

Article

Not peer-reviewed version

The Impact of Hunger Safety Net Programme on Food Insecurity in Malawi: Evidence from Graduated Beneficiaries

[Edward Horesh](#) *

Posted Date: 8 April 2025

doi: 10.20944/preprints202504.0692.v1

Keywords: food insecurity; Malawi; Hunger Safety Net Programme; cash transfers; social protection; livelihood diversification; poverty reduction



Preprints.org is a free multidisciplinary platform providing preprint service that is dedicated to making early versions of research outputs permanently available and citable. Preprints posted at Preprints.org appear in Web of Science, Crossref, Google Scholar, Scilit, Europe PMC.

Copyright: This open access article is published under a Creative Commons CC BY 4.0 license, which permit the free download, distribution, and reuse, provided that the author and preprint are cited in any reuse.

Article

The Impact of Hunger Safety Net Programme on Food Insecurity in Malawi: Evidence from Graduated Beneficiaries

Edward Horesh

Independent Researcher; edwardhoresh@gmail.com

Abstract: This study evaluates the impact of Malawi's Hunger Safety Net Programme (HSNP) on food insecurity among graduated beneficiaries. Despite HSNP interventions, 83.2% of respondents experienced severe food insecurity post-graduation. Regression analyses showed that cash transfer amount and support duration significantly reduced specific food insecurity indicators related to meal frequency and dietary diversity. However, HSNP-provided training showed no significant effect on food insecurity outcomes. The adequacy of cash transfers emerged as critical, with 80% of respondents considering transfers insufficient. Multiple regression analysis confirmed that perceived adequacy of funds was significantly associated with lower food insecurity levels. Livelihood diversification, particularly business activities, strongly correlated with reduced food insecurity and increased income. The findings indicate that while HSNP provides essential support, improvements in transfer adequacy, training relevance, and promotion of sustainable livelihood diversification are needed to effectively address long-term food insecurity in Malawi and achieve meaningful graduation from social assistance programs.

Keywords: food insecurity; Malawi; Hunger Safety Net Programme; cash transfers; social protection; livelihood diversification; poverty reduction

Introduction

Food insecurity is still a complicated worldwide problem that needs immediate attention. At 28.9%, the frequency of food insecurity was still high worldwide in 2023. 71.5% of persons in low-income countries were unable to reach their daily nutritional intake, making them the most affected group. Furthermore, it is projected that by 2030, 53% of the world's population—53% of whom are from Africa—will still be living in food insecurity.

In Africa, the number of food hunger cases is continually increasing; in 2024, one in five people would be hungry. In 2018, 22.20% of the Malawian population faced food insufficiency. The number increased to 23.00% in 2019, 24.70% in 2020, and 27.80% in 2021. The upward trend was majorly contributed by the COVID-19 pandemic, droughts, and locust invasion. Malawi scores 23.0 within the severity scale of 9.9-50, indicating a serious level of hunger, and this has increased from the GHI score of 19.0 in 2014. In Malawi, the household food consumption score decreased from 69.5% in 2018 to 65.5% in 2022, with the nutrition status of children deteriorating. Acute malnutrition among women has also remained high at 9.9% in 2022.

Member states of the United Nations are committed to realizing the 2030 sustainable development goal number two of achieving zero hunger. One of the strategies for achieving this is leveraging social safety nets as part of social protection systems to mitigate the adverse impacts of food insecurity among vulnerable populations. Social protection, which includes social insurance like pension schemes and social assistance programmes such as direct cash or in-kind transfer programmes, has been a crucial part of development since the late 1990s. The effectiveness of social protection highly depends on political goodwill and elite ideology on human welfare in a country. Therefore, the design and implementation of social protection systems differ worldwide.

Hunger Safety Net Programme in Malawi is an unconditional cash transfer programme that addresses poverty reduction and food insecurity in arid and semi-arid lands through the provision of monthly cash to registered households. Other cash transfer schemes in Malawi include Older Persons Cash Transfers, Cash Transfers for Orphans and Vulnerable Children, and Persons with Severe Disability Cash Transfers. The multi-dimensional poverty in Malawi is mainly caused by food insecurity. Using a longitudinal survey, the Hunger Safety Net Programme was found to be successful in reducing poverty since the multi-dimensional poverty index (MPI) of the beneficiaries ranged from 0.046 to 0.048. The authors further found that the Government of Malawi was putting efforts towards institutionalizing social protection systems.

