

ARTICLE

Social Safety Nets and Their Effectiveness in Poverty Alleviation: Evidence from Banadir Region, Somalia

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ABSTRACT

The paper primarily focuses on social safety nets and their effectiveness in poverty alleviation. Social Safety Net (SSN) programs pertain to social service initiatives aimed at providing temporary assistance to individuals or groups facing vulnerabilities or unexpected hardships, such as those with lower incomes. Poverty poses a significant obstacle to the progress of social development, and its impacts are worsened by various factors including insecurity, frequent flooding, and droughts in Somalia. A total of 342 households in the Banadir region of Somalia were interviewed for the social safety nets (SSN) study. Data collection in the study was facilitated through the utilization of Kobo Toolbox, while the data analysis was conducted using EViews v.12. The results obtained from the ADP and PP tests indicated that all variables exhibited stationarity at the level. The Impact Assessment (IA) reveals a positive correlation with Household Income and Poverty Indices (HIPI), suggesting a risk of dependency without a strategic exit strategy, potentially leading to a 26% increase in poverty levels. A well-executed Program Implementation and Design (PID) can result in a 33% increase in income and poverty indices. Recipients perceive the Social Safety Net (PSSN) as reducing poverty and increasing income by 11%. Therefore, the study recommends integrating beneficiaries into the urban economy through sustainable livelihood options. Finally, the Somali government should prioritize the implementation of sustainable livelihood programs to mitigate dependency and alleviate poverty among SSN beneficiaries.

Keywords: Social Safety Nets (SSNs); Poverty Alleviation; Household Income; Agriculture; Income Generation Activities (IGAs); Sustainable Livelihoods; Banadir Region; Somalia

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1. Introduction

The social safety net holds significant potential as a direct and impactful investment in enhancing the welfare of individuals and families. By diminishing vulnerability, it enables the accumulation of productive assets within families. This comprehensive support system encompasses a range of provisions, such as cash transfers, food assistance, grants, access to education and healthcare services, nutritional programs, school meals for children, temporary job creation through public works, and fee waivers for housing, healthcare, and education. Collectively, these measures work together to bolster the resilience and well-being of individuals and families, ultimately fostering their capacity for economic productivity and self-sufficiency. According to Devereux^[1], safety nets refer to programs designed to safeguard individuals or households from two undesirable outcomes related to their well-being: chronic incapacity to work and earn a sufficient income (chronic poverty) and a deterioration in their situation from a precarious state that barely provides the minimum means of survival with little to no reserves (transient poverty). Social safety net programs currently provide assistance to over 1.9 billion individuals residing in 136 low and middle-income countries. However, despite these efforts, a significant proportion of the global impoverished population, amounting to 773 million individuals or 55 percent, continue to remain without access to crucial support World Bank^[2]. According to the World Bank^[3], Sub-Saharan Africa continues to have the highest number of people living in extreme poverty, with approximately 462 million individuals in 2023. Moreover, in 1990, approximately half of Sub-Saharan Africa and South Asia's population and two-thirds of East Asia and the Pacific lived in extreme poverty, surviving on less than \$2.15 per person per day Baah & Lakner^[4].

The Federal Republic of Somalia defines social protection as “government-led policies and programs, which address predictable needs throughout the life cycle in order to protect all groups, and particularly the poor and vulnerable, against shocks, help them to manage risks, and provide them with opportunities to overcome poverty, vulnerability, and exclusion”.

Unarguably, Somalia is categorized as a least developed country (LDC) and relies heavily on agriculture and livestock as the primary sources of income for the majority

of its population UNFPA^[5]; Samatar^[6, 7]. Climate change and natural disasters severely impact animal and agricultural production in Somalia, worsening food insecurity and economic vulnerabilities. Since 1990, Somalia has faced over 30 climate-related hazards, which include 12 droughts and 19 floods—three times the number of such events recorded from 1970 to 1990 OCHA^[8]; Samatar^[7]. Annual GDP growth averaged only 2 percent between 2013 and 2020. However, amid repeated shocks and multiple crises, Somalia's GDP contracted by 0.2 percent in 2020. Although there was a recovery, with GDP growth reaching 2.9 percent in 2021, it is projected to have fallen to 1.7 percent in 2022, primarily due to persistent droughts. Additionally, growth in GDP is forecasted to rebound to 2.8 percent in 2023 and further increase to 3.7 percent in 2024 World Bank^[8]. Somalia heavily relies on aid and remittances as sources of financial support. Official grants to the country have shown a fluctuating pattern, averaging over 30 percent of GDP in the past three years. In contrast, foreign direct investment (FDI) in Somalia has remained relatively stable, averaging 7.8 percent. However, Somalia's dependence on external grants is expected to reduce significantly following the HIPC Completion Point (HIPC CP) NEC^[9].

