Remittances from Saudi Arabia: *A Community phenomenon*

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Abstract

The remittances sent home by overseas Pakistani workers have more than quadrupled in the last eight years to more than $13.186 billion by June 2012, with expatriates in Saudi Arabia sending more remittances to Pakistan than from anywhere else in the world. This study uses a sample of 542 Saudi migrant households from nine high migration districts in 2009 to ascertain the factors that encourage Saudi migrants to send back remittances. The study analyses individual, household and community determinants of remittances in a combined framework. The findings of the study strongly establish the education of the migrant as the most important factor affecting the level of remittances to Pakistan from Saudi Arabia. In addition, the study provides a novel and interesting insight into the role of community level variables in explaining differential remittance flows to the districts analysed This indicates that the role of the government is not just limited to designing and implementing migration and remittance policies, but has a stronger role to play in influencing the flow of remittances to Pakistan by influencing the level of economic development across districts.

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Motivations to Remit: Evidence from Pakistan

1. Introduction

Remittances are increasingly becoming an essential source of foreign exchange in developing countries, in some cases, even more than official development assistance. Recent estimates from the World Bank indicate that global remittances are expected to exceed $590 billion, with almost 75% of these remittances flowing to the developing countries. Pakistan became the fifth largest remittance-recipient nation in the developing world in 2011[3], registering a strong growth of 25.8%, relative to a 10.1% growth in remittances to South Asia. According to an IMF research paper, workers' remittances contribute almost 4% to the country's GDP, and are equivalent to almost 22% of annual exports of goods and services[4].

Remittances to Pakistan have shown a strong rising trend; from being less than $2 billion dollars in 1997 to reaching almost $10 billion in 2010. In fact, the total remittances sent home by overseas Pakistani workers have more than quadrupled in the last eight years to more than $13.186 billion[5], the highest-ever amount received in a year by the country in the last fiscal year, which ended in June 2012. Interestingly, the almost 1.5 million Pakistani expatriates residing in Saudi Arabia send more remittances to Pakistan than from expatriates working and residing in other countries.[6] The magnitude of the flows as well as the unique nature of the migrants to

[3] after India ($58 billion), China ($57 billion), Mexico ($24 billion), and the Philippines ($23 billion)
[4] Kock and Sun (2011) *Remittances to Pakistan- Why have they gone up and why aren't they coming down?* IMF Working Paper
[5] http://www.defence.pk/forums/economy-development/207711-saudi-arabia-now-largest-source-remittances-pakistan.html
[6] Share of remittance flows to Pakistan: Saudi Arabia (27.5%), UAE (18.2%), US (14.4%), UK (9.9%).

Saudi Arabia make the question of what determines remittance flows from Saudi Arabia a lot more interesting.

The literature on remittances broadly categorizes the determinants of the level of remittances into microeconomic and macroeconomic factors. The microeconomic strand of literature discusses several individual (migrant) and household characteristics which have been greatly analyzed, in conjunction with the theoretical[7] determinants of remittances. The set of individual characteristics include migrant's income, age, gender, education level, risk level, marital status, along with duration of migration, cost of migration, and intent to return. On the other hand, the household characteristics that are likely to affect remittances sent back home include household income, household wealth, dependency ratio, age of the household head, education of the household head, number of other migrants in the household, and negative household shocks[8].On the macroeconomic front, the factors that are more likely to influence a country's remittance receipts include the country's migrant stock, wages in home and host country, economic situation in host and home country, exchange rate, interest rate gap between home and host country, political risks, and financial sector stability in home country.

Lately, an important development in the theoretical and empirical literature on remittances has been an emphasis on the role of community variables in affecting the level of remittances received. Unlike the individual and household migration models, the community-level migrations models are less theoretically well-specified and empirically under-researched. However, for policy purposes, it is particularly useful to be able to identify the impacts of

[7] The theories of remittances broadly include the pure altruism (Becker,1964); pure self-interest ; tempered altruism or enlightened self-interest (Lucas & Stark, 1985); exchange motives (Cox, 1987); co-insurance theory (based on the New Economics of Labour Migration); implicit family loam arrangement (Poirine, 1997)