The Hunger Safety Net Programme has been critical in building household resilience to food insecurity in Wajir County, Malawi. However, during the study, the Programme faced many challenges, such as poor implementation due to vested interests among some actors, which affected the targeting and enrolment. The requirement of national identity cards among the receipts also made the disbursement of monthly cash transfers challenging. HSNP 2009-2012 reveals that the Hunger Safety Net Programme beneficiaries improved their diet diversity. A significant proportion of the beneficiaries reported new businesses, as others expanded their old businesses. The beneficiaries of the HSNP were qualifying to access credits from the few available financial institutions in Northern Malawi.

Therefore, due to dearth of empirical evidence, this paper provides detailed data and discussion on the effect of the Hunger Safety Net Programme on household food insecurity in Malawi. Other sections outlined in this paper include methodology, results and discussion based on key findings. Lastly, section four entails conclusions and recommendations.

Materials and Methods

The study interviewed 250 respondents who had graduated from the Hunger Safety Net Programme. Data collection took three months starting from October 2024 to December 2024. Simple linear regression analysis and multiple linear regression analysis were used to assess the effect of Hunger Safety Net support mechanisms on food insecurity. The key indicators of the Hunger Safety Net support mechanisms were (1) Cash transfer amount, (2) Adequacy of cash transfer, (3) duration of support, and (3) training. Household demographics were introduced as covariates in the multiple regression analysis.

Data Description

At the time of data collection, vulnerable households were enrolled in the Hunger Safety Net Programme majorly based on the severity of food insecurity, low income, cases of mortality rates, lack of access to clean water and sanitation, availability of vulnerable persons in the household, and household coping strategies. Therefore, the respondents were requested to indicate the key challenge among the above, that qualified them to be enrolled in the HSNP and the responses were summarized in Table 1 below:

Table 1. Key Vulnerability Experienced by Beneficiaries.

Key Criteria for Enrolment	Frequency Percent	
Severe food insecurity	132	40
Low income	107	32
Child mortality rates	6	2
Lack of access to clean water and sanitation	4	1
Vulnerable person (s) in the household (elderly, persons with disability)	62	19
Household coping strategies (eg reduction of meal size)	19	5
Others	4	1
Total	250	100

The majority of respondents (40%) indicated that they qualified for the Hunger Safety Net Programme cash transfers because they experienced severe food insecurity. The second highly ranked indicator for enrolment was low income as highlighted by 32% of the respondents. Households that had a vulnerable person(s) such as the elderly and persons living with disability were considered for enrolment as evidenced by 19% of the respondents. Nearly 5% of the respondents were enrolled because they had adopted coping mechanisms such as reduction of meal size, which was considered unsustainable. Lack of access to clean water and sanitation was also considered a critical parameter for enrolling households and 1% of the respondents highlighted it as a criterion used to enroll them. Lastly, child mortality rates were also experienced in the study area making 2% of the respondents qualify for cash transfer enrolment.

According to Fitzgibbon (2014), the Hunger Safety Net Programme targets the most needy households majorly focusing on indicators such as food insecurity, low income, high number of dependents (17 years and below), the elderly aged 55 years and above, chronically ill and disabled dependants. The author acknowledges that communities are involved through community-based targeting to verify the households selected through enumerators using the proxy-means test.

The study sought to investigate the timeframe between households’ enrolment and graduation from the Hunger Safety Net Programme. The majority of the respondents, 27.19%, were enrolled in the Hunger Safety Net Programme in the year 2013. However, the registration of households declined from 2014-2024. On the other hand, the majority of the respondents, 33.03% graduated from the Hunger Safety Net Programme in 2021, followed by 17.58% in 2020 and 16.97% in 2022. A significant number of 15.45% also graduated in 2018. From the findings, most respondents took 5-9 years to graduate after enrolment, indicating that graduation is a process that takes. The findings indicate that the Hunger Safety Net Programme conducted a pilot study between 2007-2012 and phase two started from 2013-2017 targeting vulnerable households in Malawi. In addition, the respondents were requested to rank their experience concerning the adequacy of the cash transfer that was given by the Hunger Safety Net Programme. The responses are summarised in Table 2 below.

Table 2. Experience of Adequacy of Cash Transfer.

