Master's Program in Economic Development and Growth (MEDEG)

Self-Selection and Wage Consequences among Undocumented Central American Migrants in the United States

The Case of Nicaraguan, Guatemalan, and Salvadorian Migrants

by

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Abstract: After the U.S. intervention, civil wars, and growing violence during the late 20th century, migration from the Central American countries to the U.S. increased rapidly in the 1980s, especially illegal migration. The Nicaraguan Adjustment and Central American Relief Act (NACARA) granted Nicaraguans permanent residency, while the others could apply "only" for asylum or were not even mentioned. In this study, I use household data from the Latin American Migration Project survey to analyze which factors encouraged U.S. migration in the first place, which factors stimulated illegal border crossing, and whether the illegal status of Central American migrants was related to U.S. wages. I investigate El Salvador, Guatemala, and Nicaragua together and then separately to compare them. Using descriptive and empirical analysis, I find a positive selection of highly educated Nicaraguans in the U.S. In contrast, lower but not non-educated Guatemalans and Salvadorians self-select into migration. Guatemalans with prior labor experience are likely to migrate legally into their first migration. Guatemalans with a high-skilled occupational position prior to their last migration are likely to migrate legally, while Salvadorians with a high-skilled previous job are much more likely to migrate illegally, possibly due to their disadvantaged treatment under NACARA. The next result of Guatemalan and Salvadorian migrants being more likely to have an illegal status compared to Nicaraguan migrants confirms this. I find no significant relationship between U.S. wages and illegal status, possibly due to few observations.

Keywords: Migration, NACARA, Nicaragua, Guatemala, El Salvador, United States, Self-Selection, Wages

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1 Introduction

Migration is an essential topic in the wake of global economic, social, political, and technological change (IOM, 2021). Currently, the number of international migrants amounts to 281 million people or 3.6% of the world's population, two-thirds of whom are labor migrants (UN DESA, 2021). Globalization promotes the interconnection of different places; innovative technologies reduce distances between them, thus stimulating migration. However, migration patterns do not always stem from a positive context. Under unfortunate circumstances, such as conflict, war, extreme violence, economic and political instability, and environmental dangers, people are forced to leave their countries of origin (IOM, 2021). Crises as in Syria and recently in Ukraine push people to leave everything behind and start a new life in a different country.

While migration can change population structures and labor markets in both the sending and receiving countries, the type of the influence may depend on which part of the population decides to migrate. Among other things, migrants bring their human capital to the destination country. Even in crises, people select themselves out of their home country's population into certain destination countries. For example, higher-income households can afford long-distance trips to establish themselves in a higher-income country.

The migration literature deals with characteristics of migrants, what happens after migration in the origin and destination countries, and whether migrants establish themselves in the destination country worse, the same, or better than before migration. External influences may make the migration process easier or more difficult for migrants and affect the selection process. This thesis addresses this self-selection process and delves into the consequences of undocumented migration by investigating the Central and U.S. American context.

1.1 Research Problem

In 2019, the stock of Mexican and Central American[1] migrants in the United States (U.S.) amounted to 14.7 million (Migration Policy Institute, Data Hub, n.d.B). Migrants from Mexico represent 75% and therefore the largest part of this number. However, the composition of the migrant stock in the U.S. has changed in recent years as more and more Central Americans enter the U.S. In 2019, around 23.8% of the stock of U.S. migrants comes from Nicaragua, Guatemala, El Salvador, and Honduras (Migration Policy Institute, Data Hub, n.d.B).

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[1] In this paper, I refer to Nicaragua, El Salvador, Guatemala, and Honduras (later excluding Honduras) as Central America. Although Belize, Costa Rica, and Panama also belong to Central America, they are not included for reasons of simplification and irrelevance to the purpose of this study.

From the literature, we know that migrants are not randomly selected from the population of the origin country (Borjas 1987; Borjas et al., 2019). These findings have especially been salient in the case of the U.S. labor market (Borjas, 1987). Positive selection occurs when people from the upper tail income distribution of the origin country migrate to the destination country (Borjas, 1987). If, on the other hand, people from the lower end of the origin country's income distribution emigrate, then we speak of negative selection.

Many of U.S. immigrants have crossed the border without legal papers and are thus undocumented and classified as illegal or unauthorized immigrants (Massey et al., 2014).[2] The undocumented status masks disadvantages, as vital public goods such as the health care system cannot be accessed (Hacker et al., 2015). Besides, undocumented migrants may suffer from discriminatory labor conditions since they are not protected by law and are often exploited in the labor market (Massey & Gentsch, 2014; Rivera-Batiz, 1999). In addition, unauthorized migrants have gained a bad reputation in public opinion in recent years, which has been used for political campaigns such as in the 2016 Trump election (Farris & Silber Mohamed, 2018).

Mexican immigration has a long history with the U.S. and is mainly related to labor migration (Massey & Durand, 1992). In contrast, the origin of the ever-increasing migration of Central Americans was shaped by the Cold War and the associated civil wars in the Central American countries (Massey et al., 2014). The resulting violence, instability, and low prospects of economic opportunities in Nicaragua, Guatemala, El Salvador, and Honduras led to waves of migration to the U.S. (Lundquist & Massey, 2005; Massey et al., 2014). Emigration was particularly prevalent when the contra wars erupted around 1983 and peaked around 1988 (Lundquist & Massey, 2005). From 1980 to 1990, the absolute number of Central American migrants in the U.S. tripled to quintupled, depending on the country (Migration Policy Institute, Data Hub, n.d.). With that, the number of illegal immigrants increased. Stricter laws were imposed to stop the inflow of undocumented migrants (Massey et al., 2014).

The goal of ending illegal immigration seemed challenging. The Nicaraguan Adjustment and Central American Relief Act (NACARA) of 1997 intended to stop illegal immigration and reduce the stock of illegal migrants from Central America. Under the NACARA, Nicaraguans could obtain permanent residency without having to apply for hardship, while El Salvadorians and Guatemalans could "only" apply for asylum (Eig, 1998). The legislation did not cover Hondurans. Therefore, Nicaraguans received priority and preferential treatment under the

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[2] In the following, I use the words "illegal", "undocumented", and "unauthorized" immigrants interchangeably. I do not wish to express any offensive hostility or judgment here toward those who fall under these terms. I distinguish the groupings only for the sake of simplifying the thesis.

NACARA (Eig, 1998). As a result, in 1998, the stock of undocumented Nicaraguan immigrants decreased, while that of Guatemalans, Salvadorians, and Hondurans rose (Massey et al., 2014).

U.S. migrants from Nicaragua, Guatemala, and El Salvador could have similar migration patterns due to their political backgrounds. However, the patterns could also be country-specific, thus leading to differences in migrant selection. The selection between legal and illegal migration can also vary from country to country. Furthermore, the experiences in the destination country can vary among the migrant groups, which may be reflected in their wages. The wage disparity could be due to different treatment in the U.S. based on origin.

1.2 Motivation

The continuous increase in Central American immigration to the U.S. creates a research gap this thesis seeks to fill. The unanswered question is: Which part of the population of the three Central American countries migrated to the U.S.? Moreover, the NACARA legislation provided benefits to Nicaraguans in the U.S. by granting them documented status. The advantage legal permanent residency allows holders to work and live in the U.S. (USCIS, 2022). The holders can demand minimum wage, enjoy a fairer relationship with their employer, are mobile within the U.S., and can build their human capital, while Guatemalan and Salvadorian migrants may be limited by their possible undocumented status.

The literature on U.S. migration from Latin American often focuses on Mexican migration to the U.S. However, it is not possible to infer Central American migration from empirical findings on Mexican migration since migration histories are too nuanced across regions (De Haas et al., 2020, p. 71). In contrast to the Mexican context, persecuted Central American migrants cannot return to their politically unstable countries. Moreover, the U.S. had a direct influence on political developments in all three countries and is thus tied to Central American history.

To my knowledge, there has not been research with a country-specific and comparative focus on the selection of Nicaraguan, Guatemalan, and Salvadorian migrants to the U.S. using the Latin American Migration Project (LAMP) survey data. Furthermore, there is no direct cross-country comparison between undocumented immigrants from Nicaragua, Guatemala, and El Salvador in the U.S. under the NACARA legislation. Kaushal (2006), while examining the three countries and analyzing the amnesty program, uses a different data set, namely the population survey, examined a different period (1996-2002), and most importantly, grouped all three countries together. Contrary to my paper, Kaushal (2006) assumed that all three countries had the same eligibility for the amnesty under NACARA since he does not differentiate between

the countries and the differences in treatments under NACARA. In contrast, I evaluate the countries separately, noting that Nicaragua has received preferential status under NACARA.

1.3 Aim and Scope

The narrative of this thesis will guide the reader through Central American migration to the U.S. by first highlighting the selection between migrants and non-migrants. Secondly, I examine the selection between legal and illegal migrants from Central America in the U.S. Then, I assess the relationship between illegal status and the corresponding U.S. wages. Finally, I aim to identify differences in the documentation status between Nicaraguan, Guatemalan, and Salvadorian migrants in the U.S. given that Nicaraguans received legal status in the U.S. under the NACARA of 1997. Thereby, I investigate whether the U.S. wages reflect these different treatments. I use LAMP data to understand the U.S. migration flows from Central America.

Overall, this study contributes to existing literature on Central American migration by shedding light on the key determinants of Central American migration to the U.S. In addition, policy advances in the form of laws and legislation that allow illegal migrants to convert their undocumented status to documented status and expand their opportunities may provide new insights into the importance of legal status. Therefore, the research questions of this thesis are:

1. *What demographic and socio-economic factors played a role in the selection of Nicaraguan, Guatemalan, and Salvadorian migrants in the U.S.?*
2. *What factors led to differences in selectivity between legal and illegal migrants from Central America in the U.S.?*
3. *Is illegal status of Central American migrants related to their U.S. wages at the time of migration?*
4. *Are Guatemalans and Salvadorians more likely to migrate illegally under NACARA than Nicaraguans, and is this reflected in U.S. wages at the time of migration?*

2 Central American Immigration to the U.S.

2.1 U.S. Immigrant Legislations

Immigration has always been vital for the U.S. economy (Migration Policy Institute, 2022B). From 1880 to 1930, the immigration flows from Europe and Canada led to a rise in the number of foreign-born people in the U.S.[3] The Immigration Act of 1924 established a restrictive and discriminatory system that tightened "national origin" quotas (Immigration and Ethnic History Society, 2019). In the wake of civil rights movements, the Immigration and Nationality Act of 1965 replaced the quota system with a preference system, particularly for family reunification, marking an end of preferences for European immigration (Migration Policy Institute, 2022B).

Since the 1970s, there was a rapid increase in migration primarily from Latin America and Asia, also involving undocumented migration (Migration Policy Institute, 2022A). The Immigration Reform and Control Act of 1986 (IRCA) addressed this by investing in border controls, penalizing employers for hiring illegal migrants, and providing amnesty. Yet, the number of illegal U.S. migrants rose. (Orrenius and Zavodny, 2003). The following Illegal Immigration Reform and Immigrant Responsibility Act of 1996 (IIRIRA) permitted authorities to tighten immigration controls (Immigration and Ethnic History Society, 2019). In 1997, the Nicaraguan Adjustment and Central American Relief Act (NACARA) granted legal permanent residence to Nicaraguans and the opportunity to Salvadorians and Guatemalans, who had fled violence and poverty in the 1980s, to apply for asylum (Immigration and Ethnic History Society, 2019).

2.2 Who Migrates to the U.S.?

To answer the question posed in the subheading, Figure 1 not only shows the absolute increase in the immigrant population, but also categorizes immigrants by their country of birth. In 1960, European immigrants represented the largest group of origin covering 7.3 million people. The number decreased to 4.7 million people in 2019. Compared to the other regions of origin, the number of Latin American immigrants increased the most. In 1960, Latin Americans accounted for less than a million people in the U.S. In 2019, the number exceeded 22 million, representing the largest share of immigration by origin. Table 1 highlights the largest representative groups of the Latin American community in the U.S.: Mexico and Central America.

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[3] I use "foreign-born", and "immigrant" interchangeably as suggested by the Migration Policy Institute (2022A). It describes people without U.S. citizenship at birth and involves naturalized citizens, authorized permanent residents, refugees, asylum seekers, individuals on temporary permits, and undocumented or unauthorized immigrants.

Figure 1 - U.S. Immigrant Population by Region and Country of Birth, 1960-2019
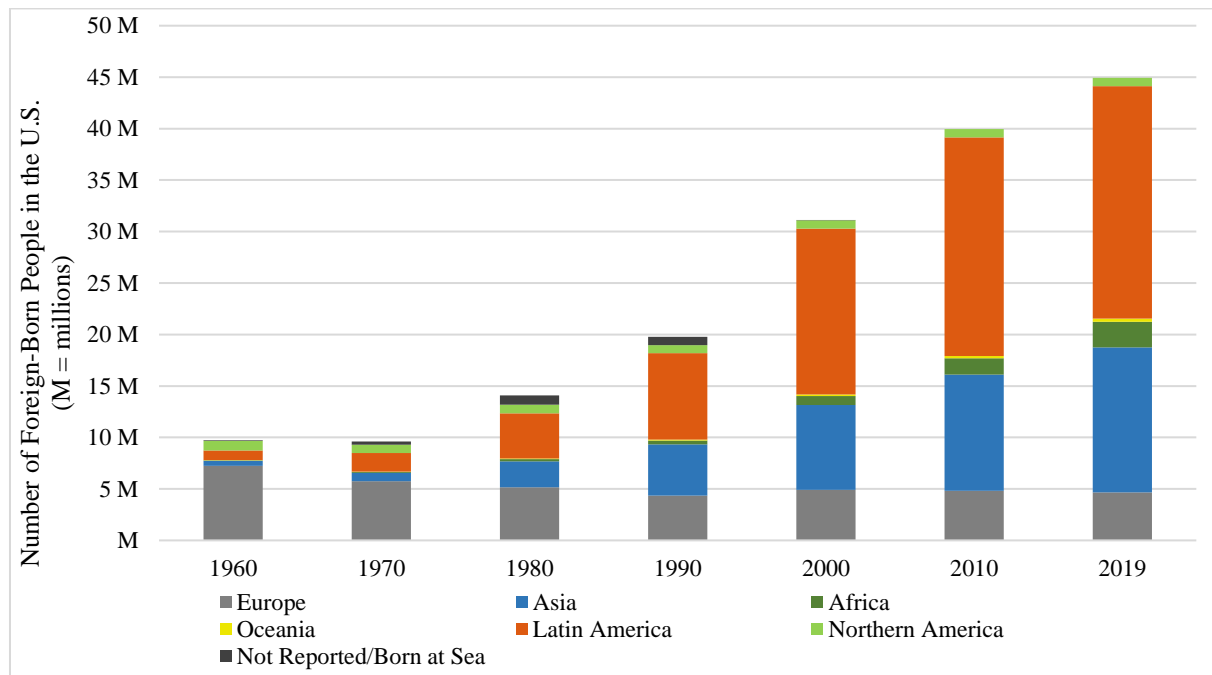
Source: Migration Policy Institute (MPI) Data Hub (n.d.B). based on U.S. Census Bureau (n.d.) American Community Survey (2010-2019); Decennial Census (1970, 1980, 2000); Gibson, C. J. & Lennon, E. (1999) Historical Census Statistics on the Foreign-Born Population of the United States: 1850 to 1990, *working paper*, no. 29

Table 1 - Decadal Stock of Latin American Migrants in the U.S.

