DEPTARTMENT OF POLITICAL SCIENCE

REMITTANCES AND CORRUPTION IN MIGRANTS' COUNTRIES OF ORIGIN

Corruption Experience of Remittance Recipients in Latin America and the Caribbean

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Abstract

This thesis aims to explore whether and how (monetary) remittance affects petty corruption in migrants' countries of origin. Specifically, it investigates whether remittance recipients are more likely to pay bribes than non-recipients. Two arguments are put forward. On one hand, monetary remittance facilitates the circulation of positive social remittance from migrants working/residing in less corrupt countries to their families back home, which makes the latter less likely to think that paying a bribe is justifiable, hence lower actual bribe payment. On the other hand, compared to those not receiving remittance, recipients are exposed to a higher probability of being targeted for bribes and, therefore, more prone to pay bribes as the positive social remittances may not be robust enough to replace the particularistic culture of corrupt societies. The results from multilevel modeling of household survey data from 16 countries in Latin America and the Caribbean in 2014 support the second argument. Although I failed to find consistent supporting evidence that those that receive remittances from abroad are also more likely to actually pay bribes, it does not necessarily mean a better state of affairs. Remittance recipients are more likely to find it justifiable to pay a bribe and be targeted for bribe solicitations by public officials than non-recipients. These grim findings may be explained by the combination of limited or weak transmission of positive social remittance and the persistence of the particularistic culture shaping the way a corrupt society functions. The policy implications from this study are essential in the context of numerous efforts to curb corruption and harness the positive gains from remittance in migrants' countries of origin.

Key words: monetary remittance, social remittance, migration, petty corruption, sending countries, bribe payment, bribe solicitation, multilevel model, particularistic culture, political networks, social networks.

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I.   Introduction

Corruption is probably no longer a new phenomenon. One search with the key word "corruption" in Google Search generates about 146,000,000 results[1]. Corruption, understood as the "misuse of public office for private gain" (Treisman, 2000), has been consistently found to have detrimental consequences on economic growth (Mauro, 1995), interpersonal trust among citizens in the society (Rothstein, 2013), efficient resource allocation (Krueger, 1974), political legitimacy of the state (Rose-Ackerman, 1996), and so on. Determinants of corruption, mostly at the cross-national level, have been identified in order to curb corruption, such as freedom of press, colonial origin, religion, level of economic development (Treisman, 2000), the degree of female participation in government (Dollar et al., 2001), political institutions (Gerring and Thacker, 2004; Kunicova and Rose-Ackerman, 2003; Fisman and Gatti, 2002; Persson et al, 2003; Chang and Golden, 2007), etc.

These studies utilize aggregate corruption data, which makes it relatively easy to compare corruption level across countries and over time. However, these data tell us very little about the corruption experience at micro-level (Svensson, 2002). Why does corruption occur, i.e. why do people engage in corrupt exchange? The answer to this question necessitates research on individual/household characteristics, which prompt people to participate in corrupt transactions in the first place (Tavits, 2005). Furthermore, aggregate data cannot explain within-country variations regarding corruption behaviour (Svensson, 2002), i.e. some people are more prone to corrupt behaviour than others.

For these reasons, another branch of literature on corruption is devoted to exploring which individual/household characteristics matter when it comes to a person's decision to engage in petty corruption, i.e. corruption involving ordinary people. Petty corruption refers to bribery that involves only low-level administrators and citizens who need to acquire license, approval, or so from the bureaucrats (Dahlström, 2011, p.4)[2], i.e. to gain access to public services. The results of the studies range from individual socio-demographic characteristics, including gender (Swamy et al, 2001; Mocan, 2004), education, wealth (Mocan, 2004), age (Guerrero and Rodriguez-Oreggia, 2008), to individual perceptions of the spread of corruption (Tavits, 2005) and personal social and political networks (Rose and Peiffer, 2013), etc. This thesis focuses on yet another important feature which has been neglected in previous research, i.e. whether a person receives remittances or not.

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[1] Author's own calculation.

[2] This is to distinguish petty corruption from grand corruption. Grand corruption refers to "misuse of public office on the higher levels within the state" (Rose-Ackerman, 1999, p.27). Corruption at this level generally involves both politicians and bureaucrats (Dahlström, 2011, p.4), but not ordinary citizens. The terms "petty corruption" and "bribery" are used interchangeably hereafter.

Remittance, here defined as the transfer in cash or kind from international migrants to their families and/or relatives who reside in the sending countries[3], has attracted a lot of attention from both policy makers and scholars during the last few decades. Remittance flows have been reported as a large and steadily growing financial source for developing countries, projected to reach US$435 billion in 2015 (World Bank, 2015, p.3). Remittances are demonstrated to be considerably larger than other capital flows to developing countries. For instance, they were more than three times as large as official development assistance to these countries in 2014 (World Bank, 2015, p.3).

Remittances have been found to play an important role in transforming different aspects of life, in both positive and negative directions, in home countries (de Haas, 2007). For millions of people in the developing world, remittances have increasingly become a crucial source of income insurance and livelihoods, especially in times of hardship (de Haas, 2007, p.8; Lubambu, 2014, p.18). Remittances help improve women's position in the society, thereby reducing gender inequality (Orozco and Ellis, 2013, p.10). Furthermore, remittances may be used to fund community projects and remittance recipients become more active in local administration and able to recognize corruption (Tyburski, 2012, p.342). Yet, in the short run, these remitted incomes may foster dependency on migrants' transfers, reduce the recipients' participation in working force, while increasing their consumption rather than channeling this funding source to domestic investments or savings (Lubambu, 2014, p.22; de Haas, 2007, p.14). Remittances may also be used to support conflicts in both sending and receiving countries (Lubambu, 2014, p.21).

Evidences of the relationship between remittance and corruption have mainly been found at cross-national level (Tyburski, 2012; Tyburski, 2014; Abdih et al, 2012; Ahmed, 2013; Berdiev et al, 2013). Based on national and sub-national data, scholars generally agree that remittance does affect corruption in sending countries. However, the direction of the relationship is ambiguous depending on specific circumstances of these countries. The effect of remittance on corruption-related attitudes and behaviors of ordinary people, i.e. remittance recipients, has, most of the time, been overlooked. The only study up to now that has touched on this topic is Ivlevs and King (2014), using data

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[3] According to the United Nations Technical Subgroup on the Movement of Persons (Alfieri and Havinga, 2006), "personal remittances" are defined as the sum of personal transfers, i.e. transfers in cash or kind between resident and non-resident households, and compensation of employees, i.e. net compensation of short-term employment in another economy. The term "remittance" used in this thesis refers to the inflows to a household in the sending country from a household member working abroad.

The terms "sending countries", "countries of origin" and "home countries" are used interchangeably to refer to migrants' countries of birth. The terms "receiving countries", "destination countries" and "host countries" denote the countries migrants move to, regardless of whether they have acquired citizenships of those countries or not.

on six Balkan countries. The debate, consequently, lacks contribution from studies using micro data.

This thesis aims to clarify the ambiguous relationship between remittance and corruption by exploring whether and how remittance affects petty corruption (or bribery) in sending countries. The main research question is: *are remittance recipients more likely to pay bribes than non-recipients?*

To answer this question, the thesis employs a quantitative approach utilizing multilevel modeling of household survey data in Latin America and the Caribbean (LAC), where both remittances and corruption play important roles in daily life. The results indicate that remittance recipients are substantially more likely to think that paying a bribe is a justifiable act, to be prone to bribe solicitations, but *not* significantly more likely to pay bribes than non-recipients.

The contributions of the thesis are three-fold. First, it verifies the result of Ivlevs and King (2014), using new data, i.e. data from Latin America, thereby enriching the literature on the relationship between remittance and corruption at micro level. Second, it validates the findings of the previous research on individual determinants of corruption and extends this branch of literature by examining the role of remittance receipt. Last but not least, the thesis highlights the significance of social remittance as ideas and practices transmitted from migrants to their families[4] in control of corruption in sending countries. The study provides essential policy implications, which necessitate consideration in the context of numerous efforts to curb corruption (Mungiu-Pippidi, 2006, p.86) and harness the positive gains from remittances in these countries (Tyburski, 2012, p.339).

The thesis proceeds as follows. Section 2 provides a review of previous research on the individual determinants of corruption and the remittance-corruption relationship. Section 3 presents a theoretical framework based on relevant theories and proposes hypotheses. Section 4 outlines the data source, variables and methodology to test the hypotheses. Empirical results are reported in Section 5, which is followed by interpretation and discussion of the results in Section 6. Section 7 wraps up the findings and posits the contributions in the research field. This section also sheds light on policy implications and discusses limitations as well as suggestions for future research.

II.   Previous research

1. Individual determinants of corruption

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[4] See Section III for detailed explanations.

This branch of literature emphasizes the importance of understanding the incentives and mechanisms of corruption at micro-level in fighting corruption.

It is often found that individual socio-demographic features matter when it comes to explaining individual incentives and decisions to commit corruption acts. Men are found to be more prone to corruption than women (Swamy et al, 2001; Guerrero and Rodriguez-Oreggia, 2008; Mocan, 2004). Women may be more honest or more risk averse than men and may find it necessary to set a good example for their children while teaching them about honesty (Swamy et al, 2001). It can also be the case that men may be more active in the labour market than women, which exposes men more frequently to public officials (Mocan, 2004). People of older age (over 60 years old) may be less prone to corruption than those who are younger, because they may have less frequent contact with government officials (Mocan, 2004).

People with higher income are more likely to pay bribes (Mocan, 2004; Guerrero and Rodriguez-Oreggia, 2008). Due to their higher earning capacity, they may be more likely to be asked for bribes by government officials (Mocan, 2004), or have a higher opportunity cost, i.e. time becomes more valuable for them than for those with lower income, hence higher probability to pay bribes to avoid wasting time (Guerrero and Rodriguez-Oreggia, 2008).

Findings regarding the role of education in determining an individual's involvement in corruption vary. Rose and Peiffer (2014) hypothesized that highly educated people may be less likely to pay bribes thanks to their knowledge of the public services they are entitled to, yet they found no significant impact of education on bribe payment. Meanwhile, Mocan (2004) and Guerrero and Rodriguez-Oreggia (2008) arrived at a significant positive relationship between education and bribery, i.e. the higher the education level, the more likely a person is to pay bribes. This is due to the argument that, like those with high income, highly educated people tend to be solicited for bribes when contacting government officials (Mocan, 2004), or have a higher opportunity cost and therefore more likely to pay bribes (Guerrero and Rodriguez-Oreggia, 2008).

A person's decision to engage in corrupt exchanges is also found to be affected by his/her definition of whether corruption is acceptable, and perception of how widespread corruption is (Tavits, 2005). The more a person defines corruption as an acceptable act, the more likely he/she is to engage in it. In addition, the more widespread corruption is perceived to be, the more prone to corruption an individual becomes. This finding reflects how the association and interaction with other people in the society foster one's imitation of deviant behaviours, and corrupt behaviour can be considered as one of them (Tavits, 2005).

The connection among people within the society is also demonstrated through a person's social and political networks, which are found by Rose and Peiffer (2014) to be crucial in determining his/her engagement in corruption. Social networks refer to face-to-face connection among individuals in the locality, while political networks denote first-hand contact between an individual and public officials (Rose and Peiffer, 2014). Social networks are formed through participation in solving a community problem and attendance in meetings of different associations, such as parent associations, community improvement groups, professional or merchant associations. Meanwhile, political networks are built through contacts and requests for support from officials at different levels, including municipality, ministry and legislature, and through attendance in municipal meetings. Those that belong to a social network do not necessarily have political connections (Rose and Peiffer, 2013). Using data from the Afrobarometer survey in 2005 with 18 countries, Rose and Peiffer (2014) found that those having social and/or political networks are more likely to pay bribes than those that do not belong to any network because the former could make use of the networks to find out who to bribe and monitor if the bribe takers deliver the service. This finding is contrary to the theoretical expectation by Putnam et al (1993), i.e. such networks can come to one's advantage to get access to services without having to pay bribes.

While focusing on individual determinants of corruption, this branch of literature also highlights several contextual factors that may affect a person's decision to engage in corrupt acts. Examples include the country's legal origin (Mocan, 2004; Rose and Peiffer, 2014), uninterrupted democracy, institutional strength (Mocan, 2004), free press (Rose and Peiffer, 2013, 2014), ethnic fractionalization (Rose and Peiffer, 2014). These results are in line with those of the studies on corruption at cross-national level mentioned above.

It can be seen that the relationship between remittance and corruption has not at all been discussed in this body of literature, to which I now turn in the next part.

2. The relationship between remittance and corruption

How may remittance and corruption be connected? The lion share of previous research focused on cross-national variances and pointed out two main mechanisms through which remittance may have ambiguous influence on aggregate corruption in home countries.

First, remittance may have detrimental effect on institutional quality, including corruption, in the same way as natural resource rents do. The natural resource curse theory states that as governments can substitute the resource windfalls for (income) taxes to finance their activities, citizens may be bought by patronage or simply have fewer incentives to monitor and hold the government accountable, hence lower

institutional quality (Sala-i-Martin and Subramanian, 2003). Abdih et al (2012) showed that remittance inflows may influence the government's incentives through one or both of the following two channels. On one hand, as private income transfers, remittances are not directly taxed as personal income, yet they expand the base for other taxes (VAT, etc.), increasing the resources in the government's hands. On the other hand, the availability of remittances enables households to purchase private goods (that are substitutes for public goods) rather than rely on the government to provide them. Therefore, the cost of government corruption becomes less costly for the households to bear. Both ways make it easier for the government to divert resources for its own purposes. The proposition was tested in a cross-section analysis of 111 countries and robust to the control of reverse causality. Berdiev et al (2013) and Ahmed (2013) arrived at the similar results that remittances deteriorate institutional quality, though they used different methods. The former used panel data of 111 countries during 1986–2010, while the latter took advantage of a natural experiment of 57 poor, non-oil-producing countries during 1984-2004.

Second, remittances may exert both positive and negative effects on aggregate corruption in sending countries depending on how remittances interact with both the governments' and migrants' incentives. Tyburski (2014) argued that politicians react to remittances by diverting resources from public services towards patronage, but migrants and remittance receivers may use remittances as a leverage to hold politicians accountable. In the end, the aggregate effect of remittance on control of corruption depends on the regime type. Empirical analyses of panel data from 127 developing states between 2000 and 2010 suggested that as remittance flows increase, authoritarian regimes will have worse control of corruption than democracies (Tyburski, 2014). In closed regimes, the government requires a smaller supporting coalition and the costs of political activity are higher for migrants and remittance recipients, hence lower probability of influencing corruption. In contrast, democratic regimes require larger supporting coalitions and provide more lower-cost participation opportunities, thereby enhancing the probability for migrants and remittance recipients to influence the government in their home countries (Tyburski, 2014). Likewise, Tyburski (2012) found that at regional level in Mexico during 2001-2007, the level of corruption is lower in states receiving more remittances. In the context of political competition in Mexico, he emphasized that these remitted incomes enable receivers to participate in political activity and vote for opposition parties, thus increasing government accountability.

This branch of literature, so far, has hardly paid attention to the individual-level mechanism, i.e. how remittances may affect a recipient's propensity to engage in corruption acts. The closest study to this thesis is Ivlevs and King (2014), which explored the impacts of migration and remittances on corruption experiences of migrants' family members back home. They used data from the Gallup Balkan Monitor

survey in six countries (Bosnia and Herzegovina, Croatia, Kosovo, Macedonia, Montenegro and Serbia) over two years (repeated country cross-section in 2010 and 2011). They found that families with migrants, especially those also receiving monetary remittances, are more prone to bribe solicitations by public officials. However, households having connections with migrants (regardless of whether they receive monetary remittances or not) are less likely to pay bribes than those without migrants. This is interpreted as a positive effect of migrants' transmission of good practices from host countries to home countries. Yet, the authors argue that this positive effect can be offset by monetary remittances. It is because if households also receive remittances, they will be more targeted by public officials for extortion, or more willing and able to pay bribes (though the relationship between remittances and actual bribery is not significant). This finding is contrary to the inference we can make from the above-mentioned studies at cross-national level, i.e. to the extent that bribes are exchanged for access to public services (Rose and Peiffer, 2014), ordinary citizens' bribe payment should decrease because remittances have removed the need to rely on the government for the provision of public services. Furthermore, Ivlevs and King (2014) simply posed the research question as an empirical issue, while there are sufficient theoretical works which can be connected to explain the phenomenon.

