# Do Remittances Shape Fear of Crime? Case of El Salvador

**Thesis**

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# Contents

## Abstract

Recently, in two recent articles, Lopez-Garcia and Maydom argued that the reception of remittances increases the fear of crime. According to these authors, this stems from the theory that remittance-households invest more in durable goods and that these goods are more likely to be the target of crime. This research has for objective clarifying two important questions : First, does receiving remittances increase fear of crime? If so, how? Second, does possession of durable goods increase fears of crime? The case of El Salvador between 2017 to 2019 will be used here to empirically support the findings. For this purpose, data from the Encuesta de Hogares de Propositos Multiples (EHPM), an annual survey gathering information on approximately 20,000 households spread across the country's municipalities is used. This paper shows that by comparing two households similar except for remittances receipt living in the same municipality, it is true that remittance households have a higher fear of crime and victimization for certain types of crime. However, generalizing this relationship to all types of crime seems exaggerated, and attributing this to the possession of durable goods is erroneous.

Dans deux récents articles, Lopez-Garcia et Maydom ont soutenu que la réception de fonds envoyés par les migrants augmente la peur du crime. Selon ces auteurs, cela provient du fait que les ménages qui reçoivent des envois de fonds investissent davantage dans des biens durables et que ces biens sont plus susceptibles d'être la cible de la criminalité. Cette recherche a pour objectif de clarifier deux questions importantes : Premièrement, le fait de recevoir des envois de fonds augmente-t-il la peur du crime ? Si oui, comment ? Deuxièmement, la possession de biens durables augmente-t-elle la peur du crime ? Le cas du Salvador entre 2017 et 2019 sera ici utilisé pour étayer empiriquement les résultats. Pour cela, on utilise les données de l'Encuesta de Hogares de Propositos Multiples (EHPM), une enquête annuelle recueillant des informations sur environ 20 000 ménages répartis dans les municipalités du pays. Cet article montre qu'en comparant deux ménages similaires, à l'exception de la réception de transferts de fonds, vivant dans la même municipalité, il est vrai que les ménages qui reçoivent des transferts de fonds ont une plus grande peur du crime et une plus grande victimisation pour certains types de crimes. Cependant, la généralisation de cette relation à tous les types de crimes semble exagérée, et l'attribution de ce phénomène à la possession de biens durables est erronée.

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# Do Remittances Shape Fear of Crime? Case of El Salvador

## 1. Introduction

### 1.1 Topic

*Mano Dura*, repressive policies to fight “alleged” crime, remains a popular policy across America (Aguilar 2014, Pereira and Ungar 2016, Muggah 2019, Bonner 2019), but also in the rest of the world as Duterte's "War on Drugs" in the Philippines can attest to. Researchers need to empirically measure and understand who the most supportive voters of repressive policies against "alleged" crime are, and more importantly, what characteristics influence their fear of crime and preferences for those policies.

In an article published in Latin American Politics and Society, Lopez-Garcia and Maydom (2021a), who published numerous articles (2019, 2021b, 2021c, López García 2018, Doyle and López García 2021) on the effects of remittances on the political behavior of remittance-households, particularly with respect to crime in Latin America, argued that the receipt of remittances increases the fear of crime. According to these authors, this stems from the fact that remittance-households invest more in durable goods and that these goods are more likely to be the target of crime. In other words, they argued that remittance-households were more victimized and more fearful of crime than their counterparts with the same pre-treatment variables.

This is of particular interest, first, because researchers have demonstrated that higher fear of crime increases preferences for policies to fight "alleged" crime. (Simon 2007, Baker and al. 2015) Second, because knowing who is most likely to be a victim of crime allows legislators to make better security policies.

The objective of this research is to clarify two important questions: First, does receiving remittances increase fear of crime? If so, how? Second, does possession of durable goods increase fear of crime? The case of El Salvador between 2017 to 2019 will be used here to empirically evaluate these questions. For this purpose, we analyze data from the *Encuesta de Hogares de Propositos Multiples* (EHPM), an annual survey gathering information on approximately 20,000 households spread across the country's municipalities.

This paper shows that by comparing two similar households in the same municipality that differ only regarding their remittance receipt, we can see that remittance-households have a higher fear of crime and victimization for certain types of crime. However, generalizing this relationship to all types of crime seems exaggerated, and attributing this to the possession of durable goods is erroneous.

The first section defines important concepts and provides a brief portrait of remittances and violence in El Salvador will be drawn. The second section develops a literature review in five parts: Remittances and Political Behavior, Durable goods and Victimization, Determinants of Fear of crime, and Remittances and Security. This section will develop our hypotheses and structure our empirical models. The third section explains the empirical strategy. The fourth section presents the results testing each of the hypotheses, seeking to understand how remittance receipt may be associated with greater fear of crime. Finally, the last section attempts to understand why remittances are associated with greater fear of crime and victimization. In addition, this section discusses the challenges of creating an explanatory

model for the effects of remittances on fear of crime and, conversely, the effects of fear of crime on immigration and, thus, on remittances.

This research project approximates causal inference due to the choice of cases, the available data, and the empirical strategy. But there is still one obstacle remaining, that of reverse causality, where some households receiving remittances are more fearful of crime since it is the fear of crime that has caused one of the family members to leave the country. That said, by performing exact matching by municipality and rurality, we greatly reduce the possibility that remittance-households live in places where crime is more prevalent. It is also possible to control for victimization, which allows us to further isolate the treatment, 'receiving remittances". However, our data only allow us to know the victimization status of the 12 months prior to the interview, which does not allow us to know if the reason the family member left was influenced by being a victim of crime.

## 1.2 Concept Definitions and Limits

**Remittances:** Remittances can take many forms. Social remittance is the transfer of ideas, values, and knowledge resulting from emigration (Levitt 1998). In this paper, however, only monetary remittances, which are money or goods sent by an emigrant to his or her home country, family, or community, will be considered in the analysis. Monetary remittances will be our main independent variable.

**Fear of Crime:** Pain (2000, 367) describes fear of crime as "the wide range of emotional and practical responses to crime and disorder individuals and communities may make". Here, we will refer specifically to emotional responses to crime. We consider the fear of crime as the

perception of security in relation to crime of individuals or groups of individuals. In this research, we will measure fear of crime by the people's perception of the risk of victimization. Fear of crime is the dependent variable of the study.

**Victimization:** Victimization (direct) will be viewed as the personal lived experience of criminal violence. Indirect victimization considers the lived experience of a loved one or in the community of criminal violence (Doran and Burgess 2012). In this research, when using victimization, we consider the personal victimization of our unit of measurement: the household. We would look at 4 different types of victimization: Burglary, Thief, and robbery in public, Thief, and robbery at their business, and extortion. In this research, durable goods are both a dependent variable and an independent variable.

**Durable Goods:** Durable goods are goods that do not wear out or wear out slowly. They do not need to be purchased often. These goods are not considered as a main source of income. In this research, we distinguish them from productive assets, from which the income of their owners depends on them. In this research, durable Goods will be both a dependent variable and an independent variable.

## 1.3 Overview of remittances and violence El Salvador

It is important to understand the importance, as well as the geographic and demographic distribution of remittances and violence. As can be seen in the figures below, often regions with higher remittances are regions with lower levels of violence. Therefore, there is an imbalance in the violence level variable between the treated group (remittance-households) and the control group. Therefore, matching by localization becomes important when looking at the perception of security. We will see that this is not the only imbalance between treatment and control groups.

Figure 1. Percentage of households receiving remittances per department in 2014

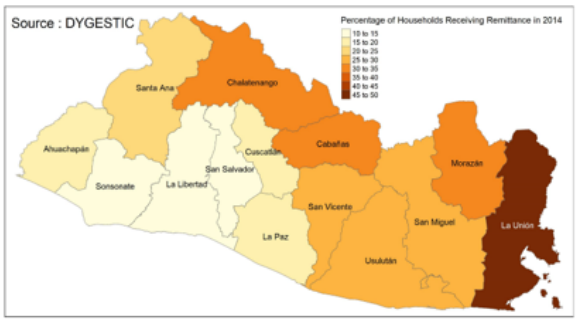



Figure 2. Homicide Rates per department in 2014

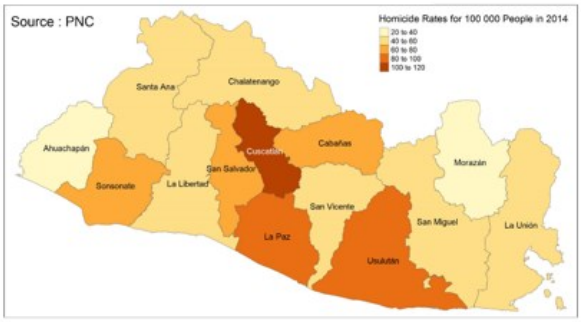
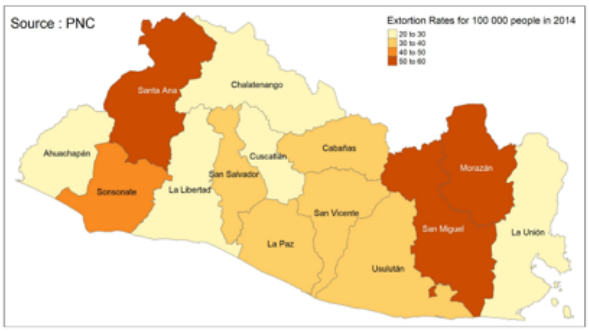



Figure 3. Extortion Rates per department in 2014




### 1.3.1 Remittances in El Salvador

El Salvador is one of the top five countries in the world whose remittances represent the largest part of their GDP. In 2020, it represented 24% in El Salvador compared to 4% in Mexico for example. (World Bank 2021) Based on DIGESTYC, in 2018, 20% of all households interviewed received remittances in the past 12 months. As can be seen in Figure 1, the geographic distribution of remittance receipts is uneven across the country, ranging from over 45% of households in La Union Department to about 12% of households in San Salvador in 2018. (DIGESTYC) In our sample, from 2017 to 2019, about 55% of households receiving remittances are located in rural areas while only 47% of the population lives in rural areas. 48% of households receiving remittances are managed by women, while this figure is 36% in the

entire population. Also, El Salvador is among the top 3 countries in Latin America whose inhabitants think most about emigrating (Latinobarómetro 2018)

### 1.3.2 Crime in El Salvador in late 2010s

The term Mano Dura (iron fist) in El Salvador was first used in 2003 to describe the political strategy of Salvadoran President Francisco Flores, leader of the right-wing ARENA party. Mano Dura describes a set of repressive policies against criminal gangs such as **"**immediate imprisonment of a gang member simply for having gang-related tattoos or flashing gang signs in public, something that became punishable with two to five years in jail, and applicable to gang members from the age of twelve upwards" (Rodgers 2009, 967). At that time, Flores enacted the Ley Anti-Maras (Anti-gang law), which gave police the right to arrest and prosecute anyone suspected of being a member of one of the two main gangs MS-13 and Barrio 18. In less than a year, nearly 20,000 suspected members were arrested. (Muggah et al. 2019, 5) A large majority of these were teenagers and adults. To this end, 90 percent of the arrests in Latin America were of youth between the ages of 15 and 29 (ibid. 1). These types of policies have been the norm rather than the exception in El Salvador since then, although the leftist party FMLN has sometimes attempted to implement long-term crime reduction programs, such as the Plan El Salvador Seguro implemented by Cerén in 2016. (Kinosian and Albaladejo 2016)

According to estimates, in 2013, there were 30,000 active gang members and more than 7 percent of the population had a direct link with them. (Markham 2016, 73) In 2014, a drastic increase in violence in El Salvador occurred after a not-quite-secret truce exploded between the government and the gangs. This truce reduced drastically the homicides between 2012 and 2014. From 2014 and 2018, although homicide rates were gradually decreasing, violence was

still prevalent. (Ruiz and Mackey 2020, Wolf 2021) It is in this context in which El Salvador, between 2015 and 2018, was ranked between the first and third place of the countries with the highest homicide rate in the world, that Nayib Bukele, who also campaigned on severe security policies against criminals, arrived to office in 2019.

