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Comparative Analysis of Remitted and Non-Remitted Households' Budget Allocation to Food and Non-Food Items in Pakistan

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Globalization has expanded labor market interconnectedness, and countries are striving to take advantage of this opportunity by sending their work force to countries where labor is in demand. On the other side, unfavorable events such as COVID-19 can impose restrictions such as lockdowns, travel bans, and social distance, all of which have caused problems for migrant workers and reduced remitted household budget allocation. Using the two-sample t-test and the PLSM 2014-15 dataset, this study compares the budget allocation of remitted and non-remitted households to food and non-food items. In addition, the distribution of remitted households by province and region, as well as remittance sources also determined. The results show that the Punjab province has the highest percentage of remitted households (51%), while Balochistan has the lowest percentage (1.4%). Furthermore, in Punjab, Bank is the most common channel of receiving remittances, whereas Hundi is in Khyber Pakhtunkhwa. The results of a two-sample t-test show that between remitted and non-remitted families, there is a significant difference in mean monthly budget allocation to food and non-food items. Remitted households spend more on food, education, health, and gas usage than non-remitted households on a monthly basis. As a result, the study suggests that increasing job opportunities both inside and outside Pakistan could be a viable policy option for increasing remitted and non-remitted household budget allocation. Enhancing bank remittances channels could be a viable policy option for increasing remittances and consequently increases households' budget allocation to food and non-food items .

Keywords: Remittances, Household, Budget Allocation, Pakistan
JEL: Q25, D10, F24,

Although globalization has increased labor market connectedness, and countries are attempting to capitalize on this opportunity through migrants of their labor force involvement in labor demanded countries(Rahim & Wahab 2020). Migration in term of labor force has a significant importance in sharing new ideas and efficiency skills in various fields both in developed and developing countries(Ahmed, Sugiyarto, & Jha

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2010). Around 3.5 percent of the global population is believed to be residing outside of their native nations, with 63.5 percent of them migrating for work(Government of Pakistan, 2020; Migration and Development Brief, 2018). The migrants to labor-demanding countries is increasing the proportion of the global population living outside their birth countries(Olowa et al., 2013). International migrants (including refugees) climbed from 172 million in 2000 to 258 million in 2017, with high-income nations accounting for most of the rise(Migration and Development Brief, 2018). For economic development and household welfare, external financing through migrant inflows of remittances to developing nations is becoming increasingly important. Remittance inflows to low and middle-income nations were the highest in 2019, totaling $554 million(World Bank, 2020). On the other hand, in the context of remittances, the COVID-19 epidemic has stuck various economic operations, and this epidemic could be long, deep, and ubiquitous. COVID-19 imposed restrictions such as lockdowns, travel bans, and social distance, all of which posed issues to migrant workers. Loss of employment, earnings, food security risk, and loss of remittances to their families are all possible challenges as are facing by migrant workers(Government of Pakistan, 2020). Remittances to low and middle-income countries are predicted to fall by 20% to $445 billion in 2020, from $554 billion in 2019. Thus, the relative importance of remittance flow as a source of external financing to low-and middle-income countries is expected to rise. This is because COVID-19 is expected to diminish the flow of foreign direct investment due to trade restrictions, travel bans, and the wealth effect of a drop in multinational company stock prices(World Bank, 2020).

Remittances to South Asia are expected to decrease by 22% to $109 billion by 2020. This unprecedented drop is attributable to a substantial drop in remittance inflows to South Asia from the United States, the United Kingdom, and EU countries. According to The International Organization for Migration(2020) survey the most common reasons for Pakistani employees migrating to other countries are an insufficient income (33%), unemployment (25%), and financial difficulties/debts (13%). Pakistan was placed second in South Asia in terms of manpower exporting country to Gulf Cooperation Council countries such as Saudi Arabia and the United Arab Emirates, with a 96 percent manpower share(Government of Pakistan, 2020). Pakistan's share of remittance inflows is expected to fall by 23% to $17 billion in 2020, down from $22.5 billion in 2019. Average remittances inflow to Pakistan in the last ten years is $16.6 billion with the major contributor is Saudi Arabia followed by UAE, USA and UK(World Bank, 2020). However, the remittance loss is a severe problem for the household sector in Pakistan, like other developing counties. This is because remitted households are mainly dependent upon on remittances while a constraint such as COVID-19 could influence negatively on households living standards. To address the importance of remittances and the future living standards of the household sector in the face of recent adverse occurrences, this study adds to the current literature by examining the distribution and sources of remittances among remitted households by province and region, and comparison of remitted and non-remitted households' budget allocation to food and non-food items.