In order to clarify this ambiguous relationship between remittances and individual corruption experiences, I present a theoretical framework in the next section by synthesizing relevant bodies of literature in migration studies. Instead of portraying the research question as an empirical issue, this framework explains in theoretical terms how remittances may influence a recipient's bribe payment behavior via his/her attitude towards petty corruption and being solicited for bribes. Hypotheses are then put forward at the end of the section.

III. Theoretical framework: How may remittances affect individual bribe payment behavior?

1. Remittances and reduced bribe payment

The departure point of this framework is the pertaining ties between migrants and their home countries. A number of studies have pointed out that migrants may maintain their connections with their countries of origin after leaving (Burgess, 2012; Hoffman, 2008; Levitt, 1998; Levitt and Lamba-Nieves, 2011; Batista and Vicente, 2010; Pérez-Armendáriz and Crow, 2010; Vari-Lavoisier, 2014). Due to the loyalty bonds with their countries of origin, migrants may bring about political changes, including better governance, through their direct involvement in domestic political activities (Burgess, 2012, p.48-51; Hoffman, 2008, p.10-12) and influences on international actors' policies towards their home countries (Hoffman, 2008, p.10-12).

Similarly, Levitt (1998) showed that migrants absorb and transmit to their families "social remittances"[5], defined as "normative structures, systems of practice and social capital". Normative structures include, for example, "expectations about organizational performance, such as how the church, state or the court should function", and "norms about the role of clergy, judges and politicians" (Levitt, 1998, p.933). Systems of practice refer to "household labour, religious practices, and patterns of civil and political participation" (Levitt, 1998, p.934). Lastly, social capital means the prestige and status that migrants have acquired in destination countries and are utilized to their advantage (or disadvantage) at home. Social remittances are circulated between individuals, i.e. migrants and their families, when they exchange visits, when migrants return to reside in their home communities, through exchanges of communication, and even local television channels and Internet websites (Levitt and Lamba-Nieves, 2011, p.12). Social remittances can also be understood in a collective sense, which means ideas and practices transferred by individuals in their roles within the hometown associations (HTAs), political parties or church groups. A Hometown Association (HTA) is an organization formed by migrants coming from the same country of origin and living in the same destination country. Migrants can transfer money and resources to fund projects in their home countries through HTAs[6]. For instance, the social development projects implemented by the HTAs in their hometown in the Dominican Republic change the way community members demand provision of public goods and transparency and accountability from the government (Levitt and Lamba-Nieves, 2011). This theory is linked to the accountability aspect in Tyburski (2012, 2014), i.e. migrants learn to abide by legal norms and demand accountability during their time in the destination countries and transmit back these lessons to the remittance recipients, so that both migrants and their families can hold officials accountable. Evidence about migration's positive effect on the dissemination of democratic attitude and behaviours in their country of origin has also been documented elsewhere (Batista and Vicente, 2010; Pérez-Armendáriz and Crow, 2010).

Yet, Levitt (1998) and Levitt and Lamba-Nieves (2011) contend that social remittances can have both positive and negative effects on home communities. It means that social remittance can promote or hinder the improvement of institutional quality in sending countries. The positive effects of social remittances are often attributed to the high quality of government in destination countries (Batista and Vicente, 2010)[7]. In the

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[5] The term "remittance" as the main focus of this thesis refers to the monetary, financial aspect. This meaning should be used whenever the term appears by itself. When put in the same sentence with the other term "social remittance", it is mentioned explicitly as "monetary remittance".

[6] The total number of HTAs around the world is unknown; however, according to Orozco and Garcia-Zanello (2009), they exist among many migrant groups from different sending countries in Asia, Africa and Latin America.

[7] Yet, Portes (2008) argued that the characteristics of migrants decide what remittances they transfer back. As a result, even in countries with relatively high institutional quality, the outcomes are heterogeneous. For instance, children of poor migrants from Central America to the United States (US)

case of corruption, it can be understood that migrants working or residing in countries with higher quality of institution than their countries of origin, may transfer back home those social remittances favorable for control of corruption, though what they are exactly have not been identified in the literature. As a result, migrants' families and/or relatives at home may become less tolerant towards corruption.

Examples of how social remittances have been used either by migrants themselves or their families back home to fight corruption in sending countries with the support of monetary remittance have been quite rare. Vari-Lavoisier (2014) took note of two cases in Senegal, where migrants living in Paris and being active members of the board of the HTA, came back home in Senegal for a short visit and influenced the local authorities to dismiss corrupt officials. According to Vari-Lavoisier (2014), migrants remitted money home through the HTA to fund different projects, for example, building a school, and this gave them the legitimacy to request changes towards better management. This point may suggest that control of corruption benefits from collective social remittance circulated through the HTA rather than social remittance transferred through the family sphere. However, I argue that to the extent that migrants are active in HTA and strongly oppose to corruption as in the cases in Senegal, it is possible that their social remittances may as well have been transmitted and adopted by their families.

In short, remittance can be seen as an important token of migrants' maintaining ties with their home countries (Vari-Lavoisier, 2014). Through this connection, migrants transfer what they have absorbed in foreign countries with higher institutional quality back to their families/relatives. I hypothesize that monetary remittances facilitate the circulation of these positive social remittances, which in turn may make the recipients less likely to find it justifiable to pay bribes and therefore lower the propensity to pay bribes.

2. Remittances and increased bribe payment

Remittance is often considered a sign of a better life. de Haas (2007, p.16) argues that after such basic consumption needs as food, health care, debt repayment and education of the children have been fulfilled, migrants and their families may start investing in housing and land, small-scale businesses and agriculture. Evidences were found in a number of sending countries, for example, Guatemala (Davis and Lopez-Carr, 2010), El Salvado (Edwards and Ureta, 2003), Eritrea (Kifle, 2007), Philippines (Yang, 2006), Mexico (Woodruff and Zenteno, 2001), that remitted incomes were used to invest in children's education, healthcare, build a new house, and/or establishing small enterprises. Most studies on the use of remittances seem to agree that households receiving remittances are more likely to invest than those without remittances, all else

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participate in youth gangs, get deported and bring the culture of gang violence back to their sending countries (Portes, 2008, p.26-28).

equal (de Haas, 2007, p.14).

The impacts of migration and remittances on investments and economic development of the sending communities have generally been found to be positive (de Haas, 2007, pp.14-18). Nevertheless, migrant status and remittance receipt expose migrants and their families to a higher probability of being solicited for bribes by public officials and/or private agents.

On one hand, remittance recipients are more likely to be asked for bribes, insofar as they use remittances to pay for public services (health care, education, etc.) and/or invest in small businesses, which are often the target of bribe extortion. For instance, Chan et al (2009, p.287) noted a case, in the mid-1980s, of a family in Chen village, a small village in southern China, who used remittances from their son who was in Hong Kong to buy a secondhand minibus to run a transport service along the county's main road. Yet, they could not maintain the business due to the large amount of bribes that police from each commune along the way extracted from them.

On the other hand, migrant status and remittance receipt may make it easier to identify migrants and their families and, thus, make them more vulnerable to bribe solicitation. In the East and South-East Asia, when receiving remittance through banks, recipients were reportedly asked for bribes by bank officers, who intentionally delayed the payment for this purpose (Ullah, 2016, pp.168-169). Mexican migrants, who return home from the US for holidays, are often stopped on the way by Mexican police, who then demand an amount of money for not seizing the migrants' vehicles.

> "…Mexican immigrants remain "perfect targets" for low-paid police officers looking to supplement their incomes… Police "know the migrants have dollars, that normally they do not have high levels of education and that they don't know about Mexican law"".

> (Los Angeles Times, December 3, 2006).

It appeared that migrants were easily recognizable with their clothes and foreign cars. A lot of migrants ended up paying the requested bribes to avoid wasting time or having their cars confiscated (Los Angeles Times, December 3, 2006)[8]. The Paisano (compatriot) program in Mexico, one of the state policies towards migrants, has aimed at the very purpose of easing the return of migrants for vacations by eliminating police's bribe extortions (Fitzgerald, 2006, p.278).

My argument here is that remittance may make recipients more likely to be asked for bribes by, among others, public officials, hence higher propensity to pay bribes. It seems contradictory to the argument above that positive social remittances

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[8] Jennifer Delson, Los Angeles Times, December 3, 2006, "A road paved with extortion". Available at: http://articles.latimes.com/2006/dec/03/local/me-bribe3

may result in fewer bribe payments. Does it mean that social remittances, no matter how beneficial they are for control of corruption, may have very little impact on reducing bribery because the recipients are prone to bribe extortions anyway?

This may be the case. According to Portes (2008, p.5) on migration and social change, the depth of social changes can be categorized into those that lead to only superficial, "marginal modifications of the social order" (Portes, 2008, p.5) and those that shift the fundamental values shaping the society. Portes (2008, p.14) argued that migration can lead to deeper social changes in home countries than in destination countries, depending on the size of expatriate communities as a share of total population, migration duration and the migrants' characteristics. In short, profound social changes in sending countries can only be created if the core values underpinning the society are changed.

A corrupt society can be characterized with "a particularistic political culture", in which the government treats its citizens and provides public services based on a person's status or social position (Mungiu-Pippidi, 2006, p.92). With status being understood as representing the distance between a person and the group(s) that holds power, individuals with closer links to such groups enjoy greater access to public services[9] (Mungiu-Pippidi, 2006, p.88). Those that have lower status may have to pay bribes to officials to obtain equal treatment (Mungiu-Pippidi, 2006, p.88). As such, a person's gain from the public sector depends on his/her connections, ability to bribe, and involvement in corrupt networks (Rothstein, 2011, p.238). When corruption is endemic, the need to behave corruptly, including paying bribes, to access public services is so ingrained in almost everyone's mind that paying bribes or carrying out similarly corrupt acts becomes a standard procedure (Rothstein, 2011, p.233).

When the new ideas and practices transmitted home by migrants come into confrontation with this particularistic culture, it may not be easy, though not totally impossible, for the former to transform the latter if corrupt behavior is understood as the prevailing behavioral expectation. The reason is that, as Mungiu-Pippidi (2013, p.10) suggested, in a corrupt society, a "critical mass" of pro-change citizens is needed to curb corruption. In this case, remittance recipients may resemble such a critical mass, but the size of expatriate communities as a share of total population migration (Portes, 2008, p.14) should be large enough for the "critical mass" to be created. Even if the group is large enough, coordination among such a dispersed group to achieve collective action is challenging (Tyburski, 2012, p.342). As a result, the new ideas and practices, though they may have been circulated, may not be sufficiently powerful to win over the particularistic culture that has shaped the way a corrupt society functions. Therefore, behavioral change may hardly occur, i.e. migrants' families and relatives may not refrain

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[9] As shown by Rose and Peiffer (2014) above, this does not necessarily mean that those closely linked to powerful groups or networks never have to pay bribes to get public services.

from paying bribes when they are exposed to bribe solicitation.

3. Hypotheses

In this section, I have reviewed and synthesized different bodies of literature in order to explain the relationship between remittance and petty corruption among remittance recipients. In short, I have argued two main points. First, monetary remittances facilitate the circulation of social remittances favorable for anticorruption from countries with higher institutional quality than migrants' home countries, which in turn may reduce the recipients' propensity to justify bribe payment. The result is that remittance recipients may become less likely to pay bribes. Second, compared to those not receiving remittance, recipients may be exposed to a higher probability of being targeted for bribes and therefore more prone to pay bribes, as the positive social remittances may not be robust enough to replace the particularistic culture of corrupt societies. Based on the discussion above, four testable propositions are put forward:

Hypothesis 1: Remittance recipients are less likely to justify bribery-related behavior than those who do not receive remittances.

Hypothesis 2: Remittance recipients are more likely to be asked for bribes than those who do not receive remittances.

Hypothesis 3a: Remittance recipients are less likely to pay bribes than non-recipients.

Hypothesis 3b: Remittance recipients are more likely to pay bribes than non-recipients.

IV. Data and methodology

1. Empirical milieu

This research focuses on Latin America and the Caribbean (LAC) region (excluding North America), where migration, remittance and corruption have been prominent features of people's life.

Since the 1960s, outward migration has been a dominating trend in LAC region. According to UN-DESA and OECD (2013), nearly 6% of all people born in LAC region were living in OECD countries in 2010-2011. In the same period, the emigration rate for LAC region was almost seven times the rate for Asia and more than twice that for Africa (UN-DESA and OECD, 2013). Three most popular destinations for migrants from LAC countries have been developed countries including the United States, Spain and Canada,

with each country accounting for, respectively, 72%, 9% and 2% of the total migrants from the region in 2010 (Organization of American States, 2011, p.57). Despite the economic slowdown in the United States and Spain during 2008-2009, remittances to Mexico and Central America were still dominated by remittance flows from the US, while remittances to Southern America came mostly from the US and Spain (Orozco et al, 2016, p.6, p.14). Since the 1990s, there has been an increasing trend of intra-regional mobility, which accounted for 11% of total LAC migration in 2010 (Organization of American States, 2011, p.57). Several countries in the region, such as Argentina, Costa Rica, Venezuela and Chile, have constantly received migrants from neighboring countries (Organization of American States, 2011, p.62). Although remittances received along these intra-regional corridors were smaller than those from the US and Spain, remittance flows among several pairs of neighboring countries did increase. For instance, remittances from Chile, Panama and Ecuador to Colombia increased by 14.3%, 35.3% and 71.6%, correspondingly, from 2014 to 2015 (Orozco et al, 2016, p.14).

Graph 1 - Principal destinations for Latin American and Caribbean migrants
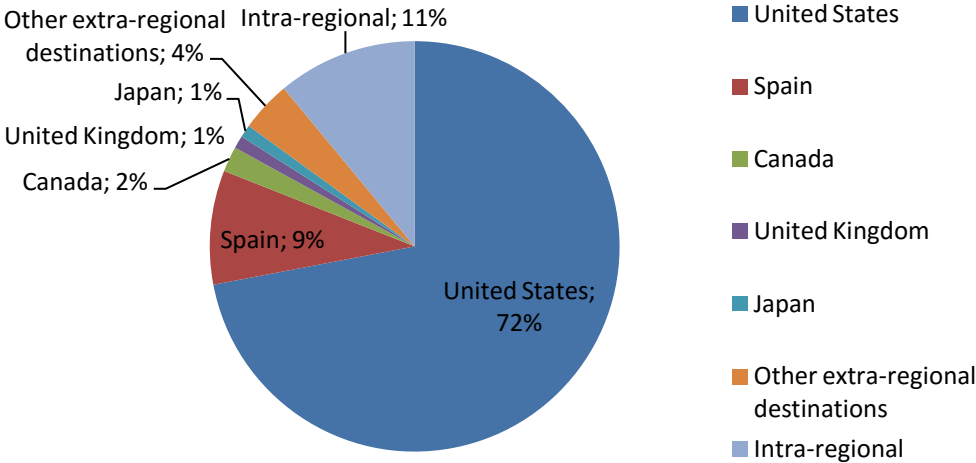
Source: Organization of American States. "International Migration in the Americas: First Report of the Continuous Reporting System on International Migration in the Americas" (SICREMI) 2011, p.57.

Remittances have become very important for many Latin American countries. In 2014, Latin America and the Caribbean received more than US$63 billion of remittances, which was nearly 40% of foreign direct investment and more than six times as large as official development assistance flows to the region[10] (World Development Indicators, 2015). For many countries in the region like Haiti, Honduras and El Salvador, remittance makes up more than 15% of GDP (Maldonado and Hayem, 2015, p.29). At household

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[10] Author's calculation based on data from World Development Indicators 2015, section 6.9, 6.11 and 6.13.

levels, remittances accounted for a substantial proportion of total household income, ranging from 18% in Ecuador to 43% in Brazil (de Haas, 2007, p.8). There is evidence that remittances have contributed positively to socio-economic development in the region, such as poverty and inequality reduction in recipient countries, increase in households' savings and spending on human capital (Fainzylber and Lopez, 2008).

On the other hand, corruption is rampant in this region. More than two thirds of the countries in the Latin America and Carribean region fall in the bottom half of the Corruption Perception Index (CPI) 2014 (i.e. score under 50/100). Grand corruption has been a major problem in the region. One of the latest scandals is the case of Brazil's state oil giant, Petrobras. More than 50 incumbent politicians and 18 companies were involved in siphoning more than US$2 billion from the company into parties and private hands. It is one of the three grand corruption scandals in the region (among nine worldwide) that the Transparency International decided to pursue social sanctions in their campaign "Unmask the corrupt 2015"[11]. Bribery is rather common as well. According to the survey data from the AmericasBarometer 2014 which covers 26 countries[12] with more than 46,000 respondents in the studied region, roughly one in five respondents paid a bribe in the year prior to the survey (Zechmeister, 2014, p.140).

