

Life Course and Structural Migrations: Refining Migration Classifications

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Abstract

Migration is a major engine of demographic change for towns, regions, and whole countries. Traditionally, migrations have been divided into those caused by push or pull factors or classified by events that triggered them. In other words, push and pull factors are but one way to classify migration movements. This work distinguishes between life course and structural migrations. Life course migrations are linked to important events in people's lives such as graduation, marriage, having children, job promotions, discharge from the military, or retirement and the motivation comes from the migrant. Structural migrations are caused by changes in the economic, social, political, or natural environment and, therefore, externally motivated. This classification scheme is compatible with and complementary to existing classifications and particularly those based on push and pull factors. It yields some additional insights for policy making, empirical research, and migration modeling.

Keywords

migration, human spatial structure, spatial structure, policy and applications, other economic growth and development, economic growth and development, policy and applications, other demographic analysis, demographic analysis, methods, other theory, general theory, general theory and history, demographics, human resources, policy and applications

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Introduction

Migration is a significant force in changing the populations of towns and cities, regions, and whole countries. Large numbers of people moving from one place to another impact labor, housing, and consumer markets, as well as tax revenues and the demand for government services. The arrival of large numbers of newcomers can also change the political landscape (e.g., [Lueders 2022](#)) and impact the environment. All of these are reasons for studying migrations empirically and theoretically. A review of recent migration trends in the United States is provided by [Toukabri, Delbé, Miller, and Ozgenc \(2022\)](#) at the county level and [North American \(n.d., the data cover 2021\)](#) at the state level. For more detailed information, see [U.S. Census Bureau \(2021a\)](#).

To start, we define migration as a change of location and residence for a duration beyond a few weeks and to a location beyond commuting distance. For empirical research, duration and distance of the move need to be specified, but for our purposes, this general definition is sufficient. The [U.S. Census Bureau \(2021b\)](#), italics in original) offers a similar definition: “*Migration* typically refers to moves that cross a boundary, such as a county or state line, and is either *domestic migration* (movement within the U.S.) or *international migration* (movement between the U.S. and other countries).”

This contribution is not about the behavior of an individual migrant or household but typical and aggregate behaviors. Distinctions between different migration types can be based on the duration (permanent vs. temporary or seasonal), borders being crossed (domestic vs. international and, in the latter case, on visa status), motivation (amenities, economic opportunities, education or training), life course events (graduation and job search, retirement when movers are no longer constrained by the availability of work), disasters (flooding, large-scale fires), politics (oppressive governments), and wars; for a review see [King \(2012\)](#) for international migrations and [Schaeffer \(2017\)](#) for migration, in general. A common binary definition distinguishes between migrations caused by push factors (e.g., deteriorating economy, disaster) and pull factors (e.g., environmental amenities such as scenery and/or climate; growing economic opportunities; favorable tax rates), a tradition going back to Ravenstein’s seminal contributions (1885, 1889). See [Dorigo and Tobler \(1983\)](#) and [Corbett \(2003\)](#) for an overview. Definitions of migrations can be mutually exclusive, complementary, or overlapping. For example, some migrants may simultaneously experience push and pull factors (e.g., [Dorigo and Tobler 1983](#)).

Aggregated migrations usually display regular patterns, particularly by age (e.g., [Plane and Jurjevic 2009](#)), marital status, and education, which also follows from [Sjaastad’s \(1962\)](#) human capital model of migration. While these regularities are not constant, the general pattern has been observed for a very long time. This is so because a large number of moves are made in response to important events in individuals’ lives, that is life course events, such as graduation, job promotion, marriage, divorce, discharge from the military, retirement, and, particularly late in life, health and social issues, events that occur regularly and largely regardless of a potential migrant’s location. The same regularities do not apply equally to all migrants, however. Differences

by age are particularly pronounced, both in migration frequency as well as destination. For example, [Plane and Jurjevic \(2009\)](#) documented that in the United States, older migrants moved to smaller cities and amenities while young migrants were more likely to choose large metropolitan regions as their destinations. The net effect of such moves on a region therefore depends on the makeup of the population by age, gender, marital status, and education. [Franklin \(2003\)](#) used US Census data to describe the migration of young people, those 25 to 39, during 1995 and 2000, distinguishing them by age, education, and marital status. For this age group, only 17 states plus the District of Columbia experienced positive net migration during this period.

Destinations also change over time. For a long period of time, increasing industrialization went hand-in-hand with increasing urbanization. In the 1970s, however, this seemed to change ([Vining and Kontuly 1977](#); [Plane 1984](#)) and some referred to counterurbanization. This occurred not only in the United States but also in other advanced economies and while we may not have experienced counterurbanization, there have been clear shifts in destinations and centers of population growth. [Plane \(1989\)](#) also explored the relationship between migration and economic restructuring.

[Goworowska and Gardner \(2012\)](#) extended Franklin's work by studying a much longer period, from 1965 to 2000, and found differences as the size and composition (e.g., larger share with a college education) of this age cohort changed over time, but confirmed the long-standing result that on average the young are the most mobile age group. The migration of the elderly was explored by [Litwak and Longino \(1987\)](#) and their results confirmed by [Bradley \(2010\)](#).

