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March 2021

Online at <https://mpra.ub.uni-muenchen.de/106330/>

MPRA Paper No. 106330, posted 05 Mar 2021 03:41 UTC

# **Labour Participation Decision and Preferences towards Different Employment Status in Response to Remittances: Evidence from the Provincial Capital of Punjab and Khyber Pakhtunkhwa (KPK), Pakistan**

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## **Abstract**

This study has examined the effect of remittances on the labour force participation decisions and preferences of the individuals towards different employment status and work categories. The data from the rural and urban areas of the two provincial capitals of Pakistan has been collected to cover the main range of the topic. The study adds in existing literature the three major implications of labour market outcomes in response to remittances. First, the estimates of the Logit and Probit model suggest that remittances significantly increase the likelihood to not participate in the labour force. In addition, the differential effect of remittances depicts that as monthly remittances increase from 10,000 rupees to 500,000 rupees, the likelihood to participate in labour market decreases from 0.84 to 0.30 respectively. Second, estimates of the multinomial logit model reveal that among different employment categories, remittances increase the likelihood to participate in non-employment. While in case of participation in labour market, they are more likely to prefer full-time self-employment status. Third, estimates of the multinomial logit model depict that among different work professions, remittances increase the likelihood to participate in self-employment and employer profession. The results of the study suggest policy implication on the reallocation of labour from non-employment to self-employment or employer can generate productive outcomes. Furthermore, incentives in the adoption of self-employment and improvement in ease of doing business are essential to spill over the effect of remittances as job creators.

**JEL Classification:** J22, C24, F24

**Key words:** Remittances, Labour Participation, Self-Employment, Wage-Employment

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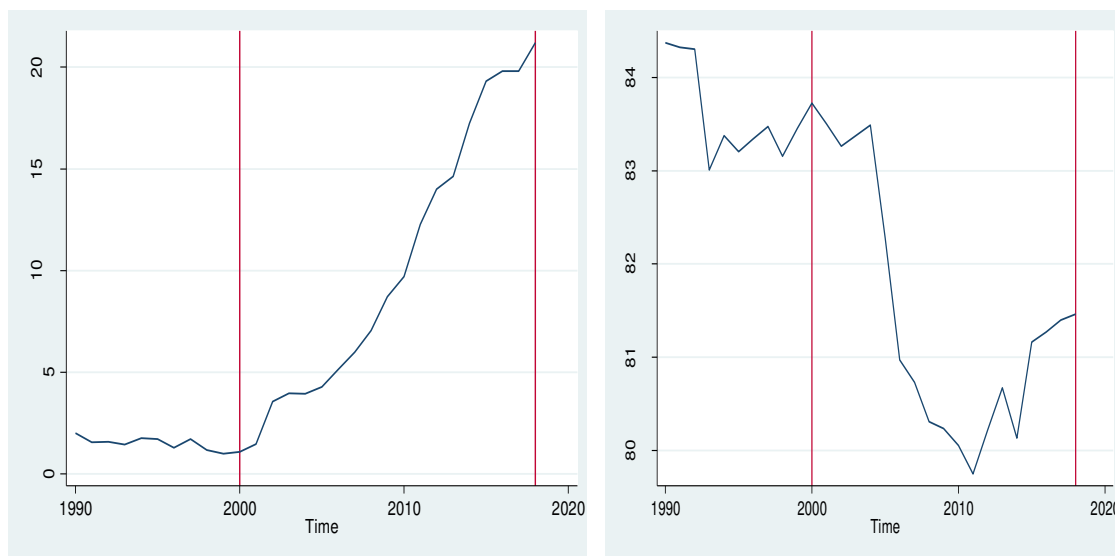
## 1. Introduction

The labour diaspora of Pakistani workers remains persistent and also become more prevalent than before. The number of workers Pakistan exports to other countries on an annual basis depicts a general upward trend from 113,781 in 1990 to 147,422 in 2000 and 362,904 in 2010 to 625,203 in 2019 (BOEOE, 2019). The estimated stock of Pakistani migrants till 2019 stretched to 4 million, which is 2% of the population and 10% of the labour force. Remittances to Pakistan from the migrants surge to US\$22 billion in 2019 by comparing with US\$2 billion in 2001 and accounted for about 8% of the country's GDP (World Bank, 2019).

Remittances can better the position of macroeconomic indicators in the developing economies. Remittances are a major source of foreign exchange reserves, it supports in meeting the current account deficit which in turn stabilizes the exchange rate and economic growth (Ratha, 2005). Remittances are returns on labour migration in source countries and it generates economic activities when it utilized at the household level. Therefore, recent concerns regarding the effect of remittances on the microeconomic outcomes getting importance, especially on the labour participation of non-migrant members of the household. The decision to labour participation depends upon the difference between reservation wage and existing market wage. The reservation wage is a positive function of non-labour income. It implies that remittances (part of non-labour income) increase reservation wage, which in turn increases the likelihood to not participate in labour market (Jadotte, 2009; Justino & Shemyakina, 2012). In addition, remittances can affect the labour supply due to income effect or conjugal home-time effect. The income effect increases the consumption of leisure (leisure is also good) and conjugal home-time effect increases the responsibility of the individual at home and work lesser hour (Cabegin, 2006).

