Industrial Channeling among New Immigrants

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ABSTRACT

Recent work introduces the concept of "channeling" and asks whether some forms of work provide ready-made paths into analogous work sectors in the U.S. labor market. In this study, we build on this prior work by taking up the question of how channeling affects the economic integration of immigrants' from a variety of source countries. To explore this idea, we use the New Immigrant Survey and simultaneous equation modeling. Our study contributes to this literature by focusing on industrial sectors across a diverse sample and identifying a consistent pattern across these different countries. This demonstrates the increasing integration of these economies – and the resulting articulation of the labor markets – of between these nations. Overall, this study joins a growing body of literature that is interested in the work transitions that accompany migration between the United States and various sending countries.

Keywords: Immigration, Industry, Channeling, Wages, New Immigrant Survey

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INTRODUCTION

Immigrant integration is an important issue in receiving countries, but especially in receiving countries with large immigrant populations. If immigrants are not able to readily access work that utilizes the skills, training, and talents they bring into the labor market, unemployment and underemployment can result. In destination contexts with large and growing immigrant populations, unemployment and underemployment among large and expanding immigration populations challenges mantras of inclusion and upward mobility, and raises the possibilities of political and social instability.

Upon arrival, immigrants, however, may encounter a number of obstacles to integration into U.S. society, including discrimination. In the labor market, new immigrants may experience difficulty transferring their source country education and work experiences to the United States because foreign education is often devalued upon migration (e.g., Bratsberg and Ragan 2002; Chiswick 1978; Chiswick and DebBurman 2004; Godin 2008; Zeng and Xie 2004). The result is that foreign work experience receives little, if any, return in the U.S. labor market (e.g., Chiswick 1978; Chiswick and Miller 2009) and immigrants often experience a substantial downgrading in terms of occupational attainment after migration (Akresh 2006, 2008; Borjas 1989; Chiswick et al. 2005).

Recent work focusing on Mexican immigrants has explored whether their foreign labor market experiences help ease the transition into the United States (Painter and Sanderson, Forthcoming; Sanderson and Painter 2011; Sanderson 2014, 2014a). This work introduces the concept of "channeling" and asks whether some forms of work provide ready-made paths into analogous work sectors in the U.S. labor market.

In this study, we build on this prior work by taking up the question of how channeling affects the economic integration of immigrants' from a variety of source countries. To explore this idea, we use the New Immigrant Survey and simultaneous equation modeling techniques. Our study makes two contributions to the literature. First, we focus on industrial sectors and refine previous work by more narrowly identifying which particular types of channeling affect immigrants. Second, we identify country-specific linkages between these nations and the United States that reflect the increasing integration of the economies – and the resulting articulation of the labor markets – of these nations. Overall, this study joins a growing body of literature that is interested in the work transitions that accompany migration between the United States and various sending countries.

CONCEPTUAL FRAMEWORK

Research consistently finds that economic incorporation conforms to a "U-shaped" pattern across a range of labor market outcomes (Akresh 2006, 2008; Borjas 1989; Chiswick et al. 2005). The general pattern begins with occupational downgrading and the depth of this downgrading depends upon the extent of transferability of immigrants' skills, education, and experience from their home country to the United States (Akresh 2008; Chiswick et al. 2005; Duleep and Regets 1999). Upon migration to the United States, immigrants typically work in jobs that do not match their prior jobs in terms of prestige, working conditions, and skill level. Although there is variation in the pattern, immigrants tend to experience some degree of upward mobility over time, moving into jobs that are more similar to their last job prior to migration – hence, the U-shaped pattern – as they acquire U.S.-specific human capital, including English language proficiency, additional education, and U.S. work experience.

In addition to the U-shaped pattern, there are additional paths to integration in the destination labor market, depending upon the degree to which immigrants are able to draw upon the skills and training received in the origin labor market to access and negotiate the destination country labor market. Fuller (2015) empirically identifies seven employment sequences among immigrants in Canada. One sequence is "quick integration," which is characterized by early entry into full-time employment. This sequence reflects good matches between immigrants' pre-immigration work and their initial job in the United States. Another pathway is "redirection," where immigrants quickly enter into full-time employment after migration but then enter into periods of non-employment, part-time employment, self-employment, and/or return to school. This type of employment suggests that immigrants were unsatisfied with their initial employment, which likely reflects the type of work they had.

METHODS

Data

We use data from the New Immigrant Survey (NIS). The NIS is a multi-cohort prospective-retrospective longitudinal panel that is nationally representative of immigrants gaining LPR status in 2003. We use the first wave of the NIS data, which contain 8,573 such LPRs, who were at least 18 years of age at LPR receipt. The NIS is uniquely suited for the purpose of this study, as it contains detailed information on immigrants' jobs before and after migration as well as data on migration history, education (both in the source country and the United States), and English language proficiency.