Literature Review

The literature contains a substantial debate about the impact of remittances on the growth of a society and the welfare of the household sector. However, the literature shows mixed results on household decisions about remittances allocation to spending, debt, saving, human capital development, labor supply and living standards of household. In the case of developing, the studies investigated the remittances impact on households' consumption, health, education, housing, and utilities. Kapri and Jha (2020), Thapa and Acharya (2017) for Nepal; Yuni et al., (2018) for Nigeria; Mahapatro et al., (2017) for India; Khan et al., (2021) for Pakistan investigated the impact of remittances on household's food and non-food items. The findings of Khan et al., (2021) support the argument that remittance inflow enhances spending on health at household level. Using the Nepal Living Standards Survey 2010-11, Kapri and Jha, (2020) investigated the remittances impact on household health care expenditure. The result shows remittances have a positive impact on health care at the household level. Because a substantial amount of household health care expenditure is based on self-finance, an increase in remittances inflow boosts households' ability to spend more on health care services. In the contest of Nepal, the results of Thapa and Acharya, (2017) show that remitted households spend more on consumption, education, and health than non-remitted households. Remitted households are better off in terms of expenditure on durable goods, education, and health than non-remitted households. Both within and outside Nepal, remittances have a positive impact on health-care spending. Yuni et al., (2018) conducted a comparative examination of remitted and non-remitted households' expenditure habits in Enugu and Anambra, Nigeria. In most expenditure categories, the results show no substantial difference between remitted and non-remitted households' budget allocation. In other words, neither remitted nor non-remitted households significantly alter their budget allocations for health, education, consumption, business, charitable giving, or saving. Mahapatro et al., (2017) investigated households budget allocation to food and non-food items in case of India. The leading category is food where household allocates more budget whose share is 70%, followed by education (35%), health care (33%), and other purposes (33%). However, budget allocation to food, medical, and other categories differ significantly between remittances and non-remittances households. Using the PSLAM (2010-11) dataset, Khan et al., (2021) investigated the nexus between remittances and health care expenditure. It confirms that remittances increase household spending on health care services, based on the findings.

After reviewing the above summarized literature, to best our knowledge the literature on comparative analysis of remitted and non-remitted households' budget allocation to food and non-food items has not been addressed empirically for the case of Pakistan. To fill this gap and add to the existing literature, this study examines (i) the distribution and sources of remittances among remitted households by province and region, and (ii) comparison of remitted and non-remitted households' budget allocation to food and non-food items.

Method

Data Source

The Pakistan Social and Living Standards Measurement (PSLM) 2014-15 dataset is used to survey the study's objectives. The remitted households are chosen based on the survey's reported question: "What is the source of remittances received from within/outside Pakistan?" Because this is a stratified random sampling survey, the sample of households from each province is chosen based on the population size of the province. A total of 1733 remitted, and 22357 non-remitted households are chosen. The study also collects information on household's total expenditure/income, and budget allocation to food and non-food items from the PSLM 2014-15.

Following Mohamed et al., (2021); Yousaf, Ahmed and Ali (2020) and George and Mallery (2018) a comparative analysis of remitted and non-remitted household's budget allocation to food and non-food item is computed as follows:

$$t\text{-}test = \frac{\left(Budget_{\ remitted\ household\ to\ item\ i} - Budget_{\ non-remitted\ household\ to\ item\ i}\right)}{\sqrt{s.e_{remitted\ budget\ allocation\ to\ item\ i}^{\ 2} + s.e_{non-remitted\ budget\ allocation\ to\ item\ i}^{\ 2}}} \quad (1)$$

Equation (1) is basically the mean difference t-test and therefore, the mean value of household budget allocation to food and non-food items uses and $s.e_{remitted\ budget\ allocation\ to\ item\ i}$ and $s.e_{non-remitted\ budget\ allocation\ to\ item\ i}$ are the standard errors. When finding differences between the mean of the two groups, this test is more suited. The ratio of expenditure on food and non-food items to income is used to calculate the mean budget allocation to food and non-food items in share form. Table 1 shows the categories and construction of budget allocations for food and non-food items as well as total expenditure/income.

