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ARAŞTIRMA MAKALESİ / RESEARCH ARTICLE

REMITTANCE AND POVERTY IN SOMALIA: PROPENSITY SCORE MATCHING APPROACH

SOMALİ'DE HAVALE VE YOKSULLUK: EĞİLİM PUANI EŞLEŞTİRME YAKLAŞIMI

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Abstract

Somalia, the remittance from the diaspora, is an essential part of the economy, where the inflows indicate more than the sum of the foreign aid and investment together. More than two million Somalis living abroad send 1.3 billion dollars annually to Somalia. The study was set up to examine how remittances affect household expenditure and reduce poverty in Somalia. Specifically, this study aims to investigate how households spend remittances in Somalia using the latest survey data from the Somali High-Frequency Survey 2018, and the equation is estimated using propensity score matching. This study's calculated result showed that the per capita consumption of remittance recipients was higher than non-recipient households, and household poverty levels decreased significantly due to remittance.

Keywords: Somalia, Households, Poverty, Consumption, Poverty Propensity Score Matching
JEL Classification: I3, I32, F24, P36

Öz

Somali'de, diasporadan gelen para transferi, girişlerin dış yardım ve yatırımın toplamından daha fazlasını gösterdiği ekonominin önemli bir parçasıdır. Yurt dışında yaşayan 2 milyondan fazla Somalili, Somali'ye yılda 1,3 milyar dolar gönderiyor. Çalışma, işçi dövizlerinin hane halkı harcamalarını nasıl etkilediğini ve Somali'de yoksulluğu nasıl azalttığını incelemek için kuruldu. Spesifik olarak, bu çalışmanın amacı, Somali Yüksek Frekans Anketi 2018'in en son anket verilerini kullanarak Somali'de hanehalklarının işçi dövizlerini nasıl harcadığını araştırmaktır ve denklem eğilim puanı eşleştirmesi kullanılarak tahmin edilir. Bu çalışmadaki tahmin edilen sonuç, havale alanların kişi başına tüketiminin, alıcı olmayan hanelere göre daha fazla olduğunu ve göçmen dövizleri nedeniyle hane halkının yoksulluk düzeyinin önemli ölçüde düştüğünü göstermiştir.

Anahtar Kelimeler: Somali, Hanehalkı, Harcama, Tüketim, Yoksulluk, Eğilimi Puanı Eşleştirme
JEL Sınıflandırması: I3, I32, F24, P36

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1. Introduction

Remittances have become a significant source of financial capital for external development globally. The recorded remittance received by developing countries was substantially high, based on the estimate by World Bank in 2006, and the official remittance gotten by developing countries rose from US$31.2 billion in 1990 to US$221.3 billion for the year 2005, speaking to a yearly development of more than 13 percent (Ratha & Shaw, 2006). The migrant remittance flows to developing countries in 2016 reached $429 billion, albeit a decline of 2.4 percent over $440 billion in 2015. In sub-Saharan Africa, money sent back by foreigners to their homes reached a record of $41 billion in 2017. This shows a 10% rise in remittance from the earlier year, immense yearly growth for any world region (Ratha et al., 2016). In third world nations, migration, whether international or internal, is frequently brought about by people looking for better pastures for themselves and their families, apart from escaping persecutions and other societal predicaments. When they discover urban areas or abroad opportunities, they will send a sizeable bit of their income to families back home (Adams, 2006).

Remittances flow to developing countries is now more than three times the size of official development aid flows and more stable than private capital flows. Workers' remittances are one of the primary sources of foreign exchange in many developing countries. This consistent increase of remittance inflows to developing countries was attributed to a rise in the number of migrants and the increasing integration of immigrants in developed countries' economies, then enhanced workers' incomes and thus their remittance capability (Rocher and Pelletier, 2008). However, the most exciting element with remittances is how the population spend the received financial resources. From a pessimistic perspective, households that receive remittance funds from abroad tend to channel the resources to consumption due to the high poverty levels that many populations in developing countries face. Besides, a substantial portion of the average household savings made by individuals in third-world countries benefitting from overseas remittances does not significantly contribute to the overall economy (Adams, 2006).

Remittance serves as a development tool and positively impacts recipient countries' economies; from a microeconomic point of view, remittances from foreign sources remain essential in allowing the poor communities to increase their savings and investment while spending more on consumption and reducing poverty. At the household level, the majority of the recipient households exhibit significantly better livelihoods through improved health within families and access to better education, help in acquiring houses, and promote entrepreneurial activities (Karagöz, 2009).

