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THE EFFECTS OF VIOLENCE ON REMITTANCES:
THE CASE OF CENTRAL AMERICA

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QUE PARA OBTENER EL GRADO DE
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Abstract:

The present work delves into the literature on remittances and violence, using security perception and crime victimization as proxies. Central America is considered one of the world's most significant remittance-receiving regions and one of the most violent regions. Therefore, this study examines the impact of violence on the receipt of remittances. This will be measured not only by security perception but also by crime victimization. I analyze this relationship using public opinion surveys from El Salvador, Guatemala, Honduras, and Nicaragua for the time periods from 2010 to 2023 (around six survey waves), by analyzing the data with a logistic regression model. The findings highlight that there exists a difference between violence perception and crime victimization in terms of receiving remittances. A high violence perception does not necessarily correspond negatively to the receipt of remittances for almost all of the analyzed countries, while crime victimization corresponds positively to remittances in all cases.

Keywords: Remittances; violence; violence perception; victimization; Central America

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1. Introduction

Remittances are now considered a crucial component of economies in many regions, proving themselves as an essential source of income for numerous households over the years. Remittances are typically sent by migrants to their home countries at regular intervals and are of great importance not only to the individuals receiving them but also in terms of development in the receiving countries. The monthly money transfers amount to approximately 200 to 300 USD, and the volume of remittances often exceeds the amount of official development assistance sent to the country (BMZ, 2023; Dinges, 2022). In recent years, it has become evident that the sending of remittances has increased slowly but steadily, reaching new record volumes annually (Ong, 2023).

According to economic theory, migrants living abroad aim either to financially support individuals in their home country or to invest in personal projects, with the prospect of returning in the long term. In many cases, the reasons for sending remittances are diverse and can be found within the home country. These reasons typically encompass both macroeconomic and microeconomic factors (Adams, 2009). Due to the multifaceted nature of these reasons, they are integrated into the present paper to yield particularly specific results.

However, how do the factors of violence and insecurity in the home country affect both the individual and the investments made in terms of remittance sending? Additionally, does it make a difference whether an individual in the home country has been a direct victim of a crime or merely has a general perception of insecurity?

In the literature, the comparison between security perception and actual crime victimization in relation to the impact on remittances is still relatively under-researched. In the present work, the research question is whether a context of violence tends to stimulate or depress remittance flows in terms of violence perception and victimization. Based on the reviewed literature and the research question, I hypothesize that increasing violence perception by the remittance recipient will result in a decrease in remittances. This may occur when individuals residing abroad primarily act out of pure self-interest, focusing on financing investments in their home country or contemplating a return there (Vargas-Silva, 2009; Meseguer et al., 2017; Lucas & Stark, 1985).

However, due to risks or a low security situation, such intentions may diminish. In this context, the emphasis on security perception, rather than an actual case of violence against a

relative (victimization), underscores the predominance of pure self-interest. I also hypothesize that being a victim of a crime leads to an increase in the receiving of remittances. In cases where a relative or friend in the home country becomes a victim of crime, it clearly illustrates the sense of "insecurity." In such instances, the focus shifts away from considerations of returning to the home country or promoting investments. Instead, the individual residing abroad sends money to financially support the crime victim, ensuring their future safety, which is not provided by the government (Altamirano et al. 2020; Angulo Amaya & Littlefield, 2023; Lucas & Stark, 1985; Van Dalen et al., 2005). It is important to mention that information is typically transmitted through social remittances, wherein the remittance sender communicates with the remittance receiver in the home country or receives information from the media (Levitt, 2001; Pérez-Armendáriz & Crow, 2010; Levitt & Lamba-Nieves, 2011; Careja & Emmenegger, 2012; Pérez-Armendáriz, 2014; Escribà-Folch et al., 2015; Karakoç et al., 2017).

In this context, the less explored topic of violence in the country is also considered. In addition to that, and also related to social remittances, I argue that a crime victim receives more financial support from their relatives or friends abroad in terms of remittances. In such instances, the driving force behind increased remittances is predominantly attributed to pure altruism rather than factors concerning the sender or macroeconomic considerations (López García & Maydom, 2021; Meseguer et al., 2017; Vargas-Silva, 2009; Farzanegan et al., 2017; Van Dalen et al., 2005; Hagen-Zanker & Siegel, 2007; Adams, 2009; Gallina, 2006; Lucas & Stark, 1985; Niimi & Özden, 2006; Amuedo-Dorantes & Pozo, 2006; Carling, 2014).

To test this theory, I analyze the countries of El Salvador, Guatemala, Honduras, and Nicaragua using the survey data from 2010 to 2023 of the Latin American Public Opinion Project (LAPOP). With this study, I contribute to the analysis of the intricate interplay between violence perception, victimization, and remittance behavior. The obtained results provide valuable insights into the factors and dynamics influencing remittance behavior in Central America. Over the examined period of approximately 13 years (around six survey waves), this study also reveals how these events have evolved over time and whether similar patterns are discernible in the investigated countries. Furthermore, this work directs its focus toward the less explored non-economic motivations, which may contribute to the decision to send remittances. This study conducts a comparative analysis within Central America, which has not been done

before in the already limited literature on the topic (Lucas & Stark, 1985; Vargas-Silva, 2009; Meseguer et al., 2017).

The article is structured as follows. The second section explores why remittances are being sent to the migrant's country of origin, as well as the argument of the paper. The third section provides information about the case selection and empirical strategy, along with the data employed for analysis. The fourth section presents the results. The article's discussion and conclusion are provided in the fifth and final section.

2. Theoretical Framework

2.1 Remittances

In recent years, remittances have become an increasingly important source of income for developing and emerging countries. This financial support involves the transfer of money from migrants living and working abroad to their relatives and friends in their home countries (Adams, 2009; López García & Maydom, 2021; Van Dalen et al, 2005; Regan & Frank, 2014). Remittances are particularly perceived by relatives in their home countries, especially in developing and emerging countries, as a self-insurance mechanism. Simultaneously, they represent an increasingly relevant external financial source for these countries. The significance of remittances for certain countries is evident as their volume surpasses foreign direct investments and aid in some instances (Kapur, 2003; Savage & Harvey, 2007; Yang, 2011; Niimi & Özden, 2006; Rodima-Taylor, 2022). Moreover, it has been shown that remittances are also significantly less volatile, remain stable over a longer period, and behave countercyclical to political or economic downturns in the receiving country (Ratha, 2003; Gallina, 2006; Farzanegan, et al., 2017).

The migrants living abroad who send remittances to individuals have various motivations for initiating these transactions. Typically, these motivations can be classified into microeconomic or macroeconomic factors (Adams, 2009). Remittance senders generally prioritize their families/households when considering the reasons for sending money, followed by the community to which they belong, and, lastly, to support the overall economy through socially responsible or profit-oriented investments (Gallina, 2006). In the following, I will explore in detail the primary reasons why migrants send remittances and the potential variations in these reasons.

Microeconomic reasons for the increase or decrease of remittances to families and friends in the home countries can stem from the expectation of eventually returning to live in the country of origin, or the desire to seek returns on property (Meseguer et al., 2017; Farzanegan et al., 2017; Nwosu et al., 2012; Fullenkamp et al., 2008). Financial remittances are typically sent to the families in the home country, whose use of the remittance funds is generally at the discretion of the recipients. This is particularly crucial given that remittance-receiving countries are typically among the poorest and more frequently affected by various crises. Additionally, factors such as the age, gender, educational attainment, income, and employment

status of the receiver play a crucial role. In the literature, it is frequently mentioned that women over 60 years of age, as well as individuals who are not employed or have lower educational levels, tend to receive significantly more remittances (López García & Maydom, 2021; Meseguer et al., 2017; Vargas-Silva, 2009; Farzanegan et al., 2017; Van Dalen et al., 2005; Hagen-Zanker & Siegel, 2007; Adams, 2009; Gallina, 2006; Lucas & Stark, 1985; Niimi & Özden, 2006; Amuedo-Dorantes & Pozo, 2006; Carling, 2014).