The inflow of remittances to Pakistan after 9/11 incident increases definitely from US\$2 billion in 2000 to US\$21 billion in 2018. Interestingly, the labour force participation rate depicts a sharp decline from 84% in 2000 to 79% in 2012 and then approaches to 81% in 2018. All these facts give an intuition to conduct a study to explore the relationship between remittances and labour force participation. Unfortunately, there are few studies conducted on the effect of remittances on labour force participation. According to the best of our knowledge, an available study in the context of Pakistan is (for example Kozel & Alderman, 1990; Mughal & Makhoulouf, 2013; Shair & Majeed, 2020). But these studies either using traditional econometrics approaches or focus only effect of remittances on labour supply and ignoring individuals' preferences towards different employment forms and professions. The contribution of this study is threefold. First, it presents the casual evidence on the impact of remittances on individuals' preferences towards work or leisure. In addition, the differential effect of remittances on the likelihood to participate in labour market also observed. Second, the study attempts to determine the effect of remittances on individuals' preferences towards different employment forms like full-time wage or self-employment, part-time wage or self-employment, or non-employment status. Third, the impact of remittances on individuals' preferences towards different professions also examined in case of participation in the labor market. The different types of professions include formal work, farming, self-employed, and employer.

**Figure 1.** Pattern of Remittances and labour force participation rate over the time



Source: World Development Indicator (WDI, 2018)

This study examines the effect of remittances on labour participation decision and preference towards different employment forms and professions by conducting survey at the household level. The decision to participate in the labour force is determined by the demographic characteristics of individuals and households. For empirical analysis, we collected data from the capital of two major provinces of Pakistan named Punjab and Khyber Pakhtunkhawa (KPK). The importance of these two provinces emerges from the fact that they supply about 75% of the total migrants of Pakistan (BOEOE, 2019). We used the Logit and Probit model to determine the likelihood to participate in labour market in response to remittances. Furthermore, the multinomial logit model used to determine the individuals' preference towards different employment forms and professions.

This study organized as the next part describe a brief review of the literature, part 3 follows the theoretical relationship between the variable and econometric model. Part 4 explains the data collection method and descriptive analysis of the variables. Part 5 follows the key findings of the results and in part we have drawn conclusions.

## 2. Literature Review

The neoclassical model of labour, leisure choice states that every individual derives his utility from the consumption of goods and leisure. While deriving utility from consumption of goods and leisure, individual has to face time and income constraints. However, income constraint can be soften with the rise in non-labour income which in turn raise the utility level with the increase in consumption of leisure hour. Recent literatures highlight the factors which affect the leisure and working hour. Amongst these factors, non-labour income (remittances, property, income, dividends, and lottery prizes) significantly affect the individual's leisure and working hours. In this section, we will discuss the previous literature which highlight the effect of non-labour income (remittances) on the labour supply of the individual.

### 2.1 Country Specific Study

The previous literature in the context of remittances and labour supply shows the ambiguous and contradictory nature of the effect. For instance, remittances have a significantly negative effect on labour supply (Itzigsohn, 1995; Kim, 2007). Remittances increase the reservation wage which is a negative function of labour supply (Alcaraz et al., 2010). The effect of remittances on labour participation vary on the basis of gender (Acosta, 2006; Airola, 2008), and on the basis of the individual's age (Grigorian & Tigran 2011). Remittances allow the member of the household to stay out of labour force and increase the consumption of leisure. In addition, remittances divert the preferences of household's members towards flexible work rather than the hard one. Contrary, some studies (Cox-Edwards & Rodríguez-Oreggia, 2009; Jadotte, 2009) find that remittances did not affect labour market outcomes of non-migrant members. The neutrality of remittances explains in a way that persistent remittance flow is an integral part of a household's strategy to generate income, and the emigrant worker is a member of the household who is remitting to replace his/her lost contribution to the household due to emigration.

It is also worthwhile to note that remittances have a positive effect on the labour supply of non-migrant members of the household (Emilsson, 2011). It has been observed that remittances made the members of household self-sufficient because remittance-receipt is sufficient to overcome the credit constraint (Bussolo & Danis, 2008) and able to generate employment opportunity at the household level (Piracha et al., 2013). The positive impact of remittances on labour market outcomes can be channelized through skill formation of young members of the household and increased investment attributed to remittances (Dávalos et al., 2017).

The existing literature not only incorporates remittances but also found the association between migration and labour participation. Several studies, such as (Rodríguez & Tiongson, 2001; Hanson, 2007; Lokshin & Elena, 2009) compare the labour market outcomes of the household with-migrant and without-migrant. The results of these studies suggest that members of household with-migrant is relatively more likely to participate in labour force than household without-migrant. Similarly, Görlich et al., (2007) found that migration increases the probability of being inactive for non-migrant members of the household. The non-migrant members of households participate in higher education, engaging in childcare, subsistence farming, and other household duties in the absence of participation in the labour. On the contrary, the study of Cox-Edwards and Rodríguez-Oreggia (2009) suggests that remittances have a neutral effect on labour participation. The theoretical reasoning is that remittances did not create a surplus in the household's budget because migrant send money just to compensate for the expense incurred by household in his migration. It follows that remittances have not real effect on the labour market outcome.

