

Migration and the Life Course in the Context of Social Change*

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Abstract: This paper uses data from the Chitwan Valley Family Study in Nepal, to explore migration trajectories over the second half of the 20th century in relation to social change. We cover the timeframe from when the Chitwan Valley first opened to new settlement in the 1950s through its incorporation into the global economy in the 1980s and 1990s. Using a life course framework that features individual and historical time, we show how migration trajectories changed across birth cohorts. The dynamic and developing nature of places leads to important differences in the experiences of individuals. Although Chitwan is unique as a case, we argue that it helps us understand global migration patterns over the second half of the 20th century, as populations grew and development projects got underway (e.g., *Barbieri et al.* 2009; *Moran et al.* 2005; *Schewel* 2025).

We use neighborhood history calendars and published studies to describe macro changes. We use life history calendars and household registries for five birth cohorts of males (N = 3,485) and females (N = 3,261) from ages 0 to 34 and sequence analysis techniques, to develop a typology of nine trajectories that characterize the timing, direction, and destinations of migration. We describe heterogeneity in these trajectories within and between cohorts, examining in-, out-, and return migration across internal and international boundaries. This is a distinctive feature of our study and enables us to capture female and male migration. We find that individuals seem to specialize in internal or international migration, with stasis increasingly common for females, and international out-migration increasingly common for males. The divergence of male and female migration patterns appears to be a recent phenomenon. Increasingly, age patterns of migration have become concentrated.

Over time, most people experience a change in place – whether through departing a place themselves, macro change, or the movement of people into or out of a place. Trajectories allow us to describe migration as a transition in individuals' lives. A typology of trajectories makes it possible to capture key elements of migration timing, direction, and destination. Cohort comparisons demonstrate shifts in migration in the history of a place.

Keywords: Migration • Life Course • Trajectories • Social Change • Place • Nepal

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** This article has an Online Appendix with supplementary material:
<https://www.comparativepopulationstudies.de/index.php/CPoS/article/view/765/477>

1 Introduction

Migration trajectories carve paths through time and space, as individuals move through the life course choosing, adjusting to, and availing themselves of changing contexts. Consisting of periods of immobility punctuated by moves, these trajectories are strongly patterned by age, but vary depending on the timing of key life events such as marriage, the location and moves of others, and the broader social context (Bernard *et al.* 2014; Clark 2013; Courgeau 1985; Rogers *et al.* 1978). Heterogeneity of migration trajectories has been documented in many places, including European countries (Bernard 2023), Australia (Kalemba *et al.* 2022), Chile (Vidal *et al.* 2024), and China (Zhu/Vidal 2024). This paper uses data from the Chitwan Valley Family Study in Nepal to explore migration trajectories over the second half of the 20th century, from when the Chitwan Valley first opened to new settlement through its incorporation into the global economy. To our knowledge, we are the first to undertake a cohort-based analysis of migration trajectories using the Chitwan Valley Family Study and the first to consider shifts in these trajectories over such a broad sweep of historical change.¹

More specifically, using neighborhood history calendars and other sources, we sketch the main contours of social change, from when the Chitwan Valley opened to new settlement in the early 1950s to becoming an exporter of labor to Southeast and Southwest Asia (especially to the Gulf) in the 1990s and beyond. We identify changing conditions prevailing when five birth cohorts came of age, setting the stage for our subsequent analysis of migration trajectories. Using retrospective and prospective life history data for 3,485 males and 3,261 females, we reconstruct age patterns of migration over a half century, comparing the experiences of different cohorts. We define migration as residency in a place for at least six months and examine moves to and from Chitwan, other places in Nepal, and internationally. Both individual action and structural conditions shape the life course. Comparing trajectories across cohorts enables us to view the impacts of macro social change, as each cohort is exposed to an evolving context at a similar life stage. As social change occurs, places change in relation to the people who shape them: attracting, repelling, and retaining people and serving as an anchor point for individuals to return to.

Although Chitwan is unique as a case, it nevertheless contributes to an understanding of evolving global migration patterns over the second half of the 20th century. In Chitwan, a frontier was settled in conjunction with market expansion, road extension, and deforestation, followed by a shift to major migration outflows connected to recent global patterns of labor recruitment. The role of frontier migration and the settlement of places have been highlighted for other cases. For example, Schewel (2025) traces intergenerational changes in migration patterns in

¹ Labovitz and Ng (2026) use the CVFS to study change over time in the relation between family formation and migration behaviors amongst males between the ages of 15–30, using a similarly broad timeframe.

a community in Ethiopia, including the settlement of a nomadic community, with the extensification of agriculture and education. *Barbieri et al.* (2009) show similar changes in migration patterns for the Northern Ecuadorian Amazon frontier in the 1970s. *Rindfuss et al.* (2007) describe in-migration and changes in land use in seven cases of frontier migration across the Americas and Asia. We argue that these cases are all examples of a broader set of cases of social policy, frontier migration, and social change.

We are not the first to study migration in the Chitwan Valley. Numerous scholars have studied a wide range of determinants of out-migration from and return migration to Chitwan, typically focusing on more recent years (e.g., *Bohra/Massey* 2009; *Hughes et al.* 2020; *Labovitz/Ng* 2026; *Thornton et al.* 2022; *Williams* 2009; *Williams et al.* 2020; *Williams/Gray* 2020). We build on this local and global work, stepping back to take a broader view of Chitwan as both a place of destination and origin for internal and international migrants in the context of social change over the latter half of the 20th century.

Chitwan provides valuable insights as a location that experienced the extensification of agriculture, rapid social change, and frontier migration, set within a particular context of global opportunity. The uniquely rich and high quality of data over time allows us to model changing migration patterns in relation to place. As we will show, over the course of seven decades, Chitwan experienced increased local access to roads and services (e.g., schools and health clinics) and changes to social policies. We embed individuals' migration trajectories in this context of social change, using cohorts to highlight experiences of changing places at similar ages.

2 Migration and the life course

We draw on the life course perspective to frame our study, especially on three of the five core principles outlined by *Elder and colleagues* (2003): (1) agency and its expression in relation to the opportunities and constraints of a particular context; (2) time and place, the idea that lives are both a part of and shaped by historical time and context; and (3) timing, that *when* events and transitions occur matters. We pay particular attention to (1) age patterns of migration, (2) migration as a transition between places of residence, (3) migration trajectories that include in-, out-, and return migration and periods of stasis, (4) movement to and from international as well as internal destinations, and (5) the way that individuals' lives and larger historical context intersect in cohort patterns and gender differences.

In literature on the life course, patterns of migration are age-related, especially because many life events call for moves. People adjust to new circumstances (*Neugarten et al.* 1965; *Courageau* 1985; *Clark* 2013) and relationships to others change, impacting agency. Mobility is especially concentrated in early adulthood, corresponding with the completion of schooling, entry into the labor force, union formation, and the beginning of childbearing (*Bernard et al.* 2014; *Horowitz/Entwistle* 2021; *Rindfuss* 1991). Although there is variability in the precise shape of the age curve of migration, this pattern has been found around the world for residential mobility

(e.g., *Clark* 2013), internal migration (e.g., *Bernard et al.* 2014), and international migration (e.g., *Raymer et al.* 2025). This prior work, however, largely focuses on the contemporary period without considering how patterns may have changed over time. Still unknown is the degree to which these age patterns characterize other periods and places beyond the scope of those studies. For example, the now-standard age pattern of migration – early adulthood – may have emerged with the spread of global capitalism (*Sassen* 1988). Or, it might reflect the spread of Western ideas about the family and expectations about choice of partner, timing of marriage, and postnuptial residence (*Thornton* 2001).

Contextual conditions and the intersection of historical time and place are key factors in shaping the life course (*Elder et al.* 2003). In migration studies, a focus on agency in relationship to context is central to the aspirations-capabilities framework (*Carling/Schewel* 2018; *De Haas* 2021). Aspirations and capabilities reflect the agency of individuals and are shaped by cultural norms and social structure. Decisions to stay or move evolve over time due to changes in individuals' circumstances as they move through the life course, and with changes over time in the macro context including moves from one place to another. Feedback loops are inherent in migration processes, as *De Haas* (2021) points out. Migration and sedentarization are a part of social change, impacting aspirations and capabilities to be mobile or immobile and potentially also affecting context.

Mayer (2004) emphasizes the role of contextual conditions in producing variation in life courses, and how these changes produce differences in life courses over historical time. Contextual conditions do not affect everyone equally. Timing matters. To understand this, *Ryder* (1965) proposed birth cohorts as a valuable tool for studying social change. *Bernard* (2022) has applied this approach effectively in the study of migration. Cohorts capture the intersection of historical time, i.e., the dynamic development and changing conditions of place, and age, i.e., the timing of life that unfolds. We focus on birth cohorts as they reach the cusp of adulthood, in our case age 15. In a changing context such as Chitwan, Nepal, these cohorts of young people encounter different versions of the place and different versions of other places as they age. For example, over time, there has been increased local access to markets, employers, buses, schools, and health services. This has consequences for migration and staying behavior.

Trajectories capture the unfolding of the life course. These pathways involve sequences of states and transitions between states. In the case of migration trajectories, states are places of residence and transitions are migrations (changes) between them. At least potentially, the number of different migration trajectories in a population could equal its size. If we consider two places of residence, origin and destination, assume that changes of residence only happen at the beginning of a year, and follow individuals over 34 years of their lives, the possible sequences of origin and destination number in the billions. This is never the case, however, because trajectories are shaped by time and place as well as individual agency. Typically, they cluster into broad categories that capture key aspects of migration experience, including the timing of mobility, directionality, and repetition of events (e.g., *Bernard/Vidal* 2023).

