



Estimating Aswesuma Effectiveness

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Pulasthi Amarasinghe

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Acronyms

GOSL	Government of Sri Lanka
HIES	Household Income and Expenditure Survey
LFP	Labour Force Participation
LKR	Sri Lankan Rupees
MPI	Multidimensional Poverty Index

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Abstract

This paper develops and demonstrates an analytical framework to simulate the effects of the cash transfers proposed by the Aswesuma programme on households under various eligibility criteria for selection of its beneficiaries. The results enable decision-makers to evaluate the possibility of utilising joint or weighted criteria of 22 indicators used in selecting eligible candidates and to identify the necessary changes to move people along the poverty evaluations set forth by the programme criteria. The addition of other factors affecting key welfare outcomes highlights the importance of including climate change and disaster preparedness as a subset of eligibility criteria.

JEL classification : J15, J71, J10

Keywords: Social protection, multidimensional poverty, cash transfers

1 Introduction

Social protection programmes are central to Sri Lanka's growth as it slowly recovers from its largest economic crisis so far in 2022. The crisis has put a large set of households in or near poverty, with households reeling from losses in income and price hikes. Existing social protection at the time was inadequate in its coverage and protection to provide relief for low-income families. Social protection had difficulty expanding, given the government was limited in finding funds to address socioeconomic issues. Poverty rose to 25% in 2022, from an 11.3% increase in 2019 (WorldBank, 2023). This increase in poverty signalled a need for improved social protection methods to ensure people can manoeuvre through economic hardships without significant disruptions to consumption.

In response, the Government of Sri Lanka (GOSL) introduced Aswesuma as a temporary measure to replace the existing Samurdhi programme to address issues in previous social protection programmes and offer a new way to ensure only the deserving receive cash transfers and will be likely to graduate out of vulnerability. The programme employs a multidimensional approach to assess the eligibility of applicants for cash transfers using 22 selected indicators across six dimensions: education, health, economic status, housing conditions, family demographics, and assets. These indicators aim to comprehensively assess household deprivation and ensure that assistance is given to the most deserving. Beneficiaries receive varying monthly cash transfers for six months up to three years,¹ depending on the severity of their poverty status, with the most deprived households across the evaluation criteria receiving larger cash transfers for the maximum duration.

Despite the multidimensional selection of the programme, the eligibility criteria have raised questions. Several criticisms of the program included the selection of households not facing economic hardship or ineligibility of impoverished families. The problems in implementing the programme and identifying poor households have also faced difficulties at the ground level with the capacity and cooperation of local authorities.² Transformation of the programme to better serve the poorest segments of society is a major political and social priority to ensure that economic recovery is equitable and inclusive. One key area of transformation requires improved targeting of households and determining transfer amounts for respective households. While there are inadequate data on the effectiveness of transfers since the recent inception of the programme, ex-ante studies are useful in observing the predicted changes in key outcomes. These provide insight into the efficacy of current evaluation criteria in capturing the poor and the sufficiency of cash transfers to maximise the impact on recipient decisions and welfare (Todd and Wolpin, 2006). In addition to estimating and simulating possible benefits of Aswesuma transfers under the current criteria, ex-ante studies explore other possible criteria and transfer schemes to improve targeting and welfare.

The current paper's primary objective is to develop a framework to study the ex-ante effects of Aswesuma on the coverage of poor households and the impact on key welfare indicators. The Aswesuma effectiveness not only extends to the program's ability to impact key outcomes such as food insecurity, indebtedness, and labour market participation but also in its capacity to capture the neediest groups of the country. Thus, in evaluating the effectiveness of the Aswesuma programme, this paper looks at the specific objectives of:

1 Under the 'Aswesuma' welfare scheme from 1 July 2023 onwards, about 400,000 families identified as 'severely poor' would receive payments of Sri Lankan Rupees (LKR) 15,000 a month for three years, about 800,000 recipients identified as 'poor' will get LKR 8,500 a month for three years, and another 400,000 recipients identified as 'transitional' will get LKR 2,000 a month until December 2023 and 400,000 identified as 'vulnerable' will get LKR 5,000 up to March 2024 (EconomyNext (2023, April 23). "Sri Lanka Publishes 'Aswesuma' Welfare Beneficiaries").

2 The Grama Niladhari (GN) Officers have shown reluctance to work on implementing the programme, as reported in The Morning newspaper (2024, December 3), "GNs Threaten Action Over Aswesuma DS 'Pressure'" (<https://www.themorning.lk/articles/FIFLOU5vINE2zjAv69T3>).

1. Assessing the effectiveness of the multidimensional criteria of current Aswesuma to identify households relative to its predecessor Samurdhi Programme.
2. Estimating the suitability of Aswesuma indicators in determining the effects on key outcomes related to household welfare.
3. Analysing the impact of the proposed criteria and transfers on welfare outcomes
4. Examining programme transformation suggested to improve targeting and better outcomes.

A vast literature of ex-ante and ex-post evaluations of these programmes exists and provides insights into their design, implementation, and impact. These studies examine programme design, implementation, and impact variations, assisting policymakers identify the best practices and lessons learned. A major contribution of these studies is that these offer a framework to analyse the effectiveness of such programmes and create a set of measurable outcomes that are likely to be impacted through cash transfers. For instance, a meta-analysis by Bastagli et al. (2016) compared the effect of cash transfer programmes on poverty and inequality across 15 countries and found consistent evidence of positive impacts on household welfare, with exceptions in labour market participation. Similarly, human capital development and social inclusion, or general living standards measured through a multitude of factors such as food consumption and nutritional outcomes, are likely to respond positively under a well-functioning social protection programme (Barrientos et al., 2008; Handa et al., 2018; Skoufias and Parker, 2001). Additionally, Gertler et al. (2012) found that cash transfers helped buffer such households against economic shocks and enabled them to cope better with financial stress, enhancing their overall welfare and well-being. Thus, the existing literature provides ample evidence for measuring the efficacy of social protection programmes. As such, this study focuses on a similar set of outcomes backed up by available literature to determine the performance of Aswesuma: food security, debt, and labour market outcomes.

To determine Aswesuma's effectiveness, the paper first identifies the household eligibility for the programme under the criteria outlined in the gazette (as per Gazette No. 2302/23) and compares it with the individual status of the recipient of the previous social protection programme of Samurdhi. In addition to the comparison of Aswesuma and Samurdhi to assess the targeting capabilities, the paper measures the

It is shown to be a more objective measure of multidimensional poverty than its predecessor, Samurdhi, with those eligible for Aswesuma displaying higher rates of multidimensional poverty.

impact on key dimensions of food insecurity, indebtedness, and labour market participation through a probabilistic model of the outcomes due to the multidimensional criteria used to capture eligibility. By doing so, the model explores the extent to which Aswesuma criteria provide a framework to capture households' vulnerabilities in key outcomes. Second, the study simulates the effects of proposed Aswesuma cash transfers for the respective recipients in key outcomes of food insecurity, indebtedness, and labour market participation. Third, the paper offers the changes in key outcomes if Aswesuma criteria or transfers are to be revised as proposed by policymakers. In addition to policymakers proposing changes to Aswesuma, the paper also explores additional criteria to improve coverage to both improve the accuracy in the selection and the total welfare of society.

The results shed light on the current capacity of Aswesuma indicators as an efficient targeting mechanism. It is shown to be a more objective measure of multidimensional poverty than its predecessor, Samurdhi, with those eligible for Aswesuma displaying higher rates of multidimensional poverty. The Aswesuma selection criteria serve as robust indicators of food insecurity, indebtedness, and labour force participation (LFP) with exceptions observed. In assessing the efficacy of Aswesuma criteria by simulating cash transfers to eligible households, the study finds that the current mechanism works well over other proposed

mechanisms but could be improved through the inclusion of factors such as disaster vulnerability to better target poor households. Overall, the findings highlight the potential of Aswesuma transfers to alleviate food insecurity among vulnerable households in Sri Lanka.

The following sections are organised as follows: Section 2 provides background and the context on previous social protection measures and the transition to Aswesuma. Section 3 discusses methodology and data used for the study. Section 4 explains the results, and Section 5 concludes with a discussion on the way forward.

2 Background

2.1 Samurdhi Programme

The Samurdhi programme introduced in 1995 has been a social welfare and poverty alleviation initiative in Sri Lanka, which aimed to provide financial assistance and support to low-income families and individuals. Key components of the Samurdhi programme typically include targeted cash transfers, livelihood development projects, and various poverty reduction measures. The programme identifies eligible beneficiaries based on income and economic criteria, and it often includes provisions for skills development, self-employment opportunities, and community development projects to empower participants economically. Literature has found that the Samurdhi programme positively affected poverty alleviation and welfare in the country (Thavarasasingam and Balagobei, 2020).

The Samurdhi programme, while crucial in extending financial aid to numerous low-income households, has encountered significant challenges and critiques over its operational lifespan. Mainly among these are issues concerning the programme's targeting mechanisms, with critics contending that it has struggled to accurately identify and assist the most vulnerable segments of society. Both inclusion errors, wherein non-needy individuals receive benefits, and exclusion errors, whereby deserving recipients are overlooked, have been reported, casting doubt on the programme's efficacy.