2. Data

This study relies on survey data from the AmericasBarometer by the Latin American Public Opinion Project (LAPOP). The AmericasBarometer is a series of multi-country surveys regularly conducted in North America and the Caribbean, focusing on socio-economic conditions, values, and behaviors in the Americas. It contains questions on migration, remittance and corruption, as well as other socio-demographic indicators, all of which are not always available in other multi-national surveys (Global Corruption Barometer, Eurobarometer, Afrobarometer, etc.) (Rose and Peiffer, 2013, p.13). The survey has been conducted every two years since 2004, with the number of participating countries increasing through each wave. In each country, approximately 1500 people were interviewed face-to-face (except internet surveys in Canada and the US, which are not part of this study) in each wave. Only one respondent was interviewed per household. The questions were translated into popular indigenous languages in the region. The samples of respondents were designed to be nationally representative and followed a stratified multi-stage cluster sampling[13].

This research builds on data from 16 countries (Mexico, Guatemala, El Salvador,

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[11] See details at:
http://www.transparency.org/news/pressrelease/transparency_international_to_pursue_social_sanctions_on_9_grand_corruption
[12] This figure excludes Canada and the United States.
[13] For more details on the methodology of the AmericasBarometer, see:
http://vanderbilt.edu/lapop/methods-practices.php

Honduras, Nicaragua, Panama, Colombia, Peru, Paraguay, Uruguay, Brazil, Dominican Republic, Haiti, Jamaica, Guyana, and Belize), surveyed in the latest wave, 2014. This is the wave that has the largest coverage of countries and contains several updates regarding data collection technique (using handheld electronic devices) and sampling frame so that it reflects the population changes (if any) captured in the new 2010-2011 national census.

The countries were selected upon several considerations of methodological and practical character. This set of countries provides a good coverage of geographical sub-regions (Central America, Andean/Southern Cone and the Caribbean), income groups (ranging from low to high income) and remittance figures as well as corruption level. In 2014, the total annual remittances these 16 countries received accounted for 89% of the total remittance flows to the whole LAC region[14] (Orozco et al, 2016, p.4). Within the set, Haiti has the highest remittance proportion in GDP (22.7% in 2014) (World Bank) and is also the most corrupt country (CPI score 19/100, 2014). I used data and questionnaire from the merged dataset for the period 2004-2014 on the AmericasBarometer website because they have been integrated and officially translated into English[15]. In the merged dataset, LAPOP reweighs are assigned in such a way that each country renders a sample size of 1,500. As weighted samples require special statistical programs that are designed to take into account complex sampling strategy (to which I have no access), I selected only those countries whose samples are not seriously affected if they are unweighted, i.e. the national sample size is close to 1,500 respondents[16]. The resulting dataset consists of 24,304 observations in 16 countries taken in 2014.

Due to the construction of one of the dependent variables ("paid bribe"), which is described in the following part, I further excluded 3,155 cases from this sample. This action facilitates the interpretation of results (see more details below), but comes as a cost of reduced sample size. The sample size of each country consequently ranges from 1,248 to 1,403 respondents, instead of 1,500 cases. The final dataset used for analysis includes 21,149 observations in 16 countries in 2014.

Details on the countries included in the analysis are provided in Annex 1.

3. Variables

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[14] This figure excludes Bahamas and Barbados.

[15] Some national questionnaires in 2014 are only available in Spanish, such as Ecuador and Venezuela. I exclude these countries to avoid the possibility that unofficial translation affects the sensitivity of outcomes to how the questions are formulated.

[16] The countries in Latin America and the Caribbean region that were surveyed in 2014, but excluded from this thesis are: Argentina, Bahamas, Barbados, Bolivia, Chile, Costa Rica, Ecuador, Suriname, Trinidad and Tobago, and Venezuela. These countries have rather similar characteristics to those selected, in terms of geographical location, income groups, remittance figures and corruption level. Thus, the exclusion of these countries does not seriously affect the results of analysis.

3.1. Dependent variables

The main interest of this thesis is to examine whether remittances influence the recipient's tendency to pay bribe. Therefore, the main dependent variable is a binary variable called "paid bribe", which measures whether the respondent did pay a bribe within the last twelve months or not. I relied on a number of questions in which respondents were asked if they had contacted and used any public services (obtaining official documents, the courts, hospital, children's education, work-related matters) in the last twelve months. If yes, they were then asked if they had to pay a bribe to the corresponding institution. Because the focus of this study is on the likelihood of paying bribe when an individual contacted the public service suppliers, I excluded from the sample those respondents that did *not* contact any of the mentioned public services in the last twelve months (3155 respondents). I then constructed a categorical variable which consists of two categories: 0 = people who were in contact with at least one of those institutions but did not pay a bribe; and 1 = people who bribed at least one of the public service providers.

I also created two other dependent variables to test Hypothesis 1 and Hypothesis 2. First, I constructed a binary variable to measure individual attitude towards bribery, called "justify paying a bribe", based on the question "Do you think given the way things are, sometimes paying a bribe is justified?"[17]. Second, I created a dichotomous variable named "being asked for bribe", using information from the questions regarding whether the respondent was asked for a bribe by a police officer, a government employee or a soldier/military officer in the last twelve months. With these two variables, an affirmative answer does not necessarily mean that a person did pay a bribe. Therefore, the information gained from these two variables is supposed to complement that from the main dependent variable "paid bribe", which is the focus of this study. That said, if there is information about whether a person justified paying a bribe and whether he/she was asked for bribes, but no information about whether he/she did pay a bribe, it would be impossible to draw any conclusions about the relationship between remittance and the propensity to pay bribes. As a result, it makes sense to exclude 3,155 (whole) cases, i.e. excluding data on all variables of these cases, rather than only 3,155 missing values of the "paid bribe" variable.

3.2. Independent variable

The main independent variable is a dichotomous variable named "remittance", based on the question "Do you or someone else living in your household receive remittances (financial support), that is, economic assistance from abroad?", 0 = No, 1 =

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[17] As Tavits (2005) suggested that there is a relationship between a person's attitude towards bribery and his/her actual bribe payment, adding both of them in regressions with the remittance variable may trigger multicollinearity. Thus, it appears better to treat them as separate dependent variables.

Yes. This variable was also used in Ivlevs and King (2014). While using such a binary variable allows comparison between two groups of individuals (recipients versus non-recipients) regarding their corruption experiences, it may not always provide sufficient information to explain the mechanism behind the differences (if any) between the two groups. Specifically, to test Hypothesis 1 and 3a related to the transmission of social remittances together with monetary remittances, it would be beneficial to have additional independent variables. For instance, the frequency of communication between remittance senders and recipients and/or of receiving remittances, the degree of dependence of the household on remittances may affect the magnitude of the social remittance impact (Levitt, 1998, p.940-941). Nonetheless, these questions were not asked in the AmericasBarometer 2014.

3.3. Control variables

Following previous research, I controlled for a number of variables[18]. I first took into account the household income level (Mocan, 2004; Guerrero and Rodriguez-Oreggia, 2008). The original monthly household income variable has 16 categories. To make it easier to interpret the meaning of the coefficient, I collapsed these categories into three levels: 1 = low, 2 = middle, 3 = high.

I also controlled for perception of the spread of corruption (Tavits, 2005), based on the question "Taking into account your own experience or what you have heard, corruption among public officials is: (1) Very common, (2) Common, (3) Uncommon, or (4) Very uncommon?". I reversed the scale of this variable so that the higher the value, the more common the respondent perceives corruption to be.

To account for whether the respondent belongs to political/social networks, I constructed two binary variables called "political networks" and "social networks" (Rose and Peiffer, 2013, 2014) (0 = No; 1 = Yes). The variable regarding political networks was based on information from four questions on whether the respondent requested help from a public official in municipality or local government, whether he/she attended the town or city council meetings in the last twelve months, and how often he/she attended meetings of a political party or political organization. The other variable regarding social networks was created based on the questions related to the respondent's participation in solving a problem in the community, frequency of attendance at meetings of different associations (religious, parent, community improvement committee).

I accounted for other individual and household characteristics that were included in studies on individual determinants of corruption. These variables include

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[18] To make sure the results of regressions with different dependent variables are comparable with one another, I included the same set of control variables in all the regressions (though the theoretical explanations for the relationship between each control variable and each of the dependent variables are not always available).

gender (0 = male, 1 = female) (Swamy et al, 2001; Guerrero and Rodriguez-Oreggia, 2008; Mocan, 2004; Zechmeister, 2014), age – over 60 years old or not (0 = No, 1 = Yes) (Mocan, 2004), education level (0 = no education, 1 = primary, 2 = secondary, 3 = tertiary and above) (Rose and Peiffer, 2014; Mocan, 2014; Guerrero and Rodriguez-Oreggia, 2008; Zechmeister, 2014).

As the "paid bribe" variable was constructed based on, among others, the question on whether a person paid bribes for work-related matters, I controlled for employment status, i.e. whether a person has a (paid) job or not (0 = No, 1 = Yes). All else being equal, those that have a paid job are more likely to interact with government officers regarding work-related matters, be asked for bribe and have financial ability to pay bribes than unemployed people.

Last but not least, I took into account whether anyone in the household is a beneficiary of government assistance programs or not (0 = No, 1 = Yes). Zechmeister's report on corruption in Latin America using AmericasBarometer data 2014 showed that those that received welfare from the state faced higher possibility to be targeted for extortion due to their interaction with the government, compared to non-beneficiaries (Zechmeister, 2014, p.147).

4. Methodology: Multilevel modeling

This study employs the large-N statistical method with multilevel modeling on SPSS statistical software (version 23). Normally, with categorical outcomes and data at only one level (for example, individuals, or households, or countries), single-level logistic analysis can be good enough to predict the probability (or likelihood) of an event occurring. However, as AmericasBarometer employed stratified multi-stage cluster sampling, a type of hierarchical sampling strategy, a multilevel model appears to be a better choice. Hierarchical sampling means that clusters (or groups) are sampled at higher level, and then individuals are sampled within clusters (groups) at lower level (Hox, 2002, p.1). The problem with a single-level model incorporating variables at different levels/clusters is that it violates the assumption of independence of observations, which standard statistical tests rely on (Hox, 2002, p.5). It means that, for instance, individuals clustered in one group may be more similar to one another compared to individuals in another group. The consequence is that the estimate of standard errors becomes too small and the results appear more significant than they should be (Hox, 2002, p.5). A multilevel model helps lower the possibility of biased estimation by explicitly modeling the clustering of data.

A feature of the multilevel model is to allow for testing fixed and random effects at different levels. By "fixed effects", I mean that the estimates of parameters are interpreted as the average across the whole sample, while "random effects" means that

the estimates of these parameters are interpreted as the additional change in the outcome caused by different groups (Heck et al, 2012, p.17). In this study, I pay attention to the significance of the random effects rather than their substantive meanings.

According to Heck et al (2012), a basic two-level model is often implemented in a step-wise procedure. First, a so-called null model with random intercept at group level only (no predictors) is estimated to find out whether the outcomes vary among groups. Then, level-1 (for example, individual-level, household-level) predictors are added to the model as fixed effects (intercept is always random) to see whether individual/household characteristics affect the outcomes. Next, level-1 predictors are added as random effects, i.e. the slope of a level-1 predictor is expected to vary among groups. This means that the relationship between individual/household characteristics and the outcomes may vary across groups, or different contexts. It leads to the next step, adding level-2 predictors to identify if group-specific features affect the outcomes as well. Lastly, cross-level interaction terms can be added if certain group-level factors are expected to moderate the relationship between individual-level factors and the outcomes. At the end of each step, the variances of intercept and slope (if any) among groups are calculated. Significant variances at least at p<0.05 signalize the need to continue with the next step. The intraclass correlation (ICC) is also calculated to determine the portion of variability in the outcomes that can be explained by the variability between groups compared to the total variability (Heck et al, 2012, p.21)[19]. As multilevel models with categorical outcomes and more than two levels can be quite demanding regarding model estimation, researchers are advised to run these models only if there is a specific theoretical guidance to do so (Heck et al, 2012, p.9).

This thesis focuses on effects at level-1 (individual/household level). Nonetheless, as discussed above, the literature on individual determinants of corruption pointed out that contextual factors affect a person's propensity of paying bribes. Thus, I implemented a simple two-level model, with the minimal control at level 2 (country level), i.e. with random intercept. The control at level 2 of the model is supposed to cover all the variances caused by level-2 variables (if any) (Möhring, 2012), which are not examined in this thesis. Therefore, the focus of my analysis is on the two-level model with all level-1 predictors as fixed effects. Yet, the results of the null model and the model with level-1 predictor(s) as random effect(s) would also be provided to demonstrate the step-wise procedure.

This two-level model with only fixed effects and robust standard errors

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[19] SPSS provides variance ($\sigma^2_{between}$) figures, but not ICC results. ICC was then calculated based on the formula in Heck et al (2012, p.157): $ICC = \frac{\sigma^2_{between}}{(\sigma^2_{between} + \sigma^2_{within})} = \frac{\sigma^2_{between}}{\sigma^2_{between} + 3.29_{within}}$. In this formula, 3.29 is understood as the (approximate) variance of a logistic distribution with scale factor 1.0 (Heck et al, 2012, p.157).

produces similar results as logistic regressions with country fixed effects (i.e. country dummies), with the number of countries smaller than 25 and robust standard errors (Möhring, 2012). Another practical issue in favour of multilevel modeling is that SPSS requires an add-on component to estimate robust standard errors in single-level logistic regressions (to which I have no access), while the option of robust estimator of standard errors is readily integrated in multilevel modeling. The robust (Huber/White/sandwich) estimator of standard errors provided by SPSS is a technique that, in principle, exaggerates standard errors, thereby reducing the possibility of mistakenly concluding that the results are significant (Heck et al, 2012). However, robust standard errors may lead to inaccurate estimates if the number of units at level 2 is small (Heck et al, 2012, p.147). It remains arbitrary as to the threshold for the number of level-2 units to be considered "small" (Cameron and Miller, 2014, p.342). Therefore, I included results both with and without robust standard errors to find out if there is a large difference between them.

5. Limitations of methodology

As I explained previously, one of the advantages of the multilevel model is that it helps reduce biased estimation by explicitly integrating the multilevel data structure in the model. A multilevel model also allows for modeling fixed effects and random effects, and robust estimation of standard errors. However, this methodology may suffer from several constraints.

First, SPSS multilevel modeling procedure has quite limited strategy to deal with missing data. Missing data can result in biased estimation of parameters if not handled in an appropriate way. There are three types of missing data mechanisms, missing completely at random (MCAR), missing at random (MAR) and non-ignorable missing (NIM) (Heck et al, 2012, p.30). MCAR means that the data missing on the outcome is not related to data missing on observed variables or unobserved variables, hence no bias in the estimation. MAR refers to the situation where the probability of missing data on the outcome depends only on the probability of missing data on observed predictors. To illustrate, if all demographic variables (sex, age, etc.) are recorded for all respondents in a survey, then the data on the earning outcome is MAR if the probability of missing data is only related to those fully recorded variables. NIM refers to the case when the probability of missing values on the outcomes may be linked to the unobserved or not fully recorded predictors (Heck et al, 2012, p.30; Gelman and Hill, 2006, p.530). For instance, to the extent that earnings depend on high education, those people with high education tend to not reveal their earnings and there are also missing values in the education question. Then the earning outcome is NIM (Gelman and Hill, 2006, p.530). Another example is that if a treatment causes discomfort for a patient, then he/she is likely to drop out of the study. If "discomfort" is not measured and observed for all patients, the treatment outcome is NIM (Gelman and Hill, 2006, p.530). The last type of

missing data causes more biased estimation than the other two types (Heck et al, 2012, p.30).