	1960	1970	1980	1990	2000	2010	2019
Caribbeans	193,922	675,108	1,258,363	1,938,348	2,953,066	3,730,644	4,494,211
Mexico & C.A.	624,851	873,624	2,553,113	5,431,992	11,203,637	14,763,612	14,714,249
South America	89,536	255,238	561,011	1,037,497	1,930,271	2,729,831	3,379,779
Total	*908,309*	*1,803,970*	*4,372,487*	*8,407,837*	*16,086,974*	*21,224,087*	*22,588,239*

Source: Source: Migration Policy Institute (MPI) Data Hub (n.d.B). based on U.S. Census Bureau (n.d.) American Community Survey (2010-2019); Decennial Census (1970, 1980, 2000); Gibson, C. J. & Lennon, E. (1999) Historical Census Statistics on the Foreign-Born Population of the United States: 1850 to 1990, *working paper*, no. 29

2.3 Central American Migration to the U.S.

Among Mexican and Central American migrants, Mexicans represent the largest group, however the relative share of Mexican immigrants has declined. Massey et al. (2014) outlined that the undocumented migration from Mexico ended. Instead, that of Central America will grow due to future family reunification processes since Salvadorians, Guatemalans, Hondurans, and Nicaraguans fled to the U.S. during the Central American crisis, (Hamilton & Chinchilla, 1991; Massey et al., 2014). Increasing tensions between the peasants and the elite in Central America as well as the Cold War, during which the U.S. intervened, led to these migratory movements. Fear of a communist uprising in America led the U.S. to weaken leftist regimes

and support right-wing regimes by providing financial aid, training soldiers, and supplying arms (Argueta Guevara, 2019; Massey et al., 2014).

El Salvador

The Salvadorian civil war started in late 1979 after a military coup and lasted 12 years, resulting in systematic violence and perpetual terror among civilians (United Nations, 1993). Arbitrary arrests, assassinations, and the disappearance of leaders of opposition movements were common practices during the civil war (United Nations, 1993). Five leftist *guerilla* organizations formed the Farabundo Martí National Liberation Front (FMNL) in the 1980s, which posed a political opponent to the Salvadorian government (United Nations, 1993).[4] The U.S.-supported right-wing military government fought against the left-wing guerillas during the civil war period in the 1980s (Argueta Guevara, 2019). Salvadorians fled the country and searched for a secure livelihood in the U.S (Argueta Guevara, 2019). Trauma from the civil war, hardship of sustaining themselves due to exploitive work in the U.S., illegal status, risks of deportation, and the lack of prospects fostered the formation of Salvadorian gangs (Roumie, 2017). In 1990, the IIRIRA permitted the deportation of U.S. migrants with a criminal record (Roumie, 2017). Back in El Salvador, where institutional and law enforcement structures were weak, the gangs have re-established themselves and became more violent (Roumie, 2017). Until now, gang violence in El Salvador perpetuates outmigration (Argueta Guevara, 2019).

Guatemala

In Guatemala, the U.S. aimed to overthrow the leftist government of the 1951 democratically elected president Jacobo Árbenz who aimed to tackle inequality by introducing an agrarian reform that intended to redistribute land to farmers (Jonas, 1996). This conflicted with the economic interests of the largest landowner in Guatemala, the United Fruit Company owned by the U.S. (Bucheli, 2008). After a U.S.-backed coup, the right-wing military took over the government (Jonas, 1996). The leftist opposition grew with significant involvement of the Indigenous population until the situation degenerated into a 36-year civil war in 1960. More than 200,000 people died and 45,000 disappeared (Ball et al., 1999). The Indigenous Mayan population suffered the most casualties. (Ball et al., 1999). The 1976 Guatemala earthquake exacerbated the economy (Ball et al., 1999). The catastrophic humanitarian situation led to people fleeing war and poverty to the U.S. (Ball et al., 1999; Jonas, 1996).

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[4] Guerrillas are unofficial military groups and aim to launch unexpected and sudden attack on the immobile official military to change the government (Cambridge University Press, n.d.).

Honduras

Salvadorian immigrants in Honduras experienced increased resentment from the Honduran population due to perceived competition in the home labor market (Cable, 1969). Due to increased pressure from farmers, the Honduran government implemented a land reform, to redistribute land from areas illegally occupied by Salvadorians (Cable, 1969). This left some Salvadorians with no choice but to leave their longtime residence. Increased political tensions eventually erupted in a war between El Salvador and Honduras, harming both neighboring economies (Cable, 1969). During Reagan's presidency, the U.S. attempted to overthrow the communist Sandinista government in Nicaragua by supporting right-wing guerrillas (Meyer, 2016; Shepherd, 1984). To this end, the U.S. stationed U.S. American soldiers in Honduras and militarized the country (Shepherd, 1984). Hondurans suffered from political repression, corruption, and governmental violence causing migration to the U.S. (Meurs, 2020).

Nicaragua

Augusto Cesar Sandino was a left-wing Nicaraguan guerrilla leader who opposed the U.S. military presence in Nicaragua (BBC, 2018). In 1934, Sandino was assassinated on the orders of the military commander Anastasio Somoza Garcia (BBC, 2018). In 1937, the commander was elected to be president. The U.S. financially supported Somoza's right-wing government, which radicalized over time (Peace, 2010). In total, Anastasio Somoza ruled the dictatorship for 44 years. After his assassination, he was succeeded by his son (BBC, 2018). The leftist Frente Sandinista de Liberación Nacional (FSLN) party formed in 1961. The party overthrew Somoza's dictatorial government and took over the governance. The U.S. supported the right-wing rebel groups called *contras* by establishing military stations in Honduras (Massey et al., 2014; Shepherd, 1984). From 1981 to 1990, the Contra War between the two parties led to political distress and economic difficulties resulting in outmigration (Peace, 2010).

Violence and war spread through Central America in the 1980s. Central Americans emigrated to the U.S., even illegally (Lundquist & Massey, 2005). The NACARA of 1997 gave Nicaraguans preferential access to permanent residence (Marín Abaunza, 1998). Guatemalans and Salvadorians could apply for an extension of their stay and asylum. For the admission, they had to meet several conditions (Massey et al., 2014). Hondurans were not offered the prospect of possible legal immigration. Overall, it was therefore possible for Nicaraguans to convert their undocumented to documented status, while it was challenging or impossible for the others. Illegal Nicaraguan immigration decreased, whereas illegal immigration from El Salvador, Guatemala, and Honduras increased.

3 Theory and Literature Review

3.1 Theoretical Approach

3.1.1 Push-Pull Theory

The push-pull theory of Lee (1966) includes reasons that lead people to emigrate (*push*) from their home countries to another country. It also considers factors of the destination country that attract (*pull*) people from their home countries. These factors can be of environmental, social, economic, or political nature. Potential push factors are for example growing population density, few economic prospects, and political uncertainty in the origin country (De Haas et al., 2020, pp. 45-46). Pull factors involve labor demand, land availability, economic opportunities, and political security in the destination country. In El Salvador, Guatemala, Honduras, and Nicaragua civil war, violence, and political and economic deterioration represent push factors that led to outmigration. Pioneering migrants may have established social networks in the U.S. and therefore increased the attractiveness of the destination. Besides, the U.S. represents the closest high-income country for Central Americans. Occupational opportunities, political stability and border crossing options established by Mexicans are additional pull factors. However, many Central Americans decide to stay due to obstacles that lead to selectivity. A lack of sufficient physical capital, different migration aspirations, and political and environmental barriers may limit migration behavior of certain individuals (Carling, 2002).

According to Lee (1966), migration is indeed selective. People react differently to push and pull factors out of personal preferences or social conditions (Lee, 1966). The author highlights that those migrants responding to pull factors in the destination country are selected positively, while those migrants led by push factors are negatively selected. The more difficult the obstacles get, the more it intensifies positive selection (Lee, 1966). Applying this to Central American immigration suggests an interplay between negative and positive selection. Due to the conflict, people emigrate because of push factors when they are forced to leave. Others might be affected by pull factors. Since the trip to the U.S. is long and costly, one might expect high-income individuals to leave. In contrast, pull factors of *illegal* migration are small. This is because illegal migration is not necessarily the mode of migration potential migrants prefer due to the disadvantages that come with undocumented status, such as the risks of deportation and labor market discrimination. According to the push-pull theory, if pull factors are small, but push factors are larger, the lower end of the income distribution of the population emigrates. Hence, illegal migrants are negatively rather than positively selected. Thus, the less-educated

migrants might self-select into illegal migration and therefore potentially receive lower income in the U.S. In contrast, the economic opportunities of legal migrants indicate positive selection.

According to Skeldon (1990), a push-pull model lacks a framework. Its descriptive nature does not link push and pull factors. With this theory, it is difficult to explain why emigration and immigration occur simultaneously (De Haas et al., 2020, pp. 45-46). The model considers vital but insufficient factors for describing migration flows between Central America and the U.S.

3.1.2 Neoclassical Migration Theory

The neoclassical migration theory, inspired by Torado's (1969) neoclassical theory equates labor supply and demand in two regions. On a micro-level, the theory is based on individual decisions by rational actors who aim to maximize their income (De Haas et al., 2020, p. 46). According to this theory, decision-makers conduct a cost-benefit analysis to choose the destination country. On the macro-level, the allocation of production factors leads to an eventual wage convergence. Interregional wage differences lead to migration between the regions until wages of the regions converge. A region with labor surpluses and therefore lower wages pushes people to the region with labor deficits and therefore higher wages (De Haas et al., 2020, p. 46). On the micro-level, migrants from Central America aim to maximize their income. In contrast to the crisis region of Central America, this is achievable in the U.S. On the macro-level, the interregional wage differentials due to the instability in Central America attract migrants to go to the U.S., which has higher wages and potentially also a labor deficit.

In terms of self-selection, the individual cost-benefit analysis may be different between those belonging to the upper tail and those belonging to the lower tail of the income distribution since the former might be able to afford the costs of migration. Moreover, the benefits can be disproportionate depending on the labor market opportunities of positively selected migrants.

Torado and Maruszko (1987) extend the neoclassical framework for illegal migration and include the risk of deportation, and the degree of wage discrimination against illegal migrant workers into the equation. This means that undocumented migrants consider these factors in their cost-benefit analysis. Since the costs of illegal migration are higher, the benefits must also be higher for people to decide to migrate. This is realistic in the Central American context, where constant exposure to danger is not an option for many to stay in the origin country. According to Massey & Riosmena (2010), the increased U.S. enforcement in terms of unauthorized border crossing led to higher immigration costs. However, the gains of living and working in the U.S. with an illegal status are still higher than the costs and therefore continued to attract Central Americans.

Nevertheless, the assumption that individuals base their decision rationally on cost-benefit analysis is unrealistic (De Haas et al., 2020, pp. 47-48). Especially in the context of undocumented migration from Central America to the U.S. in which migrants flee from a highly unstable country expecting no earnings. Moreover, it is unrealistic that migrants know the exact wage level of the destination country to perform a cost-benefit analysis. Therefore, the neoclassical model does not cover all crucial factors that influence migration.

3.1.3 Human Capital Theory

Complementing the neoclassical theory, the human capital theory states that migration is a type of investment (Sjaadstad, 1962). A human actor is willing to undertake this lifetime investment if the beneficial returns of higher wages in the future outweigh the costs of migration (Chiswick, 2000). For young, motivated, and highly skilled people, this cost-benefit differential may be higher than for older, less motivated, and lower-skilled people, thus explaining that the former tends to migrate more (Chiswick, 2000). This positive self-selection leads to conducive future human capital productivity (De Haas et al, 2020, p. 47). The opportunities in a different region offer the human agent to expand her or his education, labor experience, financial assets, and therefore improve his or her human capital productivity. Migrating to the U.S. may be a costly investment for Central American migrants. However, following the theory, migrants assume the future returns to be higher than the costs of migrating. In addition, Central Americans can build their human capital in the U.S., while they are limited in doing so in their home countries.

This theory might also explain selectivity between migrants. Often migrants from a specific country share certain socio-economic and demographic characteristics. Since the trip to the U.S. from Nicaragua is farther away than for example the trip to neighboring Costa Rica, more educated, higher-skilled, and richer migrants can financially afford the former trip. Positively selected immigrants can then further expand their human capital in the U.S. Considering that a lot of the Central American migrants crossed the border without documents, even with stricter U.S. immigration policies, the investments to increase the human capital productivity seem to be more important than for example the risks of being deported. Especially young and motivated people are willing to expose themselves to these risks according to this theory.

The theories assume that people from all socio-economic classes can migrate, but often only wealthier people can only afford an expensive migration journey (De Haas et al., 2020, p. 47). Besides, the theories assume that an isolated individual decides to migrate. However, this is often not the case.

3.1.4 New Economics Labor Markets (NELM)

In developing countries, usually an entire household decides for one or more family members to migrate (Stark, 1978). Here, it is not necessarily important to maximize wages, but to diversify the household income and minimize income risks (Stark & Levhari, 1982). In this theory, a communal comparison can also lead to migration (Czaika & de Haas, 2012). The mere fact that other people from the community have a higher standard of living thanks to migration can motivate people to migrate themselves. This can also explicate why people migrate within their origin country, which is a phenomenon in Central America described by Escamilla García (2021). Gang violence, labor exploitation, and lacking security drive young people to migrate domestically before eventually deciding to relocate internationally (Escamilla García, 2021). Hence, previous migratory experience may influence the selection of U.S. migrants.

Some Nicaraguans gravitate toward Costa Rica over the U.S., as these migrants may long for immediate social security than for higher incomes. Lundquist and Massey (2005) explore, that political migrants prefer the U.S. over Costa Rica since they are more willing to go farther away. Hence, individual preferences also play a role, which are neglected in the NELM theory. Under NELM, the migrant's documented or undocumented status does not necessarily impact income diversification. But if the goal is to mitigate income risks, having a documented status can be advantageous to ensure stable income without risks of deportation.

3.1.5 Migration Network Theory

The following theories focus on the internal dynamics during migration. In the migration network theory, prospective migrants are motivated to move to the destination country because migration networks have already formed there (De Haas et al., 2020, p. 65). The social ties and connections with other migrants help potential migrants to obtain information about the journey and facilitate the migration process. Massey et al. (1998) coined the term location-specific social capital, which helps potential migrants reduce the economic, social, and psychological costs of migration. Social capital includes information, arranging travel, finding a job, and housing, and integrating into the new country, thus reducing barriers to successful integration.

The theory cannot explain the initiation of migration (De Haas, 2010, p. 70). It presupposes a pre-existing network. In Central American migration, there were pioneer migrants who were the first to take the plunge without having direct networks with people from Nicaragua, Guatemala, and El Salvador. Perhaps the network of Mexican migrants helped Central Americans facilitating the migration process, since there is no language barrier between them.