In terms of the macroeconomic reasons in most instances, the literature suggests that migrants assist their left-behind relatives or friends in overcoming financial crises in their daily lives and minimizing financial risks as much as possible in the event of unforeseen financial shocks (Lucas & Stark, 1985; Van Dalen et al., 2005; Meseguer et al., 2017; Combes & Ebeke, 2011; Niimi and Özden, 2006). Additional reasons for sending remittances include the political and economic conditions in the country. This implies that remittance sending may decrease in certain circumstances, such as when the political and economic situation is unfavorable for remittance transfers (Ratha et al., 2016; Hagen-Zanker & Siegel, 2007; Adams, 2009; Fullenkamp et al., 2008; Nwosu et al., 2012; Niimi & Özden, 2006). According to Hagen-Zanker and Siegel (2007), the micro- and macroeconomic reasons play an important role in why fewer remittances are sent to the home country, even in the presence of low levels of rule of law in the country. These political and economic aspects are not conducive to long-term investment purposes, as a financially developed infrastructure and a robust internal market are generally more desirable for sending and investing remittances in the long term by the remitter (Nwosu et al., 2012; Gallina, 2012).

2.2 Remittances and Violence

Another less-explored motive for migrants to send more or fewer remittances is guided by reasons of violence in their home country. This motive is particularly crucial in the case of Central America, given that this region is known to be the most violent in the world (Erickson, 2018). As mentioned above, migrants with an interest in the overall situation in their home country, especially those making or intending to make investments there, are particularly affected. In the context of violence, Meseguer et al. (2017) suggest that, especially in an atmosphere of violence that jeopardizes their investments, migrants' interest in sending remittances diminishes. This puts them in a dilemma between sending and not sending.

Furthermore, the theory posits that migrants tend to be well-informed about the political, economic, and violent situation in their country of origin over an extended period, either through news or communication with their relatives and friends (Nwosu et al., 2012).

Especially important are the works of Vargas-Silva (2009) and Meseguer et al. (2017), which offer a more nuanced exploration of the research question. Unlike much of the existing literature that predominantly investigates the impact of remittances on violence, these authors focus on the reciprocal relationship, examining the effects of violence on remittance patterns. Both studies concentrate on the Latin American context, specifically Mexico and Colombia, yet their temporal scope is limited to a maximum of two survey rounds. Vargas-Silva (2009) utilizes survey data collected between March and May 2003, while Meseguer et al. (2017) analyze two survey waves in 2006 and 2010. It is important to note that the period under consideration coincided with the early stages of the drug war in Mexico. Consequently, the proximity of these time frames raises concerns about whether observed variations in remittance behavior are indicative of broader trends or are confined to a specific "peak" period.

According to the literature on the reasons for sending remittances, many different factors play a significant role (Gallina, 2006). As mentioned, macroeconomic stability, influenced by violence in the region, plays a crucial role. Instances of reduced returns due to the violent situation in the home country therefore can result in lower expected returns or profits (Hagen-Zanker & Siegel, 2007). Simultaneously, access to remittances becomes more challenging, and it becomes crucial for individuals in affected regions not to reveal that they receive remittances to avoid becoming potential targets of criminal violence (Meseguer et al., 2017; López García & Maydom, 2021). Vargas-Silva (2009) also highlights that the number of remittances declines in the case of Colombia when a family member in the home country becomes a victim of a crime, which will be discussed further in this work. Thus, a dilemma arises, especially during times of increased criminal violence, as relatives or friends require more remittances to secure safety (Meseguer et al., 2017; López García & Maydom, 2021). Volatility during crises is relatively low concerning the amount of remittances since the individuals sending remittances are located abroad and, therefore, less or not affected by crises in their home country. Thus, remittances serve as a form of 'cushion' for households in times of crisis. However, these financial aids cannot entirely replace the public safety net for family members or friends in their home countries (López García & Maydom, 2021; Savage & Harvey, 2007).

2.3 Argument

In my study, I differentiate between security perception and victimization to compare how varying contexts of violence may influence the sending of remittances. Despite their apparent similarity, perception and victimization are perceived differently not only by those directly affected but also by migrants living abroad. Lucas and Stark (1985) highlight distinctions between sending remittances driven by pure self-interest versus pure altruism. This distinction suggests that perception and victimization may lead to different outcomes in terms of remittance behavior, as perception is subjective compared to the concrete experience of victimization. The literature indicates that the variables of "violence perception" and "crime victimization" are interconnected. These two variables are frequently used together with other dependent variables in various studies. Doran and Burgess (2011) mention demographic theories which illustrate that the fear of becoming a crime victim has less impact on a person's daily life compared to the impact on someone who has been a crime victim. However, individuals who have been victims of crime tend to have a higher perception of insecurity, although this perception diminishes over time (Clark, 2003). There are numerous reasons (media, social circle, violence in the country, etc.) why a person might have a corresponding perception of insecurity, which is highly subjective. Conversely, being a crime victim is less subjective, making the comparison of these two variables particularly intriguing (Doran & Burgess, 2011).

Therefore, the transmission of social remittances plays a significant role, both in violence perception and victimization. Social remittances refer to the transfer of ideas, behaviors, or values from one country to another, facilitated by cross-border interactions over long distances or face-to-face communication (Escribà-Folch et al., 2015; Pérez-Armendáriz, 2014). Both the migrant's home country, where the relatives and friends reside, and the migrant's host country are major sources of social remittances. Typically, this communication increasingly occurs over the internet or phone, on a very personal level between the migrant abroad and their family and friends back home, thereby providing a trustworthy source of reporting, or when the person living abroad is visited by relatives or friends in the host country (Karakoç et al., 2017; Levitt, 2001; Levitt & Lamba-Nieves, 2011).

As social remittances are usually exchanged and perceived among closely related individuals who also come from the same culture, social and political developments in the respective countries are perceived and discussed (Pérez-Armendáriz & Crow, 2010; Levitt &

Lamba-Nieves, 2011). Due to the ever-advancing communication possibilities, it becomes easier for migrants and their families in the home country to experience or learn about each other's daily activities (Levitt, 2001). Pérez-Armendáriz and Crow (2010) indicate that recipients of social remittances are highly receptive to the ideas and reactions of their relatives and friends abroad, adopting them more quickly, which influences the attitudes regarding various topics among family members and friends. Particularly, political issues are perceived more critically, leading to a greater interest in them (Careja & Emmenegger, 2012).

Regarding individuals receiving remittances, these are particularly vulnerable to violent crimes, as they typically reside in smaller communities where remittances materialize and are externalized (for example, through the purchase of a new car or home renovations), thereby becoming visible to other individuals in the locality.

As described in the literature, individuals living in rural areas (villages and small towns) tend to receive more remittances and are acquainted with each other and with remittance recipients (Ocampo Arista, 2023). Consequently, in some countries, insurance policies are offered, providing coverage to remittance recipients for up to three hours after withdrawing money in the event of a robbery. This illustrates that it is not uncommon for robberies to occur targeting these individuals, prompting corresponding insurance programs (El Economista, 2017). Given that the majority of remittance transfers worldwide are processed through the payment service Western Union, where recipients can only withdraw remittances at specific and marked branches, those receiving remittances also become notably visible (El Economista, 2015). As mentioned here, individuals receiving remittances may have the opportunity to "purchase" their security; however, this does not substitute for the public security typically provided by the government (López García & Maydom, 2021).

As migrants also become acquainted with a "new" reality, they have a direct comparison between the situation in their home country and that in the host country regarding general well-being or the functioning of the legal system (Careja & Emmenegger, 2012). If the comparison in terms of psychological and political attributes is negative for the home country, the migrant's return is usually less considered (Pérez-Armendáriz & Crow, 2010). Thus, social remittances have a significant impact on financial remittances (Levitt & Lamba-Nieves, 2011). Based on the preceding discussion, I propose the following hypothesis for this study.

Hypothesis 1: Lower security perception is negatively correlated to the receiving of remittances.