Furthermore, allegations of political interference in the beneficiary selection and programme administration have surfaced, raising apprehensions regarding fairness and transparency in its implementation. Concerns about the sustainability of the programme's poverty alleviation impact have also been voiced, with arguments for a shift towards strategies encompassing broader, long-term economic development and empowerment initiatives rather than relying solely on short-term cash transfers. Additionally, criticisms regarding the absence of robust monitoring and evaluation mechanisms have been articulated, underscoring the challenge of gauging the programme's effectiveness and ensuring accountability. Lastly, apprehensions have been raised regarding the potential perpetuation of dependency on social welfare schemes, such as Samurdhi, and its possible hindrance to fostering self-sufficiency and sustainable economic growth.

2.2 Multidimensional Approach to Poverty

In social protection programmes, Multidimensional Poverty Indices (MPIs) play a crucial role in identifying and targeting the most vulnerable populations and evaluating the effectiveness of cash transfer initiatives. Multidimensional Poverty Indices go beyond traditional income-based measures and capture various dimensions of deprivation, including health, education, living standards, and social inclusion. Governments, international organisations, and researchers have widely adopted MPIs to assess poverty and guide policy interventions. Among the MPIs, one of the most prominent is the MPI developed by the Oxford Poverty and Human Development Initiative. The MPI incorporates health, education, and living standards indicators to provide a holistic view of poverty at the household level (Alkire and Foster, 2011). In the context of social protection programmes, MPIs are instrumental in identifying and targeting vulnerable populations for assistance. For example, in countries like Sri Lanka, where traditional income-based measures may not fully capture the complexities of poverty, MPIs offer a more comprehensive understanding of deprivation. By incorporating indicators such as access to healthcare, education, and basic amenities, MPIs enable policymakers to design targeted interventions that address the multidimensional nature of poverty.

While MPIs offer valuable insights into the multidimensional nature of poverty, these also present several challenges in the context of social protection programmes. One challenge is the selection and weighting of indicators, which can vary depending on the context and objectives of the programme. Ensuring the reliability and validity of these indicators is essential for accurate assessment of poverty and targeting assistance to those most in need. Another challenge is the availability and quality of data required to construct MPIs. In many low- and middle-income countries, data on key indicators such as health, education, and living standards may be limited or unreliable, posing challenges for accurate poverty measurement (Alkire and Santos, 2014). However, challenges related to indicator selection, data availability, and measurement accuracy must be addressed to ensure the effectiveness of MPIs in informing policy decisions and reducing poverty. As the recent Aswesuma programme is motivated to capture those in poverty with a multidimensional poverty framework, the criteria used in identifying recipients must be accurate and relevant in capturing the most vulnerable groups of society. Against this backdrop, this paper explores the extent to which Aswesuma criteria perform as a multidimensional measure and the efficacy of alternative measures.

2.3 Aswesuma Programme and the Multidimensional Approach

The Gazette No. 2302/23 outlines the criteria for persons and families eligible for welfare benefits. The selection is based on six criteria, each measured using various indicators. The six dimensions of education, health, economic level, assets, housing conditions, and family demography are further subdivided into indicators highlighted in Table 1. The average household deprivation of each indicator is shown as 1, equivalent to deprivation, and 0, indicating that the household is not deprived. Table 1 highlights that the 22 factors used for Aswesuma calculations show significant variation in deprivation status.

In education indicators, the education level of the highest educated member was less than General Certificate of Education (GCE) Ordinary Level exams for 40% of the households in the sample. The second education indicator of school attendance of all children aged 5-16 remained at 4%. Both education indicators are expected to stay similar or worsen in the current climate as more older teenagers engaged in secondary education could be compelled to drop out and support family incomes. In health, the presence of a household member with a chronic disease or a disability was at 48% and 36%, respectively. The average deprivation across the health indicators is expected to remain in a similar environment in 2023, as the effects of economic conditions on the selected health conditions.

Table 1: Aswesuma Indicators

Indicators	Deprivation
Assets	
Not having at least one asset related to livestock	0.983
Not having cultivable highland	0.855
Not having at least one vehicle	0.319
Not having at least one machinery	0.989
Occupied house	0.113
Other properties	0.980
Nature of the House	
Living In Poor space	0.035
Informal lighting sources	0.002
Not having a permanent structure in the house	0.084
Total floor area < 500 square feet (sq ft)	0.178
No clean drinking water	0.087
Inadequate sanitation	0.079
Health	
Chronic diseases	0.483
Family members with disabilities	0.360
Education	
Education level of family members	0.403
Number of non-school going children	0.043
Demographics Dependency Ratio	
Ratio	0.206
Single parent family	0.522
Economic Level	
Electricity consumption	0.700
Expenditure	0.137
Income	0.125
N	19,911

Notes: Aswesuma measures take values of 0 for a household not deprived and 1 for a household that is deprived.

Source: Household Income and Expenditure Survey (HIES), 2019, conducted by the Department of Census and Statistics (DCS) Sri Lanka.

are expected to appear over the long run.³ The indicators for the economic level are 12.5% living below the expenditure poverty line and 13.7% living below the income poverty line in 2019. The deprivation score for electricity use suggested that over 70% of households consume under 60 watts per month. The average deprivation of income indicators in 2019 is likely lower than that of the post-economic crisis setting. The surge in prices of goods and services, coupled with income losses following the economic crisis, is likely to leave a larger portion of the country deprived of the three economic indicators. While data limitations create difficulty in studying changes to deprivation, this study accounts for price changes in its simulations in Section 5.

Additional indicators of household deprivation are factors that capture assets, family, and housing conditions indicative of long-term household poverty. The seven indicators of household assets examine poverty in occupied houses and other house ownership, highland and paddy ownership, vehicles and farming machinery ownership, and livestock. Occupied house ownership indicates that around 11.3% of households do not hold ownership of their living premises, which indicates a significant number of households being displaced or those living in rented properties. In addition, cattle or livestock deprivation was high across the country, with 98% of the households failing to meet the required cattle to escape the poor threshold. Ownership of paddy land over an acre and highland over half an acre scores high deprivation 86.8 and 85.6%, respectively. Vehicle ownership indicates that 31.9% of households do not own at least one vehicle, and machinery ownership has 98% of households deprived of means to assist in agricultural and fishery-related activities. However, high deprivation across household assets related to employment can be misleading as an indicator of household poverty. The choice of purchasing such assets means that indicators are heavily reliant on the industry or employment needs of the household. The Household Income and Expenditure Survey (HIES) conducted by the Department of Census and Statistics (DCS), Sri Lanka, shows that households engaged in agricultural activities show differences in consumption and income by asset-related indicators used in the Aswesuma criteria. However, non-farm households exhibit higher consumption and income through higher-paying jobs that do not rely on paddy and highlands, agricultural machinery, and cattle.

The housing conditions assess poverty in materials used in the construction and the general facilities available for household residents, suggesting low deprivation across the dimension. A small set of 3.5% of families are in slums, shanties, or in other similar establishments. About 8.4% of households do not have homes with permanent walls, floors, or roofs. The total floor area under 500 square feet (sq ft) is occupied by 24% of households. Poverty measures across clean water and sanitation access are relatively low at 8.7% and 7.9%, respectively. The inclusion of these measures is unlikely to change in the post-economic crisis environment, as home ownership and cohabiting households are typical in Sri Lanka.

³ The incidence of selected long term health issues and disabilities is similar across the Household Income and Expenditure Survey (HIES) 2019 and the United Nations Development Programme-led Multidimensional Vulnerability data from 2022 (UNDP-MVI).

3 Methodology and Data

The paper uses the HIES 2019 as it provides ample information on household characteristics, community characteristics, and outcomes of household actions to account for household heterogeneity. A sample of 19,911 households is used for the study. Household characteristics indicate race, religion, age, and gender composition, along with other individual-specific information. The Aswesuma programme, too, uses HIES to assess the poverty levels in the country and updates the poverty cutoff, as highlighted in the following sections. Community characteristics report on access to health, financial, and education facilities and regional labour market conditions. In this study, the outcomes for households capture three dimensions of household welfare: food security, household debt, and labour market participation.

3.1 Aswesuma Selection Criteria and Targeting

First, to identify the eligibility of households, the paper uses the deprivation status of each indicator highlighted in Table 1. The deprivation status of each indicator is transformed into a single deprivation score as the sum of the weighted deprivation status across the indicators. The weighting of each indicator is based on the number of deprived households for the given indicator at the district level using the HIES. Notably, deprivation scores and cutoffs are constructed using the HIES 2019 and deprivation is expected to be worse across most indicators. However, as HIES 2019 is the latest survey, the deprivation scores and weighting for the currently implemented Aswesuma programme will be revised and reviewed once new HIES data becomes available. Thus, despite the changes in the economic landscape, the weighting and deprivation scores used for this study follow suit when using the HIES data from the year 2019.