As this article's title suggests, it presents a classification system based on life course events. [Clark and Onaka \(1983\)](#) also presented a typology based on the life course but one with a narrower focus on residential mobility and housing choices (see also [Clark and Huang, 2003](#)). Their typology includes local mobility while our definition (page 1) excludes local moves. The distinction is important. For example, [Mulder and Wagner \(1993\)](#) found that in West Germany, marriage reduced migration (more distant moves) but increased local moves compared to single individuals in the same cohort. Also relevant is [Warnes \(1992\)](#), an important contribution to migration over the life course.

[King and Skeldon \(2010\)](#) make the case for greater integration of research in domestic and international migrations. The distinction between the two has become blurred particularly within the European Union where citizens of member states and a few associate countries can move freely from one member country to another. Not only do they have the right to work if offered a job but EU citizens can even vote in local elections. This is another illustration how the context within which migrations take place has changed over time and is likely to continue to do so.

International migrations are driven not only by economic or political issues. Environmental issues related to climate change are becoming more frequent. Some countries are particularly strongly affected, but the heat waves in Great Britain and France during summer 2022 show that this is becoming a global issue. [Black et al. \(2011\)](#) therefore advocate for greater integration of the environment in migration research and [McAdam \(2012\)](#) present legal issues of environment-caused cross-border

migrations. The literature on amenities-driven migration (for an early contribution see [Graves and Knapp 1985](#); for a review of the literature [Gosnell and Abrams 2011](#)) can be considered “the flip side” of environmentally-driven displacement migration. Amenities also play a role in the life course retirement migration of the elderly, for example from the United States to Mexico and Ecuador or northern Europeans to Spain.

Not all migrations are entirely voluntary.¹ An example of a large involuntary migration still on the minds of many adult Americans is the permanent displacement of many residents of New Orleans in the aftermath of Hurricane Katrina in 2005 (see [Fan, Fisher-Vanden, and Klaiber 2018](#), for a discussion of migration and climate change and [Fussell 2015](#), for a discussion of long-term effects of Hurricane Katrina). Such disasters cause literal push migrations. Push factors behind migrations, in addition to natural disasters, include war or the decline of a once dominant industry (steel, coal) or labor-saving technological change (coal, steel, automobiles). Migration-inducing events in an industry may be caused by changes that render some products obsolete, international competition, and the replacement of workers by machines, or several factor combined. Pull factors include growing opportunities elsewhere, a beautiful natural and/or built environment, cultural amenities, outstanding schools, climate, low cost of living, etc.

This contribution adds two new general distinctions: life course and structural migrations, respectively. We will show that these new migration types complement existing ones and, in particular, those caused by push or pull factors. In the remainder of this paper we introduce these two distinctions and discuss their implications as well as their relationship to previously established definitions. We begin in section the next by exploring the fundamental question why people migrate. Based on the results of our exploration, then we define life course and structural migrations. This is followed by a discussion of the relevance of the difference between these two migration types for public policy and how they relate to other migration classifications. The final two sections discuss and implications and provide a summary and conclusions.

Why Do People Move?

In the following discussion we use the terms “migrant” or “subject.” However, migration is not necessarily the result of the decision of a single individual. When families move, their choices may differ from those that individual members would have made, had they moved alone ([Mincer 1978](#)) and, in addition, even individual migrants’ decisions may be influenced by others, for example, through material support for some choices over others, or recruitment and information by relatives or friends who had migrated before (for example, [Rérat 2014](#), shows that the destination choices of rural college graduates in Switzerland depend on their family). [Mincer \(1978\)](#) introduced the useful concepts of the tied mover and tied stayer, respectively. These terms refer to individuals who would have made different choices if they had to decide only for themselves.

Additionally, although most of the migration literature treats migration as a once in a lifetime event (mostly because of a lack of data), repeat migrations, some because of

disappointment with the results of a move and others as a deliberate career strategy (e.g., Morrison and DaVanzo 1986), are not uncommon (for a theoretical treatment see Schaeffer 1985, Constant and Zimmermann 2011, and Gosh 2000 for an international perspective). An empirical study with the then newly available data from the Panel Study of Income Dynamics (PSID²) found that in the United States the majority of the moves across boundaries of Standard Metropolitan Statistical Areas or nonmetropolitan State Economic Areas, were made by migrants who had moved at least once before (DaVanzo 1983). An interesting empirical study of self-selection and repeat migration of working-age adults in Canada was undertaken by Newbold (1996). In line with other such studies, the findings show that return migrants are negatively selected and onward migrants positively. This conclusion seems equally valid in the United States. History shows that repeat migrations are not new. Keeling (2011) studies return migration from the United States to Europe over the period from 1870 to 1914. On balance, about a third of immigrants to the United States during this period eventually returned to their origin countries though with significant variability by national origin.