While the first hypothesis examines whether people who have a lower security perception in their neighborhood receive fewer remittances, the second hypothesis focuses on crime victims and whether they receive more remittances from abroad. According to Vargas-Silva (2009), these groups of people in particular (those who have been victims of a crime) receive fewer remittances from abroad. This applies not only to the amount of remittances but also to the likelihood of receiving remittances at all. Vargas-Silva (2009) points out that those people who send remittances lose interest in inheriting something from their family members in their home country after they become victims of a crime.

I use this second hypothesis with another independent variable because, according to Altamirano et al. (2020), violence perception has little to do with crime victimization, and people who feel unsafe perceive a higher risk than is the case. In the case of Latin America in particular, it is mentioned that perception is a social construct and is shared accordingly at a cultural level. Thus, it may well be the case that people who have been victims of a crime do not necessarily have a higher perception of insecurity, and those who have a higher perception of insecurity have not been victims of a crime (Ceobanu et al., 2011).

In particular, the consequences experienced by the victims of a crime are usually such that they feel helpless and lose confidence in the role of the state, which should protect them (Bateson, 2012). Altamirano et al. (2020) also state that many victims of violent crime blame the state for the lack of security and that there are no alternatives to escape this situation if they do not have the economic resources to do so. Due to this lack of help and security from the state and the communication between the victim of a violent crime and their relative abroad, the person abroad sends remittances so that the person can “buy” their security, and use this as a product of security spending it on safer neighborhoods, enrolling their children in better schools, or avoiding the use of public transportation (López García & Maydom, 2021; Brito et al., 2014). Being the victim of a violent crime impacts the quality of life in many areas, as it usually has health, economic, and emotional consequences, which can also restrict victims' ability to work (Altamirano et al., 2020). The behavior of those affected by violent crime also changes, with these individuals avoiding public transport or refraining from leaving their homes at night, among other things, which impacts consumption and economic activities for both the economy

and the individual (Robles et al., 2013). To shield themselves from such conflict situations due to prevailing public insecurity, some remittance recipients utilize the money to protect themselves and their families from criminal activities. As Angulo Amaya and Littlefield (2023) state, when citizens experience higher levels of crime, they become more critical of the state and its responsibility to provide public safety. Since the people affected usually demand compensation from the state for the costs incurred, but the state cannot or does not want to take responsibility for them, it is possible that family members or friends from abroad in particular take on this role by sending more remittances. For this reason, I formulate the following second hypothesis:

Hypothesis 2: Being a crime victim is positively correlated to the receiving of remittances.

The focus of this paper is on remittance dynamics in the context of violence in Central America. I distinguish between low security perception and victimization, as Altamirano et al. (2020) and Angulo Amaya and Littlefield (2023) point out that both variables tend to show different patterns, although they are very much connected.

3. Empirical Strategy

This study entails a quantitative analysis in which I will utilize data from the Latin American Public Opinion Project (LAPOP) carried out by Vanderbilt University, which studies public opinion and behavior within the AmericasBarometer. Six waves of the survey conducted between 2010 and 2023 will be examined for each country in Central America and compared.¹²

3.1 Case Selection: Central America

Central America is an ideal case for testing the hypotheses presented in this paper. First, Central America is considered a global leader in both the receipt of remittances per capita and in terms of volume. Second, the violence prevailing in the region has continued to increase since the 1970s (Heinemann & Verner, 2006; Acosta et al., 2008; Acevedo, 2020). Furthermore, the analyzed countries are quite homogenous in terms of their geographic location, size, historical and economic backgrounds. In the following section, I expand on these case justifications.

In terms of violence, only in 2019, Central America had an average homicide rate of 26.6 per 100,000 people, with a global average of 6.18 homicides per 100,000 people (Pan American Health Organization, 2021; Statista, 2024a, 2024b, 2024c, 2024d). According to Doyle and López García (2021), violence has notably increased in the leading recipient countries of remittances, which include countries such as those in the Northern Triangle of Central America (El Salvador, Honduras, and Nicaragua).

Central America serves as a compelling case study for this research due to its reliable violence statistics and extensive studies on violence in the region, which facilitate comparative analysis between countries (Heinemann & Verner, 2006; Vilalta, 2020; López García & Maydom, 2021). According to López García and Maydom (2021), violence in Central America exhibits diverse manifestations, with assaults, robberies, and physical attacks often resulting in homicides at higher rates compared to other regions worldwide.

At the same time, remittances play an important role in the political, economic, and social contexts, which have become increasingly significant for Central American countries in

¹ The dataset comprises surveys for El Salvador (LAPOP surveys for 2010, 2012, 2014, 2016, 2018, and 2023), Guatemala (LAPOP surveys for 2010, 2012, 2014, 2017, 2019, and 2023), Honduras (LAPOP surveys for 2010, 2012, 2014, 2016, 2018, and 2023), and Nicaragua (LAPOP surveys for 2010, 2012, 2014, 2016, and 2019).

² Due to the availability of data collected in different years, I chose not to analyze the countries as a whole but rather to examine them individually.

recent years. The top remittance-receiving countries (in terms of impact on national GDP) in 2022 according to the World Bank were Honduras (26.8%), El Salvador (23.7%), Nicaragua (20.6%), and Guatemala (19.2%).

3.2 Variables and Structural Models

The dependent variable is a dichotomous variable indicating whether a household receives remittances or not. The person interviewed was asked, “Do you or anyone living in your household receive remittances, i.e. financial assistance from abroad?”. The response options were limited to "Yes" or "No". Accordingly, "Yes" has been encoded as 1, and "No" as 0.

In terms of the independent variable for the first hypothesis, the individuals' violence perception will be used, as relatives or friends typically serve as conduits for migrants living abroad and can perceive the situation accordingly (Meseguer et al., 2017). In the survey, respondents were asked: “Speaking about the neighborhood or area where you live and considering the possibility of being a victim of assault or robbery, do you feel very safe, somewhat safe, somewhat unsafe, or very unsafe?”. The response options were (1) Very safe; (2) Somewhat safe; (3) Somewhat unsafe; and (4) Very unsafe, whereby in the present study options (1) and (2) were coded as safe, and options (3) and (4) were coded as unsafe.

For the second hypothesis, I use a LAPOP question that measures crime victimization: “Have you been a victim of any criminal act in the last 12 months? That is, have you been a victim of robbery, theft, assault, fraud, blackmail, extortion, threats, or any other type of criminal act in the last 12 months?” If the person answers yes to this question, they are coded as 1, otherwise as 0.

The two independent main variables used here are proxies for violence, which include both the security perception and crime victimization. The literature and official institutions (e.g. U.S. Department of Justice) indicate that an assault or robbery is considered a violent crime, which falls under the overarching theme of violence (Pretorius, 2008). In particular, the variable of violence perception is influenced by the violent situation in the country, whether a violent atmosphere prevails, and how the media report on violent incidents in the region (Prieto Curiel & Bishop, 2016; Pretorius, 2008; Humphrey & Palmer, 2013; Milani et al., 2022). As this work focuses on one of the most violent regions in the world, I therefore use the independent variables of safety perception and crime victimization as proxies for violence.

Regarding the control variables, these also will be sourced from the LAPOP database. Therefore, I looked at the literature to see what variables were used in articles that explored a similar relationship and where the effects of violence on remittance behavior were measured. Regarding gender, I have included this variable in the model since the majority of the literature has examined whether the surveyed individual is male or female (López García & Maydom, 2021; Meseguer et al., 2017; Vargas-Silva, 2009; Farzanegan et al., 2017). The study by Meseguer et al. (2017) highlights that women, in particular, receive more remittances than men.

I have decided to group the age categories into four distinct age groups: (1) 18-29 years; (2) 30-49 years; (3) 50-64 years; (4) 65-79 years, and (5) 80 years and older. Existing literature notably indicates that the likelihood of receiving remittances increases with the age of the recipient (Meseguer et al., 2017). This is also understandable since, typically, older people do not work anymore due to their age. However, another study by Vargas-Silva (2009) suggests that the age of the remittance recipient does not play a significant role and lacks statistical significance (Hagen-Zanker & Siegel, 2007; Van Dalen et al., 2005; Adams, 2009).