Despite economic growth, Somalia has struggled to reduce poverty. Between 2013 and 2017, annual population growth of 2.9 percent led to a per capita GDP contraction of 0.3 percent per year, significantly lower than the average per capita growth in fragile countries and Sub-Saharan Africa, making Somalia's GDP per capita one of the lowest in the world. As a result, poverty rates remained high, with half of the population living in poverty and nearly a third in extreme poverty in 2016. Regional disparities are evident, with internally displaced people (IDPs), rural communities, and nomads experiencing the highest poverty incidence Federal Republic of Somalia^[10]. Around 70 percent of Somalis live in poverty, with 90 percent experiencing multidimensional poverty, encompassing education, water, sanitation, and electricity needs World Bank^[11]. In terms of the Human Development Index (HDI), Somalia has the lowest HDI in the world UN-DESA^[12]. In another study by UNDP^[13], Somalia's Human Development Index (HDI) value is extremely low, measuring at 0.285. If internationally comparable data were accessible, Somalia would likely be ranked among the countries with the lowest HDI in the world.

Somalia has been selected as one of the countries in the Eastern and Southern Africa Region to receive priority focus on social protection. The social protection policy prioritizes a range of areas, including social assistance, income support, social insurance, active labor market policies, and social care services Federal Republic of Somalia^[14]. In September 2019, the Federal Government of Somalia (FGS) approved the National Development Plan 2020–2024 (NDP-9), which serves as the framework for the government’s reform agenda and strategy to address poverty reduction and foster inclusive economic growth. The plan also meets the requirements to be classified as a Poverty Reduction Strategy Paper (PRSP) under the Highly Indebted Poor Countries (HIPC) Initiative Federal Republic of Somalia^[15]. Additionally, Somalia, a country where the majority of the population struggles with poverty, faces significant challenges. Approximately 77 percent of the population lives below the poverty line of US\$1.9 per day, with 43 percent experiencing extreme poverty. According to the Federal Republic of Somalia^[16], rural areas in Somalia have a poverty rate of 53 percent, while urban areas (excluding Mogadishu) have a poverty rate of 41 percent. The highest poverty rates are found in IDP settlements (72 percent) and Mogadishu (58 percent). It is noteworthy that internally displaced persons (IDPs), women, and individuals residing in rural areas bear the brunt of poverty. Moreover, Somalia currently witnesses one of the largest displacement crises globally, with over 870,000 registered refugees in the Horn of Africa/Yemen region. Additionally, an estimated 2.9 million people are internally displaced within the country, accompanied by more than 92,000 returning refugees and 24,000 individuals seeking asylum or refuge Federal Republic of Somalia^[10].

According to the World Bank^[2], throughout the year 2022, a prolonged period of insufficient rainfall resulted in severe drought conditions within the nation, surpassing the durations, severities, and scales of previous drought episodes in 2010–2011 and 2016–2017. The impact of this drought was reflected in the significant increase of individuals experiencing food insecurity, reaching a staggering 8.3 million people in the country, which accounted for over 50 percent of the population. Additionally, the drought forced the displacement of more than 2 million individuals from their homes as they sought access to water, food, and pasture. To address this humanitarian crisis, grants such as social safety net pro-

grams, primarily targeting rural households facing poverty and vulnerability, alongside remittances, have played a crucial role in mitigating the adverse effects of the situation.