When migrants want to send back money to their families, they use it either through formal or informal procedures. Some use the official routes of money transfer operators (MTOs) and banks, but the language barriers and costs associated with these services can hinder use. As a result, most remittances occur in unofficial channels. For example, immigrants may convey money home themselves or send cash through the mail or a friend (Carrasco and Ro, 2007).

Table 1: Estimates and Projections of Remittance Flows to Low – and Middle-Income Regions

	2010	2016	2017	2018	2019e	2020f	2021f
				($ billions)			
Low and Middle Income	**343**	**444**	**484**	**526**	**551**	**574**	**597**
East Asia and Pacific	96	128	134	143	149	156	163
Europe and Central Asia	38	44	53	58	59	62	64
Latin America and the Caribbean	56	73	81	89	96	99	103
Middle East and North Africa	39	51	57	58	59	61	63
South Asia	82	111	117	132	139	145	150
Sub-Saharan Africa	32	38	42	47	49	51	54
World	**470**	**589**	**634**	**683**	**707**	**739**	**768**
				(Growth rate, percent)			
Low and Middle Income	**11.6**	**-1.6**	**9.1**	**8.6**	**4.7**	**4.2**	**4.0**
East Asia and Pacific	19.9	-0.5	5.1	6.8	3.8	4.7	4.5
Europe and Central Asia	5.6	0.1	22.3	8.4	1.8	4.6	4.3
Latin America and the Caribbean	2.5	7.4	10.8	9.6	7.8	3.8	3.6
Middle East and North Africa	18.2	-1.2	12.1	1.6	3.0	2.7	3.2
South Asia	9.4	-5.9	5.8	12.7	5.3	4.1	3.6
Sub-Saharan Africa	11.1	-9.9	9.4	10.7	5.1	5.1	4.9
World	**8.6**	**-1.1**	**7.7**	**7.6**	**3.5**	**4.6**	**4.0**

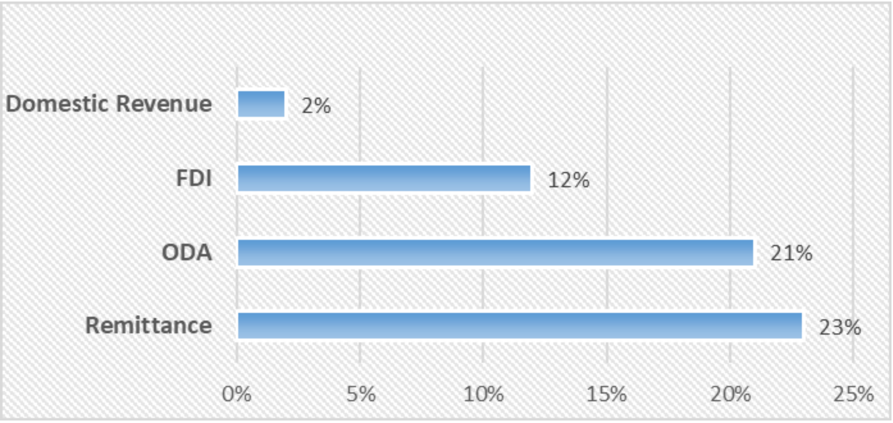
Source: Migration Data Portal, 2020

Martinez (2005) analyzed the remittances coverage and national statistics of the 40 developing countries. He found that the current data do not reflect the full number of remittance inflows, and most nations need to set up better systems that would license them to boost the developmental effect of remittance inflows. He concludes that a couple of countries only measure remittance that happens through informal channels (Martínez, 2005). On the other hand, there is no general understanding of the most proficient method to measure the international workers' remittances to developing countries. Therefore, Table 1 does not reflect the forthcoming volumes of the unrecorded informal routes of remittance.

Somalia is one of the countries that heavily rely on remittance for its operations. A society experienced a protracted crisis in the 1980s, a decrease in economic activities and war brought about raising the level of poverty, hardship, and weakness. The remittance inflow in Somalia is critical in sustaining family members, friends, and close associates' livelihoods. They remained in the country, especially during the civil war and the aftermath from 1988 to 1992. The majority of the Somalis still living in the country use the acquired remittance resources for health, education, and other socially – improving purposes. (UNDP, 2001).

The aftermath of the civil war in 1988 that led to the ultimate collapse of the Somalia state in 1991 resulted in thousands fleeing the country. In light of these mass movements, over two million Somalis live abroad and in neighboring nations currently. Further, the majority of these communities still maintain close ties with their families in the homeland and offer substantial amounts of financial resources for their routine upkeep, commonly referred to as remittances. Presently, remittances remain a critical element for the survival and stability of the Somalia economy. The reported remittances were estimated at US$ 1.4 billion in 2016 that is more than 23% of GDP, which is more than the recorded official development assistance (ODA), which is totaled US$ 1.3 billion in 2016. There are concerns over whether remittances significantly impact consumption expenditure and, hence, poverty reduction (Worldbank, 2017).