### 1.4.3 Victimization and Fear of Crime

El Salvador is a country with exceptionally high direct and indirect victimization and fear of crime is a major issue. From 2015 to 2018, El Salvador was in the top 3 countries with the highest homicide rates. Regarding direct victimization, in 2018, 14.1 percent of the household respondents to the annual DIGESTYC survey (2018, 31) were victims of some type of crime in the past 12 months. In 2014, 40% of crime victims were victims of armed robbery crime. (Galiani and al. 2020, 151) Men were more directly affected. The geographic distribution (see Figures 2 and 3) of criminal violence is uneven, generally occurring in urban areas.

Regarding Fear of Crime**,** when respondents were asked about the country's most important issue in an annual DIGESTYC (2018, 19) survey, 67 percent responded either crime, criminal gangs, or insecurity. By comparison, employment is the country's second most important issue for 11.6 percent of respondents, inequality 6.4 percent, poverty 5.2 percent, and corruption 1.4 percent. In El Salvador, 55% of respondents feel insecure walking down the street in their neighborhood at night (ibid. 22). The feeling of insecurity is slightly higher among women with 55.3% against 54.8%. (idem.)

Regarding the use of extra-legal means to solve crime problems, 40.1 percent of respondents approve of the use of torture to fight organized crime, 34.6 percent approve of

extra-judicial executions and 17.2 percent consent to the practice of "social cleansing" (Cruz et al. 2017). El Salvador people are Latin America's most supportive people of vigilantism, repressive security policing, and militarization to fight crime. (Lopez-Garcia and Maydom 2021)

In short, it should be noted that, first, households receiving remittances are more likely to be found in rural areas, while violence is more likely to be found in urban areas. Second, the geographic distribution of remittance receipt is very uneven in which the proportion of households receiving remittances from one department may be up to three times greater than another. Third, women are more likely to receive remittances, while men are more likely to be victims of violence. Fourth, victimization and fear of crime are very high, and the population is willing to use radical, sometimes extralegal, means to reduce security problems. Finally, property crimes are the most frequent type of crime.

## 2. Literature

### 2.1.1 Remittances and Political Behavior

The literature on the relationship between remittances and political behavior has already attracted a great deal of attention among economists, political scientists, and sociologists. Levitt (1998) published an article on social remittances, which he defined as "ideas, behavior, identities and social capital that flow from receiving- to sending-country communities" (ibid. 926). Levitt was referring directly to non-monetary exchanges, but since then other researchers have shown that monetary remittances also have consequences for the political behavior of those who receive them. For example, De Haas (2005, 1274) argues that remittances improve

the living conditions of households without any additional work. Therefore, remittances allow more time to "increase their productivity, freedom of choice and the capacity to participate in public debate." For De Haas (2005), remittances become an alternative provider to the state and the employment of goods for those who receive them. In this regard, several authors show that remittance-households are less dependent on the services provided by governments. (Aparicio and Meseguer 2012, Escriba-Folch and al 2018). Moreover, because remittance flows are not directly linked to the country of emigration, those who receive remittances have greater resilience to local economic shocks. (Ratha 2013, Escriba-Folch and al 2018) Furthermore, De Haas (2007) and McKenzie, David, and Rapoport (2010) show that emigration, and consequently remittances, do not generally occur in the poorest populations of the country, reinforcing the idea of their increased independence from the state.

Recently, the relationship between remittances and voter turnout has received some attention from researchers. Goodman and Hiskey (2008) and Germano (2013) showed that, in Mexico, receiving remittances decreased voter turnout. Lopez-Garcia and Maydom (2021) have drawn similar conclusions in their statistical analysis using regional data from Latin America. This relationship in which remittances decreased voter turnout can be explained by the diminished importance of the state as the main provider of goods for those receiving remittances. Moreover, Goodman and Hiskey (2008), Germano (2013), who used qualitative and quantitative data respectively, show that households receiving remittances place less importance on economic issues during elections. They demonstrate this statement by showing that households receiving remittances in Mexico are less likely to punish the incumbent for poor economic performance. Conversely, Lopez-Garcia and Maydom (idem. 2019, 2021), as well as Ley and al. (2019), find that remittance-households are more likely to engage in non-governmental organizations to defend their material interests, such as *vigilencias*. Lopez-

Garcia and Maydom (2019, 2021) show that remittance recipients, through their support for *vigilencias*, are willing to use extra-legal means to protect their interests. This is of particular interest in this research project, first, because it shows that while remittance-households are participating less in economic and political debates, they are highly concerned by the defense of their material interests. In other words, security is an important political issue for this population. Second, as the use of *vigilencias* or private security has probably an impact on the level of victimization and of fear of crime, it is important to include "investment in security" as a pre-treatment variable to have a better comparison.

Additionally, Escriba-Folch and al. (2015, 2018) and Pfutze (2012) respectively show that remittance reception and emigration increase regime opposition in non-democratic regimes. According to these authors, the transfer of ideas and knowledge may be one of the causal channels explaining this phenomenon. For Escriba-Folch and al. (2015, 2018), it appears that remittances increase the resources available to an opponent who would be more aligned with the interests of those receiving remittances. Remittances override the unequal distribution and restricted access to resources in authoritarian regimes, and these resources can be used to establish a regime that is considered more advantageous to those receiving remittances.

Three important hypotheses for our research project seem to emerge from recent research mentioned above on the consequences of remittances on political behavior: First, households receiving remittances have neither attachment to democratic values nor a preference for an authoritarian system to defend their interest. However, defending their material interest remains a priority. Second, households receiving remittances have greater resilience to social, political,

and economic shocks. An increase in crime can produce social, political, and economic shocks. Third, remittance-households are more likely to invest resources to defend their interest.

### 2.1.2 Determinant of Victimization

In the criminology literature, two theories of crime are of particular importance in understanding the risk of victimization and, therefore, choosing our control variables that influence crime incidence. First, routine activities theory (RAT), developed by Cohen and Felson (1979, 589), argues that the convergence of "(1) motivated offenders, (2) suitable targets, (3) the absence of capable guardians against a violation" results in an increase in crime, especially with respect to "predatory violations [which] are defined here as illegal acts in which 'someone definitely and intentionally takes or damages the person property of another'" (idem.) According to this theory, the absence of one of these factors can prevent the completion of the crime. In other words, we should not expect any concentration of crime in a gated community with « capable guardians against violation", but inversely we should expect higher crime level in the non-gated community during work and school hours, since there are no « capable guardians against violation" at home. Secondly, the rational choice theory developed by Cornish and Clarke (1986, 2014) argues that the decision of a criminal to commit a crime or not follows a rational choice where the expected rewards and the expected risks of committing a crime are weighed. Cornish and Clarke (2014) emphasize the importance when studying crime, of focusing our analysis on individual criminal decisions (of committing the crime) rather than assessing the characteristics of the criminal per se. In other words, it is important to analyze the perceived risk and reward of, for example, stealing something in household X in municipality X with the family composition X. For example, the reward of stealing in a rich household seems greater than in a poor household because rich households own expensive goods. However, the risk of getting arrested during the crime seems to be greater in rich

communities than in poor communities because more police agents are patrolling in rich communities. Based on these assumptions, the criminal will decide if he commits the crime and where he will commit it.

Regarding victimization risk, several authors have attempted to draw a portrait of victims. (Cohen et al. 1981, Sampson 1985, ibid. 1987, Smith and Jarioura 1989, Gaviria Pagés 2002, Gomes and Paz 2008, Giménez-Santana et al. 2018) Two fields of research have prevailed on victimization risk: Household level and Aggregate level (social areas). On the one hand, many have shown that the location where individuals live is an excellent predictor of victimization (Smith and Jarioura 1989, Gaviria Pagés 2002, Gomes and Paz 2008, Giménez-Santana et al. 2018, Ramos 2021). Giménez-Santana et al. (2018) show that in Bogotá, homicides, and assaults are more recurrent in the poorer areas of the city, while robberies and thieves are more frequent in the city center. On the other hand, household demographics and financial status, as well as household routines, influence the risk of victimization (Cohen et al. 1981, Sampson 1985, 1987, 1991, Smith and Jarioura 1989, Fajnzylber et al. 2001, Gomes and Paz 2008, Chon and Wilson 2016). However, in each of the studies, age appears to decrease victimization. Males are more victimized by both violent and non-violent non-sexual crimes. Fajnzylber et al (2001) are particularly informative, as his book, which includes a chapter on El Salvador as a case study, focuses specifically on Latin America. Fajnzylber shows in several cases in Latin America that the victims of property crime are generally not the poorest of the population nor the richest. These results are consistent with more recent studies (Galiani and al. 2020, Lopez-Garcia 2021) that show that in Latin America the middle class is the main target of property crime. Fajnzylber (2001) also shows that in El Salvador workers are more generally victims of violent property crime. He argues that time spent on public transportation increases the risk of victimization. The study of transit locations as places where crime thrives has been extensively

studied (Brantingham and Brantingham 1995, Moreira and Ceccato 2021, Ceccato and Moreira 2021) and is particularly interesting in Latin America where the population has relatively less access to non-public modes of transportation. (Moreira and Ceccato 2021) Also, households in which one member is directly or indirectly involved in crime have a greater risk of being victimized. (Weulen Kranenbarg and al. 2019)

Literature on the determinant of victimization dictates which pre-treatment variable we should account for. As we have seen, the location of the household should be controlled for, as it is an excellent predictor of victimization risk, as well as controlling for demographic characteristics associated with victimization. As Smith and Jarioura noted (1989, 621), including both household variables and precise spatial variables is greatly improving studies on victimization. Additionally, goods with a higher value are more susceptible to getting stolen, as the reward is perceived to be higher by the thief.

### 2.1.3 Durable goods and Victimization

Some studies have established a positive relationship between the possession of durable goods and crime victimization. (Gaviria and Pagés 1999, Galiani et al 2020, Lopez-Garcia and Maydom 2021) This is of great importance because the mechanism of previous studies linking remittances to victimization and fear of crime (Lopez-Garcia and Maydom 2021a, b) based their argument on the fact that households receiving remittances possess more durable goods and that this was the reason why they suffer more from crime and perceive crime more fearfully.