Finally in the context of work choice, the study of Cabegin (2006) found that migration of Filipino's spouse is associated with shift the preferences towards non-employment than other employment forms like paid/self-employment in part/full-time format. Similarly, migration of household member also shift the preferences of women from wage work to non-wage work due to rise in reservation wage (Binzel & Ragui, 2011). While robust evidence found on preferences towards self-employment in the presence of remittances receipt, for instance, divert from salary and casual wage worker to self-employed worker (Khan & Valatheeswaran, 2016); from unpaid wage to self-employed (Mendola &

Calogero, 2012); from the private/public sector to self-employed (Stanley, 2014). It implies that remittances have a major share in household income and creates a surplus which is sufficient to overcome the credit constraint (Acosta, 2020). Interestingly, a recent study of Dary and Ustarz (2020) attempts to explain the impact of internal remittances on employment choices and found that internal remittances reduce the likelihood to participate in self-employment but increase the likelihood to participate in family employment.

## **2.2 Cross Country Study**

Posso (2012) examined the association of remittances with aggregate labour supply by using the panel of sixty-six developing countries from 1985 to 2005. The results suggested that remittances are positively associated with aggregate labour supply because remittances overcome the credit constraint in the developing countries which helps to expand the business and generate employment. Similarly, Jackman (2014) analysed the association of remittances with unemployment by using the panel data of 18 Latin American and Caribbean countries for the year 1991-2010. The result suggested that due to the non-linear relationship there exists a neutral relationship between remittances and unemployment. The non-linear relationship indicates the presence of threshold, it suggest that when remittances to GDP ratio is below 3.25% than remittances have a positive relationship with unemployment, and above it has a negative relationship.

## **2.3 Pakistan Specific Study**

The study of Kozel and Alderman (1990) for the urban area of Pakistan suggests that remittances have a negative effect on the labour supply of non-migrant members. Remittances allow the educated members of the household to extend the job search time until they found as per their taste. Contrary, Mughal and Makhoulf (2013) argued that domestic and foreign remittances did not effect the quantity of labour supplied; however, an increase in remittances associated with a lower likelihood of labour market participation. Likewise, remittances divert individual's preferences towards self-employment and cultivating one's own land than wage employment. While the study of Shair and majeed (2020) examined the effect of remittances on the labour market outcome of left-behind. Their study reveal that remittances lower the labour supply, decrease the likelihood of an employed person to participate in labour market, and increase the likelihood to be voluntarily unemployed.

The objective of the study is to add some extent of labour market outcome of members of migrant household in the existing literature. First, we will examine the effect of remittances on labour participation decisions and after determining next to find out the likelihood to participate in the labour market against the different amounts of remittances receipt. Second, we will explore preferences towards different employment forms and professions' categories by using the multinomial logit model. This study will help labour economist to channelize the spillover effect of remittances in employment generation by promoting entrepreneurial activities in remittances receiving household.

## **3. The Empirical Model**

The purpose of this study is to analyse the effect of remittance on the labour participation of the household's head. For this purpose, we will determine the labour participation of the household's head by using the following reduce form labour supply function:

$$H = h(R, E, H_c, X_c) \quad (1)$$

In equation  $H$  is the hour of work in a day,  $R$  is the monthly remittances received. According to the neoclassical model of labour leisure choice, non-labour income has a negative effect on labour supply and it raises the reservation income which keeps the individual outside the labour market.  $E$  is the monthly expense of the household which states that higher the household expense might leads to higher the labour supply.  $H_c$  is a vector of variable which consists of household's head characteristics i.e. age, education, gender, and relationship with a migrant.  $X_c$  is a vector of variable which includes the demographic and household characteristics i.e. dummy of province and area, and ratio number of male to household size.

### 3.1 Switching Regression Model of Labour Force Participation

The purpose of this study is to find out the likelihood of labour force participation in response to remittances. In the sample more than one-third of the head of household does not participate in the labour market, and they are not a part of labour force. For this purpose, we would have to convert our model of equation 1 into labour force participation model by taking the labour force participation decision as a binary dummy dependant variable. The most appropriate model in the literature is Logit and Probit model used by Acosta (2006); Hanson, (2007); Lokshin and Elena, (2009); Jadotte, (2009); Alcaraz et al., (2010); Binzel and Ragui, (2011) to analyse the effect of remittances on the labour market outcomes.

The model for labour force participation (LFP):

$$P_i = E(L_i = 1 | X_i) = \Lambda(Z) = \frac{e^Z}{1 + e^Z} + U_i \quad (2)$$

$L_i$  is equal to one if the head of the household participate in the labour market, zero otherwise and  $Z = X\beta$ .  $X$  is a vector of regressors and  $\Lambda(Z)$  is logistic cumulative distribution function.