Migration can be examined from the perspective of place as well as individual and group experience. In places, economic opportunities expand or contract; political and social climates can shift (*De Haas 2010; Engbersen et al. 2016*). Places can become more or less accessible, with changes in visa requirements, transportation options, government agreements, etc. Over time, destinations can become places of origin as migration streams shift, as we show for the Chitwan Valley in Nepal. Origins can become places of destination as migrants return, which we also demonstrate. Migrants are not only recipients of this exposure, but shape places themselves (*Entwistle 2007*). Mobility creates webs of interrelationships between places, sometimes building migration systems. Population dynamics, as a contextual factor, can shape migration age profiles (*Bernard et al. 2014*).

Gender also structures migration (*Curran et al. 2006*). Migration is impacted by institutions that are gendered, such as marriage and the labor market (*Herrera 2013*). The transition to adulthood involves the acquisition of new roles and responsibilities for productive and reproductive labor (*Labovitz/Ng 2026*). Union formation often spurs a move, although who moves depends on whether marriage patterns are patrilocal, matrilineal, or neolocal. Demand for labor is often gendered. Males and females vary in their access to work opportunities, both locally and in other places. Much migration research is skewed towards labor migration, giving the impression that migration is largely a male phenomenon. While migration processes may differ between males and females (*Curran et al. 2006*), female mobility should not be discounted as “only” family migration, tied migration, or highlighted as a special case, but understood as both contributing to changes in social contexts and impacted by changes in contexts.

We examine when and in what ways male and female migration patterns diverge, whether age patterns of migration are an artifact of the period in which much survey data on migration was collected (i.e., is it a recent phenomenon?), and consider the link between internal and international migration. By focusing on place, we allow for an exploration of both in and out migration, change over periods such as the expansion of roads and social policies, and a view of both mobility and immobility with neither being considered an exception to the other. We raise theoretical questions for what this means for the study of intergenerational mobility, as macro change continues; incorporate the role of place in being shaped and shaping migration; contribute to discussions on migration and development; and highlight cohorts as the contexts (age × historical time) from which individuals select to leave or stay, including when experiences of opportunities to leave or stay may evolve.

3 Time and place: Chitwan Valley, Nepal

The Chitwan Valley is an agrarian area in the valleys of South Central Nepal once marked by dense forests, wildlife, and virulent malaria (*Ghimire 2014*). Change in the post WWII period was profound. The Peace and Friendship Treaty of 1950 opened the border between Nepal and India, allowing citizens of both countries to travel back and forth without the need for passports and visas. In 1954-56, a few pioneers

from Nepal, and some from India, moved into Chitwan as part of a newly instituted resettlement program. The pace of settlement picked up considerably with the launch of a malaria eradication program that cleared parts of the dense forests (Shrestha *et al.* 1993). Families moved in as new land became available for farming. Their settlement largely displaced the Tharu, an indigenous group (McLean 1999). State development policy shaped such frontier migration (e.g., Shrestha 1989). Road construction also changed conditions. Work on the East-West Highway began in the 1960s; a connector between the Chitwan Valley and the highway was completed in 1979 (Massey *et al.* 2010), making the valley key to travel across Nepal. While these particulars are unique to Chitwan, market expansion, road construction, and the clearing of forests were the impetus to frontier migration in many places around the world, including Latin America (e.g., Barbieri *et al.* 2009; Moran *et al.* 2005) and other parts of Asia (e.g., Entwisle *et al.* 2005).

Roads not only facilitated the migration of settlers into Chitwan, they also facilitated migration out of Chitwan. The first Foreign Employment Act, signed in 1985, provided a framework for international labor migration from Nepal. This, along with an open border with India beginning in the 1950s and shifting global labor demand to Southeast Asia and the Gulf in the 1970s, began to impact Nepal by the 1990s. Nonetheless, the roads that paved the way for population mobility also allowed people to stay put, by allowing opportunity and services in. The subsequent socioeconomic development in the 1970s and beyond changed marriage and fertility behavior (Bhandari/Ghimire 2013; Coltabiano/Castiglioni 2008). Furthermore, the rapid expansion and accessibility of Bharatpur, the urban center of Chitwan, increased opportunities within the valley, allowing people to stay rather than go elsewhere for such opportunities. The establishment of Bharatpur as a municipality in 1991 and its growth into the third most populous city in Nepal is a change that only our most recent cohorts would have experienced.

These are macro-scale changes. To further situate the place, and provide local details, we draw on retrospective neighborhood history calendars from neighborhoods sampled in the Chitwan Valley Family Study (Axinn *et al.* 2007), extending prior depictions of social change summarized by Massey *et al.* (2010). Neighborhood history calendars were collected from 171 neighborhoods – clusters of 5-15 households – in the Chitwan Valley (Axinn *et al.* 1997). Neighborhoods were selected on an equal probability basis, and were representative of the valley as a whole at the time of data collection (Barber *et al.* 1997). Individuals interviewed were in sampled neighborhoods, but capturing social change such as the distance to a school did not require the school to be in the boundaries of the neighborhood (Axinn *et al.* 1997: 367).

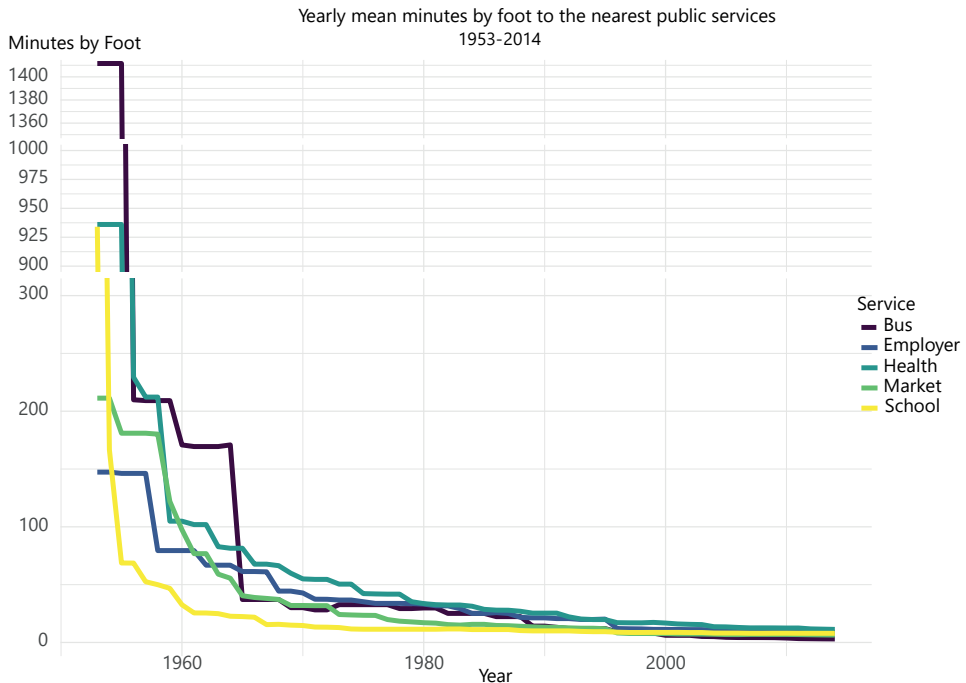
Collected in 1995, the histories cover the prior four decades, from when Chitwan opened to new settlement, and were refreshed in 2004 and 2015. To collect key context-level measures of social change and reduce the potential for recall errors, multiple sources of evidence were collected. Interviews with diverse individuals in terms of age, gender, and education were conducted in each neighborhood, as they may remember different events to varying degrees or interact with services more or less (Axinn *et al.* 1997). These interviews were cross validated with archival records

and interviews with informants from key services (Axinn *et al.* 1997). Together, this evidence was used to pinpoint dates as accurately as possible to capture dynamic change. See Axinn *et al.* (1997) for an overview of the data collection.

Figure 1 shows that access to key public services increased rapidly over the decades. The pace of change between the 1950s and 1960s onwards was so dramatic that it requires breaks in the y-axis (time), demonstrating just how rapid change was. After the first schools were established in the 1950s, the average walk to the nearest school decreased from more than an hour in 1955 to less than half that in 1965, holding steady at about 15 minutes from 1970 onwards. Markets, bus services, and employment establishments came next, with travel times decreasing rapidly through the 1990s. Health care services followed soon after. Online Appendix A1 shows how these changes are even more profound when examining the interquartile range for access to health services. Online Appendix A1 shows the dispersion of health clinics on a map. By 2005, a wide range of services were within a 20-minute walk, on average.

The rapid expansion of public services had multiple impacts. First, the supply of services such as schools, does not just serve the existing population, but can also be an attractive force. Second, with an increase in services, possibilities and reasons to stay increase. Services also allow for individual family members to leave,

Fig. 1: Accessibility of public services over time



Source: Authors' own calculation using the Chitwan Valley Family Study Neighborhood History Calendars

as infrastructure such as health care and education supports families left behind. Third, residents are not only the recipients of these developments, but are also actively engaged in shaping them, e.g., through employment. The demand for professionals may also increase the supply of those who work in these services. Population changes impact markets which impact population change.

Clearly, the latter part of the 20th century was marked by dramatic social change, both in Chitwan and in Nepal as a whole. The way individuals respond depends to some extent on their stage in the life course as circumstances change. Coming of age before the connecting road was built was very different from coming of age after services proliferated. The context prevailing at the beginning of the transition to adulthood shapes options and choices, defining the experiences of entire cohorts. Using age 15 to proxy the beginning of this transition, Table 1 shows key features of the changing context for five different birth cohorts: those born before 1950; 1950-59; 1960-69; 1970-79; and 1980-87. The oldest cohort came of age when Chitwan was first settled; the next with the rapid expansion of schools and other services; the next when the highway connecting Chitwan to the rest of Nepal was completed; the following when the Foreign Employment Act was signed and labor recruitment agencies established; and the youngest as those agencies began to direct international migrants from Nepal to the Gulf in the 1990s (*Valenta* 2022). With these differences in conditions, we are interested in how migration patterns and trajectories may have shifted over time, and how migration patterns changed in terms of direction and destination.