Urbanization is also included in the model, as it can be crucial to determine whether a person lives in a rural or urban area. The survey specifically asks whether someone lives in an urban (1) or a rural (2) area. According to the literature, significantly fewer remittances are sent to households in the capital, while smaller towns or rural villages receive a considerably higher amount. I assume that, generally, individuals living in a larger city have significantly more opportunities to find employment, access educational institutions, and benefit from various social and economic resources (Gallina, 2006; Lucas & Stark, 1985).

One of the most important variables mentioned in the literature is the educational attainment of the person living in the home country. It is assumed that the higher the level of education, the lower the probability of the person receiving remittances (Farzanegan et al., 2017; Gallina, 2006; Meseguer et al., 2017; Vargas-Silva, 2009; Niimi & Özden, 2006). In this regard, I categorized the response options given in years into three levels, mirroring the education system. Accordingly, distinctions are made here between basic education, intermediate education, and higher education.

To ensure that the individual not only possesses a certain level of education but is also economically engaged, I will use another variable that inquires whether the respondent is employed or not. In my model, this will be represented as "working", if the person is employed

or if the person is not working at the moment but has a job (Farzanegan et al., 2017; Vargas-Silva, 2009; Meseguer et al., 2017). I assume that people who work generally receive fewer remittances from abroad than people who do not work, and use this control because not everyone who has a higher education is employed. Individuals are coded as non-working if they include students, homemakers, or retirees, among others.

Regarding the income, respondents were asked about the household's monthly earnings. I assume that the higher the income, the more likely it is that the remittances can be used not only for family or friends but also for investments (Vargas-Silva, 2009; Adams, 2009; Amuedo-Dorantes & Pozo, 2006; Carling, 2014; Gallina, 2006; Hagen-Zanker & Siegel, 2007; Van Dalen et al., 2005). Since this variable already encompasses remittances, it will be included in a separate model to avoid double-counting.

In addition to the variables mentioned, I have also decided to include the variable of participation in an organization of a community improvement committee or board. I included this variable in the models because Nussio (2019), as well as, Amaya and Littlefield (2023) mention that people who have been victims of a violent crime, in particular, show increased social participation. The question in the LAPOP survey asks how often the respondent participates in meetings of a committee or community improvement. I code the variable so that people who attend meetings weekly or monthly are assigned a 1, while people who rarely or never attend (0-2 times a year) are coded as 0. This variable will be

The following presents the structural models of the logit regression analysis with the variables explained above. I am using a logit model, to estimate the likelihood of receiving or not receiving remittances, as the dependent variable is dichotomous. Limitations of the here presented model can be endogeneity, as well as, omitted variable bias. Regarding endogeneity, there is a possibility that the explanatory variable is correlated with the error term, which can result in biased outcomes and lead to incorrect inferences. To minimize endogeneity, the variables used in this study are those that have been employed in similar literature. The same concern applies to omitted variable bias. To mitigate this, I have used variables that are commonly employed in similar literature to avoid the exclusion of significant variables that might alter the results substantially. However, it is still possible that some important variables may be missing, leading to the omitted variable bias. I am not making causal claims as the survey data does not enable me to do so.

Model 1 (Violence perception):

$$\begin{aligned} & \textit{logit}(\textit{remittances}_{it}) \\ &= \alpha + \beta_1(\textit{violence perception}_{it}) + \beta_2(\textit{victim of crime}_{it}) + \beta_3(\textit{sex}_{it}) \\ &+ \beta_4(\textit{age}_{it}) + \beta_5(\textit{urbanization}_{it}) + \beta_6(\textit{education}_{it}) \\ &+ \beta_7(\textit{employment}_{it}) + \varepsilon_{it} \end{aligned}$$

Model 2 (Victim of crime):

$$\begin{aligned} & \textit{logit}(\textit{remittances}_{it}) \\ &= \alpha + \beta_1(\textit{victim of crime}_{it}) + \beta_2(\textit{violence perception}_{it}) + \beta_3(\textit{sex}_{it}) \\ &+ \beta_4(\textit{age}_{it}) + \beta_5(\textit{urbanization}_{it}) + \beta_6(\textit{education}_{it}) \\ &+ \beta_7(\textit{employment}_{it}) + \varepsilon_{it} \end{aligned}$$

4. Results

To understand whether a context of violence, in terms of the proxies of security perception and victimization, tends to stimulate or depress remittance flows, the results will be presented as follows. Firstly, I will focus on the results regarding security perception (hypothesis 1). Below, the summary results are presented for each of the examined countries. Secondly, the results concerning crime victimization will be presented (hypothesis 2). In a third model, I will take a look at the summary results for each hypothesis including the variables of income and being part of an organization.

In the summary results (Table 1), it becomes evident that El Salvador exhibits a strong negative significance. This negative significance indicates that as individuals perceive their surroundings as less secure, remittances decrease. Guatemala, Honduras, and Nicaragua do not show any significance.

For the case of El Salvador, Table 1 indicates a strong significance between a low security perception in the neighborhood and receiving fewer remittances. Furthermore, it becomes evident that especially individuals aged between 30 and 64 who feel unsafe receive fewer remittances, as well as those who are employed.

In Guatemala, as depicted in Table 1, it becomes apparent that no significance can be found. Individuals aged between 30 and 49 who have a higher insecurity perception receive fewer remittances from abroad. The same applies to those individuals who live in an urban area and lack formal education.

In the context of Honduras, as illustrated in Table 1, no significant correlation can be found between a low security perception and receiving fewer remittances. Similar to El Salvador, it becomes evident that individuals aged between 30 and 64 with a lower security perception receive fewer remittances from abroad. Furthermore, individuals lacking formal education receive fewer remittances from abroad, as do those who are employed.

In Nicaragua, as indicated in Table 1, no significant correlation can be found between a low security perception and the sending of remittances. Similar to the other countries examined, it becomes evident that individuals aged between 30 and 49 receive fewer remittances, as do those who lack formal education and are employed.

Even when the control variables of income and being part of an organization are incorporated into the third model (Appendix D), the significance of the correlation between low

security perception and receiving remittances remains largely unchanged. While El Salvador continues to show a strong negative significance, Guatemala, Honduras, and Nicaragua do not show any significance.

Based on the results presented here, it becomes apparent that the hypothesis can only be strongly confirmed for the case of El Salvador. For Guatemala, Nicaragua, and Honduras no significance can be found. In terms of the covariates, the results and significances vary significantly from country to country, and in certain aspects, the countries show striking similarities and exhibit similar results or significances.

Table 1:
Summary Results - Low Security Perception - All Countries (2010-2023)

	<i>Dependent variable:</i>			
	Receives Remittances			
	El Salvador	Guatemala	Honduras	Nicaragua
Low Security Perception	-0.122** (0.047)	0.006 (0.076)	0.019 (0.060)	0.065 (0.073)
Male	0.190*** (0.054)	0.129* (0.067)	0.190*** (0.056)	0.289*** (0.066)
Age 30 to 49	-0.446*** (0.056)	-0.286*** (0.081)	-0.284*** (0.061)	-0.277*** (0.070)
Age 50 to 64	-0.244*** (0.077)	-0.129 (0.112)	-0.146* (0.086)	-0.093 (0.095)
Age 65 to 79	-0.018 (0.086)	-0.142 (0.150)	-0.027 (0.121)	-0.069 (0.147)
Age 80 and more	-0.093 (0.246)	0.265 (0.322)	0.250 (0.241)	-0.187 (0.341)
Urban	-0.011 (0.080)	-0.161* (0.082)	0.357*** (0.066)	0.474*** (0.106)
No Education	-0.111 (0.109)	-0.441*** (0.145)	-0.221* (0.130)	-0.579*** (0.155)
Medium Education	0.198*** (0.065)	0.361*** (0.082)	0.440*** (0.063)	0.496*** (0.072)
Superior Education	0.173* (0.090)	0.441*** (0.091)	0.529*** (0.100)	0.759*** (0.087)
Working	-0.159*** (0.052)	-0.110 (0.072)	-0.188*** (0.059)	-0.377*** (0.066)
Constant	-1.011*** (0.092)	-1.915*** (0.098)	-1.570*** (0.079)	-2.000*** (0.108)
Observations	8,854	8,814	9,200	7,282
Log Likelihood	-4,866.120	-3,203.299	-4,604.303	-3,163.253
Akaike Inf. Crit.	9,756.240	6,430.598	9,232.606	6,350.507

Note:

*p<0.1; **p<0.05; ***p<0.01

Source: LAPOP (2024a, 2024b, 2024c, 2024d).