### 3.2 Multinomial Logit Model

An alternative econometric specification that used to find out the likelihood of a person's preferences towards different employment form is multinomial logit model. We modified our baseline equation into the multinomial logit model used by Cabegin (2006) and Görlich et al. (2010) in the existing literate to find out the likelihood of participation in different employment forms. To apply the multinomial logit model, we define our dependant variable in more than two nominal categories such as wage-employed, self-employed, and no-employment. Similarly, on the basis of the working hour, we further divide the wage-employed and self-employed into full-time and part-time employment. We define part-time employment in such a way that a person with less than 8 hours falls under part-time employment and a person with 8 or more working hour in a day fall under full-time employment.

The following model:

$$L_c = \alpha + X\beta + \gamma R + \varepsilon \quad (3)$$

$X$  is a vector which includes the variable on household's head characteristics, a dummy of geographical location, monthly expense,  $\beta$  is a vector of coefficient, and  $R$  is the

amount of remittances and  $L_c$  is a categorical dependant variable with following five category:

$$L_c = \begin{cases} L = 1 \text{ if employment status no – employment} \\ L = 2 \text{ if employment status, part – time wage – employed} \\ L = 3, \text{ if employment status, part – time wage – employed} \\ L = 4, \text{ if employment status, part – time self – employed} \\ L = 5, \text{ if employment status, full – time self – employed} \end{cases}$$

#### 4. Data and Descriptive Analysis

In the literature, a number of studies used different secondary sources of data to investigate the effect of remittances on socio-economics outcomes. Many of them limited due to lack of relevant variables because the secondary sources of data did not focus on specific aspects of information related to migrant’ status. But in our study, we used primary data based on the survey to cover a wide range of information on remittance and labour supply of the household’s head. We collected data from the provincial capital of Punjab and KPK named Lahore and Peshawar respectively. The importance of these two provinces emerged from the fact that they share 75% of the total migrant (BOEOE 2019). Moreover, the selection of provincial capital is for the sake of comparison.

We design the questionnaire to cover a wide range of information related to the demographics of households and migrants. The questionnaire used in the study consist on the information on: household, household’s head, migrant, migrant’s family, source of income, and their utilization. We consider the characteristics of Lahore and Peshawar’s resident heterogeneous and split into two strata, then each strata divide into sub-strata of urban and rural. The sample size for each strata is equal but different for sub-strata. The total size of the sample is 600 and each strata contain the sample of 300, but the sample of sub-strata for Lahore and Peshawar consist of one-third (100 observation) for urban and two-third (200 observation) for rural respectively. In our sample, we gave more weightage to the village because variation in the working hour comes from self-employment and most of the people from the village interlinked with self-employment. On the other hand, a person from urban areas mostly interlinked with wage-employed work and supply fixed labour hour.

We used a non-random sampling technique because data on migrants were not easily accessible. There is not any public institute which keeps the record of migrants at the district level to help the researcher to identify the household with the migrant. Furthermore, a number of migrants migrate to other countries illegally; therefore, the household having migrants are hidden not known. In this case, a type of non-random sampling technique named the snowball sampling technique is more appealing. In the snowball sampling techniques, the researcher asked the respondent to help in identifying the person of similar attributes in the given area.

The description of the variable which we shall use in our analysis are given in table 1.

**Table 1:** Definition of Variable

<i>Variable Names</i>	<i>Description</i>
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Weekly Working Hour	For variation in the labour supply we asked in questionnaire about working hour in a day and weekly working day then obtain weekly working hour
Hourly Wage Rate	We asked monthly labour income in questionnaire then convert into hourly wage by computing monthly labour hour and divide on monthly earned income
Log Remittances	Monthly remittance receive by household
Age	Age of the household's head
Age Square	Square the Age of household's head for non-linear relationship between age and weekly work
Min. Education	Dummy variable coded 1 if the head of household literate, 0 otherwise
Nuclear family	Dummy variable coded 1 if the head of household is son or wife of migrant, 0 otherwise
Lahore	Dummy variable coded 1 if the head of household from Lahore, 0 otherwise
Urban	Dummy variable coded 1 if the head of household from urban, 0 otherwise.
Ratio male to household size	Total number of male in the household divided by household size
Log Expense	It includes expense on the education, non-durable goods, and basic needs

In table 2, we presented the descriptive statistics of explanatory variables against five different employment categories. In the sample, about 40 percent of the household's head reported no they are not actively participating in the labour market. The difference in working hours persists with the difference in hourly wage. As depicts in table 2 that the upward trend in hourly wage associated with a slide down working hour which indicates the dominance of the income effect of the wage increase. According to the theory of labour leisure choice, a rise in wage rate increase the consumption of leisure which in turn lower the working hour (backward-bending labour supply curve). There seems to be a tendency of full-time self-employment with a higher level of remittances and part-time self-employment with a lower level of remittances. Interestingly, a higher level of remittances depicts the lower working hours in wage-employment and higher working hours in self-employment.