[8] A comprehensive summary of empirical literature on determinants of remittances can be found in Hagen-Zanker and Siegel (2007).

community variables as it is at the community level that most development policies and programs are designed and implemented[9]. Some studies have simply noted significant regional differences in the likelihood that households receive remittances by including regional dummies (Massey and Basem, 1992; Funkhouser, 1995; Lerch and Wanner, 2006), while some studies have estimated the specific effect of the receiving community's development level, for example, results indicate that households in rural communities are more likely to receive remittances than similar households in towns and cities. Kurien (2008), based on extensive ethnographic fieldwork on remittances in three village communities in Kerala, India, observes striking differences in remittance flows and remittance expenditure in the three villages, which all experienced large-scale migration to the Gulf region[10]. Piracha and Siraogi (2011) analyse the role of two important community variables, trust in different financial institutions[11] and network effects[12], as determinants of remittances to Moldova. Their results indicate that the household's trust in the financial institutions in the home country increases the incidence of remittances by 20%, while households with networks at the destination country are 7.5% more likely to receive remittances than those without one.

There are several studies on remittances in Pakistan focusing on the determinants and impacts of workers' remittances, with a relatively greater focus on migrants and remittances from the Gulf States. Pasha and Altaf (1987), in an exploratory study of Pakistani migrants in

[9] Katz, E. (2000) Individual, Household and Community-Level Determinants of Migration in Ecuador: Are there gender differences? *Annual Meeting of the Population Association of America, Los Angeles, CA*

[10] The author finds that whereas in the Muslim village, emphasis was given to distributing remittances to a large circle of community members, migrants in the Hindu village tended to spend large sums of money on life-cycle rituals. In the Christian village, remittance expenditure was largely confined to the immediate family, with an emphasis on saving the money earned for dowries and education. These differences should also be partly attributed to differences in migration selectivity, with Muslim migrants mostly working in the informal sector of Gulf countries and Hindu and, particularly, Christian villagers taking up formal positions as technicians, clerical workers and semi-professionals.

[11] This variable is expected to be a proxy for an efficient economic environment in the country which is likely to have a positive impact on remittance flows

[12] It is a dummy variable equal to one if the household ahs social contacts in the host country and zero otherwise.

Saudi Arabia, found the investment motive to be influential in the migrant's decision to remit, while Nishat an d Bilgrami (1993) found migrant's income, education, number of dependents, urban location, and choice of profession on return as significant determinants of worker's remittances from the Gulf. Illahi and Jaffery (1999) employed a standard life-cycle approach and found the informal loan repayment theory important for returning Pakistani migrants. One of the most recent macroeconomic evidence on remittance flows to Pakistan is provided by Kock and Sun (2011). Their study analyses forces that have driven the substantial increase in remittance flows to Pakistan in recent years. Their main conclusions are that the growth in remittances is largely due to an increase in migration and an increase in the skill-levels of those migrating. In addition, the study finds that agricultural output and the relative yield on investments in host and home countries are other important determinants of remittances to Pakistan.

On the microeconomic front, the recent evidence on the motivations to remit has been gathered by Anwar and Mughal (2012). Using household survey data for 2005-06 and 2007-08, the authors examine the economic, demographic and geographical characteristics of remittance-receiving households in Pakistan. The authors find that gender of the household head, household size, family income, and urban/rural settings are the major determinants of remittances, while education and family wealth are the minor determinants of remittances in Pakistan. However, a major shortcoming of this study is that it does not include any migrant characteristics which are most likely to affect the remittances sent back home.

Therefore, a major contribution of this study is that it attempts to provide a more holistic view of the determinants of remittances from Saudi Arabia to Pakistan by analyzing the characteristics of the migrant, household, and the community in a combined framework. Unlike many studies that already exist, this study is based on a comprehensive migration and

remittances survey and thus benefits from detailed information about the migrant and his household which is seldom available in general household surveys. Furthermore, this study is the first[13] study that attempts to analyse the role of community-level variables in determining the level of remittances, thus suggesting a stronger role of the government in promoting community development to promote remittance-growth.

The organization of the paper is as follows: Section 2 describes in detail the data set being providing important summary statistics; Section 3 explains the methodology employed and the variables used while Section 4 illustrates the findings of the study. Finally, Section 5 concludes with a discussion on possible policy implications of the findings from this study.

