# Theories of international migration

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# International migration

- Influenced especially by opportunity structures in place of origin and desired place of destination
- Important processes include
- Step migration
  - From rural to town to city to another country
- Chain migration
  - Pioneer migrants get established and then are followed by family and friends

# Limitations of migration theory

(Portes 1997)

- Immigration theory has sought to understand
  - Fundamental forces driving migration
  - How social networks, community normative expectations, and household strategies affect structural determinants (political, economic...)
- Migration theories and concepts arose from a historical experience, but they are flawed due to
  - Stereotypical characteristics of immigrant groups
  - Too much emphasis and focus on superficial aspects of adaptation (language, cultural habits)

# Misconceptions

(Portes 1997)

- Four misconceptions about developing immigration theory
  - Theories do not grow additively
  - Theories do not necessarily correspond to people's perception
  - Typologies are not theories
  - There is no overall encompassing theory of immigration

# Theories do not grow additively

(Portes 1997)

- Accumulation of evidence does not lead to theoretical developments and innovation
  - Innovation does occur if accumulated evidence requires new explanation and pre-existing theory cannot make sense of some piece of accumulated evidence
- Researcher need to be able to identify contradictions and single them out for analysis
- Theoretical insights require that we gain some distance from reality, in order to identify patterns
- Excessive empirical analyses (data-driven field) makes it harder to generate theories capable of generalization

# Theories are not perceptions

(Portes 1997)

- People's subjective orientation are certainly important and represent a legitimate field or study
  - However, unless a theory specifically refers to these perceptions, it is improper to make them a standard of evaluation
  - A theory is useful if it can explain and predict immigrant patterns of economic adaptation, residential settlement, and relationships with the native population
- Theoretical progress is stalled when
  - Individual case is presented as contradicting general propositions (case study cannot invalidate a general theory)
  - Measurement and sample selection fit the theory awkwardly, but the researcher still draws conclusion about its validity
  - Migration is data driven and equal attention has not been given to theory and concepts

# Typologies are not theories

(Portes 1997)

- Typologies might specify concepts and differentiate groups of people
  - However, they do not amount to a theoretical statement because they simply assert differences without specifying their origins or anticipating their consequences
  - Typologies are valid intellectual exercises, but they are not theories
- A theory must have four elements
  - Delimitation and description of some area of reality
  - Identification and definition of a process or characteristic to be explained (dependent variable)
  - One or more explanatory factors (independent variables) and their types of effects (additive or interactive)
  - Logical link to at least one other similar proposition

# There is no overall theory

(Portes 1997)

- The different areas of migration are too disparate to be unified into one theory
- The macrostructural and microstructural levels of migration should not be unified under one theory
- Portes argues for building a middle-range theory in four areas
  - The origins of migration
  - Direction and continuity of migration flows
  - Utilization of immigrant labor
  - Sociocultural and adaptation of immigrants

**TABLE 1.1: MIGRATION THEORIES ACROSS DISCIPLINES**

| Discipline | Research Question(s) | Levels/Units of Analysis | Dominant Theories | Sample Hypothesis |
|---|---|---|---|---|
| Anthropology | How does migration effect cultural change and affect cultural identity? | Micro/individuals, households, groups | Relational or structuralist and transnational | Social networks help maintain cultural difference. |
| Demography | To what extent do immigrant and native populations become more similar over time? | Individuals, immigrant groups, ethnoracial groups, national foreign-born populations | Theories of migration (cost/benefit and structural; theories in integration (assimilation and pluralist-based); theories of migration effects (economic, social structural, and cultural) | Immigrants will not become successfully integrated when they experience significant membership exclusion. |
| Economics | What explains the propensity to migrate and its effects? | Micro/individuals | Rationalist: cost-benefit and utility maximizing behavior | Incorporation varies with the level of human capital of immigrants. |
| Geography | What explains the socio-spatial patterns of migration? | Macro, meso and micro/individuals, households and groups | Relational, structural, and transnational | Incorporation depends on ethnic networks and residential patterns. |
| History | How has a phenomenon (e.g. causes, structures, processes, consequences of migration) or a relationship (e.g. gender and migration) changed or persisted over time? | Varies temporally (from short-to medium and long-term) as well as spatially | Periodization | Usually not applicable. |
| Law | How does the law influence migration? | Macro and micro/the political and legal system | Institutionalist and rationalist (borrows from all the social sciences) | Rights create incentive structures for migration and incorporation. |
| Political science | Why do states have difficulty controlling migration? | More macro/political and international systems | Institutionalist and rationalist | States are often captured by pro-immigrant interests. |
| Sociology | What explains incorporation and exclusion? | Macro/ethnic groups and social class | Structuralist or institutionalist | Incorporation varies with social and human capital. |

**Source: Brettell, Hollifield 2014, p.4.**

**TABLE 1.2: MODELING MIGRANT BEHAVIOR AND ITS EFFECTS**

| Discipline | Dependent Variables | Independent Variables |
|---|---|---|
| Anthropology | Migrant behavior and migrant identities, gender relations (emigration, integration) | Social and cultural context, transnational networks |
| Demography | Sizes of migration flows, degree of integration for individuals and groups, societal cohesion | Kinds of migration policies, contexts of reception, ethnoracial diversity |
| Economics | Migrant flows and adjustment and macroeconomic impact | Wage/income differentials, demand-pull/supply-push, human capital, factor proportions, structure of the economy and transfer systems |
| Geography | Migrant decision making | Spatial, environmental, political, cultural, and socioeconomic contexts |
| History | Migrant experience | Social/historical context |
| Law | Legal, political, social, and economic treatment of migrants | Law or policy |
| Political science | Policy outputs (admissionist or restrictionist); policy outcomes (control); political incorporation and civic engagement | Institutions, rights, Interests |
| Sociology | Migrant behavior (immigration and incorporation) | Networks, enclaves, social capital |