The dataset I used had a rather considerable amount of missing values (about 20-30% of total sample in some models - see the next Section for empirical results and Annex 7 for details on missing data). To deal with missing data, the multilevel modeling procedure in SPSS, up to now, has only allowed for listwise deletion, i.e. any case with at least one missing value on any variable will be eliminated (Heck et al, 2012, p.30). Listwise deletion is only accepted when data is missing completely at random (MCAR), which is a very strong assumption and is hardly the case with real data (Heck et al, 2012, p.30). In addition, it leads to substantial loss of information. A recommended procedure to deal with missing data starts with determining the pattern of missing data by conducting necessary tests. However, SPSS does not provide test for missing data patterns of categorical variables. Therefore, in this study, it seems reasonable to assume that MCAR is *not* the case. Then an acceptable solution is to create multiple imputations to replace missing values with imputed plausible values and analyze based on these imputed datasets (Heck et al, 2012, p.31). Results from the pooled dataset (combining all the imputed datasets) can be compared with results from the original dataset with missing data. Nevertheless, for multilevel models with categorical outcomes, SPSS does not produce parameter estimates for the pooled dataset. Although, in principle, these estimates are the average of the estimates from separate imputed datasets (Gelman and Hill, 2006, p.542), calculating them by hand, especially the standard errors, the significance levels and the variances, is rather complicated. Given these limitations, the only thing that could be done is to include in the model as many predictors that may influence the probability of missingness as possible (Gelman and Hill, 2006, p.531). In this case, it means including variables that were found to be related to the outcomes in previous literature. Gelman and Hill (2006, p.531) argue that doing so makes sure that the assumption of MAR is reasonable, and then it is acceptable to exclude the missing cases providing that the above-mentioned variables have been controlled for. Above all, I acknowledge that the problem of missing data has not been completely solved due to technical constraints, thus the results should be considered with caution.

Second, this multilevel model is a cross-sectional analysis in its nature and, therefore, the results may be insufficient to make sound conclusions about causation due to the endogeneity problem. The potential causes of this problem include self-selection into remittance recipients and reverse causality from corruption to migration-remittance (McKenzie and Sasin, 2007, p.4).

In randomized experiments, the randomization creates two groups that are basically the same. The difference in outcomes between the treatment and the control groups, therefore, can be attributed to the treatment (Hill, 2004). Self-selection issue means that whether a study unit falls into the treatment or the control group may not be

a function of randomization, but there are systematic pre-treatment differences between the two groups that lead to their choice of treatment (Hill, 2004). In the example of remittance, remittances receivers and non-receivers may be systematically different regarding certain characteristics, which influence their probability of receiving the treatment (receiving remittances). These characteristics can be either observable (e.g. level of income of both remittance senders and receivers, etc.) or unobservable (e.g. senders' ability, etc.) (Acosta, 2006, p.18-21). In this case, the receipt of remittance may not be the only difference between the control and the treatment groups. An omitted variable problem, i.e. an unobservable factor drives both the independent variable and the dependent variable, may also be present (Acosta, 2006, p.3). Consequently, it is difficult to attribute the difference in bribery-related outcomes to the receipt of remittance, which is the main goal of this research.

A technique often used to correct for this self-selection problem is Propensity Score Matching (PSM). According to Thoemmes (2012), PSM helps balance the systematic differences between the treatment group (remittance recipients) and the control group (non-recipients). A propensity score, i.e. the probability of receiving the treatment, is calculated based on a number of observable characteristics. A person from the treatment group can be matched with a person from the control group with a similar estimated propensity score. The average treatment effect is finally calculated based on the matched sample. Yet, this technique requires the use of pre-treatment covariates, which are not always available in the AmericasBarometers questionnaire. To illustrate, one of the covariates that should be included in calculating the propensity score of receiving remittance is household income. But the survey does not have any information on whether this income excludes remittance or not. Furthermore, PSM cannot account for unobservable characteristics. Thus, the problem of self-selection cannot be solved completely with PSM.

Nevertheless, it seems unclear that the self-selection issue is problematic for the identification of impact in this research. As I have added common control variables at individual and household levels, the probability that any other observable characteristic can affect the outcomes is relatively low. It is possible that unobservable characteristic matters, but it is difficult to come up with such a factor that affects both the likelihood of receiving remittance and adopting corruption-related attitude or engaging in corruption. Therefore, although I acknowledge that this problem may exist, it seems either unnecessary or infeasible to totally correct for it.

Reverse causality means that the outcome may affect the predictor, not the other way round (McKenzie and Sasin, 2007, p.4). Studies on migration/remittance and corruption have often accounted for the possibility that migrants take into consideration the level of corruption when deciding to migrate and/or sending remittance back home (Beine and Sekkat, 2013; Abdih et al, 2012; Tyburski, 2014; Ivlevs and King, 2014). A

solution for the reverse causality is to use panel data (Acosta, 2006), yet it is impossible in this case because large-scale surveys like the AmericasBarometer do not follow the same households in every wave. Another solution is to use an instrumental variable which must be relevant, i.e. highly correlated with the migration/remittance variable, and exogenous, i.e. not directly affect the corruption variable (Ivlevs and King, 2014, p.13). Various instruments for migration and remittance have been used in previous studies, for example, migration network or history (at household, village or municipality level) (Acosta, 2006; Ivlevs and King, 2014), economic shocks (Yang, 2006), the coastal area of a country (Tyburski, 2014), and so on. To decide if the instrument is both relevant and exogenous, researchers must carry out a number of tests, which are available in several statistical programs. SPSS is not a good option for handling instruments for categorical variables, for example, it does not provide the tests for the instrument. I therefore did not conduct instrumental variable analysis.

However, it is not clear that reverse causality is a serious problem for this research. Previous research focused on the relationship between remittance and the aggregate level of corruption. In that case, it makes sense to discuss the possibility that migrants consider the corruption level when deciding to remit. But this thesis focuses on the relationship between remittance and receivers' attitude and behaviour related to corruption. It is hard, though not totally impossible, to come up with a persuasive empirical situation in which an individual's attitude towards bribery (that bribery is justifiable), the likelihood of being solicited for bribes and their decision to pay bribes may influence the probability of their household receiving remittance. Having said that, I acknowledge that this problem may be present and suggest it be dealt with in future research.

V. Results

This section is divided into two parts. The first part provides results of multilevel analysis with robust estimation of standard errors (and missing values). These results are compared with those of analysis without robust standard errors, which are presented in Annex 5. The second part focuses on diagnostic checks to see if the analysis in the first part violated any assumptions of multilevel modeling with categorical outcomes.

1. Results with robust estimation of standard errors

Results in this part are presented in the order of the hypotheses which were tested, table 1 for hypothesis 1, table 2 for hypothesis 2, and table 3 for both hypotheses 3a and 3b. In each table, three models are presented. The first model in every table is the null model, the second model with all predictors as fixed effects, and the last model with receiving remittances as a random effect and other predictors as fixed effects. Random

intercept was included in all models. Both (unstandardized) coefficients and odds ratios are reported. Odds ratio is often used to facilitate interpretation of the results. It denotes the change in the odds of the outcome event occurring versus not occurring per unit change of the predictor. Odds ratios larger than 1 mean positive relationships, while those smaller than 1 represent negative relationships. If odds ratios are equal to 1, it means there is no relationship between the variables. For predictors that have at least two categories, the first category is used as reference category, i.e. the odds ratio of each of the remaining categories is interpreted in comparison with the first category.

Table 1 below presents the results of whether receiving remittances affects the recipients' propensity of justifying paying bribes as per hypothesis 1. Table 1, Model 1 (null model) indicates that countries vary regarding their starting points in the level of remittance recipients' attitude towards bribery, the variance of the country intercepts being significant at $p<0.05$. ICC is 0.099, which means that 9.9% of the total variance can be explained by the variance between countries, and 90.1% explained by the variance among individuals/households within countries. The null model results confirm the need to proceed with Model 2 with all level-1 variables as fixed effects. My main independent variable, receiving remittances, is found to have a strongly significant and positive relationship with the recipients' tendency of justifying paying bribes ($p<0.001$). This is contrary to what hypothesis 1 predicted. The odds ratio of the independent variable is 1.201, which means that, all else being equal, those receiving remittances are 1.2 times more likely to think that paying bribes is justifiable than those without remittances. The variance of intercepts at country level remains significant at $p<0.05$ and ICC is 0.103, which is slightly higher than that in Model 1. These results do not change in Model 3, in which receiving remittances is added as a random effect. Yet, the variance of the remittance variable becomes 0 in Model 3, which can be interpreted that the clustering of individuals within countries does not help explain the variance in the relationship between remittance receipt and the likelihood of being asked for bribes (Cornell University, 2012). For this reason, it appears unnecessary to proceed to subsequent models in the stepwise procedure.

Among control variables, only gender, age over 60 and being a beneficiary of government support program have significant relationship with the propensity of justifying bribery. Women and people over 60 years old are less likely to find paying bribes justifiable than men and younger people, respectively. On the contrary, those who received support from government programs tend to justify bribery, which implies that bribery may be part of the process of obtaining welfare in the Americas (Zechmeister, 2014, p.147). Compared with those who perceive corruption to be very uncommon, those that perceive corruption to be very common are significantly more likely to justify paying bribes. Most of the remaining control variables have positive relationships with the outcome (except for the primary education level and social networks); however, their coefficients are not significant at all.

Table 1 – The impacts of remittances on the propensity of justifying paying bribes

Model	(1) Coefficient	Odds ratio	(2) Coefficient	Odds ratio	(3) Coefficient	Odds ratio
Fixed effects						
Receiving remittances			0.183*** (0.052)	1.201		
Household monthly income						
Low			Ref.		Ref.	
Middle			0.071 (0.077)	1.074	0.071 (0.077)	1.074
High			0.138 (0.099)	1.148	0.138 (0.099)	1.148
Perception of corruption						
Very uncommon			Ref.		Ref.	
Uncommon			0.223 (0.146)	1.249	0.223 (0.146)	1.249
Common			0.186 (0.152)	1.205	0.186 (0.152)	1.205
Very common			0.418** (0.158)	1.519	0.418** (0.158)	1.519
Political networks			0.102 (0.072)	1.108	0.102 (0.072)	1.108
Social networks			-0.033 (0.100)	0.967	-0.033 (0.100)	0.967
Gender			-0.316*** (0.070)	0.729	-0.316*** (0.070)	0.729
Age over 60			-0.433** (0.127)	0.648	-0.433** (0.127)	0.648
Education level						
No education			Ref.		Ref.	
Primary			-0.087 (0.134)	0.917	-0.087 (0.134)	0.917
Secondary			0.221 (0.147)	1.248	0.221 (0.147)	1.248

Model	(1) Coefficient	Odds ratio	(2) Coefficient	Odds ratio	(3) Coefficient	Odds ratio
Tertiary			0.205	1.228	0.205	1.228
			(0.125)		(0.125)	
Employment status			0.011	1.011	0.011	1.011
			(0.065)		(0.065)	
Beneficiary of government program			0.209**	1.232	0.209**	1.232
			(0.069)		(0.069)	
Random effects						
Constant (country intercepts)	-1.512***	0.220	-1.888***	0.151	-1.888***	0.151
	(0.157)		(0.283)		(0.283)	
Receiving remittances					0.183***	1.201
					(0.052)	
Variance (intercept)	0.364*		0.379*		0.379*	
	(0.145)		(0.152)		(0.152)	
Variance (remittance)					0[a]	
ICC[b]	0.099		0.103		0.103	
Akaike Corrected[c]	87058.002		71333.498		71335.498	
N (level 1)	18108		14695		14695	
N (level 2)	16		16		16	

*p<.05 ** p<.01 ***p<.001. Robust standard errors in parentheses. Odd ratios bigger than 1 denotes a positive relationship, odd ratios smaller than 1 means a negative relationship and odd ratios equal to 1 means no relationship.

a – SPSS automatically set this parameter as redundant.

b – SPSS provides variance ($\sigma^2_{between}$) figures, but not ICC results. ICC was then calculated based on the formula in Heck et al (2012, p.157): $ICC = \frac{\sigma^2_{between}}{(\sigma^2_{between}+\sigma^2_{within})} = \frac{\sigma^2_{between}}{\sigma^2_{between}+3.29_{within}}$

c – Akaike Corrected is an information criterion calculated based on the -2 log pseudo likelihood and is used to compare models. Models with smaller information criterion values fit better.

Source: AmericasBarometer 2014.

Table 2 tests whether remittance receipt affects the recipients' propensity of being asked for bribes as hypothesis 2 suggested. Again, Model 4 (null model) demonstrates that there are statistically significant differences among countries as for their starting points in the level of bribe solicitations, the variance of the country intercepts being significant at p<0.01 and 8.3% of the total variance can be explained by the variance between countries (ICC = 0.083). In line with hypothesis 2, Model 5 with all

predictors as fixed effects shows that the main independent variable, receiving remittances, is a strongly significant predictor of the recipients' likelihood of being asked for bribes ($p<0.001$). The odds ratio of the independent variable is 1.406, which means that, holding other variables constant, remittance recipients are 1.4 times more likely to be solicited for bribes by public officials than non-recipients. The sign of this relationship remains the same, but the size of effect slightly increases in Model 6 where remittance variable is included as a random effect. The variance at country level remains significant in both Model 5 and Model 6, but at lower level of significance ($p<0.05$) than in Model 4. The variance of the remittance variable is not significant at all in Model 6. ICC is 0.081 and 0.074 in Model 5 and Model 6, respectively, which is lower than that in Model 4. These figures point out the decreasing role of the between-country variance in explaining the variance in the relationship between remittance receipt and the likelihood of bribe extortion. Thus, there is no need to build subsequent models.

Regarding control variables, those that have political/social networks and at least secondary education are more prone to bribe solicitations than those without any networks or education. Compared to those that perceive corruption to be very uncommon, those that perceive corruption to be uncommon (i.e. slightly more popular) are less likely to be asked for bribes. These controls have no significant relationship with the tendency of justifying bribe payment, but are found to be significantly associated to the likelihood of being asked for bribes. On the contrary, whether a person is a beneficiary of government support programs is a significant predictor of increased probability of justifying bribery, but not bribe extortions. On the other hand, several controls have the same relationship with both dependent variables in Table 1 and Table 2. Gender and age over 60 are significantly related to lower likelihood of being asked for bribes. Women and people over 60 years old, as predicted, are less likely to be targeted for bribes probably due to more limited interaction with government officials compared to men and younger people. Employment status and household monthly income have positive relationships with the likelihood of being asked for bribes, but their coefficients are not significant, except for the coefficient of high income level (significant at $p<0.05$).

Table 2 – The impacts of remittances on the propensity of being asked for bribes

Model	(4) Coefficient	Odds ratio	(5) Coefficient	Odds ratio	(6) Coefficient	Odds ratio
Fixed effects						
Receiving remittances			0.341*** (0.083)	1.406		

Model	(4) Coefficient	Odds ratio	(5) Coefficient	Odds ratio	(6) Coefficient	Odds ratio
Household monthly income						
Low			Ref.		Ref.	
Middle			0.018 (0.061)	1.018	0.021 (0.061)	1.021
High			0.199* (0.097)	1.220	0.202* (0.095)	1.223
Perception of corruption						
Very uncommon			Ref.		Ref.	
Uncommon			-0.260** (0.090)	0.771	-0.240** (0.082)	0.787
Common			-0.261 (0.146)	0.770	-0.257 (0.147)	0.773
Very common			0.116 (0.128)	1.123	0.123 (0.128)	1.131
Political networks			0.449*** (0.084)	1.566	0.449*** (0.083)	1.567
Social networks			0.246* (0.117)	1.279	0.242* (0.115)	1.274
Gender			-0.710*** (0.085)	0.491	-0.711*** (0.086)	0.491
Age over 60			-0.565*** (0.078)	0.569	-0.566*** (0.079)	0.568
Education level						
No education			Ref.		Ref.	
Primary			0.118 (0.115)	1.128	0.120 (0.127)	1.127
Secondary			0.558*** (0.112)	1.746	0.555*** (0.113)	1.742
Tertiary			0.864*** (0.141)	2.373	0.856*** (0.145)	2.354
Employment			0.094	1.099	0.097	1.101

Model	(4) Coefficient	Odds ratio	(5) Coefficient	Odds ratio	(6) Coefficient	Odds ratio
status			(0.054)		(0.055)	
Beneficiary of government program			0.224	1.251	0.227	1.254
			(0.119)		(0.118)	
Random effects						
Constant (country intercepts)	-1.861***	0.156	-2.509***	0.081	-2.500***	0.082
	(0.134)		(0.206)		(0.204)	
Receiving remittances					0.359***	1.431
					(0.102)	
Variance (intercept)	0.299**		0.292*		0.263*	
	(0.112)		(0.115)		(0.116)	
Variance (remittance)					0.044	
					(0.035)	
ICCa	0.083		0.081		0.074	
Akaike Correctedb	105909.638		81537.657		81532.442	
N (level 1)	21119		16011		16011	
N (level 2)	16		16		16	

*p<.05 ** p<.01 ***p<.001. Robust standard errors in parentheses. Odd ratios bigger than 1 denotes a positive relationship, odd ratios smaller than 1 means a negative relationship and odd ratios equal to 1 means no relationship.

a – SPSS provides variance ($\sigma^2_{between)}$ figures, but not ICC results. ICC was then calculated based on the formula in Heck et al (2012, p.157): $ICC = \frac{\sigma^2_{between}}{(\sigma^2_{between}+\sigma^2_{within})} = \frac{\sigma^2_{between}}{\sigma^2_{between}+3.29_{within}}$

b – Akaike Corrected is an information criterion calculated based on the -2 log pseudo likelihood and is used to compare models. Models with smaller information criterion values fit better.