School meal programs are prevalent and well-liked initiatives that involve the provision of meals to students in exchange for their attendance at school. These programs, which are implemented in various countries regardless of their income level, can be considered as in-kind transfers that are contingent upon school attendance Bakhshinyana^[17]. According to Hunter^[18], in low-income countries, only 12 percent of school-attending children receive meals at school, whereas in upper-middle-income countries, 37 percent of their counterparts participate in such programs.

Social protection in Somalia lags behind its neighboring countries, primarily due to financial limitations and restricted accessibility in rural regions caused by security concerns. In the period from 2012 to 2016, Ethiopia allocated approximately 1 percent of its GDP to social protection, with an additional average contribution of 1.6 percent from donors. Similarly, Kenya has implemented the Hunger Safety Nets Program. In contrast, Somalia’s expenditure on social protection averages around 0.8 percent of its comparatively smaller GDP Federal Republic of Somalia^[19].

Social safety nets are crucial in alleviating poverty and improving the livelihoods of farming families and rural communities in the Banadir region of Somalia. Programs tailored to address local vulnerabilities have enhanced agricultural productivity, stabilized incomes, and strengthened food security. For instance, conditional cash transfers (CCTs) and community-based interventions in the region have demonstrated success in reducing income disparities, facilitating access to essential agricultural inputs, and fostering resilience to economic shocks. These measures have enabled farmers to invest in improved techniques and infrastructure, enhancing their productivity and food security World Bank^[2] Treacle^[20].

Additionally, Treacle’s^[20] agriculture-related policies, such as subsidies and targeted farmer relief initiatives, have significantly contributed to poverty alleviation efforts in Somalia. These policies help farmers overcome resource limitations, increase yields, and generate higher incomes. When integrated with well-designed social safety nets, such policies amplify their impact by addressing both immediate consumption needs and longer-term agricultural sustainabil-

ity. Evidence from Somalia highlights how these combined interventions not only reduce poverty but also empower rural communities, contributing to broader economic stability and resilience.

The Social Safety Net (SSN) comprises a set of public interventions in social services that serve two primary objectives: (1) the equitable redistribution of resources to the most economically disadvantaged individuals in society and (2) the provision of enhanced opportunities to mitigate unforeseen risks faced by individuals Besley^[21]. The effective execution of social safety net programs encounters various obstacles, such as the practical implementation of eligibility criteria, resource limitations, disparities between supply and demand, the engagement of influential individuals in local decision-making, and inadequate responsiveness to evolving needs. Nevertheless, corruption emerges as a prevailing element that amplifies these difficulties. Unjust targeting procedures in numerous social safety net initiatives lead to the exclusion of numerous impoverished and extremely poor individuals, denying them their entitled benefits and violating their basic rights Sifat^[22]. It is widely accepted and supported by significant evidence that involving the community can result in enhanced project performance and more effective targeting Conning & Kevane^[23].

In recent years, numerous non-governmental organizations (NGOs), development partners, and the government of Somalia have collaborated to implement social safety net programs within the country Rahman^[24]. However, several challenges have been identified in the course of these initiatives. The key problems are outlined below: (1) challenges stem from the presence of multiple planning and implementing agencies; (2) absence of a centralized entity responsible for policy formulation in social safety net programs; (3) limited financial resources pose a significant challenge to the successful implementation of social safety net programs; (4) the existence of numerous intermediaries within the program's delivery system hampers efficiency and heightens the potential for leaks; (5) the inadequacy of local government institutions, which bear the primary responsibility for program implementation, is a significant cause for concern; and (6) the lack of robust systems to measure and assess program outcomes and impact makes it difficult to gauge their effectiveness and identify areas for improvement.

Therefore, the Federal Government of Somalia (FGS)

is continuously enhancing its capabilities and is dedicated to establishing a robust social protection system, as indicated in the National Development Plan (NDP) 2017–2019, Recovery and Resilience Framework. However, social safety net programs in Somalia face various challenges, including multiple planning agencies, limited financial resources, inefficient delivery systems, inadequate local government institutions, and a lack of effective monitoring and evaluation systems. Against the above backdrop, the study aims to examine the effectiveness of social safety net programmes in poverty alleviation in Banaadir, Somalia, and identify potential areas for improvement in program implementation and impact assessment.

