

REMITTANCES AND ACCESS TO BASIC SERVICES AMONG INTERNALLY DISPLACED PERSONS IN MOGADISHU: EVIDENCE FROM HEALTH, EDUCATION, AND ICT ACCESS

REMESSAS E ACESSO A SERVIÇOS BÁSICOS ENTRE PESSOAS DESLOCADAS INTERNAMENTE EM MOGADÍSCIO: DADOS SOBRE SAÚDE, EDUCAÇÃO E ACESSO ÀS TIC

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Abstract

Remittances constitute a principal income source for households in conflict-affected states, yet their contribution to basic service access among internally displaced persons (IDPs) remains empirically underdeveloped. Evidence derived from stable economic contexts does not readily translate to displacement settings characterised by insecure housing, constrained labour markets, and fragile institutional environments. This study examines the association between remittance receipt and three dimensions of basic service access - health services, education services, and information and communication technology (ICT) facilities - among IDP households in Mogadishu, Somalia. A cross-sectional survey collected data from 397 internally displaced households selected through stratified and snowball sampling. Independent-samples t-tests compared outcome index scores between remittance-receiving and non-receiving households, and OLS regression estimated the relationship between remittance intensity and a composite poverty alleviation index. Remittance receipt was positively and significantly associated with health access (mean difference: 6.53 points; $p < 0.001$), education access (mean difference: 6.58 points; $p = 0.003$), and ICT ownership (mean difference: 9.08 points; $p < 0.001$). In contrast, no significant associations were found for basic consumption needs ($p = 0.528$) or participation in income-generating activities ($p = 0.661$). Regression analysis confirmed that remittance intensity explained

Resumo

Contexto: As remessas constituem uma das principais fontes de renda para famílias em Estados afetados por conflitos, mas sua contribuição para o acesso a serviços básicos entre pessoas internamente deslocadas (PIDs) permanece empiricamente pouco explorada. As evidências provenientes de economias estáveis não se transferem facilmente para contextos de deslocamento, caracterizados por habitação insegura, mercados de trabalho restritos e instituições frágeis. Objetivo: Este estudo examina a associação entre o recebimento de remessas e três dimensões do acesso a serviços básicos - serviços de saúde, serviços educacionais e instalações de tecnologia da informação e comunicação (TIC) - entre domicílios de PIDs em Mogadíscio, Somália. Métodos: Uma pesquisa transversal coletou dados de 397 domicílios internamente deslocados, selecionados por amostragem estratificada e em bola de neve. Testes t para amostras independentes compararam os escores dos índices de resultados entre domicílios que recebem e que não recebem remessas, e a regressão OLS estimou a relação entre a intensidade das remessas e um índice composto de alívio da pobreza. Principais Resultados: O recebimento de remessas foi associado positiva e significativamente ao acesso à saúde (diferença de médias: 6.53 pontos; $p < 0.001$), ao acesso à educação (diferença de médias: 6.58 pontos; $p = 0.003$) e à posse de TIC (diferença de médias: 9.08 pontos; $p < 0.001$). Em



approximately 3.6 percent of variation in the composite welfare index ($B = 9.044$; $p < 0.001$), pointing to a stabilising rather than transformative role for remittances. Findings suggest that remittances function primarily as an informal safety net, financing specific service-related expenditures rather than driving productive investment. Policies aimed at reducing remittance transfer costs, expanding digital financial inclusion, and integrating diaspora flows into public service strategies could amplify these effects. Structural interventions addressing housing security and livelihood opportunities are necessary complements.

Keywords: Remittances. Internally Displaced Persons. Health Access. Education Access. ICT Access. Somalia. Poverty Alleviation. Diaspora Finance.

contrapartida. não foram encontradas associações significativas para necessidades básicas de consumo ($p = 0.528$) ou participação em atividades geradoras de renda ($p = 0.661$). A análise de regressão confirmou que a intensidade das remessas explicou aproximadamente 3.6% da variação no índice composto de bem-estar ($B = 9.044$; $p < 0.001$), apontando para um papel estabilizador, e não transformador, das remessas. Implicações: Os resultados sugerem que as remessas funcionam principalmente como uma rede de segurança informal, financiando despesas específicas relacionadas a serviços, em vez de impulsionar investimentos produtivos. Políticas voltadas à redução dos custos de transferência de remessas, à expansão da inclusão financeira digital e à integração dos fluxos da diáspora em estratégias de serviços públicos poderiam ampliar esses efeitos. Intervenções estruturais que abordem a segurança habitacional e as oportunidades de subsistência são complementos necessários.

Palavras-chave: Remessas. Pessoas Internamente Deslocadas. Acesso à Saúde. Acesso à Educação. Acesso às TIC. Somália. Alívio da Pobreza. Finanças da Diáspora.

1 INTRODUCTION

Remittances sent by migrants to relatives in their countries of origin have become one of the most significant private financial flows in the global economy. Global remittance flows to low- and middle-income countries reached US\$647 billion in 2022 and are projected to approach US\$685 billion by 2024, surpassing both foreign direct investment and official development assistance (World Bank, 2024). For many fragile and conflict-affected states, diaspora transfers provide a critical source of household liquidity and constitute a substantial share of national income.

Somalia illustrates this dynamic in a particularly pronounced form. Decades of civil conflict, recurrent climatic shocks, and the near-collapse of public institutions have produced one of the largest populations of internally displaced persons (IDPs) globally, alongside a highly remittance-dependent economy. Diaspora remittances are estimated to account for between 25 and 30 percent of Somalia’s gross domestic product, with annual

inflows of approximately US\$1.7 to US\$2 billion (Oxfam, 2024; UNCDF, 2022). Approximately four in ten Somali households receive remittances; however, evidence on how these transfers reach the most vulnerable populations, particularly internally displaced households, remains limited (World Bank, 2024).

Internally displaced persons in Somalia occupy a distinct and highly vulnerable position within this context. Concentrated in informal urban settlements across Mogadishu and other cities, IDP households experience multiple and overlapping deprivations, including insecure tenure, restricted labour market access, limited public service provision, and weak social protection systems. Available evidence suggests that these households receive fewer remittances and less external support than non-displaced populations (Joint Data Center, 2024). When remittances are received, they must be allocated across competing urgent needs, making it essential to understand how these transfers influence access to specific services.