Once the indicators for households display a deprivation score of 0 for individuals who are not deprived or 1 for individuals who are deprived, a frequency-based weight function is used to calculate the deprivation score. The weights consider the relative importance of different measures at the district level using the complete HIES 2019 survey. The weight for a given district's j^{th} indicator is:

$$w(j) = \frac{\ln(1/f_j)}{\sum_j^K \ln(1/f_j)} \times 100 \quad (1)$$

where f denotes the portion of people who are deprived on the j^{th} indicator and K is the number of indicators. The weighting measure assigns lower values to the criterion in which many people are less deprived and higher values to those in which many households are deprived, indicating a larger importance on poverty dimensions that are more frequent at the district level. The calculation of the weighted deprivation score finds the weighted average of total deprivation, μ_i , for the i^{th} individual:

$$\mu_i = \sum_{j=1}^K w(j) \times \pi_i(j) \quad (2)$$

where the $\pi_i(j)$ is the deprivation score of the j^{th} indicator. The cutoff for the programme eligibility is decided on the poorest 40% of households. The Gazette 2328/13, issued in April 2023, states that 2 million (Mn) of the poorest households will receive cash transfers at varying levels conditional on their poverty level, corresponding to the target of 40% set by previous gazettes. The actual transfers, however, found that around 1.2 Mn households are receiving Aswesuma benefits under the HIES 2019 deprivation thresholds. Appendix Section A discusses the differences in deprivation measures of recipients between Aswesuma and its predecessor, Samurdhi.

3.2 Suitability of Criteria for Impact on Key Outcomes

Here, a probabilistic model is utilised to estimate the effectiveness of Aswesuma criteria to explain the variability of outcomes that determine household welfare in line with Kumara and Pfau (2011). The outcomes of food insecurity, debt, and labour market participation are measured to identify the magnitude and significance of indicators for selecting Aswesuma beneficiaries:

$$P(Y = 1) = \Phi(\beta X + \alpha Z + \gamma D) \quad (3)$$

Where Y is the outcomes of interest, X is the set of criteria used to determine Aswesuma eligibility, Z is a vector of variables controlling for other household characteristics, and D is a set of district characteristics for households i in district d. Household non-labour income, N, is presented separately to account for changes in food insecurity and debt measures due to transfers or interventions of outside parties. To capture the diminishing returns from expenditures, changes in measures are computed as the sum of changes in the logarithms of non-labour income before and after the cash transfer. The impact on welfare is higher for relatively poor households as it starts with lower incomes and, thus, are likely to experience more prominent changes in outcomes. Household characteristics, X, capture the household size, economic activities such as unemployment, and access to institutions such as banks, hospitals, and other service providers. District characteristics account for regional labour market conditions in wages and unemployment.

The estimated probit model is used to calculate the marginal effects of the explanatory variables:

$$\text{Marginal Effects} = \frac{\partial P(Y = 1)}{\partial X} = P(Y = 1 | X = 1) - P(Y = 1 | X = 0) \quad (4)$$

The marginal effects of deprivation indicators on household food insecurity experiences and debt are expected to be negative and significant if the indicators are sufficient measures of household difficulties in multiple dimensions. Equation 3 is estimated separately for households by their expenditure quintiles, where marginal effects of measures are likely to vary across the household's socioeconomic status.

Limitations: Note that the Aswesuma criteria are endogenous concerning other eligible indicators and economic conditions. However, due to data limitations, the model is restricted in capturing the dynamics of the Aswesuma indicators and taking the indicator as given. Panel data would be required to consider changes over time to model the endogeneity of indicators. As such, the model takes the characteristics used for the criteria as given and predicts how a cash transfer made based on such criteria changes household welfare outcomes.

3.3 Simulating Proposed Transfers

The estimates from equation 3 are used to simulate the behaviour and outcomes of recipients of cash transfers in line with Aswesuma criteria. In addition to those eligible, the paper simulates the outcomes of the counterfactual scenario of providing transfers to ineligible households. Still, it demonstrates a deprived status in at least one of the 22 indicators. According to the programme categorisation, the deprivation score that measures the vulnerability of households orders the most eligible candidates by vulnerability and places them in either severely poor, poor, or transitional poor categories. Gazette

No. 2328/13 shows that the current recipients of Aswesuma are limited to 2 Mn households under the categories and cash transfers, as highlighted in Table 2.

Table 2: Aswesuma Welfare Benefits Payment Scheme for Beneficiaries

Social Group	Number of Beneficiaries	Monthly Allowance (LKR)
Transitional	400,000	2,500
Vulnerable	400,000	5,000
Poor	800,000	8,500
Severely poor	400,000	15,000

Source: Gazette No. 2328/13, Colombo: Department of Government Printing.

To evaluate the impact of the Aswesuma payments, the paper first simulates transfers to households eligible for Aswesuma under subdivisions outlined in Table 2. The simulations provide cash transfers to increase the non-labour income of households and observe the change in the probability of food insecurity and indebtedness relative to the benchmark of no transfers. The benchmark of non-labour incomes is adjusted to reflect a reduction in non-labour income for households receiving Samurdhi benefits to avoid the effects of households receiving multiple similar social protection. All in all, Aswesuma is intended to replace Samurdhi; thus, the paper excludes adding Samurdhi on top of Aswesuma.

3.4 Simulating Alternative Transfers

To explore the alternate criteria proposed by Aswesuma, the paper proposes four additional scenarios relative to the benchmark scenario of no transfers. Simulations are conducted by increasing the non-labour income of households. First, the paper provides uniform payments of Sri Lankan Rupees (LKR) 15,000 as proposed by the GOSL to reform Aswesuma payments. Second, the paper explores the addition of disaster exposure as an added criterion. Lastly, new sets of household rankings are conducted for household expenditures, while electricity consumption is used to study a single metric for determining Aswesuma eligibility performs well relative to the current eligibility criteria. These rankings separate households into severely poor, poor, or transitional poor categories using a single metric of poverty.

4 Results

4.1 Aswesuma Eligibility and Targeting

A comparison of Aswesuma and Samurdhi recipients is presented in Table 3. The recipient distribution suggests that around 53.51% of Samurdhi recipients also qualify for Aswesuma under the proposed guidelines. This also indicates that of the 40% of the households targeted under Aswesuma, only 44% were the recipients of the Samurdhi benefit scheme. When Aswesuma initially collected household applications and listed beneficiaries, the programme faced significant opposition from Samurdhi households that were not selected for Aswesuma transfers. Thus, the study further disaggregates the deprivation status across the 22 Aswesuma poverty indicators by a household's eligibility of Aswesuma and Samurdhi in Figure 1.

The recipient distribution suggests that around 53.51% of Samurdhi recipients also qualify for Aswesuma under the proposed guidelines. This also indicates that of the 40% of the households targeted under Aswesuma, only 44% were the recipients of the Samurdhi benefit scheme.