**Table 2:** Number of person with different employment status receiving monthly remittances and hourly wage

Category	N	Weekly Work		Hourly Wage		Remittance	
		Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
<i>Non-employed</i>	246	0	0	0	0	68349.6	71001
<i>Wage-employment</i>							
Part-time	20	31.2	10.1	354.2	382.3	75000	67864.2
Full-time	142	53.8	11.8	159.1	116.4	62781.7	50062.9
<i>Self-employment</i>							
Part-time	80	29.3	8.2	233.3	355.9	47375	34042.7

Full-time	112	66.9	17.7	186.1	286.4	86321.4	83331.8
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An alternative specification of work categories defined as formal workers, farming, self-employed, and employer. The first category ‘formal worker’ consist of the person working in the public or private sector. The second category ‘farming’ includes the person interlink with the farming profession and the third category ‘self-employed’ comprises the person who is running their own business and has not any employee. The final category ‘employer’ includes the person running their own business and employed more than one person. Table 3 depicts the average weekly work, hourly wage rate, and remittances against different professions’ categories. It shows that across different professions higher wage rate associated with higher working hours which indicates the dominance of the substitution effect of wage rise. While households receiving higher level of remittances hold an employer profession across the different profession categories. It indicates that a higher level of remittances may create surplus saving which may turn into investment and increase the employment opportunity.

**Table 3:** Number of person with different profession receiving monthly remittances and hourly wage

Category	N	Weekly Work		Hourly Wage		Remittances	
		Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Formal Worker	162	50.8889	13.755	183.186	180.1834	64290.1	52225.4
Farming	100	48.52	25.93732	156.331	112.3422	77960	79973.97
Self-employed	44	55.2273	21.72322	114.515	121.9824	39136.4	28577.87
Employer	48	53.3333	19.87497	392.322	568.5489	82083.3	67355.59

Table 4 shows the summary statistics of the explanatory variable. The demographics of household shows that 35 percent of the household belongs to the urban area and 15 percent of the household living in a nuclear family. The characteristics of the household’s head indicate that 87 percent of the household heads are male and greater variation observed in the age of the household head. While 84 percent of the head of household is literate and rest of them are illiterate.

**Table 4:** Descriptive Statistics

Variable	Mean	Std. Dev.	Min	Max
Weekly work	30.1	29.34	0	105
Hourly wage rate	115.3	223.21	0	2309.47
Age	44.6	15.49	18	85
Remittances	67811.7	65869.02	10000	600000
Gender	0.87	0.37	0	1
Punjab	0.5	0.50	0	1
Nuclear	0.15	0.35	0	1

Urban	0.35	0.47	0	1
Monthly expense	52855	40685.63	10000	300000
Min. education	0.84	0.37	0	1
Ratio Male to household size	0.51	0.14	0.15	0.86

## 5. RESULTS AND INTERPERTATION

### 5.1 Participation in labour force

In the literature of remittances and labour supply, the potential endogeneity in remittances may be persist due to unobserved characteristics which may jointly effect the remittances and labour supply. For the detection of endogeneity in remittances, a Hausman specification test proposed by Hausman (1976). The p-value of the Hausman test shows that we did not reject the null hypothesis “variable is exogenous”. The following literature also supports the exogeneity of remittances: Itzigsohn (1995); Rodriguez and Tiongson (2001); Funkhouser (2006); Hanson (2007); Kim (2007); Airola (2008); Emilsson (2011); Grigorian and Melkonyan (2011); Posso (2012); Mughal and Makhoulouf (2013); Jackman (2014); Raihan et al. (2018).

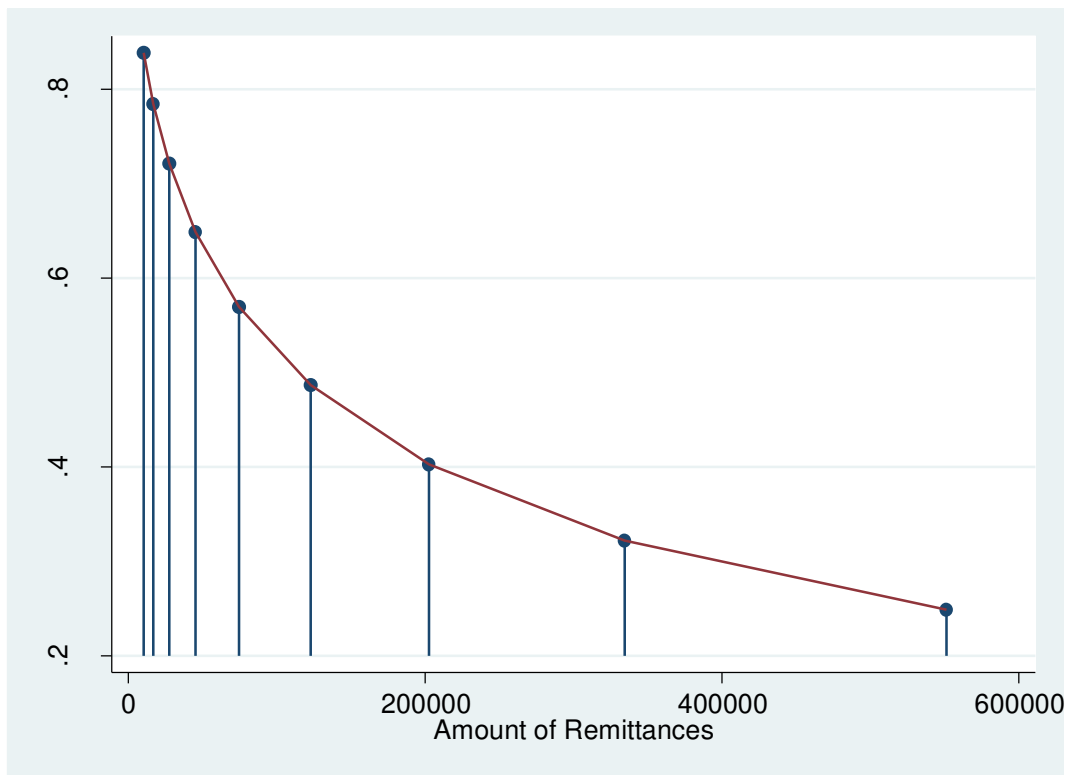
**Table 5:** Hausman Test of endogeneity