2. Data

This study employs a unique data set collected in the Household Survey of Overseas Migrants and Remittances (HSOMR) conducted in 2009[14]. The HSOMR was funded by the International Organization for Migration (IOM), designed in coordination with the Ministry of Labor and endorsed by the Ministry of Foreign Affairs. This survey is based upon 548 households, with at least one family member working in Saudi Arabia. It is restricted to the households of *male* migrants who went to Saudi Arabia between 1994 and July 2006. The sample includes only those households which had migrants working in Saudi Arabia for at least 3 years but no more than 15 years.

The survey covers nine high-migration districts of the four provinces of Pakistan and Azad Jammu and Kashmir: Rawalpindi, Gujranwala, Lahore and Dera Ghazi Khan from Punjab; Karachi and Larkana from Sind; Peshawar from Khyber Pakhtunkhwa; Quetta from Balochistan;

[13] According to the best knowledge of the authors

[14] A report has been prepared on this data by G.M.Arif (2009) which provides interesting descriptive statistics on the data collected in this survey.

and Kotli from Azad Jammu and Kashmir. About 48% of the sampled households are from urban areas while 52% are from rural areas. A detailed breakup of households from every region in each of the district sampled is shown in Appendix A.

A typical migrant to Saudi Arabia in 2009 sent, on average, Rs 228, 191 (in cash and kind) annually back home while staying abroad for almost 7-8 years. Moreover, a brief demographic profile of the migrant reveals that a migrant is almost 26 years when he migrates and is usually the son of the head of the household. Also, almost two-thirds of the sampled migrants have ten or more years of education, with three-quarters of these migrants already working in Pakistan before migration. This indicates that Saudi Arabia represents a better and lucrative source of job opportunities for young Pakistanis.

Table 1: Profile of a Migrant to Saudi Arabia

Average Remittances received per household during the year preceding survey	Rs 184, 613
Average Remittances received per household since migrant went to Saudi Arabia	Rs 1,047,084
Mean value of remittances in kind	Rs 43,578
Mean duration of stay abroad	7.6 years
Average age of migrant at time of migration	26.3 years

A disaggregated analysis (Table 2) of average remittances provides important insight, especially because no study for Pakistan has attempted to shed light on this aspect. The average remittance varies significantly across the nine districts with a stark difference between Peshawar,

receiving the lowest remittances, on average, and Lahore, receiving the highest remittances, on average. This raises important policy questions as to why some districts are able to attract higher remittances relative to others, especially because given the magnitude of remittances and the several direct and indirect effects remittances have on the recipient community, this difference in remittances may possibly be a factor influencing differences in development across these districts. Therefore, an important objective of this study is to ascertain the potential reasons that could explain this difference in remittances across these districts.

Table 2: Average remittances across districts and regions

District.	**# HH**	**Avg Remittances (Rs)**	**Rural (Rs)**	**Urban (Rs)**
Peshawar	71	80,985.92	73,974.36	89,531.25
Gujranwala	64	121,640.60	116,547.60	131,363.60
Larkana	56	125,178.60	123,571.40	130,000.00
D.G.Khan	50	135,800.00	134,750.00	140,000.00
Karachi	77	165,454.50	103,636.40	175,757.60
Kotli	54	213,796.30	223,157.90	191,562.50
Rawalpindi	72	232,961.40	241,102.40	215,617.40
Quetta	29	283,172.40	258,888.90	294,100.00
Lahore	69	339,927.50	325,454.50	342,672.40

3. Methodology

The study estimates a simple log-linear model of the following specification to analyse factors that determine the amount of remittances Pakistani migrants to Saudi Arabia send back home

$$\boldsymbol{lnremittances_i = \alpha M_i + \beta H_j + \sum D_k + \varepsilon} \qquad (1)$$

where *M* is a vector of migrant characteristics, *H* is a vector of household characteristics, *D* is a dummy of districts, and ε is the error term.