Figure 1. Financial Flows as % of GDP, 2016



Source: World Bank Group. (2017). Somalia Economic Update

Therefore, the study examines whether remittance affects the household poverty levels using the latest survey data from the Somali High-Frequency Survey 2018. Even though Somalia's economy is to a great extent subject to remittance, its commitment to a decrease in poverty is obscure. Hence, the critical policy question is, how do remittances affect household expenditure and reduce poverty in Somalia? Specifically, the objective of this study is to investigate how households spend remittances in Somalia. To the best of the writer's understanding and information, no research has managed this issue in the particular example of Somalia; however, numerous comparable studies have been done on different countries.

In contrast to various researches, this paper utilizes a propensity score matching (PSM), which enables the recipient of remittance households to be compared to non-recipient who are similar in terms of their observed characteristics, and thereby correcting for self-selection of recipient households, conditional on those observables**.** The study seeks to proffer answer(s) to the study questions of how families in Somalia spend received remittances and to what extent the remittance helps reduce poverty and enhance the standard of living? The rest of the paper is composed as follows: section 2 is the literature review; section 3 methodology, section 4 is on results and discussion, while section 5 is the conclusion.

2. Literature Review

Remittances are funds migrants in the diaspora send to family members in their home country. It refers to money sent by individuals living or working outside their birth countries to their home country. Remittance inflows from foreign countries are seen to be more critical and different from other external capital inflows as foreign aid because it is stable and more reliable.

In recent decades, the effect of migration on development has been the subject of fiery discussion. In this argument, one can comprehensively separate two fundamentally contradicted approaches: the "developmental optimisms views "versus "pessimistic development view. The optimistic developmental opinions of the 1950 and 1960s hold the assumption that significant capital inflow and industrialization policy to developing nations would speed up economic development and modernization. To them, migration of people usually brings about the transfer of investment capital through remittance. This speeds up traditional communities' exposure to liberal, rational and democratic ideas, modern knowledge, and education. This inflow through remittance is projected to rise, as migrants would be expected to invest considerable capital into the enterprise in their home countries.

Alternatively, the pessimistic view argues that when educated citizens migrate, it drains human capital resources and does not enhance sustainable development (Adenutsi, 2010). Therefore, migration and remittance are seen as disadvantageous to the underdeveloped countries' economies, which is because remittance makes both recipient and sending countries dependent on each other (Binford, 2003). Instead of encouraging economic growth, remittance tends to be used as money for unproductive activities. Besides, it is argued that remittance would not be spent on developing and enhancing investment as the optimistic view would imply but would instead make the investment decisions on behalf of the sender.

2.1. Remittance in Somalia

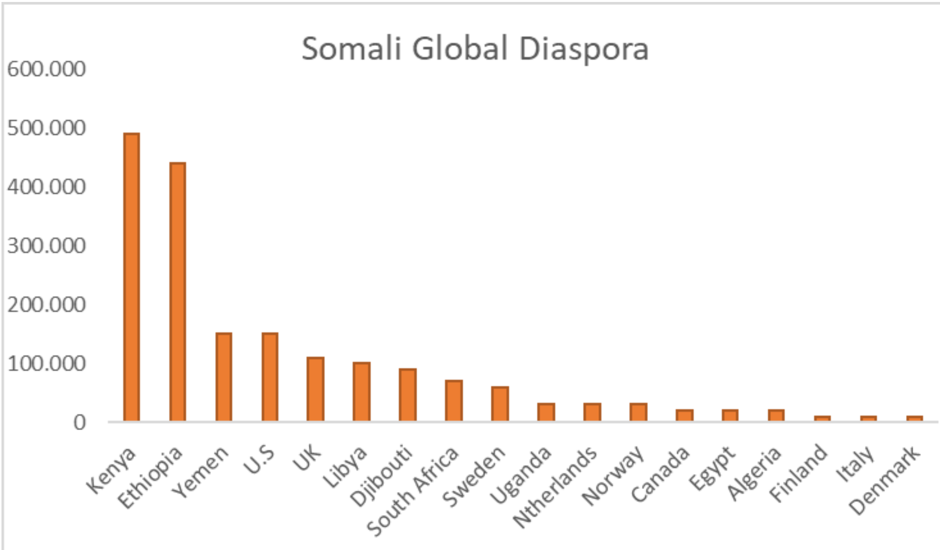
Somalis have traditionally been residents within the area along with the horn of Africa, stretching into the Ogaden regions along with Ethiopia, present-day Djibouti, and Northern Kenya. Largely agro-pastoralists and nomads, the Somalis moved within and beyond their country's borders in search of pasture and water for their livestock. In 1969, supported by the USSR, military, and later, the USA, Siyad Mohammed Barre took power in a coup (Marchal and Sheikh, 2015). The country experienced an economic boom for the first five years until a severe drought (dabadheer) happened in 1974 in the northern part of the country, which devastated the livelihood and forced the government to relocate those families in the southern part of the county. The economic downturn and high unemployment forced many Somali to find a better life. Therefore, thousands of Somalis went to the Middle East to work as construction laborers, drivers, guards, and other skilled sectors. By the end of the 1980s, many of the dwellers, especially in the cities, had at least one close relative or friend living in the Gulf States. Most of the individuals were men, single, and with high expectations of returning home. Besides, the basic wages in Somalia stagnated through the 70s, the employees working in the Gulf States were earning about six times more.