Regarding the second model, which uses whether the respondent has been a victim of a crime in the past 12 months as the main independent variable, the results are significantly more homogenous. In all four countries considered, Table 2 indicates a positive significance between a person being a victim of a crime and receiving more remittances.

In the case of El Salvador, a strong positive significance becomes evident. Victims of a

crime receive more remittances than those who have not been victims. Notably, men receive more remittances, as well as individuals with at most a high school diploma. People aged between 30 and 49 receive fewer remittances, as well as individuals who live in urban areas and have no formal education.

In Guatemala, although a positive significance is evident, it is the country among those examined that shows the least significance. In particular, individuals who have been victims of a crime receive more remittances if they possess a medium or superior education.

In the case of Honduras, a strong positive relationship between being a crime victim and receiving more remittances becomes evident (Table 2). Here, men receive more remittances, as well as individuals who have at least a high school diploma or a university degree. Surprisingly, people living in a city also receive more remittances.

Nicaragua, similar to Honduras and El Salvador, also exhibits a strong positive significance (Table 2), which means crime victims receive more remittances. Male individuals, as well as people living in an urban area, and those with a medium or superior education, tend to receive more remittances from abroad.

As with the first hypothesis, the control variables of income and being part of an organization are incorporated into the third model (Appendix E) for the second hypothesis. It becomes evident that the inclusion of these variables does not result in any changes in significance. The strong positive significance remains evident for all four countries.

The second hypothesis can strongly be confirmed through the results presented here. As in the results for the first hypothesis, it also becomes evident for the second hypothesis that some countries are more similar than others about certain control variables.

Table 2:
Summary Results - Crime Victim - All Countries (2010-2023)

	<i>Dependent variable:</i>			
	Receives Remittances			
	El Salvador	Guatemala	Honduras	Nicaragua
Crime Victim	0.123** (0.059)	0.147* (0.078)	0.279*** (0.068)	0.217*** (0.078)
Male	0.193*** (0.055)	0.125* (0.067)	0.183*** (0.056)	0.271*** (0.065)
Age 30 to 49	-0.446*** (0.056)	-0.288*** (0.081)	-0.277*** (0.061)	-0.272*** (0.069)
Age 50 to 64	-0.241*** (0.077)	-0.126 (0.112)	-0.130 (0.087)	-0.088 (0.093)
Age 65 to 79	-0.007 (0.087)	-0.134 (0.149)	0.005 (0.122)	-0.054 (0.145)
Age 80 and more	-0.070 (0.245)	0.285 (0.323)	0.278 (0.240)	-0.178 (0.339)
Urban	-0.025 (0.082)	-0.174** (0.082)	0.329*** (0.066)	0.456*** (0.105)
No Education	-0.111 (0.109)	-0.438*** (0.145)	-0.211 (0.130)	-0.577*** (0.156)
Medium Education	0.196*** (0.065)	0.356*** (0.082)	0.429*** (0.063)	0.486*** (0.073)
Superior Education	0.165* (0.091)	0.431*** (0.090)	0.490*** (0.100)	0.736*** (0.088)
Working	-0.163*** (0.052)	-0.116 (0.072)	-0.198*** (0.059)	-0.377*** (0.066)
Constant	-1.073*** (0.091)	-1.930*** (0.094)	-1.597*** (0.077)	-1.995*** (0.103)
Observations	8,141	8,069	8,112	6,825
Log Likelihood	-4,510.192	-3,001.006	-4,029.113	-2,974.486
Akaike Inf. Crit.	9,050.384	6,032.012	8,088.225	5,978.973

Note: *p<0.1; **p<0.05; ***p<0.01

Source: LAPOP (2024a, 2024b, 2024c, 2024d).

For the robustness checks for the first hypothesis, which can be found in the appendix (Appendix F-I), I have created three different models for each hypothesis and each country under research. In Model 1, I examine only the significance between the independent and

dependent variables, while in Model 2, the variables of gender, age, and urbanization are added. In Model 3, the variables of education level and employment are additionally included.

In the case of El Salvador (Appendix F), robustness checks confirm that even with additional variables included in the model, a significant negative relationship persists across all three models between a lower security perception and the receiving of remittances. In Model 3, after incorporating education and employment variables, the negative significance persists but shows a slight weakening, indicating a somewhat weaker relationship.

Regarding the robustness checks for Guatemala (Appendix G), it is notable that in none of the three models, any significance can be found. Only in Model 1 a negative trend (without significance) can be found between the lower security perception and the receiving of remittances.

For Honduras (Appendix H), no significance can be observed in any of the three models. It becomes apparent that including the control variables of education and employment in Model 3 further reduces the negative significance of other control variables compared to Model 2.

Regarding the robustness checks for Nicaragua (Appendix I), no significance can be observed in any of the three models. In Model 3, similar to Honduras, the inclusion of education and employment as control variables weakens the significance of other variables compared to Model 2.

The robustness checks for the second hypothesis can also be found in the appendix (Appendix K-N). Here, in contrast to the first hypothesis, a strong positive correlation becomes evident in each of the conducted robustness checks.

For El Salvador (Appendix K), the robustness checks indicate that a strong positive correlation exists between being a crime victim and receiving remittances. Even after adding control variables in Model 2 and Model 3, the positive significance weakens slightly but remains robust.

Similar to El Salvador, the same can be found in the case of Guatemala (Appendix L). Adding more variables to the models it becomes apparent that, again, the positive significance weakens slightly but the robustness of the positive significance is maintained.

In the case of Honduras (Appendix M), the robustness checks in all three models show a strong positive significance which maintains stable throughout all models. It can be seen that some control variables such as age, completely lose significance after adding more variables

(Model 3).

The robustness checks for Nicaragua (Appendix N) consistently demonstrate a strong and stable positive correlation between being a crime victim and receiving remittances across all three models. While the addition of more variables causes certain control variables to lose significance, the positive relationship remains robust and consistent.

Another robustness check is conducted by including both independent variables in the same model (Appendix J). It becomes evident that incorporating both independent variables does not lead to significant changes in the results, consistent with previous robustness checks where the findings remain stable for each of the independent variables.

5. Discussion and Conclusion

The present study aims to demonstrate, that a higher perception of violence in the migrant's home country leads to a reduction in remittance sending from abroad in certain countries of Central America. The results indicate that hypothesis 1 fails to be rejected for El Salvador, while the other countries show no statistical significance.

Regarding hypothesis 2, which assumes that individuals who have been victims of a crime receive more remittances, this hypothesis can be confirmed for all four countries examined. This study makes a significant contribution to the literature as there is currently no research known to examine the relationships between security perception, victimization, and the receipt of remittances in the countries under consideration. It becomes evident, that there exists a difference in the sending behavior of remittances, in terms of the perception of crime, or being a crime victim.

Furthermore, it refutes the general assumption by Vargas-Silva (2009) that the likelihood of remittances decreases when an individual becomes a victim of a crime. The opposite is the case for the low security perception. Except El Salvador, migrants from Guatemala, Honduras, and Nicaragua tend to act out of pure self-interest, rather than pure altruism, by sending fewer remittances to their relatives and friends in their home countries.