Why do people migrate? To answer this question, we use a simple thought experiment. Consider a migrant who has achieved a Pareto optimal location and therefore has no incentive to move. What would have to happen for this Pareto optimum to be disturbed? In the most general terms, there are two possibilities. First, the subject changes, which we refer to as a *change or changes internal to the subject*. If the subject is an individual, examples of such changes include graduation from high school or college, marriage or divorce, a large inheritance, retirement, discharge from serving in the military, change in health status, or a job promotion. If the subject is a household, then in addition children reaching school age may motivate a relocation to a place more suitable for raising children, including having better schools. Thus, life course migrations come about as a result of decisions made by the migrants.

The second possibility is that the subject did not change, but the subject's environment did, that is, a *change or changes external to the subject*. That is, the motivation to migrate is the result of decisions and changes made by others and not by the migrant. If the migration-inducing change occurs elsewhere it constitutes a pull factor and if it occurs at the subject's present location a push factor. An example of migration caused by push factors is the loss of a position combined with low job availability at the present location. Superior opportunities or even just information becoming available about better economic opportunities elsewhere are considered pull factors causing the reevaluation of the relative attractiveness of the present location. The subject of this study is in initial equilibrium with respect to its current location and the new classification results from answering the question what would have to occur for this equilibrium to be disturbed.

Based on these two basic reasons why people may decide to move, and borrowing from Milton Friedman (1968), we call migration caused by changes internal to the subject *life course migration*, and those caused by changes external to the subject *structural migration*. This study does not use the term "natural migration" as analogous to Friedman's natural unemployment. While the latter seems descriptive in the case of

one type of unemployment, the former is not. Therefore, we use “life course migration,” which suggests migration occurring when individuals or households move from one stage in the lives to another, such as from employment to retirement (Kley 2011). In the next paragraphs, we explain why this distinction is important. We treat life course and structural migrations as distinct processes although it is possible that a migrant is simultaneously motivated by internal and external changes and official statistics do not distinguish between them. While the theoretical distinction between these two migration types is unambiguous, mixed motivations may obscure differences in empirical research. A particularly good illustration of possible mixed motivations is Mazzarol and Soutar (2002), a study of push and pull factors influencing the destination choices of international students. While push and pull factors affected the destination choices, they were not responsible for the initial decision to move, which was a consequence of the decision to pursue higher education.

Previous migration research focused on the subjects and their preferences and motivations, for example for warmer climates in the United States’ south and southwest, that is pull and push factors (see the seminal work of Ravenstein 1885, 1889 and Corbett’s comments on it) and the discussion of push and pull factors by Dorigo and Tobler (1983). This study considers a subject who initially perceives the current location as the best available choice. We refer to “available choices” to indicate that there may be better choices that are, however, unavailable because of constraints, such as a lack of job opportunities for working-age adults, legal barriers, very high cost of living, or unknown to the subject. The fact that some preferred choices are unavailable is particularly evident in international migrations, where potential destination countries impose conditions and limits on immigration and – not always with complete success³ – control who may enter.

Life Course and Structural Migration

Based on changes internal or external to the subject and adapting Friedman’s (1968) definition of natural versus structural unemployment, we call migration caused by changes internal to the subject *life course migrations*, and those caused by changes external to the subject *structural migrations*. We treat these two migrations as distinct although it is possible that a migrant is simultaneously motivated by internal and external changes, just as a migrant may respond to push as well as pull factors. Therefore, while the theoretical distinction between life course and structural migration is unambiguous, mixed motivations may obscure the differences in empirical research particularly of individual migrants or small samples.

Life Course Migration

Life course migrations based on important events in people’s lives are frequent and regular occurrences. Also included in life course migrations are subjects who move out of a sense of adventure, seeking new experiences and opportunities without any

obvious external event or cause to motivate their migration. Life course migrations do not signal an economic or social disequilibrium or disturbance but are movements within existing dynamic equilibria.

The example of college students illustrates this point. [Wilson \(2010\)](#), focusing on students, explores the implications of their migration patterns on overall population forecasting and [Franklin \(2003\)](#) and [Goworowska and Gardner \(2012\)](#) also provide more general information about young migrants. In college towns, every spring many graduates leave after finishing their degrees to find opportunities elsewhere. They are replaced by incoming freshmen and newly entering graduate students. This change causes no problems because institutions and markets anticipate and are accustomed to it. Housing markets easily accommodate newcomers who replace tenants who graduated and left. Traffic patterns also remain roughly the same, as does the demand for retail and other businesses. At colleges and universities, freshmen replace those students who advanced to sophomore status, and so on. This flow of new students and graduates resembles water flowing into a basin replacing water flowing out at the other end. The water level of the basin is not significantly affected as long as inflow and outflow are roughly the same. In other words, there exists a dynamic equilibrium and life course migration is necessary to maintain this equilibrium.

Because they are the result of different events (internal vs. external changes), life course migrations do not necessarily go in the same direction as structural migrations. In fact, mobility to advance one's career may be best understood as a combination of life course and occupational events. The latter are often related to the accumulation of experience and skills and, therefore, also fit in the category of life course events. This point is forcefully made by [Mulder and Hooimeijer \(1999\)](#) and [Coulter, van Ham, and Findlay \(2016\)](#). [Korpi, Clark, and Malmberg \(2011\)](#), using Swedish panel data for the late 20th century, also find that economic factors such as short-term income gains cannot explain all aggregate migration behavior, which is also the argument of [Schaeffer's \(1985\)](#) theoretical contribution.