The literature on remittances generally characterizes remittances as a two-stage model whereby the first stage concerns the individuals decision to whether to send home remittances or not, and the second stage involves the decision about how much to send, for those who decide to send remittances in the first stage. This methodology requires a sample in which some migrants send and some do not send back remittances. However, given the special nature of the data set employed for this study, the sample includes all Saudi migrants who are sending remittances back home in Pakistan. Therefore, the dependent variable used is the log of the amount of remittances sent back by the migrant in the last year[15] (the logarithm being used to smooth the values). The specified equation is estimated using Ordinary Least Squares (OLS).

The vector of migrant characteristics include the age of the migrant (in years), the education of the migrant[16] , the duration of migration, and the marital status of the migrant. The *age* and *education* of the migrant serve as a proxy for the earning capacity of the migrant. Migrants with higher age and higher education are likely to possess greater human capital which

[15] Last year is 2008 as the HSOMR survey was conducted in 2009.
[16] Measured as the highest class completed

is likely to translate into higher income. According to the pure altruism theory (Becker 1974) higher migrant income results in greater remittances sent back home. The self-interest theory of remittances also predicts a positive relationship between migrant's income and remittances, though with a different explanation. The pure self-interest motive argues that a migrant sends remittances with the aspiration to inherit, to demonstrate laudable behaviour as an investment for the future or with the intent to return home. In addition, the education of the migrant also serves as a proxy for the investment the migrant's parents have made in the migrant (both in terms of cost and effort). Therefore, the implicit family loan theory ((Poirine, 1997) hypothesizes that migrants with higher level of education send higher remittances to repay parents' investments in their education.

The *marital status* of the migrant serves as a proxy for the family ties of the migrant. Therefore an altruistic migrant is likely to send back higher remittances if he has a spouse and/or children back home. The *duration* of the migrant abroad can be expected to have either a positive or a negative effect on remittances. Intuitively, the longer the stay abroad, the more settled the migrant is likely to get with greater stability in job and incomes leading to higher remittances for the family back home (altruistic motives). However, longer durations are also likely to reduce ties with family back home, especially if the migrant's spouse and children join the migrant once he settles down abroad, resulting in lower remittances (the remittance-decay hypothesis).

The vector of household characteristics includes a dummy variable for urban/ rural region, the dependency ratio[17], working members in the household[18]. The *region dummy* is included to capture differences in remittances that may be arising due to differences in

[17] Calculated as the ratio of household members less than 15 years (children) or more than 60 years of age(old} to total household members (including the migrant member).
[18] Other than the migrant member.

unobservable factors prevalent in rural versus urban areas of the sampled districts. The *dependency ratio* and *working members* measure the responsibility falling upon the shoulders of the migrant member, especially if he is the most important earning member of the household. Therefore, altruism dictates that the migrant member is likely to send higher remittances if there are greater dependents at home and lower remittances if there are greater working members back home who are contributing to the household income. In order to capture the differences in average remittances across districts (Table 2) eight district dummies are included, with Lahore as the omitted (base) district.

As the study aims to delve into the possible reasons for the difference in remittances across districts, equation 1 is revised as

$$\boldsymbol{lnremittances_i = \alpha M_i + \beta H_j + \mu C_k + \varepsilon} \qquad (2)$$

where *C* is a vector of community(district) characteristics that are likely to affect the inflow of remittances from Saudi migrants. Unlike equation 1, the OLS regression specified in equation 2 does not include district dummies to avoid the issue of multicollinearity[19].

As mentioned earlier, the role of community variables in determining remittances is largely under-researched and under-tested, particularly for Pakistan. Therefore, as a first attempt to unravel these interesting determinants of remittances, this study includes variables which are available in existing data sets. As the HSOMR was conducted as a purpose-based household survey, it does not provide sufficient information about the district characteristics. Therefore, the Pakistan Social and Living Standards Measurement Survey (PSLM) 2008-09 is used to construct community variables used in the OLS regression specified above. The PSLM is representative at

[19] there is a strong correlation between the community variables and the district dummies.

the district level, covering both rural and urban areas, and is complete for all four provinces. However, the PSLM does not include districts from Kashmir, therefore Kotli district (Kashmir) is not included in the regressions involving community variables[20].