Source: AmericasBarometer 2014.

Table 3 tests whether remittance receipt is related to the recipients' propensity of pay bribes as per hypotheses 3a and 3b. Model 7 (null model) again suggests that countries have significantly different starting points in the level of bribe payment, with the variance of the country intercepts being significant at p<0.01 and ICC = 0.262. Model 8 with all predictors as fixed effects provides support for hypothesis 3b. Remittance receipt is positively associated to the recipients' likelihood of pay bribes, but at a lower level of significance (p<0.05) than it is to the other two dependent variables. With the odds ratio being 1.263, remittance recipients are 1.263 times more likely to pay bribes

than non-recipients, all else being equal. This relationship remains positive in Model 9 where remittance variable is included as a random effect; nonetheless, its coefficient increases and becomes insignificant. The variance of country intercepts continues to be significant in both Model 8 and Model 9, but at lower level of significance ($p<0.05$) in Model 9. ICC increases from 0.262 in Model 7 to 0.293 in Model 8, and then decreases slightly to 0.291 in Model 9. However, similar to the analysis of Table 1 and Table 2, the variance of the remittance variable is not significant at all in Model 9; hence, no further model constructed.

In terms of control variables, only political and social networks and employment status are significantly and positively related to the probability to pay bribes at high level of significance ($p<0.001$). It means that those that have political/social networks and a paid job are more likely to pay bribes than those without any networks or employment. Compared to those that perceive corruption to be very uncommon, those that perceive corruption to be uncommon (i.e. slightly more popular) are less likely to pay bribes. Gender has a negative relationship with the propensity to pay bribes, but significant at a lower level ($p<0.05$) than it was with the other two dependent variables. Education level, household monthly income level and being older than 60 are negatively associated to the probability of paying bribes, yet no significant impacts. Similar to the relationship with the likelihood of being asked for bribes, receiving support from government programs increases the probability of paying bribes, but the effects are insignificant.

Table 3 – The impacts of remittances on the propensity of paying bribes

Model	(7) Coefficient	Odds ratio	(8) Coefficient	Odds ratio	(9) Coefficient	Odds ratio
Fixed effects						
Receiving remittances			0.234* (0.116)	1.263		
Household monthly income						
Low			Ref.		Ref.	
Middle			-0.070 (0.077)	0.933	-0.068 (0.077)	0.934
High			-0.125 (0.084)	0.882	-0.116 (0.080)	0.890

Model	(7) Coefficient	Odds ratio	(8) Coefficient	Odds ratio	(9) Coefficient	Odds ratio
Perception of corruption						
Very uncommon			Ref.		Ref.	
Uncommon			-0.212*	0.809	-0.194	0.823
			(0.103)		(0.106)	
Common			-0.266	0.767	-0.255	0.775
			(0.198)		(0.204)	
Very common			0.064	1.066	0.084	1.087
			(0.178)		(0.183)	
Political networks			0.566***	1.762	0.563***	1.756
			(0.089)		(0.087)	
Social networks			0.398***	1.489	0.390***	1.478
			(0.088)		(0.084)	
Gender			-0.146*	0.864	-0.148*	0.863
			(0.058)		(0.058)	
Age over 60			-0.175	0.839	-0.178	0.837
			(0.102)		(0.102)	
Education level						
No education			Ref.		Ref.	
Primary			-0.135	0.874	-0.138	0.871
			(0.152)		(0.154)	
Secondary			-0.111	0.895	-0.112	0.894
			(0.119)		(0.121)	
Tertiary			-0.096	0.908	-0.114	0.892
			(0.103)		(0.106)	
Employment status			0.199***	1.221	0.198***	1.219
			(0.046)		(0.047)	
Beneficiary of government program			0.113	1.120	0.107	1.113
			(0.127)		(0.125)	
Random effects						
Constant (country intercepts)	-2.150***	0.117	-2.549***	0.078	-2.543***	0.079
	(0.263)		(0.408)		(0.409)	

Model	(7) Coefficient	Odds ratio	(8) Coefficient	Odds ratio	(9) Coefficient	Odds ratio
Receiving remittances					0.273 (0.141)	1.314
Variance (intercept)	1.174** (0.432)		1.364** (0.521)		1.352* (0.538)	
Variance (remittance)					0.102 (0.060)	
ICC[a]	0.262		0.293		0.291	
Akaike Corrected[b]	113604.845		87700.589		87678.333	
N (level 1)	21148		16028		16028	
N (level 2)	16		16		16	

*p<.05 ** p<.01 ***p<.001. Robust standard errors in parentheses. Odd ratios bigger than 1 denotes a positive relationship, odd ratios smaller than 1 means a negative relationship and odd ratios equal to 1 means no relationship.

a – SPSS provides variance ($\sigma^2_{between}$) figures, but not ICC results. ICC was then calculated based on the formula in Heck et al (2012, p.157): $ICC = \frac{\sigma^2_{between}}{(\sigma^2_{between} + \sigma^2_{within})} = \frac{\sigma^2_{between}}{\sigma^2_{between} + 3.29_{within}}$

b – Akaike Corrected is an information criterion calculated based on the -2 log pseudo likelihood and is used to compare models. Models with smaller information criterion values fit better.

Source: AmericasBarometer 2014.

How well a model fits the data can be assessed with the Akaike Corrected (AC) values. It can be seen from the tables above that with the inclusion of fixed effects and random effects, AC values became smaller, which means that model fit improved a lot compared to the null model. Meanwhile, there is not a big difference regarding model fit between models with only fixed effects and models with remittance variable as a random effect.

Overall, I found support for hypotheses 2 and 3b, while hypotheses 1 and 3a were not supported in the data. Remittance receipt was found to be a significant predictor of all three dependent variables. Yet, it appeared to be more strongly related with a recipient's propensity of increasingly justifying paying bribes, or being asked for bribes by public officials, than with his/her tendency to pay more bribes. The strongest association was found with the likelihood of being solicited for bribes. The results without robust standard errors (see Annex 5) are quite similar to those presented in this part, except for the estimates of standard errors and minor changes in significance level of the coefficients of the remittance variable. As expected, in models with only fixed effects (Annex 5 – Models 11, 14, 17), the relationship between remittance receipt and the three dependent variables were found to be significant at higher level (at least

p<0.01) than in the analysis with robust standard errors (in which the lowest significance level was p<0.05). Up to this point, remittance is a major predictor of bribery-related attitude and behavior.

2. Diagnostics

The assumptions for single-level models apply for multilevel models as well (Heck et al, 2012, p.80). As this is a multilevel logistic model, I check if the assumptions for logistic regressions are violated. The assumptions include linearity, normality, homoscedasticity, independence of errors, no multicollinearity and outliers (Field, 2014, p.768). As all predictors are categorical, it is not possible to check if the predictors have linear relationships with the log of outcome variable (Field, 2014, p.794).

Models with categorical dependent variable violate the assumption that residuals (errors) in predicting Y (the outcome) from X (the predictor) are normally distributed around a mean of 0. When the outcomes are dichotomous as the case in this thesis, Y can only have two possible values; thus, the residuals will vary according to the levels of X. For each level of X (predictor), there are only two possible residuals; therefore, residuals are not normally distributed around the mean (Heck et al, 2012, p.88). However, the generalized linear technique used for multilevel modeling here solves this problem by incorporating necessary transformation of the outcome and an appropriate error distribution directly into the statistical model (Hox, 2002).

Homoscedasticity and the independence of errors are not possible to diagnose in SPSS component on multilevel modeling. Yet, as explained above, the multilevel model is supposed to correct for the problem of dependence of errors. Heteroscedasticity means that the residuals follow some patterns instead having constant variance from the mean of 0. Heteroscedasticity does not make the estimates become biased, but less efficient. Nonetheless, heteroscedasticity should be taken care of when robust standard errors are used (Williams, 2015).

Multicollinearity happens when predictors are highly correlated with each other, making it difficult to distinguish the effect of each predictor on the outcome (Field, 2014, p.325). Multicolinearity in a logistic model is checked by rerunning the analysis as a linear regression, including collinearity statistics (Field, 2014, p.795). VIF over 10 and Tolerance values under 0.1 signify the presence of multicollinearity (Field, 2014, p.795). The statistics in Annex 4 shows that this is not a problem in my models.

Potential outliers can also be problematic. While individuals deviating substantially from their country means should not be a problem, given the large group sizes, individual countries deviating largely from the total sample mean could be an issue. As SPSS does not provide any options of producing graphs with saved values to identify potential outliers in multilevel models, I used simple scatterplots to identify

countries with means on the main independent variable and three dependent variables deviating from means of the total sample (see Annex 4). Two potentially significant outliers were Haiti and Jamaica. Their mean values were located on the right-hand side in all scatterplots, far from other countries' values. However, the location of Haiti's means was more substantially different from the main trend of the data than that of Jamaica's means. Therefore, I reran the analysis excluding only Haiti. The results are provided in Annex 6. Table 7 and Table 8 (Annex 6) demonstrate that, without Haiti, the relationship between remittance receipt and the propensity of justifying bribery and being asked for bribes remains positive and significant at highest level ($p<0.001$), but the size of effects increases compared to the results with all 16 countries (Table 1, Table 2). Interestingly, remittance is no longer a significant predictor of whether a recipient pays bribe or not and the size of coefficient becomes smaller, although the sign of effect remains positive (Table 9, Annex 6) compared with the results in Table 3. I also reconstructed the scatterplot between remittance means and paid bribe means without Haiti in the sample (Annex 6). The regression line became downward, instead of upward as it was when Haiti was included. These evidences point out that the relationship between remittance and the likelihood of bribe payment is primarily driven by data on Haiti, while the relationship between remittance and the remaining outcomes is not.

VI. Discussion

The results of the analysis suggest that remittance recipients are substantially more likely to think that paying a bribe is justifiable, to be prone to bribe solicitations, but *not* significantly more likely to pay bribes than non-recipients.

Earlier, I hypothesized that monetary remittance facilitates the dissemination of social remittances beneficial for control of corruption from countries with higher institutional quality than migrants' home countries, thus lowers the recipients' propensity to justify paying bribes and to actually pay bribes. The finding that receiving remittances significantly increases the likelihood of justifying paying bribes is opposite to my hypothesis. This result can be explained as a consequence of limited or weak transmission of positive social remittances. On one hand, monetary may facilitate the circulation of such social remittances *only* after the recipients' basic needs have been fulfilled. Ethnographic studies on transnational money transfers have documented cases in which monetary remittances are sent home to fulfill the migrants' commitments and obligations to their families, such as covering the costs of parents' disease treatment, children's or siblings' education, repaying debts, etc. (Paerregaard, 2015; Carling, 2014). In such cases, the circulation of social remittances which are useful for curbing corruption may be limited. On the other hand, insofar as positive social remittances are transmitted from less corrupt countries to more corrupt countries, the impact of such social remittances on the recipients' bribery-related attitude may have been weakened

by the presence of less positive social remittances from countries with low quality of institution. As outlined above, the main destinations of migrants from LAC and from which remittances are sent are the US and Spain, which have better control of corruption, scoring 74/100 and 60/100 in CPI 2014, respectively, than those of LAC countries in this study, except Uruguay, scoring 73/100 in CPI 2014[20]. Yet, increasing intra-regional migration and remittance flows between neighboring countries may hamper the transfer of positive social remittance. Most countries within the region, which host part of the expatriate community from their neighbor countries, except Chile[21] and Uruguay, have quite low quality of institution (see Annex 1). Besides, as indicated earlier, the expatriate community of migrants from the LAC accounted for a fairly small share of the total regional population (6% in 2010-2011 (UN-DESA and OECD, 2013)). Given the complex development of migration and remittance trend, the impact of positive social remittance on changing the recipients' attitude towards bribery may probably become not as favorable as expected.

The relationship between remittance and the likelihood of being asked for bribes turns out to be as predicted. Individuals or households who receive remittances are more likely to be targeted for bribes by public officials than those who do not receive any remittances. This result is congruent with what Ivlevs and King (2014) found in the six Balkan countries. In fact, the association between receipt of remittances and bribe solicitations is consistently the strongest (at the highest level of significance) out of the three outcomes in this thesis. This finding echoes the argument that corrupt behaviors are the prevailing behavioral expectation in a corrupt society. The new ideas and practices transmitted from migrants may be not sufficiently strong to win over the existing particularistic culture in the sending countries.

The combination of both limited or weak transmission of positive social remittance and the persistence of the particularistic culture underpinning the function of a corrupt society may hinder any behavioral change towards less petty corruption. Receipt of remittance has a positive relationship with the likelihood of paying bribes. However, unlike Ivlevs and King's interpretation (2014), the impact of remittance on the propensity to pay bribes here was found to be not significant. Yet, it does not necessarily mean a favorable state of affairs due to the absence of positive bribery-related behavioral change among the remittance recipients. This finding highlights that monetary remittance alone may not be the solution to corruption, and that taking into account the role of both monetary and social remittances, and the core values that have shaped the way a corrupt society functions is of critical importance in curbing corruption in sending countries. This point corroborates the findings of some of the studies at cross-national level that I referred to previously (Abdih et al, 2012; Berdiev et al, 2013; Ahmed, 2013) in the sense that they did not consider the role of social

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[20] 0 means highly corrupt, while 100 means very clean.
[21] Chile is not included in this study.

remittances and found a detrimental effect of monetary remittance on institutional quality in home countries.

The association of remittance and bribe payment becomes slightly stronger (at the lowest significance level) when the sample includes Haiti, which is identified as an outlier. Haiti has the highest country mean on both remittance and bribe payment (see Annex 4). This finding can be partially explained when we look at the country background (see Annex 1). Among the 16 countries in this study, Haiti is the poorest, most corrupt country with the highest proportion of remittance over GDP 2014. It is the only country in the sample classified by the World Bank as a low income country. Five years after it was devastated by a massive earthquake in 2010, Haiti has yet to fully recover (US Agency for International Development (USAID), 2015). 59% of Haitians live in poverty and 75% of the population live on less than US$2 per day (World Food Programme (WFP), 2016). Access to water, sanitation, electricity, health care and food security is limited (WPF, 2016). In this sending country, where the people's basic needs have yet to be fulfilled, the money migrants send home may be used to serve these needs rather than to facilitate the dissemination of ideas and practices to fight corruption. It may also be the case that those receiving remittances can be more easily identified from other poor people. When corruption is pervasive, the remittance receivers may be exposed to more bribe extortions to access public services and more likely to pay bribes.

Several control variables have performed as expected with at least one outcome, even when Haiti is excluded. Women and people over 60 years old are less likely to justify paying a bribe, be asked for bribes and pay bribes than men and younger people, respectively. It confirms the argument that women and aged people may be less frequently involved in transactions with public officials (Mocan, 2004). Employment status is only a strong predictor of whether an individual pays bribes, with those having a paid job more likely to pay bribes than those who are unemployed, probably because the former have more financial ability to do so. Higher education level is only significantly associated with higher probability of being asked for bribes, but more educated people are no more likely to pay bribes. This result is consistent with the expectation that more educated people may know what public services they are entitled to (Rose and Peiffer, 2014). Those that receive support from government assistance programs are more likely to find it justifiable to pay a bribe, which suggests the existence of bribery in the process of obtaining welfare in the Americas (Zechmeister, 2014).