Because of its characteristics, life course migration is rarely a subject that requires significant policy intervention. First among its characteristics is that it is driven by decisions made by the migrant. In addition, it is a well-known and predictable process, and markets, private and public organizations, and other affected institutions are therefore accustomed to and deal with it as a matter of routine. Because life course migrations are also widely dispersed over space dealing with them does not overwhelm a small number of jurisdictions and markets with sudden and unanticipated changes. As an illustration, [Figure 1](#) shows the distribution of colleges and universities in the contiguous United States. Their distribution resembles the distribution of the population over the 48 states and the regular population exchanges affiliated with college and university life are therefore also widely distributed.

It is likely that in the case of young people ([Benetsky, Burd, and Rapino, 2015](#), writing for the U.S. Census Bureau, define young adults as those between 18 and 34 years of age and [Franklin, 2003](#) and [Goworowska and Gardner, 2012](#), also on behalf of the U.S. Census Bureau define them as 25–39), life course migrations dominate. This

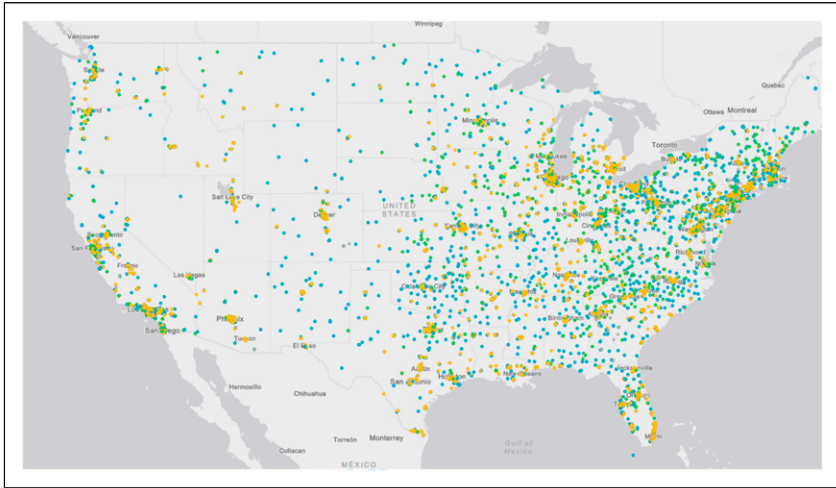


Figure 1. Map of colleges and universities in the contiguous United States. Source: <https://nces.ed.gov/ipeds/CollegeMap/> (21 October 2020).

claim is based on the observed regularity of the likelihood of migration by age, which peaks in early adult life (Benetsky, Burd, and Rapino, 2015, particularly Figure 2, page 3; and Clark, 1986 using 1980 U.S. data; Figure 1.6, page 17). This regularity is well known and enduring as also noted in the introduction.

Structural Migration

Structural migration is a response to external change or changes that frequently do not occur regularly, predictably, and not always in the same geographical and political units. Unlike life course migration, structural migration does not maintain a dynamic equilibrium but is a response to a disturbance and will eventually bring about a new equilibrium. The pace of the adjustment to a new equilibrium can be fast or slow, depending on the cost of migration, the pace and nature of the event that causes the disruption, and available opportunities elsewhere. Reliable information is another factor determining the ease and speed of adjustment. For example, if workers in a struggling industry believe that they are being laid off because of a temporary downturn when the real cause is long term decline, they may initially not consider occupational or geographical mobility as a rational response. This seems to have occurred in the employment decline in the steel and automotive industries in the early 1980s.

In the case of life course migration the motivation to move starts with the subject, while in structural migration it is triggered by an external event. In addition, structural migrations are usually geographically concentrated and impact often only a small

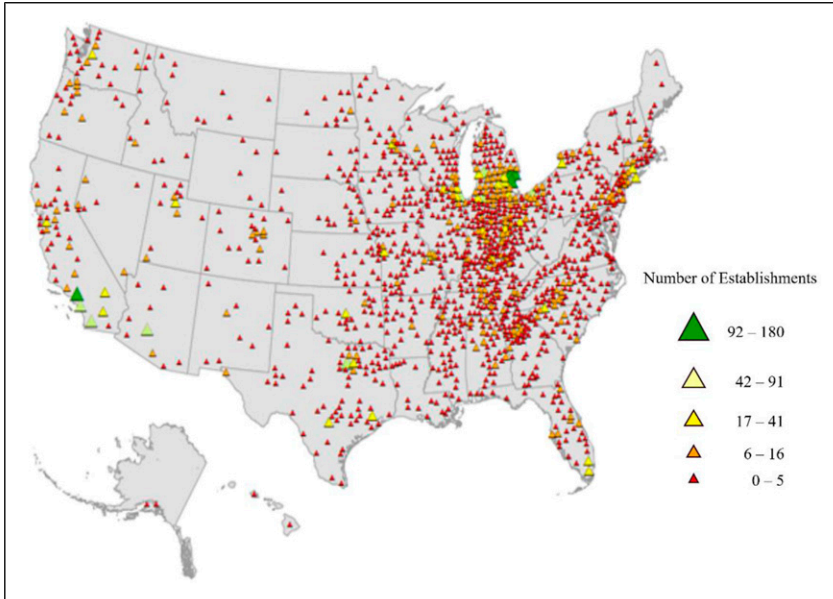


Figure 2. Motor Vehicle Parts Manufacturers (2010 annual average, by county). Source: <https://www.bls.gov/spotlight/2011/auto/> (22 October 2020).