Ho: variables are exogenous		
	Score	P-value
Robust score chi2(1)	0.469228	0.4933
Robust regression F(1,588)	0.446136	0.5047

In the sample, more than one-third of the respondent does not participate in the labour market. It follows that the likelihood to participate in the labour market can be determined, however; for this purpose, the logit and probit model is most appealing. The significance and sign of the regressors in the logit and probit model does not vary across the model, but the magnitude of the regressors differ across the model. For the magnitude of the coefficient, the rule of thumb is that the logit coefficient is 1.6 times of probit coefficient (Cameron & Pravink, 2005).

In table 6, the estimates of the labour force participation presented. The semi-log coefficient converted into elasticity, found elasticity of remittances -0.78 from the estimates of the logit model. The elasticity can be interpreted as a 10% increase in the monthly remittances associated with decrease in likelihood to participate in the labour market by 7.8%. In the sample, on average household receive about 70,000 rupee remittances monthly and one-fourth of the household receiving remittances above 70,000 rupees. It implies that the effect of remittances stronger for the household receiving above 70,000 rupees. In this context, we predict probability at a different level of remittance in figure 2. The trend of the line in the graph shows that at the initial level when monthly remittances 10,000 the likelihood to participate in the labour force is 0.84, but as the level of remittances rises indefinitely, the likelihood to participate in the labour force slide down to 0.3. Finally, it can be predicted that remittances increase the reservation wage which in turn is a negative function of labour participation.

The results suggest that an increase in age is significantly associated with a rise in the likelihood to participate in the labour force. While there is a nonlinear relationship between age and likelihood to participate in the labour market. The nonlinearity implies that the likelihood to participate increases with age but after a threshold level the likelihood to participate decreases with an increase in age. The results suggest that the male-headed household is more likely to participate in the labour market than a female-headed household. Moreover, a household's head from more developed provincial capital is more likely to participate in the labour market than a household's head from less developed provincial capital. It implies the opportunity differential at the provincial level may lower the labour participation in the less developed regions.



**Figure 2:** Relationship between Probability to Work and Remittances

Contrary, the head of the household from urban is less likely to participate in labour market because in the urban area mostly people preferred to work in the private or public sector and try to get a job in accordance with their taste. But due to technology advances their skills got expired and unable to survive in the advanced labour market which indulges them to quit from labour force and increase the dependency ratio in the presence of remittance receipt. While in the rural area mostly people prefer self-employed status (farming or shopkeeping) which is an easy and accessible form of work than wage-employment which is a hard, complex, and inaccessible form of work. As expected, the coefficient of expense shows a significant positive effect on the likelihood to participate.

The coefficient of expense converted into elasticity which interpreted as an increase in the monthly expense by 10% is associated with 3.6% increase in the likelihood to participate in the labour market to maintain the standard of living of the household by keeping the purchasing power constant.

**Table 6:** Determinants of Labour Force Participation

Z-stats in parentheses \* p<0.1, \*\* p<0.05, \*\*\* p<0.01

Variable	Logit			Probit		
	Coef.	z-stat	dy/dx	Coef.	z-stat	dy/dx
Log Remittances	-0.965***	-4.27	- 0.2134***	-0.5381***	-4.28	- 0.1954***
Age	0.1498***	2.80	0.0331***	0.0764***	2.73	0.0278***
Ages	-.0018***	-3.05	- 0.0004***	-0.0009***	-3.04	- 0.0003***
Gender (Male=1)	2.3362***	6.20	0.5233***	1.321***	6.46	0.4905***
Min. Education	0.4181	1.46	0.0962	0.2359	1.42	0.0881
Nuclear	-0.9246***	-2.96	- 0.2194***	-0.5653***	-3.06	- 0.2167***
Lahore	1.6243***	7.09	0.3466***	0.9308***	7.40	0.3284***
Urban	-0.6283***	-2.60	-0.1431**	-0.3221**	-2.35	- 0.1194***
Male to HH Size	-1.3783*	-1.91	-0.3047*	-0.8079*	-1.89	- 0.2935***
Log Expense	1.0400***	4.58	0.2299***	0.5960***	4.53	0.2165***
Constant	-4.6700**	-2.22		-2.6079**	-2.15	
Wald chi2	93.90			117.47		
Pseudo R2	0.2333			0.2300		
N	600			600		