**Source: Brettell, Hollifield 2014, p.24.**

# Migration framework

(Massey et al. 1994)

- Build framework to better understand resurgence of immigration into North America, primarily after 1945
- Evaluate theories that account for the initiation of international migration
- Consider theories that explain persistence and transnational movements across time and space
- Reconsider the current state of theoretical knowledge in light of the available empirical evidence
- Specify the kinds of studies and data that would be needed to address the theoretical questions and conceptual ideas
- Offer a preliminary synthesis of the theories reviewed

# Initiation of international migration

(Massey et al. 1994)

- Neoclassical economics
  - Supply-demand framework
- The new household economics of migration
  - Diversify income sources: remittances
- Segmented labor market theory (demand-driven)
  - Primary sector: well-educated, good salary, benefits
  - Secondary sector: low wages, unstable, usually rejected by natives
- World systems theory
  - Peripheral countries are most likely to send migrants to core nations

# Neoclassical economics

(Massey et al. 1994)

- Differential wage gaps between countries of origin and destination do contribute to international movement
- Wage gaps do not fully explain international migration nor do they seem to be the most important factor in determining migration decisions

# New economics of migration

(Massey et al. 1994)

- Poor households do use international migration to diversify their labor portfolios and to minimize financial risk in the sending regions
- Remittances from foreign settings raise household income in sending regions by more than the value of the remittances themselves
- However, the new economics model does not fully explain international movement but merely complements the neoclassical model

# Segmented labor market theory

(Massey et al. 1994)

- U.S. labor markets are segmented
- Immigrants are selectively excluded from the primary labor market and found disproportionately in the secondary labor market
- However, it is not clear that labor market segmentation explains all or even most of the demand for immigrants
- Dual labor market theory complements rather than supplants the neoclassical and new economics theories

# World systems theory

(Massey et al. 1994)

- Available evidence does suggest that indicators of capitalist market penetration are instruments in initiating migratory flows
  - Industrialization, agricultural development, direct foreign investment, U.S. military base
- However, its theoretical propositions have not received sufficient analytical attention
- It is difficult to draw conclusions about the explanatory power of world systems theory

# Continuation of migration

(Massey et al. 1994; Massey, Espinosa 1997)

- Network theory
  - Migrants establish interpersonal ties
  - Once started, migration sustains itself through diffusion
- Institutional theory
  - Institutions facilitate or profit from the continued flow of migrants
  - Organizations help perpetuate migration in the face of government attempts to limit the flow of migrants
- Cumulative causation
  - Migration has an impact on social environments of sending and receiving regions

# Network theory

(Massey et al. 1994)

- Social capital refers to potential value that exists in social relationships between people
  - Among people considering a trip to the U.S., ties to current or former U.S. migrants represent a valuable social asset since these connections can be used to acquire information and assistance that reduce the costs and risks of entering the U.S. and raise the odds of getting a good job
- Even after controlling for predictors of neoclassical and new economics variables, network connections strongly predict the likelihood of international migration
- More research on non-Mexican samples is needed to confirm and generalize these findings

# Cumulative causation

(Massey et al. 1994)

- Empirical evidence shows that people who migrate are likely to migrate again
- International migration perpetuates itself, regardless of the conditions that originally caused it
- Evidence from Mexico indicates support for cumulative causation through changes in income distribution and land inequality in sending regions
- However, theory involving networks and cumulative causation remains plausible, but empirical evidence is weak

# Empirical evidence

(Massey et al. 1994)

- There is little empirical evidence that would call for the rejection of any of the theories presented
- However, the problem is an absence of adequate empirical evidence
- Principle goals for future research
  - Integrate dual labor market theory and world systems theory with other models and systematically test the validity of competing propositions
  - Focus on additional countries other than Mexico to increase generalization

# Theories through time

(Massey et al. 1994)

- Initial phases of emigration are most influenced by market penetration (world systems theory), network theory, and cumulative causation
- International migration originates in processes of economic growth and political transformation within the context of a globalizing market economy (world systems theory)

# Theories through time

(Massey et al. 1994)

- As sending regions become more industrialized, emigration becomes more dependent on wage differentials (neoclassical economic theory)
  - Penetration of markets into peripheral nations disrupts noncapitalist modes of social and economic organization and causes widespread labor displacement, creating a mobile population that actively searches for a mean of improving income, acquiring capital,  or controlling risks (neoclassical economics and the new economics of migration)
- Net migration ceases once sending regions become integrated into the international market as developed economies

# Theories through time

(Massey et al. 1994)

- In core nations, postindustrial development leads to a bifurcation of the labor market, creating a secondary sector of jobs with low pay, unstable conditions, and few opportunities for advancement (dual labor market theory)
- Such bifurcation is particularly acute in global cities, where a congregation of managerial, administrative, and technical expertise leads to a concentration of income and a strong ancillary demand for low-wage services (world systems theory)
- Because natives shun secondary sector jobs, employers rely on immigrant workers, at times initiating the immigrant flows directly through recruitment (dual labor market theory)