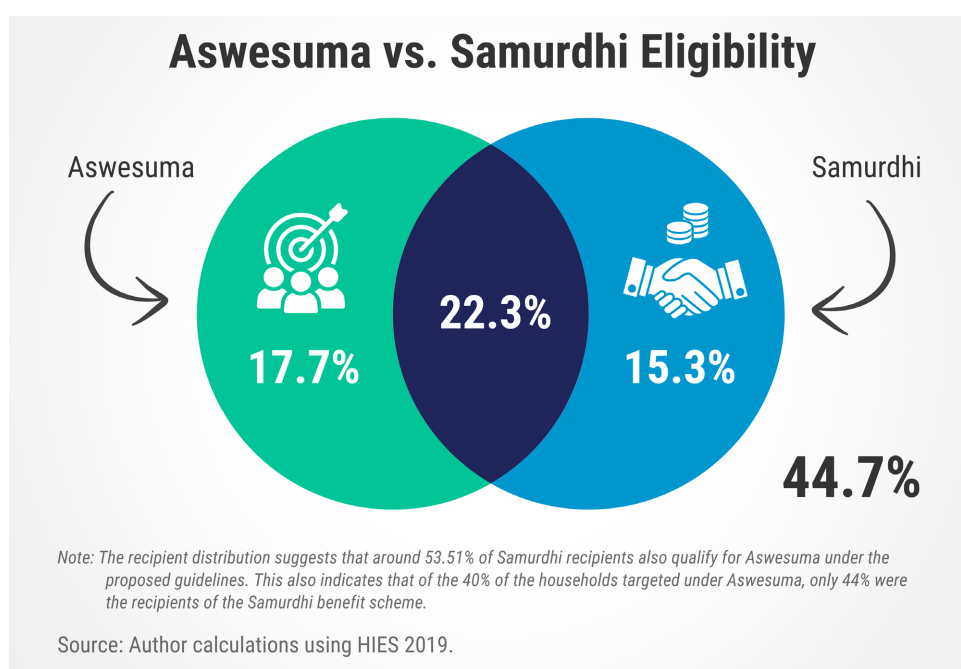


Table 3: Aswesuma vs. Samurdhi Eligibility

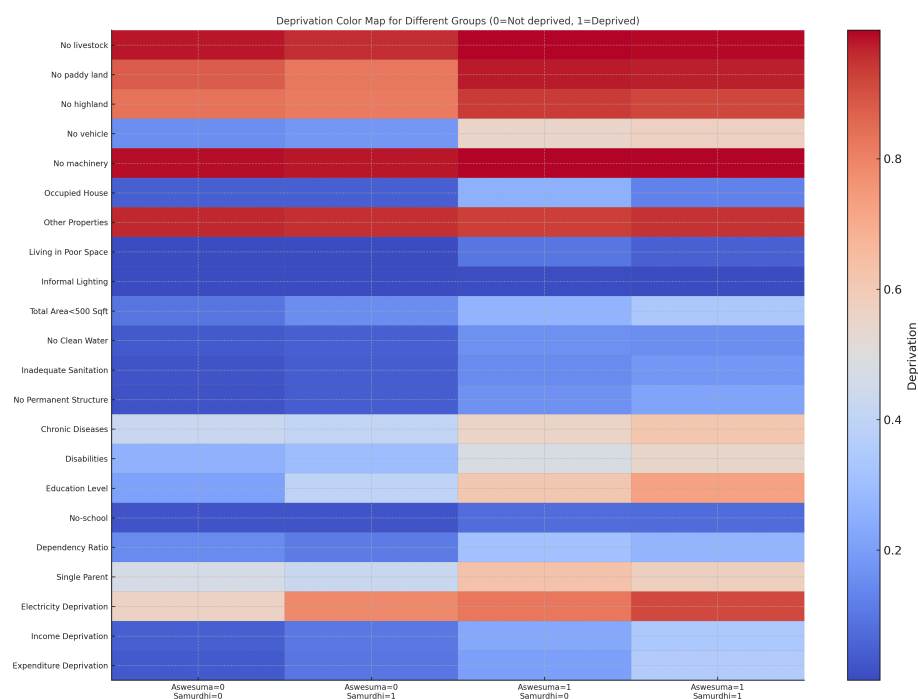
	Percentage (%)
Aswesuma eligible and Samurdhi recipient	22.3
Aswesuma eligible, but not Samurdhi Recipient	17.7
Aswesuma ineligible, but Samurdhi recipient	15.3
Aswesuma ineligible, and not Samurdhi recipient	44.7

Source: Author calculations using HIES 2019.

Figure 1 shows a coloured map of Aswesuma indicators by Aswesuma and Samurdhi eligibility. Red and blue values represent higher and lower levels of deprivation, respectively, for the average household in its categorisation by Aswesuma and Samurdhi eligibility. The differences among the Aswesuma and Samurdhi recipients suggest that the total deprivation was the lowest among those ineligible for both, followed by Samurdhi recipients who are ineligible for Aswesuma. Next, are Aswesuma recipients without Samurdhi, and finally, the Aswesuma recipients with Samurdhi have the highest deprivation. The Samurdhi-qualified households ineligible for Aswesuma display improved deprivation in all criteria relative to other Aswesuma-qualified households. This suggests that Aswesuma is more objective than Samurdhi in selecting cash recipients, as it can identify relatively more deprived households using the multidimensional poverty approach.⁴

While Samurdhi households ineligible for Aswesuma are relatively better off than Aswesuma eligible households, they still remain worse off than those who are ineligible for both social protection schemes. Specifically, these Samurdhi beneficiaries were more deprived of economic and education-related measures. While the average Samurdhi recipient who did not qualify for Aswesuma is better off than Aswesuma recipients, they still require a planned approach to be relieved or graduate out from the cash transfer programmes. This is because they are prone to financial and educational difficulties in contrast to the rest of the population.⁵

Figure 1: Deprivation Status of Each Aswesuma Indicator by Aswesuma and Samurdhi Eligibility



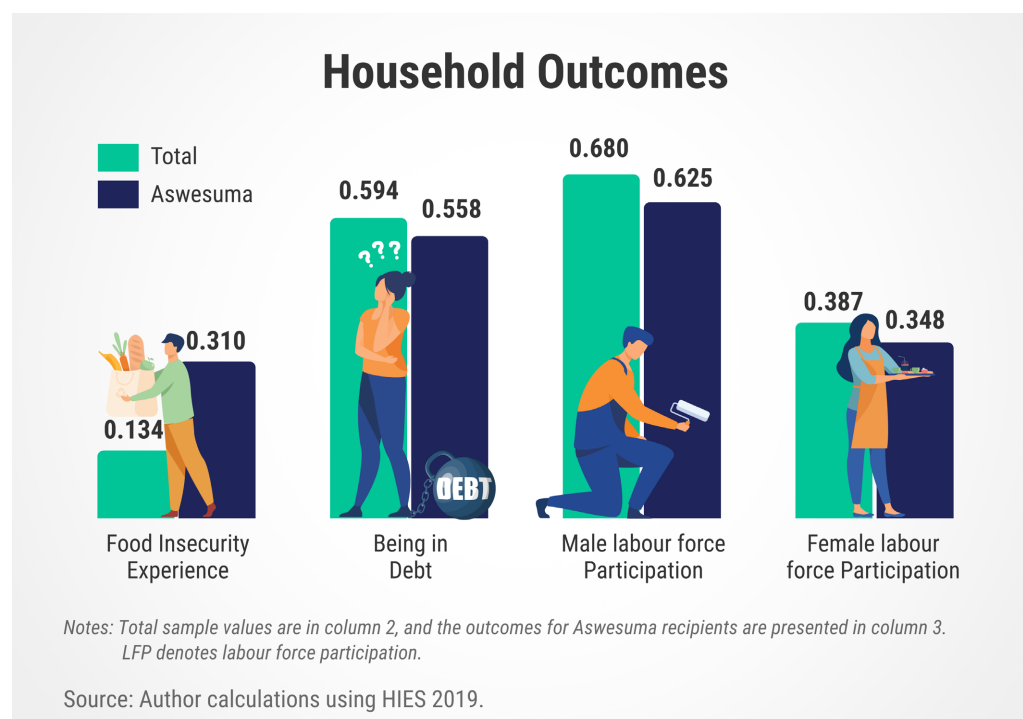
Source: Author's estimations based on HIES 2019.

⁴ A more detailed deprivation score Table is presented in Appendix A.1.

⁵ The authorities announced that previous recipients of cash transfers under Samurdhi are eligible for transfers for six months, despite not qualifying for Aswesuma

4.2 Impact on Key Outcomes

The infographic shows outcomes used to measure household welfare. As mentioned at the onset, these outcomes cover the three critical areas of food security, indebtedness, and labour supply. Food security outcomes assess the households that have experienced food insecurities and determine if they undertook negative coping measures in response to such difficulties.⁶ Food insecurity experience is characterised by whether households responded ‘yes’ to one of the six questions on coping mechanisms and food insecurity experiences highlighted in Table A2. The sample suggests that 31.09% of households experienced food insecurity relative to 13.46% reported by other households.



Household Outcomes

Outcomes	Total	Aswesuma
Food insecurity experience	0.134	0.310
Pr (Being in debt)	0.594	0.558
Male LFP	0.680	0.625
Female LFP	0.387	0.348
N	19,911	7,979

Notes: Total sample values are in column 2, and the outcomes for Aswesuma recipients are presented in column 3. LFP denotes labour force participation.

Source: Author calculations using HIES 2019.

⁶ Appendix Table A2 presents the questions used in the survey on the Food Security Experience. These questions were used to map outcomes indicating various food insecurity occurrences and related coping mechanisms, such as changes in the diet.

Similarly, the debt measures capture indicators of a household's indebtedness to all institutions. The infographic also shows that 59.4% of households in debt have borrowed from various formal and informal institutions and agents within a one-year time frame. The outcomes are less severe for Aswesuma-eligible households at 55.8%, likely indicating the lack of access to formal financial institutions.⁷

Another measure of household welfare is the LFP of working-age adults in these households. The LFP rates of men and women in households aged 15-60 are 68% and 38.7%, respectively. The outcome of interest in LFP by gender is calculated using the instance of men or women engaged in economic activity in a given household.⁸ As cash transfers that enter the household's budget as non-labour income are likely to increase the reservation wages and discourage workers from entering the labour markets, labour participation measures are expected to capture possible adverse effects of Aswesuma transfers. The low female LFP rate in Sri Lanka at 38.7%, is considered a significant obstacle for development. This rate is even lower among Aswesuma households, at 34.8%. Aswesuma-eligible households also display gaps in male LFP, which is 62.5%. Participation in household production or unpaid family work is disproportionately higher for women and often reduces household income-earning opportunities. Thus, male and female LFP figures are examined to explore the potential adverse effects of Aswesuma cash transfers.

4.2.1 Estimation Results

Table 4 shows the marginal effects computed for equation 3 for the outcomes of interest. The Aswesuma selection criteria are strong indicators of food insecurity, with several exceptions. Household characteristics and asset vulnerabilities, capturing symptoms of chronic poverty, present mixed significance in its impact on food insecurity experience. Cattle ownership is a statistically insignificant estimator. It highlights the high number of cattle required to be not deprived in the statistics and the observed and unobserved selection in cattle ownership. This creates low variance as almost all households are deprived, which is not a strong predictor of food insecurity. Paddy land ownership and agricultural machinery ownership, highly dependent on large-scale agricultural involvement, also display low variance as most families are poor under the depravity definitions. However, highland ownership remains a considerable indicator of food insecurity, as those with highland ownership are more likely to participate in subsistence farming.⁹ Vehicle ownership deprivation, which is highly dependent on the wealth and income of households, indicates a positive and significant indicator of food insecurity. House characteristics and facilities indicators used for Aswesuma criteria show inconsistency as predictors of food insecurity. Deprivations in clean water, sanitation access, and house size are valid and positive predictors of food security inexperience as these indicate structural deficiencies that suggest chronic, long-run poverty.