Sample

The data requirements for an analysis of industrial channeling are steep. We include all immigrants in our analytical sample who were participating in the labor market before and after migration and have valid responses on *both* the industry code of their last job prior to migration *and* their first job after arrival in the United States. As such, the analytical sample in this study includes 3,199 new immigrants. The majority of the difference between the total number of immigrants in the NIS and our analytical sample is due to immigrants not being in the labor force upon arrival to the United States.

Measures

Outcome Variable. The NIS contains numerous questions that ask about a variety of respondents' income sources. We focus on four income sources that reflect respondents' labor market activities: self-employment income, wages and salary, income from a professional practice or trade, and income from tips, bonuses, and/or commissions. We then sum these four sources of income and log the variable to correct for skew.

Explanatory Variables. Our primary explanatory variable is a measure of industrial sector channeling. The NIS assigns each respondent's industry a 2003 Census 4-digit codes. We use this information to classify each immigrant into an industrial sector: primary (agriculture/forestry/fishing, mining), secondary (utilities, construction, manufacturing), and tertiary (e.g., trade, transportation, finance). We then create a dichotomous variable that is equal to one if the industrial sector prior to migration and the industrial sector of the first job in the United States are the same and zero if not.

We organize the rest of our explanatory variables by the particular equation they appear in. First, we discuss variables in both the channeling and income equations. These include the

number of years of foreign education and the number of years at the last job abroad. We have a dichotomous variable for whether an immigrant ever entered the United States without documentation, a dichotomous variable for gender (1=female), and a series of three dichotomous variables that capture the largest countries of origin in the NIS: Mexico, India, and Philippines (the reference category is the remaining counties).

Second, there is one explanatory variable that is unique to the channeling equation: a dichotomous variable for whether the individual lived in a rural area as a child (1=yes).

Last, variables unique to the income equation include the number of years of U.S. education, the number of years of immigrants' work experience at their first job in the United States, and how long an immigrant has lived in the United States. To capture the process through which immigrants qualify for LPR status, we use a dichotomous variable to control for how immigrants applied for LPR status: adjustment of status or new arrival (reference category). We also have a dichotomous variable for immigrants' class of admission (1=employment preference). English language proficiency is dichotomous (1=speaks English "very well" or "well;" 0=speaks English "not well" or "not at all") as is marital status (1=married). Age is a continuous variable, measured in years.

Analytical Approach

To examine the relationship between income, channeling, and our other explanatory variables, we use simultaneous equation modeling (SiEM) with two equations. The second equation has income as the outcome variable and our key explanatory variable, industrial channeling, as an explanatory variable. Within the SiEM framework, we can create a system of equations whereby industrial channeling is itself an outcome variable with its own equation. As outlined above, both of the equations share a set of overlapping explanatory variables while also

having unique predictors. The advantage of this approach is that we can test the hypothesis that industrial channeling affects income, while at the same time accounting for factors that shape both variables. It also allows us to examine how the various predictors affect each outcome within its own equation and better assess whether there is an independent effect of industrial channeling.

With SiEM, there are several important issues to note. First is model identification. Our model is recursive, which means that it is identified by definition. Second is estimation. We estimate our model with a Full Information Maximum Likelihood (FIML) technique using Proc Calis within SAS 9.4. FIML uses information from all equations within a model to jointly derive estimates for all of the parameters. Last is model assessment. If a system of equations has more information than that needed to identify the models, measures of fit are able to be estimated. We provide four goodness-of-fit statistics that summarize fit for the entire model, in addition to R^2 values for each equation. These measures of fit represent several different approaches to model fit and, together, provide a good representation of how well the system of equations fit the data. We use the χ^2 test, where a nonsignificant value indicates good model fit. Notably, this test statistic is considered quite restrictive as it assesses exact or perfect model fit. Therefore, we also use two incremental fit indices: the Comparative Fit Index (CFI) (Bentler 1990) and the Non-normed Fit Index (NNFI) (Bollen 1989). Values above .95 are considered to indicate good fit. Last, we provide the Root Mean Squares of Error Approximation (RMSEA) (Brown and Cudekc 1993; Steiger and Lind 1980) where a test value below .05 indicates good fit.

Our presentation and discussion of results takes the following approach. Table 1 has means and standard deviations for the full sample as well as for subsamples of immigrants with and without industrial channeling. We use t-tests to explore differences between these groups.

Table 2 contains the results from the SiEM analyses for the full sample and the subsamples of Mexican, Indian, and Filipino immigrants.