# Recruitment

(Massey et al. 1994)

- Recruitment often is not needed
- The same processes of **economic globalization** that create mobile populations in developing regions, and that generate a demand for their services in global cities, also foment links of transportation, communication, and culture to make their movement possible (world systems theory)
- International movement is further caused by **foreign policy and military involvements** that reflect the need of core nations to maintain international stability and security (world systems theory), which results in flows of refugees and military dependents

# Summary of initiation

(Massey et al. 1994)

- World systems, neoclassical, new economics, dual labor market
- Individuals and families respond to changing circumstances set in motion by **structural transformations (political, economic...)** of their societies of origin
- Migrants seek to raise incomes, accumulate capital, and control risk by following international routes of transportation and communication to global cities with secondary sector jobs

# Summary of continuation

(Massey et al. 1994)

- Flows display a strong tendency to become **self-perpetuating**
- Each act of migration contributes to the expansion of migrant networks and sets off a process of social capital accumulation that makes additional movement more likely (**network theory**)
- Regional concentration of immigrants creates a "**family and friends**" effect that further encourages the channeling of immigrants to some places and not others
- If enough migrants arrive under the right conditions it can also lead to the formation of an enclave economy, which further augments the demand for immigrant workers and creates a safe haven for their arrival (**enclave theory**)
- The spread of migratory behavior within sending communities sparks other structural changes, shifting distributions of income and land, as well as modifying local cultures in ways that promote additional migration (**theory of cumulative causation**)

# Summary of continuation

(Massey et al. 1994)

- During the **initial phases** of emigration from any particular sending country, the effects of market penetration, network formation, and cumulative causation predominate in explaining the flows
- As migration reaches **high levels** and development moves societies toward industrial economies, the costs and risks of movement drop to low levels and migration is increasingly determined by international wage differentials (neoclassical economics)
- As economic growth in sending regions occurs and emigration proceeds, international wage gaps gradually close and markets for capital, credit, insurance, and futures become more accessible, **lowering the incentives for movement**
- If the sending country is ultimately integrated into the international market as a developed, urbanized economy, **net migration ceases** and the former sending country may itself become a net importer of immigrant labor

# Massey's laws of international migration

- Immigration is a lot easier to start than it is to stop
- Actions taken to restrict immigration often have the opposite effect
- The fundamental causes of immigration may be outside the control of policymakers
- Immigrants understand immigration better than politicians and academicians
- Because they understand immigration better than policymakers, immigrants are often able to circumvent policies aimed at stopping them

# What's driving Mexico-US migration?

(Massey, Espinosa 1997)

- Models estimated the effects of 41 variables and explored the validity of five theories of international migration

- Three fundamental forces are at work in promoting Mexican migration to the United States
  - Social capital formation
  - Human capital formation
  - Market consolidation

# Social capital formation

(Massey, Espinosa 1997)

- Social capital is generally the most powerful factor predicting the odds of initial, repeat, and return migration
- People who are related to U.S. migrants are themselves more likely to migrate
- Each act of migration creates additional social capital capable of instigating and sustaining more migration
- About half of adult Mexicans are related to someone living in the United States (Camp 1993)

# Human capital formation

(Massey, Espinosa 1997)

- For undocumented migrants, the most important element of human capital is migration experience itself
  - Crossing the border, living in the U.S., working in the U.S. labor market, negotiating U.S. housing markets
  - The more U.S. experience a migrant accumulates, the higher her/his likelihood of migrating again
- This process intersects with social capital formation
  - Migration experience makes a person more valuable as a resource for gaining entry to the U.S. and finding a job
  - The more experience a person has, the more likely her/his friends and relatives are to begin migrating and to continue migrating themselves
- One-third of all Mexicans have been to the U.S. at some point in their lives (Camp 1993)

# Market consolidation

(Massey, Espinosa 1997)

- Over the past two decades, the economics of Mexico and the U.S. have become increasingly connected to each other and to the global capitalist economy

- **Rural Mexico:** displacement of manual workers, concentration of land, mechanization of production

- **Urban Mexico:** ending of import substitution industrialization has brought about important economic transformations that have displaced workers from enterprises and public bureaucracies

# Development and migration

(Massey, Espinosa 1997)

- Growing economic insecurity coupled with a strong desire to participate in the new political economy
  - Stimulated Mexican households to search for ways to self insure against threats to family income and to gain access to scarce capital
- Given ready access to human and social capital connecting them to the U.S.
  - Household heads and other family members migrate internationally as part of a conscious strategy of risk diversification and capital accumulation
- Economic development goes hand in hand with international migration

# Definition of variables

| Variable | Operational Definition |
|---|---|
| Demographic background: | |
| Age | Age at last birthday |
| Married | Respondent in formal or informal union |
| No. of minors in household | No. of own children under age 18 |
| General human capital: | |
| Labor force experience | No. of years since first job |
| Education | No. of years of school completed |
| Migration-specific human capital: | |
| Cumulative U.S. experience | Total months spent in United States |
| No. of prior U.S. trips | Total no. of trips taken to the United States |
| Unskilled urban job | Unskilled nonagricultural occupation in the United States |
| Skilled urban job | Skilled nonagricultural occupation in the United States |
| General social capital: | |
| Parent a U.S. migrant | Subject's parent was a U.S. migrant |
| No. of U.S. migrant siblings | No. of siblings with U.S. experience |
| % U.S. migrants in community | Proportion over age 15 with U.S. experience |
| Migration-specific social capital: | |
| Wife a U.S. migrant | Wife has begun migrating to the United States |
| No. of U.S. migrant children | No. of children who have begun migrating |
| U.S.-born children | Whether any children were born in the United States |