There are many reasons why people living abroad who send remittances to individuals in their home country see little or no motive to send more money. According to Orozco and Yansura (2015), one potential reason, linked to pure self-interest, could be that the majority of Salvadorans living in the U.S. do not want to return to their home country in the long term. For Central America, it is generally apparent that the lack of job opportunities in the formal sector, stagnating economic developments in the region, a lack of infrastructure, and the prevalence of violence in the country are reasons why they do not want to return to their countries of origin (Scarnato, 2019; Hagan & Wassink, 2020; Bhatt & Roberts, 2012).

In addition, the countries in Central America do not have a long history of circular migration, which means that most countries lack the appropriate policies for this, and migrants living abroad are not incentivized to return home (Hagan & Wassink, 2020). The distinction between security perception and being a crime victim yields different outcomes. When security perception is low, the individual affected does not necessarily receive increased financial support. This might be because the remittance sender, informed through communication,

recognizes the poor security situation, reducing incentives to invest in the country or consider returning. In contrast, more remittances are sent when an individual becomes a victim of a crime. This reflects pure altruism, as the sender, while not investing in the country or planning to return, is concerned with the safety of the affected individual.

Due to limitations arising from the available data for this study, I am unable to test how remittances are used in the countries examined. For future research, using available datasets (e.g. Latin American Migration Project) or through qualitative studies, it would be interesting to investigate how remittances are utilized in the countries examined here, particularly in the context of low security perception and victimization. This would enable a more detailed exploration of the mechanisms discussed in this study.

With the present work, I aim to fill a gap in the literature by analyzing four Central American countries over 13 years (spanning approximately six survey waves), within a specific region that are similarly impacted by remittances and violence, making these factors highly specific. This research provides a comparison between these countries concerning individuals' perceptions of crime and those of crime victims who receive remittances. This aspect has not been previously addressed and compared in the literature for the countries analyzed here. In terms of external validity, the results make it possible to further examine other countries using the same or a different method, typically those affected by comparable levels of violence and receiving remittances.

In terms of public policies, the results obtained from this study can provide information on which individuals are particularly affected by remittances in situations of violence. The Mexican program "Programa 3x1 para Migrantes" could serve as a potential model (Gobierno de México, 2017). It is well-known that many people in the countries under investigation receive remittances sent to individuals or households, which are used accordingly. Given the relatively small size of these countries, it would be advisable to invest these remittances in community projects supported by federal, state, and municipal funds, directing them towards security projects. With an effective policy that addresses both the topic of remittances and the security of the inhabitants, not only is the general well-being of the population positively impacted, but also the state benefits economically in the long term.

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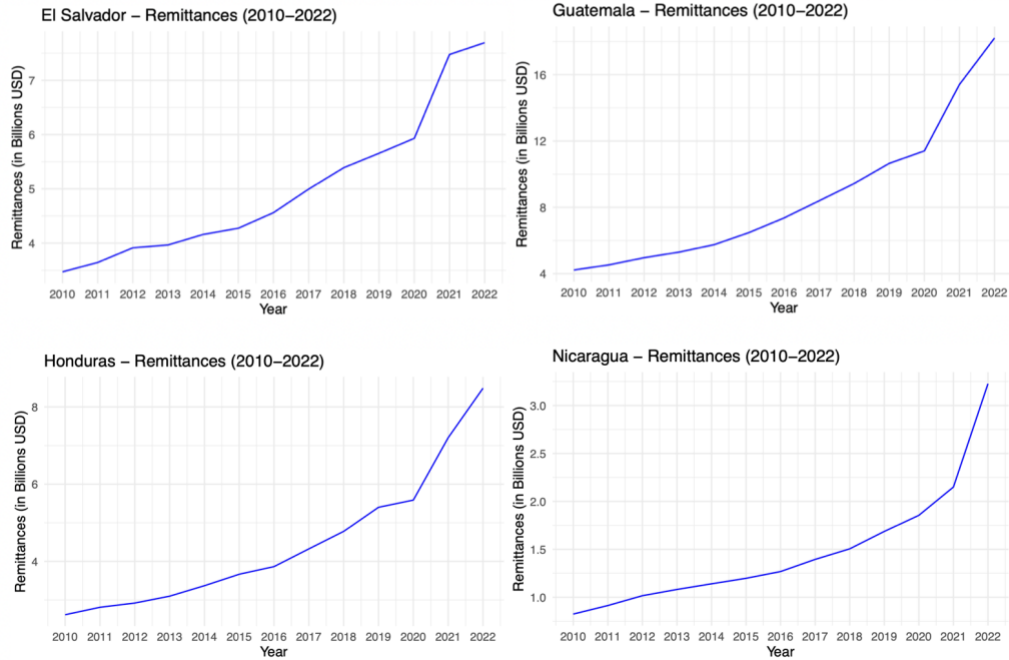
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Appendix

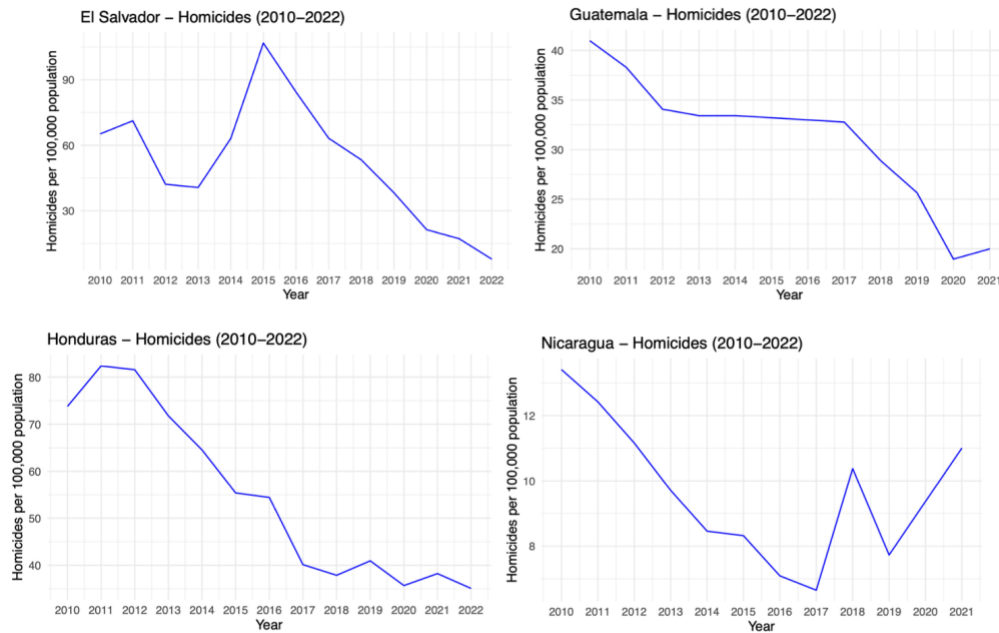
Appendix A: *Remittances (in Billion USD) per Year*



Source: Own elaboration with data from World Bank Group (2022).

Appendix B:

Homicide rates per country per 100,000 population



Source: Own elaboration with data from United Nations Office on Drugs and Crime (2023).