3.1.6 Migration Systems Theory

Migration systems theory assesses how migration is linked to prior relationships between the origin and destination country (De Haas et al., 2020, p. 68). As the U.S. intervened in Central America through military occupations and cooperation with right-wing governments during the Cold War, this may have created ties between the economies.

Cumulative Causation

Changes in social and economic structures due to migration can trigger additional migration (Massey, 1990). Established migrants in the destination country send remittances to their community which can increase inequality at the community level resulting in further migration (De Haas et al., 2020; Czaika & de Haas, 2019). In addition, large and successful waves of migration can influence the culture of the country of origin so much that non-migration becomes an indication for failure (Massey et al., 1993). This may reinforce why Mexicans and Central Americans continue to migrate even though U.S. immigration laws became stricter. Young people from Mexico already assume that one day they will live and work in the U.S. (Kandel & Massey, 2002). Since Central American migration to the U.S. continues and will continue due to family reunification, it may also adapt to their culture (Massey et al., 2014).

3.2 Previous Literature

3.2.1 Self-Selection among Migrants and non-Migrants

Through research, we know that people do not migrate randomly. Instead, they often represent a specific part of the population of the home country (Borjas, 1987; Borjas et al., 2019). According to Borjas (1987), if the income distribution in the country of origin is more unequal than in the destination country, negative selection occurs. In the Central American context, the income distribution is more unequal than in the U.S.; thus, following Borjas' (1987) theory, migrants self-select negatively into migration. This contradicts the push-pull theory since according to it, attractive pull factors such as a more equal income distribution in the destination country should stimulate positive instead of negative self-selection. However, Central Americans at the richer end of the income distribution have lower incentives to emigrate because they do not necessarily suffer from inequality, while the poorer would fare better in a more equal society like the U.S. To emphasize this, Brücker and Defoort (2003) find that if the inequality is larger in the origin than in the destination country, migrants positively select themselves in terms of skills. Moreover, Central American migrants have less costly options to migrate to countries nearby. This circumstance might filter the migrants. According to Brücker and Defoort (2003), higher migration costs and selective immigration policies increase the skill

level of migrants compared to non-migrants. Hence, with increasingly restrictive U.S. immigration policies and high journey costs, higher-skilled Central Americans might select themselves into U.S. migration. Therefore, the push-pull theory alone is not sufficient to explain the dynamics of Central American migration. The possibility to maximize one's own income plays a role which is in accordance with the neoclassical model.

Lundquist and Massey (2005) examine the political and economic backgrounds of Mexican and Central American immigrants. The decision to migrate either to Costa Rica or to the U.S. involves a selection process. Conservative Nicaraguans who can identify with the political ideology of the Americans are more likely to seek protection in the U.S. and are also therefore willing to travel farther away (Lundquist & Massey, 2005). The socio-political connection to the U.S. and the ability to finance the journey creates the impression that it is primarily the more educated who emigrate. Flores (2010) examines U.S. immigrants from Guatemala, Mexico, Costa Rica, and Nicaragua and their transferability of human capital – that is, the extent to which an immigrant can take his or her human capital with them to the destination country and deploy it there. In this assessment, Nicaraguans turned out to be on average more educated and were more able to translate their human capital to higher-skilled U.S. occupations (Flores, 2010). In Lundquist & Massey's (2005) study, lower-skilled Nicaraguans migrate to Costa Rica because it is cheaper to travel to the neighboring country. The question here is whether this selection also occurs in Guatemala and El Salvador.

Despite the danger to the *entire* Central American population, Aksoy and Poutvaara (2021) find a positive selection bias among refugees. It is primarily men with higher education and higher income expectations who choose to migrate. Among refugees, females represent an irregular group of migrants (Aksoy & Poutvaara, 2021). Another demographic factor shaping migration is the age of a potential migrant. Escamilla García (2021) found that young and motivated people usually decide to migrate and is thus in accordance with the human capital theory. I consider the gender and age bias of Central American migrants in my empirical model below.

3.2.2 Self-Selection among Legal and Illegal Migrants

Massey and Riosmena (2010) discuss undocumented Latin American migration with increasing U.S. enforcement. The imposed policies have increased the costs of migration. However, the unauthorized immigration flow did not stop. Hence, according to neoclassical migration theory, although the costs of migration have risen, the returns of undocumented migration have not been outweighed. Moreover, the social capital theory predicts that larger networks have already been established which can fuel migration dynamics. Since migration theories are not mutually

exclusive, the increase in costs due to increased policy restrictions and the decrease in costs due to social ties may have offset each other (Massey et al., 1998).

Unauthorized border crossing bears risks potential migrants perceive and evaluated differently, which could affect the selectivity of undocumented migration. Massey and Riosmena (2010) highlight the selection of undocumented migration of Latin Americans in the U.S. When it comes to undocumented migration, educated people select themselves into internal over international migration. Educated people are aware of the disadvantages when entering a country without documents and thus refrain from it (Taylor, 1987). Therefore, educated people who still want to migrate to the U.S. might enter the country on a tourist or any other temporary visa (Massey & Riosmena, 2010).

Riosmena (2010) analyzes the transition into legal permanent residence status of Mexicans, Dominicans, and Nicaraguans in the U.S. The author explains that cross-country differences are based on the conditions for initial emigration and the country-specific immigration policy context faced by migrant pioneers (Riosmena, 2010). The case of Nicaragua, Guatemala, and El Salvador must be similar since all three countries were exposed to major episodes of civil war, violence, and political instability. According to Riosmena (2010), another reason for cross-country differences among Latin American immigrants is the social ties and networks created in the destination country which perpetuates increasing flows of legal immigrants. Thus, if increasingly Nicaraguans became legalized under the NACARA, this can positively influence legal migration flows from the perspective of Nicaraguan immigrants whereas El Salvadorians and Guatemalans might not be able to establish social ties with legalized immigrants from their origin country. However, Guatemalans and El Salvadorians may establish social ties to the documented Nicaraguan immigrant community. Moreover, potential migrants can be sponsored by family members who are legally established in the U.S. (Riosmena, 2010). The more Nicaraguans obtain legal residency, the more they can support other family members. This may create divergent trends between Nicaraguans and non-Nicaraguans.

3.2.3 Wage Differentials among Legal and Illegal Migrants under NACARA

Concerning wage differentials between migrants with and without a documented status, the literature shows inconsistent results. Flores (2010) compared the human capital transferability of Guatemalans, Mexicans, Costa Ricans, and Nicaraguans, whereby the latter reported most occupational benefits (Flores, 2010). The author relates better employment opportunities and higher wages of Nicaraguans to their U.S. residence legalization (Flores, 2010).

Hall et al. (2010) assess wage disparities related to the legal status of Mexican immigrants. They divide respondents into four groups: Mexican immigrants with legal status, Mexican immigrants without legal status, native-born Mexican Americans, and native non-Latino whites (Hall et al., 2010). After controlling for human capital and occupational status, the wage gap between documented and undocumented Mexican male immigrants is 8% to the disadvantage of the latter; the wage gap for their female counterparts is 4% to the detriment of illegal Mexican immigrant women (Hall et al., 2010). Undocumented Mexican immigrants have the lowest wage earnings and experience sluggish wage growth over time, highlighting wage advantages of documented migrants over undocumented migrants. Therefore, the NACARA might have been useful for Nicaraguans, however not so much for Salvadorians and Guatemalans.

Bailey (1985) finds that legal status only has an indirect impact on the labor market impact of migrants. This indirect impact stems from the fact that legal status facilitates unionization, which can positively affect the labor rights of legal migrants (Bailey, 1985). In contrast, undocumented migrants refrain from forming unions because of the risk of deportation. Moreover, undocumented immigrants are willing to work at a lower wage and are thus more vulnerable to the labor market (Bailey, 1985). Massey (1987) examined the influence of legal status of Mexican immigrants in the U.S. on wages and finds no significant relationship when controlling for duration of employment, skills, relationships with legal migrants, and English proficiency, in which illegal migrants perform worse (Massey, 1987). In contrast, Borjas and Tienda (1993) found that legal migrant earnings are 30% higher than those of illegal migrants from the same origin. In this thesis I aim to update literature and examine the association of wages and the undocumented status of Nicaraguan, Guatemalan, and Salvadorian migrants.

3.3 Hypotheses

Through theory and literature, the following hypotheses emerge.

1) *Highly educated Central American men with previous migratory experience positively select themselves into U.S. migration.*

Usually, it is the male population that emigrates. Since traveling to the U.S. is expensive and the immigration policies have become more restrictive, I expect migrants who also meet the U.S. labor demand to migrate. This allows better educated people to settle in the U.S. Selection can also play a role in the mode of border crossing. Therefore, I hypothesize:

2) *If a Central American migrant has better education, previous higher occupational status, and previous labor experience, then their migrant status is likely to be legal.*

Likely, migrants positively select themselves into legal migration, whereas illegal migrants negatively self-select. Central Americans with a higher educational and occupational status can not only afford the trip to the U.S. but also evaluate the disadvantages of an illegal status more strictly and therefore prefer legal migration. In contrast, the negatively selected illegal migrants may suffer under the undocumented status. Because of discriminatory working conditions and working below minimum wage, I propose that:

3) *There is a negative relationship between U.S. wages and illegal status among Central American migrants.*

Whilst the negatively selected illegal migrants face challenges in their migration process, the positively selected legal migrants might have higher-skilled and higher-paid occupations in the U.S. due to their higher education and previous work experience. Under NACARA, I expect Guatemalans and Salvadorians to represent the negatively selected illegal migrant group, while the Nicaraguans are likely to be legal migrants. The NACARA perpetuates the pull factors of migrating to the U.S. because Nicaraguans can receive legal permanent residency in a safer environment with higher occupational prospects. According to the neoclassical model, the NACARA lowers the costs of migration for Nicaraguans further stimulating legal migration. Finally, the more Nicaraguans establish themselves in the U.S., the more Nicaraguans will reunite later which is per the NELM and the migration system theory. In contrast, Guatemalans and Salvadorians do not benefit from legal migration stimulating factors. Instead, I hypothesize:

4) *Under NACARA, Guatemalan and Salvadorians are more likely to migrate illegally than Nicaraguans and thus their U.S. wages are lower.*

Legal papers offer the Nicaraguan migrants the opportunity to work in a non-exploitative environment. Wages can therefore be higher. Moreover, as hinted above, the higher occupational status of the Nicaraguans compared to the non-Nicaraguans is another advantage. In comparison, I expect Guatemalan and Salvadorian migrants to earn less than Nicaraguans.

4 Data and Descriptive Statistics

4.1 Source

I use the dataset of the Latin American Migration Project (LAMP) collected by Princeton University and Guadalajara University (Latin American Migration Project, n.d.). The project is based on the well-known Mexican Migration Project (MMP) of 1982, which aims to provide a historical overview of Mexican American migration (Mexican Migration Project, n.d.). Academics rely on the MMP dataset for their research, and it is therefore a scientifically recognized data source. The goal of LAMP is to extend the MMP and document Latin American migration flows (Latin American Migration Project, n.d.). The project follows an Ethnosurvey approach combining ethnographic fieldwork and survey sampling. The combination of a qualitative and quantitative method emphasizes the validity of the data since they compensate for each other's weaknesses (Massey & Capoferro, 2004). The questionnaire is semi-structured so the interviewer can decide when to ask which question (Latin American Migration Project, n.d.). Researchers are surveying households of randomly selected communities to collect sociodemographic and economic information on household members. The LAMP defines a U.S. migration as a trip in which a migrant works, seeks for work, or settles in other ways.

The sample of the communities includes regions of different sizes to ensure variety. Generally, 200 households per community are surveyed, unless the community is too small, in which case fewer households are interviewed. The surveyors list all households in rural towns and farming communities and obtain the samples from that census. In the larger regions, the researchers choose well-developed districts that are not affected by rural-to-urban migration and contain at least 1,200 residences. From these, they sample 200 households. Most traditional household studies would tend to survey a smaller number of households but in a higher number of regions (Mexican Migration Project, n.d.). However, then no generalization can be made about the communities. This project considers communities as a whole and covers a higher number of households and therefore a higher number of potential migrants. Therefore, generalizations can be drawn from the process of migration at the community level.

The interviews are divided into 3 phases (Latin American Migration Project, n.d.). The first phase lists all household members and their relationship to the household head. It records previous internal migratory experiences, the number of U.S. trips, precise information on the first and last trip, such as year, duration, employment, documented status, and U.S. wages. In the second phase, the household head provides information about child rearing, property,

housing, business, work, and migration. The third phase includes information on the experience of the last U.S. trip. From 2000 to 2002, LAMP data collected data on 9 communities in Nicaragua with 1,789 households and 11,168 individuals. In 2004, LAMP gathered data on 3 Guatemalan communities with 514 households and 2,813 individuals. The 2007 collected data assessed 4 Salvadorian communities covering 383 households and 2,047 individuals. Table A.1 in Appendix A provides an overview of the number of households assessed in each community.

The data sets include several files for each country separately (Latin American Migration Project, n.d.). Among them is the PERS file which compiles general and demographic information for each household member. The MIG file gives additional information about the migration experience of all heads. The MIGOTHER file reports about migrations of other household members. The HOUSE file lists the characteristics of the household, members, and assets. The LIFE file reports the labor history of the head, while the SPOUSE file does that for the spouse. This thesis makes use of the PERS, LIFE, and the SPOUSE files.

4.2 Dependent Variable

My dependent variables vary based on the research question. To answer the first research question, I use a dichotomous variable called "Ever migrated to the U.S." as the dependent variable, which takes the value of 1 if the variable on U.S. trips is greater than 0. If the individual has never traveled to the U.S., or the number of trips is unknown, the variable is classified as 0.

For the second research question, the dependent variable is whether the Central American migrant entered the U.S. illegally or legally. I assess both the first and last U.S. migration, separately. I use a binary variable taking the value 1 if the migrant crosses the borders without documents or false documents. The variable becomes 0 if the migrant entered the U.S. legally. If the data is unknown, I categorize the observations into legal migration.[5] Since some individuals never migrated to the U.S., the observations shrink significantly.

The third research question relates the illegal status to U.S. wages. The dependent variable is a continuous variable on U.S. wages at migration. Again, I evaluate both migration experiences. U.S. wages are reported in U.S. Dollars, however, with differing frequencies involving hourly, daily, weekly, biweekly, monthly, and annual wages. I convert them to hourly wages. Finally, I adjust the U.S. hourly wages to the Consumer Price Index (CPI) in the corresponding year, with a base year of 2004 since this is the latest year for which data are available for all three countries (World Bank, 2022). Thus, the U.S. wages earned by Nicaraguan, Guatemalan, and

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[5] That is 25 observations for first migration and 27 observations for last migration.

Salvadorian migrants are comparable over time. With the help of the second and the third regression I aim to answer the last research question, which will be explained below.