Gaviria and Pagés (1999) show that in Latin America, members of the middle and upper class are more affected by property crimes. In addition, Galiani and al (2020) show that the more durable the good, the higher the probability that it will be stolen. For Galiani and al.

(2020), property crimes in Latin America are of particular interest, first, because they are more frequent and, second, because more than everywhere else in the world, property crimes end up being violent.

Another interesting insight, that is consistent with the rational choice theory developed by Clarke (1986, 2014), comes from Draca and Machin 2019 and Draca and al. 2019 (a, b) who show that criminals see goods as an opportunity for benefit, meaning that, following the value of the good, thieves will decide whether or not to steal it. That said, a potential inverse relationship whereby higher income provides access to more resources to protect property, as well as to live in gated communities where crime rates are often lower, could influence the fear of crime downward. (Blakely and Snyder 1998). However, Abdullah et al. (2012) demonstrate the opposite by showing that, in Malaysia, people living in gated communities share a higher fear of crime. These findings oblige us to control for the income of the household as well as the use of private security, such as living in a gated community.

### 2.1.4 Causes of Fear of Crime

The question of the causes of fear of crime is of particular importance, since, first, it clarifies the causal mechanisms structuring the indirect causal relationship between remittances and fear of crime and, second, we will need to control for the different variables that may also influence fear of crime. The literature on the causes of fear of crime is broad. The book *Putting Fear of Crime on the Map* by Doran and Burgess (2012), summarizes the main theories on this subject. It is possible to separate the theories of fear of crime into three main categories: Demographic Theories, Social Theories, and Environmental Theories. In this research, we will use the demographic theories - the dominant category in the literature - that focus on the demographic characteristics of individuals or groups of individuals that influence fear of crime. First, the *Victimization Hypothesis* proposes a positive causal relationship between direct

victimization and fear of crime (Meier and Miethe 1993, Katz et al. 2003, Doran and Burg 2012). It is expected that households directly affected by a crime will have a higher fear of crime. This hypothesis has been the subject of much research, but the results of this research have not always supported this hypothesis (although most research does, but at different levels of significance). (*idem*.) The second victimization hypothesis, the *Indirect Victimization Hypothesis,* argues that non-victims of crime may also have a higher fear of crime if they are related to direct victims of violence or live in a community where crimes are common. Lane and Meeker (2000, 2003), and Katz et al. (2003) have shown that the level of gang presence in the community is positively and directly related to fear of violence.

The *Vulnerabilities Hypothesis* argues that people with more social vulnerabilities perceive fear of crime in a pronounced way. Following this logic, women and the elderly would perceive fear of crime less than a young man in the same household. That said, it is difficult to find comprehensive and recent research on this topic. Doran and Burg (2012) and others have found an opposite association in which fear of crime was higher for females (Scarborough and al., 2010, Abdullah and al., 2013, Chon and Wilson 2016, Lee and al. 2020) and elders (Scarborough and al., 2010, Abdullah and al., 2013). Recent studies have attempted to understand what socio-demographic characteristics may influence fear of crime (Chon and Wilson 2016, Lee and al. 2020), which is of particular interest for this research project. While multiple studies, which fall under the Vulnerabilities Hypothesis, (Scarborough and al., 2010, Abdullah and al., 2013, Chon and Wilson 2016, Lee and al. 2020) agree on a greater fear of crime for women, studies contradict each other on the effect of age on fear of crime. The results of studies on the effect of education on fear of crime are also reversed across studies, although it appears that higher education decreases fear of crime (Scarborough and al., 2010). Also, as for victimization risk, location matters in terms of fear of crime. The geographical distribution

of fear of crime and precepted risk of victimization is uneven. (Wyant 2008, Lai and al. 2017) For example, people living in gated communities with security guards, fear crime, especially property crime in a reduced way. (Blakely and Snyder 1998, Wilson-Doenges, 2000, 606) Considering these research findings, we need to compare households living in municipalities with similar exposure to violence and with the same direct victimization. Also, controlling for the demographic characteristics of the household member being interviewed is of great importance, since different demographic groups do not perceive crime in the same way, even within the same household. Matching allows us to make this type of comparison.

### 2.1.5 Remittances and Security

Regarding the relationship between remittances and security, two papers have attempted to measure how criminal violence influences remittances (Vargas-Silva 2009; Meseguer and al. 2017). These authors show that criminal violence in a municipality can discourage migrants abroad from sending remittances to their families. It is important to note that these papers, on one hand, look at the reverse causal relationship, in which violence influences remittances, and, on the other hand, don't look at the perception of crime or political behaviors related to security, but at the crime itself. That said, these papers, in our opinion, fail to overcome the endogeneity concern in their identification strategy and to find an effective IV to tackle this threat to causality. As a matter of fact, these authors, in their subsequent research (Escriba-Folch, Meseguer, and Wright 2018; Ley and al. 2019), have studied how remittances affect political behavior related to security. Ley and al. (2019) found that remittances increase the support for vigilantism. This goes along with the argument of studies that show that people with high income and highly concerned with criminal violence tend to invest in private security to counteract the failure of the state to provide security (Blakely and Snyder 1998, Godoy 2006,

Malone 2010). Studies show that crime has a negative effect on the perceived quality of democracy (Godoy 2006, Ceobanu 2011) and that people highly concerned by crime are allowing the government to use repressive actions to punish criminals (Simon 2007, Malone 2010, Doran and Burg 2012, Baker and al. 2015, Lopez-Garcia and Maydom 2021).

Those research findings, as well as the argument of López García and Maydom (2021), will be central to our argument because they show that high-income households receiving remittances have greater support for vigilantism and tend to invest in private security to counteract the failure of the state to provide security. According to Lopez-Garcia and Maydom (2021), who based their argument on Galiani and al. (2020) work, households with more durable goods have a greater fear of crime. Meanwhile, households receiving remittances invest more in durable goods than a household not receiving remittances with the same income. (Airola 2007, Thapa and Sanjaya 2017; Sunny et al. 2020, Lopez-Garcia and Maydom 2021) Since their income is less dependent on productive assets, households receiving remittances can spend more on durable goods (*idem*.). Lopez-Garcia and Maydom (2021) take this discussion a step further by showing that fear of crime increases support for repressive policies against "alleged" crime and, therefore, that households receiving remittances have greater support for these policies.

## 2.2 Hypotheses

In sum, we identify four main hypotheses that will guide the analysis. These four hypotheses represent the path by which households receiving remittances have a greater fear of crime.

*Hypothesis 1*: Households receiving remittances will possess more durable goods than households that do not.

*Possible explanation*: At equal incomes, households receiving remittances invest more in durable goods, since their income does not depend on productive assets. (Airola 2007, Thapa and Sanjaya 2017; Sunny and al. 2020; Lopez-Garcia 2021)

*Hypothesis* 2: Households with more durable goods will have greater victimization.

*Possible explanation*: Households with durable goods have a higher risk of victimization because property crime is the most frequent type of crime and thieves are looking for high rewards that durable goods offer them. (Lopez-Garcia and Maydom 2021 and inferred from Draca and. Al. 2019, Galiani and al. 2020)

Hypothesis 3: Households with more durable goods have a greater fear of crime.

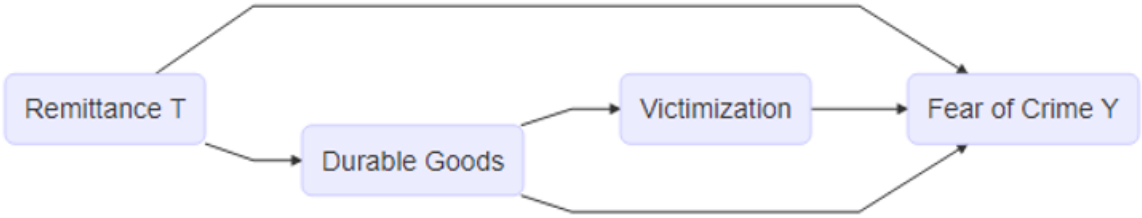
*Possible explanation*: Households with more durable goods will have a greater fear of crime because they have a higher risk of direct victimization. (Meier and and Miethe 1993, Katz et al. 2003, Wyant 2008, Doran and Burg 2012, Lai and al. 2017, Galiani and al. 2020, Lopez-Garcia and Maydom 2021)

*Hypothesis 4*: Households receiving remittances will perceive fear of crime more severely than non-remittance-households.

*Possible explanations*: First (if H1, H2 and H3 are true), the increased spending on durable goods by households receiving remittances will lead to more fear of losing them from stealing (Lopez-Garcia 2021). Second, security standards or norms are passed through the social remittance and information flows with migrants outside the country. (Levitt 1998, De Haas 2005)

## 3. Empirical Strategy

Figure 4. Graph of causal mechanism




### 3.1 Case of El Salvador and Data

Most of the research on this topic in Latin America has focused on the case of Mexico. Using the case of El Salvador helps to get a more comprehensive understanding of the relationship between remittances and fear of crime, as well as political preferences related to security, for two reasons.

First, the Salvadoran case is an extreme case in terms of remittances and crime. Regarding the social and economic situation, El Salvador has a higher and more volatile homicide rate than Mexico and Colombia (Van der Borgh 2019). El Salvador had the highest homicide rate in the world from 2015 to 2018. El Salvador is among the top 3 countries in Latin America whose inhabitants think most about emigrating. (Latinobarómetro 2018) The share of remittances of GDP in 2020 is also much higher in El Salvador (24%) than in Mexico (4%), and Colombia (2%), which also has been used in research on remittances and security in Latin America, and more generally Latin America and the Caribbeans (2.5%). (World Bank 2021)

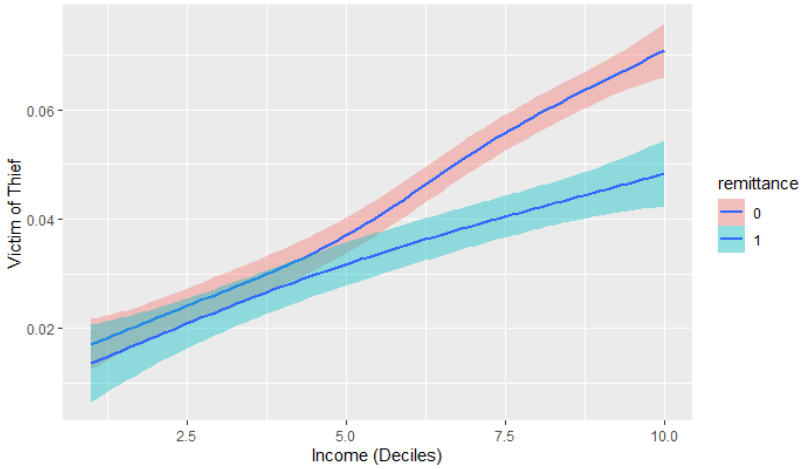
Second, DIGESTYC, the Salvadoran statistical institute, is providing the researchers with the data from a national survey (EHPM) conducted on around 20,000 households annually in each of the country's 242 municipalities. Data on remittances, fear of crime, and the set of

control variables will be drawn from this national survey. Since data on fear of crime have only been available since 2017, the analysis will focus on the years 2017 through 2019. In this same survey, socio-economic and durable goods ownership data are also available. These datasets allow having adequate counterfactuals (control group) for treated units (receiving remittances) since, on the one hand, a multitude of control variables are available and, on the other hand, data is clustered by municipality allowing for no omitted variable concerning the real level of security of the municipality when we are comparing two households living in the same municipality with similar characteristics except for receiving remittances (the treatment).