2. Literature Review

Somalia, plagued by decades of internal strife and political division, has been pushed to the brink of poverty, making it one of the most impoverished nations in Sub-Saharan Africa. Somalia has introduced a range of policies and initiatives, such as the Somalia Social Protection Policies (Somalia Social Protection Policy, 2019), and other measures aimed at addressing the needs of the impoverished population over an extended duration. These efforts are also replicated at the national, state, and local government levels, showcasing a widespread commitment to implementation.

Obike^[25] examined how the National Directorate of Employment (NDE) contributes to poverty reduction in Nigeria, specifically focusing on Abia State. The study utilized a structured questionnaire to gather information from 120 participants, consisting of 60 individuals who benefited from NDE services and 60 individuals who did not. The sample was selected through simple random sampling. The names of NDE beneficiaries in Abia State and the names of farmers registered with the Agricultural Development Programme (ADP) were used as the sampling frames for selecting the beneficiaries and non-beneficiaries of NDE services, respectively. The collected data were analyzed using the Foster, Greer, and Thorbecke (F-G-T) poverty measure and multiple regression analysis. The findings of the data analysis indicate that credit, prior farming experience, the level of education for children, and the income generated from farming were important factors influencing poverty levels among individuals who benefited from NDE services. In contrast,

household size, farm income, and the education level of children were identified as significant factors affecting poverty levels among individuals who did not receive NDE services.

Wang^[26] conducted a study analyzing how effective social safety net programs are in reducing poverty risks. This is the first research to analyze poverty trends and explore the impact of social safety nets in reducing poverty in East Asia, specifically Taiwan and Southeast China, using data from the harmonized Panel Study on Family Dynamics from 2006, 2011, and 2013/14. The study employed comparative analysis and utilized multilevel regression models to assess the effectiveness of public transfers in alleviating poverty. The findings suggest that poverty has been increasing at a faster rate in rural areas and among migrants in Southeast China compared to residents in Taiwan and urban Southeast China, indicating a widening regional inequality. Social safety nets have helped reduce poverty in all locations, with greater reductions observed over time in rural areas and among migrants in Southeast China. However, these reductions have not been sufficient to narrow the disparity in regional poverty trends. There are differences in social safety net participation rates between Southeast China and Taiwan, with Southeast China lagging behind in elder, disability, and education assistance but leading in low-income assistance. While welfare policy design in Taiwan is more generous, the study's findings indicate that Taiwan's safety net did not alleviate poverty to a greater extent compared to Southeast China's.

Devereux^[1] examined the differences between three factors that contribute to poverty (low labor productivity, vulnerability, and dependency) and two types of interventions to alleviate poverty (livelihood promotion and livelihood protection). It suggests that social safety nets, which are publicly funded transfer programs, aim to stabilize consumption rather than simply shifting the average income level. Furthermore, the article proposes that safety nets can have both protective and developmental impacts. Three case studies in southern Africa demonstrate that even small income transfers are frequently used for income-generating endeavors, education, building social connections, or obtaining productive assets. This suggests that social safety nets can effectively alleviate chronic poverty, extending beyond temporary relief for livelihood crises.

Therefore, social safety nets in Somalia boost farm productivity, income, and market participation by ensuring

financial stability and access to inputs. They promote improved practices, investment in sustainable resources, and marketable surpluses. By minimizing economic risks, these programs enhance resource allocation, strategic market engagement, and food security. Effective implementation builds resilience, supports market-oriented production, and strengthens agricultural communities, significantly aiding poverty alleviation and rural economic growth development.

3. Methodology

The study was conducted in the Banadir region, which hosts the largest beneficiaries of social safety net programs. Selected members were invited to participate in the SSN exercise. A one-on-one semi-structured interview was conducted with the respondents who were available. The collected data comprises socioeconomic characteristics, including details about the household head, such as their gender, age, and marital status. It also includes information about the household size, their perception of social safety nets, program implementation and impact, savings behavior, as well as specific poverty indicators like household income and expenditure.

This study gathered data from March to April 2024 using the Kobo Toolbox platform, conducting physical surveys in the Banadir region. Structured questionnaires were utilized to collect data regarding social safety nets, agricultural productivity, household incomes, and market participation. EViews v.12 was used for data analysis, employing advanced econometric tools and models such as the production function approach and market equilibrium analysis. This approach provided a thorough framework for assessing the influence of social safety nets on resource allocation, productivity among farm households, and market engagement, resulting in valuable insights into their effectiveness and socio-economic impact implications.