Tab. 1: Context of social change

Cohort	Context of social change at age 15
Born before 1950	• Peace and Friendship Treaty between India and Nepal (1950) • Malaria eradication (mid 1950s) • Jungles of Chitwan cleared for settlement (1950s) • Schools established (1950s)
Born 1950-59	• East-West Highway built (starting 1960 but not connected to Chitwan) • Expansion of markets, bus service
Born 1960-69	• East-West Highway connected to Chitwan (1979) • Foreign Employment Act (1985) • Rapid increase in access to public services
Born 1970-79	• Foreign Employment Act (1985) • Labor recruitment agencies established (early 1990s) • Rapid increase in access to public services
Born 1980-87	• Increased labor demand from Southwest and East Asian countries • Recruitment agencies begin to send migrants to the Gulf • Nepalese Civil War (1996-2006)

Source: *Axinn* and *Yabiku* 2001; *Ghimire* 2014; *Massey et al.* 2010; authors’ analysis of the Chitwan Valley Family Study Neighborhood History Calendars

4 Transitions and trajectories

To understand the ways that social and demographic change has shaped both cohort experience and migration over the latter half of the 20th century, we examine migration trajectories. We view migration as a dynamic process across the life course – a series of transitions (events) and non-transitions (durations in place) – and ask how migration trajectories cluster and whether they change over time in relation to changes in places.

For this, we draw on individual data from the Chitwan Valley Family Study (CVFS) (Axinn *et al.* 2007). The original purpose of the study was to examine the influence of changing community and household contexts on marital and childbearing processes. Over time, the CVFS has become a rich panel study of individuals, families, and communities over many decades. The CVFS contains many different surveys, including the neighborhood history calendars introduced above. At its core are retrospective life history calendars and a prospective monthly household registry of individuals. This combination of retrospective and prospective data and panel structure is unique for micro surveys used for the study of migration. This is especially useful for the study of migrants who by definition leave a place or come into a place, as it captures everyone in a place (Riosmena 2016). Retrospective data captures the histories of a population in a place at the time of the survey, while prospective data tracks how a population changes over time going forward, and suffers from less recall bias, especially if moves are short in duration (Redstone/Massey 2004). Retrospective data was collected twice, meaning that most of the eligible sample was captured at two different points in time.

We primarily use the life history calendars, collected in 1996 and 2008. These calendars were completed by nearly all individuals (97 percent) aged 15-59 in the sampled neighborhoods (Axinn *et al.* 1999). They were subsequently refreshed in 2008 to 2012, including people newly part of the sampled neighborhoods and those newly aged into eligibility.² For this study, we include only individuals who completed at least one life history calendar. We combine this data with residence information from the prospective household registry collected every month beginning in 1996 and at increasing intervals over time. All individuals in sampled neighborhoods are tracked through this household registry. The use of the household registry allows us to capture more cohorts, and individuals, especially individuals who may not have been present when one of the two waves of retrospective data was collected. Further, to be a part of our analytic sample, we required complete information as to where respondents resided between ages 0 through 34. This ultimately leads to a sample of 6,746 individuals, 3,485 of whom are male and 3,261 female. We discuss issues of missingness – how much of the population we capture – further below in

² Though most were captured in 2008, some were interviewed between 2009-12, as efforts were made to interview all individuals who are members in a neighborhood, including those who were considered contributors to households but were not physically present, such as migrants. This 2009-12 extension accounts for 15 percent of the analytic sample. Neighborhoods were selected on an equal probability basis using a multistage cluster design (Barber *et al.* 1997).

this section. Online Appendix A2 provides additional details on the sample, and how age at the time of the survey matters for whom we do and do not capture.

We organize our data into five birth cohorts: those born before 1950; 1950-59; 1960-69; 1970-79; and 1980-87. We do so because not only is migration age-dependent (e.g., *Courgeau* 1985), but also to capture the impact of historical time in terms of the transition to adulthood. Historical time is particularly key in a context of rapid social and demographic change. Each cohort experienced very different versions of a place, with varying access to resources as they came of age. Similarly, simply examining migration year by year, rather than individual trajectories, would not allow us to understand migration in relation to the life course. These lives, including childhood and young adulthood, happened in the context of different periods of social change.

Table 2 shows the distribution of our sample by cohort, both overall and separately for males and females. As shown, the cohorts vary in size, with the oldest cohort being the smallest. To some extent, this reflects biases in our data. As with all retrospective data, there is a survivorship bias. Individuals must be alive at the time of data collection to have completed a life history calendar. This should impact older cohorts of individuals more than younger cohorts, as they were interviewed at older ages. In addition, due to the age-restricted nature of eligibility to complete the life history calendar, we do not capture the oldest individuals. These forms of bias likely mean that we are under-capturing migration to Chitwan. Finally, our sample fails to capture individuals who resided in Chitwan prior to data collection (in 1996 and 2008) and were not considered a part of the neighborhood at the time of data collection (e.g., the entire household left). Thus, we are likely capturing more stayers or those still tied to selected neighborhoods, than movers around these time periods. Notably, the differences in cohort sizes also reflect changes in fertility and mortality over time in Chitwan (*World Bank* 2025). Life expectancy at birth in Nepal increased from 39 years in 1960 to 52 years in 1987. The total fertility rate decreased from 6.1 in 1960 to 5.3 in 1987 (and very rapidly after that, with the most recent estimates at 2.0 for 2023). These differences mean that we would not expect birth cohorts to be even in the first place.

To measure migration trajectories, we sequence spells of residency, with migration defined as the transitions between spells. We identify three distinct places where respondents might reside: Chitwan (including both sampled and not sampled neighborhoods), elsewhere in Nepal, or another country.³ Respondents were assigned to one of these places of residence for each year between the ages of 0 and 34. This age range allows us to capture complete sequences of individuals born up to 1987 (as our latest data is from 2021), while also including the ages when most moves occur – early adulthood.

³ Lack of further detail does not allow us to disentangle migrations to different international destinations. Importantly, India is not separated from other international destinations, though the costs of moving to and from India and other international places certainly differ.

Tab. 2: Analytic sample characteristics

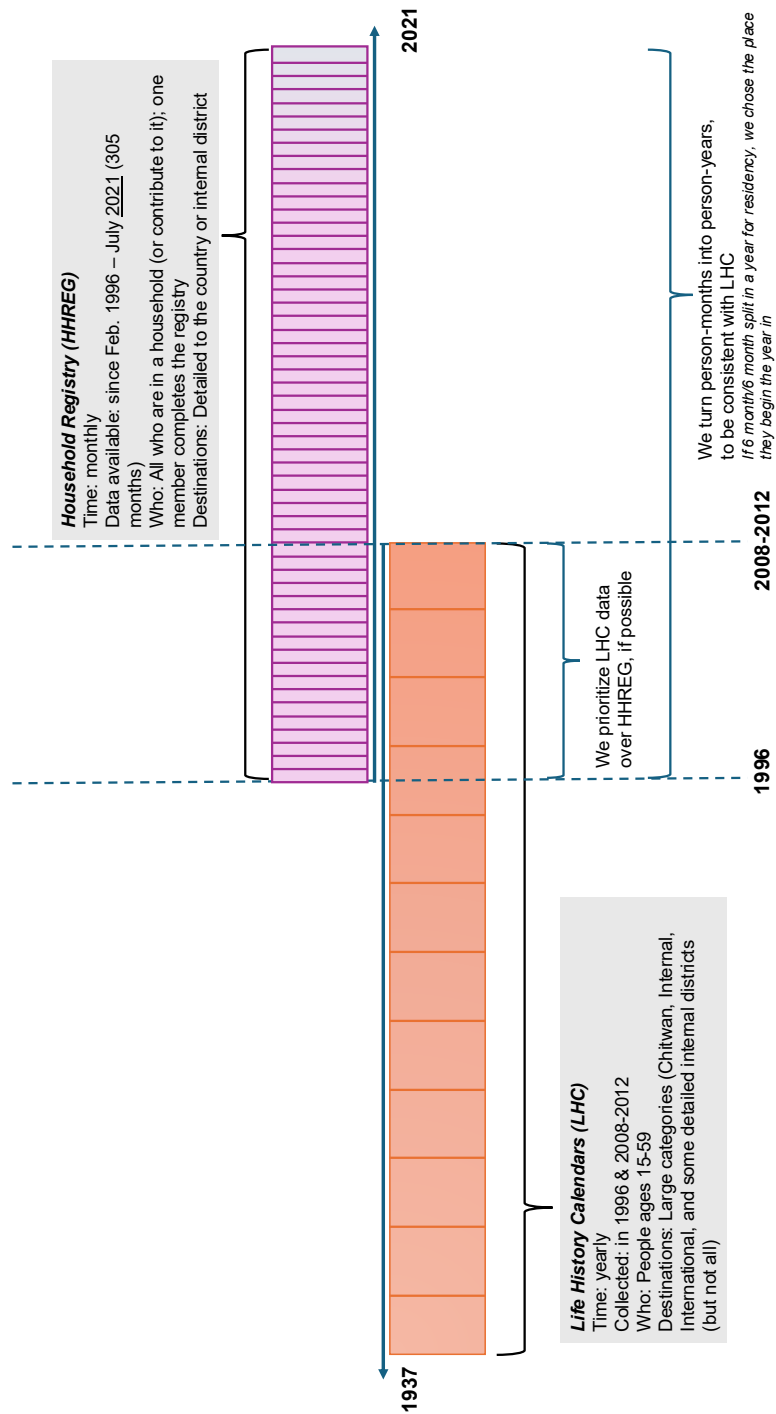
Cohort	Males % of total sample	Females	%	Combined Number	Sex ratio
Born before 1950	9.18	5.66	11.53	778	1.04
Born 1950-59	5.87	8.32	17.21	1,161	1.07
Born 1960-69	8.89	11.27	23.94	1,615	1.13
Born 1970-79	12.67	13.92	29.53	1,992	1.12
Born 1980-87	15.61	8.18	17.79	1,200	0.94
Total	52.22	48.34	100	6,746	1.07