## 3.2 Empirical Methods

As mentioned in Section 1, the geographic and demographic distribution of remittance reception is uneven. On the one hand, remittance receivers are predominantly located in rural areas and some departments receive up to four times more remittances than other departments. On the other hand, women are more likely to receive remittances, while men are more likely to be victims of violence. On this subject, by performing a simple regression of income on victimization for the treatment group (remittance-households) and the control group without matching or control, we can see that remittance recipients are less often victims of violence as can be seen in the figure below. On the other hand, after adding some control covariates, as well as matching so that we compare people from the same municipalities, we observe that remittance receipt is positively associated with victimization. In other words, the uneven geographic

Figure 5. Income on Victim of Thief



distribution of remittance (see table 1 in the appendix) receipt requires us to use Matching Method to compare similar households located in municipalities with similar levels of violence.

Thanks to the large N and the large number of socio-economic variables available in the data, the matching methods applied using the *MatchIt* (2011) package in R on this observational data will allow us to obtain adequate counterfactuals reducing the possible confounders' bias. In addition, we will include dummies for year and municipality to reduce the impact of time-variant omitted variable bias and unit time-invariant omitted variable bias.

To examine the relationships between remittances, durable goods, victimization, and fear of crime, we will perform a range of logit regressions that will allow us to accurately isolate the coefficients of our dependent variables, thanks to the matching method. Depending on the dependent variable, we will decide our matching formula and decide whether full Coarsened Exact Matching (CEM), Nearest neighbor method, or a mix of them will be used (Diamond and Sekhon 2013, Iacus et al. 2012) Apart from the exact matching for municipality, rurality and year that will be used each time, the matching formulas are based on the literature on the factors of fear of crime and victimization which are the age of respondent, gender of respondent, gender of head of household, number of people living in the household, education level, employment status, income per capita, as well as in some cases security spending and victimization (for fear of crime). Matching will greatly reduce the number of observations from 62643 observations to 13092 in the most extreme case. It goes without saying that the loss of observations in urban areas and municipalities with low remittances will lead to a loss of external validity in exchange for greater internal validity. By matching, in our three main models, we reduced our imbalance between the treatment and control groups as measured by

L1 statistics from 0.60 to 0.06, 0.79 to 0.03, and 0.80 to 0.17 respectively. (To see how we reduced imbalance, see Tables 1 and 2 in the appendix.)

Our main empirical specification (effect of Remittances on Fear of Crime) takes the following form:

$$P_i = \frac{1}{1+e^{-f}} \quad \text{; where} \quad F_i = b_0 + b_1(Ri) + b_2(Xi) + b_4(M_i) + b_4(Y_i) + ei$$

The dependent variable, F$i$, measures the fear of crime of the household. We estimate, by performing a logit model, the effect of remittances on the expected probability of observing fear of crime (P$i$) in answers to specific questions on security issues in the household survey. To investigate the effect of remittances on fear of crime, the main independent variable, R$i$ is a binary variable indicating if the household receives remittances. $Xi$ is a vector of socioeconomic and demographic factors of Fear of Crime. M$i$ is a vector of spatial indicators in which the household resides that allows us to control for the level of crime, and Y$i$ is the year in which has been taken the survey.

Our study differs from other recent studies that have investigated the relationship between remittances and political behavior on security issues (Lopez-Garcia and Maydom 2021a, 2021b, Doyle and Lopez Garcia 2021), which sometimes, but not always (Meseguer et al. 2017, Escriba-Folch et al. 2018, Ley et al. 2021), do not sufficiently take into account the differences in the levels of violence between each municipality and neighborhood. For this reason, in this study, we always produce exact matching on the municipality, the rurality, and the year. Since

the Salvadoran territory is no more than 5 times the size of the island of Montreal, matching for the 262 municipalities and the level of rurality that are found there allows us to control in a relatively precise way for the level of violence, which turns out to be one of the main predictors of victimization and fear of crime.

## 4. Results

This section presents the results of the various regressions that assess the hypotheses drawn above

### 4.1 Effect of Remittances on Fear of crime

In these models, we ran multiple logit regressions on five fear of crime indicators: "Considering the security in the community, town or colony, the members of the household: 1. Can go out at night? 2. Can have a business? 3. Can leave the house without anyone in it? 4. Can let the kids go play outside alone? 5. The woman can transit in freedom? : Yes or No?

Our independent variable is the receipt of remittances by the household. We included a multitude of other pre-treatment variables that emerged as important from the literature. After Coarsened Exact Matching (CEM) on the variables employment, income, area, age of respondent, sex of respondent, edition, and municipality, we are left with 14614 observations. We decided to match on the sex and age of the respondent rather than the head of household because such a survey gives us the perception of the security of the respondent and not of the whole family. In addition, Security Expenses, Victimization, and Education level were added to the model later, as adding them directly into the matching formula would have greatly reduced the number of observations due to the low occurrence of victimization and security expenses. That being said, there is very little imbalance between control and treatment groups as you can see in Summary Statistic table 2 in the appendix.

**Regression Table 1, Logit Model. Remittance on Fear of Crime**

| | *Dependent variable:* | | | | |
|---|---|---|---|---|---|
| | Home | Business | Night | Woman | Kids |
| | (1) | (2) | (3) | (4) | (5) |
| Remittance, Yes | 0.092** | 0.052 | 0.064* | 0.045 | 0.051 |
| | (0.039) | (0.038) | (0.038) | (0.045) | (0.051) |
| Security Expenses | -0.677*** | -0.546*** | -0.748*** | -1.021*** | -0.989*** |
| | (0.191) | (0.161) | (0.174) | (0.217) | (0.259) |
| Victimization | 0.608*** | 0.471*** | 0.525*** | 0.509*** | 0.616*** |
| | (0.074) | (0.073) | (0.074) | (0.084) | (0.095) |
| employement | -0.049 | -0.266*** | 0.001 | -0.137** | -0.090 |
| | (0.050) | (0.048) | (0.048) | (0.058) | (0.065) |
| Income | -0.0004 | -0.0001 | 0.0001 | 0.002*** | 0.001 |
| | (0.0003) | (0.0003) | (0.0002) | (0.0003) | (0.0004) |
| Income 2 | 0.00000** | -0.00000 | -0.000 | -0.00000** | -0.00000 |
| | (0.00000) | (0.00000) | (0.00000) | (0.00000) | (0.00000) |
| Area, Urb | 0.014** | 0.018*** | 0.004 | 0.022*** | 0.017* |
| | (0.006) | (0.006) | (0.006) | (0.007) | (0.009) |
| Age Respondent | -0.00002 | -0.0001 | 0.00004 | -0.0001 | -0.0001 |
| | (0.0001) | (0.0001) | (0.0001) | (0.0001) | (0.0001) |
| Age Respondent2 | 0.048*** | -0.022** | -0.003 | -0.010 | -0.064*** |
| | (0.011) | (0.011) | (0.011) | (0.013) | (0.016) |
| Size of Household | 0.088 | 0.073 | -0.007 | 0.096 | 0.146** |
| | (0.054) | (0.051) | (0.051) | (0.060) | (0.068) |
| Sex, Masc | 0.153*** | 0.196*** | -0.025 | 0.383*** | 0.234*** |
| | (0.051) | (0.049) | (0.049) | (0.059) | (0.068) |
| Education Level2 | 0.383 | -15.230*** | -15.126*** | -15.323*** | -15.094*** |
| | (0.910) | (0.718) | (0.707) | (0.726) | (0.840) |
| Education Level3 | -0.102 | -0.286*** | -0.124 | -0.153 | 0.023 |
| | (0.103) | (0.097) | (0.098) | (0.116) | (0.155) |
| Education Level4 | -0.159 | -0.338*** | -0.202* | -0.236* | 0.097 |
| | (0.116) | (0.110) | (0.110) | (0.130) | (0.167) |
| Education Level5 | -0.172 | -0.099 | -0.341** | -0.411** | 0.047 |
| | (0.141) | (0.132) | (0.136) | (0.160) | (0.196) |
| Education Level Other | -0.013 | -0.228** | -0.069 | -0.066 | 0.082 |
| | (0.108) | (0.103) | (0.103) | (0.122) | (0.163) |
| edicion2018 | -0.156*** | -0.118** | -0.178*** | -0.175*** | -0.070 |
| | (0.049) | (0.047) | (0.047) | (0.055) | (0.062) |
| edicion2019 | -0.211*** | -0.194*** | -0.225*** | -0.346*** | -0.193*** |
| | (0.048) | (0.047) | (0.047) | (0.055) | (0.063) |
| Constant | -1.653*** | -0.434 | -0.524* | -2.211*** | -1.771*** |
| | (0.350) | (0.339) | (0.291) | (0.444) | (0.443) |
| *Note:* | | | | | *p<0.1; **p<0.05; ***p<0.01 |

As expected, the remittance coefficient on fear of crime is consistently positive. For fear of crime in the community at night, as well as at home, the remittance coefficients are statistically significant. Receipt of remittances is associated with an almost 10% increase of the odds of experiencing fear of crime at home compared to a similar household not receiving remittances and an almost 7% increase of the odds of experiencing in fear of crime at night in the community. In addition, the geographic variables Area and Municipality (which we decided not to include in order not to clutter the regression result table) are generally statistically significant as indicators of fear of crime. As expected, fear of crime is more present in urban areas. Finally, it should be noted that several pre-treatment variables lost their statistical significance due to Matching which reduces the variation in the pre-treatment variables. The only

unexpected coefficient is sex where male seems to have higher fear of crime, while some authors have found the opposite. (Scarborough and al., 2010, Abdullah and al., 2013, Chon and Wilson 2016, Lee and al. 2020)

