

## **AN ECONOMIC IMPACT OF REMITTANCES IN RURAL ECONOMY**

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The rationale of this research study was to estimate the socio-economic impacts of remittances on the left behind households in district Sialkot. This research paper focused on the direct, first-order effects of remittances at household level. The study is based on the primary data. Data collection tool for the study was the survey method. The data was collected from 88 respondents in the rural areas. The most of the respondents were the migrants' brothers. The major destinations of the overseas migrants were the Saudi Arabia, Greece, Dubai, Kuwait, Oman and Italy. Low income has exposed as a major reason for more than 45%, for overseas migration. The most of the overseas migrants (38%) had attained middle level of education at the time of migration. The major occupations abroad were the daily wage laborers. There was mix trend about the received remittances. Around 52% of the households received on an average up to Rs. 20,000 and about 41% received Rs. 20,001-40,000 on per month basis. Descriptive Statistics and Regression models were also used for data analysis. All variables included in the model were highly significant. Adjusted R Square was 0.54, which indicated that independent variables included in the model explained about 54% of the total variation in the dependent variable. The findings regarding remittances use patterns revealed that the migrants' left behind households used the major portion of the remittance on household consumption, house construction/improvement, purchase of luxuries etc; but a relatively small portion of the remittances was used in productive investment (like agriculture land, livestock etc.). It is suggested that the Government should develop a policy to encourage the migrants' households to use remittances in productive activities such as the establishment of small industrial units, small businesses etc. so that the unemployed children of migrants should be encouraged to join such centers to utilize their talents and earn their income.

**Keywords:** Economic impact, migration, remittances, rural economy

### **INTRODUCTION**

Remittances sent home by overseas Pakistani workers crossed the \$13 billion mark for the first time in country's history during the last fiscal year 2011-12. They remitted a record amount of \$13,186.58 million during the last fiscal year that ended on June 30, 2012, showing an impressive growth of 17.73 percent when compared with \$ 11,200.97 million received during the preceding fiscal year 2010-11 (SBP, 2012). The major source countries of remittances to Pakistan included UAE, USA, Saudi Arabia, GCC countries (including Bahrain, Kuwait, Qatar and Oman), Australia, Canada, Japan, UK and EU countries like Norway, Switzerland etc. (SBP, 2011). The major continent of destination for overseas migrants from Pakistan is Asia, with 72.5% of total emigrants living there. The USA is the host to nearly 40 million international migrants. It is estimated that there were about 214 million international migrants in the world in the year 2010 (Government of Pakistan, 2010).

The unemployment situations, low income and poor socio-economic position of the households are big reasons of overseas migration. Economic security is also the dominant factor in determining the emigration behavior to find out a secure economic opportunity in a foreign country (Yang, 2009).

The impact of worker's remittances in economic development of receiving countries is considered to be an important area of research. But particular sound research in this area is central for policy makers in order to plan wise policies to channel these flows of remittances into productive investment. Remittances have turn out to be an important source of foreign exchange earnings, mostly from developed countries to developing countries. The availability of foreign exchange through remittances has not only supported the recipient countries in getting a reasonably higher economic growth by reducing the current account deficit, it has also reduced their external borrowing as well as external debt burden. There is, however, also an alternative analysis that remittances may have a negative impact on output in beneficiary economies (Jamal, 2004).

This research study focused on the direct, first-order impacts of remittances at the household level. It means that the study entirely ignores the second and third order impacts of remittances on employment, wages and production etc. This difference of scope of the study shows a clear importance of this research work. Thus the objectives of the study were to find out the impact of remittances on the socio-economic conditions of the rural households and to estimate the change in household expenditures on consumption, durables, investment due to remittances. This research paper is divided into five parts. Second part explains materials and methods

for the research, third part explains about results and discussions, and fourth part is about conclusions and suggestions.

## MATERIAL AND METHODS

Percentage distribution of foreign remittance by province Punjab is 67.6 for the year 2007-08 (Amjad *et al.*, 2012). Major districts of out-migration within Punjab are Jehlum, Sialkot, Gujrat and Gujranwala with the share of overseas migrants as 11.1%, 10.9%, 10.7% and 8.2%, respectively (Government of Pakistan, 2003). For the year 2007-08 with larger volume of total remittances, the district ranking changed. Gujarat, Sialkot and Mandi Bahauddin acquired the importance with the receipt of 26 percent of the total remittances (Irfan, 2011). Khan (2007) researched on the topic entitled "Overseas Migration and its Socio-Economic Impacts on the Families Left Behind in Pakistan" by selecting the districts Jehlum and Gujrat. Among the major districts of out-migration within Punjab, the socio-economic impacts of remittances at household level had not been analyzed since for in district Sialkot. Therefore the selected population for this research study were the households from district Sialkot village areas whom at least one person was employed in any of the foreign countries. To get data from the whole district was lengthy, costly and time consuming procedure. To keep these problems in mind two tehsils, i.e. tehsile Daska and tehsile Pasrur were randomly selected. Then from each tehsile data from 44 respondents were collected through the randomly selection of villages and thus collected the total data from 88 respondents.