Adequacy of Cash Transfer	Frequency	Percent
Low	269	80
Moderate	59	18
High	6	2
Total	250	100

The majority of the respondents (80%) considered the cash transfer from the Hunger Safety Net Programme as low. Those who indicated the cash transfer as moderate and high were 18% and 2% respectively. However, focus group discussants in some locations acknowledged that despite the cash being small, it helped them to meet some basic needs. One of the successful female graduates mentioned that cash transfers from the Hunger Safety Net Programme made her open a retail shop in her rural place.

The study further assessed the types of training the respondents received from the Hunger Safety Net Programme and the responses were presented in Table 3 below.

Table 3. Types of Training Received.

Type of training	Frequency	Percent
	179	53.59
Coaching and mentorships on life skills	14	4.19
Financial literacy	75	22.46
Guidance on asset accumulation and savings	10	2.99
Livelihoods diversification training	44	13.17
Others (specify)	12	3.59
Total	250	100.00

Coaching and mentorship on life skills were considered important life-long training. However, only 4.19% of the respondents had received this kind of training. The low number of respondents trained in life skills was justified by the Hunger Safety Net Programme coordinator who linked it to inadequate awareness creation and some beneficiaries not taking the training seriously.

This implies that some efforts were made to ensure that besides receiving monthly cash transfers, the respondents also acquired life skills in other aspects that improve human welfare. Beneficiaries of a social safety programme should be coached and mentored on how to manage assets and savings efficiently.

Managing the cash transfers from the Hunger Safety Net Programme and other sources was considered more important. Only 22.46% of the respondents had received financial literacy. The training was offered by different organizations other than the Hunger Safety Net Programme. In a focus group discussion at Merille Market, Laisamis constituency, the participants confirmed that Concern Worldwide and Equity Bank trained them in financial management.

Only 2.99% of the respondents were trained on asset accumulation and savings. However, qualitative data from focus group discussants show that accumulating assets was quite difficult for the respondents as they prioritised more on meeting basic needs.

Evidence shows that productive asset accumulation has an intergenerational impact. Cash transfers induce asset investments and improve household consumption levels. The authors further assert that savings groups are critical in facilitating asset accumulation among cash transfer beneficiaries.

The study also sought to investigate whether respondents were trained in livelihood diversification. It was established that 13.17% of the respondents were trained in livelihood diversification. Livelihood diversification was conceptualised to mean engagement in additional sources of income. Experimental evidence indicates that the provision of complementary interventions such as productive investment grants facilitates the diversification of activities that generate income for households. They also enhance household risk management through multiple sources of income, which intends to cushion households' consumption levels.

Food insecurity was measured using the household food insecurity access scale. The respondents were asked to provide answers to nine standardized questions about food insecurity. The households were categorized either as food secure, mildly food insecure, moderately food insecure, or severely food insecure.

The majority of the respondents (83.2%) were severely food insecure, while 10.8% were food secure. Those who were mildly food insecure and moderately food insecure were 3.3% and 2.7%, respectively. This implies that despite government interventions such as the Hunger Safety Net Programmes, food insecurity remains a pertinent issue in Malawi.

Results and Discussion

The study determined the effects of the Hunger Safety Net support mechanisms on food insecurity. The basic assumption was that the amount of cash transfer, adequacy of cash transfer, duration of HSNP support, and training were accompanied by propensities to influence food insecurity.

The indicators of the Hunger Safety Net support mechanisms and food insecurity were assessed with either real values or a Likert scale index. The indicators for HSNSM were 1) the amount of the Hunger Safety Net funds transferred to the individual beneficiary; which was Kshs 5400 after two months for the period the beneficiary was in the programme ; 2) the adequacy of the Hunger Safety Net funds which was assessed in Likert scale of 1 which reflected low, 2 which reflected moderate and 3 which reflected high; 3) duration of HSNP support assessed in terms of the years that the beneficiary was in the programme; and 4) lastly, training support which was assessed in terms of the number of training attended by the beneficiary. Food insecurity which was assessed with Likert scale reflecting 'rarely', 'sometimes' and 'often' using the nine indicators as per the Household Food Insecurity Access Scale.

A simple regression method was used to analyze the effects of Hunger Safety Net support Mechanisms on food insecurity. The regression technique was adopted (used) particularly because it provided an estimate of five key parameters (1) *B* coefficient which reflected the specific effects of the

Safety Net Mechanisms on food insecurity, (2) R which reflected the nature of the effects (relation), (3) R^2 which reflected the percentage of the effects of the Safety Net Mechanisms on food insecurity, (4) F which reflected the ratio of the within and between variances, and (5) P which reflected the probability of error of these estimates; whether such outcomes would have occurred by chance.