Considering these observations, many Somalis started remitting their earnings to the home country for their families to meet their basic needs. Subsequently, emigration patterns dramatically changed in 1988 due to the outbreak of the civil war. The government collapsed in 1991 due to the increased opposition to the Barre regime and a shrinking economy. This led to a substantial displacement from the country, with many emigrating to Ethiopia, Saudi Arabia, Europe, and the Americas.

Presently, Somalia migrants all around the globe, remit approximately \$1.3 billion in resources annually (Majid, Abdirahman, and Hassan, 2017). It is imperative to note that these funds exceed the total sum of funds and resources remitted through the humanitarian aid kitty, which is about \$800 million. It is critical to note that Somalis' remittances leaving aboard play a substantial role in sustaining the country's economy. Besides, they make an essential contribution to the country's household income through food security's sustenance. Characteristically about 40% of the population in Somalia depends on resources that come in the form of remittance from foreign relatives and associates. Besides, Somalia's Gross Domestic Product (GDP) is estimated to be around \$6 billion, with the per capita income being about \$435 (Majid, Abdirahma, and Hassan, 2017). Somalia's per capita income is the fifth-lowest on a global scale. Besides, Somalia relies heavily on imports to sustain its demand for goods and services.

For this reason, its imports directly account for over two-thirds of its GDP. Most of the two-thirds of GDP are paid for by remittances from transfers made by Somalis living in the diaspora. The total amount of remittances experienced by the country surpasses the overall amount of development and humanitarian aid.

Figure 2. Total Number [1] of Somali Migrants Living Outside of Somalia in 2015, in thousands



Source: Connor & Krogstad, 2016

2.2. Empirical Studies on Remittance and Poverty

Over the years, some fundamental empirical questions were raised in macroeconomics on issues concerning the role of remittance on consumption, poverty reduction, and others. The reason was that most underdeveloped nations have depended on all kinds of remittance from nationals in developed countries for several decades. Several empirical studies were carried out; the results appear to be indecisive.

Employing both quantitative and qualitative research methods Kibikyo and Omar (2012) examined the effect of remittance on poverty and social development within the city of Mogadishu in Somalia. They collected both primary and secondary data; their study findings revealed that the expectations of remittance in reducing poverty are not in doubt as remittance lived according to expectation in reducing poverty that has led to a resultant effect boosting the incomes and gaining grounds to access healthcare and educational services. Worthy of note from the study, remittance is not a contributing factor to employment as it is failing. However, the study recommended that effort in policies should be set aside to encourage remitted funds to employment development.

A similar study conducted by Bulut and Mohammed (2018) also tried to investigate the effects of remittance on poverty reduction in Somalia. The study utilized high-frequency survey data from

1 Estimates rounded to nearest 10,000.

the World Bank data indicators, UNICEF and IMF; hence, the Ordinary Least Square (OLS) was adopted for estimation. The study found that there is a negative impact of Remittance in Somalia and poverty reduction. Thus, they are no tangible impact of remittance of fund from an external source in poverty reduction in Somalia given the ration of Somalia poverty headcount. They recommended that flows of remittance into the country should be channeled to the right purpose order than using funds from remittance to fund terrorist groups, again that the high level taxed attached to remittance should be curbed to reduced cased of informal means of fund remittance into the country.

Lindley (2006) obtained a similar result but in considering the role of migrant remittance and crises in the Somali society with a specific case of Hargeisa. The study adopted the use of both quantitative and qualitative data in making an estimation. Findings revealed that migrant remittance has a direct impact on the household, especially to female, as one and a half household depend fully on the gains from remittance since after the era of crises, funds from remittance have increased per capita household income, which also has increased primary school enrolment within Hargeisa based on results findings. The study recommended that household who receives remittance be in a better position in the era of exchange rate variation as they can access more generous dividend even in times of crises.