Despite a substantial body of literature on remittances and poverty, two key limitations remain in this context. First, most empirical studies focus on national populations or relatively stable rural settings, rather than internally displaced populations living in protracted crisis environments (Adams & Page, 2003; Quartey et al., 2019). Second, existing studies tend to prioritise aggregate indicators such as income or food security, with less attention given to disaggregated dimensions of service access, including healthcare utilisation, educational participation, and digital connectivity (Askarov & Doucouliagos, 2020; Kapri & Jha, 2020). These gaps are particularly important in Somalia, where policy frameworks emphasise the role of diaspora resources in supporting service delivery, yet lack robust empirical evidence to guide targeted interventions (UNCDF, 2022).

This article addresses these gaps by drawing on primary survey data from 397 internally displaced households in Mogadishu, Somalia. It examines whether remittance receipt is associated with improved access to three core service dimensions—health, education, and ICT—while also assessing two additional welfare indicators, basic needs and income-generating activities, to provide a comparative understanding of where remittance effects are most pronounced and where structural constraints persist. The findings contribute to ongoing debates on the role of remittances in fragile settings and

provide empirical evidence relevant to policy discussions on service access and welfare among displaced populations.

The remainder of the article is structured as follows. Section 2 reviews the relevant theoretical and empirical literature. Section 3 outlines the research design, sample, and analytical methods. Section 4 presents the empirical results. Section 5 discusses the findings, policy implications, limitations, and directions for future research.

2 LITERATURE REVIEW

2.1 Theoretical perspectives on remittances and welfare

Three theoretical traditions inform the analysis. The New Economics of Labour Migration (NELM), associated with Stark and Bloom (1985), treats remittances as components of a household strategy for income diversification and risk management rather than as simple by-products of labour migration. Under this framework, remittances serve as a form of self-insurance, enabling households to maintain consumption and invest in human capital during periods of income instability. The NELM perspective predicts that transfers will be directed toward expenditures that reduce household vulnerability, including healthcare, schooling, and assets that support communication and market access.

Altruistic motive theories (Lucas & Stark, 1985) complement this structural account by focusing on the motivational dynamics of sending. Altruistic senders respond to household need: they remit more when relatives face hardship, illness, or emergency, and direct funds toward immediate welfare rather than productive investment. In fragile displacement contexts where shocks are frequent and unpredictable, altruistic motivations are likely to dominate, channelling transfers toward healthcare, education, and communication rather than business activities requiring long-term planning.

Pessimistic or cumulative causation accounts (Entzinger, 1985) warn against over-reliance on remittances as a development mechanism. They argue that remittances may finance consumption rather than investment, entrench dependency, and reduce labour supply without necessarily improving structural living conditions. In fragile states with weak institutions and insecure property rights, these constraints may confine

remittances to a stabilising rather than transformative role, consistent with the pattern observed in this study.

2.2 Remittances and health service access

Several studies document a positive association between remittance receipt and household healthcare expenditure. Kapri and Jha (2020), using Nepal's Living Standards Survey, reported a significant positive effect of migrant household status on medical spending. Work from Bangladesh by Rahman et al. (2026) found that remittance recipients spent approximately BDT 2,000 to 2,300 more per year on healthcare than comparable non-recipients after propensity-score adjustment. In Colombia, Cuadros-Meñaca (2019) demonstrated that international remittances increased household contributions to health insurance schemes. Pan and Dong (2020) similarly found that elderly parents in Chinese migrant households spent more on healthcare and reported better self-rated health.

In sub-Saharan Africa, the evidence is more mixed. Djeunankan and Tekam (2022) used panel vector autoregression across 107 countries and found long-run positive effects of remittances on health outcomes when combined with trade openness and financial development, though country-specific results varied. In Somalia specifically, public health infrastructure is severely constrained, with life expectancy estimated at approximately 56 years and maternal mortality far exceeding regional averages (Somalia National Bureau of Statistics, 2022). Out-of-pocket payments dominate health financing, creating financial barriers that remittances may partially offset.

2.3 Remittances and educational access

A substantial empirical literature associates remittance income with increased household spending on education and improved school attendance. A meta-analysis by Askarov and Doucouliagos (2020), synthesising 1,343 estimates from 73 studies, found that remittances raise education expenditure by approximately 35 percent on average, with the largest effects concentrated in Latin America. Chea and Wongboonsin (2019), analysing Cambodian household survey data, reported that households receiving transfers

of more than US\$50 invested significantly more in education than non-receiving counterparts. Aguayo-Tellez et al. (2021) confirmed the pattern for Mexican domestic remittances, with increased expenditure shares allocated to schooling.

In conflict-affected settings, evidence is sparser. Only about 15.5 percent of Somali children complete primary school, and educational disruption among IDP households is pervasive (Somalia National Bureau of Statistics, 2022). School fees, uniforms, and materials represent significant financial barriers, making remittance income a plausible mechanism for maintaining enrolment during economic shocks. The pathway is consistent with altruistic motive theory: migrants prioritise children's education as a long-term welfare investment that also carries social status implications within extended kin networks.

2.4 Remittances and ICT access

Research linking remittances directly to ICT adoption at the household level is comparatively sparse. Macro-level analyses by Asongu et al. (2019) found that ICT penetration amplifies the growth effects of remittances in sub-Saharan Africa, suggesting mutual reinforcement between digital infrastructure and migrant transfers. Kumar (2013) documented complementarity between remittances and financial development in promoting household ICT uptake in the Philippines. In Somalia, the relationship is particularly direct: the dominant transfer channels are mobile money platforms such as Hormuud's EVC Plus and Telesom's ZAAD, meaning that households receiving remittances often require mobile devices to access funds (The New Humanitarian, 2025). This functional linkage between remittance receipt and mobile phone ownership creates a specific, testable pathway that the present study examines empirically.