Appendix C:
Summary Results (incl. Income & Part of organization)

	<i>Dependent variable:</i>			
	Receives Remittances			
	El Salvador	Guatemala	Honduras	Nicaragua
Low Security Perception	-0.127** (0.052)	0.048 (0.075)	0.001 (0.064)	0.051 (0.073)
Male	0.162*** (0.056)	0.110 (0.072)	0.190*** (0.055)	0.253*** (0.069)
Age 30 to 49	-0.452*** (0.059)	-0.309*** (0.083)	-0.305*** (0.067)	-0.281*** (0.071)
Age 50 to 64	-0.217*** (0.080)	-0.173 (0.117)	-0.196** (0.092)	-0.111 (0.093)
Age 65 to 79	0.014 (0.088)	-0.159 (0.164)	-0.049 (0.122)	-0.044 (0.145)
Age 80 and more	-0.154 (0.263)	0.231 (0.343)	0.367 (0.272)	-0.170 (0.343)
Urban	0.010 (0.083)	-0.113 (0.084)	0.401*** (0.070)	0.449*** (0.105)
No Education	-0.077 (0.113)	-0.440*** (0.139)	-0.185 (0.141)	-0.569*** (0.155)
Medium Education	0.199*** (0.069)	0.372*** (0.085)	0.412*** (0.064)	0.470*** (0.077)
Superior Education	0.172* (0.092)	0.321*** (0.103)	0.427*** (0.117)	0.749*** (0.090)
Working	-0.160*** (0.053)	-0.137* (0.075)	-0.251*** (0.058)	-0.384*** (0.070)
Low Income	-0.006 (0.124)	-0.274** (0.125)	-0.538*** (0.163)	-0.263* (0.148)
Part of organization	0.037 (0.074)	0.145* (0.083)	0.158** (0.074)	0.018 (0.094)
Constant	-0.988*** (0.155)	-1.636*** (0.163)	-1.012*** (0.188)	-1.682*** (0.193)
Observations	8,078	7,955	8,016	6,778
Log Likelihood	-4,487.529	-2,984.151	-4,042.168	-2,970.548
Akaike Inf. Crit.	9,003.059	5,996.302	8,112.336	5,969.096

Note:

*p<0.1; **p<0.05; ***p<0.01

Source: LAPOP (2024a, 2024b, 2024c, 2024d).

Appendix D:
Summary Results (incl. Income & Part of organization) - Crime Victim - All Countries (2010-2023)

	<i>Dependent variable:</i>			
	Receives Remittances			
	El Salvador	Guatemala	Honduras	Nicaragua
Crime Victim	0.125** (0.062)	0.137* (0.081)	0.309*** (0.072)	0.245*** (0.078)
Male	0.165*** (0.056)	0.104 (0.072)	0.185*** (0.055)	0.234*** (0.068)
Age 30 to 49	-0.451*** (0.059)	-0.310*** (0.083)	-0.297*** (0.068)	-0.275*** (0.070)
Age 50 to 64	-0.214*** (0.081)	-0.170 (0.117)	-0.177* (0.092)	-0.106 (0.092)
Age 65 to 79	0.026 (0.089)	-0.154 (0.163)	-0.008 (0.124)	-0.026 (0.143)
Age 80 and more	-0.129 (0.263)	0.240 (0.343)	0.398 (0.273)	-0.157 (0.343)
Urban	-0.006 (0.085)	-0.122 (0.084)	0.367*** (0.069)	0.428*** (0.106)
No Education	-0.078 (0.113)	-0.439*** (0.139)	-0.174 (0.141)	-0.568*** (0.156)
Medium Education	0.198*** (0.069)	0.364*** (0.084)	0.400*** (0.064)	0.458*** (0.078)
Superior Education	0.164* (0.092)	0.310*** (0.102)	0.389*** (0.117)	0.725*** (0.089)
Working	-0.164*** (0.053)	-0.144* (0.076)	-0.260*** (0.058)	-0.383*** (0.069)
Low Income	-0.011 (0.124)	-0.273** (0.125)	-0.524*** (0.163)	-0.261* (0.150)
Part of organization	0.029 (0.075)	0.141* (0.083)	0.140* (0.074)	0.016 (0.095)
Constant	-1.045*** (0.153)	-1.631*** (0.160)	-1.061*** (0.192)	-1.686*** (0.191)
Observations	8,141	8,069	8,112	6,825
Log Likelihood	-4,510.192	-3,001.006	-4,029.113	-2,974.486
Akaike Inf. Crit.	9,050.384	6,032.012	8,088.225	5,978.973

Note:

*p<0.1; **p<0.05; ***p<0.01

Source: LAPOP (2024a, 2024b, 2024c, 2024d).

Appendix E:
Robustness Check - Low Security Perception - El Salvador

	<i>Dependent variable:</i>		
	Remittances		
	Model 1	Model 2	Model 3
Low Security Perception	-0.145*** (0.047)	-0.126*** (0.047)	-0.122** (0.047)
Male		0.153*** (0.050)	0.190*** (0.054)
Age 30 to 49		-0.525*** (0.055)	-0.446*** (0.056)
Age 50 to 64		-0.356*** (0.072)	-0.244*** (0.077)
Age 65 to 79		-0.135 (0.082)	-0.018 (0.086)
Age 80 and more		-0.195 (0.238)	-0.093 (0.246)
Urban		0.039 (0.075)	-0.011 (0.080)
No Education			-0.111 (0.109)
Medium Education			0.198*** (0.065)
Superior Education			0.173* (0.090)
Working			-0.159*** (0.052)
Constant	-1.070*** (0.040)	-0.920*** (0.081)	-1.011*** (0.092)
Observations	8,854	8,854	8,854
Log Likelihood	-4,925.367	-4,876.274	-4,866.120
Akaike Inf. Crit.	9,854.734	9,768.547	9,756.240

Note: *p<0.1; **p<0.05; ***p<0.01

Source: LAPOP (2024a).

Appendix F:
Robustness Check - Low Security Perception - Guatemala

	<i>Dependent variable:</i>		
	Remittances		
	Model 1	Model 2	Model 3
Low Security Perception	-0.012 (0.074)	0.001 (0.075)	0.006 (0.076)
Male		0.134** (0.063)	0.129* (0.067)
Age 30 to 49		-0.382*** (0.079)	-0.286*** (0.081)
Age 50 to 64		-0.299*** (0.111)	-0.129 (0.112)
Age 65 to 79		-0.386*** (0.145)	-0.142 (0.150)
Age 80 and more		0.005 (0.316)	0.265 (0.322)
Urban		-0.030 (0.083)	-0.161* (0.082)
No Education			-0.441*** (0.145)
Medium Education			0.361*** (0.082)
Superior Education			0.441*** (0.091)
Working			-0.110 (0.072)
Constant	-1.982*** (0.060)	-1.823*** (0.086)	-1.915*** (0.098)
Observations	8,814	8,814	8,814
Log Likelihood	-3,244.646	-3,227.476	-3,203.299
Akaike Inf. Crit.	6,493.292	6,470.952	6,430.598

Note: *p<0.1; **p<0.05; ***p<0.01

Source: LAPOP (2024b).

Appendix G:
Robustness Check - Low Security Perception - Honduras

	<i>Dependent variable:</i>		
	Remittances		
	Model 1	Model 2	Model 3
Low Security Perception	0.063 (0.058)	0.021 (0.058)	0.019 (0.060)
Male		0.111** (0.050)	0.190*** (0.056)
Age 30 to 49		-0.386*** (0.060)	-0.284*** (0.061)
Age 50 to 64		-0.290*** (0.085)	-0.146* (0.086)
Age 65 to 79		-0.199* (0.118)	-0.027 (0.121)
Age 80 and more		0.057 (0.232)	0.250 (0.241)
Urban		0.464*** (0.066)	0.357*** (0.066)
No Education			-0.221* (0.130)
Medium Education			0.440*** (0.063)
Superior Education			0.529*** (0.100)
Working			-0.188*** (0.059)
Constant	-1.353*** (0.049)	-1.451*** (0.072)	-1.570*** (0.079)
Observations	9,200	9,200	9,200
Log Likelihood	-4,711.783	-4,646.753	-4,604.303
Akaike Inf. Crit.	9,427.566	9,309.507	9,232.606

Note: *p<0.1; **p<0.05; ***p<0.01

Source: LAPOP (2024c).