** Table 1 about here **

RESULTS

Descriptive Results

Table 1 presents descriptive statistics for the full sample. Average income is about $24,500 with 13 percent of new immigrants working in the same industry before and after migration. For the variables that appear in both the channeling and income equations, immigrants have, on average, slightly more than 13 years of education and almost a decade's worth of work experience in their home country. 20 percent completed an undocumented trip to the United States and approximately equal proportions are from the top three sending nations. There is one variable unique to the channeling equation and this variable indicates that almost 40 percent of the sample lived in a rural area as a child. For the variables that only appear in the income equation, immigrants have, on average, less than a year of U.S. education and have worked slightly more than three years in the United States. Immigrants have spent almost six years in the United States with about two-thirds adjusting to LPR status and approximately a third using the employment class of admission. Last, about half of the sample speaks English "very well" or "well" and 75 percent are married.

Table 1 also displays descriptive statistics for immigrants who experienced channeling and those who did not. We used t-tests to identify statistically significant differences between these two groups and several findings are notable. First, immigrants with industrial channeling average significantly less income (approximately $5,000), both in the original and logged forms. For the joint variables, channeled immigrants have less home-country education and a greater

percentage have completed an undocumented trip. These immigrants, on average, migrated from Mexico with fewer originating from India and the Philippines. Second, there was no difference in the proportion of the two subsamples that lived in a rural area as a child. Last, immigrants with industrial channeling had more time in the United States and, correspondingly, had a higher proportion adjusting to LPR status. Interesting, a lower proportion used the employment class of admission to obtain LPR status.

** Table 2 about here **

Regression Results from Simultaneous Equation Model

Table 2 contains the results from the simultaneous equation model. Turning to the first equation for the full sample, three factors influence channeling with female and being born in Mexico increasing the likelihood of working in the same industry before and after migration while being Filipino reduces the likelihood. In the second equation, industrial channeling is a statistically significant factor for income, even when accounting for the variables that predict channeling in the first equation. Here, channeling reduces income by 81% [=100*[exp(-1.68) – 1] or using predicted values and holding other variables at their means in this equation, $1,616. Alongside channeling, two other factors reduce income, including female (73% decrease in income using the above formula) and being married (60%). Increases to income come from adjustment to LPR status (69%), the employment preference (73.6), and English language proficiency increase income (82%).

A unique advantage of SiEM is the ability to estimate goodness-of-fit statistics. These metrics indicate that the model fits the data very well. While the χ^2 test is significant and a nonsignificant test indicates good fit, this is a strict test of model fit. Both the CFI and NNFI are

well above their thresholds of .95 and the RMSEA is right at the cut-off for determining good model fit, .05.

Our next analyses focus on the subsamples of immigrants from the three largest sending nations in the New Immigrant Survey. Across all three subsamples, industrial channeling consistently reduces income, by 69% or $796 for Mexicans, 83% or $3,295 for Indians, and 90% or $2,036 for Filipinos.

Within the Mexican subsample, more foreign education reduces the likelihood of industrial channeling while women are more likely to be channeled. Women also receive less income than Mexican men with marriage and older ages also reducing income. In contrast, adjustment to LPR status and the employment class of admission increase income among new Mexican immigrants. The goodness-of-fit statistics indicate that the model fits the Mexican subsample very well.

The model for the Indian and Filipino subsamples interesting as no factors predict channeling and the goodness-of-fit statistics are positive. Alongside channeling, Indian women are associated with less income than men while more U.S. education and marriage reduce income for Filipinos. Uniquely, foreign education increases income for Filipinos.

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TABLES AND FIGURES

Table 1. Means and Standard Deviations, New Immigrant Survey, N=3,199

	Full sample	Immigrants with Industrial Channeling	Immigrants without Industrial Channeling
Outcome variable			
Income[a]	$24,548	**$19,996**	$25,253
	($44,288)	($39,240)	($44,985)
Income, logged	7.37	**5.76**	7.62
	(4.21)	(4.85)	(4.04)
Focal explanatory variable			
Industrial channeling	0.13	—	—
Variables in both channeling and income equations			
Foreign education (years)	13.13	**12.42**	13.24
	(4.55)	(5.00)	(4.47)
Foreign work experience (years)	9.24	8.88	9.30
	(8.01)	(8.60)	(7.91)
Had undocumented trip	0.19	**0.27**	0.18
Female	0.37	**0.46**	0.36
Country of birth			
Mexico	0.11	**0.20**	0.10
India	0.10	**0.07**	0.10
Philippines	0.07	**0.04**	0.07
other	0.73	0.69	0.73
Variable unique to channeling equation			
Lived in rural area as child	0.38	0.39	0.38
Variables unique to income equation			
U.S. education (years)	0.55	0.61	0.54
	(1.50)	(1.54)	(1.50)
U.S. work experience (years)	3.20	3.40	3.17
	(3.45)	(3.37)	(3.46)
Time in U.S. (years)	5.89	**8.20**	5.53
	(6.21)	(7.86)	(5.83)
Adjusted to LPR status	0.63	**0.79**	0.60
Class of admission - employment preference	0.30	**0.24**	0.31
Speaks English "very well" or "well"	0.54	0.50	0.55
Married	0.74	**0.80**	0.73
Age	37.75	**39.59**	37.47
	(9.90)	(11.70)	(9.57)
N	3199	429	2770