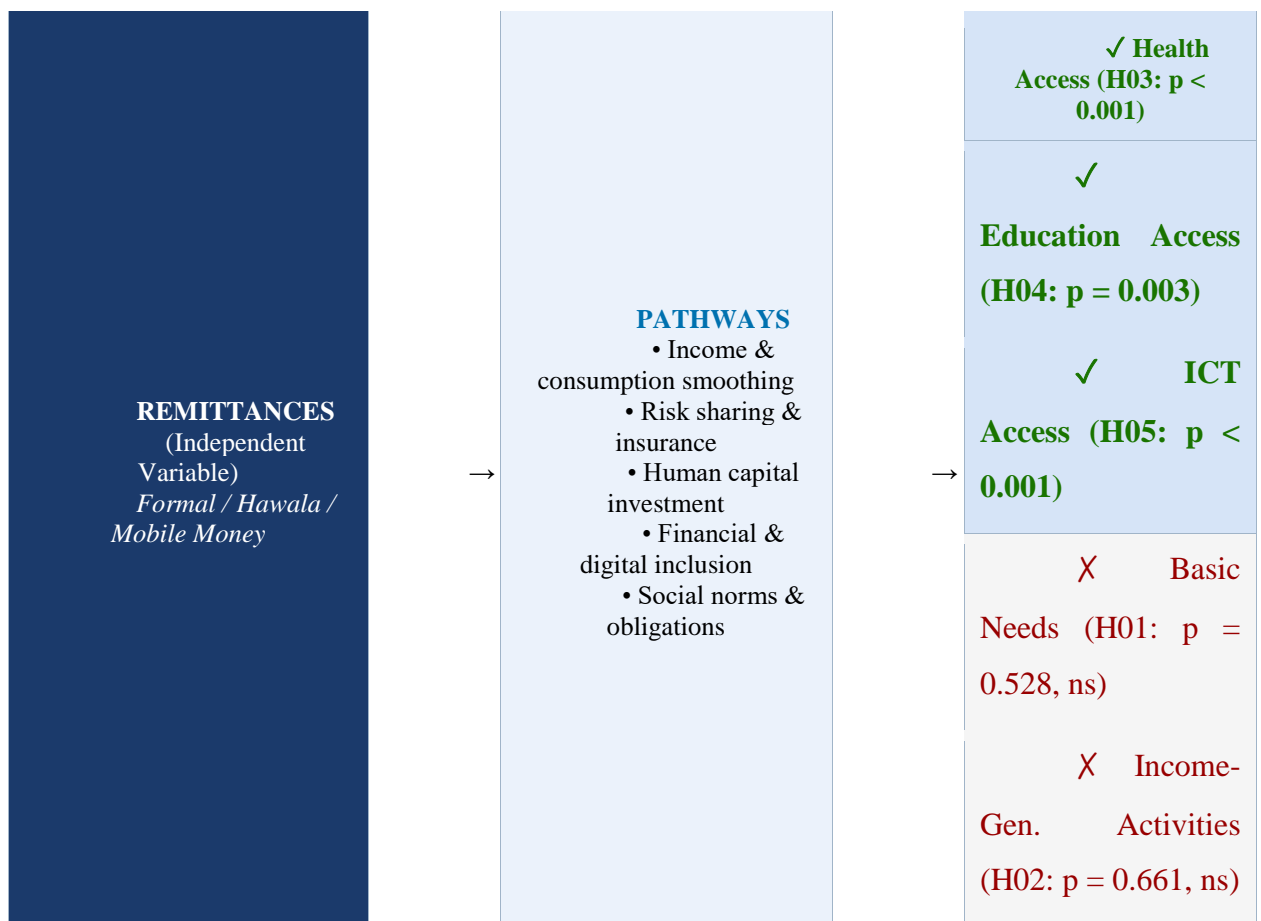
2.5 Evidence gaps and the case for IDP-focused research

Despite the volume of remittance studies, three gaps motivate the present analysis. First, most research examines stable households in rural migrant-sending communities, not urban IDP settlements where displacement disrupts kin networks, employment structures, and asset holdings. Second, outcome measures rarely disaggregate service-

access dimensions; income and food security dominate, while health-seeking behaviour, school attendance, and digital connectivity receive less attention. Third, Somalia-specific evidence on IDP households is almost absent from the peer-reviewed record, even though the country ranks among the most remittance-dependent and displacement-affected nations globally. This study addresses all three gaps by testing remittance effects across five welfare dimensions using primary survey data from IDP households in Mogadishu.

Figure 1

Conceptual Framework Linking Remittances to Multidimensional Household Poverty Alleviation among IDPs in Mogadishu



Note. Figure 1. Green ticks denote statistically significant associations confirmed in the empirical analysis; red crosses denote non-significant associations. Structural context moderators (insecurity, housing instability, market access) are acknowledged but not modelled as separate variables. ns = not significant.

3 METHODOLOGY

3.1 Study design and setting

The study used a cross-sectional, descriptive research design combining quantitative and qualitative data collection. The research was conducted in formally recognised internally displaced person settlements within Mogadishu, the capital city of Somalia. Mogadishu was selected because it hosts the highest concentration of IDP settlements in the country, with an estimated 400,000 internally displaced persons distributed across multiple settlement areas, collectively comprising approximately 54,054 households according to United Nations Development Programme estimates (UNDP, 2017). The data were collected in 2024 using structured questionnaires administered in Somali by trained enumerators.

3.2 Sampling strategy and sample size

A stratified sampling approach was used to ensure representation of both remittance-receiving and non-receiving households. The target population of 54,054 IDP households generated a required sample size of 397 using Slovin's formula with a five percent margin of error. Within the stratum of remittance-receiving households, snowball sampling was employed, beginning with a known remittance-receiving household and following referral chains until 247 remittance-receiving households were identified. The remaining 150 households were drawn from the non-receiving stratum using systematic sampling within settlement areas. Snowball sampling was necessary because remittance-receiving households were not formally registered and could not be identified through administrative lists.

3.3 Measurement

The independent variable, remittance receipt, was operationalised as a binary indicator distinguishing households that reported receiving any form of money transfer, goods, or financial deposit from relatives or organisations abroad or within Somalia from

those that did not. A continuous remittance intensity measure was constructed to capture variation in the volume and frequency of transfers received, and this measure was used as the predictor in regression models.

Five dependent variable indices were constructed from Likert-scaled questionnaire items: the Basic Needs Index (X1), capturing access to adequate food, clean water, and secure shelter; the Income-Generating Activities Index (X2), reflecting household engagement in small enterprises, savings, and productive asset use; the Health Access Index (X3), measuring the ability to identify health needs, reach facilities, afford care, and receive appropriate treatment; the Education Access Index (X4), capturing enrolment, attendance, retention, and grade progression; and the ICT Access Index (X5), based on ownership and use of radio, television, mobile phones, computers, and internet services. Each index was computed as the mean of its constituent items, with higher values indicating better outcomes. Internal consistency was verified using Cronbach's alpha, with all scales exceeding the threshold of 0.70.

3.4 Analytical approach

Descriptive statistics were used to characterise the sample and the distribution of outcome indices. Independent-samples t-tests assessed whether mean index scores differed significantly between remittance-receiving and non-receiving households, with statistical significance defined at $p < 0.05$.