Appendix H:
Robustness Check - Low Security Perception - Nicaragua

	<i>Dependent variable:</i>		
	Remittances		
	Model 1	Model 2	Model 3
Low Security Perception	0.047 (0.072)	0.046 (0.073)	0.065 (0.073)
Male		0.149** (0.059)	0.289*** (0.066)
Age 30 to 49		-0.491*** (0.065)	-0.277*** (0.070)
Age 50 to 64		-0.403*** (0.087)	-0.093 (0.095)
Age 65 to 79		-0.427*** (0.142)	-0.069 (0.147)
Age 80 and more		-0.528 (0.339)	-0.187 (0.341)
Urban		0.679*** (0.105)	0.474*** (0.106)
No Education			-0.579*** (0.155)
Medium Education			0.496*** (0.072)
Superior Education			0.759*** (0.087)
Working			-0.377*** (0.066)
Constant	-1.605*** (0.059)	-1.856*** (0.110)	-2.000*** (0.108)
Observations	7,282	7,282	7,282
Log Likelihood	-3,314.841	-3,233.641	-3,163.253
Akaike Inf. Crit.	6,633.681	6,483.281	6,350.507

Note: *p<0.1; **p<0.05; ***p<0.01

Source: LAPOP (2024d).

Appendix I:
Robustness Check - Crime Victim & Low Security Perception - All Countries

	<i>Dependent variable:</i>			
	Receives Remittances			
	El Salvador	Guatemala	Honduras	Nicaragua
Crime Victim	0.151*** (0.058)	0.150* (0.079)	0.284*** (0.069)	0.210*** (0.080)
Low Security Perception	-0.142*** (0.046)	-0.016 (0.077)	-0.024 (0.060)	0.038 (0.076)
Male	0.184*** (0.055)	0.124* (0.067)	0.182*** (0.056)	0.274*** (0.064)
Age 30 to 49	-0.443*** (0.056)	-0.288*** (0.081)	-0.277*** (0.061)	-0.272*** (0.069)
Age 50 to 64	-0.236*** (0.077)	-0.125 (0.112)	-0.129 (0.087)	-0.089 (0.094)
Age 65 to 79	-0.005 (0.087)	-0.135 (0.150)	0.004 (0.122)	-0.053 (0.146)
Age 80 and more	-0.076 (0.246)	0.283 (0.323)	0.277 (0.240)	-0.177 (0.339)
Urban	-0.024 (0.081)	-0.173** (0.082)	0.331*** (0.066)	0.456*** (0.105)
No Education	-0.108 (0.109)	-0.439*** (0.145)	-0.211 (0.130)	-0.577*** (0.156)
Medium Education	0.192*** (0.065)	0.355*** (0.082)	0.429*** (0.063)	0.487*** (0.073)
Superior Education	0.155* (0.091)	0.430*** (0.090)	0.489*** (0.100)	0.738*** (0.088)
Working	-0.165*** (0.052)	-0.116 (0.072)	-0.198*** (0.059)	-0.378*** (0.066)
Constant	-1.017*** (0.092)	-1.924*** (0.099)	-1.591*** (0.080)	-2.008*** (0.108)
Observations	8,854	8,814	9,200	7,282
Log Likelihood	-4,863.370	-3,201.591	-4,595.260	-3,159.922
Akaike Inf. Crit.	9,752.739	6,429.182	9,216.521	6,345.844

Note:

*p<0.1; **p<0.05; ***p<0.01

Source: LAPOP (2024a, 2024b, 2024c, 2024d).

Appendix J:
Robustness Check - Crime Victim - El Salvador

	<i>Dependent variable:</i>		
	Remittances		
	Model 1	Model 2	Model 3
Crime Victim	0.150*** (0.057)	0.125** (0.058)	0.123** (0.059)
Male		0.154*** (0.051)	0.193*** (0.055)
Age 30 to 49		-0.524*** (0.055)	-0.446*** (0.056)
Age 50 to 64		-0.351*** (0.073)	-0.241*** (0.077)
Age 65 to 79		-0.122 (0.083)	-0.007 (0.087)
Age 80 and more		-0.168 (0.237)	-0.070 (0.245)
Urban		0.023 (0.077)	-0.025 (0.082)
No Education			-0.111 (0.109)
Medium Education			0.196*** (0.065)
Superior Education			0.165* (0.091)
Working			-0.163*** (0.052)
Constant	-1.155*** (0.041)	-0.986*** (0.079)	-1.073*** (0.091)
Observations	8,854	8,854	8,854
Log Likelihood	-4,926.477	-4,877.328	-4,867.070
Akaike Inf. Crit.	9,856.953	9,770.657	9,758.141

Note: *p<0.1; **p<0.05; ***p<0.01

Source: LAPOP (2024a).

Appendix K:
Robustness Check - Crime Victim - Guatemala

	<i>Dependent variable:</i>		
	Remittances		
	Model 1	Model 2	Model 3
Crime Victim	0.176** (0.079)	0.174** (0.078)	0.147* (0.078)
Male		0.126** (0.063)	0.125* (0.067)
Age 30 to 49		-0.383*** (0.079)	-0.288*** (0.081)
Age 50 to 64		-0.293*** (0.111)	-0.126 (0.112)
Age 65 to 79		-0.371** (0.144)	-0.134 (0.149)
Age 80 and more		0.034 (0.317)	0.285 (0.323)
Urban		-0.049 (0.083)	-0.174** (0.082)
No Education			-0.438*** (0.145)
Medium Education			0.356*** (0.082)
Superior Education			0.431*** (0.090)
Working			-0.116 (0.072)
Constant	-2.025*** (0.057)	-1.849*** (0.082)	-1.930*** (0.094)
Observations	8,814	8,814	8,814
Log Likelihood	-3,242.168	-3,225.116	-3,201.618
Akaike Inf. Crit.	6,488.335	6,466.232	6,427.236

Note: *p<0.1; **p<0.05; ***p<0.01

Source: LAPOP (2024b).

Appendix L:
Robustness Check - Crime Victim - Honduras

	<i>Dependent variable:</i>		
	Remittances		
	Model 1	Model 2	Model 3
Crime Victim	0.414*** (0.065)	0.317*** (0.067)	0.279*** (0.068)
Male		0.098* (0.050)	0.183*** (0.056)
Age 30 to 49		-0.377*** (0.061)	-0.277*** (0.061)
Age 50 to 64		-0.266*** (0.086)	-0.130 (0.087)
Age 65 to 79		-0.152 (0.119)	0.005 (0.122)
Age 80 and more		0.102 (0.231)	0.278 (0.240)
Urban		0.426*** (0.066)	0.329*** (0.066)
No Education			-0.211 (0.130)
Medium Education			0.429*** (0.063)
Superior Education			0.490*** (0.100)
Working			-0.198*** (0.059)
Constant	-1.414*** (0.049)	-1.490*** (0.072)	-1.597*** (0.077)
Observations	9,200	9,200	9,200
Log Likelihood	-4,691.432	-4,635.024	-4,595.347
Akaike Inf. Crit.	9,386.865	9,286.047	9,214.694

Note: *p<0.1; **p<0.05; ***p<0.01

Source: LAPOP (2024c).

Appendix M:
Robustness Check - Crime Victim - Nicaragua

	<i>Dependent variable:</i>		
	Remittances		
	Model 1	Model 2	Model 3
Crime Victim	0.419*** (0.078)	0.281*** (0.078)	0.217*** (0.078)
Male		0.129** (0.058)	0.271*** (0.065)
Age 30 to 49		-0.481*** (0.065)	-0.272*** (0.069)
Age 50 to 64		-0.389*** (0.085)	-0.088 (0.093)
Age 65 to 79		-0.397*** (0.140)	-0.054 (0.145)
Age 80 and more		-0.509 (0.338)	-0.178 (0.339)
Urban		0.650*** (0.105)	0.456*** (0.105)
No Education			-0.577*** (0.156)
Medium Education			0.486*** (0.073)
Superior Education			0.736*** (0.088)
Working			-0.377*** (0.066)
Constant	-1.669*** (0.053)	-1.872*** (0.104)	-1.995*** (0.103)
Observations	7,282	7,282	7,282
Log Likelihood	-3,300.814	-3,227.659	-3,160.076
Akaike Inf. Crit.	6,605.627	6,471.318	6,344.152

Note: *p<0.1; **p<0.05; ***p<0.01

Source: LAPOP (2024d).