Rehman and Naher (2019) tried to investigate relationships between international remittance and poverty in Bangladesh with evidence from household income expenditure survey (HIES) 2010 data with a sample of 12,239 households accessed from the Bangladesh Bureau of Statistics (BBS). The study employed propensity score matching and probit regression. Findings from the survey revealed that remittance impact positively to per capital expenditure and consumptions of household; however, policymakers are expected to create a vibrant environment to remittance fund to strive within both home countries and destination countries.

Nnaemeka, Ebele, Sunday, Iyoko, and Okpukpara (2012) examined the impact of remittance on poverty by extracting studies from Nigeria. Utilizing microdata from the Nigeria National Living standard survey through the use of a propensity score matching method and multinomial logit method with IV's. Findings from the study show that international and country remittances are all instruments in reducing the intensity of poverty in the country. However, deductions from the study also revealed that remittance came from external trends to contribute more to poverty reduction in Nigeria. The study, therefore, recommended that policies should be made in the effort of using funds from remittance in supporting necessary infrastructure like water, electricity, and road infrastructure as measures in mitigating poverty among household units.

Research conducted by Banga and Sahu (2014) investigated and compared the impacts of remittance on poverty reduction in over 77 developing countries in Asian and African countries. The study employed the use of household data and adopted the three-stage least square estimation methods. Findings from the survey revealed that remittance positively impacts reducing poverty in other countries conducted; the most critical implications of remittance are more significant felts in countries that economic growth indicator is up to five percent. Therefore, the study recommended that effort should be made to improve remittance volume and channeling funds into productive engagements sustainable enough to reduce poverty.

Edwin, Mohamed, and Manayo (2018) also accessed the relationship between remittance and household poverty in Mogadishu; he employed primary data and qualitative and quantitative approaches with a non-experimental case study survey design. Finding from the study showed that there is a direct impact of remittance on the poverty level in Mogadishu. It was thereby contributing to the welfare and reduction of poverty among the household. The study recommended that policymakers as the government provide micro-economic policies that are oriented and create a vibrant environment that would propel the full utilization of funds from remittance into various household needs such as health services and education.

Kokeb and Molla (2014) carried out a study on the impact of remittance internationally on poverty, household consumption, and investment in Ethiopia. The study uses descriptive statistics and Heckman's two-stage selection estimation model and found that remittance at the international level has significantly reduced the poverty gap, thus increasing household consumption on durable and non-durable items and also to access investments in health, housing, and education. However, the study recommended that there is a need for remittance funds to be invested in income-generating ventures that are entrepreneurial.

The same line examined Orozco and Yansura's (2013) study on keeping the lifeline open for remittance and markets in Somalia. The study found the given the 2011 drought, which led to a food crisis in Somalia, most households entirely depend generously to the remitted fund from Somalia's living in the diaspora, thus creating a link between remittances and household needs in the country. The study recommended, among others, that the policymakers and the U.S. should regulate the various remittance agency and make payment of remittance mobile and accessible to all, thereby removing externalities.

Maimbo (2006) conducted a study on the overview of remittance and economic development in Somalia. The study form of various sectors that have been affected by a fund from remittance to ridding off the conflict in the economy. The study revealed that the private sector and its activities in trade, transfer payments, and service and telecommunication have made the economy large. The study examined the activity of over 40 percent of urban households whose income is dependent on remittance. Finding from the research indicated that there is a positive impact made by remittance and economic development. However, the study recommended that the government has a lot to do in managing vastness coming from the private sector and creating the political will for the remitted fund to contribute meaningfully to the economy. Thus, the majority of the researches support the fact that remittances not only upsurge the consumption of the household that receive the funds they also assist in improving the human and social capital of their home countries

3. Methodology Framework and Data

In this part, we explain the research approach that we employ to assess remittances' impact on household expenditure patterns in Somalia. The study uses propensity score matching since it aids in constructing counterfactuals in determining how remittances affect households in Somalia. The essential thought is to expect that getting remittance be like a "treatment," so we may evaluate a normal treatment impact on the likelihood of being in poverty. Thus, we need to think about the possibility of being in poverty for the household that receives remittance against the family that did not receive remittance. The distinction will, at that point, be credited to the presence of remittance. The basic presumption that we are making in employing is that the choice to be dealt with, for example, remittance receive though not arbitrary, eventually relies on observable factors. The fundamental idea is to accept that getting remittance is like a "treatment," with the goal that we may evaluate a standard treatment impact on the likelihood of being in household poverty.