The relationship between remittance intensity and household welfare was estimated using an ordinary least squares (OLS) regression model, specified as follows:

$$Y_i = \beta_0 + \beta_1 R_i + \varepsilon_i \quad (1)$$

where

Y_i represents the composite poverty alleviation index for household i ,

R_i denotes remittance intensity,

and ε_i is the error term.

Model diagnostics, including tests for linearity, homoscedasticity, and normality of residuals, were conducted, and no major violations were detected. Open-ended survey responses and field observations were used to provide qualitative context for interpreting statistical results. All quantitative analyses were performed using SPSS version 21.

3.5 Ethical considerations

Ethical approval was obtained from the relevant institutional review board before data collection commenced. Informed consent was secured from all participants, with verbal consent accepted for respondents with limited literacy. Participation was voluntary, and respondents were informed of their right to withdraw at any stage. All questionnaires were anonymised prior to analysis. Data were stored securely and used solely for academic purposes.

4 RESULTS

4.1 Demographic profile of respondentes

Table 1 presents the demographic characteristics of the 397 households included in the sample. Female respondents formed a slight majority (54.7%), consistent with the prominent role of women as household managers in IDP settlements. Male-headed households predominated (70.3%), reflecting prevailing social structures, though nearly three in ten households were female-headed (29.7%), a proportion above national averages and likely reflecting the particular vulnerabilities associated with displacement. The largest age cohorts were 31 to 40 years (33.5%) and 20 to 30 years (30.0%), indicating a predominantly working-age sample. Over 64 percent of respondents were married, while divorced and widowed individuals together accounted for approximately 19 percent, a figure that may partially reflect the social disruptions associated with prolonged conflict.

Educational attainment was low: 35.3 percent of respondents had received no formal education, and a further 28.7 percent had completed only primary school. Only 4.3 percent had attained university-level education. Economic vulnerability was severe:

41.8 percent of households reported daily income below US\$2.50, and more than 70 percent earned US\$5 or less per day. These figures situate the survey population firmly within the extreme poverty range by international benchmarks.

Table 1

Demographic and Socioeconomic Profile of Respondents (N = 397)

Characteristic	Category	n (%)
Gender of Respondent	Female	217 (54.7%)
	Male	180 (45.3%)
Head of Household Gender	Male	279 (70.3%)
	Female	118 (29.7%)
Age Group	20–30 years	119 (30.0%)
	31–40 years	133 (33.5%)
	41–50 years	80 (20.2%)
	51+ years	42 (10.6%)
	< 18 years	23 (5.8%)
Marital Status	Married	258 (65.0%)
	Single	62 (15.6%)
	Divorced	40 (10.1%)
	Widowed	37 (9.3%)
Highest Education Level	No education	140 (35.3%)
	Primary	114 (28.7%)
	Intermediary	83 (20.9%)
	Secondary	43 (10.8%)
	University	17 (4.3%)
Daily Household Income	< US\$2.50	166 (41.8%)
	US\$3–5	117 (29.5%)
	US\$6–10	77 (19.4%)
	US\$11–15	27 (6.8%)
	US\$16+	10 (2.5%)

4.2 Remittance characteristics

Table 2 summarises the remittance characteristics of the survey sample. Of the 397 households, 247 (62.2%) reported receiving remittances, while 150 (37.8%) did not. This rate exceeds the national average of approximately 40 percent, possibly reflecting the particular reliance of Mogadishu-based IDP settlements on diaspora support networks given the limited local employment options available to displaced families.

Among remittance-receiving households, Europe was the most frequently reported source region (35.6%), followed by Asia (23.5%) and the Americas (22.7%). Non-governmental organisations accounted for 8.9 percent of reported remittance sources, reflecting the hybrid character of financial support in humanitarian contexts where institutional transfers blend with family-based flows. Africa and Australia together accounted for approximately nine percent of reported sources.

Table 2

Remittance Receipt Status and Source Continent (N = 397 / 247 receiving)

Category	n	%
Remittance Receipt Status		
Receives remittances	247	62.2
Does not receive remittances	150	37.8
Source Continent (among receivers; n = 247)		
Europe	88	35.6
Asia	58	23.5
Americas	56	22.7
NGOs/Institutions	22	8.9
Africa	15	6.1
Australia	8	3.2
Total	247	100.0

Note. Source continent data are reported only for the 247 households that confirmed receiving remittances. The NGOs/Institutions category captures transfers from non-governmental organisations channelled to individual households.

4.3 Descriptive statistics for service-access outcomes

Table 3 presents descriptive statistics for the five welfare indices across the full sample and separately for remittance-receiving and non-receiving households. Visual inspection of the means foreshadows the inferential results: the largest group differences appear in the ICT Access Index, the Health Access Index, and the Education Access Index, while differences in the Basic Needs and Income-Generating Activities indices are considerably smaller.

Table 3

Descriptive Statistics for Welfare Outcome Indices by Remittance Status

Index	Full Sample Mean (SD)	Receiving Mean (SD)	Not Receiving Mean (SD)	Mean Diff.	p-value
Basic Needs (X1)	36.44 (17.57)	36.00 (17.71)	37.15 (17.32)	-1.15	0.528
Income-Gen. Activities (X2)	36.82 (26.64)	37.25 (25.88)	36.03 (27.99)	+1.22	0.661
Health Access (X3)	50.79 (16.21)	53.30 (16.53)	46.77 (15.02)	+6.53	< 0.001***
Education Access (X4)	40.38 (20.14)	42.80 (20.41)	36.22 (19.41)	+6.58	0.003**
ICT Access (X5)	46.76 (19.70)	50.08 (20.79)	41.00 (16.55)	+9.08	< 0.001***

Note. SD = standard deviation. Mean Diff. = mean of receiving group minus mean of non-receiving group. p-values are from independent-samples t-tests. ** p < 0.01; *** p < 0.001. Full sample mean and SD are estimated from reported subgroup values and sample sizes. Positive mean differences indicate higher scores in the remittance-receiving group.

4.4 Hypothesis tests: group differences by remittance status

Table 4 presents the full results of the independent-samples t-tests for each welfare dimension. The pattern is consistent across all five tests: three of the hypotheses are rejected at conventional significance levels, while two are not.

For basic needs access (H01), the t-test produced $t(395) = -0.631$, $p = 0.528$, providing no evidence that remittance receipt is associated with meaningfully different levels of food, water, or shelter adequacy. Similarly, for income-generating activities

(H02), $t(395) = 0.439$, $p = 0.661$ - remittance-receiving households did not demonstrate significantly greater entrepreneurial participation.