Source: Authors' own calculations using the Chitwan Valley Family Study data

Residence is defined for each age as the place where an individual resided for more than half of the year. A focus on place allows us to consider patterns of immobility as well as the timing of moves (*Schewel* 2020). As we will show, immobility is increasingly common, especially for females. The choice of year of age as the temporal unit of observation for the trajectories helps us manage the complexity of possible patterns. There is a cost to this choice, however. Residencies whose durations straddled a year without adding up to six months in either year are not captured (e.g., from the last four months of a year to the first three months). Furthermore, durations are crude. A residency of just over six months in a calendar year for one person is treated equally to a residency of twelve months for another. This could lead to an underestimation of changes in residence in this context, where labor migration, including out- and return-migrations of shorter spells (such as seasonal migration) are common. Nonetheless, this approach to measuring place of residence is valuable because it captures longer durations and distinct changes in place and thus aspects of longer residencies. The minimum six-month definition is also consistent with other trajectory-based analyses of migration (e.g., *Bernard* 2023). Although the prospective data gives monthly information on residency, allowing us to define migration by duration more flexibly, when combining it to fill in the gaps of retrospective data, we treat this as we do the retrospective data. Where individuals lived for 6+ months of a year is considered their place of residence. When there is an equal split in months, the place individuals were in at the beginning of the year is considered their place of residence. This applies to less than 2 percent of cases. Figure 2 visualizes the use of both datasets.

To create a typology of trajectories, we employ sequence and cluster analysis methods (see *Raab/Struffolino* 2023 and *Liao et al.* 2022 for overviews of the method). Using optimal matching with an indel of one, and the *Needleman/Wunsch* (1970) algorithm to cluster, we extract nine clusters of sequences from all individuals' sequences. Optimal matching prioritizes long common subsequences (duration) that are overlapping in the unit of time of interest (in this case, age) (*Elzinga/Studer* 2015). It does so by calculating the minimum cost required for states to transform into another, with similarity being prioritized. Indel operations prioritize the ordering of events (*Raab/Struffolino* 2023: 56). This is reflected in the typologies which distinguish

Fig. 2: Data diagram



Source: Authors' own visualization

the ordering of places in relation to age (our unit of time). We assessed the quality of the clustering solution using different quality indicators, including the average silhouette width, the point biserial correlation, and Hubert's gamma, summarized in *Studer* (2013). Assessments of these indicators suggested clustering into nine types, with more within-group similarity and between-group dissimilarity. Specifically, the Average Silhouette Width, which indicates coherence within clusters, is 0.47.⁴ The typology allows us to visualize residency and changes in residency, illuminating the patterns of mobility and immobility that are prevalent over time and the direction of the mobility. We create a typology for the entire analytic sample, rather than stratifying by sex or cohort, so that we can compare across these features. The resulting typologies are shown in Figure 3 and summarized in Table 3, with cohort patterns shown in Figure 4. Lastly, we examine the ordering of places of residency to explore the direction of moves and multiple moves more clearly.

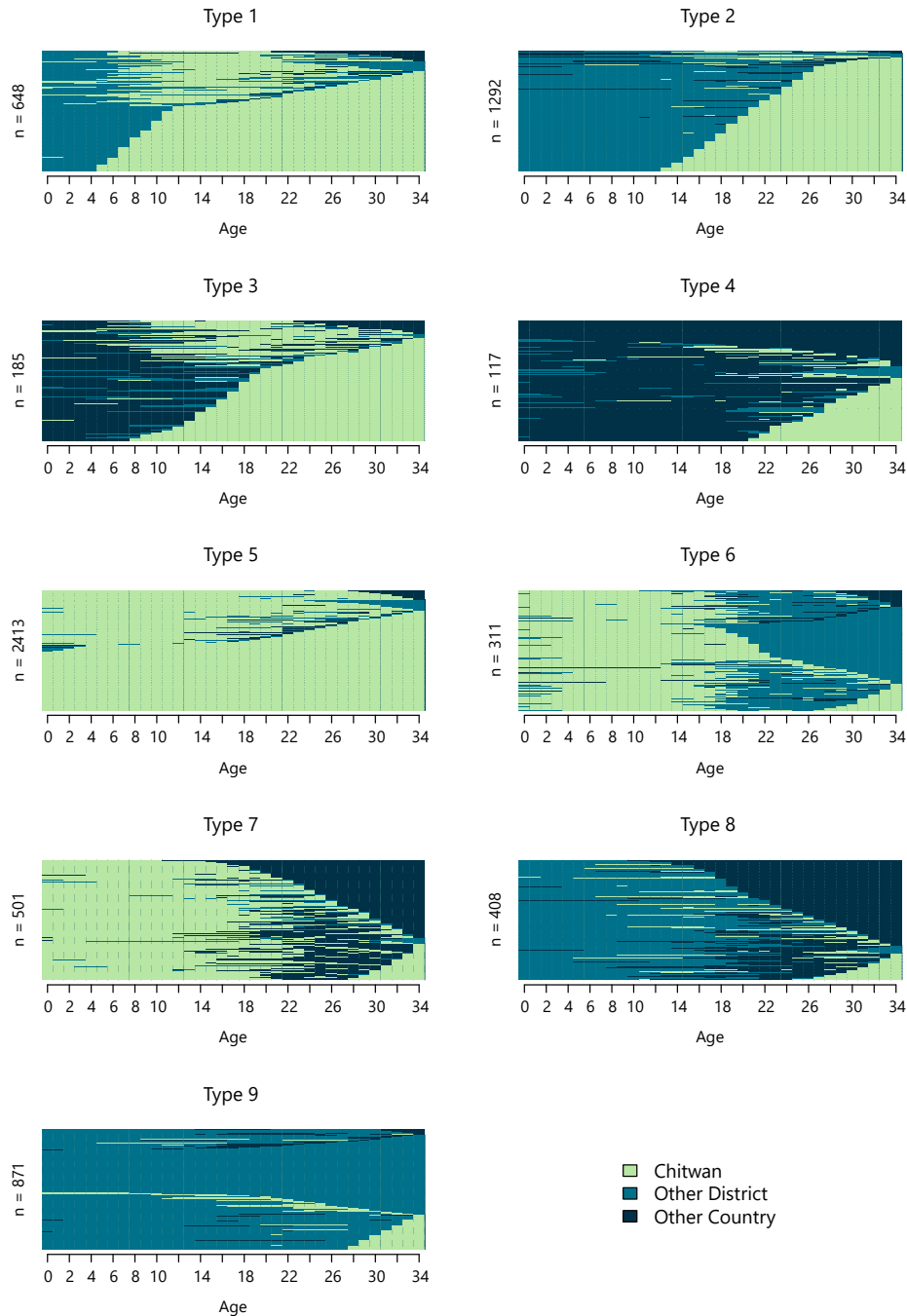
5 Results

5.1 Types of migration trajectories

We begin by examining the typology of trajectories. Trajectories allow us to capture the presence of movement to and from Chitwan, as individuals remain connected to the valley. The types of migration trajectories vary, with some emphasizing patterns of in-migration to the valley (Types 1, 2, 3, 4, 9) and others out-migration within and outside of Nepal (Types 6, 7). One type, Type 5, captures life primarily lived within the valley. Another, Type 8, shows individuals with limited contact with Chitwan, who live elsewhere, who perhaps were visiting during data collection or who moved to Chitwan later in life. This last type is uncommon, and we do not comment on it further. Looking across the trajectory types, there are distinct age patterns. If there is a move, it might occur in childhood (Type 1), adolescence (Types 2, 3, 6, 7), or early adulthood (Types 4 and 9). These patterns are similar to the age curves of migration observed in other settings, although more spread out. Further examining the trajectory types, we see individuals who predominantly move either internally (Types 1, 2, 6) or internationally (Types 3, 7, and mostly 9), but rarely both. This apparent tradeoff could be an anomaly related to the way residence is defined. Internal moves, as potentially less costly moves, might be moves of shorter duration, not captured by our six-month requirement for residency. These are likely undercounted.