3.1. Target Population

The data collection instrument used in this study consists of a set of constructed questionnaires that had been presented. A total of **353** questionnaires were distributed to beneficiaries of social safety net programs who were registered in various districts within the Banadir region. The sampling units, comprised of 353 beneficiaries, were selected using a simple random method from a comprehensive list of

3,000 beneficiaries registered in social safety net programs.

The sample was determined employing a recognized sample size determination formula known as Slovin's Formula Sampling Techniques Slovin^[27], as shown below.

$$n = \frac{N}{1 + N(0.05)^2} \quad (1)$$

In this study, the minimum sample size is represented by "n," and the total number of populations is denoted as "N." Our objective in this study was to establish a confidence interval of 95%, which means that the error value (alpha level) "e" remains constant at 0.05.

3.2. Sample Size Determination

A simple random technique was adopted to select a total of 353 participants. Random sampling often reduces the sampling error in the population, thereby enhancing the precision of any estimation methods employed Cooper & Schindler^[28].

$$\begin{aligned} n &= \frac{N}{1 + N(0.05)^2} = \frac{3000}{1 + 2 = 3000(0.05)^2} \\ n &= \frac{3000}{1 + 7.5} \\ n &= \frac{2000}{8.5} \\ n &= 353 \end{aligned} \quad (2)$$

3.3. Empirical Model

The study utilized the econometric technique of Ordinary Least Squares (OLS) to analyze the data collected through a questionnaire survey. Computed variables derived from the survey were employed as inputs in the OLS regression analysis.

$$HIPI = f(PSFN, PID, IA) \quad (3)$$

$$\log HIPI = \beta_0 + \beta_1 \log PSFN + \beta_2 \log PID + \beta_3 \log IA + \epsilon \quad (4)$$

In this study, the variable household income and poverty indices "HIPI" represent the dependent variable. The constant term is denoted as β_0 , the slope coefficients β_1 to β_3 , quantify the impact of various factors on poverty alleviation, while log is the natural logarithm. The independent variables PSFN, PID, and IA correspond to the perception of the social safety net program, the program implementation and design, and the impact assessment, respectively and the is the error term or residual.

4. Results

The study utilized a sample size of 353 participants, of which 342 respondents successfully returned their completed forms. This high response rate is indicative of excellent participant engagement and ensures an adequate dataset for comprehensive data analysis and interpretation.

4.1. Demographics

A total of 342 households in the Banadir region of Somalia were interviewed for the social safety nets (SSN) study (Figures 1–3).

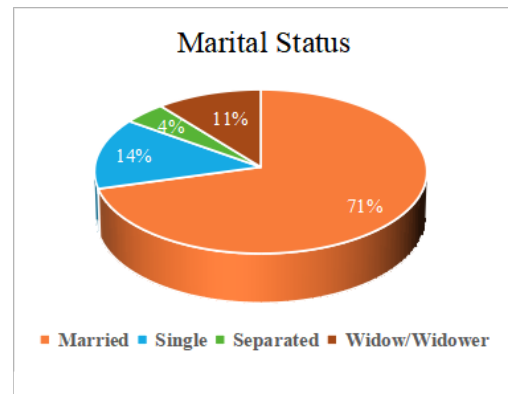


Figure 1. Marital status.

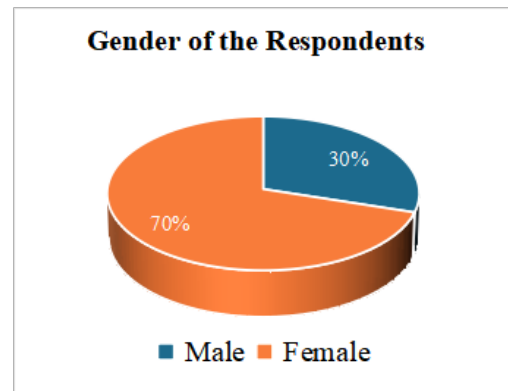


Figure 2. Gender of the respondents.