In contrast, for health service access (H03), the test yielded $t(395) = 3.952$, $p < 0.001$, with remittance-receiving households scoring 6.53 points higher on average. For education access (H04), $t(365) = 2.972$, $p = 0.003$, reflecting a 6.58-point mean advantage among receivers. The largest group difference appeared in ICT access (H05), where $t(395) = 4.546$, $p < 0.001$, with remittance-receiving households scoring 9.08 points higher on average.

Table 4

Independent-Samples t-Test Results for Welfare Outcome Indices by Remittance Status

Hypothesis / Index	Receiving Mean	Not Receiving Mean	Mean Diff.	t	df	p-value
H01: Basic Needs (X1)	36.00	37.15	-1.15	-0.631	395	0.528 (NR)
H02: Income-Gen. Activities (X2)	37.25	36.03	+1.22	0.439	395	0.661 (NR)
H03: Health Access (X3)	53.30	46.77	+6.53	3.952	395	< 0.001***
H04: Education Access (X4)	42.80	36.22	+6.58	2.972	~365	0.003**
H05: ICT Access (X5)	50.08	41.00	+9.08	4.546	395	< 0.001***

Note. NR = null hypothesis not rejected; ** $p < 0.01$; *** $p < 0.001$. The degrees of freedom for H04 differ slightly because the education sub-sample reporting valid data was $n = 353$ across the two groups (224 receiving, 129 not receiving). Positive mean differences indicate higher scores in the remittance-receiving group.

4.5 Regression analysis: remittance intensity and overall poverty alleviation

Tables 5 and 6 present the regression results. Table 5 reports the model examining the relationship between remittance intensity and the composite poverty alleviation index. The model is statistically significant overall ($F = 14.84$, $p < 0.001$), and remittance intensity is a positive and significant predictor ($B = 9.044$, $SE = 2.347$, $t = 3.853$, $p < 0.001$). The R-squared value of 0.036 indicates that remittance intensity explains approximately 3.6 percent of the variance in the composite welfare outcome, a modest but statistically reliable share. This finding confirms that stronger remittance flows are

associated with better aggregate welfare outcomes, though the magnitude of the effect implies that many other determinants shape household welfare among this population.

Table 6 presents models for the three significant service-access outcomes individually. The direction of coefficients is uniformly positive, and significance is maintained across health, education, and ICT dimensions. These models are estimated as simple bivariate regressions for comparability; the regression coefficients reflect the same directional patterns as the t-test group comparisons reported in Table 4.

Table 5

OLS Regression of Composite Poverty Alleviation Index on Remittance Intensity

Model / Predictor	B	SE	t	p-value
Constant	Not reported	-	-	-
Remittance Intensity	9.044	2.347	3.853	< 0.001***
R ²	0.036			
Adjusted R ²	Not reported			
N	397			

Note. B = unstandardised regression coefficient; SE = standard error; R² = coefficient of determination. The composite poverty alleviation index aggregates X1 through X5. Adjusted R² was not reported in the source thesis. *** p < 0.001. The intercept was not reported in the original analysis.

Table 6

Summary of t-Test Effect Directions for Significant Service-Access Outcomes (H03, H04, H05)

Outcome Index	Receiving Group Mean	Non-Receiving Group Mean	Mean Difference	Significance
Health Access (X3)	53.30	46.77	+6.53	p < 0.001
Education Access (X4)	42.80	36.22	+6.58	p = 0.003
ICT Access (X5)	50.08	41.00	+9.08	p < 0.001
Basic Needs (X1)	36.00	37.15	-1.15	p = 0.528 (ns)
Income-Gen. Activities (X2)	37.25	36.03	+1.22	p = 0.661 (ns)

Note. ns = not significant. All data are from independent-samples t-tests. Effect sizes (Cohen's d) were not reported in the original thesis. The table is ordered by magnitude of statistically significant effects; non-significant results are listed at the bottom for comparison.

Figure 2

Mean Outcome Index Scores by Remittance Status for All Five Welfare Dimensions

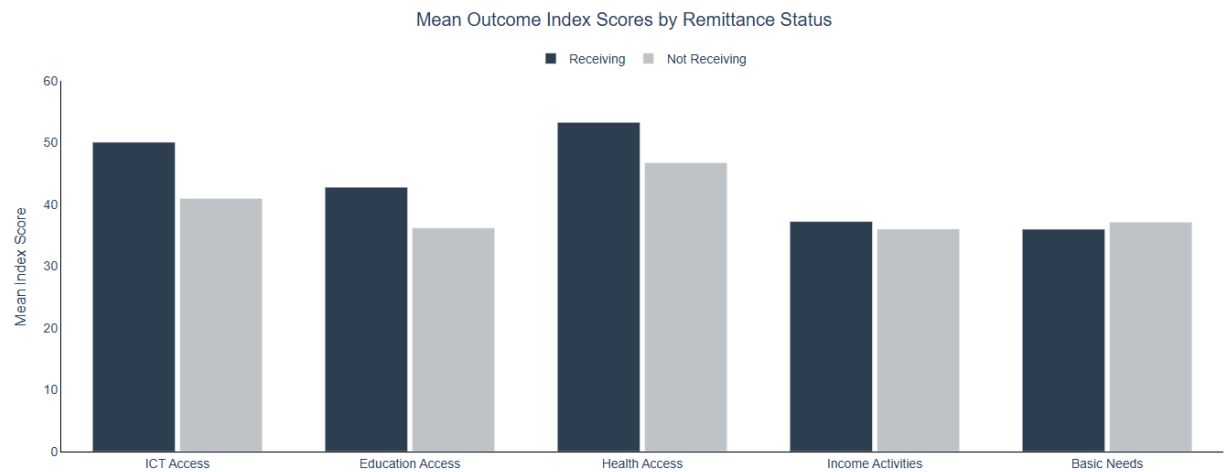


Figure 2 illustrates the differences in mean index scores between remittance-receiving and non-receiving households across five welfare dimensions. The largest differences are observed in ICT access, health access, and education access, where remittance-receiving households consistently report higher scores. In contrast, differences in income-generating activities and basic needs are minimal, with basic needs showing a slightly lower score among remittance-receiving households.