The Propensity Score Matching (PSM) estimators will be developed to correct for non-random selection to pair each treated observations (remittance recipient households) with similar control observations (non-recipient households) on the ground of their propensity scores, and to interpret the outcome of the control observations as the counterfactual outcome of the treatment.

The treatment effect for individual i measures the difference between the relevant outcome indicator with the treatment and the appropriate outcome indicator without the treatment. It is given by:

(1) $$\Delta Y_i = E[Y_{i1}|R_1 = 1] - E[Y_{i0}|\, R_i = 1]$$

Denote by R_i a dummy variable equal to 1 if individual i is a treated individual (i.e., a Household receiving remittances) and 0 otherwise. Suppose that Y_{1i} is the value of the variable of interest (expenditure patterns as outcome variables), and Y_{0i} is the value of the same variable when households do not receive any remittance (0).

This simple comparison between remittance-receiving and non-receiving households may not provide the treatment's actual impact as we intend to select in treatment. It is also a fact that other factors correlated with the treatment and omitted variable can also affect the outcome variables because of the problem of observing both treatment and control at the same time. By filling in the missing data on the counterfactual, propensity score matching provides a potential solution to the evaluation problem. More specifically, propensity score matching methods are based on the *conditional independence assumption* (CIA), which states that the untreated state's outcome is independent of treatment participation conditional on a particular set of observable characteristics, denoted by *X* (Rosenbaum and Rubin 1983).

(2) $$[Y_{i0}\, ,\, Y_{i1}] \perp R_i\, |X_i$$

Where, given Xi, the potential outcomes are independent of the treatment status, or after controlling for X_i, the treatment assignment is as good as random.

(3) $E[Y_{i0}|R_1 = 1, X_i] = E[Y_{i0}| R_i = 0, X_i]$

Here it shows that it is possible to participate conditionally in the propensity score denoted *P(X)* rather than on observable characteristics *X*. The propensity score signifies the probability of treatment conditional on a vector of observable characteristics. It is expressed as:

(4) $P(X_i) = \Pr[R_i = 1|X_i]$

The estimation of the counterfactual can be presented as:

(5) $E[Y_{i0}|R_i = 1, P(X_i] = E[Y_{i0}| R_i = 0, P(X_i)]$

To conclude, the average treatment effect for individual *i* can be measured by:

(6) $ATT = E[Y_{i0}|R_i = 1, P(X_i] - E[Y_{i0}| R_i = 0, P(X_i)]$

The main task lies in the estimation of propensity scores derived from dichotomous logit or probit models, including covariates X. Once the estimation is done, a matching estimator needs to be selected that describes how comparison units relate to treated units.

3.1. Data Sources and Variable Descriptions

The data used come from the survey of the second wave of Somali High-Frequency Survey (SHFS) and collected in December 2017 by the World Bank in collaboration with the National Statistics of the Ministry of Planning of Somalia. It is a nationally representative survey and covers 17 out of the 18 regions of Somalia. Six thousand ninety-two households were surveyed, of which 3021 were female-headed households and 3071 male-headed households. The database covers different variables of respondents' social, economic, and demographic characteristics. The survey collected information on household's demography characteristics, food and non-food consumption, livestock, durable goods, perceptions and Social Services, displacement, fishing, and catastrophic events and disasters

Table 2: Variable Description

	Variable Name	Measurement Unit
Outcome Variables	Poverty	Poverty status; 1 = poor, 0 = non-poor)
	Per capita consumption	Income Per capita
Explanatory variables	Household size	Numbers
	Gender of Household Head	Dummy (1= male, 0= otherwise)
	Age of Household Head	Years
	Literacy of Household Head	Dummy (1= if literate, 0= otherwise)
	Area of Residence	Dummy (1= Urban, 0= otherwise)
	Proportion of working-age members in the household	Ratio
	Dependency ratio	Numbers
	Ownership of a Bank Account	Dummy (1= yes, 0= otherwise)
	Ownership of a Mobile Money Account	Dummy (1= yes, 0= otherwise)
	The household has at least one employed member	Dummy (1= yes, 0= otherwise)
	Household has electricity	Dummy (1= yes, 0= otherwise)

4. Results Presentation and Analysis

Table 3 presents the percentages distribution of remittance receipts in urban and rural areas and the entire study population. It shows that overall, there are more households not receiving remittance than those who do. It further indicates that there are more urban households receiving remittance than their rural counterparts.