Table 1

Construction of Data

Variable	Construction	Symbol
Budget Allocation to		
1. Food	It is expenditure made on food divided by total expenditure of household *i*.	$\frac{px_{food}}{total\ expenditure}$
2. Education	It is expenditure made on education items divided by total expenditure of household *i*.	$\frac{px_{education}}{total\ expenditure}$
3. Health	It is expenditure made on health divided by total expenditure of household *i*	$\frac{px_{health}}{total\ expenditure}$
4. Transport	It is expenditure made on transport divided by total expenditure of household *i*	$\frac{px_{transport}}{total\ expenditure}$
5. Electricity	It is expenditure made on electricity divided by total expenditure of household *i*	$\frac{px_{electricity}}{total\ expenditure}$

6.	Gas	It is expenditure made on gas divided by total expenditure of household *i*	$\frac{px_{gas}}{total\ expenditure}$
7.	Housing	It is expenditure made on housing divided by total expenditure of household *i*	$\frac{px_{housing}}{total\ expenditure}$
8.	Total expenditure	Expenditure made on food and non-food items of household *i*	$\sum(px_{food} + px_{non-food})$

Results and Discussion

Province and region-wise remittances receiving households in Pakistan (%)

Table 2 shows the results in terms of remittances receiving households by province. It confirms that Punjab has the highest percentage of remitted households (51%), followed by Khyber Pakhtunkhwa (41.1%), Sindh (3.3%), and Balochistan (1.4%). Furthermore, the 34.3% remittances receiving households belong to urban Punjab, followed by urban Khyber Pakhtunkhwa (20.5%), Sindh (2.7%), and Balochistan (1.2%). In terms of rural distribution, Khyber Pakhtunkhwa has 19.6% of remitted households, followed by Punjab (16.7%), Sindh and Balochistan have around the same. However, in all provinces, remitted households belong to the urban region, which is greater than the rural region. The argument could be made that a large portion of the population prefers to live in cities, which is the primary driving force behind the acquisition of technical skills, education, and other supportive amenities that are valued added to human capital to secure reasonable employment opportunities both nationally and overseas.

Table 2

Province and region-wise remittances receiving households in Pakistan (%)

	Region		
Province	***Rural***	***Urban***	***Total***
KP	***19.6%***	***24.5%***	***44.1%***
Punjab	***16.7%***	***34.3%***	***51.0%***
Sindh	***0.6%***	***2.7%***	***3.3%***
Balochistan	***0.5%***	***1.2%***	***1.6%***
Total	***37.3%***	***62.7%***	***100%***

Source: Author calculation based on PSLM 2014-15

Sources of Remittances (%)

Remittances are sent through both formal and informal channels. Formal remittances are payments made through official channels like banks and money transfer agencies, although informal channels like hundi, friends, and family, or monies taken home by migrants themselves, are also used. Table 3 shows that households who receive remittances from abroad through the formal route account for 36%. For remittances to their families, urban households use more formal banking channels than rural households, accounting for 64% of total banking channels. Despite having a better banking system, remittances received through an informal channel have a higher proportion of urban households than rural households. Remitted families receive 57% of remittances through Hundi in urban areas, compared to 43% in rural regions. It is critical to encourage new technology approaches in Pakistan's rural-urban areas, such as the Roshan Digital Account and internet facilities, in order to increase remittances sent through banks.

Table 3

Sources of Remittances received (%)

Region	*Remittances through Banks*	*Remittances through Hundi*
Rural	***36%***	***43%***
Urban	***64%***	***57%***
Total	***100%***	***100%***

Source: Author calculation based on PSLM 2014-15

Table 4 shows that 64.1% of remitted families in Punjab, 31% in Khyber Pakhtunkhwa, 3.7% in Sindh, and 1.2% in Balochistan get remittances through formal (bank) channel. In Punjab, 43.3% of urban remitted families obtain remittances through the bank channel, which is dominant, while in Khyber Pakhtunkhwa, the hundi channel is dominating (59.9%). Inaccessibility and unavailability of financial intermediaries could be used as a rationale for using the informal route. It's probable that the lack of a proper mechanism is linked to government policies that make it difficult for their human capital to send remittances to their loved ones. In Pakistan, however, the ratio of remittances coming through a formal channel is higher in urban areas than in rural areas. The recent government created Roshan Digital account for overseas Pakistanis, which provides quick access and availability of bank channels, as well as remittance-friendly policies. However, the data set used in this analysis has no information on recent changes in remittances sent via new electronic channels.