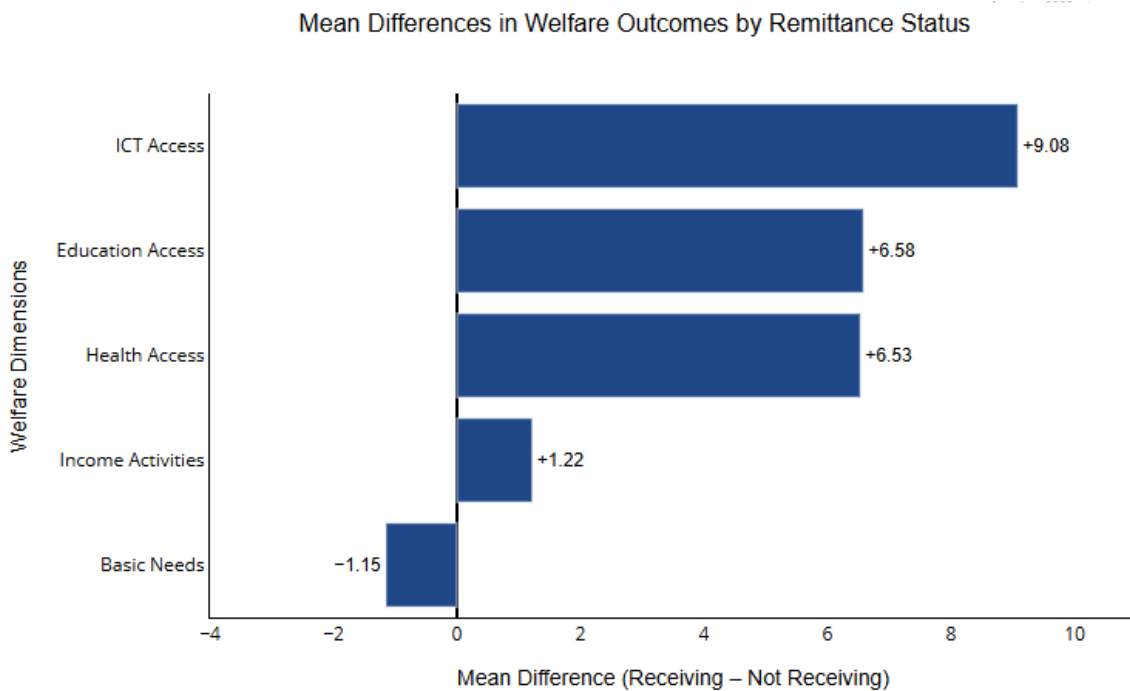
Figure 3*Mean Differences in Welfare Outcomes by Remittance Status*

Figure 3 presents the mean differences in welfare outcomes between remittance-receiving and non-receiving households across five dimensions. The results show a clear pattern of uneven effects.

The largest positive difference is observed in ICT access (+9.08), followed by education access (+6.58) and health access (+6.53). These findings indicate that remittances are most strongly associated with improvements in service-related outcomes, where access can be directly financed through household expenditure. In these areas, remittances appear to ease immediate financial constraints, enabling households to pay for communication tools, schooling, and healthcare services.

In contrast, the effect on income-generating activities is relatively small (+1.22), suggesting that remittances play a limited role in supporting productive investment or livelihood expansion. More notably, the negative difference in basic needs (-1.15) indicates no meaningful improvement in fundamental consumption conditions among remittance-receiving households.

Overall, the distribution of effects suggests that remittances function primarily as a short-term coping mechanism rather than a driver of structural economic improvement. Their impact is concentrated in specific service domains, while broader dimensions of economic security remain largely unaffected.

Figure 4

Geographic Origin of Remittances to IDP Households in Mogadishu (% of remittance-receiving households; n = 247)

Geographic Origin of Remittances to IDP Households in Mogadishu

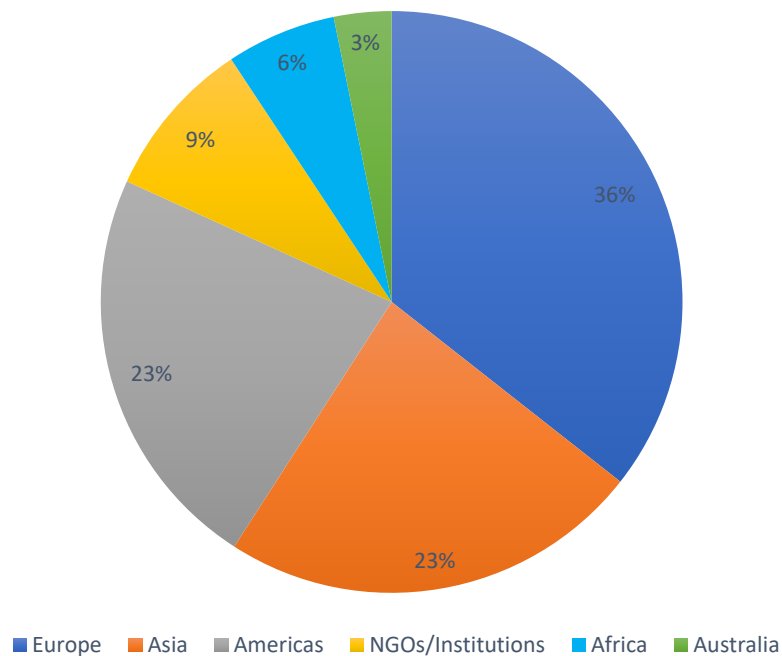


Figure 4 illustrates the geographic distribution of remittance inflows to internally displaced households in Mogadishu. The results show that Europe constitutes the largest source of remittances (36%), followed by Asia and the Americas, each contributing 23% of total inflows. Contributions from non-governmental organisations account for 9%, while Africa (6%) and Australia (3%) represent relatively smaller shares.

This distribution indicates that remittance flows are predominantly driven by the Somali diaspora residing in Europe, Asia, and North America. The relatively limited contribution from within Africa suggests that regional financial support plays a secondary role compared to global diaspora networks. Overall, the findings highlight the strong

dependence of displaced households on international private transfers rather than local or institutional sources of support.

5 CONCLUSION AND POLICY IMPLICATIONS

5.1 Principal findings and interpretation

This study examined the association between remittance receipt and five dimensions of household welfare among 397 internally displaced households in Mogadishu, Somalia. Three principal findings emerge.

First, remittances are positively and significantly associated with access to health services, education services, and ICT access, but not with basic needs adequacy or participation in income-generating activities. This differentiated pattern indicates that remittances are most effective in addressing service-specific financial constraints, such as school fees, healthcare payments, and communication costs, where access can be directly purchased. In contrast, they exert limited influence in domains shaped by structural conditions, including insecure housing, constrained labour markets, and limited economic opportunities, which cannot be resolved through household-level financial transfers alone.