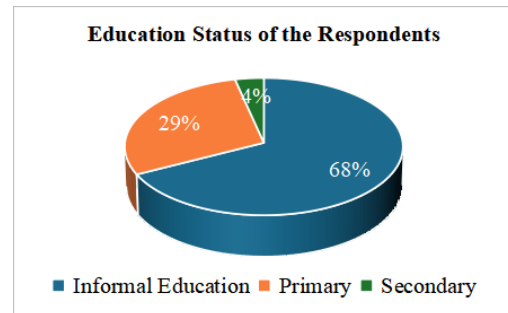


Figure 3. Education status of the respondents.

Among the respondents who served as household heads, 70% were female, while 30% were male. The survey participants encompassed individuals aged between 18 and 65. Specifically, 11% fell within the 18–25 age bracket, 32% belonged to the 26–35 age bracket, 35% fell within the 36–45 age bracket, and the remaining 23% were aged 46 years and above. A significant majority (68%) of the survey participants reported having no formal education. Meanwhile, 29% indicated that their highest level of education was primary education, and only 4% reported having attained secondary education. The survey participants exhibited diverse marital statuses. Specifically, 71% reported being married, 14% were single, 11% were widowed, and 4% were separated.

4.2. Result of the Unit Root Analysis

The stationarity of the variables was assessed using the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) unit root tests as shown in **Table 1**. This analysis was conducted to determine whether the data exhibited stationarity at the level or required differencing. The results of the stationarity tests revealed that all the variables, namely HIPI, IA, PID, and PSSN, exhibited stationarity at the level. Given the established stationarity at the level, it implies that the ordinary least squares (OLS) model can be appropriately employed.

Table 1. Results of ADF and PP unit root test of the variables.

Result of 1st Difference ADF Unit Root Test of the Variables With Constant & Trend			Result of 1st Difference PP Unit Root Test of the Variables With Constant & Trend		
Variables	t-Stat	P-Value	t-Stat	P-Value	Decision
HIPI	-6.1484	0.0000	-14.0191	0.0000	I(0)
IA	-5.1469	0.0001	-20.6004	0.0000	I(0)
PID	-9.6435	0.0000	-15.5795	0.0000	I(0)
PSSN	-15.3003	0.0000	-15.2633	0.0000	I(0)

4.3. Descriptive Statistics

Table 2 presents the descriptive statistics for several variables, namely Household Income and Poverty Indices (HIPI), Impact Assessment (IA), Program Implementation and Design (PID), and Perception of the Social Safety Net (PSSN). Among these variables, IA exhibits the highest mean value, followed by PID, PSSN, and HIPI, in that order. Furthermore, the analysis of skewness and kurtosis revealed that the normal distribution provides the best fit for the probability distribution.

4.4. Regression Analysis

Table 3 shows that the p-value of LNIA is 0.0000 at a critical point of 5%. Additionally, although the Impact Assessment (IA) has a positive p-value, it negatively correlates with the Household Income and Poverty Indices (HIPI). This negative correlation may indicate the development of a dependency behavior among beneficiaries over time if they are not provided with a strategic exit strategy. This dependency behavior could potentially contribute to a 26% increase in the poverty level of those who rely on the program. Such

a strategy would assist them in integrating into the urban economy by creating sustainable livelihood options rather than relying solely on humanitarian assistance and the social safety net programs led by the government of Somalia.

The Program Implementation and Design (PID) exhibits a p-value of 0.0000, indicating a positive relationship between PID and HIPI. This suggests that a well-executed and well-designed program implementation (PID) is likely to lead to a significant increase of 33% in household income and poverty indices performance, according to the study.

Finally, the probability of the Perception of the Social Safety Net (PSSN) is shown to be 0.0003, indicating a strong relationship between the perception of SSN and poverty reduction. This implies that recipients of SSN believe that the program effectively reduces poverty and increases household income. Consequently, SSN recipients perceive that the program reduces poverty and increases household income by 11%.

4.5. Correlation Matrix

As shown in **Table 4**, all variables in the study exhibit positive correlations with each other. This positive correla-

Table 2. Summary of descriptive statistics.