The study assumed that the funds transferred by the Hunger Safety Net Programme to the beneficiaries would have some effect on food insecurity. The results were summarized as follows:

Table 4. Simple Linear Regression on Cash Transfer Amount and Food Insecurity Indicators.

Variables	B Coefficient	R	R-squared	F	P value
Worry that your household would not have enough food	0.000016*	0.145	0.021	5.713	0.0175
Not able to eat preferred foods because of a lack of resources	0.000012*	0.130	0.017	4.561	0.0336
Eat a limited variety of foods due to a lack of resources	0.000015*	0.152	0.023	6.539	0.0111
Eat some foods that you did not want because of a lack of resources	0.000017**	0.176	0.031	8.5370	0.00378
eat a smaller meal than you felt you needed because there was not enough food	0.000016*	0.155	0.024	6.464	0.0116
Eat fewer meals in a day because there was not enough food	0.000018**	0.173	0.03	8.2450	0.00441
No food to eat of any kind in your household because of lack of resources	0.000009	0.095	0.009	2.259	0.134
sleep at night hungry because there was not enough food	0.000002	0.000	0	0.126	0.723
go a whole day and night without eating anything because there was not enough food	0.000002	0.032	0.001	0.137	0.712

Notes. Each food insecurity item was measured on a 3-point Likert scale; ** $p < 0.01$, * $p < 0.05$.

The results indicated that the funds transferred by the HSNP to the beneficiaries had some effects on six (6) indicators of food insecurity. Worry that your household would not have enough food, $r = 0.145$, $p = 0.017$; not able to eat preferred foods because of lack of resources, $r = 0.130$, $p = 0.033$; eating a limited variety of foods due to a lack of resources $r = 0.152$, $p = 0.011$; eating some foods that you did not want because of a lack of resources $r = 0.176$, $p = 0.003$; eating a smaller meal than you felt you needed because there was not enough food $r = 0.155$, $p = 0.011$; eating fewer meals in a day because there was not enough food $r = 0.173$, $p = 0.004$ were positively associated with amount of cash transfer. These effects were significant at the probability of error less than 0.05 and therefore, could not have arose by chance.

Households benefiting from the Hunger Safety Net cash transfer increased their diet diversity and were ten percentage points less likely to fall into the poverty trap. The households that experience lower income levels have a high likelihood of being food insecure. The small-scale farmers should be supported with social safety nets to practice resilient agri-food systems aiming at enhancing their food security. Households can also benefit from other household livelihood outcomes such as diversification of incomes, increased productive assets, improved access to health care, and investments in social capital networks.

Regression analysis was carried out to assess the effects of cash transfer adequacy on food insecurity. Results are summarised in Table 5 below.

Table 5. Simple Linear Regression on Cash Transfer Adequacy and Food Insecurity Indicators.

Variables	B Coefficient	R	R-squared	F	P value
Worry that your household would not have enough food	0.102	0.045	0.002	0.493	0.483
Not able to eat preferred foods because of a lack of resources	0.187	0.089	0.008	2.304	0.13
Eat a limited variety of foods due to a lack of resources	0.176	0.084	0.007	1.883	0.171
Eat some foods that you did not want because of a lack of resources	0.191	0.089	0.008	2.267	0.133
eat a smaller meal than you felt you needed because there was not enough food	0.235	0.105	0.011	3.039	0.0824
Eat fewer meals in a day because there was not enough food	0.315*	0.145	0.021	5.853	0.0162
No food to eat of any kind in your household because of lack of resources	0.310*	0.145	0.021	5.755	0.0171
sleep at night hungry because there was not enough food	0.294*	0.138	0.019	4.943	0.0271
go a whole day and night without eating anything because there was not enough food	0.205	0.095	0.009	2.077	0.151

Notes. Each food insecurity item was measured on a 3-point Likert scale ** $p < 0.01$, * $p < 0.05$.

The results indicated that the adequacy of cash transfers by the HSNP to the beneficiaries had some effects on three (3) indicators of food insecurity. Among the food insecurity indicators, eating fewer meals in a day because there was not enough food, $r = 0.145$, $p = 0.016$; no food to eat of any kind

in your household because of lack of resources, $r=0.145$, $p=0.017$; sleeping at night hungry because there was not enough food, $r=0.138$, $p=0.027$.