This study was based on the primary data. Some times outliers are present in primary data set due to the variations in views of different respondents. The following mentioned procedure of outlier detection and to tackle with it were employed in this research analysis. Ben-Gal (2005) explained that in many cases multivariable observations can not be detected as outliers when each variable is considered independently. Outlier detection is possible only when multivariate analysis is performed, and the interactions among different variables are compared within the class of data. Data sets with multiple outliers or clusters of outliers are subject to masking and swamping effects. Rousseeuw and Leory (1987) described that as in one-dimensional procedures, the distribution mean (measuring the location) and the variance-covariance (measuring the shape) are the two most commonly used statistics for data analysis in the presence of outliers.

Survey method was used for data collection. The pre-tested questionnaire included close ended and open ended questions in order to check the correct response of respondents. As discussed by Bamberger (2000) there were several benefits of using integrated (i.e. combining

quantitative and qualitative methods) approaches in research to have in-depth, rich and meaningful research findings.

Descriptive Statistics was used to draw inferences about economic and other characteristics of the sample respondents whereas Multiple Linear Regression model was developed and used to determine socio economic impact of overseas migration on households. The general form is;

$$Y = \beta_0 + \sum \beta_i X_i + \mu_i$$

Where y is the dependent variable,  $\beta_0$  is the intercept,  $\beta_i$  represents the slope coefficient,  $X_i$  represents the independent variables which includes remittances received annually, expenditures on durables after receiving remittances, expenditures on consumptions annually due to remittances and expenditures on households' investment due to remittances and  $\mu_i$  represents the error term and i represent 1, 2, 3....

The remittances impact (dependent variable) was explored as a set of four statements, i.e. improvement of children's education, improvement of housing, status of household in community and improvement of life style. The respondent's answers were recorded in four predefined categories, namely; to a great extent, to a reasonable extent, to some extent and no positive change. Thus, the categories were ranked from higher to lower and coded in chronological order to make index variable. The measuring instrument consisted of matrix questions to be answered by employing the Likert scale. A Likert scale is a psychometric scale commonly involved in research that employs questionnaires. It is the most widely used approach to scaling responses in survey research. Here the index variable comprised of these four statements and above mentioned four response categories. An index variable is usually constructed to study the combined effect of all the items in predicting the response variable. For this purpose, all statements in the matrix questions were combined together to form an index variable. However, before the index variable developed, consistency among all the items in the question matrix was ensured. For this purpose, a reliability check was carried out, and the value of Crombach's Alpha determined (as 0.80). The Statistical Package for Social Sciences (SPSS) extended this facility using an analysis menu, followed by a sub-menu scale that contains the reliability analysis test. If during the reliability check, the value of Alpha remains within the range 0.7 to 1.0, all of the statements in the question matrix can be combined to develop an index variable. If the value of Alpha is below 0.7, the element of consistency between different statements is determined individually and weaker ones are excluded from the index variable to improve the value of Alpha. On confirmation of the consistency element, the scores on all items in a question matrix recorded through response categories summed up. The minimum and maximum values determined through sub-menu descriptive statistics, followed by frequencies. The minimum values were subtracted from the maximum values, and the

remainders were divided by the number of categories for the index variable. A low score of index variable indicated a strong overseas migration impact, and vice versa. Khan (2007) employed the similar technique of formation of index variable to study the regression model.

## RESULTS AND DISCUSSION

Socio-economic characteristics of overseas migrants' households are briefly explained through mean values in Table 1. The overseas migrants were of 31 years old and having 8 years of schooling at the time of migration. There was 6 years spent by migrants at the time of survey in 2011 and according to their household members the migrants had a plan to come back Pakistan permanently in about next 9 years. Household were receiving remittances after 3 months of duration averagely.