	HIPI	IA	PID	PSSN
Mean	1.524123	2.192982	1.940351	1.684211
Median	1.500000	2.333333	2.000000	1.500000
Maximum	2.500000	3.000000	4.400000	4.000000
Minimum	1.000000	1.000000	1.000000	1.000000
Std. Dev.	0.316725	0.519220	0.715769	0.716674
Skewness	1.154006	-0.538806	0.721866	1.355908
Kurtosis	4.542954	2.760517	3.960797	4.205094
Jarque-Bera	109.8336	17.36502	42.85679	125.4883
Probability	0.000000	0.000170	0.000000	0.000000
Sum	521.2500	750.0000	663.6000	576.0000
Sum Sq. Dev.	34.20724	91.92982	174.7032	175.1447
Observations	342	342	342	342

Table 3. Regression analysis.

Dependent Variable: LNHIPI				
Method: Least Squares				
Included Observations: 342				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.355465	0.024019	14.79909	0.0000
LNIA	-0.264246	0.039478	-6.693511	0.0000
LNPID	0.327580	0.036795	8.902723	0.0000
LNPSN	0.113069	0.031017	3.645438	0.0003
R-squared	0.407421	Mean dependent var		0.401759
Adjusted R-squared	0.402161	S.D. dependent var		0.195046
S.E. of regression	0.150810	Akaike info criterion		-0.933966
Sum squared resid	7.687349	Schwarz criterion		-0.889114
Log likelihood	163.7082	Hannan-Quinn criter		-0.916098
F-statistic	77.46265	Durbin-Watson stat		1.578456
Prob (F-statistic)	0.000000			

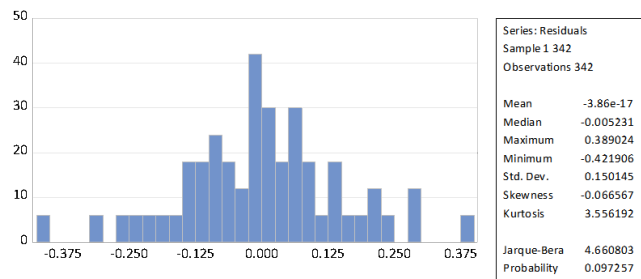
tion indicates that the variables mutually reinforce each other in a positive manner.

Table 4. Correlation analysis.

	HIPI	IA	PID	PSSN
HIPI	1			
IA	0.1856	1		
PID	0.5788	0.6813	1	
PSSN	0.5012	0.4834	0.7898	1

4.6. Normality Test

In order to assess the distribution of the dataset utilized in this model, it is crucial to test for normality. **Figure 4** illustrates that the probability value is 0.09, which is greater than 0.05. This suggests that the variables are normally distributed, indicating that the data follows a typical pattern.

**Figure 4.** Normality Test.

4.7. Heteroskedasticity Test

Multiple diagnostic tests were employed to determine the suitability of the empirical model. The outcome presented in **Table 5** indicates the absence of heteroskedasticity and serial correlation in the model. Additionally, **Figure 4**, which displays the results of normality tests, indicates that the data is well distributed. The stability of the model was

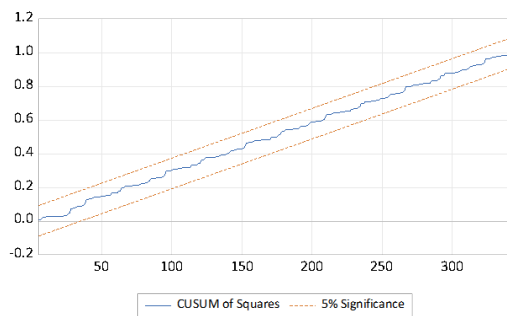
Table 5. Result of heteroscedasticity.

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	5.662581	Prob. F(3,338)	0.0009
Obs*R-squared	16.36622	Prob. Chi-Square(3)	0.0010
Scaled explained SS	20.43116	Prob. Chi-Square(3)	0.0001

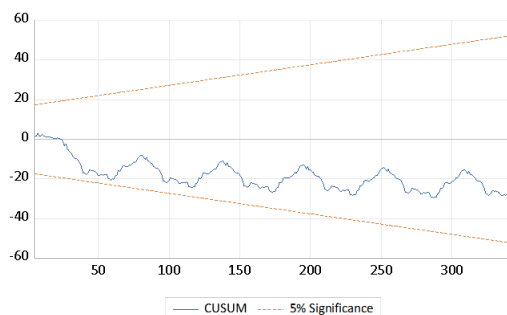
subsequently verified through the CUSUM plot (Figure 5) and the CUSUM square test (Figure 6).