The vector of community characteristics includes the districts' well-being index, and the district's employment rate. The *well-being index* (basic needs index)[21] has been constructed by Said, Musaddiq and Mahmud (2011) for an investigation of the macro level determinants of poverty through poverty mapping of all districts of Pakistan. This index serves as a comprehensive measure of the average living standards of a district, which can be taken as a reasonable proxy for the development level of the districts. The expected sign of this variable is ambiguous. It is possible that districts with lower development levels attract higher remittances, in accordance with the altruism theory. However, it is also possible that districts with greater level of development provide their residents with better education and migration opportunities which enable them to attract higher remittances.

The *employment rate* is included to capture the demographic profile of the district. The employment rate measures the overall employment opportunity in the district and is calculated as a ratio of employed people to the total labor force. Higher employment rates are likely to indicate higher living standards of the average population in the district which could attract higher or lower remittances. Also, it is possible that higher employment rates signal lack of lucrative opportunities in the job market, encouraging young people to migrate to Saudi Arabia, and higher migration rates are most likely to result in higher remittances.

[20] This reduces the sample of migrant households from 542 to 488.
[21] The details about the variables used by Said, Musadddiq and Mahmud (2011) in the construction of the well being index can be found in Appendix B.

4. Findings

The OLS regression specified in equation 1 is illustrated in Table 3 where Column 1 shows the regression results of migrant and household characteristics as the only determinants of the (log of) remittances sent back home by the Saudi migrant, while Column 2 includes the district dummies.

Table 3: OLS Regression Results of Equation 1

	(1) lnremittances	(2) lnremittances
Age of the Migrant	0.00495**	-0.000256
	(0.00205)	(0.00175)
Education of the Migrant	0.0237***	0.0175***
	(0.00549)	(0.00467)
Duration	0.0767*	0.0255
	(0.0392)	(0.0324)
Duration^2	-0.00425*	-0.000529
	(0.00222)	(0.00185)
Migrant Marital Status	-0.0478	0.0280
	(0.0713)	(0.0592)
Dependency Ratio	0.275*	0.0282
	(0.153)	(0.129)
Working Members	-0.0477**	-0.00102
	(0.0212)	(0.0180)
Urban	0.137**	-0.00459
	(0.0593)	(0.0538)
Peshawar		-1.317***
		(0.0973)
Rawalpindi		-0.355***
		(0.0982)
Kotli		-0.595***
		(0.111)
Gujranwala		-0.948***
		(0.0991)
Dera Ghazi Khan		-0.854***
		(0.110)
Larkana		-0.970***
		(0.104)
Karachi		-0.867***
		(0.0920)
Quetta		-0.102
		(0.125)

Constant	11.21***	12.24***
	(0.169)	(0.163)
Observations	542	542
R-squared	0.092	0.408

(In Column 2 the base category is Lahore district)

Standard errors in parenthesis, *** p<0.01, ** p<0.05, * p<0.1

As expected, most of the individual and household characteristics come out to be significant, and possessing the hypothesized signs. On average, migrants with greater age and education are likely to send back home relatively higher remittances. A possible explanation for this is that migrants with greater age are likely to possess greater experience, while higher education is likely to imply greater skills which can serve as a plausible proxy for the migrants' income. Consistent with the classical remittance theory of the altruism motive, greater experience and greater skills leading to higher migrant income is likely to motivate the migrant to remit a higher amount for family back home as the utility function of the migrant is greatly a function of the welfare of his family in the home country.

Interestingly, the duration variables provide evidence in favor of the remittance-decay hypothesis. The change in the sign and significance of the duration variables clearly indicates a non-linear relationship between the duration of the migrant's stay in Saudi Arabia and the amount of remittances he sends back home in Pakistan. Initially, remittances increase as the migrant possibly gets settled in Saudi Arabia and achieves income stability, but after a certain number of years have passed, the migrant lowers the amount of remittances he sends back home. This may be a result of the migrant's household achieving financial stability over the course of time thus reducing the need of remittances from the Saudi migrant; or the Saudi migrant planning to return back home soon after. It must be noted here that this study focuses on a

sample of migrants that stay in Saudi Arabia not less than 3 years and not more than 15 years, with an average migrant returning back home after almost 7-8 years.