subset of the nation. A comparison of the maps in Figures 1 and 2 shows that because car parts manufacturers are relatively concentrated, the impact of a slow-down or decline in the car industry will also be distributed unevenly. In the case of natural disasters (see Figure 3), the geographical concentration can be particularly great, as was the case after Hurricane Katrina in 2005 and other natural disasters.

A map of flood hazards, tornado frequency, earthquake risk, and other natural hazards shows even more pronounced spatially concentrated impacts (Figure 3). In addition, not all at risk regions will experience a disaster the same time. Maps of at-risk regions therefore understate the geographic concentration when disaster strikes, as shown in Figure 3. As we will explore in the next section, changes in economic fortunes may not be as common and usually not as immediately apparent as natural disasters, but from a policy perspective they may be more challenging because they generally unfold gradually and often develop over a long time. This is exemplified in the slow decline of coal mining employment where occasional resurgence may also have misled workers into believing that the industry was recovering before the long-term trend resumed (Figure 4). In addition, not all coal mining regions were affected equally by the decline.

Large-scale international migrations are often structural migrations, many caused by economic changes on a global scale. However, life course migrations crossing national

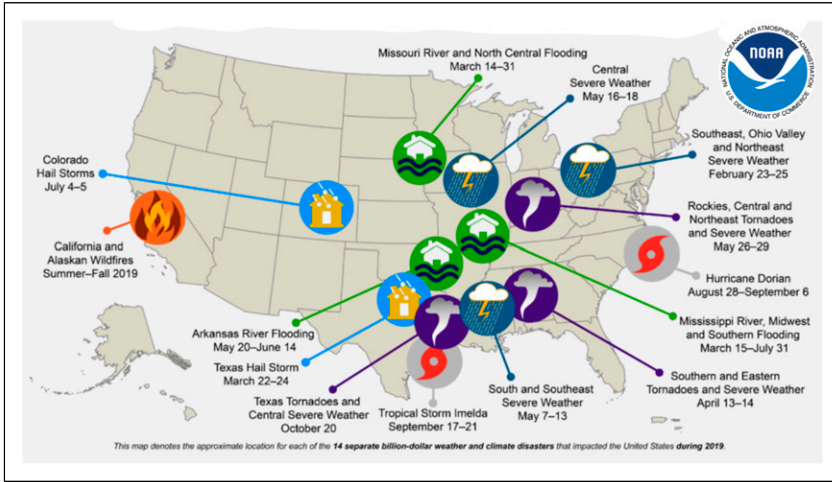


Figure 3. U.S. 2019 Billion-Dollar Weather and Climate Disasters. Source: Billion-Dollar-Map-2019-lrg_0.png (974x583) (noaa.gov), accessed 12 April 2022.



Figure 4. Coal mining employment in the United States.

borders have been growing. This is particularly evident in the rapid growth of international student populations over at least the last half century, not only in the United States, Canada, Great Britain, and Australia, but all over the world; origins of international student populations have also become much more diverse. For a critical evaluation of theories of international migrations with a focus on the United States and Canada, see Massey et al. (1994). King and Raghuram (2012) also study international student migrations. An important contribution of their work is the recognition that individuals may play multiple roles, a point that has also been a factor in the emergence of the New Brain Drain literature (e.g., Stark 2004).

Table 1. Summary: Common Characteristics of Life Course versus Structural Migrations.

	Life course migrations	Structural migrations
Initial motivation	Internal/migrant	External/economic, social, political, environmental, or other factors external to the migrant
Spatial impact	Self-determined	Imposed
	Widely dispersed; roughly proportional to population distribution	Spatially concentrated from a relatively large region (e.g., automotive belt; coastal region; earthquake region) to a small area
Predictability	Good with high probability because of regularity of occurrence and similarity of scale	Uncertain timing of occurrence in specific regions; scale, severity, and impacts can vary significantly between occurrences
Socioeconomic disruption	None or minimal	Can have major social and economic impacts; some occurrences impact markets on a national scale
Policy intervention	Routine policies and established markets and institutions are sufficient	May require emergency responses and external assistance to local and regional institutions
Equilibrium	Maintain equilibrium	Restore equilibrium

While life course migrations display regularities that change only slowly, structural migrations are more volatile. This is even more so because different drivers of migration interact with each other and contribute to the uncertainty of forecasts of the future of aggregate migration (Bijak and Czaika 2020).