**Source: Massey, Espinosa 1997, p.945–946.**

# Definition of variables

| Variable | Operational Definition |
|---|---|
| Physical capital: | |
| Land | Household owns farmland |
| Home | Household owns home |
| Business | Household owns a business |
| Community infrastructure: | |
| Preparatory school | Preparatory school in municipio |
| Paved road | Paved road between community and highway |
| Bank | Bank office open in municipio |
| Community economic context: | |
| % earning twice minimum wage | Proportion of workers earning at least twice the legal minimum wage |
| % self-employed | Proportion of workers who are self-employed |
| % females in manufacturing | Proportion of female workers employed in manufacturing |
| Community agrarian context: | |
| Agrarian economy | "1" if more than 50% of male labor force is employed in agriculture, "0" otherwise |
| Agrarian population density | Population divided by arable land |
| Proportion of land that is arable | Cultivable land divided by total land base |
| *Ejido* established | "1" if community had *ejido*, "0" otherwise |

**Source: Massey, Espinosa 1997, p.945–946.**

# Definition of variables

| Variable | Operational Definition |
|---|---|
| Macroeconomic context: | |
| Expected wage ratio | Ratio of wages predicted from equations estimated from data on migrants to the United States and migrants within Mexico (United States/Mexico; in 1990 U.S. dollars) |
| Peso devaluation | Rate of change in dollar value of Mexican peso over prior year |
| Mexican inflation rate | Rate of change in Mexican consumer index over prior year |
| U.S. employment growth | Rate of change in total U.S. employment over prior year |
| Growth in foreign investment | Rate of change in direct foreign investment over prior year |
| Mexican real interest rate | Average cost of funds in Mexico − Mexican inflation |
| U.S. policy context: | |
| Availability of visas | Legal immigration divided by sum of legal immigration and gross illegal entries |
| Probability of apprehension | Likelihood of arrest while attempting to cross border without documents |
| Employer sanctions enacted | "1" if employer sanctions in force, "0" otherwise |
| Amnesty recipients in household | "1" if any member of household received amnesty under IRCA; "0" otherwise |

**Source: Massey, Espinosa 1997, p.945–946.**

# Definition of variables

| Variable | Operational Definition |
|---|---|
| Expected value of U.S. services: | |
| Welfare | Estimated likelihood of using AFDC or food stamps if respondent were to migrate to United States × average value of monthly AFDC and food stamp payments in states receiving Mexican immigrants |
| Medical care | Estimated likelihood of receiving unreimbursed medical services if respondent were to migrate to United States × average value of Medicaid payments in states receiving Mexican immigrants |
| Education | Estimated likelihood of using public schools if respondent were to migrate to the United States × average per pupil school expenditures in states receiving Mexican immigrants |

**Source: Massey, Espinosa 1997, p.945–946.**

Initiation of migration

MULTINOMIAL LOGISTIC REGRESSION OF SELECTED VARIABLES ON THE ODDS OF TAKING A FIRST TRIP TO THE UNITED STATES IN YEAR $t + 1$

| SITUATION OF SUBJECT IN YEAR $t$ | WITHOUT DOCUMENTS | | WITH DOCUMENTS | |
|---|---|---|---|---|
| | B | SE | B | SE |
| Demographic background: | | | | |
| Age | −.004 | .031 | −.055 | .119 |
| Age$^2$ | −.001* | .0004 | .001 | .001 |
| Married | −.341* | .078 | −.432 | .444 |
| No. of minors in household | .011 | .020 | −.005 | .118 |
| General human capital: | | | | |
| Labor force experience | .013 | .010 | −.057 | .040 |
| Education | −.014 | .008 | −.002 | .039 |
| General social capital: | | | | |
| Parent a U.S. migrant | .461* | .060 | .720* | .263 |
| No. of U.S. migrant siblings | .388* | .021 | .676* | .073 |
| % of U.S. migrants in community | 5.016* | .817 | −7.254 | 4.496 |
| Physical capital: | | | | |
| Land | .298* | .127 | .759 | .666 |
| Home | −.446* | .093 | −1.368 | .759 |
| Business | −.245* | .102 | .400 | .457 |
| Community infrastructure: | | | | |
| Preparatory school | −.249* | .075 | −.061 | .385 |
| Paved road | −.107 | .125 | −.256 | .527 |
| Bank | .527* | .143 | −.148 | .549 |
| Community economic context: | | | | |
| % earning twice minimum wage | 2.209* | .596 | −7.730* | 3.241 |
| % self-employed | −.024 | .412 | −13.204* | 2.490 |
| % females in manufacturing | 1.214* | .370 | −6.337* | 2.170 |
| Community agrarian context: | | | | |
| Agrarian economy | .480* | .078 | 2.034* | .765 |
| Agrarian population density | −.001* | .0005 | −.268 | .155 |
| Proportion of land that is arable | −.322* | .119 | .214 | .573 |
| *Ejido* established | .321* | .221 | −2.880* | .892 |