4.3 Independent Variable

Since I expect that the higher educated self-select into migration, I use total educational attainment in years as my main independent variable for the first regression (Aksoy & Poutvaara, 2021; Chiswick, 2000; Massey & Riosmena, 2010). As there are individuals who migrated to the U.S. at differing times and others did not migrate at all, I used total education years instead to get an understanding of the socioeconomic background of potential migrants and non-migrants. I categorized the years of education into the following educational stages: A person has completed primary school after 6 years, lower secondary school after 9 years and upper secondary school after 12 years. Tertiary education begins with the 13th school year. The categorization is as follows: First, I group those without data into "Missing". The second category are those who have no education or have not completed primary school. The next category involves those who have completed primary but not lower secondary school. This is also the reference group. The next category represents those who have completed lower secondary but not upper secondary school. Finally, I group those who completed upper secondary school into one group and those who started tertiary education into the last category.

In the second regression, the main independent variable is also the level of education, however at the year of first or last migration. I retrieve this by tracing the educational attainment of the household head and the spouse. The independent variable of regression 3 is the dummy variable for the documented status of the Central American migrant at first or last migration.

4.4 Control Variables

Since particularly the young decide to flee in crises, I control for the age groups (Escamilla García, 2021). For regression 1, I use age during the survey. If a person has not migrated, it takes the value 0. Otherwise, I group the persons aged from 0 to 17 years. The second category includes individuals aged 18 to 24 and represents the reference group. I group the following age groups at intervals of 10 years. The last category involves individuals 95 years and older. Additionally, I use demographic information as controls such as a female dummy. Moreover, I utilize a categorical variable for people who have ever been married in their lives. The categories are never married (reference group), ever married or in a consensual union, and missing values. Moreover, I account for those who were born in the U.S. by using a categorical variable including those who were born outside the U.S. (reference group) or missing values.

Since Escamilla García (2021) also found that previous internal migratory experience can drive subsequent international migration, I add a binary control variable that takes the value 1 if the individual has previous internal or international non-U.S. migratory experience. Otherwise, the value is 0. Moreover, I add a binary variable for household members other than the heads, spouses, and the children who have internal or international non-U.S. migratory experience. The migration experience potentially expands migration networks and reinforces information exchange between migrant and non-migrant family members stimulating migration of the latter.

Finally, I use lastly reported wages in the origin country that I convert into hourly wages. Additionally, I adjust the hourly wages for the country-specific CPI of the corresponding year. Finally, I convert hourly wages into country-specific US$ exchange rates for the corresponding year in which the individual reported his or her last occupation.[6] I generate a categorical variable to account for missing values, extreme outliers, and no wages. I group the other categories as 0 to 3 US$, 3 to 6 US$, 9 to 12 US$, 12 to 15 US$, 15 to 20US$, and above 20US$ per hour. The reference group is 3 to 6 US$ per hour. The differing survey years require a categorical control for the survey year of each household. The reference category is year 2000. Since I first assess all three countries together, I use a country category, in which Nicaragua is the reference group.

For regression 2, I use age at first or last migration. Moreover, I use a female dummy, the country, and the survey year control. Additionally, I use a categorical variable on both the occupation before first and last U.S. migration, which I group into high-skilled, medium-skilled, low-skilled, other occupations if not specified, and missing occupations. The medium-skilled are the reference group. Table A.2 lists the division of the occupational skill groups. I add a categorical variable on the labor experience in years before first and last migration. I group it into missing, 0 to 5 years, 5 to 10 years, 10 to 15 years, 15 to 25 years, 25 to 35 years, 35 to 45 years, and 45 years and above. Previous labor experience of 5 to 10 years is the reference group.

In the third regression, I additionally control for the occupation in the U.S. at first and last migration since Borjas (2003) found that skill distribution affected wages in both origin and destination countries. I categorize the occupational status as done above. Table A.3 displays the dependent, independent, and control variables containing brief explanations of the variables and, if applicable, the distinct categories and the reference categories.

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[6] For El Salvadorian Colón, I adjust the exchange rate from 2001 onwards to that of 2000. Due to the currency replacement in 2001, El Salvador now uses the U.S. Dollar as the official currency. For research purposes, I stick to the previous currency.

5 Models and Methods

5.1 Methodology

5.1.1 Binary Logistic Regression

For research questions 1 and 2, I use binary logistic regressions. Using the empirical analysis of the second regression, I also aim to partially answer the fourth one by specifically looking at the country variable to see whether Guatemalans and Salvadorians are more likely to migrate illegally. A binary logistic regression examines how a set of predictor variables is related to the dichotomous dependent variable Y (Harrell Jr., 2015, pp. 219-221). The response variable is dichotomous since Y can take the value of 0 or 1, while 1 represents the occurrence of the event and 0 signifies the opposite. The odds that the event occurs may be dependent on the value of one or more predictor variables (Cox, 1958). In this type of regression, the retrieved logistic coefficient represents the variation in the odds of an event happening when the predictor variable(s) increase by 1-unit (Dayton, 1992) The identified odds exponentiate the coefficients and declare them as odds ratios. Increasing a predictor variable by 1-unit is accompanied by an increase in the probability of the event occurring by a given numerical factor (Dayton, 1992).

5.1.2 Ordinary Least Squares Regression

For research question 3 and partially 4, I use an OLS that aims to find a linear relationship between an independent and dependent variable, whereby the latter needs to be continuous (Hutcheson, 1999, p. 56). In this linear model, it is important that the independent variables are not interrelated. Hence, if there is a relationship between them, the estimates can be interpreted misleadingly. Therefore, if there are multiple independent variables in the equation, other variables are held constant to assess the individual contribution by each independent variable to the dependent variable (Hutcheson, 1999, p.72). The estimate then indicates the factor by which the dependent variable changes when the independent variable increases by a 1-unit.

5.2 Model Specifications

Based on the model below, I build the model specifications for the regressions, Y being the dependent variable, α the constant, and β the correlation coefficients of the independent and control variables that are summed in the vector variables X' and Z' representing categorical and dummy variables. The error term ε captures others influence on the dependent variables.

$$Y_{i,c} = \alpha + \beta_1 X'_{i,c} + \beta_2 Z'_{i,c} + \varepsilon_I$$

5.2.1 Model Specification 1

The first regression aims to identify demographic and socioeconomic factors that are associated with migration to the U.S. My dependent variable is whether a person has ever migrated to the U.S. My main independent variable is the categorical total education. The vector variable $\mathbf{X}_i$ contains categorical control variables such as age at the survey, last reported wages, the marital status, and whether the individual was born in the U.S. $\mathbf{Z}_i$ is a vector of dummy variables, including a female dummy, whether the individual had any previous migration experience, and whether other household members had internal or international non-U.S. migration experience. When I consider the three countries together, I add a country control. All models are controlled for the survey years leading to the following model specifications for regression 1.

$$Ever\ Migrated_i = \alpha + \beta_1\ Education_i + \gamma\ \mathbf{X}_i + \delta\ \mathbf{Z}_i + \beta_2\ Country\ Category_i\ + \beta_3\ Survey\ Year_{i,c} + \varepsilon_1$$

$$Ever\ Migrated_{i,c} = \alpha + \beta_1\ Education_{i,c} + \gamma\ \mathbf{X}_{i,c} + \delta\ \mathbf{Z}_{i,c} + \beta_2\ Survey\ Year_{i,c} + \varepsilon_2$$

5.2.2 Model Specification 2

The next regression addresses factors that are associated with being an illegal migrant. I look at the first and last migration of individuals, whereby the descriptive statistics and the regression for the latter are included in Appendix B and C, respectively. The dependent variable is the illegal status at first migration. The independent variable is the categorical variable on educational attainment at the time of first migration. Here, Vector $\mathbf{X}_{i,c,t}$ represents the categorical controls, including the age at first migration, the occupational status one year before first migration, and labor experience before first migration. Vector $\mathbf{Z}_{i,c}$ includes the female and the previous migratory experience dummy. The country category accounts for cross-country differences. For all models, I control for the different survey years.

$$Illegal\ Status_{i,t} = \alpha + \beta_1\ Education_{i,t} + \gamma\ \mathbf{X}_{i,t} + \delta\ \mathbf{Z}_i + \beta_2\ Country\ Category_i + \beta_3\ Survey\ Year_{i,c} + \varepsilon_3$$

$$Illegal\ Status_{i,c,t} = \alpha + \beta_1\ Education_{i,c,t} + \gamma\ \mathbf{X}_{i,c,t} + \delta\ \mathbf{Z}_{i,c} + \beta_2\ Survey\ Year_{i,c} + \varepsilon_4$$

5.2.3 Model Specification 3

Finally, I regress U.S. hourly wages at first migration on the illegal status. Again, I consider the countries together and separately after. Vector $\mathbf{X}_{i,c,t}$ includes the categorical variables age, educational, and occupational status in the U.S. at first migration. I include a female dummy variable in vector $\mathbf{Z}_{i,c}$ and control for survey years. I also run the regression for last migration.

$$U.S.\ Wages_{i,c,t} = \alpha + \beta_1\ Illegal\ Status_{i,c,t} + \gamma\ \mathbf{X}_{i,c,t} + \delta\ \mathbf{Z}_{i,c} + \beta_2\ Country\ Category_i + \beta_3\ Survey\ Year_{i,c} + \varepsilon_5$$

$$U.S.\ Wages_{i,c,t} = \alpha + \beta_1\ Illegal\ Status_{i,c,t} + \gamma\ \mathbf{X}_{i,c,t} + \delta\ \mathbf{Z}_{i,c} + \beta_2\ Survey\ Year_{i,c,} + \varepsilon_6$$

5.3 Limitations

5.3.1 Data Limitations

Since this study makes use of household data, the self-reported observations may induce measurement errors. According to Meyer et al. (2015), arising problems with household data such as language problems, poor health, lack of interest, or privacy concerns can affect the accuracy of the answers (Meyer et al., 2015). In the U.S., the decline of landline telephones makes it more difficult to conduct face-to-face surveys, which is likely to be the case in other countries as well (Meyer et al., 2015). Respondents are less likely to participate in the survey at all or only answer certain questions resulting in a problem of "item nonresponse" (p. 199). In the LAMP survey, there is also missing data on some questions. Various variables I use in the regression are based on the LIFE and SPOUSE files, which contain observations only for the household head and spouse. For regression 3, only the household heads report U.S. wages at first and last migration, which significantly reduces the number of observations. Furthermore, the variable for marital status records whether the individual was ever married. It does not distinguish between individuals who were not married before but married after migration.

The way of collecting the data can also impact the quality of the data. In this thesis, interviewees provide information from years ago, such as income in the first U.S. trip. These may be inaccurate due to lacking memory. Since migration is a dynamic long-term process, assimilation, adaptation, and integration can also have an impact on the perception of one's past migration stay (De Haas et al., 2014, p.43). Additionally, the flexibility of the interviews can lead to forgotten or misunderstood questions. Discrimination against migrants can further sadden the interviewee's experience or influence the answers.

Data-specific limitations constrain the regressions and corresponding results and interpretations. For example, I use total educational attainment as an independent variable in the first regression to determine the influence of factors that foster migration. However, individuals might have a lower level of education at the time of migration than after migration. If I use educational attainment at the first or last migration, all individuals who did not migrate will not receive a suitable representative value, and I cannot perform the binary logistic regression. The same is true for age groups and wages of the latest occupations.

5.3.2 Model Limitations

There are also pitfalls of the methodological strategy potentially affecting the results and interpretations of this study. The main limitation of the binary logistic regression is the assumption of linearity between the dependent variable and independent variables. If the predictive values of the dependent variable are above 1 or below 0, the estimated coefficients are not highly informative. The effect of the independent variables on the dependent variable changes the closer the effect of the former on the latter gets to 0 or to 1 (Pampel, 2000, p. 9). Instead of simply interpreting the coefficients, I convert the probability of the independent variable taking over the value 1 or 0 into odds ratios, which indicates the likelihood of the event happening relative to the likelihood of the event not happening (Pampel, 2000, p. 11).

Further, the OLS model has limitations such as reverse causality. If there is a significant relationship between the independent and dependent variable, there is a correlation and not a causality since the latter can also run in the reverse direction. In my third regression, the mode of entry into the U.S. is predetermined. Thus, I assume that wages have a smaller impact on the decision of the mode of border crossing. Nevertheless, the so-called migration industry could also encourage illegal migration, with smugglers promising migrants the passage and a job (De Haas et al., 2020, p. 66). Omitted variables that impact the dependent variable or control variables but are not considered in the model also represent a limitation.

According to Hutcheson (1999, p. 78), multicollinearity can be another problem with the OLS technique. This happens, when one independent variable is related to one or more independent variables. A perfect or strong relationship between them can influence the correlation coefficients of the regression and the interpretation of the results. Multicollinearity does not demonstrate a complication for correlations between variables, but it can be a crucial obstacle to the causal interpretation of the regression results. In this thesis, the empirical analysis acknowledges this issue while carefully interpreting the correlation coefficients.

6 Empirical Analysis

6.1 Descriptive Analysis

Since the data used for the regressions have different observation numbers due to differing dependent, independent, and control variables, I present the descriptive statistics separately.

6.1.1 Descriptive Statistics 1

Table 2 - Descriptive Statistics in Shares (%): Outcome Variable: Ever Migrated to the U.S.