In the case of circular repeat migrations, such as those of seasonal workers, if the initial move is attributable to push or pull factors and falls within the category of structural migrations, then the successive moves, while regular and predictable, are nevertheless the consequence of external changes. They are, therefore, structural migrations and the motivation behind the initial move is what defines them. However, while life course migrations are usually regular and predictable structural migrations are likely to display less regularity.

Plane (1984, 1989) offered a typology that shares strong similarities with life course and structural migrations. He referred to steady-state and non-steady-state population interchanges, which resemble life course and structural migrations, respectively. However, he did not tie these migration types back to decisions of individuals, but linked them to structural employment changes. Therefore, this contribution can be considered a complement to his framework.

The most important distinctions between life course and structural migrations are summarized in Table 1.

Implications

In a theoretical contribution it is possible to overlook the fuzziness of some criteria – for example, how long a distance must a move be to count as migration – and the potential for interdependence of concepts. In this regard, it should be stressed that life course and structural migrations are not independent! For example, it is obvious that a recent graduate looking for a job will focus attention of the search on places and regions that offer sufficient and good opportunities. In other words, pull and push factors play a role. That is, the motivation for migrating is internal (life course event), but the destination choice is affected by external factors.

The comparison of life course and structural migrations in [Table 1](#) suggests that the former generally do not create new policy challenges and that, therefore, policy research on structural migrations should have priority over life course migrations. This should not be taken to mean that only structural migrations pose policy challenges and life course migrations none. This is not the case and neither do all structural migrations pose identical policy challenges. For example, in the case of a severe natural disaster, the policy response time may be measured in days or, in particularly extreme cases, hours. The federal government's Federal Emergency Management Agency (FEMA) has been created for such occurrences to assist local, regional, and state governments. Other countries maintain similar government agencies or may call on the military to provide support. In other words, in emergency circumstances, governments mobilize extra resources and coordinate responses with local and state governments. In addition, while disasters may share similarities, there are also differences in location, scale, duration, impact, etc., that responders can consider only at the time a disaster occurs. It is the more slowly unfolding structural migrations that are – or should be – of greatest interest to policy makers as they are likely signaling a strengthening or weakening of a place or region.

Structural migrations include migrations caused by push or pull factors, or a combination of both. The common meaning of a push or a pull is that of an external event, not one coming from the subject. In fact, push or pull migrations, or a combination of both, constitute all structural migrations as defined here. While it is possible to interpret a change internal to the candidate, such as graduation from college, as a push, distinguishing between internal and external causes provides useful information for research and particularly for policy making. First, life course migrations are necessary to maintain equilibria (steady-state), as our example of college towns illustrates. Second, because their causes are internal to the subjects, geographically dispersed, and predictable and routine, they are rarely an object for public policy at the national level and should, therefore, not be lumped together with factors that lie within the public policy arena.

When life course migrations become a problem as for example the current student housing scarcity at the University of California at Berkeley, it is local and sometimes state governments that take actions. Of course, migrants will choose from among available options the one they consider best. This is true even in the case of forced

migration. However, if we use this point to argue that all migrations are caused by push and/or pull factors, the concept becomes meaningless, as it cannot help us distinguish among migrations. Third, if we consider push or pull factors to explain or forecast planned repeat migrations, the results may be wrong. Relatively young labor force participants may make their first move not to their most desired final destination but to an intermediate one where they can gain experiences that help them to eventually reach their most desired job and destination combination. In other words, such subjects' career planning includes from the beginning the possibility of repeated moves and reflects occupational aspirations and mobility (Schaeffer 1985 presents a theory of career-related repeated moves). A model based on one-time utility (or income) maximizing, could give misleading results if more than one move is considered.

To explain the effect of repeated move in more precise mathematical language, consider a time interval $[0, T]$ and assume that the career plans of the subject include a move at time $t = 0$ and a second move at time $t = t^*$, $0 < t^* < T$. Assume a similarly qualified subject whose career plans include only one move over the same time interval $[0, T]$ and assume that this subject's optimal choice is location j . The current location for both subjects is i . Given these assumptions, a model based on optimization will forecast the one-time movers' destination correctly. However, this is not the case for planned repeat migration (Schaeffer 1985), as shown below.

$$PV_{ij}(0, T) < PV_{ij}(0, t^*) + PV_{jm}(t^*, T) : \text{model forecasts first move correctly}$$

$$PV_{ij}(0, T) < PV_{ii}(0, t^*) + PV_{lj}(t^*, T) : \text{model forecasts final move correctly}$$

$$PV_{ij}(0, T) < PV_{in}(0, t^*) + PV_{np}(t^*, T) : \text{model forecasts neither first nor final move correctly}$$

The term on the left is the present value of a one-time move from i to j . The terms on the right are the present values of a first move at $t = 0$ and a second move at $t = t^*$. The subscripts stand for the respective destination choices.

Many professionals, for example performing artists and athletes, start their careers at less prestigious places to gain experience, hone their skills, and establish their reputations. If successful, they move up in the hierarchy of prestige, which often requires relocation. As shown above, push or pull factors may not be able to explain or forecast such repeated moves. Because planned or anticipated repeat migrations are not caused by external factors, they are part of life course migrations.