More variable deprivation indicators in health, such as the prevalence of long-term diseases and chronic disability, are positive and significant indicators of food insecurity. Households are limited in their income-earning capabilities due to health deprivation and may face constraints in acquiring food. The education poverty criteria for Aswesuma underline that deprivation in the highest education qualifications for family members is a critical indicator of increased food insecurity due to the lack of high-paying employment and opportunities associated with higher levels of human capital. The second education deprivation indicator of family members' school attendance is not statistically significant in estimating the multiple outcomes

⁷ Indebted measures are limited in the variables presented in the survey. The paper captures the probability of debt by using the variables that measure whether a loan exists from one of the institutions or agents listed in the study.

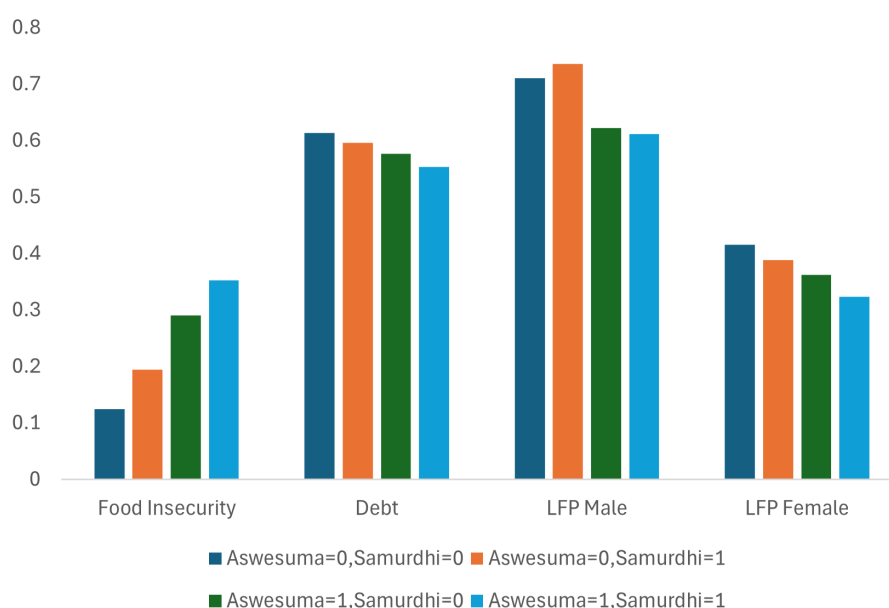
⁸ Note that this deviates from the norm of capturing individual labour force participation (LFP) as the paper focuses on the effects at the household welfare and decision-making

⁹ Around 52% of home gardeners are farmers conducting semi-subsistence in small lands (World-Bank, 2015).

of food insecurity experience. As the contribution to income remains relatively low for children, the child's school nonattendance fails to explain the variation in food insecurity outcomes. In measures of family demography for Aswesuma eligibility, the dependency ratio and single-parent families are not relevant predictors of food insecurity. Deprivation in economic indicators suggests that those in poverty in income are strongly associated with food poverty outcomes. Low electricity consumption below 60 Kilowatt (KWh) is statistically significant in explaining food insecurity incidence and related negative coping mechanisms.¹⁰

Similarly, the incidence of indebtedness depends on a similar set of characteristics. The model estimates show that asset ownership in agriculture-related activities is in a diminishing trend.

Figure 2: Aswesuma and Samurdhi Percentage of Households



the probability of a household being indebted. The deprivation in indicators of paddy land ownership, vehicles, and agricultural machinery is significantly negatively related to indebtedness. High-income deprivation is also associated with the probability of having debt, which suggests the risk-averse nature of involvement with formal financial institutions and agents as per the response obtained from the survey on informal borrowings is likely to be less accurate. In terms of male LFP, negative and significant associations with asset and economic deprivation measures suggest that males residing in well-off households will likely experience higher LFP. Poor housing conditions are also likely to increase LFP for men, highlighting the need for income-generating work for households in poor settings.

Figure 2 shows the food insecurity measures for diverse groups under current and prior social protection. The Samurdhi recipients are more likely than the average households to experience a form of food insecurity over the past 12 months. However, Samurdhi recipients sorted by their Aswesuma eligibility highlight the improvements of Aswesuma of Samurdhi in targeting households vulnerable to nutrition. The Samurdhi recipients

¹⁰ Expenditure deprivation indicator is not included in the estimation due to multicollinearity with the income indicator.

Table 4: Estimated Marginal Effects on Household Outcomes

Indicators	Food Security B/(SE)	Debt B/(SE)	LFP Male B/(SE)	LFP Female B/(SE)
No livestock	-0.003 (0.082)	-0.055 (0.075)	-0.124 (0.093)	-0.245*** (0.072)
No paddy land	0.082* (0.041)	-0.191*** (0.036)	-0.205*** (0.042)	-0.090* (0.035)
No highland	0.195*** (0.036)	0.037 (0.029)	-0.015 (0.034)	-0.303*** (0.029)
No vehicle	0.293*** (0.026)	-0.313*** (0.023)	-0.637*** (0.026)	0.027 (0.024)
No machinery	0.157 (0.109)	-0.409*** (0.101)	-0.642*** (0.150)	0.346*** (0.096)
Occupied house	0.175** (0.060)	0.167** (0.060)	-0.025 (0.071)	0.244*** (0.060)
Living in poor space	0.327 (0.236)	-0.013 (0.212)	-0.036 (0.236)	0.108 (0.204)
Informal lighting	0.035 (0.028)	-0.009 (0.025)	0.111*** (0.030)	0.002 (0.026)
No permanent structures	-0.184*** (0.040)	0.122*** (0.036)	-0.029 (0.041)	0.097** (0.035)
Total area <500 sq ft	0.379*** (0.037)	0.044 (0.036)	0.140*** (0.042)	-0.018 (0.037)
No clean water	0.233*** (0.036)	0.049 (0.033)	0.147*** (0.039)	0.182*** (0.032)
Inadequate sanitation	0.305*** (0.038)	0.113** (0.038)	0.193*** (0.044)	0.113** (0.038)
Chronic diseases	0.205*** (0.023)	0.053** (0.020)	-0.286*** (0.024)	-0.019 (0.020)
Disabilities	0.157*** (0.024)	-0.074*** (0.021)	-0.331*** (0.024)	-0.120*** (0.021)
Education level	0.405*** (0.023)	-0.096*** (0.021)	0.124*** (0.024)	-0.267*** (0.021)
No-school	0.105* (0.051)	0.047 (0.048)	-0.068 (0.058)	0.028 (0.046)
Dependency ratio	-0.001 (0.031)	0.107*** (0.027)	-0.215*** (0.033)	-0.240*** (0.027)
Single parent family	0.061* (0.030)	0.256*** (0.025)	-0.164*** (0.030)	-0.148*** (0.025)

Electricity deprivation	0.304*** (0.028)	0.105*** (0.023)	0.037 (0.027)	-0.068** (0.022)
Income deprivation	0.209*** (0.030)	-0.330*** (0.028)	-0.522*** (0.033)	-0.344*** (0.030)
N	19,907	19,905	19,907	19,907
Control Variables				
Household Characteristics	✓	✓	✓	✓
Prices	✓	✓	✓	✓
District Characteristics	✓	✓	✓	✓

Notes: Table shows the Coefficients (B) and their respective Standard errors (SE) in parentheses, ***p<0.01, ** p <0.05, p <0.1.

Source: Author's estimation based on HIES 2019.

eligible for Aswesuma transfers are more likely to experience food insecurity than Samurdhi recipients who are ineligible for Aswesuma. The latter group is less likely to be in food insecurity than the newly eligible social protection demographics in Aswesuma individuals without Samurdhi transfers.

4.3 Simulating Transfers to Current Recipients

Table 6 offers the probability of food security, debt, and LFP following Aswesuma transfers. Column 4 shows that the total sample saw a decrease of 2.6 percentage points in households' inability to procure resources to purchase food. The food insecurity experience falls further for groups receiving additional cash benefits, as the poor and severely poor in Aswesuma transfers are expected to see a decline in food insecurity by 7.2 and 7.1 percentage points, respectively. This suggests that a decline in the probability is concentrated at higher levels of cash transfers, with recipients exhibiting higher returns to transfers due to their comparatively poor initial state.

Measures of indebtedness in Table 5 display minor improvements as households in debt are likely to decrease as households receive cash transfers according to the Aswesuma guidelines by 0.2 percentage points. While measures of household vulnerability to food and debt show improvements under the Aswesuma implementation, labour market participation falls significantly in the case of male workers since households' reservation wages are higher due to a boost in their non-labour income. The probability that a male member aged 30-55 is not in the labour force is reduced by 4.1 percentage points, with females' likelihood of LFP decreasing by 1%. The adverse effects of Aswesuma

are concentrated more on the transitional and vulnerable classification of the groupings at 3.3 and 2.9 percentage points decline, respectively. This suggests that transfers are less damaging to female LFP at the poorest classifications as other factors, such as lack of opportunities, are likely to increase with poverty. However, it is important to note that the duration of cash transfers varies across the four groups, and the higher adverse impact on transitional and vulnerable household categories may not be visible in the long run.

The food insecurity experience falls further for groups receiving additional cash benefits, as the poor and severely poor in Aswesuma transfers are expected to see a decline in food insecurity by 7.2 and 7.1 percentage points, respectively. This suggests that a decline in the probability is concentrated at higher levels of cash transfers, with recipients exhibiting higher returns to transfers due to their comparatively poor initial state.