**Note: Non-migrant as reference. Source: Massey, Espinosa 1997, p.960.**

Initiation of migration

MULTINOMIAL LOGISTIC REGRESSION OF SELECTED VARIABLES ON THE ODDS OF TAKING A FIRST TRIP TO THE UNITED STATES IN YEAR $t + 1$

| SITUATION OF SUBJECT IN YEAR $t$ | WITHOUT DOCUMENTS | | WITH DOCUMENTS | |
|---|---|---|---|---|
| | B | SE | B | SE |
| Macroeconomic context: | | | | |
| Expected wage ratio | .003* | .001 | −.005 | .008 |
| Peso devaluation | −.115 | .067 | −.028 | .376 |
| Mexican inflation rate | −.702* | .298 | 2.744 | 1.472 |
| U.S. employment growth | 4.734* | 1.938 | 11.637 | 10.220 |
| Growth in foreign investment | −.228* | .067 | .108 | .351 |
| Mexican real interest rate | 2.264* | .531 | −.842 | 2.490 |
| U.S. policy context: | | | | |
| Availability of visas | −2.828* | .511 | −.568 | 1.965 |
| Probability of apprehension | 2.891* | .783 | 3.119 | 3.302 |
| Employer sanctions enacted | .304* | .149 | .135 | .836 |
| Amnesty recipients in household | 2.561* | .353 | 4.656* | .874 |
| Expected value of U.S. services: | | | | |
| Welfare | −.019* | .006 | .026 | .017 |
| Medical care | .019 | .024 | −.020 | .066 |
| Education | .002* | .0002 | −.003 | .015 |
| Constant | −5.172* | .785 | 1.239 | 3.152 |
| Log likelihood | | 6,648.100* | | |
| $\chi^2$ | | 2,181.600* | | |
| No. of person-years | | 55,762 | | |

NOTE.—Event-history data gathered among male household heads from 25 Mexican communities.
* $P < .05$.

**Note: Non-migrant as reference. Source: Massey, Espinosa 1997, p.960.**

Continuation of migration

MULTINOMIAL LOGISTIC REGRESSION OF SELECTED VARIABLES ON THE ODDS OF TAKING AN ADDITIONAL TRIP TO THE UNITED STATES IN YEAR $t + 1$

| SITUATION OF SUBJECT IN YEAR $t$ | WITHOUT DOCUMENTS | | WITH DOCUMENTS | |
|---|---|---|---|---|
| | B | SE | B | SE |
| Demographic background: | | | | |
| Age | −.156* | .021 | −.005 | .034 |
| Age$^2$ | .001* | .0003 | −.001 | .001 |
| Married | −.207* | .057 | .004 | .107 |
| No. of minors in household | .071* | .012 | .041* | .020 |
| General human capital: | | | | |
| Labor force experience | −.076* | .008 | −.041* | .014 |
| Education | −.033* | .007 | .029* | .011 |
| Migration-specific human capital: | | | | |
| Cumulative U.S. experience | .012* | .001 | .012* | .001 |
| No. of prior U.S. trips | .176* | .008 | .226* | .008 |
| Last U.S. job unskilled urban | .404* | .052 | .919* | .093 |
| Last U.S. job skilled urban | .093* | .005 | .354* | .087 |
| General social capital: | | | | |
| Parent a U.S. migrant | .224* | .043 | .452* | .076 |
| No. of U.S. migrant siblings | .006 | .013 | .090* | .020 |
| % of U.S. migrants in community | 2.992* | .558 | 6.430* | .956 |
| Migration-specific social capital: | | | | |
| Wife a U.S. migrant | 1.340* | .118 | 2.482* | .163 |
| No. of U.S. migrant children | .075* | .031 | .304* | .040 |
| U.S.-born children | 1.114* | .138 | 1.376* | .164 |

**Note: Non-migrant as reference. Source: Massey, Espinosa 1997, p.971–972.**

Continuation of migration

MULTINOMIAL LOGISTIC REGRESSION OF SELECTED VARIABLES ON THE ODDS OF TAKING AN ADDITIONAL TRIP TO THE UNITED STATES IN YEAR $t + 1$

| SITUATION OF SUBJECT IN YEAR $t$ | WITHOUT DOCUMENTS | | WITH DOCUMENTS | |
|---|---|---|---|---|
| | B | SE | B | SE |
| Physical capital: | | | | |
| Land | −.134 | .071 | .382* | .095 |
| Home | −.327* | .048 | −.324* | .079 |
| Business | −.611* | .064 | −.500* | .100 |
| Community infrastructure: | | | | |
| Preparatory school | .158* | .060 | −.236* | .102 |
| Paved road | −.177 | .101 | −.537* | .173 |
| Bank | −.078 | .097 | −.021 | .156 |
| Community economic context: | | | | |
| % earning twice minimum wage | .618 | .389 | −5.066* | .677 |
| % self-employed | .143 | .305 | −6.107* | .582 |
| % females in manufacturing | −.211 | .253 | −.732 | .440 |
| Community agrarian context: | | | | |
| Agrarian economy | .200* | .061 | .346* | .107 |
| Agrarian population density | −.001 | .001 | −.001 | .002 |
| Proportion of land that is arable | −.113 | .099 | .968* | .169 |
| *Ejido* established | .088 | .133 | −1.317* | .180 |