### **Method employed to estimate the impact of remittances:**

The following formula for Time Value of Money Concept/Future Value of a Single Sum was used to compute the worth of before the source of remittances expenditures at the time of analysis in 2011. Then the after received remittances expenditures value was subtracted/deducted from the computed worth one to calculate the change in expenditures due to remittances.

$$FV = PV(1+i)^n$$

Where, PV = expenditures value before the source of remittances; FV = worth of before the source of remittances expenditures at the time of survey analysis in 2011; n = number of years spent abroad by the overseas migrant till the time of survey in 2011; i = interest rate during the time of analysis in November 2011 which was 10.2 percent (SBP, 2012).

Now the findings of the research study are as: The expenditures on consumption items included the monthly expenditures on grocery items, dressing and shoes, medicines, recreations and traveling, child education expenditures, ceremonies/festivals expenditure, customs (*Khatam shareef etc.*) expenditures and monthly bills of electricity and gas etc. The overall percent change in monthly household expenditures on consumptions due to remittances was about 41% as details are shown in Table 2. The overall percentage change in household expenditures on durables due to remittances had observed to the extent of 31% as details are shown in Table 3 below. For motorcycle, television, refrigerator, mobile telephone set, blanket and others category the percent change in expenditure due to remittances were 20, 52, 8, 61, 29 and 5 respectively. Washing machines, juicer, electric pump and fans etc. were included here in others category. As in the study of Khan (2007) the respondents were asked about the ownership of different household items. The majority reported that they had blankets, suitcase, jewellery, refrigerator, television,

tape recorder, motorcycle and an electric iron respectively before the migration of their family member, and almost all the families owned all of these items at the time of the survey; exception were motorcycles where the share of owners increased from 52% to 85%. The share of those who had owned deep freezers before migration was 20.7%, while 15.7% had a motor car and 1.7% a jeep; 93%, 64% and 25.7% respectively did so afterwards and hence demonstrated a considerable improvement of their living standard.

Due to remittances, the distribution of household investment expenditures among commercial, agricultural (crops and orchards) and livestock sectors by using mean values of assets are shown in Table 4 below. Livestock is an essential part of agriculture and Pakistani rural life. The livelihood of the majority of the rural population is based on the livestock and it also provides a substantial share in GDP (Govt. of Pakistan, 2010). The percent change in investment expenditures due to remittances (by using mean values) in commercial, agricultural and livestock sectors were 20, 39 and 25 respectively as shown in Table 4. The overall percent change in total investment expenditures due to remittances was 10%.

The percentage distribution of the total household investment due to remittances in different sectors is shown in Table 5 by using mean values of the assets. A total household investment of 61% was in commercial sector, 21% was in agricultural sector (crops and orchards) and about 18% was in livestock sector.

As shown in Table 6 the mean values in Rs. of Remittances received annually, Expenditures on durables after receiving remittances; Expenditures on consumptions annually after receiving remittances and Expenditures on household investments due to remittances were 263,580, 264,026, 317,646 and 1,257,146, respectively.

**Multiple linear regression analysis:** The relative significance of the independent variables in determining the dependent variable was examined through multiple linear regressions. The results of the regression analysis are displayed in the Table 7. It contains standard errors and standardized regression coefficients. The table shows that the most important variables which influenced the migration impact were remittances received annually, expenditures on durables after receiving remittances, expenditures on consumptions annually due to remittances and expenditures on households' investment due to remittances with regression coefficients of 0.80, 0.14, 0.23, 0.17, and 0.38, respectively. All variables were highly significant. The value of R square was 0.57, which indicates that variables given in the model were responsible in explaining about 57% of the variation in the dependent variable. In such kind of research studies where economic values are used, if R square is >0.4 the model is considered as best fit model (Khan, 2007).

**Table 1. Socio-economic characteristics of overseas migrants' households**

Socio-economic characteristics	Minimum	Maximum	Mean	Std. deviation
Age of overseas migrant (years)	20	50	31	8.09
Education of overseas migrant (years of schooling)	2	14	8	3.10
Overseas migrant's household size (Nos.)	5	16	11	3.12
No. of overseas migrants per household	1	3	1	0.59
No. of visits of migrant paid to Pakistan after migration	0	8	2	2.43
Total years abroad to overseas migrants	0	16	6	3.97
In how many years the migrant has a plan to come back Pakistan permanently	1	25	9	4.84
After how much duration often household receive remittances (months)	0	6	3	1.60

