do rainfall deficits predict U.S.-bound migration from rural Mexico? Evidence from the Mexican census. *Population Research and Policy Review*. 2013; 32(1):129–58. [PubMed: 23913999]
- Nobles, Jenna. Migration and father absence: Shifting family structure in Mexico. *Demography*. 2013; 50(4):1303–14. [PubMed: 23355282]
- Orrenius, Pia M., Zavodny, Madeline. Self-selection among undocumented immigrants from Mexico. *Journal of Development Economics*. 2005; 78(1):215–40.
- Palloni, Alberto, Massey, Douglas S., Ceballos, Miguel, Espinosa, Kristin, Spittel, Michael. Social capital and international migration: A test using information on family networks. *American Journal of Sociology*. 2001; 106(5):1262–98.
- Parrado, Emilio A., Cerrutti, Marcela. Labor migration between developing countries: The case of Paraguay and Argentina. *International Migration Review*. 2003; 37(1):101–32.
- Parrado, Emilio A., McQuiston, Chris, Flippen, Chenoa A. Participatory survey research integrating community collaboration and quantitative methods for the study of gender and HIV risks among Hispanic migrants. *Sociological Methods & Research*. 2005; 34(2):204–39.
- Passel, Jeffrey S., Cohn, D’Vera, Gonzalez-Barrera, Ana. Population decline of unauthorized immigrants stalls, may have reversed. Washington, DC: Pew Hispanic Center; 2013.
- Raymer, James, Willekens, Frans, Kupiszewska, Dorota, Nowok, Beata. Comparability of statistics on international migration flows in the European Union. In: Kupiszewska, Dorota, Nowok, Beata, editors. *International migration in Europe: Data, models and estimates*. New York, NY: Wiley; 2008. p. 41–71.
- Redstone, Ilana, Massey, Douglas S. Coming to stay: An analysis of the U.S. Census question on immigrants’ year of arrival. *Demography*. 2004; 41(4):721–38. [PubMed: 15622951]
- Riosmena, Fernando. Socioeconomic context and the association between marriage and Mexico-U.S. migration. *Social Science Research*. 2009; 38(2):324–37. [PubMed: 19756216]
- Riosmena, Fernando. Policy shocks: on the legal auspices of Latin American migration to the United States. *The ANNALS of the American Academy of Political and Social Science*. 2010; 630:270–93. [PubMed: 21921965]
- Rogers, Andre, Little, Jani, Raymer, James. The indirect estimation of migration: Methods for dealing with irregular, inadequate, and missing data. New York, NY: Springer; 2010.

- Sana, Mariano, Massey, Douglas S. Household composition, family migration, and community context: Migrant remittances in four countries. *Social Science Quarterly*. 2005; 86(2):509–28.
- Schoumaker, Bruno, Mezger, C. Sampling and computation weights in the MAFE surveys. MAFE Methodological Note No. 6. 2013. Available from http://www.ined.fr/fichier/s_rubrique/21396/note_6_mafe_nale_for_samplingandcomputationweights.fr.pdf
- Smith, James P., Thomas, Duncan. Remembrances of things past: Test-retest reliability of retrospective migration histories. *Journal of the Royal Statistical Society: Series A (Statistics in Society)*. 2003; 166(1):23–49.
- Takenaka, Ayumi, Pren, Karen A. Determinants of emigration: Comparing migrants' selectivity from Peru and Mexico. *The ANNALS of the American Academy of Political and Social Science*. 2010; 630:178–93.
- Telles, Edward E., Ortiz, Vilma. *Generations of exclusion: Mexican-Americans, assimilation, and race*. New York, NY: Russell Sage Foundation; 2008.
- Toma, Sorana, Vause, Sophie. Gender differences in the role of migrant networks: Comparing Congolese and Senegalese migration flows. *International Migration Review*. 2014; 48(4):972–97.
- VanWey, Leah K. Land ownership as a determinant of international and internal migration in Mexico and internal migration in Thailand. *International Migration Review*. 2005; 39(1):141–72.
- Vickstrom, Erik. Pathways into irregular status among Senegalese Migrants in Europe. *International Migration Review*. 2014; 48(4):1062–99.
- Villarreal, Andrés, Blanchard, Sarah. How job characteristics affect international migration: The role of informality in Mexico. *Demography*. 2013; 50(2):751–75. [PubMed: 23073750]
- Villarreal, Andrés. Explaining the decline in Mexico-U.S. migration: The effect of the Great Recession. *Demography*. 2014; 51(6):2203–28. [PubMed: 25407844]
- Williamson, Jeffrey G. World migration in historical perspective: Four big issues. In: Chiswick, Barry A., Miller, Paul W., editors. *Handbook of the economics of international migration*, 1A: The immigrants. Amsterdam: North Holland-Elsevier; 2015. p. 89-101.
- Wong, Rebeca, Michaels-Obregón, Alejandra, Palloni, Alberto, Gutiérrez-Robledo, Luis M., González-González, César, López-Ortega, Mariana, Téllez-Rojo, Marta M., Mendoza-Alvarado, Laura R. Progression of aging in Mexico: The Mexican Health and Aging Study (MHAS) 2012. *Salud Pública de México*. 2015; 57(S1):s79–s89. [PubMed: 26172238]
- Zelinsky, Wilbur. The hypothesis of the mobility transition. *Geographical Review*. 1971; 61(2):219–49.