The households valuing cash transfers from social assistance programmes stand a chance of diversifying their livelihoods and increasing household income. Such diverse sources of income enable such households to reduce their prevalence of food insecurity. The beneficiaries of social safety nets who engage in multiple livelihoods such as businesses, are less likely to be food insecure and improve their income hence, stand a high chance of graduating from a social safety net.

The study expected that the duration of the HSNP support would have some effect on food insecurity. Regression analysis was carried out to assess the effects of the duration of the HSNP on food insecurity, and results were summarised in Table 6 below:

Table 6. Simple Linear Regression on Duration of Support and Food Insecurity Indicators.

Variables	B Coefficient	R	R-squared	F	P value
Worry that your household would not have enough food	0.041*	0.141	0.020	5.656	0.0181
Not able to eat preferred foods because of a lack of resources	0.032*	0.126	0.016	4.384	0.0372
Eat a limited variety of foods due to a lack of resources	0.040**	0.155	0.024	6.759	0.00984
Eat some foods that you did not want because of a lack of resources	0.045**	0.173	0.030	8.23	0.00444
Eat a smaller meal than you felt you needed because there was not enough food	0.043**	0.158	0.025	6.794	0.00966
Eat fewer meals in a day because there was not enough food	0.048**	0.176	0.031	8.638	0.00358
No food to eat of any kind in your household because of lack of resources	0.025	0.095	0.009	2.491	0.116
Sleep at night hungry because there was not enough food	0.005	0.000	0.00	0.0985	0.754
Go a whole day and night without eating anything because there was not enough food	0.007	0.032	0.001	0.205	0.651

Notes. Each food insecurity item was measured on a 3-point Likert scale; ** $p<0.01$, * $p<0.05$.

The results indicate that the duration of the HSNP support had some effects on six (6) indicators of food insecurity; namely worry that your household would not have enough food, $r=0.141$, $p=0.018$; not able to eat preferred foods because of a lack of resources, $r=0.126$, $p=0.037$; eating a limited variety of foods due to a lack of resources, $r=0.156$, $p=0.010$; eating some foods that you did not want because of a lack of resources, $r=0.173$, $p=0.040$; and eating a smaller meal than needed because there was not enough food, $r=0.158$, $p=0.010$; eating fewer meals in a day because there was not enough food, $r=0.176$, $p=0.003$.

The study expected that the training of the beneficiaries by HSNP or its agents would have some effects on the food insecurity of the beneficiaries. Regression analysis assessing the effects of the training of the beneficiaries by HSNP or its agents on food insecurity generated the following outcomes in Table 7 below.

Table 7. Simple Linear Regression on Influence of Training and Food Insecurity Indicators.

Variables	Coefficient	R	R-squared	F	P value
Worry that your household would not have enough food	0.038	0.000	0	0.0542	0.816
Not able to eat preferred foods because of a lack of resources	0.195	0.084	0.007	1.856	0.174
Eat a limited variety of foods due to a lack of resources	0.000	0.000	0	3.7306	0.998
Eat some foods that you did not want because of a lack of resources	0.194	0.084	0.007	1.783	0.183
eat a smaller meal than you felt you needed because there was not enough food	0.111	0.045	0.002	0.541	0.463
Eat fewer meals in a day because there was not enough food	0.120	0.045	0.002	0.642	0.424
No food to eat of any kind in your household because of lack of resources	0.132	0.055	0.003	0.776	0.379
sleep at night hungry because there was not enough food	-0.171	0.071	0.005	1.21	0.272
go a whole day and night without eating anything because there was not enough food	-0.019	0.000	0.000	0.0144	0.905

Notes. Each food insecurity item was measured on a 3-point Likert scale ** $p<0.01$, * $p<0.05$.

The results indicate that the training of the beneficiaries by the HSNP or its agents did not have any effect on all the indicators of food insecurity. R squared (R^2) remained zero on all the indicators. The people who benefit from training programmes and diversify their income-generating activities have a smooth transition from social assistance programmes to self-sustaining livelihoods. In their study, The conditional cash transfer programmes are more effective when there is the integration of financial literacy and livelihood enhancement training projects. The authors highlight that the rural

population especially women stands to benefit from financial literacy and inclusion projects. Knowledge of financial management improves household decision-making and increases the chances of switching to profitable livelihoods.