VARIABLES	All		Nicaragua		Guatemala		El Salvador	
	M	NM	M	NM	M	NM	M	NM
Ever Migrated	7.32	92.68	5.60	94.40	9.10	90.90	14.31	85.69
Total Education								
Missing	2.81	2.17	1.44	2.25	0.39	0.51	7.85	4.10
No Education/ Incomplete Primary	17.12	39.93	8.80	37.27	17.58	45.91	34.47	47.21
Complete Primary/ Incomplete Lower Secondary	21.47	21.42	15.68	21.82	41.41	24.83	16.38	14.03
Complete Lower Secondary/ Incomplete Upper Secondary	24.19	16.27	31.04	18.36	14.84	10.99	17.75	11.40
Complete Upper Secondary	16.18	9.51	15.85	8.22	18.36	12.67	15.02	12.60
Tertiary Education	18.23	10.71	27.20	12.08	7.42	5.08	8.53	10.66
Age at Survey								
Missing	1.96	1.63	1.28	1.64	0.39	0.35	4.78	3.42
0 to 17 Years	2.30	32.31	3.52	30.95	1.17	35.51	0.68	34.95
18 to 24 Years	10.14	15.72	8.64	15.89	14.84	16.89	9.22	13.00
25 to 34 Years	24.96	17.73	24.16	18.58	29.69	15.72	22.53	15.56
35 to 44 Years	33.65	13.95	33.12	15.16	32.81	10.95	35.49	11.06
45 to 54 Years	17.89	9.22	18.56	8.75	17.58	10.60	16.72	10.03
55 to 64 Years	6.13	4.67	7.20	4.40	2.73	5.36	6.83	5.25
65 to 74 Years	2.04	2.87	2.24	2.68	0.78	3.40	2.73	3.25
75 to 84 Years	0.68	1.45	0.80	1.42	-	0.98	1.02	2.34
85 to 94 Years	0.26	0.5	0.48	0.46	-	0.23	-	1.14
95 Years and over	-	0.05	-	0.07	-	-	-	-
Female	40.55	53.10	45.60	52.57	30.47	53.58	38.57	55.59
Ever Married								
Missing	1.45	1.81	1.12	1.90	0.39	0.23	3.07	3.59
Never Married	18.48	48.31	20.00	46.85	19.14	51.94	14.68	51.82
Ever Married	80.70	49.88	78.88	51.26	80.47	47.83	82.25	44.58
U.S. Born								
Missing	-	0.20	-	0.14	-	-	-	0.80
Not U.S. Born	99.74	99.05	99.52	98.99	100	99.61	100	99.37
U.S. Born	0.26	0.75	0.48	0.86	-	0.39	-	0.63
Previous Migration Experience	18.82	20.29	23.36	22.19	9.38	12.94	17.41	19.56
Wages of Last Occupation adjusted to US$ and CPI								
Missing	83.13	85.18	84.32	87.09	75.78	76.10	87.03	86.89
No Wages	1.70	2.48	0.16	0.31	2.73	9.78	4.10	4.85
0< $/h <3	13.46	11.65	13.28	11.93	19.53	12.91	8.53	8.15
3< $/h <6	0.94	0.49	1.12	0.45	1.17	1.02	0.34	0.11
6< $/h <9	0.26	0.12	0.16	0.11	0.78	0.16	-	-
9< $/h <12	0.09	0.03	0.16	0.04	-	-	-	-
12< $/h <15	0.09	0.01	0.16	-	-	0.04	-	-
15< $/h <20	0.17	-	0.32	-	-	-	-	-
20$/h and above	0.09	0.03	0.16	0.04	-	-	-	-

Extreme Outliers	0.09	0.02	0.16	0.03	-	-	-	-
Members Migration Experience	3.15	17.27	4.64	18.78	1.95	10.21	1.02	18.53
Country								
Nicaragua	53.24	70.98	100	100	-	-	-	-
Guatemala	21.81	17.21	-	-	100	100	-	-
El Salvador	24.96	11.81	-	-	-	-	100	100
Survey Year								
2000	9.28	18.82	17.44	26.51	-	-	-	-
2001	5.11	0.97	9.60	1.37	-	-	-	-
2002	33.30	50.90	62.56	71.72	-	-	-	-
2003	5.54	0.29	10.40	0.41	-	-	-	-
2004	21.81	17.21	-	-	100	100	-	-
2007	24.96	11.81	-	-	-	-	100	100
Observation Numbers	1,174	14,854	625	10,543	256	2,557	293	1,754

Here, M means "Migrant" and NM means "Never Migrant.

Guatemala and El Salvador report a larger relative share of migrants compared to Nicaragua; however, the absolute number of Nicaraguans is larger mainly because the LAMP survey assessed more households and individuals in Nicaragua. As expected from the literature, the largest share among the Nicaraguan migrants is highly educated, while the largest share of Guatemalan migrants has completed primary school and the largest share of Salvadorian migrants did not complete primary school. The largest share of the Nicaraguan, Guatemalan and Salvadorian migrants are between 35 to 44 years old. Among the interviewees, the migrants are mostly male. About one in four Nicaraguans, one in ten Guatemalans, and about one in six Salvadorians had previous migration experience either in their home country or abroad. All Guatemalan and Salvadorian migrants were not born in the U.S. Most migrants of all three countries report wages between 0 to 3 US$ per hour in their latest occupation. Latest wages had many missing values since these were only reported for the household heads. Only a small share represents household members with previous migration experience if they are U.S. migrants.

6.1.2 Descriptive Statistics 2

Table 3 - Descriptive Statistics in Shares (%): Outcome Variable: Illegal Status at First Migration

VARIABLES	All		Nicaragua		Guatemala		El Salvador	
	Illegal	Legal	Illegal	Legal	Illegal	Legal	Illegal	Legal
Illegal Status 1st M.	53.92	46.08	34.40	65.60	70.31	29.69	81.23	18.77
Education at 1st Migration								
No Education/ Incomplete Primary	8.85	5.55	2.79	4.88	10.00	6.58	13.45	9.09
Complete Primary/ Incomplete Lower Secondary	8.85	6.10	8.84	5.61	14.44	9.21	4.62	5.45
Complete Lower Secondary/ Incomplete Upper Secondary	8.06	8.50	8.84	10.00	6.11	6.58	8.82	-
Complete Secondary	5.21	5.55	7.91	5.61	5.56	7.89	2.52	1.82
Tertiary Education	3.79	9.98	9.30	10.98	0.56	7.89	1.26	5.45
Missing	65.24	64.33	62.33	62.93	62.33	61.84	69.33	78.18
Age at 1st Migration								
0 to 17 Years	17.69	21.07	19.07	20.73	13.89	15.79	19.33	30.91
18 to 24 Years	32.39	23.29	27.44	22.68	37.78	38.16	32.77	7.27

25 to 34 Years	30.33	27.54	33.49	28.54	35.00	19.74	23.95	30.91
35 to 44 Years	12.80	12.01	17.21	12.44	10.56	9.21	10.50	12.73
45 to 54 Years	2.37	8.32	1.86	8.78	1.67	9.21	3.36	3.64
55 to 64 Years	0.16	1.29	0.47	0.98	-	-	-	5.45
65 to 74 Years	-	0.37	-	0.49	-	-	-	-
75 to 84 Years	-	0.18	-	0.24	-	-	-	-
85 to 94 Years	-	-	-	-	-	-	-	-
95 Years and over	-	-	-	-	-	-	-	-
Missing	4.27	5.91	0.47	5.12	1.11	7.89	10.08	9.09
Female	34.60	47.50	38.60	49.27	29.44	32.89	34.87	54.55
Previous Migration Experience	17.38	20.52	23.26	23.41	8.89	10.53	18.49	12.73
Occupation Prior to 1st Migration								
High-Skilled	5.37	11.09	11.63	11.95	3.33	14.47	1.26	-
Medium-Skilled	11.53	6.47	7.44	5.37	23.33	13.16	6.30	5.45
Low-Skilled	15.01	14.79	16.74	16.10	8.33	9.21	18.49	12.73
Other	3.16	3.51	1.86	3.90	1.67	1.32	5.46	3.64
Missing	64.93	64.14	62.33	62.68	63.33	61.84	68.49	78.18
Labor Experience Prior to 1st Migration								
0 to 5 Years	6.00	5.73	5.58	5.85	3.33	6.58	8.40	3.64
5 to 10 Years	5.37	4.44	4.65	4.88	5.00	3.95	6.30	1.82
10 to 15 Years	6.32	5.91	7.44	5.85	7.78	6.58	4.20	5.45
15 to 25 Years	12.32	8.32	15.35	9.51	13.33	6.58	8.82	1.82
25 to 35 Years	3.95	6.28	3.72	6.59	5.00	6.58	3.36	3.64
35 to 45 Years	0.95	3.51	0.93	3.41	1.67	5.26	0.42	1.82
45 Years and above	-	1.66	-	1.22	-	2.63	-	3.64
Missing	65.09	64.14	62.33	62.68	63.89	61.84	68.49	78.18
Country								
Nicaragua	33.97	75.79	100	100	-	-	-	-
Guatemala	28.44	14.05	-	-	100	100	-	-
El Salvador	37.60	10.17	-	-	-	-	100	100
Survey Year								
2000	7.27	11.65	21.40	15.37	-	-	-	-
2001	5.69	4.44	16.74	5.85	-	-	-	-
2002	17.69	51.57	52.09	68.05	-	-	-	-
2003	3.32	8.13	9.77	10.73	-	-	-	-
2004	28.44	14.05	-	-	100	100	-	-
2007	37.60	10.17	-	-	-	-	100	100
Observation Numbers	633	541	215	410	180	76	238	55

Table 3 reports the descriptive statistics of first migration. Following the literature, 65.60% of Nicaraguan migrants migrated legally to the U.S., while the share of legal Guatemalan and Salvadorian migrants are below 30% and 20%, respectively. In terms of educational status at first migration, here only of household heads and spouses, there is not much variation except that illegal migrants from Guatemala and El Salvador have a larger share of no educational status compared to legal migrants. Guatemalan illegal migrants also report a larger share of complete primary and incomplete lower secondary education compared to legal migrants. Legal Guatemalan migrants have a larger share of tertiary education than illegal migrants. The same applies to El Salvador. The share of legal migrants with a previous high-skilled job is larger than that of illegal migrants. The opposite is true for Guatemalan and Salvadorian migrants with previous medium-skilled jobs. The share of legal migrants with 15 to 25 years of work

experience is larger than that of illegal migrants in all countries. Table B.1 reports similar trends. The most striking differences are that Nicaraguan migrants have an even larger share of legal migrants. The same applies to Guatemalan and Salvadorian migrants, which may be due to NACARA. Among the legal migrants, there is a large proportion of Nicaraguans and Guatemalans with a higher educational status. The less educated illegal Nicaraguan migrants represent a larger share than their counterpart. The same is true for Guatemalan and Salvadorian migrants who completed and did not complete primary school, respectively.

6.1.3 Descriptive Statistics 3

Table 4 - Descriptive Statistics in Shares (%): Outcome Variable: Hourly U.S. Wages at First Migration

VARIABLES	All	Nicaragua	Guatemala	El Salvador
Hourly CPI-adjusted U.S. Wages at 1st Migration in US$	6.199	6.926	5.005	5.112
Illegal Status at 1st Migration	49.54	32.50	62.32	93.10
Age at 1st Migration				
0 to 17 Years	14.07	1.50	11.59	17.24
18 to 24 Years	28.44	14.00	43.48	29.31
25 to 34 Years	31.80	23.00	28.99	27.59
35 to 44 Years	15.29	34.00	10.14	13.79
45 to 54 Years	8.56	17.50	5.80	10.34
55 to 64 Years	1.22	9.00	-	1.72
65 to 74 Years	-	1.50	-	-
75 to 84 Years	-	-	-	-
85 to 94 Years	-	-	-	-
95 Years and over	-	-	-	-
Missing	0.61	1.00	-	-
Education at 1st Migration				
No Education/Incomplete Primary	11.93	4.50	15.94	32.76
Complete Primary/ Incomplete Lower Secondary	11.01	12.50	13.04	3.45
Complete Lower Secondary /Incomplete Upper Secondary	15.60	17.50	8.70	17.24
Complete Upper Secondary	10.09	11.00	13.04	3.45
Tertiary Education	14.98	22.00	4.35	3.45
Missing	36.39	32.50	44.93	39.66
Female	37.61	43.00	31.88	25.86
U.S. Occupation at 1st Migration				
High-Skilled	10.40	14.50	7.25	-
Medium-Skilled	30.58	22.00	37.68	51.72
Low-Skilled	56.57	62.00	49.28	46.55
Other	2.45	1.50	5.80	1.72
Missing	-	-	-	-
Country				
Nicaragua	61.16	100	-	-
Guatemala	21.10	-	100	-
El Salvador	17.74	-	-	100
Survey Year				
2000	5.81	9.50	-	-
2001	7.34	12.00	-	-
2002	37.61	61.50	-	-
2003	10.40	17.00	-	-

	2004	21.10	-	100	-
	2007	17.74	-	-	100
Observation Numbers		327	200	69	58

The descriptive statistics for regression 3 have a very low the observation count because only the household heads report U.S. wages at migration. And even among them, there are lots of missing values. The hourly CPI-adjusted U.S. wages illustrate that Nicaraguans earn on average more in the first migration than Guatemalans and Salvadorians. Nicaraguans have a low share of illegal status at first migration, while 62.32% of Guatemalans and 93.10% of Salvadorians entered the U.S. illegally at first migration. Many of the Guatemalans and Salvadorians reporting U.S. wages are young, 18 to 24 years old at first migration. Nicaraguans are primarily 35 to 44 years. From the observations, a large part of the Salvadorians and Guatemalans have no education or have not completed primary school. A large part of Nicaraguans started tertiary education. Surprisingly, at first migration, most Nicaraguans have low-skilled U.S. occupations. This is also the case for Guatemalans. Compared to first migration, U.S. wages at last migration are higher for all countries (Table B.2). The shares of illegal migrants decreased at last migration in all three countries.

6.2 Regression Results

6.2.1 Regression 1: Binary Logistic Regression

In the first regression, I regress the binary variable "Ever Migrated to the U.S." on the categorized total educational attainment including the control variables.

Table 5 - Regression: Outcome Variable: Ever Migrated to the U.S.

VARIABLES	(1) All	(2) Nicaragua	(3) Guatemala	(4) El Salvador
Ever Migrated to the U.S.				
Total Education				
Missing	1.765*	0.998	0.000	3.439**
	(0.545)	(0.575)	(0.002)	(1.733)
No Education/	0.630***	0.450***	0.558***	0.950
Incomplete Primary	(0.0673)	(0.0820)	(0.113)	(0.209)
Complete Primary/	ref.	ref.	ref.	ref.
Incomplete Lower Secondary				
Complete Lower Secondary/	1.521***	2.322***	0.994	1.067
Incomplete Upper Secondary	(0.153)	(0.324)	(0.222)	(0.268)
Complete Upper Secondary	1.166	2.147***	0.723	0.606**
	(0.128)	(0.344)	(0.146)	(0.154)
Tertiary Education	1.199	2.403***	0.608*	0.348***
	(0.133)	(0.353)	(0.173)	(0.100)

Female		0.492***	0.610***	0.349***	0.382***
		(0.035)	(0.058)	(0.059)	(0.057)
Ever Married					
	Missing	0.226***	0.421	1.224e+11	0.137***
		(0.106)	(0.317)	(1.720e+14)	(0.094)
	Never Married	ref.	ref.	ref.	ref.
	Ever Married	1.517***	1.096	2.029***	2.120***
		(0.155)	(0.154)	(0.446)	(0.452)
U.S. Born					
	Missing	1	1		1
		(0)	(0)		(0)
	Not U.S. Born	ref.	ref.	ref.	ref.
	U.S. Born	0.0556***	0.051***		
		(0.041)	(0.038)		
Previous Migration Experience		0.528***	0.527***	0.525***	0.475***
		(0.047)	(0.061)	(0.125)	(0.088)
Members Migration Experience		0.271***	0.339***	0.242***	0.106***
		(0.050)	(0.074)	(0.115)	(0.064)
Wages of Last Occupation adjusted to US$ and CPI					
	No Wages	0.422**	0.201	0.565	0.456**
		(0.178)	(0.224)	(0.428)	(0.154)
	0$< $/h <3	0.714	0.548	1.372	0.388***
		(0.255)	(0.250)	(0.897)	(0.096)
	3< $/h <6	ref.	ref.	ref.	ref.
	6< $/h <9	1.242	0.567	3.764	
		(0.899)	(0.650)	(4.071)	
	9< $/h <12	2.007	1.176		
		(2.399)	(1.451)		
	12< $/h <15	3.414			
		(5.017)			
	15< $/h <20	1	1		
		(0)	(0)		
	20 $/h and above	1.418	0.961		
		(1.987)	(1.373)		
	Extreme Outliers	3.142	2.033		
		(3.833)	(2.601)		
	Missing	1.540	1.026	3.250*	
		(0.542)	(0.458)	(2.107)	
Country					
	Nicaragua	ref.			
	Guatemala	2.791***			
		(0.349)			
	El Salvador	4.484***			
		(0.553)			
Constant		0.023***	0.023***	0.052***	0.238***
		(0.009)	(0.012)	(0.036)	(0.069)
Observations		15,990	11,143	2,771	2,001

All Models are controlled for Survey Year and Age Groups. Standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

For all respondents, the odds of ever being a U.S. migrant are less likely for people without education or incomplete primary schooling than for people with a completed primary school.