## 5.2 Multinomial Logit Model for Employment status

In this study, we used a multinomial logit model (MNL) to analyse the effect of remittance on preferences towards different employment status. We did not give the odd ratio and relative risk ratio but given the marginal effects of different categories in table 7. The results reveal the two important implications of the empirical aspect. First, remittances allow the member of the household to not participate in the labour force. Second, if the household's members want to participate in the labour force then it is most likely to participate in full-time self-employment in response to higher remittances. The likelihood to participate in non-employment is higher than participate in full-time self-employment. It follows the "reservation wage effect" of non-employment when the amount of remittance is not substantial to finance the commencement of the self-employment business. However, when remittance receipt exceeds a given limit, it turn up as "work effect" because it increase the likelihood to participate in full-time self-employment. On the other hand, the likelihood to participate in wage-employment and part-time self-employment is negatively associated with remittances and its effect is insignificant.

The results suggest that a rise in age is associated with less likely to be non-employed and more likely to be full-time employed in wage/self-employed. It implies that an increase in age associate with household responsibilities and financial pressure on the head which insist on him/her to work in the labour market. Likewise, male-headed household is less likely to be non-employed and more likely to be full-time employed in wage/self-employed than their female counterparts. As expected, the head of household with a higher level of education is more likely to be full-time wage/self-employed. It follows that higher human capital supports the enlargement of entrepreneurial activities in the remittance-receiving household.

The results show that the head of the household from the nuclear family (son or wife of the migrant) is more likely to participate in the non-employment and less likely to participate in any kind of employment than the non-nuclear family's head. It portrays that the "inactivity effect" of remittances is dominant in nuclear families. Furthermore, a household's head from more developed provincial capital is less likely to participate in non-employment and more likely to participate in full-time self-employment than the person from the less developed provincial capital. As expected, a person from the urban area is less likely to participate in the non-employment and self-employment than the person from the rural area. It infers that in practice, a person from urban area is mostly literate and prefer to participate in the public or private sector jobs.

**Table 7:** Marginal effects of variable on Labour Participation

Variable	C1	C2	C3	C4	C5
	dy/dx	dy/dx	dy/dx	dy/dx	dy/dx
Log Remittances	0.2677*	-0.00052	-0.09319	-0.1381*	0.0369*
	(1.69)	(-0.01)	(-1.49)	(-1.91)	(1.72)
Age	-0.0754	-0.00098	0.0417***	.0055	0.0291**
	(-1.07)	(-0.01)	(2.89)	(0.52)	(2.37)
Ages	0.00085	0.000012	-	-.00002	-.00033**
	(1.02)	(0.01)	(-3.03)	(-0.15)	(-2.44)
Gender (Male=1)	-0.4454**	-0.00045	0.2623**	-.002001	0.1856**
	(-2.05)	(-0.01)	(2.33)	(-0.03)	(2.22)
Min. Education	-0.1264	0.0495	0.2113***	-0.1507*	0.0162
	(-1.23)	(0.01)	(4.10)	(-1.94)	(0.27)
Nuclear	0.3648***	-.0025	-0.0753	-.1197	-0.1672*
	(4.01)	(-0.01)	(-0.82)	(-1.63)	(-1.73)
Lahore	-0.3809**	-.00026	0.1042	0.0935	0.1835**
	(-2.12)	(-0.01)	(1.58)	(1.63)	(2.04)
Urban	0.1466	0.0016	0.0615	-	-0.1177**
	(0.97)	(0.01)	(0.76)	0.09209*	(-2.00)
Male to HH Size	0.3255	-0.0036	0.0882	-.14296	-0.2671
	(1.21)	(-0.88)	(0.47)	(-0.79)	(-1.12)
Log Expense	-0.26502**	0.00116	0.0955	0.0429	0.125513*
	(-2.26)	(0.01)	(1.10)	(0.81)	(1.73)

Wald chi <sup>2</sup>	1368.89			
Pseudo R <sup>2</sup>	0.2191			
N	600			

T-stat in parentheses \* p<0.1, \*\* p<0.05, \*\*\* p<0.01, C1= Non-employed, C2= Wage-employment, Part-time, C3= Wage-employment, Full-time, C4= Self-employment, Part-time, C5= Self-employment, Full-time

### 5.3 Multinomial Model for profession category

In this section, we analysed the effect of remittances on the choice of different profession categories by excluding non-employment. The marginal effects of the multinomial logit model suggest that remittances significantly decrease the likelihood to participate in the formal work, but increase the likelihood to participate in self-employment and employer. Remittances have a strong effect on the likelihood to participate in employer than self-employment because remittances may overcome financial constraints and help in expanding the micro-enterprise and family business. Furthermore, remittances increase entrepreneurial activities among non-migrant members and its spillover effect may serve as a source of job creator.