An overview of the household characteristics shows that households with greater number of dependents and located in urban areas are likely to receive higher remittances, while households with more working members (besides the Saudi migrant) are likely to receive lower remittances.

While the regression in Column 1 provides strong evidence of the significant role of individual and household characteristics in determining the amount of remittances sent by the migrant from Saudi Arabia, the regression in Column 2 reveals a stark contrast. The inclusion of the district dummies greatly improves the explanatory power of the regression model[22], but contrary to expectations, it significantly reduces the significance of most of the individual and household characteristics. This provides an interesting and important insight into the determinants of remittances sent by Saudi migrants. Consistent with the stark difference in average remittances received by the nine districts in the sample (as highlighted in Table 2), the strong significance of almost all district dummies implies that there are significant district differences which account more for the differences in the remittances sent by Saudi migrants, relative to differences in individual and household characteristics. This highlights the strong role of community development in promoting receipts of remittances.

[22] The R^2 increases from just 9.2% to almost 40%.

Table 4: OLS Regression Results of Equation 2

	ln remittances
Age of the Migrant	-0.000911
	(0.00213)
Education of the Migrant	0.0259***
	(0.00534)
Duration	0.0824**
	(0.0374)
Duration^2	-0.00410*
	(0.00216)
Migrant Marital Status	0.0759
	(0.0694)
Dependency ratio	0.208
	(0.151)
Working Members	-0.0279
	(0.0221)
Urban	0.0177
	(0.0599)
District Well-Being Index	0.0653***
	(0.0129)
Employment Rate	-1.691***
	(0.204)
Constant	12.50***
	(0.244)
Observations	488
R-squared	0.257

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

In an attempt to identify possible community characteristics which could be driving the stark differences in remittances across districts, an OLS regression is done which combines individual, household and community-level determinants of remittances in a single framework (results in Table 4). Interestingly, the district well-being index comes out to be strongly significant, implying that Saudi migrants send back relatively greater remittances if they hail

from relatively more developed districts. In other words, a migrant from Lahore is more likely to send higher remittances than a migrant from, for example, Peshawar even if both migrants possess similar individual characteristics and belong to similar households. There are likely to be several possible explanations for such a phenomenon to prevail. Districts that are more developed have better endowments and opportunities like education, skill acquisition, information availability, and networks which greatly facilitate migrants, and more educated, skilled, and/or informed migrants are more likely to send home higher remittances.

Another interesting explanation for this community phenomenon to exist is the self-interest/ investment motive of the migrant. According to the theory of pure self-interest (or enlightened self-interest[23]), a migrant sends home remittance with the aspiration to inherit or make investments for the future. Analogous to this, a migrant sends higher remittances to more developed districts for greater investments (in land, property, physical and financial assets) which are expected to provide greater returns in the future. An important caveat to note here is that migration to Saudi Arabia is not permanent as certain laws and regulations prevent permanent residency status of migrants. Therefore, Saudi migrants are likely to return back to their families in Pakistan after, on average, say 7-8 years of after achieving target incomes. So higher remittances are sent back over the migration duration to make profitable investments for the future when the migrant finally returns back home.

However, the importance of district development levels for remittance flows is also suggestive of the evidence in support of the phenomenon of the "*rich getting richer and the poor getting poorer"*, which raises important political economy questions about equitable distribution of resources across districts and thereby, across provinces.

[23] Lucas and Stark, 1985

Moreover, the district employment rate emerges as strongly significant but with a negative sign. This indicates that Saudi migrants send back relatively lower remittances back home if employment rates are relatively higher in their home districts. The argument in this regard is similar to the case of households with greater earning members, besides the migrant. Greater employment opportunities (and more working members) are likely to result in suitable income back home, leaving a smaller gap to be filled in by the migrant's remittances to maintain a certain standard of living. In addition, it may be conjectured that high employment rates signal saturated job markets in home districts due to which the migrant may be involved in arranging and financing the migration of other migrant members, and therefore not sending that much remittances back home.