4.8. Stability Diagnostic Test (Model Fit)

The stability of the model was assessed through the utilization of the CUSUM test and CUSUM of squares test, which aimed to determine the model's consistency over time. **Figure 5** displays the CUSUM plot. Notably, the solid blue line is observed to fall consistently within the boundaries of the dotted red lines. This observation serves as strong evidence that the model remains stable, with minimal deviations.

**Figure 5.** CUSUM Plot.

Similarly to **Figure 5** above, **Figure 6** below shows the CUSUM Square plot. Notably, the solid blue line consistently remains within the limits defined by the dotted red lines. This provides strong evidence of the model's stability, as it exhibits minimal deviations.

**Figure 6.** CUSUM Square Plot.

5. Conclusions and Recommendations

The study focused on social safety nets (SSNs) and their effectiveness in alleviating poverty, specifically in the Banadir region of Somalia. The findings revealed that poverty remains a significant challenge in Somalia, exacerbated by factors like insecurity, frequent flooding, and droughts. Social safety net programs have the potential to play an important role in decreasing poverty and improving the well-being of vulnerable households and individuals.

The study's impact assessment (IA) revealed a positive correlation between social safety net programs and household income and poverty indices. However, it also highlighted the risk of dependency without a strategic exit strategy, which could increase poverty levels. Therefore, it is essential to design and implement social safety net programs to ensure they have a positive effect on the targeted vulnerable groups.

The perception of social safety net recipients was positive, with program beneficiaries perceiving the SSN reduces poverty and increases income. Additionally, the effective implementation of SSN programs would potentially integrate beneficiaries into the urban economy through sustainable livelihood options. Therefore, by providing opportunities such as income generation activities (IGAs) and economic empowerment, social safety net programs can help households and individuals break the cycle of poverty.

Additionally, Somalia should incorporate subsidies for climate-resilient inputs and broaden conditional cash transfer initiatives linked to sustainable farming practices, thereby strengthening social safety nets in agriculture. Collaborative efforts between governments and international organizations are essential to enhance infrastructure, market access, and resource distribution, which in turn will boost resilience and productivity within farming communities. Initiatives such as Tanzania's Productive Social Safety Net demonstrate the significance of coordinated strategies for poverty reduction and agricultural advancement through targeted, scalable ap-

proaches and interventions.

Therefore, the study's findings suggest several key recommendations for improving the effectiveness of social safety net programs in poverty alleviation.

Firstly, it is important to prioritize the effective implementation and design of social safety net programs. This encompasses ensuring fair eligibility criteria, transparency, and efficient delivery mechanisms. Secondly, social safety net programs should focus on integrating recipients into the urban economy. This can be achieved through initiatives such as vocational programs, skills training, and entrepreneurial activities. Thirdly, partnerships and collaboration between the Somali government, non-governmental organizations, development partners, and the private sector are important for the success of social safety net programs.

In conclusion, the Somali government needs to offer policy and institutional support for social safety net indicators. This requires establishing a conducive environment through legal frameworks and supportive policies, as well as enhancing institutional capacity to effectively coordinate and implement social safety net programs. Integrating agricultural policies with social safety nets, based on agricultural economic principles, is crucial for promoting sustainable rural economic development by increasing productivity, stabilizing incomes, and encouraging market participation among vulnerable farming communities.

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Institutional Review Board Statement

The research protocol received approval from the Tropical Consult research ethics review board.

Informed Consent Statement

Informed consent was obtained from all participants prior to their responses. All contributions were anonymous, and participants were provided with a thorough explanation of the study's objectives.

Data Availability Statement

The datasets used and/or analyzed during the current study are available from the author on reasonable request.

Conflicts of Interest

The author declares that there are no conflicts of interest regarding the paper's publication.

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