Table 5: Transfer under the Current Aswesuma Criteria

	Aswesuma Groups (0 = No Aswesuma)					Total
	0	1	2	3	4	
Food insecurity	0.136	0.207	0.250	0.314	0.456	0.205
Benchmark						
Scenario	0.136	0.157	0.186	0.242	0.385	0.179
Debt						
Benchmark	0.610	0.605	0.564	0.559	0.561	0.594
Scenario	0.610	0.599	0.558	0.556	0.558	0.592
LFP male						
Benchmark	0.717	0.655	0.623	0.606	0.631	0.680
Scenario	0.717	0.534	0.510	0.510	0.540	0.639
LFP female						
Benchmark	0.411	0.369	0.328	0.329	0.397	0.387
Scenario	0.411	0.336	0.299	0.307	0.379	0.377

Source: Author's estimation based on HIES 2019.

4.4 Simulation of Other Possible Transfer Mechanisms

The study produces the simulation of transfers and their impacts under alternate Aswesuma eligibility criteria, and transfer schemes. These include the uniform cash transfer scheme and alternative eligibility criteria such as disaster or climate change preparedness. The transfers also test the hypotheses on whether expenditure or electricity consumption-based transfers are more likely to benefit from government cash assistance.

4.4.1 Uniform Transfers to All Recipients

The following simulation evaluates the coverage of all Aswesuma recipients under a uniform cash transfer scheme instead of a tiered process highlighted in Table 2. The results in Table 7 display the benchmark results of no transfers, with the predicted probability of food insecurity, debt, and labour market participation by gender under two separate transfer scenarios: receiving in the range of LKR 5,000 per month to LKR 15,000 per month for all households eligible under Aswesuma. Similar to the previous simulations, the simulation under uniform pay is designed so that cash transfers aim to increase the non-labour income of households.

Results of the two transfers relative to the benchmark of no transfers are compared in Table 6. It shows a decrease of 2.6 percentage points in food insecurity experienced in the population following the LKR 5,000 transfer to Aswesuma households. The reduction in food insecurity in the sample is more significant in the case of LKR 15,000 at 3.4 percentage points. The effects of the transfers are more effective for severely poor households than the rest, with decreases of 7.2 and 9.8 percentage points, respectively, for LKR 5,000 and LKR 15,000 transfers. Accordingly, in transitional poor categories, the same transfers resulted in 5.5 and 7.1 percentage points fall respectively, in food insecurity experiences. Despite being uniform, cash transfers are far more successful at reducing the magnitude of food insecurity experienced

by households that are relatively poorer than the rest. Therefore, regardless of the amount transferred, the households with a higher deprivation score show relatively greater improvements in the food insecurity experiences, given they are worse off in observable conditions than other Aswesuma recipients and have higher returns on their expenditures to reduce food troubles.

Other household outcomes respond similarly in the direction of change but in different magnitudes. Households in debt are likely to decrease as cash transfers are made to all Aswesuma households uniformly, with a more considerable reduction in indebtedness for the transfers of LKR 15,000. The probability of being in debt decreases by 0.1 percentage points in the sample after transfers of LKR 5,000 and LKR 15,000, and the changes, while highly minor, are concentrated in less deprived groups in Aswesuma classifications. Labour market participation falls for men at a higher rate for the increased Aswesuma transfer of LKR 15,000. The transfer of LKR 15,000 raises the non-wage income and has a more pronounced effect on reservation wages of males than in the cases of lower transfers and for women. Thus, the probability that a male household member aged 30-55 is not in the labour force is reduced by 4.3 percentage points, and female workers observe a relatively more minor decline at 1.5 percentage points for transfers of LKR 5,000 and LKR 15,000 at 5.3 and 1.7 percentage points, respectively, for male and female workers. Again, the effects of uniform transfers are more concentrated for individuals in transitional and vulnerable stages of Aswesuma classification.

Table 6: Uniform Transfers to All Aswesuma Recipients

	Aswesuma Groups (0 = No Aswesuma)					
	0	1	2	3	4	Total
Food insecurity						
Benchmark	0.136	0.207	0.250	0.314	0.456	0.205
Scenario 1	0.136	0.152	0.186	0.249	0.384	0.179
Scenario 2	0.136	0.136	0.168	0.227	0.358	0.171
Debt						
Benchmark	0.610	0.605	0.564	0.559	0.561	0.594
Scenario 1	0.610	0.601	0.560	0.557	0.560	0.593
Scenario 2	0.610	0.601	0.560	0.557	0.559	0.593
LFP male						
LFP male Benchmark	0.714	0.651	0.619	0.601	0.624	0.676
Scenario 1	0.714	0.513	0.496	0.500	0.540	0.633
Scenario 2	0.714	0.491	0.472	0.476	0.513	0.623
LFP female						
Benchmark	0.411	0.369	0.328	0.330	0.397	0.387
Scenario 1	0.411	0.319	0.285	0.298	0.373	0.372
Scenario 2	0.411	0.313	0.279	0.292	0.366	0.370

Notes: Scenario 1 refers to the case of LKR 5,000 transfer and Scenario 2 refers to LKR 15,000 transfer.

Source: Author's estimation based on HIES 2019.

4.4.2 Disaster-risk Eligibility Criterion

Around 8% are new recipients under climate change considerations. The deprivation score of the new recipients under the disaster risk condition displays higher deprivation than those who qualify under the previous 22 indicators. Those who qualify under the new criteria and the Aswesuma show significantly higher deprivation, indicating the importance of disaster risk inclusion as a criterion.

In alternative Aswesuma criteria, the paper modifies the current criteria by factoring in the exposure to environmental disasters. Climate vulnerability is an increasing concern in Sri Lanka, with extreme events, rainfall, temperatures, and increasing sea levels leaving scars on employment and livelihoods. The paper also includes exposure to disasters as an additional indicator for the eligibility criteria to target individuals prone to temporary or permanent losses due to climate change.¹¹ The simulations of transfers are conducted under the subdivisions outlined in Table 2. As Appendix Table A3 shows, the households qualifying under the new criteria with exposure to disasters slightly differ from the initial group. Around 8% are new recipients under climate change considerations. The deprivation score of the new recipients under the disaster risk condition displays higher deprivation than those who qualify under the previous 22 indicators. Those who qualify under the new criteria and the Aswesuma show significantly higher deprivation, indicating the importance of disaster risk inclusion as a criterion.

Table 7: Transfers under Aswesuma Criteria and the Exposure to Disaster Risk

	Aswesuma Groups (0 = No Aswesuma)					
	0	1	2	3	4	Total
Food insecurity						
benchmark	0.137	0.208	0.249	0.314	0.455	0.205
Scenario	0.134	0.168	0.186	0.241	0.358	0.176
Debt						
benchmark	0.610	0.606	0.562	0.559	0.559	0.594
Scenario	0.610	0.603	0.560	0.557	0.558	0.593
LFP male						
benchmark	0.714	0.651	0.619	0.601	0.624	0.676
Scenario	0.709	0.556	0.497	0.492	0.515	0.630
LFP female						
benchmark	0.411	0.369	0.328	0.330	0.396	0.387
Scenario	0.409	0.337	0.285	0.296	0.366	0.372

Source: Author's estimation based on HIES 2019.

Table 7 displays the probability of a household experiencing food insecurity dropping 2.9 percentage points following the Aswesuma transfers highlighted in Table 2. In particular, the severely poor, defined as the group with the lowest deprivation score among Aswesuma recipients observes a 9.7 percentage points fall in the probability of food insecurity. The transient poor, who score the lowest in deprivation measures among Aswesuma recipients, show a relatively more modest decrease in food insecurity experience by 4 percentage points. However, changes across the food insecurity probabilities relative to the benchmark Aswesuma criteria show significant improvements across all four groups in the programme. Change in

¹¹ The question on disaster exposure asks if the housing unit or household members were affected by any natural disaster during the last 12 months.

the magnitude of food insecurity experience suggests that considering climate change or exposure to disasters identifies a crucial group vulnerable to chronic and transient poverty. Indebtedness measures display minor improvements as households in debt are likely to decrease by 0.1 percentage points under the new Aswesuma criteria. In other measures, labour market participation falls as in other proposed transfer schemes since households' reservation wages are higher due to a boost in their non-labour income. The probability that a male household member aged 30-55 in the labour force is shown to be reduced by 4.6 percentage points and female household members by 1.5 percentage points. Under the criteria using disaster exposure, the decline in male LFP is less than under the Aswesuma benchmark criteria. The opposite holds for female LFP. However, the overall decline in LFP under disaster exposure criteria is smaller than that under the Aswesuma benchmark scenario, highlighting its additional advantages.

Change in the magnitude of food insecurity experience suggests that considering climate change or exposure to disasters identifies a crucial group vulnerable to chronic and transient poverty.