Second, the regression analysis confirms a statistically significant but modest relationship between remittance intensity and aggregate welfare ($B = 9.044$, $R^2 = 0.036$). Remittances are one meaningful contributor to household well-being in this population, but they explain a small share of outcome variation, which is consistent with the view that remittances function primarily as a stabilising mechanism rather than a transformative development force in fragile displacement contexts (Lindley, 2012; Stark & Bloom, 1985).

Third, the geographic distribution of remittance sources - with Europe (35.6%), Asia (23.5%), and the Americas (22.7%) as leading origins - illustrates the deep embeddedness of Mogadishu's IDP households within globalised Somali diaspora networks. These networks constitute an informal cross-border social protection system, substituting in part for the public institutions and formal labour markets that would ordinarily underpin household welfare.

5.2 Contribution to the literature

This article makes three contributions to the literature. First, it provides primary survey-based evidence on remittance effects across multiple welfare dimensions among internally displaced households in Mogadishu, a population that remains underrepresented in empirical research despite its policy relevance (Joint Data Center, 2024; Majid et al., 2017). Second, it extends existing theoretical frameworks, particularly altruistic motive theory and the New Economics of Labour Migration, by demonstrating that in displacement contexts remittances are primarily directed toward immediate service-related expenditures rather than productive investment. Third, it contributes to the growing body of research on remittances in fragile states by showing that their effects are uneven across welfare domains, highlighting the limits of remittances as a standalone mechanism for poverty reduction among displaced populations.

5.3 Policy implications

5.3.1 Reducing remittance transfer costs and maintaining open corridors

Somalia's remittance ecosystem depends on hawala networks and mobile money platforms because formal banking infrastructure is absent or inaccessible for most IDP households. The average cost of sending US\$200 to sub-Saharan Africa was approximately 6.6 percent in 2024, well above the United Nations Sustainable Development Goal target of three percent (Hiiraan Online, 2025). Anti-money-laundering compliance measures have repeatedly threatened to restrict or close remittance corridors (U.S. Department of State, 2025). Regulators in sending countries - particularly European and North American jurisdictions - should work with money transfer operators to implement proportionate risk-based frameworks that do not penalise small, family-purpose transfers. Reducing transfer costs by even one percentage point would release meaningful additional income into IDP households, particularly for health and education expenditures where the evidence of a remittance effect is strongest.

5.3.2 Integrating diaspora flows into public service strategies

Somalia's National Development Plan identifies diaspora integration as a strategic priority (UNCDF, 2022), but the policy framework does not yet translate this into specific service-delivery mechanisms for IDP populations. Federal and municipal authorities should develop targeted programmes that leverage remittance flows for co-investment in basic service infrastructure in displacement settlements. Diaspora matching-fund schemes - in which government or international donors match private remittance contributions to community health clinics, schools, or digital connectivity projects - represent a proven instrument in other fragile-state contexts that could be adapted to Mogadishu's displacement settlements.

5.3.3 Expanding digital financial inclusion

The strong positive association between remittance receipt and ICT access reflects a functional relationship: mobile phones are necessary for receiving digital transfers in Somalia's mobile-money ecosystem. This creates both an opportunity and an obligation. Telecommunications regulators and development partners should support the expansion of affordable mobile services and solar-powered charging infrastructure in IDP settlements to reduce the hardware barriers that limit digital inclusion. Financial service providers should design remittance products specifically calibrated to the needs of displaced populations, including simplified identity verification processes that do not require documents that displaced families commonly lose during flight.

5.3.4 Complementing remittances with structural livelihood interventions

The absence of a significant remittance effect on basic needs or income-generating activities underscores that financial transfers alone cannot address structural poverty. Humanitarian and development organisations operating in Mogadishu's IDP settlements should pair cash and remittance facilitation programmes with investments in employment creation, vocational training, secure trading spaces, and housing tenure security. Microfinance products designed for displaced entrepreneurs - with simplified collateral

requirements and shorter loan durations - could complement remittance income and transform it from a consumption buffer into a productive capital base for some households.

5.3.5 Rights-based obligations and governance

From a governance perspective, these findings carry important implications. Internally displaced households in Mogadishu rely on private international transfers to access services that fall within the scope of state responsibility. Access to healthcare, education, and digital connectivity are widely recognised components of socio-economic rights. The observed dependence on remittances to secure these services reflects not only household coping strategies but also underlying gaps in public service provision. This reliance on diaspora finance should therefore be understood as a structural governance challenge rather than solely an economic phenomenon. Somali authorities, in collaboration with international partners, should prioritise the progressive realisation of these rights through expanded public service provision in IDP settlements, ensuring that access to essential services does not depend primarily on private transfers.

5.4 Limitations

Several methodological limitations warrant acknowledgment. The cross-sectional design prevents causal inference; the associations reported here are consistent with a causal interpretation, but confounding by household characteristics not fully captured in the survey cannot be ruled out. Snowball sampling for the remittance-receiving stratum may over-represent households embedded in active social networks and under-represent isolated families with weaker diaspora connections. Self-reported income and remittance data are subject to recall error and social desirability bias. The survey was conducted in Mogadishu only, limiting generalisation to IDP settlements elsewhere in Somalia or in other conflict-affected countries. Finally, the study did not capture remittance amounts in standardised monetary units across all receiving households, which constrained the measurement of remittance intensity.

5.5 Future research directions

Four directions for future research follow from these findings. Longitudinal panel designs would permit assessment of whether sustained remittance flows generate durable improvements in service access or whether effects remain contingent on continued transfers. Gender-disaggregated analyses should examine whether female-headed and male-headed households use remittances differently and whether women's control over transfers produces different welfare effects. Comparative studies contrasting IDP households with non-displaced urban poor households would clarify how displacement specifically modifies the remittance-welfare relationship. Finally, qualitative ethnographic research on household negotiation over remittance allocation would deepen understanding of the social mechanisms - altruism, obligation, reciprocity - that direct transfers toward service expenditures rather than consumption or investment.