⁴ If we were to split with only two groups, the ASW would be higher (0.52); however, this would only differentiate between people moving into Chitwan and those moving out of Chitwan, thereby showing little of the variation that results from the timing of moves

Fig. 3: Sequence index plots of clusters



Source: Authors' own calculation using the Chitwan Valley Family Study data

Tab. 3: Trajectory types

Types	Description	Overall prevalence
Type 1	Born elsewhere in Nepal and moved to the Chitwan Valley during early to mid-childhood.	9.6%
Type 2	Born elsewhere in Nepal and moved to the Chitwan Valley in late childhood and young adulthood.	19.2%
Type 3	Born outside of Nepal with a move to the Chitwan Valley in early adulthood.	2.7%
Type 4	Life primarily occurred outside of Nepal, with short spells in the Chitwan Valley or internal destinations, or a move into the Chitwan Valley in their 20s.	1.7%
Type 5	Primarily living in the Chitwan Valley, with shorter spells at internal or international destinations in rare cases.	35.8%
Type 6	Childhood is primarily in the Chitwan Valley, or with repeated spells there, but moved to other districts in Nepal in young adulthood.	4.6%
Type 7	Childhood is primarily in the Chitwan Valley, or with repeated spells there, but moved to other countries in young adulthood.	7.4%
Type 8	Childhood is largely elsewhere in Nepal with some spells in the Chitwan Valley, with young adulthood spent primarily in another country. Largely omitted from our analysis.	6%
Type 9	Life primarily occurred elsewhere in Nepal, with a move into the Chitwan Valley in adulthood.	12.9%

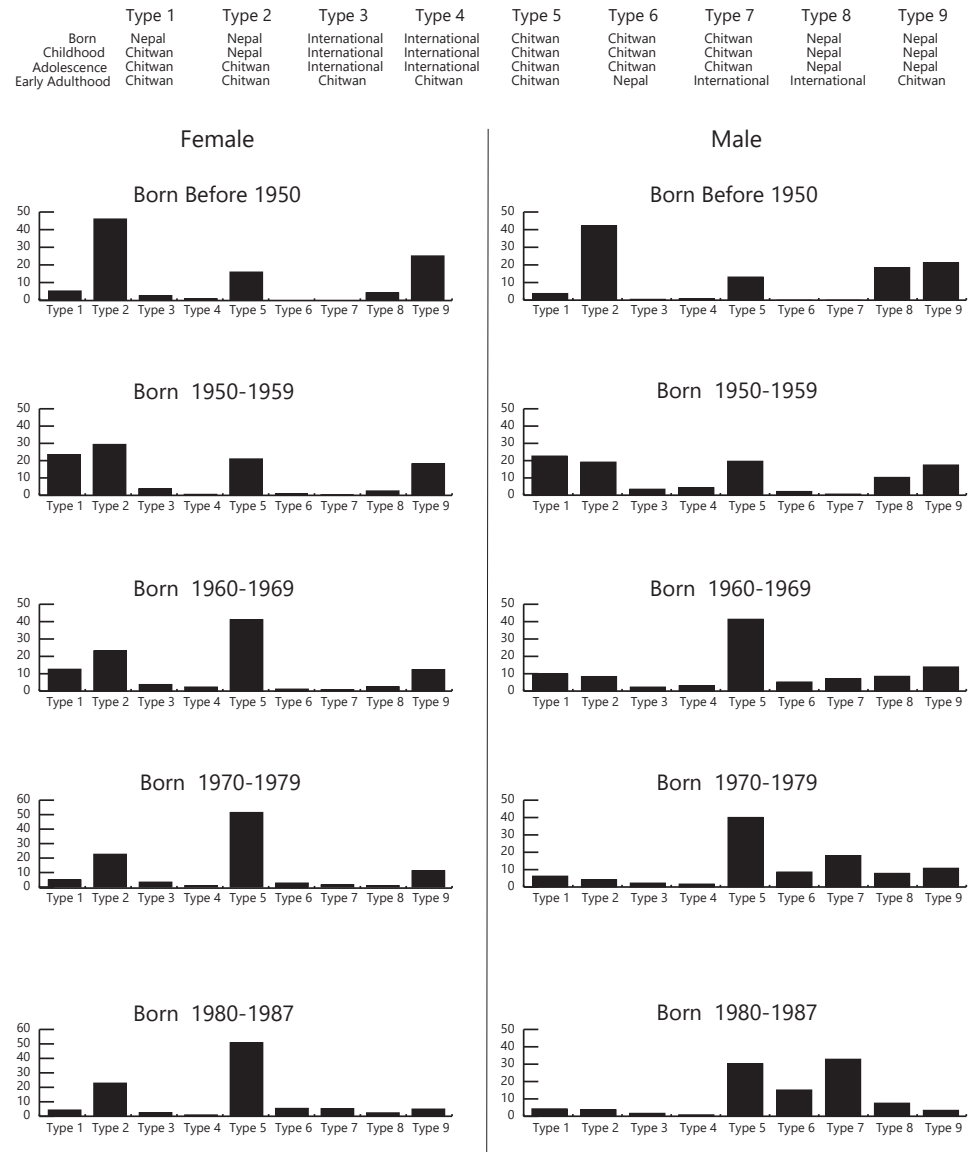
Source: Authors' own descriptions

5.2 Cohort and gender differences

Figure 4 shows the distributions of trajectory type by cohort and sex. Bar graphs indicate relative proportions of each type within each cohort and sex group, highlighting the dominant trajectories. Examining the columns reveals cohort differences in the distribution of trajectories separately for females and males. Looking across the rows shows gender differences in trajectories within each cohort. To ease interpretation, we indicate the direction and timing of migration for each type at the top of the figure.

Beginning with cohorts, Figure 4 shows pronounced shifts in the prevalence of different migration trajectories over time. In the earliest cohort (born before 1950), movement into Chitwan during childhood and young adulthood from other parts of Nepal (Type 2) is most common for both males and females. In-migration at older ages (Type 9) was also common. This cohort came of age when the jungle was cleared, malaria eradicated, and the first schools established. Both patterns decreased over cohorts. In-migration from other countries (Type 1) increased from the oldest to the next oldest cohort (1950-1959), following the Peace and Friendship Treaty between Nepal and India and the establishment of the East-West Highway

Fig. 4: Residency trajectory types by cohorts and sex



Note: Bar charts show prevalence of trajectory type within birth cohort and sex group.
Source: Own calculations using the Chitwan Valley Family Study data

and bus services, but decreased sharply thereafter. These are individuals who moved to Chitwan in young adulthood but were born and raised in another country. Out-migration (Types 6 and 7) was rare for the earliest cohorts but rose sharply among the two most recent cohorts (1970-79 and 1980-87), although mainly for

males. These cohorts came of age as demand for labor increased in Southwest and East Asian countries, and labor recruitment agencies were established. It is thus not surprising that the increase is especially notable for international out-migration (Type 7). Not everyone moved, of course. Immobility, with people living their entire lives within the Chitwan Valley (Type 5), is common for every cohort, and broadly speaking, increases over time.

Our typology of migration trajectories distinguishes directions of movement (in- and out-migration) as well as origins and destinations (Chitwan, elsewhere in Nepal, outside the country). It also distinguishes the timing of migration according to individual clocks. Individuals may move in early childhood (Type 1), adolescence (Types 2, 3, 6), or adulthood (Types 4, 7, 8, 9). We selected age 15 as “coming of age” from the standpoint of contextualizing the trajectories. This is a reasonable choice, given the patterns, but we want to point out a shift in the timing of migration over the cohorts. Timing is spread out for the earliest cohorts, and much more concentrated for the most recent ones (see Online Appendix A3). It is possible that the age curve of migration typically found in contemporary societies (*Bernard et al.* 2014; *Rogers et al.* 1978) reflects a context of urbanization and industrialization, including schooling, globally as well as nationally, and cultural factors such as Western family patterns (*Thornton* 2001).

Turning to sex differences, three patterns stand out. The first involves an increase in the relative importance of Type 2, in-migration to Chitwan during adolescence, among females compared to males. Among the oldest cohort, prevalence is nearly equal between the sexes. Type 2 falls in importance for males but remains one of the two most important migration trajectories for females across all five cohorts, even though its prevalence decreases with time. Among females in the youngest cohort (1980–87), more than 20 percent followed the Type 2 pattern of in-migration, probably reflecting patrilocal marriage patterns.

The second sex difference of note is the increasing importance of out-migration over the cohorts for males but not for females. Notably, the most prevalent types for later cohorts – Types 6 and 7 – are absent for the oldest cohort (before 1950) and uncommon for the 1950–59 cohort. These types remain rare for females but increase markedly for males, especially Type 7, involving migration to other countries. Whereas Types 6 and 7 were equally prevalent for the 1960–69 cohort, the prevalence of Type 7 was twice that of Type 6 by the 1980–89 cohort, signaling the emergence of a strong international migration pattern. Both are consistent with expectations based on labor migration, whereby young adulthood is spent elsewhere with potential patterns of shifting to other destinations or returning to Chitwan.

The third sex difference involves immobility, Type 5. For females, trajectories of this type increase steadily to represent half of those in the most recent cohorts. For males, the pattern parallels that for females for the oldest three cohorts but diverges for the youngest two. The prevalence of Type 5 is around 30 percent for males in the 1980–87 cohort, compared to roughly 50 percent of females.

5.3 Moves and multiple migration

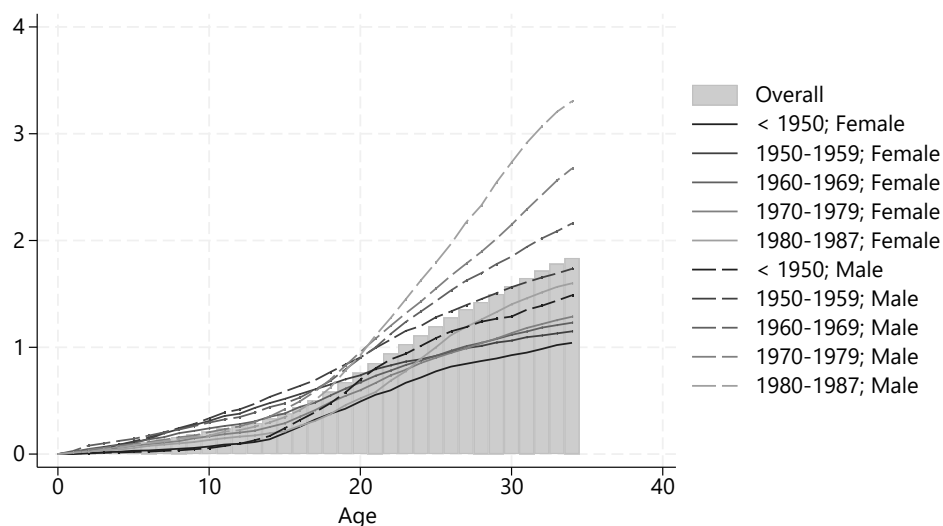
While the clusters of trajectories show general types, and highlight temporal trends and durations, they obscure the number of transitions and which changes between states are most common. Examining Figure 3, possibilities for multiple migration events emerge as people age and engage in their first and subsequent migration(s). Multiple migrations clearly occur but it is less clear what their prevalence is or what the ordering of different residencies might be.