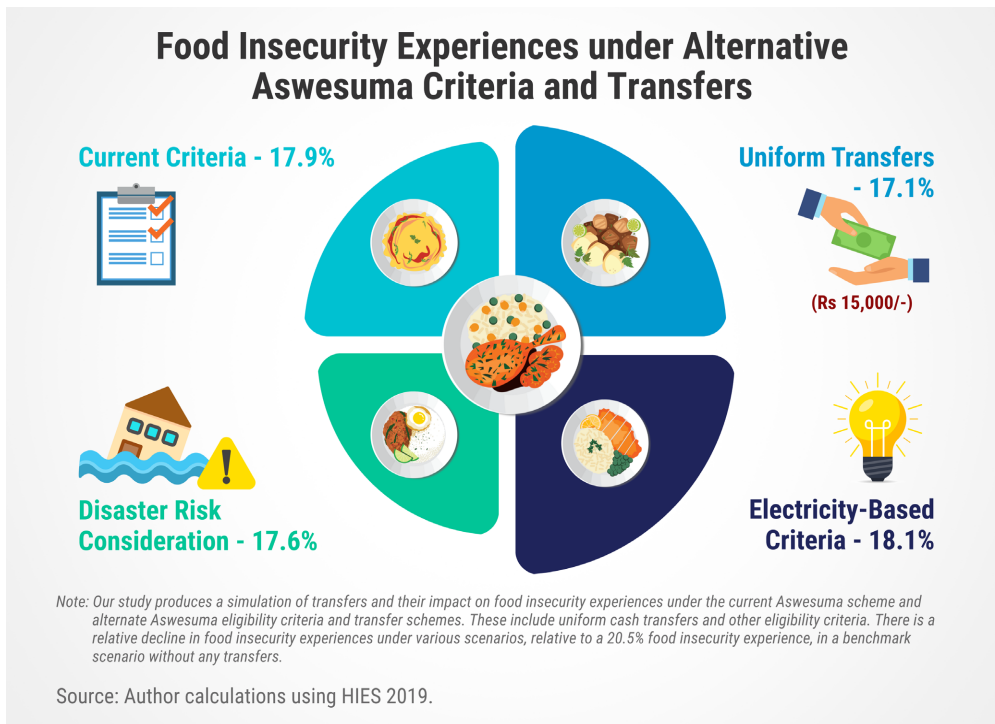
4.4.3 Electricity Consumption Eligibility Criterion

The other alternate criterion for Aswesuma eligibility is the electricity consumption-based metric for identifying poor households. Access to and sufficiency in energy consumption are often regarded as complementary poverty measures (Pachauri, 2004). Access to energy, an indicator of household integration with markets, is high at 100% in Sri Lanka. Consumption includes a non-commercial aspect where households rely on self-produced energy methods such as firewood. In general, rural populations often observe high energy poverty in most areas worldwide against income poverty. In contrast, the differences are more evident in urban areas due to the increased use of commercial sources of electricity due to the lack of substitutes (Lipu et al., 2013). As electricity consumption is widely available and often accurate in its measures, the current study uses electricity consumption as the sole identifier of Aswesuma eligibility. However, one must be cautious in using electricity as a valid measure due to the forced availability and access in urban areas, particularly in poor households in urban areas. The electricity usage is more of a choice presented to rural households despite income poverty, with various substitutes for energy readily available. In fact, Jayasinghe et al. (2021) find that energy poverty and income poverty are not complete substitutes as the energy poor are not always income-poor.

Table 8: Transfers under Aswesuma Criteria Based on Electricity

	Aswesuma Groups (0 = No Aswesuma)					
	0	1	2	3	4	Total
Food insecurity						
benchmark	0.166	0.245	0.245	0.259	0.299	0.205
Scenario	0.166	0.201	0.191	0.198	0.221	0.181
Debt						
benchmark	0.620	0.593	0.588	0.560	0.483	0.594
Scenario	0.620	0.589	0.583	0.556	0.479	0.592
LFP male						
benchmark	0.730	0.681	0.656	0.614	0.478	0.680
Scenario	0.730	0.590	0.548	0.513	0.385	0.640
LFP female						
benchmark	0.408	0.385	0.365	0.356	0.315	0.387
Scenario	0.408	0.362	0.339	0.332	0.295	0.377

Source: Author's estimation based on HIES 2019.



Aswesuma eligibility using electricity consumption, while offering a simplistic way of measuring those who are energy poor due to the information available to the government, provides mixed results as an alternative to the current eligibility criteria. While electricity consumption offers an objective measure of consumption, the availability of substitutes creates significant differences in the electricity demand. In the presence of substitutes in rural areas, indicators based on electricity consumption fail to account for the unavailability regarding the choice of energy use for urban populations.

The transfers under the electricity consumption criteria decrease food insecurity experiences. However, the percentage change in food insecurity is less than the change in food insecurity experiences under the transfers based on the 22 criteria used by the programme. The reduction in food insecurity in the population is 2.4 percentage points, with a 7.8 percentage points decrease for the poorest group under the Aswesuma selection based on electricity consumption. Similarly, for measures of indebtedness, households are less likely to be in debt, but the decline is lower in magnitude against the benchmark values of initial transfers. Labour market participation falls significantly as in other transfer schemes since households' reservation wages are higher due to a boost in their non-labour income. The probability that a male household member aged 30-55 is not in the labour force is reduced by 4 percentage points, and the same by 1 percentage point for female household members can be observed. Aswesuma eligibility using electricity consumption, while offering a simplistic way of measuring those who are energy poor due to the information available to the government, provides mixed results as an alternative to the current eligibility criteria. While electricity consumption offers an objective measure of consumption, the availability of substitutes creates significant differences in the electricity demand. In the presence of substitutes in rural areas, indicators based on electricity consumption fail

to account for the unavailability regarding the choice of energy use for urban populations. In the new groupings of Aswesuma using electricity consumption criteria, high variation in outcomes exists in each poverty group, suggesting that it fails to capture deprivation scores across other measures consistently

within and across poverty groups. For example, in benchmark models, the predicted outcomes across groups are not as varied as in the variation seen in predicted outcomes across groups in the original Aswesuma criteria (Table 5). Thus, it is insufficient in rural contexts to be the sole measure of deprivation for the Aswesuma eligibility.

Table 9: Transfers under Aswesuma Criteria based on Expenditure

	Aswesuma Groups (0 = No Aswesuma)					
	0	1	2	3	4	Total
Food insecurity						
benchmark	0.158	0.236	0.245	0.282	0.335	0.205
Scenario	0.158	0.192	0.197	0.225	0.268	0.183
Debt						
benchmark	0.595	0.590	0.606	0.591	0.579	0.594
Scenario	0.595	0.587	0.603	0.589	0.577	0.593
LFP male						
benchmark	0.656	0.696	0.720	0.717	0.732	0.680
Scenario	0.656	0.599	0.632	0.632	0.660	0.646
LFP female					0.295	0.377
benchmark	0.390	0.380	0.390	0.379	0.383	0.387
Scenario	0.390	0.360	0.371	0.362	0.368	0.380

Source: Author's estimation based on HIES 2019.

4.4.4 Expenditure-based Eligibility Criterion

A final alternative criterion considered under the simulations based on household expenditures is presented in Table 9. Aswesuma was brought forth during economic turmoil; Aswesuma transfers are designed to provide safety nets to impoverished households, where the support extended to a certain extent is sufficient to combat the price hikes and income losses due to the economic crisis of 2022. The Consumer Price Index (CPI) measures highlight that the basket of goods in 2019 costs 70% more in 2022. Thus, an expenditure approach is considered relevant to capture responses to the economic conditions. The probability of food insecurity decreases by 2.2 percentage points, with effects concentrated at the severely poorest at 7.7 percentage points. The direction of the results is similar to other criteria, with debt falling by 0.1 percentage points and LFP for men and women falling by less than previous alternative cases referred to in the current study.

The alternative criteria and uniform transfers to all individuals result in changes in outcomes in the same direction, with substantial declines in food insecurity, probability of debt, and LFP rates. The transfer schemes vary in the magnitude of the effects, with uniform transfers of LKR 15,000 to all Aswesuma recipients resulting in the most significant changes in outcomes. However, the simulation of LKR 15,000 is expensive than other programmes and may not be a feasible solution, given the post-economic crisis setting. The criteria that included deprivation measures in disaster exposure also reduced food insecurity in the poorest groups in a magnitude comparable to the case of uniform transfers of LKR 15,000. Relative to the benchmark scenario of current transfers, cash transfers based on including disaster exposure to the existing criteria have a more pronounced effect on the population.

5 Discussion

Despite the programme's multidimensional selection, the eligibility criteria have raised questions. Some of these are related to the selection of households not facing economic hardship or ineligibility of impoverished families. There is a need to refine the criteria currently used to capture households facing temporary economic hardships despite the ownership of certain assets. Another area for improvement with Aswesuma is the measurement difficulties faced by officials on the ground about verifying household information on the eligibility criteria. For example, there could be errors in collecting information as households may withhold truthful reporting of their poverty status to obtain benefits or could not recall

Another area for improvement with Aswesuma is the measurement difficulties faced by officials on the ground about verifying household information on the eligibility criteria. For example, there could be errors in collecting information as households may withhold truthful reporting of their poverty status to obtain benefits or could not recall accurate information. Such inaccuracies in gathering information on a household's poverty status could harm the coverage of individuals who require assistance and undermine the efforts to implement a more objective social protection programme. Improving data collection methods in follow-ups with Aswesuma recipients is crucial to refine the criteria. This would ensure that the programme keeps track of households' socioeconomic conditions and indications of improvements resulting from cash transfers.

accurate information. Such inaccuracies in gathering information on a household's poverty status could harm the coverage of individuals who require assistance and undermine the efforts to implement a more objective social protection programme. Improving data collection methods in follow-ups with Aswesuma recipients is crucial to refine the criteria. This would ensure that the programme keeps track of households' socioeconomic conditions and indications of improvements resulting from cash transfers. The primary objective of the program's transfers is to help participants graduate from poverty by enhancing their household circumstances. Therefore, follow-up assessments with Aswesuma recipients should document any potential changes and quantifiable results concerning food insecurity or poverty levels. Measurable outcomes must go beyond the Aswesuma indicators when follow-ups are conducted to ascertain welfare improvements.