Finally, it is possible that a subject is actively considering a move because of the perception of better opportunities elsewhere but, after considering available alternatives, concludes that the current location is in fact the optimal choice. Such a decision is also based on push and/or pull factors (that favor the present location) but, because it does not involve a move, will usually go unnoticed (e.g., Clark 1986).

Table 2 below summarizes possible migrations caused by push and/or pull factors between two locations based on their respective gains or losses in attractivity.

If structural migrations are to be given priority for policy attention over life course migrations, how can we distinguish between them? Published mobility data do not contain information that would allow us to make the distinction. However, it may be possible to estimate structural and life course migrations. Lowry’s synthesis of a simple gravity forecasting model (Lowry 1966) illustrates the idea.

$$M_{i \rightarrow j} = \left(\frac{U_i}{U_j} \right) \left(\frac{W_j}{W_i} \right) \left(k_{ij} \frac{L_i L_j}{D_{ij}^\alpha} \right)$$

- D_{ij} : distance between region i and region j ;
- $M_{i \rightarrow j}$: migration from region i to region j ;
- U_g : civilian unemployment rate in region $g = i, j$;
- W_g : hourly wage rate in region $g = i, j$;
- L_g : size of the nonagricultural labor force in region $g = i, j$;
- k_{ij} : location specific parameter;
- α : parameter sometimes assumed to be 2.

In this gravity formulation the third term in parenthesis can be taken to represent the potential for life course migration when there are no push or pull factors present; the first two terms represent push and/or pull factors.⁴ An alternative formulation could replace the nonagricultural labor force with population size. This would be an appropriate change if the focus is on all migrations and not only on job-related migrations. Works that built on Lowry’s contribution added refinements to his model. For a review

Table 2. Push/Pull Factors for Residents at Location A Relative to Location B Based on the Locations’ Respective Attractivity

		Attractivity of location A		
		Decreasing	Stable/ Constant	Increasing
Attractivity of location B	Decreasing	Pull to stay in A if B’s attractivity is decreasing more quickly; otherwise push to leave A and pull to move to B	Pull to stay in A	Pull to stay in A
	Stable/ Constant	Push to leave A and pull to move to B	Neither push nor pull	Pull to stay in A
	Increasing	Push to leave A and pull to move to B	Pull to move to B	Pull to stay in A if B’s attractivity is increasing less quickly; otherwise pull to move to B

of gravity models, see [Fotheringham and O’Kelly \(1989\)](#) or [Haynes and Fotheringham \(2000\)](#). [Niedercorn and Bechdolt \(1969, 1972\)](#) provided a theoretical justification of the gravity model.

If we contrast this approach with human capital models in the [Sjaastad \(1962\)](#) tradition, the latter is a model of an individual migrant who considers the size of a potential destination only indirectly in terms of perceived qualities and opportunities. Therefore, such models cannot distinguish between aggregate life course and structural migrations although they inform models of aggregate migration.

The proposed approach to estimating life course migrations could be used to establish an index of expected migration (based on life course events). Migration exceeding or not reaching that threshold, could be interpreted analogous to the extra mortality caused by an illness or, conversely, the benefits of policy measures in reducing adverse effects. In the latter case it would provide information about the efficacy of policy measures. Additionally, when the rate of overall migration changes, it would be possible to discern if these changes equally affect life course and structural migrations, or if there are differences. This is of particular interest because residential geographic mobility in the United States has been decreasing slowly but steadily for over thirty years ([Frost 2020](#)). We note that this idea of an index share similarities with the notion of demographic efficiency (e.g., [Plane 1984](#)).

Structural migrations could also change if the job turnover rate changes or if policies regulating a profession change. [Fields \(1976\)](#) argued persuasively that workers are more sensitive to the job turnover than the unemployment rate and provided empirical estimates. Based on Field’s ideas, [Schaeffer and Gebremedhin \(2009\)](#) provided a theoretical explanation. It would therefore be interesting to learn if structural or life course migration rates, or both, have been decreasing. If structural migrations had decreased, and to our knowledge this issue has not yet been researched, but if it were the case, it could signal, for example, convergence of opportunities.

As argued earlier, structural migrations due to a declining industry, which is a push factor, are among the most challenging policy issues because the first out-migrants are not a representative segment of the declining region’s population but tend to include those best qualified for alternative employment, that is, the most skilled, trained, and educated. They also tend to be younger than the average adult. This makes it more difficult to address the underlying structural problem, for example, by attracting and supporting other industries to fill the void left by the declining industry. The coal industry in Appalachia provides an example of a particularly big challenge. Since many of the coal fields are located in fairly remote places, they are not favored by industries that, unlike extractive industries, can choose from among a large number of alternatives.