Figure 5 shows the average number of migrations experienced by age for males and females in each of the five cohorts. Females generally move once. This is true across cohorts. Though males are more likely to experience more migration events as they age, the number of migrations experienced, for both sexes, increases for more recent cohorts. Migration never was a rare event, but younger cohorts more commonly engage in multiple migrations. This could be because of increasingly accessible migration pathways, not only as Nepal developed internally and Chitwan became more accessible, but as labor demand increased internationally, as discussed in Section 3.

The ordering of destinations, i.e., places, is an important indicator of change in Chitwan. There are three possible states of residency: Chitwan, other district in Nepal, and other Country. Of all possible combinations and orderings of transitions from one state to another, 12,390 migration events are observed across the 6,746 people in the analytic sample. Of these, the most frequent place-to-place transitions are from another district to the Chitwan Valley. Not only is this true for the oldest cohorts, but also for the 1960s and 1970s cohorts, who were more likely to have

Fig. 5: Average number of moves experienced by age, cohort, and sex

Average number of moves experienced by each age



Source: Authors' own calculations using the Chitwan Valley Family Study data

spent their childhood in Chitwan than prior cohorts were. The explanation could be return migration, in that individuals move from Chitwan to another district and back. Moving from Chitwan to another district or country are the second and third most frequent type of transitions. 5,229 people (the vast majority, 78 percent) experienced a migration event. Though males moved more than females, females also moved.⁵

When we examine multiple migration – including either stepwise or return migration – with three states and two transitions, the most common patterns include return migration. This is close to three times the number of stepwise moves without a return. Most frequently, moves occur from Chitwan to another district or country with a return to Chitwan. Individuals may also move from another district to Chitwan and return to another district. For multiple migration that does not include a return, the most common pattern is moving from another district to Chitwan and then to another country. The second most common is moving from another country to another district and then to Chitwan, and the third most common is moving from Chitwan to another district and then to another country. In general, this highlights that multiple migration, without any return migration involved, frequently includes both internal and international migration, though this was not as distinct when examining our migration trajectory types. Return migration is a much more common experience overall, particularly for the most recent cohorts. The limited moves of settlers may be because their intention was to settle and stay put. *Massey et al.* (2010) suggest that beyond intention, the conditions of place – such as increased access to services – allowed people to stay.

A slight majority of people never experienced a two-step transition (55 percent versus 45 percent). In contrast, the vast majority have experienced at least one move (78 percent). Furthermore, while most individuals and families came into Chitwan as settlers, some groups were already resident when the settlers arrived. Most were probably Tharu, the predominant native ethnic group to the area, although we have no direct data to support this claim. Examining additional ethnic and caste differences in in-migration lies beyond the scope of this paper.

6 Discussion

This study used migration sequences to develop a deeper understanding of changes experienced by individuals in relation to changing places. Emphasizing individual agency, timing of events and transitions, and historical time and place as context, the life course perspective provided a useful framework for interpreting shifts in migration patterns over the second half of the 20th century in the Chitwan Valley of Nepal. Pathways forged by individuals as they move through the life course reflect the confluence of individual and historical time, creating a duality of person and place. Viewing migration as a transition between two places of residence, our study

⁵ 84 percent of males experienced at least one move and 71 percent of females did too.

focused on the timing of migration, both in the context of the lives of individuals and in relation to large scale social changes locally, nationally, and globally. Trajectories capture migration as a transition in the lives of individuals, and cohort comparisons identify shifts in migration in the history of a place. Cohort comparisons highlight historical time, that places are dynamic and developing, and that cohorts differ in the conditions they encounter as they come of age. Migration biographies shift with social change. We highlighted that conditions to move to Chitwan, stay, leave, and return changed across cohorts, increasingly differentiating the experiences of males and females. Whether this trend continues or reverses is an open question.

A distinctive feature of our study is its focus on both in- and out-migration. Numerous scholars have studied a wide range of determinants of out-migration from and return migration to Chitwan (e.g., *Bohra/Massey* 2009; *Hughes et al.* 2020; *Thornton et al.* 2022, 2020; *Williams* 2009; *Williams et al.* 2020; *Williams/Gray* 2020). However, studying migration in terms of a single direction of movement risks missing part of the picture by not considering the other direction. In the 1950s and early 1960s, Chitwan grew with frontier migration. It then increasingly became a place of out-migration, especially in the 1990s, complemented by return migration. Although we highlight the case of Chitwan, frontier migration and settlement followed by out-migration is not a unique pattern. Rather, it is part of a global picture during the half century following WWII (e.g., *Schewel* 2025; *Skeldon* 1990). It is possible that in-migration and out-migration are linked over time. Other studies have found that the children of migratory parents are more likely to migrate themselves (e.g., *Bernard/Perales* 2024; *Côté-Gendreau* 2026). Though the focus on out and return migration is relevant for current patterns of migration, we argue that the broader context of place needs to be considered when thinking about the intergenerational transmission of migration behaviors, especially for places that experienced rapid change. This is a topic worth further investigation.

Another distinctive feature of our study is the incorporation of internal and international migration. Though the initial period of settlement in Chitwan involved some international in-migration, most stemmed from internal in-migration. Internal out-migration was also more common among older cohorts, but over time, it was accompanied and then superseded by out-migration to international places, especially for males. While we document some stepwise migration, where migrants from Chitwan first moved internally before migrating internationally, this was not common. Rather, internal and international moves operated more as substitutes, and international moves became increasingly common. This may be partially due to our operationalization of migration, in particular our inability to capture shorter migrations. It may also reflect other change: the importance of recruiters, shifts in origins on the meaning of migration to different destinations, and shifts in labor demand in destinations. Changes in social context may also allow linked individuals to move further.

A unique combination of retrospective and prospective data allowed us to examine how migration in a place evolves. One interest was whether the now-standard age profile characterized migration patterns when Chitwan was opened to settlement, or whether it is a more recent phenomenon. The answer is a partial yes. It may be a

more recent phenomenon. Many of the most common trajectories in every cohort saw an increase in migration at age 15 (see Fig. 5), the age we selected to relate cohort experience to macro change. And yet, it may be more accurate to characterize the initiation of in-migration during the years of early settlement as centered on age 15 rather than beginning at age 15. The timing of first migration in the earliest cohort (before 1950) was much more dispersed than it was in the later cohorts (see Online Appendix A3). From this perspective, the now-standard age profile is more of a recent phenomenon, linked to larger the extension of globalization (*Sassen* 1988) or the spread of Western ideas about the family (*Thornton* 2001). This topic, too, is worthy of further investigation.

Interestingly, there was an increasing differentiation of male and female migration trajectories over time. Migration patterns and their distributions were fairly similar for the oldest cohorts. In contrast, for younger cohorts of females, the most common trajectory types were in-migration (likely for marriage) and stasis. For younger cohorts of males, the most common types were out-migration to other countries, with stasis and out-migration to other places in Nepal close behind. Migration research has focused on how the changing conditions of a context impact out-migration or return migration. This focus has only rarely been combined with a view of movement into a place (unless it is distinctly a return) or with immobility. In the case of Chitwan, the mobility of females becomes especially visible when we include in-migration. Although females did not join streams of labor migration until recently, it would be incorrect to label them as non-migrants based on their lack of out-migration from Chitwan. Nepal is a patrilocal society where females move to join their husbands upon marriage (*Pearlman et al.* 2017). They migrate internally, both contributing to changes in social contexts and being impacted by changes in those contexts.

Importantly, the observed changes in residency and migration occurred in the context of social change with consequences for capabilities to be immobile or mobile (*Schewel* 2020, 2025). As Chitwan developed, roads were built and connected to national highways and bus services were established throughout the district. Infrastructural developments facilitated movement into and out of the district. They also facilitated the creation of businesses, schools, and healthcare, creating new opportunities in place. A view of both mobility and immobility allowed us to describe a broad sweep of migration history in Chitwan. In outlining stages of mobility transitions within a society, *Zelinsky* (1971) suggests that development, especially urbanization, leads to migration. We argued that a combination of state development policies and the settlement of Chitwan sparked Chitwan's mobility transition (i.e., people moving out). Chitwan developed as people stayed and as infrastructure connected Chitwan to other places. Development and population mobility (and immobility) happened in conjunction. Places do not develop by themselves, people develop places.

Historically speaking, the earliest cohorts we studied did not move a very long time ago. However, their mobility was largely in a different direction in relation to place. We observed a shift from a pattern of in-migration to a later pattern of out-migration, especially for males. Remaining in Chitwan also became more prevalent

for more recent cohorts, especially for females. It is possible that we are overstating the amount of stasis, because attrition from the household registry (e.g., through moving) means that we are more likely to capture stayers. At the same time, it is notable that we still see a different pattern for males and females in the same cohorts. Out-migration becomes a clear pattern once in-migrants settled. Ultimately, we showed that the context of migration has changed alongside migration trajectories. Not only are individuals' residencies dynamic, places are dynamic too. Individuals continue to shape contexts (Entwisle 2007). Furthermore, social change allows people to stay in place and to leave places (De Haas 2021). Not only are in, out, and return migrants contributing to social change; they are experiencing changed and changing contexts and opportunities. Both individuals' movements and macro social change shape place and future movement. Such patterns are shown in other contexts of development (e.g., Schewel 2025).