The current improvements to Aswesuma require enhancing its ability to target individuals in chronic and transient poverty. Chronic poverty is when individuals or households experience a state of deprivation over many years and, at times, pass it on to future generations. Transient poverty is a phenomenon of short-term losses in income or expenditure despite having sufficient resources, in the long run, to stay

above the poverty line (Duclos et al., 2078). The current indicators used to calculate the deprivation score focus primarily on chronic poverty. These include placing a greater emphasis on measuring household assets and housing conditions, with 13 of the 22 indicators using the multidimensional measurement. While the coverage of individuals in chronic poverty is essential, placing much emphasis on individuals and households in transient poverty remains vital. Households' ineligible for Aswesuma but display a history of food insecurity within the last 12 months are a significant portion of the sample: of the 20% of the population that experienced food insecurity, nearly 40% are not recipients of Aswesuma.

Given the economic climate with increased expenditures and loss in income, transient poverty measures could capture individuals in chronic poverty and those who face temporary economic hardships regardless of their house conditions and assets. Thus, incorporating the economic activities and experiences of household members, particularly with recent unemployment, could provide a more holistic framework for addressing the needs of the most vulnerable segments of society. The amount of cash transfers

is unlikely to directly improve the Aswesuma indicators related to household assets and other chronic poverty indicators, as those require significant investments in human and physical capital (Lipton and Ravallion, 1995). In addition to measures that capture transient poverty, climate vulnerability creates additional complications for households. While measuring climate vulnerability is complex, the addition would improve the coverage of the more vulnerable groups in Sri Lanka.

In addition to including highly variable indicators for sudden economic and political hardships, the current set of indicators can be improved to account for the selection and choice of households based on observable and unobservable factors. The relevance of indicators will vary considering the regional context and demographics. Vehicle use and electricity consumption vary with the availability of substitutes in various regions of the country. Lack of transport could hinder rural households from accessing markets, and electricity sources are restricted to urban areas. Thus, households may avoid purchasing such services conditionally based on their substitutability and availability. Regional differentiation of deprivation calculations for indicators is likely to provide more accurate measurements of poverty in rural and urban populations. Other indicators of assets such as agricultural machinery, highland, and paddy land ownership are selective based on observable and unobservable characteristics in an individual's decision to participate in agricultural work. This endogeneity in asset ownership and employment choices could justify the need for other forms of social protection, such as insurance for agricultural workers. In addition, conditional on geographic location and market access, deprivation in agriculture-related indicators could signify higher welfare.¹²

A final comment on the criteria and the programme's effectiveness must consider the effects on labour market outcomes. The paper predicts that LFP falls for both men and women under various scenarios. The results align with economic theory as higher non-labour income lowers the need for income-generating activities (Garganta et al., 2017). However, resilience achieved through income-generating activities should be promoted to graduate out of poverty. In specific contexts, transfers conditional on employment have a less detrimental or beneficial impact on labour market participation (Berlinski et al., 2024). While cash transfers are a valuable tool to improve outcomes such as food insecurity, exploring conditional transfers to enhance participation and self-reliance on income-generating activities is crucial to achieving graduation out of poverty.

The current improvements to Aswesuma require enhancing its ability to target individuals in chronic and transient poverty. Chronic poverty is when individuals or households experience a state of deprivation over many years and, at times, pass it on to future generations. Transient poverty is a phenomenon of short-term losses in income or expenditure despite having sufficient resources, in the long run, to stay above the poverty line (Duclos et al., 2078). The current indicators used to calculate the deprivation score focus primarily on chronic poverty.

Given the economic climate with increased expenditures and loss in income, transient poverty measures could capture individuals in chronic poverty and those who face temporary economic hardships regardless of their house conditions and assets.

¹² Average household expenditures remain higher, and indebtedness remains lower for those not deprived of cattle ownership, paddy land ownership, and highland ownership. Food insecurity measures follow the opposite pattern, as subsistence is available for those in agriculture-related activities.

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Appendices

A Aswesuma and Samurdhi

Table 10: Aswesuma and Samurdhi Household Comparison

	(Aswesuma=0, Samurdhi=0)	(Aswesuma=0, Samurdhi=1)	(Aswesuma=1, Samurdhi=0)	(Aswesuma=1, Samurdhi=1)
No livestock	0.978	0.957	0.997	0.993
No paddy land	0.877	0.822	0.977	0.973
No highland	0.834	0.817	0.937	0.919
No vehicle	0.157	0.180	0.553	0.569
No machinery	0.986	0.978	0.996	0.996
Other Properties	0.963	0.953	0.930	0.947
Living in poor space	0.001	0.003	0.100	0.049
Informal Lighting	0.0005	0.002	0.005	0.003
Total Area<500 sq ft	0.094	0.156	0.268	0.338
No clean water	0.035	0.045	0.163	0.160
Inadequate sanitation	0.023	0.042	0.150	0.181
Occupied house	0.044	0.047	0.255	0.128
No permanent structure	0.017	0.042	0.164	0.218
Chronic Diseases	0.427	0.409	0.554	0.612
Disabilities	0.260	0.299	0.478	0.548
Education Level	0.210	0.396	0.609	0.727
No-school	0.022	0.023	0.077	0.071
Dependency ratio	0.150	0.110	0.313	0.272
Single parent	0.468	0.431	0.629	0.575
Electricity deprivation	0.563	0.784	0.823	0.913
Income deprivation	0.0434	0.105	0.229	0.340
Expenditure deprivation	0.0321	0.0982	0.204	0.355

Source: Author compilation based on HIES 2019.

B Food Insecurity

The results suggest that food insecurity within 12 months exists among Aswesuma-eligible households and others. The proportion of Aswesuma households worried about the ability to procure resources to purchase food is higher than the total sample by 7.8%. Similarly, the percentage of eligible people who could not eat healthy and nutritious foods ran out was 26.6%, relative to 17% for the whole sample. The likelihood of reducing food items, skipping meals, and reducing the quantity of food eaten are 21.8, 11.4, and 15.4% for Aswesuma households, which are higher than the sample averages of 13.5, 6.3, and 8.9%, respectively. Additionally, around 10% of the Aswesuma households exhausted their food due to financial constraints relative to 5.9% in the total sample. Coping mechanisms for food security show that Aswesuma-eligible households are more likely to adjust their dietary needs to counter food insecurity experiences.

Table 11: Food Insecurity Outcomes

Outcomes	Total	Aswesuma
Inability to procure resources to purchase food	0.113	0.191
Inability to eat nutritious and quality foods	0.171	0.266
Pr(reducing food items of meals)	0.135	0.218
Pr(of skipping meals)	0.063	0.114
Pr(reducing the quantity of food per meal)	0.089	0.154
Exhausting food due to financial constraints	0.057	0.099
N	19,911	7,979

Source: Author compilation based on HIES, 2019.

C Other Tables

Table 12: Deprivation Scores of Households under Alternate Aswesuma Criteria

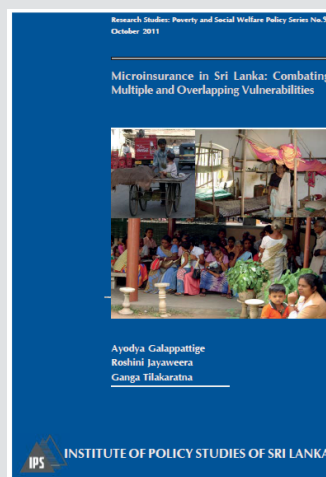
	Not Qualified	Only Aswesuma	Only Alternate	Both	Total
Aswesuma	25.90	31.32	33.48	41.43	32.05
Disaster	26.30	35.57	33.48	41.95	32.58

Source: Author compilation based on HIES, 2019.

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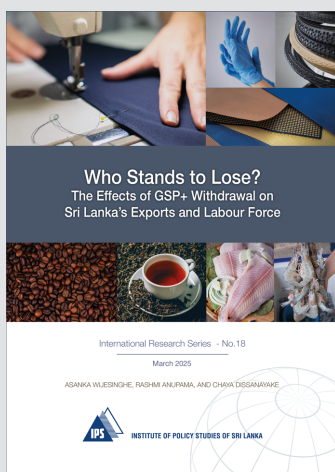


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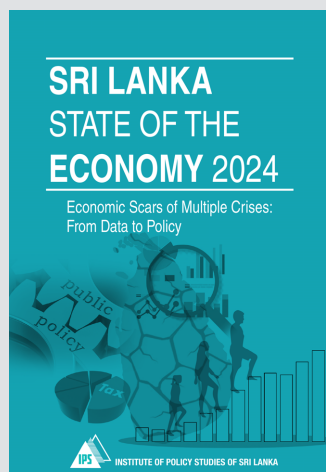


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