Table 4
Province and Region Wise source of Remittances

Province		Region		Total
		Rural	Urban	
Remittances received through bank	KP	14.10%	16.90%	31.00%
	Punjab	20.80%	43.30%	64.10%
	Sindh	0.50%	3.20%	3.70%
	Balochistan	0.20%	1.00%	1.20%
Remittances received through Hundi	KP	38.80%	50.90%	89.70%
	Punjab	2.30%	3.10%	5.40%
	Sindh	0.80%	1.00%	1.80%
	Balochistan	1.30%	1.80%	3.10%

Source: Author calculation based on PSLM 2014-15

Comparative Analysis Through Mean Difference test

Table 5 shows the mean difference test results for the following hypotheses: (1) there is no significant difference in mean budget allocation to food and (2) there is no significant difference in mean budget allocation to non-food items between remitted and non-remitted households in Pakistan. In terms of remitted household mean monthly budget allocation, it confirms that housing takes up much of the budget, with a mean monthly budget allocation of 0.467, followed by health (0.155), education (0.135), transportation (0.110), and food and other non-food items' budget share is less than 0.100. In terms of non-remitted household budget allocation, it indicates that housing is the most important category, with a share of 0.524, followed by transportation (0.142), education (0.130), and the remaining categories' share is less than 0.100. This research demonstrates that both remitted and non-remitted households devote a significant portion of their budget to housing. This confirms that as household income rises, so does the budget allocation for housing.

The t-test results are statistically significant, indicating the difference in mean monthly budget allocation to food and non-food items between remitted and non-remitted households. In the case of household budget allocation to food, the difference in mean monthly value is positive, indicating that remitted household budget allocation to food is more than non-remitted household. The positive value associated with the difference in mean monthly budget share to education demonstrates that remitted household budget's share to education is greater than non-remitted household. The difference in mean monthly budget share to health is positive and statistically significant, indicating that remitted household allocates more money to this category than non-remitting household. In the case of gas, the same effect holds true, as remitted household is allocating more money to gas than non-remitted household. The values of two-sample t-test for transportation, power, and housing is statistically significant, demonstrating that there exist differences in remitted and non-remitted budget shares. However, non-remitted household budget shares on these items are larger than remitted ones.

Table5

Two-Sample Mean difference t-test

	Mean Monthly Budget Allocation			
Groups	***Remitted households***	***Non-remitted households***	***Difference in mean monthly budget allocation***	***Two-sample t-statistics***
Food	***0.0987***	***0.0724***	***0.0263***	***15.380******
Education	***0.1357***	***0.1307***	***0.0050***	***1.415****
Health	***0.1552***	***0.0987***	***0.0565***	***18.648*****
Transport	***0.1101***	***0.1423***	***-0.0322***	***-12.07*****
Electricity	***0.0212***	***0.0258***	***-0.0046***	***-6.435****
Gas	***0.0116***	***0.0059***	***0.0057***	***7.536*****
Housing	***0.4674***	***0.5243***	***-0.0569***	***-11.904*****

Source: Author estimation based on PSLM 2014-15

Note: *shows significant at 10%, ** shows significant at 5%, and *** shows significant at 1%.

Conclusion and Recommendation

The main objective of this study is to investigate a comparative analysis of remitted and non-remitted households' budget allocation to food and non-food items for the case of Pakistan while using the PLSM 2014-15 dataset and the two-sample t-test. To fulfill this objective, the following hypotheses are tested: (i) there is no significant difference in mean monthly budget allocation to food and (ii) there is no significant difference in mean monthly budget allocation to non-food items between remitted and non-remitted households. In addition, distribution and sources of remittances receiving by province and region wises are estimated. Based on study's finding the relevant policy recommendations are as follows:

1. It indicates that by province and area, Punjab has the most remitted households while Balochistan has the least. In terms of rural areas, Khyber Pakhtunkhwa has the most remitted receiving households compared to other provinces' rural areas. To raise the proportion of remitted households, it is consequently more vital to boost job opportunities for rural and urban households both within and outside the country.
2. Since most remittances are received through the bank channel in Punjab, Hundi is used as a channel for remittances sent to households' members in Khyber Pakhtunkhwa. It is more necessary to promote Baking as a source of remittance sending in Punjab and Khyber Pakhtunkhwa. The present government of Pakistan has introduced a Roshan Digital account for Pakistanis living abroad, which gives quick access and availability, as well as a remittance-friendly option for remittances sending. This policy must be promoted with aiming to increase remittances through formal channel. In addition, new technological methods for sending remittances must be established in Pakistan's rural-urban areas.

3. Because the average monthly budget allocation to food, education, health, and gas is higher in remitted households than in non-remitted households. As a result, creating job opportunities for adult members of remitted households would be a viable policy option for increasing the budget allocation of remitted households to food and non-

food products. A similar argument is made for increasing non-remitted households' budget allocation.

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