Note : **Bold underlying** indicates a statistically significant difference ($p < .05$) from the reference category (immigrants without industrial channeling). Standard deviation in parentheses.

[a] U.S.$2003

Table 2. Simultaneous Equation Model Estimates for Industrial Channeling and Logged Employment Income

	Full sample		Mexico		India		Philippines	
	Channeling	Income	Channeling	Income	Channeling	Income	Channeling	Income
Industrial channeling	---	-1.68 ***	---	-1.18 *	---	-1.77 *	---	-2.28 *
		(0.22)		(0.51)		(0.87)		(0.96)
Variables in both channeling and income equations								
Foreign education (years)	0.00	0.06 **	-0.02 **	0.09	0.00	0.05	0.00	0.27 *
	(0.00)	(0.02)	(0.01)	(0.06)	(0.01)	(0.11)	(0.01)	(0.11)
Foreign work experience (years)	0.00	0.01	0.00	-0.01	0.00	-0.01	0.00	-0.04
	(0.00)	(0.01)	(0.00)	(0.04)	(0.00)	(0.05)	(0.00)	(0.05)
Had undocumented trip	0.02	0.42	-0.02	0.36	0.07	1.07	0.03	1.08
	(0.02)	(0.24)	(0.05)	(0.51)	(0.12)	(1.91)	(0.09)	(1.30)
Female	0.05 ***	-1.28 ***	0.11 *	-2.78 ***	0.04	-1.92 **	-0.06	-0.62
	(0.01)	(0.15)	(0.05)	(0.45)	(0.04)	(0.64)	(0.04)	(0.54)
Country of birth								
Mexico	0.10 ***	-0.09	---	---	---	---	---	---
	(0.02)	(0.26)						
India	-0.02	0.05	---	---	---	---	---	---
	(0.02)	(0.27)						
Philippines	-0.06 *	0.13	---	---	---	---	---	---
	(0.02)	(0.32)						
Variable unique to channeling equation								
Lived in rural area as child	0.00	---	-0.03	---	-0.01	---	-0.03	---
	(0.01)		(0.05)		(0.04)		(0.04)	
Variables unique to income equation								
U.S. education (years)	---	0.02	---	0.01	---	0.29	---	-1.10 *
		(0.05)		(0.17)		(0.28)		(0.49)
U.S. work experience (years)	---	-0.03	---	-0.03	---	0.10	---	-0.17
		(0.03)		(0.05)		(0.13)		(0.13)
Time in U.S. (years)	---	0.01	---	0.01	---	-0.11	---	0.04
		(0.02)		(0.04)		(0.13)		(0.11)
Adjusted to LPR status	---	0.53 **	---	1.36 *	---	-0.19	---	0.81
		(0.19)		(0.65)		(0.81)		(0.75)
Class of admission - employment preference	---	0.55 **	---	1.68 **	---	0.57	---	0.52
		(0.19)		(0.64)		(0.93)		(0.62)
Speaks English "very well" or "well"	---	0.60 ***	---	-0.80	---	0.55	---	-1.11
		(0.18)		(0.55)		(1.16)		(0.90)
Married	---	-0.92 ***	---	-1.65 **	---	-1.53	---	-1.69 **
		(0.17)		(0.58)		(0.99)		(0.56)
Age	---	-0.01	---	-0.07 *	---	0.02	---	0.02
		(0.01)		(0.03)		(0.04)		(0.04)
Intercept	0.12 ***	7.16 ***	0.35 ***	10.00 ***	0.19	7.94 ***	0.12	5.74 **
N	3199		354		306		214	
χ^2	86.45***		17.51*		14.57		17.12*	
CFI	0.99		0.99		0.99		0.99	
NNFI	0.99		0.99		0.99		0.99	
RMSEA	0.05		0.05		0.05		0.06	
R^2	0.02	0.08	0.06	0.22	0.01	0.07	0.02	0.15

Note: Standard errors in parentheses.

* $p < .05$; ** $p < .01$; *** $p < .001$, two-tailed