There are, of course, limitations to our analysis. We relied primarily on retrospective life history calendars, which may suffer from recall errors, likely affecting the accounts of older individuals more as they are asked to report on more years of past experience. However, the dataset's extensive cross-validation of evidence reduces these recall errors. Survival bias is also a concern, especially for older cohorts, who generally died at younger ages. Information is not available for the in- and out-migrations of those in each cohort who did not survive until data collection. Missing too are those who moved into Chitwan but moved on before data collection. Stayers are thus overrepresented in our sample, especially among the oldest cohorts. From this perspective, it is notable that stasis increases rather than decreases over the cohorts. Females born in Chitwan who moved elsewhere for marriage may also be missed. Our requirement that residency involves a stay of six or more months in a year may also create a downward bias in counts of moves, as does using the calendar year as a unit of measure. Seasonal and short-term labor migration may be missed as a result. Despite these many reasons why migration may be understated in our sample, we find a high degree of mobility. With more granular data on places or destinations, future research should distinguish between a more diverse set of locations or disentangle rural and urban migration. In the case of Chitwan, it would be important to differentiate migration to India and other international destinations. The retrospective data did not allow us to go in such detail. Though we link migration and development, we do not focus on specific drivers such as education. Nonetheless, we show how access to education and other resources rapidly increased over the study period. Furthermore, we do not distinguish by caste or other stratifiers beyond sex, limiting intersectional analyses. We did some preliminary investigation of caste differences in the trajectories, but the numbers were not sufficient to support the sex-by-cohort design of our study.

Over time, most people experience a change in place – whether through departing a place themselves, through macro change (e.g., Massey *et al.* 2010), or the movement of people into or out of a place. The movement of prior generations shapes the places that current generations experience. Not only may mobility behavior be transmitted between generations, but, endogenously, the larger contexts from which people depart or stay in are shaped through such population mobility and immobility

(Entwisle 2007). Migration and development have a reciprocal relationship (De Haas 2010: 253).

7 Conclusion

This case study of the Chitwan Valley of Nepal, used uniquely rich panel data to understand migration trajectories through a perspective of place. In sum, we found (1) a shift in predominant directions of migration (in or out) in relation to Chitwan over time, as Chitwan was settled, expanded services, and became part of the global economy; (2) a specialization in either internal or international migration; (3) similar and then diverging migration patterns of males and females over time, as males increasingly migrate internationally and females increasingly base their lives in Chitwan; and (4) a consolidation of age patterns of migration across cohorts. Our study adds to understandings of migration and moves as potentially multiple throughout individuals' lives. We considered both internal and international moves, into and out of the district, gaining a more complete picture of migration patterns than when focusing only on subsets of moves. Examining similarities and differences between birth cohorts facilitated our understanding of how experiencing a context at a particular historical time at a particular age shapes mobility, and raises questions on the role of macro change for mobility, including the selectivity of migration. To our knowledge, we are the first to create a historical account of migration trajectories using the Chitwan Valley Family Study. Additionally, this paper adds to a literature on the life course and the transition to adulthood that has disproportionately focused on the Global North (Juárez/Gayet 2014; Trask 2018). We demonstrated sexed differences of such migration patterns, showing differences in migration processes of both males and females and differential change over time in a context known for out-migration related to male labor. Finally, through our descriptive understanding of the residential histories of individuals in Chitwan, we add to understandings of the place itself, describing transitions in a place through the transitions in lives of the people therein.

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References

- Axinn, William G.; Barber, Jennifer S.; Ghimire, Dirgha J. 1997: The Neighborhood History Calendar: A Data Collection Method Designed for Dynamic Multilevel Modeling. In: *Sociological Methodology* 27,1: 355-392. <https://doi.org/10.1111/1467-9531.271031>
- Axinn, William G.; Pearce, Lisa D.; Ghimire, Dirgha 1999: Innovations in Life History Calendar Applications. In: *Social Science Research* 28,3: 243-264. <https://doi.org/10.1006/ssre.1998.0641>
- Axinn, William G.; Yabiku, Scott T. 2001: Social Change, the Social Organization of Families, and Fertility Limitation. In: *American Journal of Sociology* 106,5: 1219-1261. <https://doi.org/10.1086/320818>
- Axinn, William G. et al. 2007: Chitwan Valley Family Study: Changing Social Contexts and Family Formation, Nepal, 1995-2019: Version 22. In: ICPSR – Interuniversity Consortium for Political and Social Research. <https://doi.org/10.3886/ICPSR04538.v22>
- Barber, Jennifer, G. P. et al. 1997: Sampling Strategies for Rural Settings: A Detailed Example from Chitwan Valley Family Study, Nepal. In: *Nepal Population Journal* 6,5: 193-203.
- Barbieri, Alisson Flávio; Carr, David L.; Bilsborrow, Richard E. 2009: Migration Within the Frontier: The Second Generation Colonization in the Ecuadorian Amazon. In: *Population Research and Policy Review* 28,3: 291-320. <https://doi.org/10.1007/s11113-008-9100-y>
- Bernard, Aude 2022: Internal Migration as a Life-Course Trajectory: Concepts, Methods and Empirical Applications. The Springer Series on Demographic Methods and Population Analysis. Volume 53. Cham: Springer International Publishing. <https://doi.org/10.1007/978-3-031-05423-5>
- Bernard, Aude 2023: Does Internal Migration Contribute to the Intergenerational Transmission of Socioeconomic Inequalities? The Role of Childhood Migration. In: *Demography* 60,4: 1059-1088. <https://doi.org/10.1215/00703370-10826486>
- Bernard, Aude; Bell, Martin; Charles-Edwards, Elin 2014: Life-Course Transitions and the Age Profile of Internal Migration. In: *Population and Development Review* 40,2: 213-239. <https://doi.org/10.1111/j.1728-4457.2014.00671.x>
- Bernard, Aude; Perales, Francisco 2024: The Intergenerational Transmission of Migration Capital: The Role of Family Migration History and Lived Migration Experiences. In: *Demographic Research* 50: 827-870. <https://doi.org/10.4054/DemRes.2024.50.29>
- Bernard, Aude; Vidal, Sergi 2023: Linking Internal and International Migration over the Life Course: A Sequence Analysis of Individual Migration Trajectories in Europe. In: *Population Studies* 77,3: 515-537. <https://doi.org/10.1080/00324728.2023.2231913>
- Bhandari, Prem; Ghimire, Dirgha 2013: Rural Agricultural Change and Fertility Transition in Nepal. In: *Rural Sociology* 78,2: 229-252. <https://doi.org/10.1111/ruso.12007>

- Bohra, Pratikshya; Massey, Douglas S.* 2009: Processes of Internal and International Migration from Chitwan, Nepal. In: *International Migration Review* 43,3: 621-651.
<https://doi.org/10.1111/j.1747-7379.2009.00779.x>
- Carling, Jørgen; Schewel, Kerilyn* 2018: Revisiting Aspiration and Ability in International Migration. In: *Journal of Ethnic and Migration Studies* 44,6: 945-963.
<https://doi.org/10.1080/1369183X.2017.1384146>
- Clark, William A. V.* 2013: Life Course Events and Residential Change: Unpacking Age Effects on the Probability of Moving. In: *Journal of Population Research* 30,4: 319-334.
<https://doi.org/10.1007/s12546-013-9116-y>
- Coltabiano, Marcontonio; Castiglioni, Maria* 2008: Changing Family Formation in Nepal: Marriage, Cohabitation and First Sexual Intercourse. In: *International Family Planning Perspectives* 34,1: 30-39. <https://doi.org/10.1363/ifpp.34.030.08>
- Côté-Gendreau, Marielle* 2026: Multigenerational and Gender-Symmetric Transmission of Migration Behaviors in Historical Quebec. In: *Proceedings of the National Academy of Sciences* 123,13: e2522792123. <https://doi.org/10.1073/pnas.2522792123>
- Courgeau, Daniel* 1985: Interaction between Spatial Mobility, Family and Career Life-Cycle: A French Survey. In: *European Sociological Review* 1,2: 139-162.
<https://doi.org/10.1093/oxfordjournals.esr.a036382>
- Curran, Sara R. et al.* 2006: Mapping Gender and Migration in Sociological Scholarship: Is It Segregation or Integration? In: *International Migration Review* 40,1: 199-223.
<https://doi.org/10.1111/j.1747-7379.2006.00008.x>
- De Haas, Hein* 2010: The Internal Dynamics of Migration Processes: A Theoretical Inquiry. In: *Journal of Ethnic and Migration Studies* 36,10: 1587-1617.
<https://doi.org/10.1080/1369183X.2010.489361>
- De Haas, Hein* 2021: A Theory of Migration: The Aspirations-Capabilities Framework. In: *Comparative Migration Studies* 9,1: 8. <https://doi.org/10.1186/s40878-020-00210-4>
- Elder, Glen H.; Kirkpatrick Johnson, Monica; Crosnoe, Robert* 2003: The Emergence and Development of Life Course Theory. In: *Mortimer, Jeylan T.; Shanahan, Michael J.* (Eds.): *Handbook of the Life Course, Handbooks of Sociology and Social Research*. Boston, MA: Springer US: 3-19. https://doi.org/10.1007/978-0-306-48247-2_1
- Elzinga, Cees H.; Studer, Matthias* 2015: Spell Sequences, State Proximities, and Distance Metrics. In: *Sociological Methods & Research* 44,1: 3-47. <https://doi.org/10.1177/0049124114540707>
- Engbersen, Godfried; Snel, Erik; Esteves, Alina* 2016: Migration Mechanisms of the Middle Range: On the Concept of Reverse Cumulative Causation. In: *Bakewell, Oliver et al.* (Eds.): *Beyond Networks. Migration, Diasporas and Citizenship*. London: Palgrave Macmillan UK: 205-230. https://doi.org/10.1057/9781137539212_10
- Entwisle, Barbara* 2007: Putting People into Place. In: *Demography* 44,4: 687-703.
<https://doi.org/10.1353/dem.2007.0045>
- Entwisle, Barbara et al.* 2005: Population and Upland Crop Production in Nang Rong, Thailand. In: *Population and Environment* 26,6: 449-470. <https://doi.org/10.1007/s11111-005-0007-9>
- Ghimire, Sharad* 2014: Flood of 1954: The Beginning of a Developmental State. In: *New Angle: Nepal Journal of Social Science and Public Policy* 3,1: 5-48.
<https://doi.org/10.53037/na.v3i1.26>
- Herrera, Gioconda* 2013: Gender and International Migration: Contributions and Cross-Fertilizations. In: *Annual Review of Sociology* 39,1: 471-489.
<https://doi.org/10.1146/annurev-soc-071811-145446>
- Horowitz, Jonathan; Entwisle, Barbara* 2021: Life Course Events and Migration in the Transition to Adulthood. In: *Social Forces* 100,1: 29-55. <https://doi.org/10.1093/sf/soaa098>