Interestingly, social and political networks are consistently significant predictors of the higher likelihood of bribe solicitations as well as bribe payment[22]. Although there has been no theoretical explanation of the association between

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[22] Political networks appear to matter more (coefficient being significant at higher level) than social networks when it comes to bribe extortions.

belonging to social and political networks and being asked for bribes, one possible interpretation of the finding is that, in a society where corrupt behavior is the standard procedure, having networks does not seem to help a person avoid bribe solicitations. This finding also points to the direction that these networks may be used to find out whom to bribe and monitor if the bribe takers deliver the service (Rose and Peiffer, 2014), which is contrary to the expectation by Putnam et al (1993) that such networks can help an individual to get access to services without having to pay bribes. The result, once again, reflects a particularistic culture, in which a person's gain from the public sector depends on his/her connections, ability to bribe, and involvement in corrupt networks (Rothstein, 2011, p.238). As such, the social and political networks that one belongs to become one of the prerequisites for achieving benefits. In this case, besides acquiring access to the necessary services, the benefits also mean knowing who to bribe to get access to those services and being able to monitor service delivery.

The relationship between how common a person perceives corruption to be and whether he/she actually pays bribes is insignificant, which is opposite to the argument that the more widespread corruption is perceived to be, the more likely he/she is to engage in it (Tavits, 2005). This finding reinforces the criticisms of using perception of corruption as an indication of individuals' actual bribe payment (Rose and Peiffer, 2013).

Household income level is found to have no significant relationship with all the three outcomes. That means whether an individual is prone to corruption or not is independent of his/her household income level. This finding is against what Mocan (2004) and Guerrero and Rodriguez-Oreggia (2008) found, i.e. richer people are more likely to be targeted for bribes and to pay bribes. It suggests that the relationship between income and corruption-related outcomes may not always play out at household level, but at country level as cross-national studies on corruption have pointed out.

VII. Conclusion

The aim of this thesis was to explore whether and how remittance affects petty corruption (or bribery) in sending countries in order to clarify the ambiguous relationship between remittance and corruption. The main research question asked was: A*re remittance recipients more likely to pay bribes than non-recipients?* The results of the analysis indicated that those who receive remittances are more likely to think that paying a bribe is a justifiable act and be asked for bribes by public officials, but *no* more likely to actually pay bribes than those who do not receive remittances. The effect of remittance was rather consistent and significant regarding whether the recipients tend to justify paying bribes and be targeted for bribe extortions, even when the outlier Haiti was excluded. Yet, the relationship between remittance and bribe payment was not

robust to the exclusion of Haiti.

The study contributes to the existing literature on several fronts. First, it used new data from the LAC to verify the findings by Ivlevs and King (2014) in the Balkan countries that receiving remittance increases the likelihood of justifying paying bribes and being solicited for bribes by public officials. Like Ivlevs and King (2014), I failed to find consistent supporting evidence that remittance recipients are significantly more prone to actual bribe payment than non-recipients in the LAC. However, rather than posing the research question as an empirical issue, this study went on to explain that the combination of limited or weak transmission of positive social remittance and the persistence of the particularistic culture shaping the way a corrupt society functions may impede behavioral change towards less petty corruption.

Second, it confirmed findings of most of the studies on individual determinants of corruption, except those on income and perception of how common corruption is. These two variables were not found to have any significant relationship with bribe payment at individual level. The study also extended the literature in this field by investigating the role of remittance, a household/individual characteristic that has yet to be considered in previous research.

Third, the study emphasized the importance of social remittance in control of corruption, which was neglected in several studies on (monetary) remittance and aggregate corruption. To study the impact of social remittance, the thesis shifted the focus from remittance senders as change agents in most of the previous research on remittance and corruption to remittance receivers. The findings suggest that the impact of monetary remittance on individual engagement in bribery is contingent on the circulation of social remittance, which in turns may depend on the contextual factors, for instance, the complex development of migration and remittance trend in the region and the level of economic development in the sending countries.

The study has essential policy implications. First, it identifies that households/individuals receiving remittances from abroad are more likely to be exposed to bribe solicitations (Ivlevs and King, 2014). Corruption prevention policies, therefore, can be directed towards this group of people. As an example, more attention can be paid to monitoring transactions between public service providers and individuals with migrant connections. The purpose is to assure migrants that the money they sent home would not end up in the wrong pockets and, importantly, encourage them to maintain the remittance flows. This action is vital in the context of sending countries implementing more and more policies to harness the benefits of remittance for development (Tyburski, 2012, p.339).

Furthermore, the research findings illustrate the conclusion by de Haas (2007)

that remittance is no panacea for development. The research has shown that it is of utmost significance to tackle the root of corruption, which is particularism, while simultaneously improving the households' living standards. In order to do this, top-down structural changes are required (Rothstein, 2011). The combination of monetary and social remittance alone as a bottom-up solution to corruption may not work without these changes, which fall under the responsibilities of the state.

The study suffers from several limitations both from theoretical and methodological aspects. The role of specific country contexts as alternative explanations for perpetuating corruption, including but not limited to crime level, law enforcement (Zechmeister, 2014), level of economic development (Treisman, 2000), the degree of female participation in government (Dollar et al., 2001), political institutions (Gerring and Thacker, 2004; Kunicova and Rose-Ackerman, 2003; Fisman and Gatti, 2002; Persson et al, 2003; Chang and Golden, 2007), has not been considered. As the current data has no country-level variables, the empirical results in this study indicate that there is no need to proceed to multilevel model with level-2 variables. Nevertheless, if new data on these variables are added, it is totally possible to explore in this direction. In addition, more real-life examples, especially on remittance recipients' experience of bribe solicitations and how the transmission of social remittances helps fight petty corruption, can be beneficial to strengthen the arguments in my theoretical framework. Up to now, it has been quite difficult to find those examples partly because the studies on remittance so far have only focused on remittance senders rather than remittance receivers as agents of change.

The thesis also has several methodological issues. As discussed above, due to technical limitations of SPSS, the study has not dealt with the problems of missing values and endogeneity, though it is unclear whether they are serious issues here. Notwithstanding its popularity among social science researchers, SPSS does not appear to be the best statistical program to handle multilevel models with categorical outcomes and complex sampling strategy. Besides, additional independent variables, as outlined earlier, can be useful to elaborate how monetary remittances facilitate the transmission of social remittances.

Future research can close the above-mentioned gaps by expanding the multilevel model to include level-2 predictors. The role of contextual factors, such as the level of economic development, can be studied as direct effects on petty corruption and/or, as indicated earlier, moderating effects on the relationship between remittance and petty corruption. It is also very useful to document more case studies, not only in the outlier country, Haiti, but in other countries/regions as well to verify the mechanisms of the relationship between remittances and bribery. To overcome the endogeneity problem, the time dimension, i.e. how social remittances and the relationship between remittances and corruption experiences change over time, can be

explored. However, it may be quite demanding for data collection because large surveys currently do not follow the same households/individuals across several time periods.

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Annex 1: List of countries included in the analysis

Countries	Sample size (respondents)	Geographical position	GDP per capita 2014 (US$)	Income group	Remittances as % of GDP 2014	Corruption Perception Index 2014
Mexico	1 336	Central America	10 325.6	Upper middle	1.9%	35
Guatemala	1 297	Central America	3 673.1	Low middle	9.9%	32
El Salvador	1 317	Central America	4 120.0	Low middle	16.8%	39
Honduras	1 313	Central America	2 434.8	Low middle	17.8%	29
Nicaragua	1 403	Central America	1 963.1	Low middle	9.7%	28
Panama	1 273	Central America	11 948.9	Upper middle	1.6%	37
Dominican Republic	1 337	Caribbean	6 163.6	Upper middle	7.5%	32
Haiti	1 248	Caribbean	824.2	Low	22.4%	19
Jamaica	1 302	Caribbean	5 104.8	Upper middle	15.7%	38
Guyana	1 298	Caribbean	4 053.9	Low middle	10.2%	30
Belize	1 296	Caribbean	4 831.2	Upper middle	4.9%	N/A[a]
Colombia	1 326	Andean - Southern Cone	7 903.9	Upper middle	1.1%	37
Peru	1 360	Andean - Southern Cone	6 541.0	Upper middle	1.3%	38
Paraguay	1 399	Andean - Southern Cone	4 712.8	Upper middle	1.9%	24
Uruguay	1 288	Andean - Southern Cone	16 806.8	High	0.2%	73
Brazil	1 356	Andean - Southern Cone	11 384.4	Upper middle	0.1%	43

Source: Geographical position – AmericasBarometer 2014 Sample Design (http://www.vanderbilt.edu/lapop/survey-designs.php); GDP per capita data from World Development Indicators; Income group data from the World Bank's country classifications; Remittance data from the World Bank; and Corruption Perception Index by Transparency International (0-highly corrupt, 100-very clean).

a - N/A = Not available

Annex 2: List of variables

Variable Name	Variable label	Description	Data source
paid_bribe	Paid bribe	Categorical variable to measure respondent's behaviour related to bribe payment. It has two categories: 0 people who were in contact with at least one of those institutions but did not pay a bribe; and 1 = people who bribed at least one of the public service providers.	AmericasBarometer 2014, questions exc11, exc13, exc14, exc 15, exc16.
justify_bribe	Justifying paying bribes	Dichotomous variable to measure individual attitude towards petty corruption, based on the question "Do you think given the way things are, sometimes paying a bribe is justified?" (0 – No, 1 – Yes).	AmericasBarometer 2014, question exc18.
asked_bribe	Being asked for bribe	Dichotomous variable to measure whether the respondent was asked for a bribe by a police officer, a government employee or a soldier/military officer in the last twelve months (0 – No, 1 – Yes).	AmericasBarometer 2014, questions exc2, exc6, exc20.
remittance	Receiving remittance	Dichotomous variable to measure whether respondent's household receives any remittance from abroad, based on the question "Do you or someone else living in your household receive remittances (financial support), that is, economic assistance from abroad?" (0 – No, 1 – Yes).	AmericasBarometer 2014, question q10a.
hhinc	Household monthly income level	Categorical variable to measure the respondent's monthly household income level. It has three categories: 1 - low, 2 - middle, 3 - high.	AmericasBarometer 2014, question q10new.

Variable Name	Variable label	Description	Data source
percep	Perception of the spread of corruption	Categorical variable to measure how widespread the respondent perceives corruption to be. It has four categories: 1 - Very uncommon, 2 - Uncommon, 3 - Common, 4 - Very common.	AmericasBarometer 2014, question exc7.
polcap	Political networks	Binary variable to measure whether a person is involved in political networks, based on information from four questions on whether the respondent requested help from a public official in municipality or local government, whether he/she attended the town or city council meetings in the last twelve months, and how often he/she attended meetings of a political party or political organization (0 – No, 1 – Yes).	AmericasBarometer 2014, questions np1, np2, cp4a, cp13.
soccap	Social networks	Binary variable to measure whether a person is involved in social networks, based on the questions related to the respondent's participation in solving a problem in the community, attendance at meetings of different associations (religious, parent, community improvement committee) (0 – No, 1 – Yes).	AmericasBarometer 2014, questions cp5, cp6, cp7, cp8.
gender	Gender	Dichotomous variable for respondent's ender (0 – male, 1 - female).	AmericasBarometer 2014, question q1.
age60	Age over 60	Dichotomous variable to measure whether respondent is over 60 years old or not (0 – No, 1 – Yes).	AmericasBarometer 2014, question q2.

Variable Name	Variable label	Description	Data source
ed	Education level	Categorical variable for respondent's education level (0 - no education, 1 - primary, 2 - secondary, 3 - tertiary and above).	AmericasBarometer 2014, question ed.
occup	Employment status	Dichotomous variable to measure whether respondent has a paid job or not (0 – No, 1 – Yes).	AmericasBarometer 2014, question occup4a.
wf1	Beneficiary of government programs	Binary variable to measure whether anyone in the household is a beneficiary of government assistance programs or not (0 – No, 1 – Yes).	AmericasBarometer 2014, question wf1.

Annex 3: Descriptive statistics

Variable	N	Minimum	Maximum	Mean	Standard Deviation
Paid bribe	21148	0	1	0.1339	0.34057
Justifying paying bribes	18108	0	1	0.1930	0.39467
Being asked for bribe	21119	0	1	0.1459	0.35305
Receiving remittances	20981	0	1	0.1494	0.35646
Household monthly income level	18195	1	3	2.1359	0.81961
Perception of the spread of corruption	18945	1	4	3.1861	0.84258
Political networks	21149	0	1	0.3986	0.48961
Social networks	21145	0	1	0.8513	0.35579
Gender	21149	0	1	0.4945	0.49998
Age over 60	21124	0	1	0.1088	0.31138
Education level	21089	0	3	1.8182	0.75848
Employment status	21101	0	1	0.5733	0.49460
Beneficiary of government program(s)	21007	0	1	0.1224	0.32774

Annex 4: Diagnostics

Multicollinearity

<table>
<tr><th colspan="7">Collinearity Statistics</th></tr>
<tr><td rowspan="2">Model</td><td colspan="2">DV: Being asked for bribes</td><td colspan="2">DV: Justifying paying bribes</td><td colspan="2">DV: Paid bribes</td></tr>
<tr><td>Tolerance</td><td>VIF</td><td>Tolerance</td><td>VIF</td><td>Tolerance</td><td>VIF</td></tr>
<tr><td>Receiving remittances</td><td>0.983</td><td>1.017</td><td>0.984</td><td>1.016</td><td>0.983</td><td>1.017</td></tr>
<tr><td>Household monthly income level</td><td>0.838</td><td>1.194</td><td>0.846</td><td>1.183</td><td>0.838</td><td>1.194</td></tr>
<tr><td>Perception of the spread of corruption</td><td>0.982</td><td>1.018</td><td>0.984</td><td>1.016</td><td>0.982</td><td>1.018</td></tr>
<tr><td>Political networks</td><td>0.958</td><td>1.043</td><td>0.957</td><td>1.045</td><td>0.958</td><td>1.043</td></tr>
<tr><td>Social networks</td><td>0.955</td><td>1.047</td><td>0.953</td><td>1.050</td><td>0.955</td><td>1.047</td></tr>
<tr><td>Gender</td><td>0.852</td><td>1.173</td><td>0.857</td><td>1.167</td><td>0.852</td><td>1.173</td></tr>
<tr><td>Age over 60</td><td>0.933</td><td>1.072</td><td>0.929</td><td>1.076</td><td>0.933</td><td>1.072</td></tr>
<tr><td>Education level</td><td>0.833</td><td>1.200</td><td>0.839</td><td>1.192</td><td>0.833</td><td>1.200</td></tr>
<tr><td>Employment status</td><td>0.822</td><td>1.217</td><td>0.827</td><td>1.209</td><td>0.822</td><td>1.217</td></tr>
<tr><td>Beneficiary of government program(s)</td><td>0.975</td><td>1.025</td><td>0.973</td><td>1.028</td><td>0.975</td><td>1.025</td></tr>
</table>

Outliers

Note: As it is not possible to display the country names on the plot, the dots representing the countries are cross-checked with the case numbers of the respondents that belong to each country.