**Table 2. Percentage change in household monthly expenditures on consumption due to remittances (used means) (Rs.)**

Consumption items	Before the source of remittances	Worth of A at the time of survey in 2011	After the source of remittances	Change in consumption exp. due to remittances	% age change in consumption exp. due to remittances
	A	A*	B	B-A*	
Grocery	2,460	5,096	5,915	819	16
Dressing + shoes	1,609	3,188	3,592	404	13
Medicines	1,003	2,158	2,811	653	30
Recreations + Traveling	1,374	2,802	3,663	861	31
Child education exp.	1,010	1,946	3,486	1,540	79
Ceremonies/festivals exp.	2,606	4,972	6,003	1,031	21
Costumes ( <i>Khatam shareef</i> etc.) exp.	1,830	3,494	4,091	597	17
Bills (electricity gas etc.)	884	1,628	3,018	1,390	85
Others	433	883	1,491	608	69
Total expenditures on consumption(monthly)	13,209	26,166	368,00	10,634	41

**Table 3. Percentage change in household expenditures on durable items due to remittances (used mean values for all items of durables) (Rs.)**

Durable Items	Before the source of remittances	Worth of A at the time of survey in 2011	After the source of remittances	Change in exp. on durables due to remittances	% age change in exp. on durables due to remittances
	A	A*	B	B-A*	
Motorcycle	60,325	94,900	114,050	19,150	20
Motorcar	0	-	410,000	410,000	-
Jeep or other vehicle	412,500	995,421	1,502,222	506,801	51
AC	0	-	45,500	45,500	-
Air-cooler	0	-	12,530	12,530	-
Television	4,150	8,740	13,300	4,560	52
CD or DVD	3,900	5,750	7,050	1,300	23
Digital camera	5,400	12,800	18,500	5,700	45
Mobile telephone set	6,450	11,090	17,800	6,710	61
Refrigerator	27,000	60,500	65,050	4,550	8
Defreeze	0	-	53,200	53,200	-
Micro-wave oven	0	-	10,500	10,500	-
Suitcase	9,400	23,000	25,000	2,000	9
Blanket	10,500	31,500	40,500	9,000	29
Electric iron	1,050	2,050	2,800	750	37
Jewelry ornament set	0	-	203,000	203,000	-
Computer	11,500	18,000	20,500	2,500	14
Others	11,373	25,960	27,284	1,324	5
Total expenditures	129,389	276,612	362,118	85,506	31

**Table 4. Distribution of household investment due to remittances (mean values used) (Rs.)**

Category of investment by sector	Expenditure on investment for different categories	Before the source of remittances	Worth of exp. before the source of remittances (value in 2011)	After the source of remittances	Change in investment exp. due to remittances	% age change in investment exp. due to remittances
		A	A*	B	B-A*	
Commercial sector	Residential plot	297,381	1,021,378	1,500,540	479,162	47
	Industrial plot	545,833	2,193,579	2,725,000	531,421	24
	Shops	331,607	1,031,055	1,504,100	473,045	46
	Business (factory etc.)	1,100,000	2,265,934	2,505,000	239,066	11
	Transport (Bus, van etc.)	405,060	1,123,663	1,198,500	74,837	7
	Bonds etc.	18,900	57,147	67,800	10,653	19
	Others	11,067	17,024	26,043	9,019	53
	Total commercial investment expenditures	491,604	1,531,530	1,835,300	303,770	20
Agriculture sector	Agricultural land	300,909	962,005	986,360	24,355	3
	Tractor	112,500	310,882	316,667	5,785	2
	Cultivator	70,000	138,352	185,000	46,648	34
	Farm Thresher	183,333	780,809	666,000	-114,809	-15
	machinery Sowing drills	66,667	154,907	200,000	45,093	29
	Tube well	29,444	78,806	81,111	2,305	3
	Others			1,830	1,830	
	Total agri. investment expenditures (Rs.)	183,810	578,834	806,750	227,916	39
Livestock sector	Buffalo	318,833	1,137,740	1,200,600	62,860	6
	Oxen	65,000	93,291	130,000	36,709	39
	Cow	20,000	80,052	90,000	9,948	12
	Goat	22,000	41,565	54,000	12,435	30
	Poultry farm	97,715	311,810	413,333	101,523	33
	Others	7,843	10,631	10,372	-259	-2
	Total livestock investment expenditures	143,395	491,203	612,000	120,797	25
Overall total investment expenditures (Rs.)		518,071	1,642,219	1,802,400	160,181	10