The odds of being a U.S. migrant are larger for people who have a complete lower secondary education. For Nicaraguans, the odds of being a U.S. migrant increase with educational attainment compared to the reference category. For example, Nicaraguans with tertiary education have 2.403 times the odds of Nicaraguans with complete primary school or incomplete lower secondary school of being a U.S. migrant. The odds of being a U.S. migrant are less likely for Guatemalans without education or incomplete primary schooling than for people with completed primary school or incomplete lower secondary school. The likelihood of Guatemalans being a U.S. migrant is much lower for people with a high education compared to the reference group. Among the Salvadorians, those with a complete upper secondary education have 0.606 times the odds of those having a complete primary or incomplete lower secondary education of ever becoming a U.S. migrant. The likelihood is also much lower for those with tertiary education. Among all, those who married have a higher likelihood of being a migrant in the U.S. than those who never marry in their lives. In Nicaragua, those who were born in the U.S. have a much lower likelihood of being a U.S. migrant than those who were not born in the U.S. In all countries, those people with previous migratory experience have a lower likelihood of becoming a U.S. migrant than those without any migration experience. Among Nicaraguans, Guatemalans, and Salvadorians, members of a household that have migration experience have lower odds than those members who have no experience of becoming a U.S. migrant. Among all respondents, those people who earned no wages in their last occupation had lower odds than those who earned between 3 and 6 US$ per hour of ever being a U.S. migrant. Among the Salvadorians, those who earned no wages and those who earned between 0 and 3 US$ per hour have lower odds of those earning 3 to 6 US$ per hour of ever being a U.S. migrant. Among all, those who are from Guatemala have 2.791 times the odds of Nicaraguans ever being U.S. migrants. Salvadorians have 4.484 times the odds of Nicaraguans being U.S. migrants.

6.2.2 Regression 2: Binary Logistic Regression

The next regression analyzes the relationship between illegal status on education at first migration. In Appendix C, Table C.1 depicts the regression for the last migration.

Table 6 - Regression: Outcome Variable: Illegal Status at First Migration

VARIABLES	(1) All	(2) Nicaragua	(3) Guatemala	(4) El Salvador
Illegal Status at First Migration				
Education at First Migration				
Missing	0.856	0.000	0.000	2.142e+06
	(1.213)	(0.003)	(0.001)	(5.065e+09)
No Education/Incomplete Primary	0.920	0.483	0.676	4.325

	(1)	(2)	(3)	(4)
	(0.384)	(0.314)	(0.640)	(5.306)
Complete Primary/ Incomplete Lower Secondary	ref.	ref.	ref.	ref.
Complete Lower Secondary/ Incomplete Upper Secondary	0.565	0.513	0.056**	
	(0.210)	(0.241)	(0.0717)	
Complete Upper Secondary	0.503*	0.624	0.043**	2.091
	(0.207)	(0.319)	(0.058)	(3.290)
Tertiary Education	0.241***	0.388**	0.004***	0.0872*
	(0.098)	(0.186)	(0.008)	(0.119)
Female	0.597***	0.557***	1.007	0.626
	(0.085)	(0.103)	(0.368)	(0.220)
Previous Migration Experience	0.971	0.824	0.582	6.377**
	(0.189)	(0.198)	(0.337)	(5.579)
Occupation Prior to First Migration				
Missing	0.000	68,663		3.13e-06
	(0.006)	(2.797e+07)		(0.007)
High-Skilled	0.647	0.749	0.121**	
	(0.234)	(0.357)	(0.114)	
Medium-Skilled	ref.	ref.	ref.	ref.
Low-Skilled	1.058	1.011	0.365	12.50**
	(0.352)	(0.477)	(0.297)	(15.95)
Other/Unspecified	0.729	0.475	0.0643	0.000
	(0.407)	(0.382)	(0.114)	(0.022)
Labor Experience Prior to First Migration				
Missing	56,034		11,457	
	(2.971e+07)		(1.112e+07)	
0 to 5 Years	0.791	1.044	0.197	451,537
	(0.377)	(0.642)	(0.257)	(5.110e+08)
5 to 10 Years	ref.	ref.	ref.	ref.
10 to 15 Years	1.121	1.581	0.197	0.528
	(0.505)	(0.933)	(0.250)	(0.931)
15 to 25 Years	1.992	1.923	0.223	2.464
	(0.865)	(1.081)	(0.282)	(5.486)
25 to 35 Years	0.651	0.743	0.006***	0.276
	(0.358)	(0.533)	(0.011)	(0.555)
35 to 45 Years	0.657	1.098	13,918	
	(0.545)	(1.294)	(9.842e+06)	
45 Years and above	1	1	1	1
	(0)	(0)	(0)	(0)
Country				
Nicaragua	ref.			
Guatemala	2.966***			
	(0.746)			
El Salvador	6.853***			
	(1.801)			
Constant	2.240	1.815	189.2***	2.590
	(1.179)	(1.244)	(316.8)	(5.298)
Observations	1,165	620	254	267

All Models are controlled for Survey Year and Age Groups. Standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Among all respondents together, those migrants who have tertiary education report lower odds of being an illegal U.S. migrant at first migration than those who have complete primary or

incomplete lower secondary schooling. Guatemalan migrants with a complete lower secondary or incomplete upper secondary education have lower odds of those with a complete primary or incomplete lower secondary education of being an illegal migrant in the U.S. Nicaraguan migrants with a tertiary migration have 0.388 times lower odds of Nicaraguan migrants with complete primary or incomplete lower secondary education of being an illegal U.S. migrant at first migration. Guatemalan and Salvadorian migrants report a similar pattern although the odds are almost close to 0. Female Nicaraguan migrants have 0.557 times the odds of the Nicaraguan male migrants and are therefore less likely of being illegal U.S. migrants at first migration. Guatemalan migrants with previous internal and non-U.S. migration experience have 6.377 times the odds of those Guatemalans without any previous migratory experiences of becoming an illegal U.S. migrant. In terms of pre-migration occupational status and labor experience, there are no significant coefficients. Only Guatemalans with 25 to 35 years of labor experience before the first migration have much lower odds than those with 5 to 10 years prior labor experience of becoming an illegal U.S. migrant. Guatemalan migrants have 2.966 times the odds of Nicaraguan migrants being illegal migrants. Salvadorian migrants have 6.853 times the odds of Nicaraguan migrants being illegal U.S. migrants at first migration.

Assessing the last migration, Salvadorian migrants without any completed schooling have 11.17 times the odds of becoming an illegal U.S. migrant than those Salvadorian migrants with a complete primary or incomplete lower secondary schooling (Table C.1). Highly educated Nicaraguan and Guatemalan migrants have much lower odds of becoming illegal U.S. migrants than those migrants with a completed primary education. Among the Nicaraguan migrants, females and individuals with previous migratory experience have a lower likelihood of their counterparts becoming illegal U.S. migrants at last migration. Salvadorian migrants with previous migration experience report 2.276 times the odds of those without experience of being an illegal migrant. Guatemalans with a high-skilled occupation prior to last migration have a much lower likelihood of those with a medium-skilled occupation becoming illegal migrants in the U.S. In contrast, among Salvadorian migrants, those with a previous high-skilled occupational status report a large likelihood of being an illegal U.S. migrant at last migration compared to the reference group. Among all respondents, those with 15 to 25 years of labor experience prior to last migration have 3.234 times the odds of those with only 5 to 10 years of prior labor experience of being an illegal migrant. At last migration, Guatemalan and Salvadorian migrants have, respectively, 3.439 and 2.973 times the odds of Nicaraguan migrants being illegal migrants at last migration, confirming the results from the first migration.

6.2.3 Regression 3: Ordinary Least Square Regression

The last regression analyzes the relationship between hourly U.S. wages and illegal status at first migration. Table C.2 reports this regression for the last migration wave.

Table 7 - Regression: Outcome Variable: Hourly U.S. Wages at First Migration

VARIABLES	(1) All	(2) Nicaragua	(3) Guatemala	(4) El Salvador
Illegal at 1st Migration	-1.568	-2.382	-0.114	-3.348
	(1.714)	(2.665)	(0.705)	(2.432)
Education at 1st Migration				
Missing	1.785	1.476	2.250*	3.136
	(2.702)	(4.276)	(1.143)	(2.970)
No Education/	-0.663	-0.334	-2.796**	0.949
Incomplete Primary	(3.281)	(7.136)	(1.325)	(2.899)
Complete Primary/	ref.	ref.	ref.	ref.
Incomplete Lower Secondary				
Complete Lower Secondary/	0.793	0.924	-1.687	4.048
Incomplete Upper Secondary	(2.914)	(4.496)	(1.486)	(2.942)
Complete Upper Secondary	3.369	5.235	-1.784	-0.443
	(3.191)	(5.008)	(1.279)	(3.930)
Tertiary Education	1.117	1.186	-3.238*	9.135**
	(2.994)	(4.359)	(1.730)	(3.795)
Female	-0.905	-1.258	-0.720	-1.095
	(1.571)	(2.535)	(0.707)	(1.246)
U.S. Occupation at 1st Migration				
High-Skilled	1.696	3.386	0.968	
	(2.740)	(4.086)	(1.485)	
Medium-Skilled	ref.	ref.	ref.	ref.
Low-Skilled	1.771	4.070	0.0377	-1.405
	(1.755)	(3.079)	(0.659)	(1.244)
Other/Unspecified	1.986	3.426	-1.554	7.579*
	(4.909)	(10.26)	(1.458)	(3.965)
Country				
Nicaragua	ref.			
Guatemala	0.398			
	(3.492)			
El Salvador	1.916			
	(3.657)			
Constant	3.401	2.571	5.114***	6.816*
	(4.292)	(6.267)	(1.390)	(3.897)
Observations	327	200	69	58
R-squared	0.030	0.035	0.398	0.422

All Models are controlled for Survey Year and Age Groups. Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Unfortunately, the observation numbers are low which may impede the correlation coefficients, the significance levels and therefore the interpretations. Among the Guatemalans, the

relationship between those without any schooling or an incomplete primary education and the U.S. wages at first migration is negative and significant at a 5% level. Hence, a 1-point increase in the education variable comes with a 2.796-point decrease in U.S. wages at first migration. Surprisingly, Guatemalans with tertiary education have a negative correlation coefficient of 3.238 at a 10% level. Highly educated Salvadorians show a positive and significant relationship with wages. A 1-unit increase in education comes with a 9.135 increase in U.S. wages.

At last migration, Nicaraguans with a complete upper secondary education show a positive relationship with the U.S. wages, which is significant at a 10% and large in magnitude. Among Guatemalan migrants, the relationship between U.S. wages and no education is negative and significant at a 5% level. The relationship to tertiary education is also negative and significant at a 10% level. Among Salvadorian migrants, the relationship between U.S. wages and tertiary education is positive, significant at a 1% level, and large in magnitude. Among Nicaraguan migrants, the female dummy reports a negative relationship to U.S. wages at a 10% level and at a large magnitude. There is a positive and significant relationship between U.S. wages and Nicaraguan migrants with a high-skilled occupations. The correlation coefficient of 13.64 is large in magnitude and significant at a 10% level.

6.3 Discussion

The findings confirm the positive selection of Nicaraguan migrants in the U.S., as the probability of migration is higher among highly educated individuals. This confirms Borjas' (1987) selection theory. Surprisingly, high educational status is detrimental to the migration of Guatemalans and Salvadorians. This suggests negative self-selection. If one follows the push-pull theory, then this can be justified by inequality being higher in the origin countries than in the U.S. Therefore, better educated and thus most likely better paid Guatemalans and Salvadorians may be relatively better off in their origin countries than in the U.S. Following the neoclassical theory, the cost-benefit analysis shows that the costs of migration are higher than the benefits for highly educated Guatemalans and Salvadorians. They may lose occupational status in the destination country for example and thus it would not be worthwhile to leave the origin country. Instead, it makes more sense for educated people to remain in the home country. Moreover, interregional wage differences between Guatemala and El Salvador, and the U.S. may not be high enough for educated people to maximize their incomes. Thus, demographic, and socioeconomic factors do not play the same role in the three countries. Even though higher educated, richer Nicaraguans seem to select themselves into U.S. migration because they can afford the U.S. trip, as already proposed by Lundquist and Massey (2005), less educated and

poorer Guatemalans and Salvadorians select themselves into the U.S. This highlights the importance of country-specific analyses in the migration literature.

That prior migratory experience does not contribute to the likelihood of migration contradicted the findings of Escamilla García (2021). Instead, the results indicate that individuals either leave the country immediately before they have migrated elsewhere or are likely to migrate within the country without emigrating to the U.S. afterwards. According to the human capital theory, it is rather the young who emigrate and therefore it is less likely that younger people experienced any type of migration before the civil wars and violence erupted before their first U.S. migration experience. Additionally, the results confirm Aksoy & Poutvaara's (2021) findings that men are more likely to be selected from countries in crisis. This is consistent with NELM theory which states that a household selects one person who migrates to diversify household income, often a male household member.

Taylor (1987) found that educated people evaluate the disadvantages of the illegal status stricter than less educated people. According to Massey and Riosmena (2010), there is a selection bias of undocumented Latin American migrants in the U.S. My findings in the second regression contribute to these patterns as more educated Central Americans positively select themselves into legal migration. Guatemalan respondents with labor experience of more than 25 years report lower odds of migrating illegally. The human capital and skills after years of labor experience may result in a positive selection bias due to increased awareness of the downsides of illegal migration. Additionally, high skilled Guatemalans are less likely to have illegal status at last migration. The high-skilled occupation equips the Guatemalans with abilities that contributes to the positive selection into legal migration. This is in line with Borjas' (1987) theory. Moreover, it may add to the benefits of the cost-benefit analysis under the neoclassical theory. The returns for a highly skilled laborer may be higher in the U.S. Finally, the results show that Guatemalans and Salvadorians are indeed much more likely to migrate illegally compared to Nicaraguans which indicates toward the NACARA as suggested by Eig (1998) who implied that Nicaraguans were treated preferentially under the NACARA.

The most surprising result of the third regression is that Guatemalans with tertiary education report a negative correlation with wages in the U.S. when they first migrate. This finding might be related to the low observation numbers biasing the results. The educational status of Salvadorians and Nicaraguans at last migration have positive correlations with U.S. wages. My findings confirm those of Flores (2010), who found among Nicaraguan, Guatemalan, Mexican, and Costa Rican migrants that Nicaraguans were able to translate their human capital in the

U.S. which can be primarily related to their residence legalization under NACARA. I contribute that Salvadorians seemed to be able to do this as well. Future research should identify the underlying reasons for these patterns. Country differences reveal that migrants from varying countries have different experiences in the U.S., perhaps due to unequal treatment under legislations such as NACARA. Since the third regression is limited by low observations because U.S. wages were only reported for household heads, it is important to expand the data collection. With a more representative data set, one could get a better picture of the correlations. It would be particularly important to survey not only the often male heads of households, but also to consider the perspective of women.