**Note: Non-migrant as reference. Source: Massey, Espinosa 1997, p.971–972.**

Continuation of migration

MULTINOMIAL LOGISTIC REGRESSION OF SELECTED VARIABLES ON THE ODDS OF TAKING AN ADDITIONAL TRIP TO THE UNITED STATES IN YEAR $t + 1$

| SITUATION OF SUBJECT IN YEAR $t$ | WITHOUT DOCUMENTS | | WITH DOCUMENTS | |
|---|---|---|---|---|
| | B | SE | B | SE |
| Macroeconomic context: | | | | |
| Expected wage ratio | .001 | .001 | −.012* | .002 |
| Peso devaluation | −.023 | .040 | −.009 | .008 |
| Mexican inflation rate | −.883* | .191 | −.004 | .331 |
| U.S. employment growth | 4.344* | 1.462 | 4.440 | 2.691 |
| Growth in foreign investment | −.167* | .048 | −.157* | .078 |
| Mexican real interest rate | 1.593* | .375 | 2.142* | .656 |
| U.S. policy context: | | | | |
| Availability of visas | −2.900* | .409 | 1.617* | .639 |
| Probability of apprehension | −2.182* | .527 | 1.923* | .824 |
| Employer sanctions enacted | −.364* | .096 | .235 | .160 |
| Amnesty recipients in household | 1.767* | .143 | 3.748* | .160 |
| Expected value of U.S. services: | | | | |
| Welfare | −.060* | .003 | .043* | .020 |
| Medical care | .186* | .011 | −.190* | .012 |
| Education | −.0003* | .0001 | −.002* | .0001 |
| Constant | 3.892* | .558 | −1.309 | .000 |
| Log likelihood | | 11,829.000* | | |
| $\chi^2$ | | 18,059.000* | | |
| No. of person-years | | 27,813 | | |

NOTE.—Event-history data gathered among male household heads from 25 Mexican communities.
* $P < .05$.

**Note: Non-migrant as reference. Source: Massey, Espinosa 1997, p.971–972.**

Return migration

LOGISTIC REGRESSION OF SELECTED VARIABLES ON THE ODDS OF RETURNING TO MEXICO FROM THE UNITED STATES IN YEAR *t*

| SITUATION OF SUBJECT IN YEAR *t* | WITHOUT DOCUMENTS | | WITH DOCUMENTS | |
|---|---|---|---|---|
| | B | SE | B | SE |
| Demographic background: | | | | |
| Age | .002 | .047 | −.002 | .097 |
| Age² | −.0002 | .0006 | .001 | .001 |
| Married | .224* | .108 | −.658* | .239 |
| No. of minors in household | −.010 | .027 | .049 | .055 |
| General human capital: | | | | |
| Labor force experience | −.007 | .015 | .042 | .033 |
| Education | −.048* | .013 | −.087* | .029 |
| Migration-specific human capital: | | | | |
| Cumulative U.S. experience | −.025* | .002 | −.035* | .002 |
| Duration of trip in months | −.221* | .008 | −.079* | .006 |
| No. of prior U.S. trips | .270* | .022 | .276* | .020 |
| Holds unskilled urban job | −.607* | .096 | −.124 | .211 |
| Holds skilled urban job | −.323* | .102 | .289 | .203 |
| General social capital: | | | | |
| Parent a U.S. migrant | .140 | .087 | .121 | .170 |
| No. of U.S. migrant siblings | −.039 | .027 | .065 | .041 |
| % of U.S. migrants in community | .653 | 1.115 | −2.503 | 2.169 |
| Migration-specific social capital: | | | | |
| Wife a U.S. migrant | −.360 | .198 | −2.174* | .369 |
| No. of U.S. migrant children | −.387* | .077 | −.844* | .081 |
| U.S.-born children | .050 | .242 | −1.326* | .367 |

**Note: Non-migrant as reference. Source: Massey, Espinosa 1997, p.979–980.**

Return migration

LOGISTIC REGRESSION OF SELECTED VARIABLES ON THE ODDS OF RETURNING TO MEXICO FROM THE UNITED STATES IN YEAR *t*

| SITUATION OF SUBJECT IN YEAR *t* | WITHOUT DOCUMENTS | | WITH DOCUMENTS | |
|---|---|---|---|---|
| | B | SE | B | SE |
| Physical capital: | | | | |
| Land | .931* | .168 | .994* | .221 |
| Home | .241* | .109 | .216 | .182 |
| Business | −.193 | .148 | −.046 | .226 |
| Community infrastructure: | | | | |
| Preparatory school | .172 | .119 | .875* | .223 |
| Paved road | −.063 | .174 | 1.332* | .469 |
| Bank | .414* | .207 | −.387 | .413 |
| Community economic context: | | | | |
| % earning twice minimum wage | −2.782* | .761 | −3.883* | 1.548 |
| % self-employed | 1.939* | .596 | −1.012 | 1.397 |
| % females in manufacturing | −2.424* | .525 | −6.072* | 1.235 |
| Community agrarian context: | | | | |
| Agrarian economy | −.200 | .120 | −.127 | .235 |
| Agrarian population density | .001 | .001 | .014 | .005 |
| Proportion of land that is arable | .097 | .202 | −.624 | .364 |
| *Ejido* established | −.326 | .288 | −1.158* | .507 |