**Table 5. Household investment in different sectors due to remittances (by using mean values of assets) (Rs.)**

Sector	Share of total investment	%age share of total investment
Commercial sector	1,175,726	61
Agriculture sector	405,593	21
Livestock sector	351,604	18
Total investment in all sectors	1,932,923	100

**Table 6. Socio-economic characteristics of independent Variables used in model (values in Rs.)**

Independent Variables used in model	Minimum	Maximum	Mean	Std. Deviation
X <sub>1</sub> = Remittances received annually	0	720,000	263,580	171197.88
X <sub>2</sub> = Expenditures on durables after receiving remittances	63,350	642,000	264,026	130348.10
X <sub>3</sub> = Expenditures on consumptions annually after receiving remittances	187,200	492,000	317,646	81356.26
X <sub>4</sub> = Expenditures on household investments due to remittances	15,000	7,600,000	1,257,146	1440447.88

**Table 7. Multiple Linear Regression Analysis**

Variables	Coefficients	Std. Error	t-value	Significance
$\alpha$ = Constant	0.804	0.170	4.717	0.000
$X_1$ = Remittances received annually	0.144	2.83e-007	1.561	0.122*
$X_2$ = Expenditures on durables after receiving remittances	0.226	4.16e-007	2.179	0.032
$X_3$ = Expenditures on consumptions annually after receiving remittances	0.171	5.44e-007	2.028	0.046
$X_4$ = Expenditures on household investments due to remittances	0.379	3.89e-008	3.731	0.000
$R^2$	0.566	-----	-----	-----
Adjusted $R^2$	0.545	-----	-----	-----
F- Value	27.074	-----	-----	-----

\* Non-significant

The more conventional collective effect of all independent variables on the dependent variable was examined by adjusted R square (the coefficient of determination) (Johnson and Winchern, 2002). Hence, the estimated model determining the impacts of remittances is as shown:

$$Y = \alpha + 0.144 X_1 + 0.226 X_2 + 0.171 X_3 + 0.379 X_4 + \mu$$

In order to tackle the issue of multicollinearity the correlation summarized the direction and strength of the relationship between two variables of higher measurement level, i.e. of ordinal or interval data. Pearson's correlation coefficient also calculated the relationship between predictor and response variables. The values of Pearson's correlation coefficients referring to the variables of this study are shown in Table 8. It indicates the impact of Remittances received annually, Expenditures on durables after receiving remittances, Expenditures on consumptions annually after receiving remittances, Expenditures on household investments due to remittances. This analysis confirms the significance of the relationships.

**Table 8. Pearson's co-relation coefficient showing the relationship between socio-economic conditions and migration impact**

Predictive variables	Overseas Migration impact
Remittances received annually	0.539*
Expenditures on durables after receiving remittances	0.629*
Expenditures on consumptions annually after receiving remittances	0.505*
Expenditures on household investments due to remittances	0.681*

\*Correlation is significant at 0.05 levels

**Conclusions:** Age of overseas migrant, education level, type of job at home country and at abroad, reasons for overseas migration and household's composition of the migrant were selected as background variables; while socio-economic position, situation of the households left behind and migrants' sent remittances used as intervening variables. The

impact of overseas migration and remittances on the households left behind was estimated through different independent variables like improvement in children's education, improvement in housing construction, improvement of status and improvement in lifestyles of the migrant's household's members.

The major destinations of the overseas migrants from district Sialkot were the Saudi Arabia, Greece, Dubai, Kuwait, Masqat and Italy. The main reasons for overseas migration were low income and uncertainty of income. The most of the overseas migrants (38%) had attained middle level of education at the time of migration. The major occupations abroad were the daily wage laborers. There was mix trend about the received remittances. About 52% of the households received up to Rs. 20,000 and about 41% received Rs. 20,001- 40,000 averagely on per month basis while 7% were those which received Rs. 40001-60000 averagely on per month basis. Due to the impact of remittances the overall percentage change in household expenditures on durables and monthly consumptions observed up to 31% and 41% respectively. A total household investment of 61% was in commercial sector, 21% was in agricultural sector and about 18% was in livestock sector.

**Recommendations:** The small scale industries should be developed and the overseas migrant's households are encouraged to invest in these business activities which will give a base for sustainable income to households. The Govt. should start employment/specialized guidance institutes in the areas of highly out migration districts like Jehlum, Sialkot and Toba Tek Sing etc. to make the overseas migrants more skillful. Better town/village development policies should be to transfer remittances to develop infrastructure, agriculture, education, health sectors, etc. for overall community development.

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