- Hughes, Christina et al.* 2020: Family Obligation Attitudes, Gender, and Migration. In: *International Journal of Sociology* 50,4: 237-264. <https://doi.org/10.1080/00207659.2020.1726109>
- Juárez, Fatima; Gayet, Cecilia* 2014: Transitions to Adulthood in Developing Countries. In: *Annual Review of Sociology* 40,1: 521-538. <https://doi.org/10.1146/annurev-soc-052914-085540>
- Kalemba, Sunganani V. et al.* 2022: Has the Decline in the Intensity of Internal Migration Been Accompanied by Changes in Reasons for Migration? In: *Journal of Population Research* 39,3: 279-313. <https://doi.org/10.1007/s12546-022-09285-5>
- Labovitz, Emma; Ng, Ka U.* 2026: Timing and Trajectories: Shifts in Migration and Family Formation Trajectories in Nepal. In: *Journal of Marriage and Family* 88,3: 859-869. <https://doi.org/10.1111/jomf.70041>
- Liao, Tim F. et al.* 2022: Sequence Analysis: Its Past, Present, and Future. In: *Social Science Research* 107: 102772. <https://doi.org/10.1016/j.ssresearch.2022.102772>
- Massey, Douglas S. et al.* 2010: Community Services and Out-Migration. In: *International Migration* 48,3: 1-41. <https://doi.org/10.1111/j.1468-2435.2009.00581.x>
- Mayer, Karl Ulrich* 2004: Whose Lives? How History, Societies, and Institutions Define and Shape Life Courses. In: *Research in Human Development* 1,3: 161-187. https://doi.org/10.1207/s15427617rhd0103_3
- McLean, Joanne* 1999: Conservation and the Impact of Relocation on the Tharus of Chitwan, Nepal. In: *HIMALAYA* 19,2.
- Moran, Emilio; Brondízio, Eduardo; VanWey, Leah* 2005: Population and Environment in Amazônia: Landscape and Household Dynamics. In: *Entwisle; Barbara; Stern, Oaul C.* (Eds.): *Population, Land Use, and Environment: Research Directions*. The National Academies Press: 106-134.
- Needleman, Saul B.; Wunsch, Christian D.* 1970: A General Method Applicable to the Search for Similarities in the Amino Acid Sequence of Two Proteins. In: *Journal of Molecular Biology* 48,3: 443-453. [https://doi.org/10.1016/0022-2836\(70\)90057-4](https://doi.org/10.1016/0022-2836(70)90057-4)
- Neugarten, Bernice L.; Moore, Joan W.; Lowe, John C.* 1965: Age Norms, Age Constraints, and Adult Socialization. In: *American Journal of Sociology* 70,6: 710-717. <https://doi.org/10.1086/223965>
- Pearlman, Jessica et al.* 2017: Postmarital Living Arrangements in Historically Patrilocal Settings: Integrating Household Fission and Migration Perspectives. In: *Demography* 54,4: 1425-1449. <https://doi.org/10.1007/s13524-017-0588-9>
- Raab, Marcel; Struffolino, Emanuela* 2023: *Sequence Analysis. Quantitative Applications in the Social Sciences* 190. Los Angeles; London; New Delhi; Singapore; Washington DC: SAGE.
- Raymer, James et al.* 2025: Modelling the Age and Sex Profiles of Net International Migration. In: *Demographic Research* 53: 569-610. <https://doi.org/10.4054/DemRes.2025.53.19>
- Redstone, Ilana; Massey, Douglas S.* 2004: Coming to Stay: An Analysis of the U.S. Census Question on Immigrants' Year of Arrival. In: *Demography* 41,4: 721-738. <https://doi.org/10.1353/dem.2004.0035>
- Rindfuss, Ronald R.* 1991: The Young Adult Years: Diversity, Structural Change, and Fertility. In: *Demography* 28,4: 493-512. <https://doi.org/10.2307/2061419>
- Rindfuss, Ronald R. et al.* 2007: Frontier Land Use Change: Synthesis, Challenges, and Next Steps. In: *Annals of the Association of American Geographers* 97,4: 739-754. <https://doi.org/10.1111/j.1467-8306.2007.00580.x>

- Riosmena, Fernando* 2016: The Potential and Limitations of Cross-Context Comparative Research on Migration. In: *The ANNALS of the American Academy of Political and Social Science* 666,1: 28-45. <https://doi.org/10.1177/0002716216650629>
- Rogers, Andrei et al.* 1978: Model Migration Schedules and Their Applications. In: *Environment and Planning A: Economy and Space* 10,5: 475-502. <https://doi.org/10.1068/a100475>
- Ryder, Norman B.* 1965: The Cohort as a Concept in the Study of Social Change. In: *American Sociological Review* 30,6. <https://doi.org/10.2307/2090964>
- Sassen, Saskia* 1988: *The Mobility of Labor and Capital: A Study in International Investment and Labor Flow*. Cambridge: Cambridge University Press. <https://doi.org/10.1017/CBO9780511598296>
- Schewel, Kerilyn* 2020: Understanding Immobility: Moving Beyond the Mobility Bias in Migration Studies. In: *International Migration Review* 54,2: 328-355. <https://doi.org/10.1177/0197918319831952>
- Schewel, Kerilyn* 2025: *Moved by Modernity: How Development Shapes Migration in Rural Ethiopia*. New York, NY: Oxford University Press.
- Shrestha, Nanda R.* 1989: Frontier Settlement and Landlessness among Hill Migrants in Nepal Tarai. In: *Annals of the Association of American Geographers* 79,3: 370-389. <https://doi.org/10.1111/j.1467-8306.1989.tb00268.x>
- Shrestha, Nanda; Velu, Raja P.; Conway, Dennis* 1993: Frontier Migration and Upward Mobility: The Case of Nepal. In: *Economic Development and Cultural Change* 41,4: 787-816.
- Skeldon, Ronald* 1990: *Population Mobility in Developing Countries: A Reinterpretation*. London, New York: Belhaven Press.
- Studer, Matthias* 2013: WeightedCluster Library Manual: A Practical Guide to Creating Typologies of Trajectories in the Social Sciences with R. In: *LIVES Working Papers* 24: 1-32. <https://doi.org/10.12682/LIVES.2296-1658.2013.24>
- Thornton, Arland* 2001: The Developmental Paradigm, Reading History Sideways, and Family Change. In: *Demography* 38,4: 449-465. <https://doi.org/10.1353/dem.2001.0039>
- Thornton, Arland et al.* 2020: Fatalistic Beliefs and Migration Behaviors: A Study of Ideational Demography in Nepal. In: *Population Research and Policy Review* 39,4: 643-670. <https://doi.org/10.1007/s11113-019-09551-0>
- Thornton, Arland et al.* 2022: Developmental Idealism and Migration: Theorizing Their Relationship and an Empirical Example from Nepal. In: *Migration and Development* 11,3: 818-851. <https://doi.org/10.1080/21632324.2020.1837534>
- Trask, Bahira Sherif* 2018: Integrating Life Course, Globalization, and the Study of Racial and Ethnic Families. In: *Journal of Family Theory & Review* 10,2: 451-466. <https://doi.org/10.1111/jftr.12259>
- Valenta, Marko* 2022: The Drivers and Trajectories of Nepalese Multiple Migrations to the Arab Gulf. In: *South Asian Diaspora* 14,1: 21-37. <https://doi.org/10.1080/19438192.2022.2033918>
- Vidal, Sergi et al.* 2024: Socio-Spatial Trajectories and Health Disparities among Older Adults in Chile. In: *Health & Place* 89: 103324. <https://doi.org/10.1016/j.healthplace.2024.103324>
- Williams, Nathalie* 2009: Education, Gender, and Migration in the Context of Social Change. In: *Social Science Research* 38,4: 883-896. <https://doi.org/10.1016/j.ssresearch.2009.04.005>
- Williams, Nathalie E.; Gray, Clark* 2020: Spatial and Temporal Dimensions of Weather Shocks and Migration in Nepal. In: *Population and Environment* 41,3: 286-305. <https://doi.org/10.1007/s11111-019-00334-5>

- Williams, Nathalie E. et al.* 2020: When Does Social Capital Matter for Migration? A Study of Networks, Brokers, and Migrants in Nepal. In: *International Migration Review* 54,4: 964-991. <https://doi.org/10.1177/0197918319882634>
- World Bank* 2025: Life Expectancy at birth, total (years), Nepal [<https://data.worldbank.org/indicator/SP.DYN.LE00.IN?locations=NP>, 16.09.2026].
- Zelinsky, Wilbur* 1971: The Hypothesis of the Mobility Transition. In: *Geographical Review* 61,2: 219-249. <https://doi.org/10.2307/213996>
- Zhu, Min; Vidal, Sergi* 2024: Family Migration in China: A Longitudinal Analysis of Couples' Migration Behaviour. In: *Population, Space and Place* 30,4: e2751. <https://doi.org/10.1002/psp.2751>

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