**Note: Non-migrant as reference. Source: Massey, Espinosa 1997, p.979–980.**

Return migration

LOGISTIC REGRESSION OF SELECTED VARIABLES ON THE ODDS OF RETURNING TO MEXICO FROM THE UNITED STATES IN YEAR *t*

| SITUATION OF SUBJECT IN YEAR *t* | WITHOUT DOCUMENTS | | WITH DOCUMENTS | |
|---|---|---|---|---|
| | B | SE | B | SE |
| Macroeconomic context: | | | | |
| Expected wage ratio | −.0003 | .001 | .0003 | .002 |
| Peso devaluation | −.027 | .083 | −.245 | .151 |
| Mexican inflation rate | 1.098* | .396 | 3.032* | .724 |
| U.S. employment growth | 2.936 | 2.797 | −5.879 | 5.616 |
| Growth in foreign investment | −.136 | .100 | .530* | .168 |
| Mexican real interest rate | 1.560* | .760 | −.326 | 1.443 |
| U.S. policy context: | | | | |
| Availability of visas | −1.990* | .848 | −2.549 | 1.517 |
| Probability of apprehension | −.090 | 1.126 | −4.761* | 1.937 |
| Employer sanctions enacted | .232 | .228 | −1.133* | .332 |
| Amnesty recipients in household | .092 | .295 | −.198 | .281 |
| Expected value of U.S. services: | | | | |
| Welfare | −.010 | .008 | −.028* | .008 |
| Medical care | −.014 | .030 | .297* | .045 |
| Education | .0002 | .0002 | .0009* | .0002 |
| Constant | 3.565* | 1.191 | 5.620 | .225 |
| Log likelihood | 2,147.800* | | 743.340* | |
| $\chi^2$ | 6,169.900* | | 2,963.300* | |
| No. of person-years | 8,394 | | 4,733 | |

NOTE.—Event-history data gathered among male household heads from 25 Mexican communities.
* $P < .05$.

**Note: Non-migrant as reference. Source: Massey, Espinosa 1997, p.979–980.**

# Probabilities

EFFFCT OF INDEPENDENT VARIABLES ON UNDOCUMENTED MIGRATION

| Independent Variable | Probability of First Migration | | Probability of Repeat Migration | | Probability of Return to Mexico during First Year of Migration | |
|---|---|---|---|---|---|---|
| | Minimum | Maximum | Minimum | Maximum | Minimum | Maximum |
| Demographic background: | | | | | | |
| Married | .050 | .036 | .477 | .425 | .280 | .328 |
| No. of minors in household | .039 | .043 | .378 | .517 | .317 | .300 |
| General human capital: | | | | | | |
| Education | .043 | .036 | .465 | .377 | .379 | .249 |
| Migration-specific human capital: | | | | | | |
| Cumulative U.S. experience | | | .321* | .746* | .524* | .035* |
| No. of prior U.S. trips | | | .312* | .841* | .181* | .880* |
| Unskilled urban job | | | .414 | .514 | .361 | .236 |
| Skilled urban job | | | .428 | .450 | .335 | .267 |
| General social capital: | | | | | | |
| Parent a U.S. migrant | .037* | .057* | .416 | .471 | .299 | .329 |
| No. of U.S. migrant siblings | .035* | .073* | .431 | .438 | .326 | .285 |
| % U.S. migrants in community | .027* | .062* | .366 | .538 | .299 | .331 |
| Migration-specific social capital: | | | | | | |
| Wife a U.S. migrant | | | .381* | .702* | .345 | .268 |
| No. of U.S. migrant children | | | .423 | .498 | .348* | .143* |
| U.S.-born children | | | .410 | .548 | .310 | .321 |
| Physical capital: | | | | | | |
| Land | .039 | .052 | .437 | .405 | .298* | .519* |
| Home | .045 | .030 | .468 | .388 | .302 | .355 |
| Business | .041 | .032 | .460 | .316 | .316 | .276 |

Note: Range of probabilities refer to when variable goes from its 5th percentile (minimum) to its 95th percentile (maximum) while holding all other variables constant at their means. Age and labor force experience are hold constant at 18 and 3 years, respectively.

**Source: Massey, Espinosa 1997, p.966–967.**

# Probabilities

EFFFCT OF INDEPENDENT VARIABLES ON UNDOCUMENTED MIGRATION

| INDEPENDENT VARIABLE | PROBABILITY OF FIRST MIGRATION | | PROBABILITY OF REPEAT MIGRATION | | PROBABILITY OF RETURN TO MEXICO DURING FIRST YEAR OF MIGRATION | |
|---|---|---|---|---|---|---|
| | Minimum | Maximum | Minimum | Maximum | Minimum | Maximum |
| Community infrastructure: | | | | | | |
| Preparatory school | .044 | .035 | .421 | .459 | .298 | .335 |
| Paved road | .044 | .040 | .474 | .430 | .325 | .312 |
| Bank | .025 | .042 | .450 | .431 | .234 | .316 |
| Community economic context: | | | | | | |
| % earning twice minimum wage | .028* | .058* | .408 | .456 | .426* | .235* |
| % self-employed | .040 | .040 | .427 | .441 | .257* | .424* |
| % females in manufacturing | .036* | .060* | .438 | .412 | .359* | .144* |
| Community agrarian context: | | | | | | |
| Agrarian economy | .028* | .049* | .402 | .451 | .340 | .297 |
| Agrarian population density | .040 | .039 | .434 | .432 | .312 | .313 |
| Proportion of land that is arable | .047 | .036 | .445 | .422 | .304 | .321 |
| *Ejido* established | .029 | .040 | .430 | .433 | .384 | .311 |
| Macroeconomic context: | | | | | | |
| Expected wage ratio | .039 | .044 | .429 | .443 | .313 | .311 |
| Peso devaluation | .042 | .035 | .435 | .420 | .315 | .300 |
| Mexican inflation rate | .047 | .029 | .495 | .325 | .250* | .425* |
| U.S. employment growth | .035 | .044 | .401 | .454 | .294 | .327 |
| Growth in foreign investment | .049 | .032 | .475 | .389 | .342 | .281 |
| Mexican real interest rate | .028* | .056* | .368 | .493 | .261 | .368 |
| U.S. policy context: | | | | | | |
| Availability of visas | .048* | .022* | .472 | .280 | .330 | .252 |
| Probability of apprehension | .030 | .049 | .480 | .390 | .314 | .311 |
| Employer sanctions enacted | .039 | .052 | .446 | .359 | .308 | .359 |
| Amnesty recipients in household | .040* | .350* | .416* | .806* | .311 | .331 |
| Expected value of U.S. services: | | | | | | |
| Welfare | .055* | .020* | .753* | .022* | .405 | .190 |
| Medical care | .037 | .045 | .271* | .786* | .341 | .266 |
| Education | .032 | .051 | .460 | .353 | .341 | .253 |
| Mean | .040 | | .433 | | .312 | |