Referring to the hypotheses posed in subsection 3.3, I can partially confirm the hypothesis 1 for Nicaraguans, since it is indeed the highly educated Nicaraguan men who positively select themselves into U.S. migration. In contrast, Guatemalan and Salvadorian individuals select themselves rather negatively since they are on average lower educated. Previous migration experience does not stimulate U.S. migration according to my coefficients. Highly educated migrants have a lower likelihood of illegal U.S. migration than lower educated migrants. Hence, I can partially confirm hypothesis 2 for migrants from all countries. For Guatemalan migrants, previous labor experience of 25 to 35 years decreases the likelihood of being an illegal migrant, which is in line with the hypothesis. Guatemalans with a high-skilled occupation prior first migration are less likely to migrate illegally confirming the hypothesis. In contrast, low skilled Salvadorians are much more likely to have an illegal status at migration, which is also in line with the hypothesis. The results on Nicaraguan and Salvadorian migrants with 15 to 25 years of labor experience before the last migration are not consistent with the hypothesis since they are more likely to have illegal status. Also, high-skilled Salvadorians have high odds of migrating illegally to the U.S., partially rejecting hypothesis 2. Due to insignificant correlation coefficients of the illegal status at first and last migration, I cannot confirm the third hypothesis. Because of data limitations, I strongly suggest expanding the LAMP data collection on migrant wages in the U.S. to properly assess the relationship between the legal or illegal status of Central American migrants and their U.S. wages. Hypothesis 4 can be partially confirmed since Guatemalans and Salvadorians are indeed more likely to migrate illegally than Nicaraguans. If wages in the U.S. for Guatemalans and Salvadorians are lower than Nicaraguans, this could be attributed to NACARA. However, since I cannot compare the relationship between illegal status and U.S. wages due to insignificant correlation coefficients, it is not possible to either confirm or reject the second part of the last hypothesis.

7 Conclusion

This thesis aimed to shed light on Central American migration to the U.S. I investigate the case of Nicaragua, Guatemala, and El Salvador. The purpose was to determine whether a specific part of the corresponding population self-selects in terms of education into migration to the U.S. With specific laws and regulations, crossing the borders to the country without documentation became more restrictive and challenging for prospective unauthorized migrants. Therefore, I further investigated self-selection among illegal and legal migrants. In addition, I addressed the context-specific migration experiences. Since illegal migrants have some disadvantages in terms of public goods and the labor market, it is critical to analyze whether there is a relationship between the illegal status and the U.S. wages of the migrants. The LAMP survey dataset allows to draw a comparison between migrants from the three countries Nicaragua, Guatemala, and El Salvador. The NACARA legislation granted Nicaraguans permanent residency in the U.S., while Guatemalans and Salvadorians could only apply for an extended stay, which was only waived if the applicants met strict requirements. Thus, I assumed that this resulted in differences in the legal status of Nicaraguans and non-Nicaraguans, reflected in U.S. wages.

The results indicated that Nicaraguans positively self-select into U.S. migration in terms of education, whilst Guatemalan and Salvadorians rather negatively self-select. In any case, the likelihood of migration of respondents of the two countries of origin decreases as soon as the level of education is too high. Additionally, the higher educated respondents self-selected into legal migration to the U.S. Prior work experience is beneficial for a legal status at first migration only for Guatemalans. At last migration, Guatemalans with a previous high-skilled occupation are more likely to obtain a legal status. In contrast, Salvadorians with high skilled jobs prior to their last migration are more likely to cross U.S. borders illegally. The likelihood of being an illegal migrant for Salvadorians was generally high and due to the unfortunate circumstances in the country of origin, and the expensive journey to the U.S., it is likely that rather higher skilled and thus higher paid people could afford the U.S. migration, even if it had to be illegal. The likelihood of being an illegal migrant is higher for Guatemalans and Salvadorians compared to Nicaraguans, which underscores the predicted outcomes of the NACARA of 1997. Finally, I find no significant correlation between U.S. wages of the Central American migrants and the illegal status. This could be driven by the low observation numbers since only the household heads reported U.S. wages in the LAMP survey data collection.

The first research question aims to understand the demographic and socio-economic factors driving migration. The regression results show that Central American males are more likely to

migrate and that the migrants mostly marry once in their lifetime. Previous migration experience and the migration experience of household members tend not to favor migration. Especially for Nicaraguans, a higher educational status always stimulates migration. Education is also important for Guatemalans and Salvadorians. But a very high level of education discourages migration, while a lower level of education encourages migration. The positive self-selection of Nicaraguans and the rather negative self-selection of Guatemalans and Salvadorians indicate that demographic and socio-economic factors, in diverse ways, play significant roles in Central American migration to the U.S. The second research question, which analyzed the varied selection factors of legal and illegal migration, showed that education promotes legal migration for all respondents. Higher skills were conducive to legal migration for Guatemalans but not for Salvadorians. The third research question examined the relationship between the U.S. wages and the illegal status. The results are insignificant. I suggested that this is due to low observation numbers. The last research question compares the likelihood of being legal between Nicaraguan and Guatemalan and Salvadorian migrants and refers this to the U.S. wages. I found that Guatemalans and Salvadorians are more likely to have illegal status. However, due to insignificant coefficients in the last regression, it is not possible to make a cross-country comparison on the impact of the legal status on the U.S. wages.

Governments must challenge illegal status and ensure that legal status is granted sooner so that the migrants do not suffer unnecessarily from the disadvantages of an illegal status. Salvadorian migrants first expelled from their own country due to violence and war, were for example discriminated against in the U.S. labor market resulting unsurprisingly in the emergence of Salvadorian gangs. Additionally, although Honduras is not covered in this thesis, this country of origin represents an essential case because they had no opportunity to become legal at all under the NACARA of 1997. But if the U.S. government treats migrants differently depending on the country of origin, this can result in varying developments of communities and integration processes in the labor market and society. Future research should subsidize household data collection. LAMP data should capture to a greater extent observations for household members other than of the household head. Researchers can then detect possible causal influences of illegal status on U.S. wages. Furthermore, I encourage LAMP survey to extent the data set by adding values for household members other than the household head and the spouse and by including Honduras so that researchers can provide country-specific policy advice in the Central and U.S. American migration context.

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Appendix A

Table 8 - Interviewed Households in Communities in Nicaragua, Guatemala, and El Salvador

Community Number	Nicaragua	Guatemala	El Salvador
1	200 households in Nicaragua 18 households in the U.S. 20 households in Costa Rica	194 households in Guatemala	121 households in El Salvador
2	195 households in Nicaragua 6 households in the U.S. 21 households in Costa Rica	144 households in Guatemala	89 households in El Salvador
3	202 households in Nicaragua 22 households in the U.S. 11 households in Costa Rica	175 households in Guatemala	77 households in El Salvador
4	200 households in Nicaragua 2 households in Costa Rica		95 households in El Salvador
5	200 households in Nicaragua 2 households in the U.S. 19 households in Costa Rica		
6 & 7	100 households in Nicaragua (Community 6); 100 households in Nicaragua (Community 7); 10 households in the U.S. 18 households in Costa Rica Both communities		
8	201 households in Nicaragua 3 households in the U.S. 13 households in Costa Rica		
9	200 households in Nicaragua 4 households in the U.S. 22 households in Costa Rica		
Total	1,789	514	383

Source: Latin American Migration Project (n.d.). Research. Available at: https://lamp.opr.princeton.edu/

Table 9 - Division of Occupational Skills

1 High-skilled Occupations	
Professionals	Architects; civil, chemical, industrial engineers; Physicists; astronomers; mathematicians; statisticians; actuaries; Chemists and pharmacists; Physicians; dentists; optometrists; nutritionists; professional nurses; Biologists; ecologists; Agriculturalists; veterinarians; and professionals in forestry and fisheries; Social scientists, lawyers, and psychologists; Economists; business administrators; CPAs; Religious professionals; Other professionals
Technical Workers	Draftsmen; equipment technicians; video and sound technicians; Technicians in physics, mathematics, statistics, and actuarial science; Medical technicians: nurse=s aides, dental technicians; Lab technicians (chemical, biological, pharmacological, and ecological); Technicians in agriculture, veterinary sciences, forestry, fisheries; Technicians in the social sciences, accounting, administration, and tourism; Technicians in religious activities; Other technicians
Educators	Professors in universities and other institutions of higher learning; Professors/teachers in high school or the equivalent; Professors/teachers in junior high school or the equivalent; Professors/teachers in grammar school or the equivalent; Professors/teachers in preschool; Professors/teachers in special education; Professors and instructors in arts, administration, vocational arts, technical education, and sports; Other educational workers
Occupations in the Arts, Performances, and Sports	Writers; critics; journalists; editors; Composers; singers; musicians; actors; dancers; Painters; sculptors; illustrators (fine artists); designers; choreographers; Directors; producers; broadcasters; Athletes; Sports referees, umpires, and coaches; Cartoonists; magicians; clowns; Other artists
Administrators and Directors in both Private and Public Sectors	Government administrators and legislators; Presidents, directors, senior managers, large factory owners; Specialized directors, managers, and administrators; Directors of political, union, and civil organizations (non-profit); Small and medium-sized factory owners; Owners of small and medium-sized service establishments; Other administrators such as entrepreneurs, managers, and directors, when no further specification
Manufacturing/ Repair Supervisors	Food, beverage and tobacco production supervisors; Mine, quarry and well supervisors; Textile and leather production supervisors; Wood and paper production or printing supervisors; Electrical, electronic , or metallurgical production supervisors; Ceramic, tile, glass or other mineral production supervisors; Construction, installation, maintenance and finishing supervisors; Electrical generation, installation, repair and maintenance supervisors (including telecommunications equipment); Chemical, petroleum, oil, and plastics production supervisors; Other supervisors including those in unspecified industry
Service and Administration Supervisors	Health, social services, education and justice services supervisors; Accounting, finance, human resources, library services supervisors; Communications and transportation services supervisors; Statistics, information, publicity and research services supervisors; Public administration supervisors; Culture and recreation services supervisors; Restaurant, store, and hotel services supervisors; Agriculture, forestry and fisheries service supervisors; Other department supervisors; Other workers who perform similar activities, including those in unspecified industry
Sales Workers	Merchants in retail establishments, retail business owners and owners of small businesses. Workers in retail establishments. (i.e., clerks, dispatchers); Distributors or demonstrators in retail establishments, including delivery workers who may or may not also be drivers; Sales agents or representatives; brokers; insurance and real estate agents; auctioneers; etc. 719 Other retail workers, including salespeople (unknown whether in an establishment)
2 Medium-skilled Occupations	
Transportation Workers	Industrial vehicle operators and drivers. (i.e., crane operators, tractor drivers, reapers, lawn mowers); Railroad conductors and workers; Truck drivers; land-transport drivers passenger vehicle drivers; Air-transport pilots; Maritime captains, pilots, and workers; Operator of animal driven cart; Other conductors, drivers, pilots
Administrative and Support Workers	Secretaries; typists; data entry, recorders; Cashiers; collectors; ticket sellers; Record-keepers for stores and warehouses; Receptionists; travel agent; interviewers; Telephone and telegraph operators; Postal and messenger workers; Dispatchers; transportation coordinators; Other administrative service workers who perform rutinary or simple tasks; Other related workers, including generic office workers and public servants when no further specification was provided

Manufacturing/ Repair Skilled Workers	Food, beverage, and tobacco production workers, including cooks in establishments; Mine, quarry and well workers; Textile and leather production workers. (i.e., tailors, upholsterers, cobblers, embroiderers, lithographers, seamstresses; for unskilled finishing work; Wood and paper production or printing workers; (i.e., carpenter, cabinetmaker, lynotypist, film developer, other skilled carpentry work); Metal production and treatment workers; vehicle, machinery, and equipment repair. (i.e., casters, lathe operators, boilermakers, welders, jewelers, goldsmiths, locksmiths, metal polishers, tool sharpeners, blacksmiths, metal forgers, refrigerator repair people, musical instrument repair people); Ceramic, tile, glass, or other mineral production workers. (i.e., potters, glass cutters); Construction, installation, maintenance and finishing workers. (i.e., bricklayers, house painters, plasterers, roofers, floor polishers, plumbers, parts installers); Electrical equipment, electronics and telecommunications installation and repair workers. (i.e., electricians, television/radio repair people); chemical, petroleum, oil, and plastics production workers; Other craftsmen or manufacturing workers, incl unspecified industry
Manufacturing/ Repair Heavy Equipment Operators	Food, beverage, and tobacco production equipment operators; Mine, quarry and well equipment operators; Textile and leather production equipment operators; Wood and paper production or printing equipment operators (includes furniture production); Metallurgical or automotive production or repair equipment operators. (i.e., assembling machine operators, rollers, fitters); Ceramic, tile, glass, or other mineral production equipment operators; Construction equipment operators; Energy, pump or refrigeration equipment operators; Chemical, petroleum, oil, and plastics production equipment operators; Other operators of heavy machinery and equipment, incl. unspecified industry

3 Low-skilled Occupations

Unemployment/ Not in Labor Force	Unemployed (seeking work); Homemaker; Helps around the house; Idle (adult not seeking work and not helping around the house); School-aged, unspecified; School-aged or younger, not in school; Student; Student and Worker Retired, unspecified; Retired w/o pension; Retired with pension; Disability retirement; Pensioner who works; Other, unspecified (disabled, incarcerated, tourist and other); Disabled, ill; Incarcerated; Tourist; On welfare; Other, not in workforce
Agriculture, Husbandry, Forestry/ Fisheries Workers	Agricultural workers; Husbandry workers; Workers in both agriculture and husbandry; Forestry workers; Hunters; games men; trappers; Fishery or marine workers; Workers in activities associated with agricultural or marine products; Foremen, overseers, and other control persons of agricultural, husbandry or fishery activities; Other agriculture, husbandry, forestry, fishery workers
Manufacturing/ Repair Unskilled	Food, beverage, and tobacco production unskilled workers; Mine, quarry and well unskilled workers; Textile and leather production unskilled workers. (Includes garment finishing work, e.g. sewing buttons.); Wood and paper production or printing unskilled workers (includes furniture production); Metallurgical or automotive production or repair unskilled workers; Ceramic, tile, glass or other mineral production unskilled workers; Construction unskilled workers; Electrical equipment, electronics and telecommunications installation and repair unskilled workers; Chemical, petroleum, oil, and plastics production unskilled workers; Other unskilled workers includes unspecified
Ambulatory Workers	Ambulatory salespeople: toys, lottery tickets, household goods, paper, other inedible items; Ambulatory service workers: food vendors, shoe shiners, car/windshield washers, street performers; Other ambulatory workers, self-employed day laborers
Personal Services Workers in Establishments	Innkeepers; bartenders; waiters; flight attendants; Launderers; pressers; and other clothes cleaning service workers; Doormen; concierges; elevator operators; bellboys; cleaning workers; gardeners; movers; dishwasher; Barbers; hair stylists; Workers in car rental, and other movable rental establishments; Party planners; tour guides; event organizers; caregivers in institutions; Morticians; funeral home workers; Other personal service worker: e.g., parking lot attendants
Domestic Service	Domestic services workers; caregivers, drivers, gardeners, doorman and other service workers in private households, i.e., babysitter.
Protection Service	Security personnel; police officers; watchmen, firefighters; Armed forces personnel; Other related workers