## 4.2 Remittances on Durable Goods and Security Expenses

**Regression Results 2. Logit. Remittance on Expenses and Durable Goods**

| | *Dependent variable:* | | | | |
|---|---|---|---|---|---|
| | Car | Motorcycle | Computer | House Owner | House Security |
| | (1) | (2) | (3) | (4) | (5) |
| Remittance | 0.022*** | 0.005* | 0.040*** | -0.034*** | 0.002 |
| | (0.004) | (0.003) | (0.004) | (0.005) | (0.002) |
| Income | 0.001*** | 0.0002*** | 0.0004*** | 0.0002*** | 0.0001*** |
| | (0.00002) | (0.00001) | (0.00002) | (0.00002) | (0.00002) |
| Income 2 | -0.00000*** | -0.00000*** | -0.00000*** | -0.00000*** | -0.000 |
| | (0.00000) | (0.000) | (0.000) | (0.000) | (0.00000) |
| Area, Urb | 0.019*** | -0.024*** | 0.083*** | -0.119*** | -0.0002 |
| | (0.005) | (0.003) | (0.004) | (0.006) | (0.002) |
| Age Head of House | 0.010*** | -0.003*** | 0.006*** | 0.028*** | -0.00002 |
| | (0.001) | (0.001) | (0.001) | (0.001) | (0.0003) |
| Age Head of House2 | -0.0001*** | 0.00001*** | -0.0001*** | -0.0002*** | 0.00000 |
| | (0.00001) | (0.00000) | (0.00000) | (0.00001) | (0.00000) |
| Size of Household | 0.022*** | 0.017*** | 0.023*** | 0.026*** | 0.001 |
| | (0.001) | (0.001) | (0.001) | (0.001) | (0.0005) |
| Sex | 0.104*** | 0.032*** | 0.008** | 0.049*** | 0.001 |
| | (0.004) | (0.003) | (0.003) | (0.005) | (0.002) |
| Education Level 2 | 0.100 | 0.098 | 0.158 | -0.001 | -0.011 |
| | (0.177) | (0.163) | (0.170) | (0.174) | (0.012) |
| Education Level 3 | 0.036*** | 0.011* | 0.010 | 0.050*** | -0.001 |
| | (0.008) | (0.006) | (0.006) | (0.012) | (0.002) |
| Education Level 4 | 0.094*** | 0.026*** | 0.083*** | 0.043*** | 0.005 |
| | (0.010) | (0.008) | (0.009) | (0.014) | (0.004) |
| Education Level 5 | 0.232*** | 0.011 | 0.306*** | 0.075*** | 0.034*** |
| | (0.015) | (0.010) | (0.015) | (0.017) | (0.010) |
| Education Level Other | 0.021** | 0.002 | 0.054*** | 0.031** | 0.005** |
| | (0.009) | (0.007) | (0.007) | (0.013) | (0.003) |
| edicion2018 | 0.008 | 0.017*** | -0.013*** | -0.002 | -0.002 |
| | (0.005) | (0.003) | (0.004) | (0.006) | (0.003) |
| edicion2019 | 0.013*** | 0.026*** | -0.015*** | -0.043*** | -0.009*** |
| | (0.005) | (0.003) | (0.004) | (0.006) | (0.003) |
| Constant | -0.548*** | 0.018 | -0.294*** | -0.228*** | 0.001 |
| | (0.028) | (0.023) | (0.026) | (0.043) | (0.020) |
| *Note:* | | | | | *p<0.1; **p<0.05; ***p<0.01 |

In these logit models, we evaluate the effect of remittances on ownership of durable goods and on expenditures on security guards. We test three different durable goods (Car, Motorcycle, and Computer), home ownership, and security guard expenditures. In these models, we use the nearest neighbor matching method for the first four regressions, since the level of violence has little importance in the ownership of these goods. (Table statistic 3 in appendix) After matching, we have 31850 observations. However, for the fifth regression on security expenses, we prioritized CEM to ensure that we controlled for violence levels.

As expected, the receipt of remittances allows households who receive it to spend more on durable goods. The coefficients are statistically significant for each of the durable goods. This can be explained by the fact that remittance-households receive large sums of money at once allowing them to buy more expensive goods in a country where saving is very difficult due to low income. Finally, contrary to the findings of Lopez-Garcia and Maydom (2021a, 2021b), controlling for levels of violence, remittance receipt is not associated with increased spending on a security guard service (*Vigilencia*). We don't find evidence that households receiving remittances spend more on security, nor that they live more in gated communities than other households not receiving remittances living in the same area with approximately the same income. The only strong indicator of spending on security services (gated communities or private security services) is income.

## 4.3 Remittances on Victimization

In these models, we ran multiple logit regressions on four household victimization indicators: Victim of Burglary; Victim of Car Stealing or Thief; Victim of Thief or Violent Robbery in public space; and Victim of Extortion.

Our independent variable is the receipt of remittances by the household. We included a multitude of other pre-treatment variables that have emerged from the victimization literature. After Coarsened Exact Matching on the variables income, area, age of head of household, sex of head of household, number of people living in the household, edition, and municipality, we were left with 15958 observations. We decided to match on the sex and age of the head of household rather than the respondent because such a type of survey gives us the victimization status of the whole household. In addition, Education level was added to the model afterward, as adding it directly to the matching formula would have greatly reduced the number of observations. This being said, there is very little imbalance between control and treatment groups as you can see in table statistics 4 in the appendix.

**Regression Results 3. Logit. Remittance on Victims of Crime**

| | *Dependent variable:* | | | |
|---|---|---|---|---|
| | At Home | Car | In Public Space | Extorcion |
| | (1) | (2) | (3) | (4) |
| Remittance, Yes | -0.054 | -0.504 | 0.350*** | 0.462*** |
| | (0.165) | (0.579) | (0.092) | (0.166) |
| Income | 0.001 | 0.005*** | 0.001 | 0.003*** |
| | (0.001) | (0.001) | (0.001) | (0.001) |
| Income 2 | -0.00000 | -0.00000*** | -0.00000 | -0.00000 |
| | (0.00000) | (0.00000) | (0.00000) | (0.00000) |
| Area, Urb | 0.480** | 0.448 | 0.592*** | 0.513** |
| | (0.208) | (0.664) | (0.128) | (0.211) |
| Age Head of House | -0.012 | -0.085 | -0.00001 | 0.088** |
| | (0.027) | (0.094) | (0.017) | (0.035) |
| Age Head of House | 0.0002 | 0.001 | -0.0002 | -0.001*** |
| | (0.0002) | (0.001) | (0.0002) | (0.0003) |
| Size of Household | -0.038 | 0.396** | 0.139*** | 0.183*** |
| | (0.066) | (0.161) | (0.030) | (0.049) |
| Sex, Masc | -0.103 | -0.230 | -0.029 | 0.463*** |
| | (0.174) | (0.586) | (0.097) | (0.178) |
| Education Level2 | -16.896*** | 17.141 | -15.851*** | -16.476*** |
| | (1.042) | | (0.932) | (0.877) |
| Education Level3 | 0.207 | 16.517 | 0.027 | -0.709** |
| | (0.459) | | (0.305) | (0.345) |
| Education Level4 | 0.565 | 16.341 | 0.492 | -0.404 |
| | (0.486) | | (0.312) | (0.375) |
| Education Level | 1.108** | 17.430 | 0.686** | -0.016 |
| | (0.542) | | (0.338) | (0.438) |
| Education Level Other | 0.167 | 17.229 | 0.438 | -1.045*** |
| | (0.484) | | (0.312) | (0.395) |
| edicion2018 | -0.037 | -0.553 | 0.024 | -0.267 |
| | (0.201) | (0.589) | (0.115) | (0.188) |
| edicion2019 | -0.136 | -0.896 | -0.080 | -0.369** |
| | (0.195) | (0.604) | (0.112) | (0.188) |
| Constant | -4.061*** | -40.222 | -4.650*** | -23.079*** |
| | (1.330) | | (1.127) | (2.938) |
| *Note:* | | | | *p<0.1; **p<0.05; ***p<0.01 |

As expected, it appears that receiving remittances is associated with an increase in victimization. Although the coefficients for victim of burglary and car thief are not positive and statistically significant, the coefficients for victim of thief or violent robbery in public space, as well as victim of extortion are positive and statistically significant. The victimization rates for these two types of crime are very low (4% and 1% of households in the country). That said, remittances are associated with a 42% and 58% increase in the odds of being a victim of thief/violent robbery in public space or victim of extortion compared to a household not receiving remittances. These results are consistent with the findings of Lopez-Garcia and Maydom (2021a).

## 4.4 Durable Goods on Victimization

**Regression Results 4. Logit Model. Durable Goods on Victimization**

| | *Dependent variable:* | | |
|---|---|---|---|
| | At Home (1) | In Public (2) | Extorcion (3) |
| Car | -0.047 | -0.195** | 0.485*** |
| | (0.182) | (0.088) | (0.164) |
| Soundsystem | -0.015 | -0.130 | 0.083 |
| | (0.175) | (0.086) | (0.152) |
| TV | 0.171 | -0.052 | -0.392 |
| | (0.375) | (0.200) | (0.359) |
| Computer | -0.227 | 0.391*** | 0.125 |
| | (0.219) | (0.100) | (0.170) |
| Income | 0.002** | 0.002*** | 0.002*** |
| | (0.001) | (0.001) | (0.001) |
| Income 2 | -0.00000 | -0.00000** | -0.00000* |
| | (0.00000) | (0.00000) | (0.00000) |
| Area, Urb | -0.262 | 0.453*** | 0.269 |
| | (0.227) | (0.129) | (0.207) |
| Age Head of House | 0.012 | 0.019 | 0.077** |
| | (0.034) | (0.017) | (0.034) |
| Age Head of House2 | -0.0001 | -0.0002 | -0.001** |
| | (0.0003) | (0.0002) | (0.0003) |
| Size of Household | 0.085 | 0.176*** | 0.129** |
| | (0.061) | (0.031) | (0.054) |
| Sex, Masc | -0.084 | 0.015 | 0.091 |
| | (0.173) | (0.084) | (0.148) |
| Education Level 2 | -13.714*** | -16.194*** | -16.090*** |
| | (1.691) | (1.099) | (1.250) |
| Education Level 3 | 0.756 | -0.064 | -0.694 |
| | (1.038) | (0.406) | (0.467) |
| Education Level 4 | 1.351 | 0.349 | -0.346 |
| | (1.043) | (0.409) | (0.490) |
| Education Level 5 | 1.423 | 0.419 | 0.009 |
| | (1.061) | (0.418) | (0.507) |
| Education Level Other | 1.260 | 0.421 | -1.421** |
| | (1.059) | (0.415) | (0.553) |
| edicion2018 | 0.020 | -0.098 | -0.418** |
| | (0.196) | (0.101) | (0.180) |
| edicion2019 | -0.450** | -0.094 | -0.293* |
| | (0.221) | (0.099) | (0.173) |
| Constant | -22.404 | -3.943*** | -22.767 |
| | | (1.104) | |
| *Note:* | | *p<0.1; **p<0.05; ***p<0.01 | |

So far, the findings of Lopez-Garcia and Maydom (2021) seem to be validated by our models, although somewhat overestimated (see model 1). Lopez-Garcia and Maydom explained that this causal relationship between remittance receipt, victimization, and fear of crime existed because households with more durable goods had a greater risk of victimization and therefore a greater fear of crime.

In these models, we ran multiple logit regressions on four household victimization indicators: Victim of Burglary; Victim of Thief or Violent Robbery in public space; and Victim of Extortion.

Our independent variables were the possession by the household of certain durable goods that were available in our data and were goods often stolen (Galiani et al. 2020): Car, Soundsystem, TV, and Computer. We included a multitude of other pre-treatment variables that have emerged from the victimization literature. After Coarsened Exact Matching on the variables

income, area, age of head of household, sex of head of household, number of people living in the household, edition, and municipality, we were left with 13092 observations.