Table 3: Remittance Receiving in Percentages

Households receiving remittance			
	Overall	Urban	Rural
Households not receiving	81.43	78.96	82.91
Households receiving	18.57	21.04	17.09
Total	100.00	100.00	100.00

Source: Author's computation

Table 4 shows the summary data used in the model, it discloses some attractive differences between the recipient and non-recipient categories of remittances. The result shows that the mean score of poverty for those receiving was 63 percent for the complete sample and non-recipient household. In comparison, the mean score of poverty remittance recipient households shows a 50 percent, that's more than half of the family are below the probable poverty line both in the families. The means of per capita consumption are significantly different from those without remittances. The mean consumption by households that received remittance was 1.83 dollars per day, % while for families that received no remittance is 1.46%.

There is no large deviation between the groups for the average household size, gender of household head, and household head age. The household head's mean age is thirty-eight, the average of five members in a household, and the average household head also looks similar. Although many households didn't own a bank account, those with international remittances have more bank account and mobile money account, suggesting that households are more likely to be financially inclusive. Finally, the descriptive statistics show that the household who had electricity decreased as they received remittance. The proportion of households in the sample who had at least an employed member was large.

Table 4: Descriptive Statistics

	All households (N=6092)		**Remittances (N=1131)**		**No-remittances (N=4961)**	
	Mean	SD	Mean	SD	Mean	SD
Poverty	0.605	0.489	0.490	0.500	0.632	0.482
Per capita consumption	1.530	1.578	1.833	1.720	1.461	1.535
Household size	5.442	2.045	5.380	2.046	5.457	2.044
Gender	0.504	0.500	0.499	0.500	0.505	0.500
Age	37.792	11.930	38.064	12.339	37.730	11.835
Literacy	1.247	1.901	1.539	2.036	1.184	1.865
Area of Residence	1.287	0.452	1.230	0.421	1.301	0.459
Dependency ratio	1.351	1.141	1.372	1.198	1.346	1.128
Bank Account	0.114	0.318	0.224	0.417	0.089	0.285
Mobile money Account	0.678	0.467	0.756	0.430	0.660	0.474
At least one employed member	0.764	0.425	0.740	0.439	0.769	0.421
Electricity	0.622	0.485	0.755	0.430	0.592	0.491

Source: Authors' compilation based on SHFS, 2018 survey data

4.1. Empirical Result

The Probit model estimates are shown in Table 5, fitted for the treatment variable (Remittance). Receiving remittance is expected to be positively correlated with the household head's age since youth migrate more often than older people, and the latter is the major remittances recipients. And also, The probability of receiving remittances is significant and positive if the households are illiterate.

The probability of receiving remittances is negative and significant if the household has at least one employed member. Besides, the likelihood of receiving remittance also varies according to the residing area, families located in the rural areas are less likely to receive remittance than the ones found in the urban area. The probability of receiving remittances is expected to be low, along with the dependency ratio. Households are more likely to receive remittance if they have a bank account, mobile money account. The predictors of household size and gender of the household head had no significant relationship with the probability of receiving remittance.

Table 5: Estimates from Probit Regression

PROBIT ESTIMATES	
	REMITTANCE
Household size	-0.0184
	(-1.60)
Gender of Household Head	-0.0223
	(-0.54)
Age of Household Head	0.00511**
	(2.82)
Literacy of Household Head	0.150***
	(3.38)
Aera of residence	-0.206***
	(-6.08)
Proportion of working age members in household	-0.847***
	(-7.59)
Dependency ratio	-0.0918***
	(-3.58)
Ownership of a Bank Account	0.475***
	(8.28)
Ownership of a Mobile money Account	0.0882*
	(1.99)
Household has at least one employed member	-0.351***
	(-7.39)
Household has Electricity	0.173***
	(3.63)
N	6016

Note: *t* statistics in parentheses * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 6 shows the ATET of receiving remittance on poverty. From the table, it is evident that receiving remittance significantly affects poverty. It shows that there is an inverse relationship between receiving remittance and been poverty. The coefficient of ATET shows that for the complete sample, receiving remittance reduces the likelihood of being impoverished by about 10%. In comparison, in urban areas, it is 8%, and in rural areas, it is 18%.