The results show that an increase in wage increase the likelihood to participate in farming because an increase in wage rate is associated with increasing return to scales and farming has the potential of increasing return to scale by adopting modern technology. While an increase in the age of the household's head associated with an increase in the likelihood to participate in self-employment because self-employment is relatively less complex in nature and can be continued till older ages. On the other hand, an educated person has more likelihood to participate in an employer profession than an illiterate person. It implies that an educated person can run a business smoothly because he/she may understand complexity related to business, finance, and accounts matter. A person from an urban area has more likelihood to participate in formal work due to more opportunities in public and private enterprises. Similarly, a person from an urban area has more likelihood to participate in the employer profession because in urban areas financial markets are more developed and one can overcome credit constraint by getting flexible loans from the financial institution and may start small and medium enterprise (Tagoe et al., 2005).

**Table7:** Marginal effects of Variables on Labour Participation

Variable	P1	P2	P3	P4
	dy/dx	dy/dx	dy/dx	dy/dx
Log Remittances	-0.04022*	-0.08946	0.04738**	0.06018**
	(1.7)	(1.1)	(2.1)	(2.4)
Log Hourly Wage	0.02843	0.00405*	-0.03981	0.00733
	(0.6)	(1.8)	(0.2)	(0.3)
Age	-0.0098	0.00955	0.00054*	-0.00029
	(0.04)	(0.03)	(1.68)	(0.72)
Min. Education	0.49868	-0.42563	-0.13800	0.06495**
	(0.13)	(0.14)	(1.09)	(2.17)

Nuclear	-0.13167	0.25123	-0.09679	-0.02277
	(0.25)	(0.15)	(0.04)	(0.006)
Lahore	-0.11436	0.11276	-0.00317	0.00478
	(0.21)	(0.19)	(0.24)	(0.0045)
Urban	0.3796*	-0.40831*	0.026604	0.00214**
	(1.76)	(1.87)	(1.02)	(2.04)
Log Expense	0.02593**	-0.02508	-0.00705	0.00619**
	(2.11)	(0.1)	(0.021)	(2.05)
Male to HH Size	0.70587	-0.62868	-0.0877	0.0105*
	(0.36)	(0.35)	(0.08)	(1.69)
Wald chi <sup>2</sup>	2956.18			
Pseudo R <sup>2</sup>	0.2505			
N	354			

Z-stats in parentheses \* p<0.1, \*\* p<0.05, \*\*\* p<0.01, P1=formal worker, P2=farming, P3=self-employed, P4=Employer

## 6. Conclusions

This paper studies the effect of remittances on the labour force participation decision of the individual and preferences towards different employment status and work categories. We collected data from the rural and urban areas of the two provincial cities of Pakistan to cover the main range of the topic. We estimated the effect of remittances on the likelihood of labour participation by using the logit and probit model. The estimates suggest that remittance significantly increases the likelihood to not participate in the labour force. The magnitude of the coefficient converted into elasticity and interpreted that a 10% increase in the monthly remittances decreases the likelihood to participate in the labour market by 7.8%. The differential effect of remittances depict that as monthly remittances increase from 10,000 rupees to 500,000 rupees, the likelihood to participate in the labour market decreases from 0.84 to 0.30 respectively. It implies that the presence of remittance receipt increases the non-labour income of non-migrant members which is a positive function of reservation and reservation wage, in turn, a negative function of labour force participation.

We applied a multinomial logit model to analyse the effect of remittance on the choice of different employment statuses. The results revealed that among different employment categories, remittances increase the likelihood to participate in non-employment. While if a household's member wants to participate in the labour force then it is more likely to participate in full-time self-employment in response to higher remittances. It follows the "reservation wage effect" of non-employment when the amount of remittance is not substantial to finance the commencement of the self-employment business. However, when remittance receipt exceeds a given limit, it turn up as "work effect" because it increase the likelihood to participate in full-time self-employment. Furthermore, the effect of remittances on the choice of different professions depict that remittances increase the likelihood to participate in self-employment and employer profession. Remittances have a strong effect on the likelihood to participate in employer than self-employment because remittances may overcome financial constraints and help in expanding the micro-enterprise and family business. Moreover, remittances increase



entrepreneurial activities among non-migrant members and its spillover effect may serve as a source of job creator.

These findings focus on labour market outcomes and reveals that reallocation of labour from non-employment to self-employment or employer can generate a fruitful outcome. Initially, there is a need of some policy measures to channelize the effect of remittances at the micro-level. For instance, incentives in the adoption of self-employment and improvement in ease of doing business is mandatory to spill over the effect of remittances as job creators. Moreover, credit facility to remittances receiving household may partially overcome the financial constraints to accelerate employment opportunities. It implies that capital accumulation may result in hiring labour and an increase in labour productivity (Lucas, 1987).

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