It can be observed that the signs vary according to the type of durable goods and the type of crime. There is no common trend showing that possession of hard goods leads to greater odds of victimization. Only three coefficients are statistically significant and two of them can be explained by the victimization literature. First, car ownership decreases the likelihood of victimization in public spaces, as the time spent in transit areas, a crime-absorbing location, is reduced. (Brantingham and Brantingham 1995, Fajnzylber 2001, Moreira and Ceccato 2021, Ceccato and Moreira 2021) Second, computer-owning households often have a young person, who is more likely to be a victim of property crime, who studies and spends time near schools, a popular location for property crime. (Savenije and Van der Borgh, 2015) On the other hand, car ownership associated with greater victimization regarding extortion could support Lopez-Garcia and Maydom's thesis, but it seems too little to validate the theory.

Our models here demonstrate that the relationship between ownership of durable goods and victimization is not valid with the Salvadoran case data. We believe that our models here cannot necessarily be considered causal due to the lack of literature and the absence of a solid theory linking ownership of durable goods to victimization and fear of crime. However, what we see here is that while Lopez-Garcia and Maydom (2021a) built their argument that the greater victimization of remittance-households is due to their greater possession of durable goods, we see here that households with more “theft-prone” durable goods are not the households most victimized by property crime. Therefore, the higher victimization of households receiving remittances cannot be attributed solely to their greater possession of durable goods. It is important to note that this relationship between durable goods ownership and victimization was not tested by Lopez-Garcia and Maydom (2021a), which we considered to be a mistake, since their main argument was based on this relationship.

## 4.5 Durable Goods on Fear of Crime

**Regression Results 5, Logit Model. Fear of Crime on Durable Goods**

| | *Dependent variable:* | | | | |
|---|---|---|---|---|---|
| | At Night | At Night | At Home | At Night | At Home |
| | (1) | (2) | (3) | (4) | (5) |
| Car | -0.031*** | -0.014* | -0.001 | -0.015** | -0.002 |
| | (0.007) | (0.007) | (0.007) | (0.007) | (0.007) |
| Soundsystem | | -0.047*** | -0.050*** | -0.046*** | -0.049*** |
| | | (0.007) | (0.007) | (0.007) | (0.007) |
| TV | | -0.008 | 0.021 | -0.006 | 0.023 |
| | | (0.015) | (0.014) | (0.015) | (0.014) |
| Computer | | -0.041*** | -0.025*** | -0.045*** | -0.029*** |
| | | (0.009) | (0.009) | (0.009) | (0.009) |
| security Expenses | | -0.173*** | -0.157*** | -0.173*** | -0.157*** |
| | | (0.016) | (0.016) | (0.016) | (0.016) |
| Victimization | | | | 0.108*** | 0.094*** |
| | | | | (0.013) | (0.013) |
| Employement | | -0.017** | -0.007 | -0.019** | -0.008 |
| | | (0.008) | (0.008) | (0.008) | (0.008) |
| Income | 0.00003 | 0.0001*** | 0.00005** | 0.0001*** | 0.00004* |
| | (0.00002) | (0.00002) | (0.00002) | (0.00002) | (0.00002) |
| Income 2 | -0.000** | -0.00000*** | -0.000*** | -0.00000*** | -0.000*** |
| | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| Area, Urb | -0.008 | 0.002 | 0.014 | 0.00004 | 0.012 |
| | (0.009) | (0.009) | (0.009) | (0.009) | (0.009) |
| Age Head of House | 0.002* | 0.002** | 0.002* | 0.002** | 0.002* |
| | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) |
| Age Head of House2 | -0.00000 | -0.00001 | 0.00000 | -0.00001 | 0.00000 |
| | (0.00001) | (0.00001) | (0.00001) | (0.00001) | (0.00001) |
| Size of Household | -0.002 | 0.0004 | 0.012*** | -0.001 | 0.011*** |
| | (0.002) | (0.002) | (0.002) | (0.002) | (0.002) |
| Sex, Masc | 0.009 | 0.013* | 0.036*** | 0.013* | 0.036*** |
| | (0.007) | (0.008) | (0.007) | (0.008) | (0.007) |
| Education Level 2 | -0.224*** | -0.253*** | -0.105** | -0.243*** | -0.096** |
| | (0.069) | (0.080) | (0.041) | (0.078) | (0.040) |
| Education Level 3 | -0.022 | -0.024 | 0.004 | -0.022 | 0.006 |
| | (0.027) | (0.027) | (0.027) | (0.027) | (0.027) |
| Education Level 4 | -0.027 | -0.022 | 0.006 | -0.022 | 0.006 |
| | (0.028) | (0.028) | (0.028) | (0.028) | (0.028) |
| Education Level 5 | -0.038 | -0.018 | 0.008 | -0.019 | 0.007 |
| | (0.029) | (0.029) | (0.029) | (0.029) | (0.029) |
| Education Level Other | -0.025 | -0.023 | 0.015 | -0.023 | 0.015 |
| | (0.028) | (0.028) | (0.029) | (0.028) | (0.028) |
| edicion2018 | -0.028*** | -0.030*** | -0.033*** | -0.028*** | -0.032*** |
| | (0.009) | (0.009) | (0.008) | (0.009) | (0.008) |
| edicion2019 | -0.055*** | -0.061*** | -0.065*** | -0.058*** | -0.063*** |
| | (0.008) | (0.008) | (0.008) | (0.008) | (0.008) |
| Constant | 0.289*** | 0.296*** | 0.191** | 0.292*** | 0.188** |
| | (0.086) | (0.085) | (0.083) | (0.083) | (0.083) |
| *Note:* | | | | | *p<0.1; **p<0.05; ***p<0.01 |

As for the previous model, this one has not been tested by Lopez-Garcia and seems in our opinion imperative for the development of a theory that remittance receivers through their spending on durable goods have a greater fear of crime. Again, it should be noted that this model cannot be considered causal due to the absence of a solid theory linking ownership of durable goods to victimization and fear of crime, as well as the data only providing information on a few specific durable goods.

In these models, we ran multiple logit regressions with different settings on two fear of crime indicators: “Considering the security in the community, town or colony, the members of the household: 1. Can go out at night? 2. Can leave the house without anyone in it? Yes or

No. After Coarsened Exact Matching on variables employment, income, area, age of respondent, sex of respondent, edition, and municipality, we were left with 17988 observations.

It can be observed that the coefficients of durable goods ownership on fear of crime are mostly negative and statistically significant, going against the thesis that owning more durable goods increases fear of crime. We do not claim that these coefficients can be considered causal, but they do show that after rigorous matching, households with more durable goods generally have a lower fear of crime. Some could say that we didn't include all types of durable goods and that it may be that it is a specific type of goods that increases fear of crime, but to our knowledge, no one identified this specific type of goods yet in the literature. Furthermore, when controlling for victimization, the coefficients change little to nothing, which supports our results from the previous model that possession of durable goods does not have a direct effect on victimization. The other factors of fear of crime and victimization developed in the literature review such as income and security expenses predict better a household's victimization status and its fear of crime.

## 5. Discussion

Our research provided a brief background on the determinant of fear of crime and victimization in order to isolate in the best possible way the receipt of remittances. We also explore how remittances may influence political behaviors, in order to understand how remittances may make an individual or household more concerned about crime issues. The literature linking the receipt of remittances to fear of crime and victimization remains limited. That said, there has been some research in recent years that has repeatedly linked remittances and concerns regarding security issues. However, the mechanisms by which remittance affects perceptions regarding security issues have not been sufficiently empirically tested. Original

and extensive data from El Salvador allowed us to study this relationship in the Latin American country where remittances represent the largest share of GDP and where crime rates were highest during several years of the 2010s decade.

Our research shows that victimization rates, as well as fear of crime, are indeed higher among households receiving remittances, after controlling for victimization and fear of crime factors described in the literature. However, we show that the mechanism by which households receiving remittances have a greater fear of crime, i.e., ownership of durable goods, which has been suggested in previous research (Lopez-Garcia and Maydom 2021a, 2021b) does not appear to be valid in the case of El Salvador. Our research tested each of the steps that allow us to assert that households receiving remittances are more afraid of crime due to their greater possession of durable goods. After testing the main relationship which is the effect of Remittances on Fear of crime, we, first, tested the effect of remittances on durable goods and Security Expenses. As expected, we found that remittance households own more durable goods than other households in the same municipality with the same demographic characteristics. This is interesting to see that, indeed, remittances allow households who receive them to spend more on non-productive assets (not related to their work). However, we also show that, contrary to other findings in Latin America, we do not observe higher expenses on security services (private or gated communities). We think here that by controlling precisely for localization, we hide the effect of spending on security expenses. In other words, we think that, other than income, localization is a greater factor in deciding to invest in security.

Second, we tested the effect of remittances on victimization. As expected, receiving remittances is associated with an increase in victimization (for types of crime, violent robbery

in public space, and extortion). Before matching, the control group had a higher victimization rate for every type of crime. After matching, remittance-households have approximately 50% more probability of being a victim of extortion (i.e. 0.9% for the control group and 1.3% for the treatment group) or thieves / violent robbery in public space, although the victimization rates stay very low respectively 1.3% and 4.1% of the respondent. For burglary crimes, we find no evidence suggesting that remittances increase victimization. Based on these findings, we can think, following the rational choice theory, that thieves and extortioners see greater opportunities to steal from remittance-households that possess more durable goods.

Third, we tested the impact of durable goods on victimization. We showed that possession of durable goods does not increase victimization. In fact, different goods have different effects on victimization. For example, owning a car decreases victimization, while owning a computer seems to increase victimization. We consider that looking specifically at the effect of a good on victimization might not be the best way to understand the causal path. In fact, authors (Brantingham and Brantingham 1995, Moreira and Ceccato 2021, Ceccato and Moreira 2021) have studied time spent in transit as a factor of victimization, while others (Savenije and Van der Borgh 2015) have found that schools are places where crimes occur. Car owners spend less time in transit, while computer owners are often students. We consider the causal relationship in which ownership of durable goods increases victimization to be weak. Finally, we tested the effect of ownership of durable goods on fear of crime and we find no evidence that durable goods ownership increases fear of crime

By testing each step of the causal pathway of remittance influencing fear of crime, we were able to observe that the possession of durable goods does not necessarily encourage

victimization and fear of crime, and, therefore, we argue that it is not through this mechanism that households receiving remittances have a greater fear of crime.