Table 6: Propensity Score Matching Results for Poverty

	(1)	(2)	(3)
VARIABLES	NN	Kernel	Stratification
National	-0.0989***	-0.114***	-0.100***
	(0.0307)	(0.0175)	(0.0194)
Urban	-0.0504*	-0.104***	-0.0879***
	(0.0255)	(0.0258)	(0.0207)
Rural	-0.201**	-0.197***	-0.182***
	(0.0689)	(0.0285)	(0.0506)
Observations	6,092	6,092	6,092

Note: *Standard errors in parentheses* * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

To pursue this analysis, Table 7 shows the estimates for per capita household consumption; the ATET coefficient shows that receiving remittance increases household per capita consumption. For the complete sample, it shows that receiving remittances increases household per capita consumption by about 36%, while in rural areas (46%), this figure is substantially higher compared to urban areas (21%)

Table 7: Propensity Score Matching Results for Per Capita Consumption

	(1)	(2)	(3)
VARIABLES	NN	Kernel	Stratification
National	0.365***	0.355***	0.320***
	(0.0321)	(0.0810)	(0.0550)
Urban	0.213***	0.314***	0.274***
	(0.0597)	(0.0231)	(0.0341)
Rural	0.467	0.597	0.519*
	(0.550)	(0.376)	(0.221)
Observations	6092	6092	6092

Note : *Standard errors in parentheses* * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

It is evident from the result that remittance is an important determinant of households' economic state and well-being in Somalia. Households who received remittance are better-off in terms of per capita consumption. This is so because remittance increases the amount of income available to households to aid, supplement, and increase their consumption. Furthermore, these households who received these remittances could have more capital to engage in income-generating activities, which increases their income and improves their consumption. This is backed up by (Morduch, 1994) who states that especially poor households whose consumption can be lessened by shocks that occur on income as a result of the poor business environment and health deteriorations who may not the needed credit facilities and insurance cover can rely on remittances as a way of smoothing their consumption.

In terms of being poor, remittance can be a viable tool for lifting households out of poverty, as the result shows. This could be through pathways such as participation in economic activities (labor supply) hitherto were not possible as a result of lack of income. Although there exists an ambiguity on the role of remittance on labor supply as it is could either lead to loss of labor skills, because labor might substitute its services for leisure because of remittance or could lead to a change of employment, for instance too from full work to part-time or self-employment, it nevertheless may not diminish the welfare status of the households. (Yang, 2004) “points to more encouraging labor-supply effects than the standard model when he determined that remittances reduce the supply of child labor but increase that of adult labor.” Furthermore, remittances can lead to investments in education and health, which increases labor supply and boost household income, thus reducing poverty and increasing household consumption. Studies by Rubai and Dilip, 2005 and Yang, 2004 confirm these assertions.

Furthermore, it is evident from our findings that households who have more children are likely not to receive remittances, this we intuitively assert may be as a result of not having enough to cater for the educational needs of the children and/or increased intra-household competition that might lead to reduced migration and labor supply, and hence income generation which could lead to remittance transfers, since those household heads with university degrees where more likely to receive remittances compared to others.

5. Conclusion and Recommendation

This research sought to examine the impact of remittance on poverty in Somalia. The findings from the empirical result which are drawn from our research hypothesis and objectives of the study, are here explained to give a better insight if the goals are achieved for the study.

The estimated result in this study has shown that the per capita consumption of the remittance recipients is greater than that of non-receiver households, and as all empirical analysis shows that the poverty level of the household has dropped down significantly, this is due to remittance inflows.

In connection to the analysis conducting using the propensity score matching results shows that the per capita consumption of a household in Somalia have improved significantly and a thus remittance has a significant impact on per capita consumption these implies as remittance to various household increases per capita consumption will also increase in the same direction. Generally, the results propose that remittances can be used as a tool to fight poverty in Somalia since remittances had an effect on poverty. Both government and non-government organization may introduce and sustain Poverty alleviation intervention programs such as a cash transfer package that could be targeted more on poor households that do not receive remittances.

On the other hand, policies to encourage remittances could be encouraged, for example, providing hassle-free means of bringing in and transferring remittances. The cost of transferring remittance has been falling, but there is no reason they should be substantially greater than zero.

Remittance also contributes to the improvement of living standards in Somalia. The analysis also shows that more households that receive remittance inflow have access to specific necessary social infrastructure that tends to enhance their standard of living expenses in the area of access to electricity and literacy. Thus, as remittance inflow into Somalia increases, a more significant percentage of household living standard is improved and enhanced.

Lastly, Linking remittance to financial access at the household level. Although receiving remittances is primarily a function of having productive household members elsewhere, the model results show that households who owned bank accounts were about 80% likely to receive remittance than their counterparts who did not own a bank account. More could be done to link remittance to financial products such as savings, access to credit, education, and health accounts. The benefit of remittance could be increased if the recipient could use them to hedge against future hardship rather than rely on them once hardship strikes. To conclude, if national economic situations improve and a peaceful, favorable environment is developed for better job creation and higher growth, it would be imaginable to reduce from the number of young works migrating to abroad to a policy of retentive workers who could then contribute directly to the country's economic growth

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