Country
○ Mexico
○ El Salvador
○ Honduras
○ Nicaragua
○ Panama
○ Colombia
○ Peru
○ Paraguay
○ Uruguay
○ Dominican Republic
○ Haití
○ Jamaica
○ Guyana
○ Belize

R^2 Linear = 0,723

$y=0,1+0,52*x$
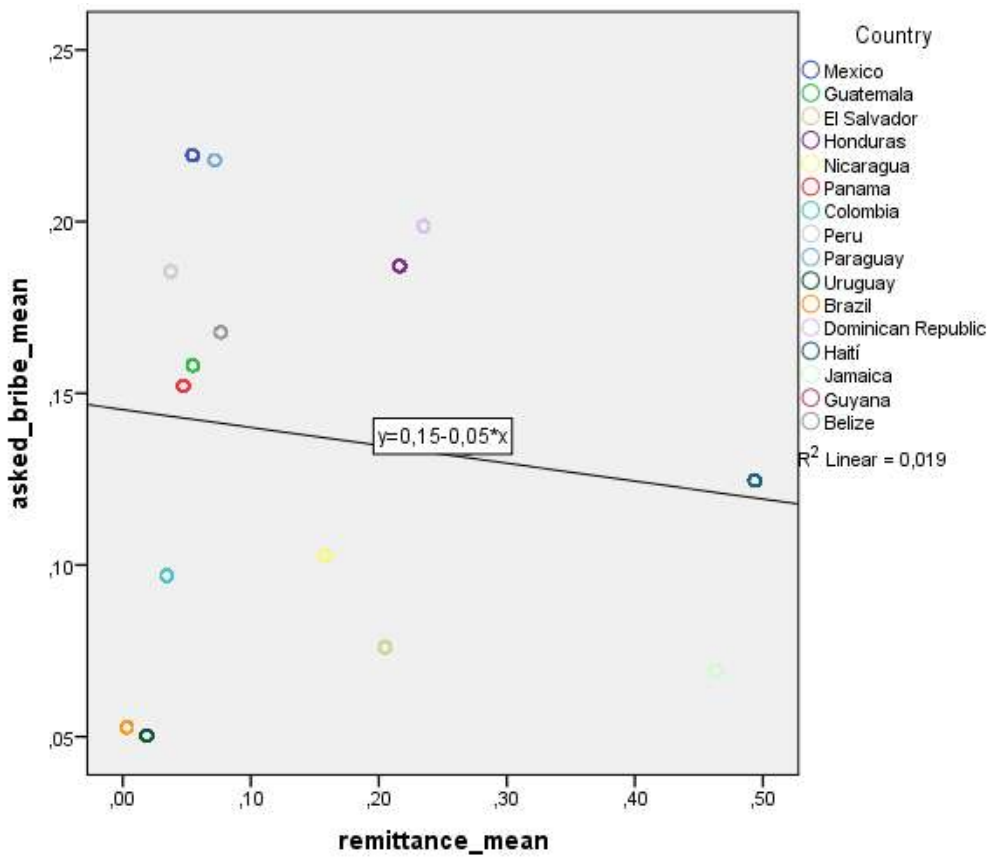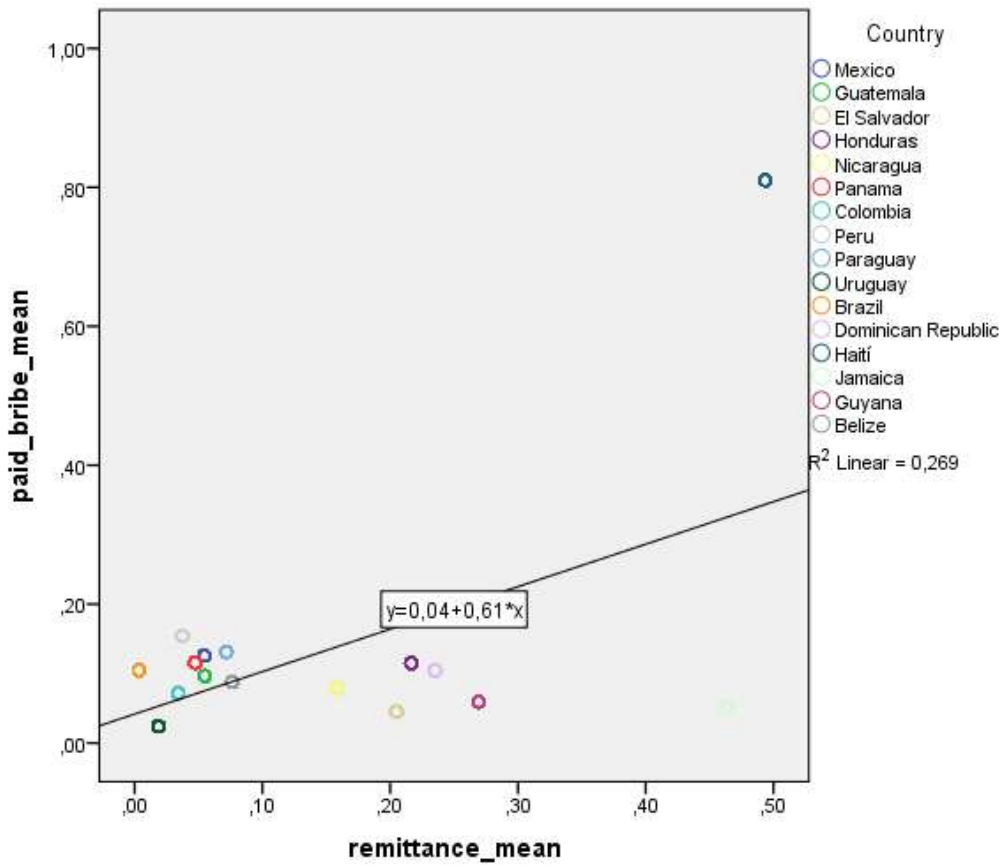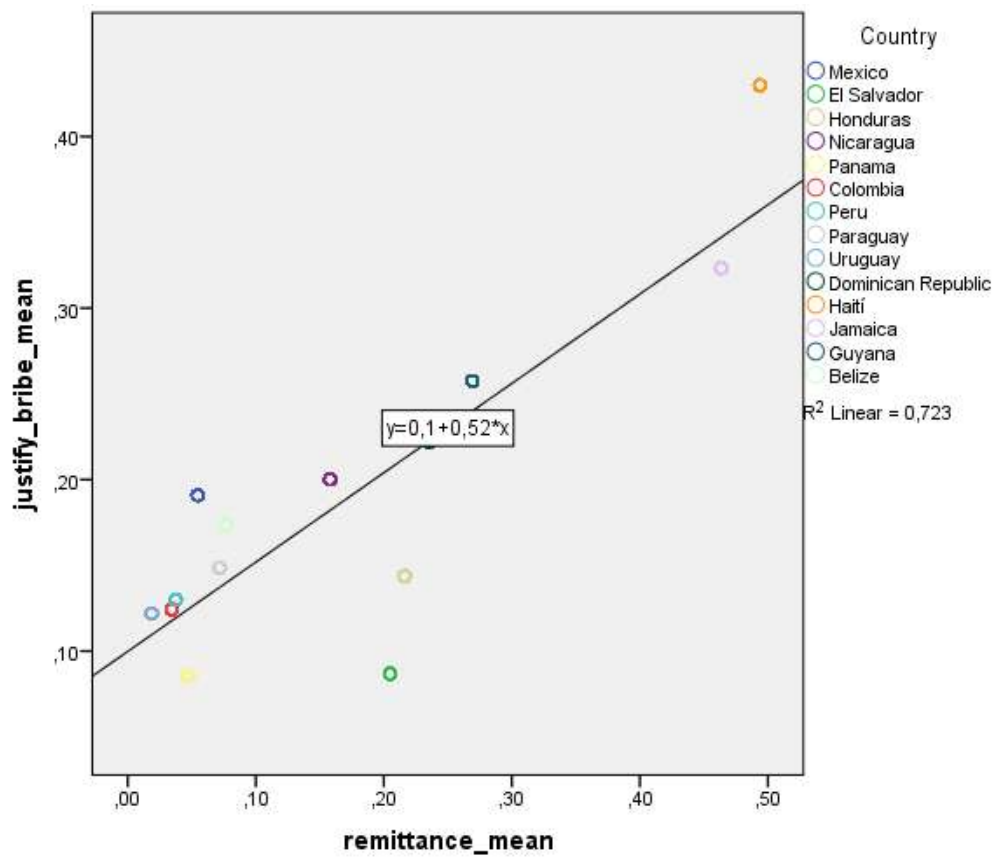
Annex 5: Results without robust standard errors

Table 4 – The impacts of remittances on the propensity of justifying paying bribes

Model	(10) Coefficient	Odds ratio	(11) Coefficient	Odds ratio	(12) Coefficient	Odds ratio
Fixed effects						
Receiving remittances (0-1)			0.183*** (0.060)	1.201		
Household monthly income						
Low			Ref.		Ref.	
Middle			0.071 (0.061)	1.074	0.071 (0.061)	1.074
High			0.138* (0.061)	1.148	0.138* (0.061)	1.148
Perception of corruption						
Very uncommon			Ref.		Ref.	
Uncommon			0.223 (0.128)	1.249	0.223 (0.128)	1.249
Common			0.186 (0.121)	1.205	0.186 (0.121)	1.205
Very common			0.418*** (0.120)	1.519	0.418*** (0.120)	1.519
Political networks			0.102* (0.045)	1.108	0.102* (0.045)	1.108
Social networks			-0.033 (0.065)	0.967	-0.033 (0.065)	0.967
Gender			-0.316*** (0.047)	0.729	-0.316*** (0.047)	0.729
Age over 60			-0.433*** (0.086)	0.648	-0.433*** (0.086)	0.648

Education level						
No education			Ref.		Ref.	
Primary			-0.087	0.917	-0.087	0.917
			(0.152)		(0.152)	
Secondary			0.221	1.248	0.221	1.248
			(0.150)		(0.150)	
Tertiary			0.205	1.228	0.205	1.228
			(0.158)		(0.158)	
Employment status			0.011	1.011	0.011	1.011
			(0.049)		(0.049)	
Beneficiary of government program			0.209**	1.232	0.209**	1.232
			(0.066)		(0.066)	
Random effects						
Constant (country intercepts)	-1.512***	0.220	-1.888***	0.151	-1.888***	0.151
	(0.163)		(0.260)		(0.260)	
Receiving remittances (0-1)					0.183***	1.201
					(0.060)	
Variance (intercept)	0.364*		0.379*		0.379*	
	(0.145)		(0.152)		(0.152)	
Variance (remittance)					0a	
ICCb	0.099		0.103		0.103	
Akaike Correctedc	87058.002		71333.498		71335.498	
N (level 1)	18108		14695		14695	
N (level 2)	16		16		16	

*p<.05 ** p<.01 ***p<.001. (Normal) Standard errors in parentheses. Odd ratios bigger than 1 denotes a positive relationship, odd ratios smaller than 1 means a negative relationship and odd ratios equal to 1 means no relationship.

a – SPSS automatically set this parameter as redundant.

b – SPSS provides variance ($\sigma^2_{between}$) figures, but not ICC results. ICC was then calculated based on the formula in Heck et al (2012, p.157): $ICC = \frac{\sigma^2_{between}}{(\sigma^2_{between}+\sigma^2_{within})} = \frac{\sigma^2_{between}}{\sigma^2_{between}+3.29_{within}}$

c – Akaike Corrected is an information criterion calculated based on the -2 log pseudo likelihood and is used to compare models. Models with smaller information criterion values fit better.

Source: AmericasBarometer 2014.

Table 5 – The impacts of remittances on the propensity of being asked for bribes

Model	(13) Coefficient	Odds ratio	(14) Coefficient	Odds ratio	(15) Coefficient	Odds ratio
Fixed effects						
Receiving remittances (0-1)			0.341*** (0.066)	1.406		
Household monthly income						
Low			Ref.		Ref.	
Middle			0.018 (0.065)	1.018	0.021 (0.065)	1.021
High			0.199** (0.064)	1.220	0.202** (0.064)	1.223
Perception of corruption						
Very uncommon			Ref.		Ref.	
Uncommon			-0.260* (0.131)	0.771	-0.254 (0.131)	0.776
Common			-0.261* (0.122)	0.770	-0.257* (0.122)	0.773
Very common			0.116 (0.120)	1.123	0.123 (0.120)	1.131
Political networks			0.449*** (0.047)	1.566	0.449*** (0.047)	1.567
Social networks			0.246** (0.072)	1.279	0.242** (0.072)	1.274
Gender			-0.710*** (0.051)	0.491	-0.711*** (0.051)	0.491
Age over 60			-0.565*** (0.095)	0.569	-0.566*** (0.095)	0.568
Education level						

No education			Ref.		Ref.	
Primary			0.120	1.128	0.120	1.127
			(0.159)		(0.159)	
Secondary			0.558***	1.746	0.555***	1.742
			(0.158)		(0.158)	
Tertiary			0.864***	2.373	0.856***	2.354
			(0.165)		(0.165)	
Employment status			0.094	1.099	0.097	1.101
			(0.052)		(0.053)	
Beneficiary of government program			0.228**	1.251	0.227**	1.254
			(0.070)		(0.070)	
Random effects						
Constant (country intercepts)	-1.861***	0.156	-2.509***	0.081	-2.500***	0.082
	(0.138)		(0.250)		(0.252)	
Receiving remittances (0-1)					0.359**	1.431
					(0.105)	
Variance (intercept)	0.299**		0.292*		0.263*	
	(0.112)		(0.115)		(0.116)	
Variance (remittance)					0.044	
					(0.035)	
ICC[a]	0.083		0.081		0.074	
Akaike Corrected[b]	105909.638		81537.657		81532.442	
N (level 1)	21119		16011		16011	
N (level 2)	16		16		16	

*p<.05 ** p<.01 ***p<.001. (Normal) Standard errors in parentheses. Odd ratios bigger than 1 denotes a positive relationship, odd ratios smaller than 1 means a negative relationship and odd ratios equal to 1 means no relationship.

a – SPSS provides variance ($\sigma^2_{between}$) figures, but not ICC results. ICC was then calculated based on the formula in Heck et al (2012, p.157): $ICC = \frac{\sigma^2_{between}}{(\sigma^2_{between}+\sigma^2_{within})} = \frac{\sigma^2_{between}}{\sigma^2_{between}+3.29_{within}}$

b – Akaike Corrected is an information criterion calculated based on the -2 log pseudo likelihood and is used to compare models. Models with smaller information criterion values fit better.

Source: AmericasBarometer 2014.

Table 6 – The impacts of remittances on the propensity of paying bribes

Model	(16) Coefficient	Odds ratio	(17) Coefficient	Odds ratio	(18) Coefficient	Odds ratio
Fixed effects						
Receiving remittances (0-1)			0.234** (0.080)	1.263		
Household monthly income						
Low			Ref.		Ref.	
Middle			-0.070 (0.073)	0.933	-0.068 (0.073)	0.934
High			-0.125 (0.075)	0.882	-0.116 (0.075)	0.890
Perception of corruption						
Very uncommon			Ref.		Ref.	
Uncommon			-0.212 (0.152)	0.809	-0.194 (0.152)	0.823
Common			-0.266 (0.143)	0.767	-0.255 (0.143)	0.775
Very common			0.064 (0.141)	1.066	0.084 (0.141)	1.087
Political networks			0.566*** (0.057)	1.762	0.563*** (0.057)	1.756
Social networks			0.398*** (0.097)	1.489	0.390*** (0.097)	1.478
Gender			-0.146* (0.060)	0.864	-0.148* (0.060)	0.863
Age over 60			-0.175 (0.100)	0.839	-0.178 (0.100)	0.837
Education level						
No education			Ref.		Ref.	

Primary			-0.135	0.874	-0.138	0.871
			(0.153)		(0.153)	
Secondary			-0.111	0.895	-0.112	0.894
			(0.154)		(0.154)	
Tertiary			-0.096	0.908	-0.114	0.892
			(0.166)		(0.166)	
Employment status			0.199**	1.221	0.198**	1.219
			(0.063)		(0.063)	
Beneficiary of government program			0.113	1.120	0.107	1.113
			(0.084)		(0.084)	
Random effects						
Constant (country intercepts)	-2.150***	0.117	-2.549***	0.078	-2.543***	0.079
	(0.272)		(0.376)		(0.384)	
Receiving remittances (0-1)					0.273	1.314
					(0.149)	
Variance (intercept)	1.174**		1.364**		1.352*	
	(0.432)		(0.521)		(0.538)	
Variance (remittance)					0.102	
					(0.060)	
ICC[a]	0.262		0.293		0.291	
Akaike Corrected[b]	113604.845		87700.589		87678.333	
N (level 1)	21148		16028		16028	
N (level 2)	16		16		16	

*p<.05 ** p<.01 ***p<.001. (Normal) Standard errors in parentheses. Odd ratios bigger than 1 denotes a positive relationship, odd ratios smaller than 1 means a negative relationship and odd ratios equal to 1 means no relationship.

a – SPSS provides variance ($\sigma^2_{between}$) figures, but not ICC results. ICC was then calculated based on the formula in Heck et al (2012, p.157): $ICC = \frac{\sigma^2_{between}}{(\sigma^2_{between}+\sigma^2_{within})} = \frac{\sigma^2_{between}}{\sigma^2_{between}+3.29_{within}}$

b – Akaike Corrected is an information criterion calculated based on the -2 log pseudo likelihood and is used to compare models. Models with smaller information criterion values fit better.

Source: AmericasBarometer 2014.