## 5.1 Addressing Causality Threats

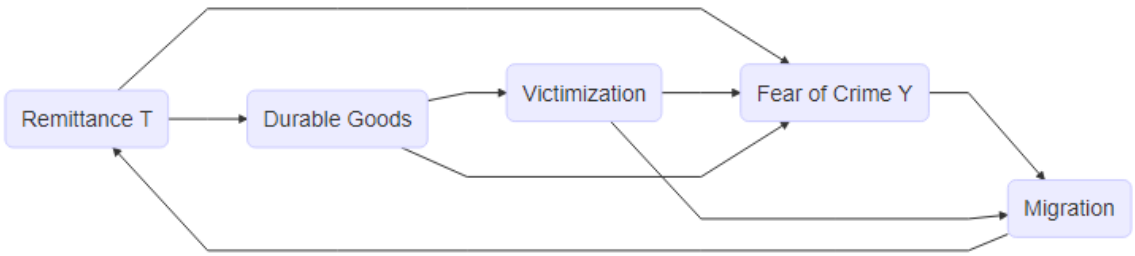
Although this research failed to empirically explain the mechanism by which receiving remittances increases fear of crime, this research did succeed in discarding, at least in the Salvadoran case, a possible explanation, that of possession of durable goods, proposed by Lopez-Garcia and Maydom (2021a, 2021b). We consider this empirical demonstration to be rigorous both in terms of the statistical method used and the data chosen. In fact, by carefully controlling for each of the municipalities and for the level of rurality, it is possible to properly isolate the level of violence influencing the fear of crime and victimization. Matching is highly important for addressing model dependency since we have shown that remittance receipt and violence do not follow the same geographic distribution (see figures 1, 2, and 3). In other words, the proportion of the population receiving remittances is higher in rural areas where crime rates are lower (negative correlation). Therefore, without matching methods, rural areas (with lower crime rates) would be overrepresented. Matching methods provide us a better external validity. Another example of model dependency that we succeeded to deal with is the proportion of women who lead households that is higher for the treated group (remittance-households) than the control group before applying matching methods.

In the past, other researchers (Lopez-Garcia and Maydom 2021a, 2021b) have used data from Latinobarometro, which includes too many different countries, 18, (and, therefore, different crime levels and structures) to be able to study the fear of crime. These researchers,

not having access to a sufficiently precise location indicator, decided to match their units by country, which seems to us too broad. It is also possible that by not having precise data on the location of households, certain regions (where remittances are more frequent) were over-represented.

## 5.2 Why Remittances are associated with higher victimization and fear of crime, then?

After reading this thesis, the question remains. In our opinion, this association is due to reverse causality where in some cases the household member abroad who sends remittances has left either because of past victimization or a greater fear of crime (see graph). Therefore, the household receiving remittances would be a victimized household or one with a greater fear of crime even before receiving remittances. An interesting article by Viridiana Rios Contreras (2014) shows that a large number of migrants migrate because of their fear of crime. According to her results, almost 2%, which represents 264,000 people, of the migrations between 2006 and 2010 are a consequence of the migrant's fear of crime. A similar paper on El Salvador is not available, but these results allow us to understand the magnitude of the security issue in the decision to migrate. Model 1, which measures the impact of remittances on fear of crime, shows that remittance receivers have a 10% higher fear of crime than non-receivers, which represents 1.7% of remittance-households. Without mistakenly linking these two studies, it seems possible that among Salvadorans who migrated in the past, many did so out of fear of crime and shared a higher fear of crime than the rest of the population.



Unless there is a valid alternative explanation, our results lead us to believe that it is nearly impossible to make causal inference without having the data on the family member's reasons for migrating or an effective instrumental variable (IV). Regarding instrumental variables, authors working on remittance have used historical migration as an instrumental variable to predict family remittances at the municipal level. (Ley and al. 2019, Pfütze 2014) However, this IV cannot be performed in the context of household-based research like ours. Another IV used by Escriba-Folch and al. (2018) in research on the effects of remittances on political behavior is the country's average distance from the coast to predict a country's influx of remittances. In our opinion, the authors do not explain enough how this would be an effective IV and, again, this IV is useless in the context of household-based research.

## 6. Conclusion

The objective of this research was to clarify two important questions: First, does receiving remittances increase fear of crime? Second, does possession of durable goods increase fear of crime? We showed that possession of durable goods does not necessarily increase fear of crime. In fact, different goods have different effects on fear of crime. For example, owning a car decreases victimization, while owning a computer seems to increase victimization. We should ask ourselves if the ownership of those durable goods is really having a direct effect on fear of crime or if is it the causes or the consequences of owning them that are the real factors of victimization. In other words, is it the ownership of a car that decreases fear of crime, or is it spending less time in transit? Is it the ownership of computers that increases fear of crime or the fact that most households with a computer have a student composing it? Is the fear of crime more associated with computers and cars or with schools and public spaces? All these questions that arise here let us believe that this causal mechanism is weak.1

Regarding the question: Do receiving remittances increase fear of crime? We showed that indeed, remittance-households have higher fear of crime. However, as mentioned before, if it is not because of their increased ownership of durable goods, we are left with no legitimate causal path explaining their higher fear of crime. Therefore, we believe that the reason why they share a higher fear of crime is that the reason why members of these households left the country might be a higher fear of crime or past victimization. In other words, the remittance households were households with a higher fear of crime than the average household, prior to the migration the member of the household that sends the remittances.

Although our research failed in ruling out the issue of reverse causality, it does provide interesting outputs, such as car owners having a lower victimization rate, on the relationship between durable goods ownership and victimization that could be the subject of further research. This is interesting because it suggests that time spent in transit is a factor of victimization for example. Also, in reverse, ownership of a computer is associated with higher victimization in public spaces. It could suggest that students (in El Salvador, the government provides a laptop to students for free) are more subject to being victims of crime. These results can be used by policymakers to identify where they should invest more in security.

This research shows the importance of extensively controlling for the geographic location of the units (households or individuals) studied in order to properly capture the level of local violence that might influence the fear of crime of the household. Matching methods allowed us to consistently control for levels of violence by comparing households living in the same communities. In future statistical research on fear of crime and victimization, using the

household as a unit, researchers need to include a sufficiently precise spatial indicator in their statistical analysis.

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# Appendix

*Table 1. Remittance Data without Matching*

| | No Remittance 0 (N=46718) | Remittance 1 (N=15925) | Total (N=62643) | p value |
|---|---|---|---|---|
| **Income per Capita** | | | | < 0.001 |
| Mean (SD) | 216.037 (253.424) | 231.435 (193.360) | 219.952 (239.679) | |
| Range | 3.290 - 16460.000 | 11.387 - 4513.330 | 3.290 - 16460.000 | |
| **Area** | | | | < 0.001 |
| Mean (SD) | 0.558 (0.497) | 0.457 (0.498) | 0.532 (0.499) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Age of Head of Household** | | | | < 0.001 |
| Mean (SD) | 48.407 (16.303) | 55.221 (17.474) | 50.139 (16.871) | |
| Range | 15.000 - 98.000 | 15.000 - 98.000 | 15.000 - 98.000 | |
| **Sex of Head of Household** | | | | < 0.001 |
| Mean (SD) | 0.675 (0.468) | 0.517 (0.500) | 0.635 (0.482) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Sex of Respondent** | | | | < 0.001 |
| Mean (SD) | 0.375 (0.484) | 0.323 (0.468) | 0.362 (0.481) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Size of Household** | | | | < 0.001 |
| Mean (SD) | 3.613 (1.791) | 3.464 (1.867) | 3.575 (1.812) | |
| Range | 1.000 - 24.000 | 1.000 - 23.000 | 1.000 - 24.000 | |
| **Education** | | | | < 0.001 |
| 0 | 1382 (3.0%) | 702 (4.4%) | 2084 (3.3%) | |
| 1 | 3 (0.0%) | 4 (0.0%) | 7 (0.0%) | |
| 2 | 25283 (54.1%) | 8699 (54.6%) | 33982 (54.2%) | |
| 3 | 8723 (18.7%) | 2214 (13.9%) | 10937 (17.5%) | |
| 4 | 3447 (7.4%) | 738 (4.6%) | 4185 (6.7%) | |
| 99 | 7880 (16.9%) | 3568 (22.4%) | 11448 (18.3%) | |
| **Employment** | | | | < 0.001 |
| Mean (SD) | 0.612 (0.487) | 0.448 (0.497) | 0.570 (0.495) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Security expenses** | | | | < 0.001 |
| N-Miss | 167 | 49 | 216 | |
| Mean (SD) | 0.021 (0.143) | 0.013 (0.113) | 0.019 (0.136) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Victim of Thief** | | | | < 0.001 |
| N-Miss | 2315 | 343 | 2658 | |
| Mean (SD) | 0.042 (0.200) | 0.034 (0.181) | 0.040 (0.195) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Victim of Burglary** | | | | 0.860 |
| N-Miss | 2315 | 343 | 2658 | |
| Mean (SD) | 0.010 (0.100) | 0.010 (0.099) | 0.010 (0.100) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Victim of Extorcion** | | | | 0.295 |
| N-Miss | 2315 | 343 | 2658 | |

| | No Remittance 0 (N=46718) | Remittance 1 (N=15925) | Total (N=62643) | p value |
|---|---|---|---|---|
| Mean (SD) | 0.012 (0.108) | 0.013 (0.112) | 0.012 (0.109) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Fear of Crime at Night** | | | | 0.014 |
| N-Miss | 2274 | 337 | 2611 | |
| Mean (SD) | 0.321 (0.467) | 0.310 (0.463) | 0.318 (0.466) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Fear of Crime at Home** | | | | 0.547 |
| N-Miss | 2274 | 337 | 2611 | |
| Mean (SD) | 0.266 (0.442) | 0.268 (0.443) | 0.267 (0.442) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Ownership of Car** | | | | < 0.001 |
| Mean (SD) | 0.165 (0.371) | 0.185 (0.388) | 0.170 (0.376) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Ownership of Computer** | | | | < 0.001 |
| Mean (SD) | 0.123 (0.328) | 0.139 (0.346) | 0.127 (0.333) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |

*Table 2. Table Statistics. Remittance Data of matched data for fear of crime*

| | No Remittance 0 (N=7307) | Remittance 1 (N=7307) | Total (N=14614) | p value |
|---|---|---|---|---|
| **Income per Capita** | | | | 0.259 |
| Mean (SD) | 185.345 (126.834) | 187.786 (134.395) | 186.565 (130.670) | |
| Range | 3.290 - 2289.580 | 16.668 - 4432.665 | 3.290 - 4432.665 | |
| **Area** | | | | 1.000 |
| Mean (SD) | 0.485 (0.500) | 0.485 (0.500) | 0.485 (0.500) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Age of Head of Household** | | | | < 0.001 |
| Mean (SD) | 50.370 (16.502) | 52.792 (16.940) | 51.581 (16.766) | |
| Range | 16.000 - 98.000 | 16.000 - 98.000 | 16.000 - 98.000 | |
| **age** | | | | 0.689 |
| Mean (SD) | 47.041 (17.459) | 47.157 (17.635) | 47.099 (17.547) | |
| Range | 15.000 - 98.000 | 15.000 - 98.000 | 15.000 - 98.000 | |
| **Sex of Head of Household** | | | | < 0.001 |
| Mean (SD) | 0.652 (0.476) | 0.521 (0.500) | 0.586 (0.493) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Sex of Respondent** | | | | 1.000 |
| Mean (SD) | 0.298 (0.457) | 0.298 (0.457) | 0.298 (0.457) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Size of Household** | | | | < 0.001 |
| Mean (SD) | 3.630 (1.805) | 3.731 (1.900) | 3.680 (1.853) | |
| Range | 1.000 - 17.000 | 1.000 - 23.000 | 1.000 - 23.000 | |
| **Education** | | | | < 0.001 |
| 0 | 269 (3.7%) | 301 (4.1%) | 570 (3.9%) | |
| 1 | 0 (0.0%) | 3 (0.0%) | 3 (0.0%) | |
| 2 | 4022 (55.0%) | 4128 (56.5%) | 8150 (55.8%) | |
| 3 | 1139 (15.6%) | 1163 (15.9%) | 2302 (15.8%) | |
| 4 | 437 (6.0%) | 328 (4.5%) | 765 (5.2%) | |
| 99 | 1440 (19.7%) | 1384 (18.9%) | 2824 (19.3%) | |
| **Employment** | | | | 1.000 |
| Mean (SD) | 0.493 (0.500) | 0.493 (0.500) | 0.493 (0.500) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Security expenses** | | | | 0.434 |
| N-Miss | 23 | 18 | 41 | |
| Mean (SD) | 0.015 (0.123) | 0.017 (0.129) | 0.016 (0.126) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Any form of Victimization** | | | | 0.079 |
| N-Miss | 202 | 205 | 407 | |
| Mean (SD) | 0.063 (0.243) | 0.070 (0.256) | 0.067 (0.249) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Victim of Thief** | | | | 0.160 |
| N-Miss | 202 | 205 | 407 | |
| Mean (SD) | 0.036 (0.186) | 0.041 (0.197) | 0.038 (0.192) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Victim of Extorcion** | | | | 0.109 |
| N-Miss | 202 | 205 | 407 | |

| | No Remittance 0 (N=7307) | Remittance 1 (N=7307) | Total (N=14614) | p value |
|---|---|---|---|---|
| Mean (SD) | 0.010 (0.098) | 0.013 (0.111) | 0.011 (0.105) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Fear of Crime at Night** | | | | 0.068 |
| N-Miss | 200 | 199 | 399 | |
| Mean (SD) | 0.302 (0.459) | 0.316 (0.465) | 0.309 (0.462) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Fear of Crime at Home** | | | | 0.011 |
| N-Miss | 200 | 199 | 399 | |
| Mean (SD) | 0.251 (0.434) | 0.270 (0.444) | 0.261 (0.439) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Ownership of Car** | | | | 0.055 |
| Mean (SD) | 0.153 (0.360) | 0.165 (0.371) | 0.159 (0.366) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Ownership of Computer** | | | | < 0.001 |
| Mean (SD) | 0.112 (0.315) | 0.142 (0.349) | 0.127 (0.333) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |

*Table 3. Table Statistics. Remittance Data of matched data for durable goods*

| | No Remittance 0 (N=15925) | Remittance 1 (N=15925) | Total (N=31850) | p value |
|---|---|---|---|---|
| **Income per Capita** | | | | 0.898 |
| Mean (SD) | 231.712 (190.675) | 231.435 (193.360) | 231.574 (192.019) | |
| Range | 3.290 - 4725.000 | 11.387 - 4513.330 | 3.290 - 4725.000 | |
| **Area** | | | | 0.014 |
| Mean (SD) | 0.471 (0.499) | 0.457 (0.498) | 0.464 (0.499) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Age of Head of Household** | | | | < 0.001 |
| Mean (SD) | 54.382 (16.647) | 55.221 (17.474) | 54.801 (17.070) | |
| Range | 16.000 - 98.000 | 15.000 - 98.000 | 15.000 - 98.000 | |
| **age** | | | | < 0.001 |
| Mean (SD) | 49.805 (18.362) | 50.534 (18.811) | 50.169 (18.591) | |
| Range | 15.000 - 98.000 | 15.000 - 98.000 | 15.000 - 98.000 | |
| **Sex of Head of Household** | | | | 0.728 |
| Mean (SD) | 0.518 (0.500) | 0.517 (0.500) | 0.518 (0.500) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Sex of Respondent** | | | | 1.000 |
| Mean (SD) | 0.323 (0.468) | 0.323 (0.468) | 0.323 (0.468) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Size of Household** | | | | 0.105 |
| Mean (SD) | 3.499 (1.922) | 3.464 (1.867) | 3.481 (1.895) | |
| Range | 1.000 - 15.000 | 1.000 - 23.000 | 1.000 - 23.000 | |
| **Education** | | | | 0.034 |
| 0 | 653 (4.1%) | 702 (4.4%) | 1355 (4.3%) | |
| 1 | 1 (0.0%) | 4 (0.0%) | 5 (0.0%) | |
| 2 | 8747 (54.9%) | 8699 (54.6%) | 17446 (54.8%) | |
| 3 | 2301 (14.4%) | 2214 (13.9%) | 4515 (14.2%) | |
| 4 | 809 (5.1%) | 738 (4.6%) | 1547 (4.9%) | |
| 99 | 3414 (21.4%) | 3568 (22.4%) | 6982 (21.9%) | |
| **Employment** | | | | < 0.001 |
| Mean (SD) | 0.594 (0.491) | 0.448 (0.497) | 0.521 (0.500) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Security expenses** | | | | < 0.001 |
| N-Miss | 66 | 49 | 115 | |
| Mean (SD) | 0.020 (0.140) | 0.013 (0.113) | 0.016 (0.127) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Any form of Victimization** | | | | 0.060 |
| N-Miss | 707 | 343 | 1050 | |
| Mean (SD) | 0.069 (0.253) | 0.064 (0.244) | 0.066 (0.249) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Victim of Thief** | | | | 0.030 |
| N-Miss | 707 | 343 | 1050 | |
| Mean (SD) | 0.038 (0.192) | 0.034 (0.181) | 0.036 (0.186) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Victim of Extorcion** | | | | 0.260 |
| N-Miss | 707 | 343 | 1050 | |

| | No Remittance 0 (N=15925) | Remittance 1 (N=15925) | Total (N=31850) | p value |
|---|---|---|---|---|
| Mean (SD) | 0.011 (0.106) | 0.013 (0.112) | 0.012 (0.109) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Fear of Crime at Night** | | | | < 0.001 |
| N-Miss | 691 | 337 | 1028 | |
| Mean (SD) | 0.333 (0.471) | 0.310 (0.463) | 0.321 (0.467) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Fear of Crime at Home** | | | | 0.288 |
| N-Miss | 691 | 337 | 1028 | |
| Mean (SD) | 0.274 (0.446) | 0.268 (0.443) | 0.271 (0.445) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Ownership of Car** | | | | < 0.001 |
| Mean (SD) | 0.160 (0.367) | 0.185 (0.388) | 0.172 (0.378) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Ownership of Computer** | | | | < 0.001 |
| Mean (SD) | 0.114 (0.318) | 0.139 (0.346) | 0.127 (0.333) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |

*Table 4. Table Statistics. Remittance Data of matched data for victimization*

| | No Remittance 0 (N=7979) | Remittance 1 (N=7979) | Total (N=15958) | p value |
|---|---|---|---|---|
| **Income per Capita** | | | | 0.739 |
| Mean (SD) | 188.962 (137.316) | 189.674 (132.961) | 189.318 (135.153) | |
| Range | 3.290 - 4477.915 | 13.250 - 4432.665 | 3.290 - 4477.915 | |
| **Area** | | | | 1.000 |
| Mean (SD) | 0.485 (0.500) | 0.485 (0.500) | 0.485 (0.500) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Age of Head of Household** | | | | < 0.001 |
| Mean (SD) | 49.448 (15.940) | 56.685 (17.606) | 53.066 (17.178) | |
| Range | 16.000 - 98.000 | 15.000 - 98.000 | 15.000 - 98.000 | |
| **age** | | | | < 0.001 |
| Mean (SD) | 45.837 (17.031) | 51.655 (19.197) | 48.746 (18.377) | |
| Range | 15.000 - 98.000 | 15.000 - 98.000 | 15.000 - 98.000 | |
| **Sex of Head of Household** | | | | 1.000 |
| Mean (SD) | 0.611 (0.488) | 0.611 (0.488) | 0.611 (0.487) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Sex of Respondent** | | | | 0.012 |
| Mean (SD) | 0.349 (0.477) | 0.368 (0.482) | 0.359 (0.480) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Size of Household** | | | | 1.000 |
| Mean (SD) | 3.330 (1.511) | 3.330 (1.511) | 3.330 (1.511) | |
| Range | 1.000 - 13.000 | 1.000 - 13.000 | 1.000 - 13.000 | |
| **Education** | | | | < 0.001 |
| 0 | 283 (3.5%) | 361 (4.5%) | 644 (4.0%) | |
| 1 | 0 (0.0%) | 3 (0.0%) | 3 (0.0%) | |
| 2 | 4467 (56.0%) | 4374 (54.8%) | 8841 (55.4%) | |
| 3 | 1302 (16.3%) | 1108 (13.9%) | 2410 (15.1%) | |
| 4 | 450 (5.6%) | 319 (4.0%) | 769 (4.8%) | |
| 99 | 1477 (18.5%) | 1814 (22.7%) | 3291 (20.6%) | |
| **Employment** | | | | < 0.001 |
| Mean (SD) | 0.615 (0.487) | 0.441 (0.497) | 0.528 (0.499) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Security expenses** | | | | 0.740 |
| N-Miss | 24 | 23 | 47 | |
| Mean (SD) | 0.014 (0.118) | 0.015 (0.120) | 0.014 (0.119) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Any form of Victimization** | | | | 0.012 |
| N-Miss | 288 | 225 | 513 | |
| Mean (SD) | 0.057 (0.233) | 0.067 (0.250) | 0.062 (0.242) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Victim of Thief** | | | | 0.011 |
| N-Miss | 288 | 225 | 513 | |
| Mean (SD) | 0.030 (0.170) | 0.037 (0.189) | 0.034 (0.180) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Victim of Extorcion** | | | | 0.026 |
| N-Miss | 288 | 225 | 513 | |

| | No Remittance 0 (N=7979) | Remittance 1 (N=7979) | Total (N=15958) | p value |
|---|---|---|---|---|
| Mean (SD) | 0.009 (0.097) | 0.013 (0.114) | 0.011 (0.106) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Fear of Crime at Night** | | | | 0.142 |
| N-Miss | 283 | 219 | 502 | |
| Mean (SD) | 0.309 (0.462) | 0.320 (0.467) | 0.315 (0.464) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Fear of Crime at Home** | | | | < 0.001 |
| N-Miss | 283 | 219 | 502 | |
| Mean (SD) | 0.254 (0.435) | 0.278 (0.448) | 0.266 (0.442) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Ownership of Car** | | | | < 0.001 |
| Mean (SD) | 0.144 (0.351) | 0.171 (0.377) | 0.158 (0.364) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |
| **Ownership of Computer** | | | | < 0.001 |
| Mean (SD) | 0.099 (0.299) | 0.132 (0.338) | 0.115 (0.319) | |
| Range | 0.000 - 1.000 | 0.000 - 1.000 | 0.000 - 1.000 | |