This results in towns with an infrastructure originally built for a much larger population. McDowell county, West Virginia, provides a dramatic illustration. Its population in 1950 was almost 99,000; the U.S. Census Bureau estimated the 2019 population to be 17,624 ([Schaeffer 2021](#)). In addition to the reduced population size, the county has also a very low labor force participation rate, low educational

attainment, and high average age (for a study, using German data, on migration of residents of a struggling town compared to those of a more prosperous town, see [Kley 2013](#)). It is a county in crisis and, since West Virginia also reached its population peak in 1950 and has since declined by some 10 percent, the county cannot expect growth stimuli from the state. Fortunately, not all regions experiencing a declining industry face such extraordinary hardship and Pittsburgh, Pennsylvania, is an example of a town and region that has overcome the decline and change of its once dominant steel industry ([Giarratani and Houston 1989](#); [Treado and Giarratani 2008](#)).

Pull migration is less serious for several reasons, including psychological ones as people seem to feel unrealized gains less acutely than losses. In addition, in pull migration, the inhabitants of a potential sending region are not or only very gradually becoming worse off unlike in the case of push migration where job losses can occur suddenly and in large numbers. While the causes and impacts of pull migration should also be addressed, we can expect the challenges to be easier and allow for more time to address them.

For an exploration of the application of behavioral economics to migration, see particularly [Clark and Lisowski \(2017\)](#). Using prospect theory, they focus on attitudes towards risk. Risk is, of course, tied to incomplete and possible inaccurate information, a likely situation for a decision maker considering a move a large distance from the current location. One of their most important findings is that seemingly identical individuals may make different migration choices because they have different reference points. This explains in part the challenge of reliably forecasting migration movements. While Clark and Lisowski used Australian data, a similar study by [Czaika \(2015\)](#) used German data. He found similar results that support the view that losses “count more” than “gains” and that, therefore, loss avoidance is a significant factor in migration decisions. [Žičkutė and Kumpikaitė-Valiūnienė \(2015\)](#) provide a review of the migration decision-making that includes a section on behavioral economic approaches.

Summary and Conclusions

In this article we argue that distinguishing migrations by causes internal or external to the subject clarifies the important and widely used distinction based on push and/or pull factors. We showed how a migration forecasting model could be used to estimate life course and structural migrations, respectively. The value of making this distinction is the ability to distinguish between migrations caused by factors external to the subject and those caused by internal factors. If life course migrations change significantly over time, this might indicate a behavioral change on the part of subjects, if the change cannot be attributed to other factors such as, for example, an aging population.

The idea of life course and structural migrations was first introduced by [Schaeffer \(2017\)](#) to organize a discussion of the most pressing future issues in migration research, though the term natural migration was used instead of life course migration. This latter term is preferred as it is more descriptive and suggestive of the underlying idea.⁵ The purpose of this article is different from that contribution as we seek to elaborate and

explain in more detail the two concepts and why they matter. The approach taken is general and does not focus on specific types of migrations, such as international or domestic, labor market participant or retiree, amenity or jobs, etc. While we give a few illustrative examples, they are not the focus of this study – the concepts life course and structural migration are.

An important insight is that Life course migrations are part of processes that maintain dynamic equilibria while structural migrations re-establish equilibria that have been disturbed by changes external to the subject.

We explained that migrations caused by push and/or pull factors are structural migrations and that push and pull factors do not account for all migrations. While life course migrations may also include push or pull factors, this is not a necessary condition. We also showed that ignoring planned repeat migrations can lead to incorrect migration destination forecasts (Schaeffer 1985). A similar problem occurs when treating family migration as the decision of only one individual (Mincer 1978). In both cases, the subjects optimize their joint or total benefits, not that of only one subject or of only one move. Since repeat and family or household migrations are not rare, this is an important aspect of understanding migration decisions and, hence, for designing policy measures.

Because of the pace of technological progress, the current volatile international political situation, and the ascent of relatively recently industrialized economies, structural migrations are likely to be an important part of aggregate migrations for a long time to come. They will continue to cause negative social and economic disruptions in some regions, while other regions, not always in the same country, benefit. To design policies to address the consequences of such disruptions, the distinction between life course and structural migrations should not be ignored.

Research starts with definitions, classifications, and typologies that are tailored to the research objectives. This is why there are many instances of multiple definitions existing for the same general object. Because definitions, classifications, and typologies matter so much, it is appropriate to re-examine them regularly.

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Notes

1. The distinction between voluntary and involuntary migration is fuzzy. For the purpose of this paper we will only refer to migrations that come about because of natural disasters or forced displacement as involuntary. Political migrations contain examples that cannot always easily be classified as either voluntary or involuntary. For more discussion of this point, see [Schaeffer \(2010\)](#). For psychological impacts in the case of tied movers ([Mincer 1978](#)), see [McCollum \(1990\)](#). A tied mover is a subject that forgoes its individual best choice and instead complies with the optimal choice of the household or family. For an even more comprehensive treatment, see [Castles \(2003\)](#).
2. PSID Home (umich.edu)
3. However, illegal or undocumented immigration (in some European countries such immigrants are referred to as “sans papiers,” without papers) is an imperfect substitute for legal immigration ([Schaeffer and Kahsai 2011](#)).
4. Randall Jackson suggested the possibility, not explored here, of a shift-share modeling alternative. For an application to migration, see [Plane \(1987\)](#).
5. I owe this change in terminology to an anonymous referee of IRSR.

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