Annex 6: Results without outlier (Haiti)

Table 7 – The impacts of remittances on the propensity of justifying paying bribes

Model	(19) Coefficient	(19) Odds ratio	(20) Coefficient	(20) Odds ratio	(21) Coefficient	(21) Odds ratio
Fixed effects						
Receiving remittances (0-1)			0.207*** (0.057)	1.230		
Household monthly income						
Low			Ref.		Ref.	
Middle			0.028 (0.075)	1.029	0.029 (0.075)	1.029
High			0.088 (0.098)	1.092	0.089 (0.098)	1.094
Perception of corruption						
Very uncommon			Ref.		Ref.	
Uncommon			0.136 (0.139)	1.146	0.136 (0.139)	1.146
Common			0.103 (0.153)	1.108	0.104 (0.154)	1.109
Very common			0.366* (0.171)	1.443	0.368* (0.171)	1.445
Political networks			0.094 (0.079)	1.099	0.094 (0.079)	1.098
Social networks			-0.028 (0.100)	0.973	-0.029 (0.099)	0.971
Gender			-0.369*** (0.057)	0.691	-0.369*** (0.057)	0.691
Age over 60			-0.521*** (0.112)	0.594	-0.522*** (0.112)	0.593

	Model 1 coef.	OR	Model 2 coef.	OR	Model 3 coef.	OR
Education level						
No education			Ref.		Ref.	
Primary			-0.012	0.988	-0.012	0.988
			(0.151)		(0.150)	
Secondary			0.298	1.347	0.299	1.348
			(0.167)		(0.167)	
Tertiary			0.275*	1.317	0.275*	1.317
			(0.140)		(0.139)	
Employment status			-0.046	0.955	-0.047	0.954
			(0.046)		(0.046)	
Beneficiary of government program			0.192**	1.212	0.191**	1.211
			(0.072)		(0.071)	
Random effects						
Constant (country intercepts)	-1.619***	0.198	-1.919***	0.147	-1.920***	0.147
	(0.126)		(0.322)		(0.322)	
Receiving remittances (0-1)					0.229**	1.257
					(0.069)	
Variance (intercept)	0.218*		0.173*		0.159	
	(0.091)		(0.074)		(0.081)	
Variance (remittance)					0.009	
					(0.032)	
ICCa	0.062		0.049		0.046	
Akaike Correctedb	82174.006		68336.023		68334.749	
N (level 1)	16958		13979		13979	
N (level 2)	15		15		15	

*p<.05 ** p<.01 ***p<.001. Robust standard errors in parentheses. Odd ratios bigger than 1 denotes a positive relationship, odd ratios smaller than 1 means a negative relationship and odd ratios equal to 1 means no relationship.

a – SPSS provides variance ($\sigma^2_{between}$) figures, but not ICC results. ICC was then calculated based on the formula in Heck et al (2012, p.157): $ICC = \frac{\sigma^2_{between}}{(\sigma^2_{between}+\sigma^2_{within})} = \frac{\sigma^2_{between}}{\sigma^2_{between}+3.29_{within}}$

b – Akaike Corrected is an information criterion calculated based on the -2 log pseudo likelihood and is used to compare models. Models with smaller information criterion values fit better.

Source: AmericasBarometer 2014.

Table 8 – The impacts of remittances on the propensity of being asked for bribes

Model	(22) Coefficient	(22) Odds ratio	(23) Coefficient	(23) Odds ratio	(24) Coefficient	(24) Odds ratio
Fixed effects						
Receiving remittances (0-1)			0.382*** (0.080)	1.465		
Household monthly income						
Low			Ref.		Ref.	
Middle			-0.003 (0.061)	0.997	-0.002 (0.061)	0.998
High			0.167 (0.098)	1.182	0.170 (0.095)	1.185
Perception of corruption						
Very uncommon			Ref.		Ref.	
Uncommon			-0.288** (0.095)	0.750	-0.280** (0.093)	0.756
Common			-0.284 (0.158)	0.753	-0.279 (0.160)	0.757
Very common			0.087 (0.137)	1.091	0.095 (0.138)	1.100
Political networks			0.442*** (0.088)	1.555	0.441*** (0.087)	1.554
Social networks			0.265* (0.116)	1.304	0.261* (0.114)	1.298
Gender			-0.752*** (0.079)	0.471	-0.754*** (0.079)	0.471
Age over 60			-0.584*** (0.078)	0.558	-0.586*** (0.079)	0.557
Education level						
No education			Ref.		Ref.	

	Coef.	OR	Coef.	OR	Coef.	OR
Primary			0.103 (0.129)	1.108	0.102 (0.131)	1.107
Secondary			0.554*** (0.117)	1.740	0.551*** (0.117)	1.735
Tertiary			0.846*** (0.148)	2.330	0.835*** (0.151)	2.305
Employment status			0.070 (0.051)	1.073	0.070 (0.052)	1.073
Beneficiary of government program			0.191 (0.120)	1.211	0.193 (0.119)	1.212
Random effects						
Constant (country intercepts)	-1.863*** (0.143)	0.155	-2.425*** (0.202)	0.088	-2.419*** (0.200)	0.089
Receiving remittances (0-1)					0.397*** (0.104)	1.487
Variance (intercept)	0.321* (0.125)		0.315* (0.128)		0.285* (0.129)	
Variance (remittance)					0.043 (0.037)	
ICC[a]	0.088		0.087		0.079	
Akaike Corrected[b]	99808.447		77778.228		77769.518	
N (level 1)	19887		15250		15250	
N (level 2)	15		15		15	

*p<.05 ** p<.01 ***p<.001. Robust standard errors in parentheses. Odd ratios bigger than 1 denotes a positive relationship, odd ratios smaller than 1 means a negative relationship and odd ratios equal to 1 means no relationship.

a – SPSS provides variance ($\sigma^2_{between}$) figures, but not ICC results. ICC was then calculated based on the formula in Heck et al (2012, p.157): $ICC = \frac{\sigma^2_{between}}{(\sigma^2_{between}+\sigma^2_{within})} = \frac{\sigma^2_{between}}{\sigma^2_{between}+3.29_{within}}$

b – Akaike Corrected is an information criterion calculated based on the -2 log pseudo likelihood and is used to compare models. Models with smaller information criterion values fit better.

Source: AmericasBarometer 2014.

Table 9 – The impacts of remittances on the propensity of paying bribes

Model	(25)		(26)		(27)	
	Coefficient	Odds ratio	Coefficient	Odds ratio	Coefficient	Odds ratio
Fixed effects						
Receiving remittances (0-1)			0.205 (0.139)	1.228		
Household monthly income						
Low			Ref.		Ref.	
Middle			-0.083 (0.085)	0.920	-0.081 (0.085)	0.923
High			-0.104 (0.089)	0.901	-0.094 (0.084)	0.910
Perception of corruption						
Very uncommon			Ref.		Ref.	
Uncommon			-0.169 (0.121)	0.845	-0.150 (0.125)	0.861
Common			-0.144 (0.204)	0.866	-0.131 (0.211)	0.878
Very common			0.162 (0.189)	1.176	0.182 (0.195)	1.200
Political networks			0.576*** (0.094)	1.778	0.572*** (0.092)	1.773
Social networks			0.406*** (0.090)	1.500	0.395*** (0.086)	1.485
Gender			-0.192*** (0.043)	0.825	-0.194*** (0.042)	0.824
Age over 60			-0.257** (0.081)	0.773	-0.259** (0.080)	0.772
Education level						
No education			Ref.		Ref.	

|						
Primary			-0.168	0.845	-0.171	0.843
			(0.157)		(0.160)	
Secondary			-0.135	0.873	-0.135	0.874
			(0.123)		(0.124)	
Tertiary			-0.116	0.890	-0.135	0.874
			(0.107)		(0.109)	
Employment status			0.171***	1.186	0.170***	1.185
			(0.042)		(0.042)	
Beneficiary of government program			0.100	1.105	0.095	1.100
			(0.135)		(0.132)	
Random effects						
Constant (country intercepts)	-2.382***	0.092	-2.847***	0.061	-2.846***	0.058
	(0.128)		(0.323)		(0.324)	
Receiving remittances (0-1)					0.265	1.303
					(0.159)	
Variance (intercept)	0.251*		0.228*		0.212	
	(0.102)		(0.097)		(0.121)	
Variance (remittance)					0.108	
					(0.066)	
ICC[a]	0.070		0.064		0.060	
Akaike Corrected[b]	107492.222		83718.744		83754.321	
N (level 1)	19901		15257		15257	
N (level 2)	15		15		15	

*p<.05 ** p<.01 ***p<.001. Robust standard errors in parentheses. Odd ratios bigger than 1 denotes a positive relationship, odd ratios smaller than 1 means a negative relationship and odd ratios equal to 1 means no relationship.

a – SPSS provides variance ($\sigma^2_{between}$) figures, but not ICC results. ICC was then calculated based on the formula in Heck et al (2012, p.157): $ICC = \frac{\sigma^2_{between}}{(\sigma^2_{between}+\sigma^2_{within})} = \frac{\sigma^2_{between}}{\sigma^2_{between}+3.29_{within}}$
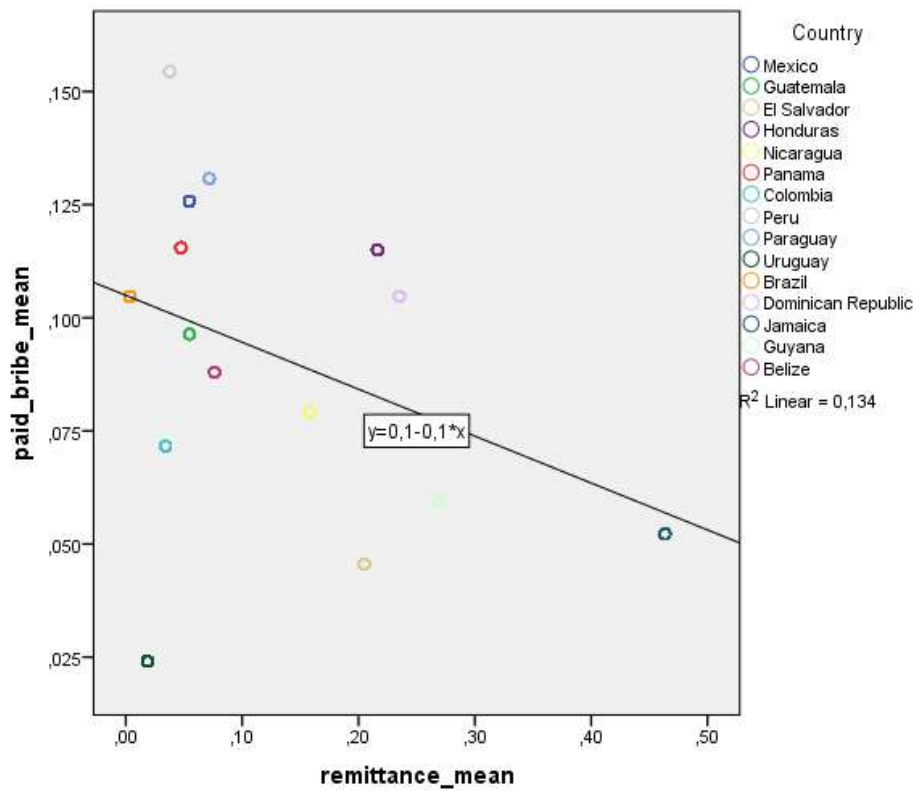
b – Akaike Corrected is an information criterion calculated based on the -2 log pseudo likelihood and is used to compare models. Models with smaller information criterion values fit better.

Source: AmericasBarometer 2014.

The scatterplot with Haiti
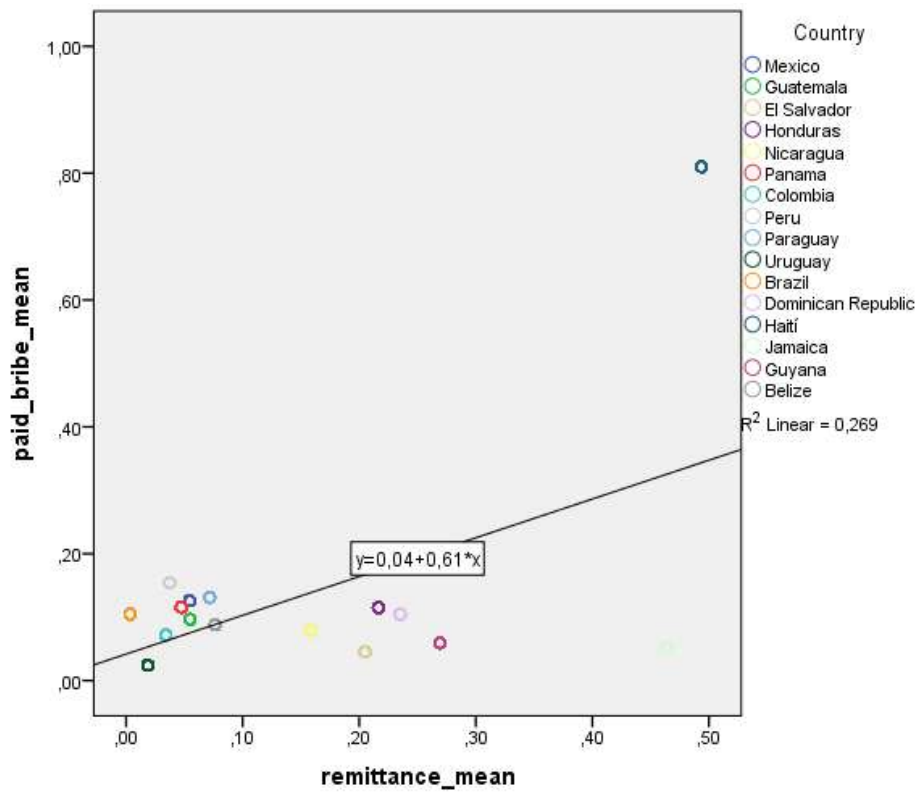
The scatterplot without Haiti

Annex 7: Missing data patterns

The analysis of missing data can be implemented by the Multiple Imputation component, Analyze Patterns, in SPSS version 23. The following pie charts indicate the percentage of missing variables, cases and individual cells that have at least one missing value. The Variables pie shows that 11 variables (84.62% of those included in the analysis) have at least one missing value. The Cases pie demonstrates that 6,470 (30.59%) of the 21,149 cases contain at least one missing value. In the Values pie, about 3.1% of all values are missing.

Overall Summary of Missing Values
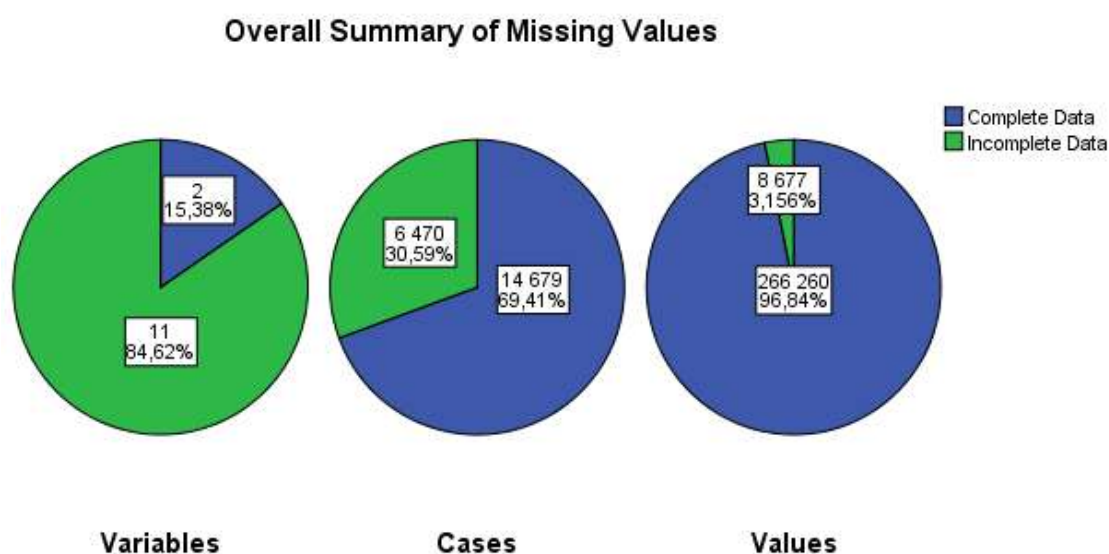
Below is the list of variables having at least 0.01% values to be missing, in the order from highest to lowest number of missing values. Three variables, paid bribe, political networks and gender, are not included in this table because they do not contain any missing values.

Variable Summary[a,b]

	Missing		
	N	Percent	Valid N
Justify paying bribe	3041	14.4%	18108
Household monthly income level	2954	14.0%	18195
Perception of the spread of corruption	2204	10.4%	18945

Receiving remittances	168	0.8%	20981
Beneficiary of government program(s)	142	0.7%	21007
Education level	60	0.3%	21089
Employment status	48	0.2%	21101
Being asked for bribe	30	0.1%	21119
Age over 60	25	0.1%	21124
Social networks	4	0.0%	21145

a. Maximum number of variables shown: 25

b. Minimum percentage of missing values for variable to be included: 0.0%