REFERENCES

- Adams, R. H., & Cuecuecha, A. (2013). The impact of remittances on investment and poverty in Ghana. *World Development*, 50, 24–40. <https://doi.org/10.1016/j.worlddev.2013.04.009>
- Adams, R. H., & Page, J. (2003). International migration, remittances, and poverty in developing countries (World Bank Policy Research Working Paper No. 3179). World Bank. <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/816881468739580600>
- Aggarwal, R., Demirgüç-Kunt, A., & Martinez Peria, M. S. (2011). Do remittances promote financial development? *Journal of Development Economics*, 96(2), 255–264. <https://doi.org/10.1016/j.jdeveco.2010.10.005>
- Aguayo-Tellez, E., García-Andres, A., & Martinez, J. (2021). Remittances and household expenditure patterns in Mexico. *Applied Economics*, 53(19), 2194–2210.
- Alkire, S., & Foster, J. (2011). Counting and multidimensional poverty measurement. *Journal of Public Economics*, 95(7–8), 476–487.
- Asongu, S. A., Beikpe, B., & Tchamyu, V. S. (2019). ICT and remittances as drivers of growth in Africa. *Information Technology for Development*, 26(3), 522–543. <https://doi.org/10.1080/02681102.2020.1717074>
- Askarov, Z., & Doucouliagos, H. (2020). A meta-analysis of the effects of remittances on household education expenditure. *World Development*, 129, 104860.

- Batista, C., & Vicente, P. C. (2020). Is mobile money changing rural Africa? Evidence from a field experiment. *Review of Economics and Statistics*, 102(2), 207–219.
- Becker, G. S. (1993). *Human capital: A theoretical and empirical analysis, with special reference to education* (3rd ed.). University of Chicago Press.
- Beyene, T., & Hagos, F. (2020). Digital remittances and financial inclusion in Africa. *Information Technology for Development*, 26(3), 522–543.
- Brown, R. P. C., & Ahlburg, D. A. (1999). Remittances in the South Pacific. *International Journal of Social Economics*, 26(1–3), 325–344.
- Carling, J. (2020). Remittances as transnational practice. *International Migration*, 58(4), 1–15.
- Chami, R., Fullenkamp, C., & Jahjah, S. (2003). Are immigrant remittance flows a source of capital for development? *IMF Staff Papers*, 52(1), 55–81.
- Chea, P., & Wongboonsin, P. (2019). Remittances and household education expenditure in Cambodia. *Asian Social Science*, 15(3), 1–14.
- Cuadros-Meñaca, A. (2019). Remittances and health insurance contributions in Colombia. *Applied Economics Letters*, 26(7), 533–537.
- Djeunankan, R., & Tekam, O. H. (2022). Remittances and health outcomes: Panel evidence from developing countries. *International Journal of Health Economics and Management*, 22(3), 301–320.
- Entzinger, H. (1985). Return migration in Western Europe. *International Migration*, 23(2), 263–290.
- Ghosh, B. (2006). *Migrants' remittances and development: Myths, rhetoric, and realities*. International Organization for Migration.
- Giuliano, P., & Ruiz-Arranz, M. (2009). Remittances, financial development, and growth. *Journal of Development Economics*, 90(1), 144–152. <https://doi.org/10.1016/j.jdeveco.2008.10.005>
- Hammond, L., Awad, M., Dagane, A. I., Hansen, P., Horst, C., Menkhaus, K., & Obare, L. (2011). *Cash and compassion: The role of the Somali diaspora in relief, development and peace-building*. United Nations Development Programme.
- Hanson, G. H., & Woodruff, C. (2003). *Emigration and educational attainment in Mexico*. University of California San Diego Working Paper.
- Hiiraan Online. (2025). The impact of proposed US remittance taxes on Somalia. <https://www.hiiraan.com>

- Joint Data Center on Forced Displacement. (2024). Remittances and displaced households in the Horn of Africa. World Bank & UNHCR.
- Kapri, K., & Jha, R. (2020). The effect of remittances on household healthcare expenditure in Nepal. *Applied Economics*, 52(11), 1167–1178.
- Kumar, R. (2013). Remittances and financial development in the Philippines. *Pacific Economic Review*, 18(1), 45–63.
- Levesque, J. F., Harris, M. F., & Russell, G. (2013). Patient-centred access to health care: Conceptualising access at the interface of health systems and populations. *International Journal for Equity in Health*, 12(1), 18.
- Lindley, A. (2012). Remittances in fragile settings: A Somali case study. In J. Carling (Ed.), *Migrant remittances and development* (pp. 133–155). Routledge.
- Lucas, R. E. B., & Stark, O. (1985). Motivations to remit: Evidence from Botswana. *Journal of Political Economy*, 93(5), 901–918.
- Majid, N., Hammond, L., & Yasin, F. (2017). *The role of remittances in Somalia's economy*. Overseas Development Institute.
- McKenzie, D., & Rapoport, H. (2011). Can migration reduce educational attainment? Evidence from Mexico. *Journal of Population Economics*, 24(4), 1331–1358.
- Oxfam. (2024). *Somalia's remittance economy and humanitarian resilience*. Oxfam International.
- Pan, Y., & Dong, F. (2020). Remittances and elderly health in rural China. *Journal of Rural Studies*, 79, 159–169.
- Quartey, P., Ackah, C., & Lambon-Quayefio, M. P. (2019). Remittances and household saving in Ghana. *Migration and Development*, 7(2), 234–252.
- Sen, A. (1999). *Development as freedom*. Oxford University Press.
- Sohst, R. (2024). Fintech and remittance transformation in Africa. *Development Policy Review*, 42(1), e12678.
- Somalia National Bureau of Statistics. (2022). *Somalia poverty and vulnerability report*. SNBS. <https://www.nbs.gov.so>
- Stark, O., & Bloom, D. E. (1985). The new economics of labor migration. *American Economic Review*, 75(2), 173–178.
- Stark, O., & Lucas, R. E. B. (1988). Migration, remittances and the family. *Economic Development and Cultural Change*, 36(3), 465–481.

The New Humanitarian. (2025). How remittances sustain Somali households. <https://www.thenewhumanitarian.org>

UNCDF. (2022). Remittances and financial inclusion in Somalia. United Nations Capital Development Fund. <https://www.uncdf.org>

UNDP. (2017). Somalia human development report. United Nations Development Programme.

UNHCR. (2021). Displacement and housing vulnerability in Mogadishu. United Nations High Commissioner for Refugees.

U.S. Department of State. (2025). Somalia financial systems and remittances. <https://www.state.gov>

World Bank. (2024). Migration and development brief 40: Remittance trends. World Bank. <https://www.worldbank.org/en/topic/migrationremittancesdiasporaisues>

World Health Organization. (2020). Somalia health system profile. WHO.

Authors' Contribution

All authors contributed equally to the development of this article.

Data availability

All datasets relevant to this study's findings are fully available within the article.

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