4 Other Occupations/Not Specified

Other	Other unspecified occupation; prior to labor force entry; unknown; unspecified by LAMP

The author made the categorization based on the occupations of the following source: Latin American Migration Project (n.d.). Appendix D: Occupation Codes [pdf] Available online: https://lamp.opr.princeton.edu/

Table 10 - Overview of all Variables Used

Dependent Variables

Ever Migrated to the U.S.	0	Never Migrated to the U.S.
	1	Migrated to the U.S. at least once
Illegal Status at First Migration	0	Legal Documents
Illegal Status at Last Migration	1	No or False Documents
U.S. Hourly CPI-Adjusted Wages at First Migration		Continuous Variable
U.S. Hourly CPI-Adjusted Wages at Last Migration		

Independent Variables

Total Education	0	Missing
Education at First Migration	1	No Education/Incomplete Primary School
Education at Last Migration	*2*	*Complete Primary School/Incomplete Lower Secondary School*
	3	Complete Lower Secondary School/ Incomplete Upper Secondary School
	4	Complete Upper Secondary School
	5	Tertiary Education
Illegal Status at First Migration	0	Legal Documents
Illegal Status at Last Migration	1	No or False Documents

Control Variables

Age at Survey	0	Missing
Age at First Migration	1	0 to 17 Years
Age at Last Migration	*2*	*18 to 24 Years*
	3	25 to 34 Years
	4	35 to 44 Years
	5	45 to 54 Years
	6	55 to 64 Years
	7	65 to 74 Years
	8	75 to 84 Years
	9	85 to 94 Years
	10	95 Years and above
Female	0	Male
	1	Female
Ever Married in Life	0	Missing
	1	*Never Married*
	2	Ever Married or Consensual Union
U.S. Born	0	Missing
	1	*Not U.S. Born*
	2	U.S. Born
Previous Migration Experience	0	No Previous Experience
	1	Previous Domestic and International non-U.S. Experience
Other Household Members Migration Experience	0	No Experience of Other Household Members
	1	Experience of Other Household Members
U.S. Wages of Last Occupation	0	No Wages
	1	0 < \$/h < 3
	2	*3 < \$/h < 6*

	3	6 < \$/h < 9
	4	9 < \$/h < 12
	5	12 < \$/h < 15
	6	15 < \$/h < 20
	7	20 \$/h and above
	8	Extreme Outliers
	9	Missing
Occupation Prior First Migration	0	Missing
Occupation Prior Last Migration	1	High-Skilled
	2	*Medium-Skilled*
	3	Low-Skilled
	4	Other/Unspecified
Labor Experience Prior First Migration	0	Missing
	1	0 to 5 Years
Labor Experience Prior Last Migration	*2*	*5 to 10 Years*
	3	10 to 15 Years
	4	15 to 25 Years
	5	25 to 35 Years
	6	35 to 45 Years
	7	45 Years and above
U.S. Occupation at First Migration	0	Missing
U.S. Occupation at Last Migration	1	High-Skilled
	2	*Medium-Skilled*
	3	Low-Skilled
	4	Other/Unspecified
Country	*1*	*Nicaragua*
	2	Guatemala
	3	El Salvador
Survey Year	*1*	*2000*
	2	2001
	3	2002
	4	2003
	5	2004
	6	2007

The reference categories of the categorical variables are depicted in *italics*.

Appendix B

Table 11 - Descriptive Statistics in Shares (%): Outcome Variable: Illegal Status at Last Migration

VARIABLES	All		Nicaragua		Guatemala		El Salvador	
	Illegal	Legal	Illegal	Legal	Illegal	Legal	Illegal	Legal
Illegal Status Last M.	37.82	62.18	15.36	84.64	66.02	33.98	61.09	38.91
Education at Last Migration								
No Education/ Incomplete Primary	10.81	5.21	3.13	4.35	9.47	8.05	16.20	7.02
Complete Primary/ Incomplete Lower Secondary	9.01	6.30	7.29	6.43	15.38	6.90	3.91	5.26
Complete Lower Secondary/ Incomplete Upper Secondary	8.33	8.22	11.46	9.07	6.51	5.75	8.38	6.14
Complete Secondary	4.50	5.75	7.29	6.05	5.33	8.05	2.23	2.63
Tertiary Education	1.80	10.00	5.21	11.91	0.59	6.90	1.12	3.51
Missing	65.54	64.52	65.63	62.19	62.72	64.37	68.16	75.44
Age at Last Migration								
0 to 17 Years	13.06	18.63	15.63	17.96	12.43	11.49	12.29	27.19
18 to 24 Years	29.95	24.66	22.92	24.01	36.09	32.18	27.93	21.93
25 to 34 Years	34.01	26.58	37.50	28.36	35.50	19.54	30.73	23.68
35 to 44 Years	14.64	15.89	19.79	15.88	12.43	21.84	13.97	11.40
45 to 54 Years	3.60	7.67	3.13	8.13	2.96	11.49	4.47	2.63
55 to 64 Years	0.23	1.37	-	1.32	-	1.15	0.56	1.75
65 to 74 Years	-	0.41	-	0.38	-	-	-	0.88
75 to 84 Years	-	0.27	-	0.38	-	-	-	-
85 to 94 Years	-	-	-	-	-	-	-	-
95 Years and over	-	-	-	-	-	-	-	-
Missing	4.50	4.52	1.04	3.59	0.59	2.30	10.06	10.53
Female	34.23	44.38	34.38	47.64	30.18	31.03	37.99	39.47
Previous Migration Experience	14.41	21.51	12.50	25.33	9.47	9.20	20.11	13.16
Occupation Prior to Last Migration								
High-Skilled	4.50	10.27	9.39	11.53	4.14	14.94	2.23	0.88
Medium-Skilled	13.29	6.58	7.29	5.29	23.08	12.64	7.26	7.89
Low-Skilled	14.41	15.62	15.63	17.77	8.28	6.90	19.55	12.28
Other	2.70	3.15	2.08	3.40	1.78	1.15	3.91	3.51
Missing	65.09	64.38	65.63	62.00	62.72	64.37	67.04	75.44
Labor Experience Prior to Last Migration								
0 to 5 Years	4.28	4.25	5.21	4.35	2.37	2.30	5.59	5.26
5 to 10 Years	3.38	4.66	1.04	5.29	4.14	2.30	3.91	3.51
10 to 15 Years	6.53	6.03	6.25	6.81	7.69	3.45	5.59	4.39
15 to 25 Years	13.51	8.90	15.63	9.64	13.61	10.34	12.29	4.39
25 to 35 Years	4.95	6.99	4.17	7.37	5.92	9.20	4.47	3.51
35 to 45 Years	2.03	3.70	2.08	3.59	2.96	6.90	1.12	1.75
45 Years and above	-	1.10	-	0.95	-	1.15	-	1.75
Missing	65.32	64.38	65.63	62.00	63.31	64.37	67.04	75.44
Country								
Nicaragua	21.62	72.47	100	100	-	-	-	-
Guatemala	38.06	11.92	-	-	100	100	-	-
El Salvador	40.32	15.62	-	-	-	-	100	100
Survey Year								
2000	8.33	9.86	38.54	13.61	-	-	-	-
2001	0.68	7.81	3.13	10.78	-	--	-	-
2002	11.71	46.44	54.17	64.08	-	-	-	-
2003	0.90	8.36	4.17	11.53	-	-	-	-
2004	38.06	11.92	-	-	100	100	-	-
2007	40.32	15.62	-	-	-	-	100	100
Observation Numbers	444	730	96	529	169	87	179	114

Table 12 - Descriptive Statistics in Shares (%): Outcome Variable: Hourly U.S. Wages at Last Migration

VARIABLES	All	Nicaragua	Guatemala	El Salvador
Hourly CPI-adjusted U.S. Wages at Last Migration in US$	7.963	9.433	5.451	5.881
Illegal Status at Last Migration	33.03	10.50	59.42	79.31
Age at Last Migration				
0 to 17 Years	11.62	12.00	37.68	13.79
18 to 24 Years	24.77	21.00	20.43	22.41
25 to 34 Years	31.80	32.50	15.94	31.03
35 to 44 Years	18.96	20.00	5.80	18.97
45 to 54 Years	10.09	11.50	1.45	10.34
55 to 64 Years	2.14	2.00	-	3.45
65 to 74 Years	-	-	-	-
75 to 84 Years	-	-	-	-
85 to 94 Years	-	-	-	-
95 Years and over	-	-	-	-
Missing	0.61	1.00	8.70	-
Education at Last Migration				
No Education/Incomplete Primary	11.93	4.50	15.94	32.76
Complete Primary/ Incomplete Lower Secondary	11.01	12.50	13.04	3,45
Complete Lower Secondary/ Incomplete Upper Secondary	15.29	17.00	8.70	17.24
Complete Upper Secondary	9.79	10.50	13.04	3.45
Tertiary Education	15.60	23.00	4.35	3.45
Missing	36.39	32.50	44.93	29.66
Female	37.61	43.00	31.88	25.86
U.S. Occupation at Last Migration				
High-Skilled	23.24	34.50	7.25	3.45
Medium-Skilled	29.97	23.50	34.78	46.55
Low-Skilled	43.73	40.50	50.72	46.55
Other	3.06	1.50	7.25	3.45
Missing	-	-	-	-
Country				
Nicaragua	61.16	100	-	-
Guatemala	21.10	-	100	-
El Salvador	17.74	-	-	100
Survey Year				
2000	5.81	9.50	-	-
2001	7.34	12.00	-	-
2002	37.61	61.50	-	-
2003	10.40	17.00	-	-
2004	21.10	-	100	-
2007	17.74	-	-	100
Observation Numbers	327	200	69	58

Appendix C

Table 13 - Regression: Outcome Variable is Illegal Status at Last Migration

VARIABLES	(1) All	(2) Nicaragua	(3) Guatemala	(4) El Salvador
Illegal Status at Last Migration				
Education at Last Migration				
Missing	6.216	0.000	0.000	2.070e+13
	(9.687)	(0.036)	(0.000)	(2.546e+16)
No Education/Incomplete Primary	1.360	0.553	0.330	11.17***
	(0.556)	(0.471)	(0.284)	(10.41)
Complete Primary/ Incomplete Lower Secondary	ref.	ref.	ref.	ref.
Complete Lower Secondary/ Incomplete Upper Secondary	0.756	0.842	0.168*	2.445
	(0.298)	(0.506)	(0.177)	(1.966)
Complete Upper Secondary	0.544	0.826	0.0521**	2.835
	(0.246)	(0.566)	(0.0611)	(3.159)
Tertiary Education	0.197***	0.269*	0.0265**	0.302
	(0.101)	(0.189)	(0.0419)	(0.350)
Female	0.801	0.543**	1.004	1.106
	(0.122)	(0.135)	(0.339)	(0.304)
Previous Migration Experience	0.886	0.436**	0.619	2.276*
	(0.191)	(0.161)	(0.358)	(0.995)
Occupation Prior to Last Migration				
Missing	0.000	49,688		0
	(0.000)	(3.052e+07)		(6.91e-10)
High-Skilled	0.683	0.689	0.189**	10.69*
	(0.280)	(0.442)	(0.156)	(14.560)
Medium-Skilled	ref.	ref.	ref.	ref.
Low-Skilled	1.045	1.040	0.441	2.930
	(0.354)	(0.609)	(0.362)	(2.047)
Other/Unspecified	0.674	0.479	0.215	3.005
	(0.391)	(0.481)	(0.358)	(3.201)
Labor Experience Prior to Last Migration				
Missing	283,110		320,816	
	(1.454e+08)		(2.899e+08)	
0 to 5 Years	1.757	6.062	0.313	2.509
	(0.998)	(7.499)	(0.496)	(2.767)
5 to 10 Years	ref.	ref.	ref.	ref.
10 to 15 Years	2.050	6.996	1.248	2.418
	(1.065)	(8.528)	(1.719)	(2.574)
15 to 25 Years	3.234**	12.41**	0.680	6.188*
	(1.581)	(14.64)	(0.866)	(6.576)
25 to 35 Years	1.664	6.394	0.186	0.549
	(0.976)	(8.228)	(0.299)	(0.665)
35 to 45 Years	1.258	12.15	0.433	0.0749
	(1.009)	(21.03)	(0.856)	(0.158)
45 Years and above	1	1	1	1
	(0)	(0)	(0)	(0)
Country				
Nicaragua	ref.			
Guatemala	3.439***			

	(0.873)			
	2.973***			
El Salvador	(0.736)			

| Constant | 0.632 | 0.245 | 63.450*** | 0.150 |
| | (0.355) | (0.300) | (97.350) | (0.179) |

| Observations | 1,165 | 614 | 254 | 291 |

All Models are controlled for Survey Year and Age Groups. seEform in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 14 - Regression: Outcome Variable is Hourly U.S. Wages at Last Migration

VARIABLES	(1) All	(2) Nicaragua	(3) Guatemala	(4) El Salvador
Illegal Status at Last Migration	3.039	3.833	-0.350	-0.334
	(4.598)	(9.361)	(0.811)	(2.124)
Education at Last Migration				
Missing	2.070	-0.498	1.423	2.230
	(5.959)	(9.107)	(1.520)	(4.023)
No Education/Incomplete Primary	-1.213	-9.362	-2.737*	1.124
	(6.993)	(15.40)	(1.520)	(3.790)
Complete Primary/ Incomplete Lower Secondary	ref.	ref.	ref.	ref.
Complete Lower Secondary/ Incomplete Upper Secondary	0.440	-3.239	-1.943	5.470
	(6.345)	(9.800)	(1.765)	(3.880)
Complete Upper Secondary	15.64**	23.57**	-1.941	1.908
	(7.003)	(11.01)	(1.469)	(5.373)
Tertiary Education	-0.226	-3.934	-3.454*	13.46***
	(6.379)	(9.342)	(2.025)	(4.979)
Female	-5.153	-9.853*	-0.788	-1.223
	(3.428)	(5.507)	(0.795)	(1.680)
U.S. Occupation at Last Migration				
High-Skilled	10.88**	13.64*	0.516	-3.054
	(4.737)	(7.143)	(1.624)	(4.726)
Medium-Skilled	ref.	ref.	ref.	ref.
Low-Skilled	-1.147	-1.632	-0.338	-2.047
	(3.958)	(7.132)	(0.794)	(1.516)
Other/Unspecified	4.537	3.061	-0.451	0.172
	(9.899)	(22.69)	(1.503)	(3.943)
Country				
Nicaragua	ref.			
Guatemala	1.252			
	(7.571)			
El Salvador	3.137			
	(7.861)			
Constant	1.078	3.300	6.206***	5.030
	(9.539)	(13.92)	(1.761)	(4.833)
Observations	327	200	69	58
R-squared	0.077	0.113	0.301	0.397

All Models are controlled for Survey Year and Age Groups. Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1