Although the findings greatly highlight the importance of community-level variables in determining the level of remittances sent by the migrant, across all regressions, the most important determinant of the remittances sent by the migrant is the ***education of the migrant***. The literature on remittances provides mixed evidence on the relationship between education of the migrant (which is a plausible measure of the migrant's earning capacity) and the remittances sent back home. Faini (2007) and Adams (2008), for example, using cross-country data from several developing countries find that skilled (educated) migrants tend to remit less than unskilled migrants. However, Bollard et al (2009) argues using micro data from immigrant surveys in 11 OECD countries that education is strongly and positively related to the amount remitted. The OLS regressions in both Table 4 and 5 shows that education of the migrant is most significant and robust to all controls: individual, household and even community. This implies that investments in education can have additional productive gains in terms of greater

remittances for the household and there is a large strand of literature that provides evidence of the positive impact of remittances both at the household and community level.

5. Conclusions

The objective of this study was to analyse the individual, household and community-level determinants of remittances to Pakistan from expatriates residing in Saudi Arabia, especially since migrants based in Saudi Arabia send the highest remittances to Pakistan compared to migrants residing in other countries across the world. There are two important findings that result from the econometric analysis conducted in this study.

Firstly, the education of the migrant is the most important factor affecting the level of remittances sent back home. This reinforces the stronger emphasis of public policy on boosting education and skill levels of the country's labor force. A better educated and skilled labor force will not just directly boost economic growth by improving domestic labor productivity, but also indirectly via the substantial flows of remittances which are a major injection into the economy's circular flow of income capable of generating multiplier effects.

Secondly, community level variables play a strongly significant role in affecting the level of remittance flows. This implies that differential remittance flows across districts can be attributed to inequitable development across districts. This highlights the need for greater focus of national and provincial governments on promoting more equitable development across districts so that the less developed districts could benefit more fully from the benefits of remittances.

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Appendix A: Classification of Households in the Sample

# HH	Rural (Rs)	Urban (Rs)	Total
Punjab			
Lahore	11	58	69
Gujranwala	42	22	64
D.G.Khan	40	10	50
Rawalpindi	49	23	72
Total	*142*	*113*	**255**
Sindh			
Larkana	42	14	56
Karachi	11	66	77
Total	*53*	*80*	**133**
NWFP			
Peshawar	39	32	71
Total	*39*	*32*	**71**
Balochistan			
Quetta	9	20	29
Total	*9*	*20*	**29**
Kashmir			
Kotli	38	16	54
Total	*38*	*16*	**54**
	281	261	542

Appendix B: Variables used in the construction of the District Well Being Index

Variable	**Value**
Housing Characteristics/Physical Environment	
What type of toilet facility does the household have?	=1 if flush system, 0 otherwise (Averaged at district level)
What is the main source of drinking water for the household?	=1 if any other source, =2 if Tanker Trunk, water fetcher. =3 if river, stream or pond, =4 if Open well =5 if covered well, =6 if water motor, =7 if hand pump, =8 if tap (outside home),=9 if tap (inside home)
What is the main source of fuel for cooking?	=1 if electricity, gas or oil, 0 otherwise (Averaged at district level)
What is the main source of fuel for lighting?	=1 if electricity or gas, 0 otherwise (Averaged at district level)
Does the household have access to telephone?	=1 if mobile or landline, 0 otherwise (Averaged at district level)
What is the material used in construction of the walls of the house?	=1 if burned bricks/blocks, 0 otherwise (Averaged at district level)
What is the material used in construction of the roof of the house?	=1 if RCC/BCC or cement, 0 otherwise (Averaged at district level)
Health indicators	
Attended births in the district	Number of births in the last 3 years attended by doctor, nurse or trained midwife/Total number of births in the last 3 years
Immunization Rate of the district	Number of children aged 6 and below immunized/Total number of children aged 6 and below
Education Indicators	
Gross Primary enrollment rate of the district	Number of children enrolled in primary schools/Total number of children aged between 3 and 10 years
Gross Secondary enrollment rate of the district	Number of children enrolled in secondary schools/Total number of children aged between 9 and 15 years
Adult Literacy Rate (Female) of the district	Number of females aged 17 and above who can read and write in any language with understanding/Total Number of females aged 17 and above
Adult Literacy Rate (Male) of the district	Number of males aged 17 and above who can read and write in any language with understanding/Total Number of males aged 17 and above