NOTE.—Probability of first migration at age 18, probability of repeat migration at age 25, and probability that a 25-year-old will return to Mexico during the first y of migration.

* Ranges greater than 50% of mean probability.

**Source: Massey, Espinosa 1997, p.966–967.**

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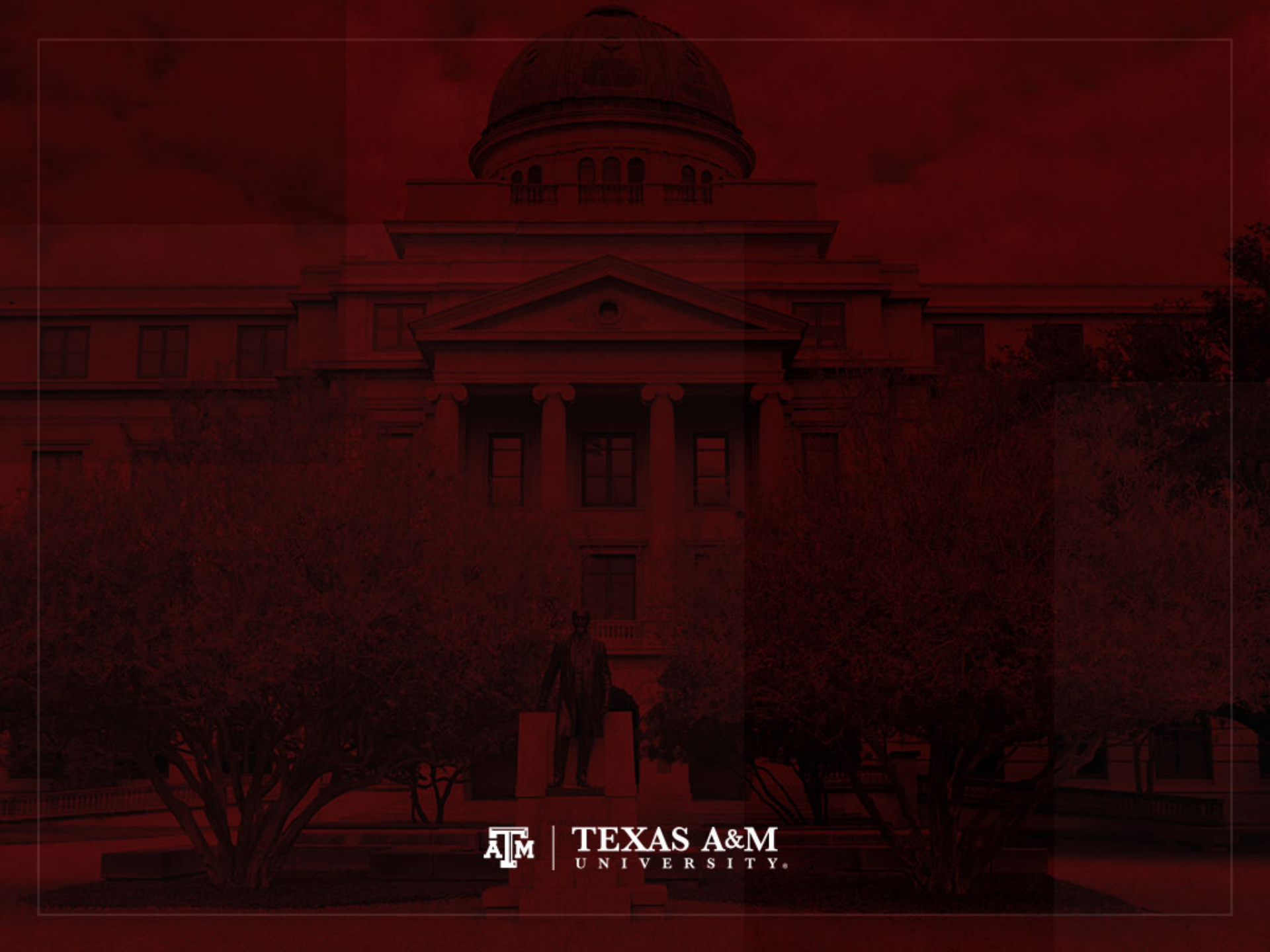
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