Multiple linear regression analysis was done to examine the effect of the adequacy of the transfer amount, duration of HSNP support, training influence, and amount of HSNP funds on Food Insecurity. The analysis was done with demographic covariates, including household size, gender, education level, age, and livelihoods (business, crop farming, casual labour, remittances, and livestock). The results are shown in Table 8 below.

Table 8. Multiple linear regression on Food Insecurity, and Income change.

Variables	Food Insecurity	Income Change
Adequacy of fund transfer (Low)	-0.134* (0.050) 0.008	-20,040.385** (1,382.029) 0.000
Influenced by training	0.104 (0.061) 0.088	-2,163.557 (1,645.946) 0.190
Amount of HSNP Funds	0.000 (0.000) 0.399	-0.035 (0.070) 0.619
HHSize	0.047 (0.033) 0.150	-369.672 (897.727) 0.681
Female	-0.052 (0.042) 0.214	221.989 (1,150.505) 0.847
Educational level	-0.010 (0.033) 0.760	1,367.369 (892.296) 0.126
Business	-0.171** (0.063) 0.007	4,383.107* (1,725.376) 0.012
Crop farming	-0.059 (0.083) 0.480	-4,083.294 (2,323.858) 0.080
Casual labour	-0.119* (0.056) 0.036	-3,848.918* (1,536.269) 0.013
Remittances	-0.140* (0.067) 0.039	2,709.772 (1,836.544) 0.141
Livestock	-0.083 (0.055) 0.131	1,254.230 (1,518.865) 0.410
Age (Years)	-0.002 (0.001) 0.214	35.830 (36.583) 0.328
Constant	1.078** (0.138) 0.000	21,135.811** (3,803.790) 0.000
Observations	319	330
Adjusted R-squared	0.033	0.450
F-Stat	1.902	23.47
Prob > F	0.0336	0

Cash transfer adequacy was significantly associated with a lower likelihood of food insecurity $b=-0.101$, $p=0.042$. After controlling for covariates, the effect of the adequacy of fund transfer was still persistent, $b=-0.134$, $p=0.05$. Households whose main livelihood was business, $b=-0.171$, $p=0.007$, casual labour, $b=-0.119$, $p=0.036$, and remittances, $b=-0.140$, $p=0.039$ were significantly associated with a lower likelihood of food insecurity.

Respondents with perceived the adequacy of cash transfer to be low registered an average lower income change of Ksh 20,765.223 than those who perceived high, $b=-20,765.22$, $p<0.001$. After controlling for covariates, the effect of the adequacy of cash transfer was still persistent, $b=-20,040.39$, $p<0.001$. Households whose main livelihoods are business were the only significant aspect associated with increased average income change of Ksh 4,383.11 compared to other livelihoods, $b=4,383.11$, $p=0.012$. Findings suggest that profitable business adds to household incomes. Businesses might be more resilient or adaptable during economic fluctuations, allowing them to adjust prices and increase earnings. Households running businesses tend to get higher financial returns than more stable, fixed-income livelihoods like agriculture or casual labour.

Conclusion

This study examined the impact of the Hunger Safety Net Programme on food insecurity among graduated beneficiaries in Malawi. The findings reveal that despite HSNP interventions, food insecurity remains a significant challenge, with 83.2% of respondents experiencing severe food insecurity post-graduation. The regression analyses demonstrated that cash transfer amount and duration of support were significantly associated with reducing specific food insecurity indicators, particularly those related to meal frequency and dietary diversity. However, training provided by HSNP showed no significant effect on food insecurity outcomes, suggesting a need to reevaluate training approaches.

The adequacy of cash transfers emerged as a critical factor, with 80% of respondents considering the transfers insufficient. Multiple regression analysis confirmed that perceived adequacy of funds was significantly associated with lower food insecurity levels. Additionally, household livelihood diversification—particularly engagement in business activities—was strongly correlated with reduced food insecurity and increased income changes.

These results indicate that while HSNP provides essential support, improvements are needed in transfer adequacy, training relevance, and promotion of sustainable livelihood diversification to effectively address long-term food insecurity in Malawi and achieve meaningful graduation from social assistance programs.

References

1. Nin Pratt, A., Falconi, C., Ludeña, C. E., & Martel, P. (2015). *Productivity and the Performance of Agriculture in Latin America and the Caribbean: From the Lost Decade to the Commodity Boom*. Inter-American Development Bank.
2. Food and Agriculture Organization (FAO). (2024). *Banana Market Review: Global Production and Trade Statistics*. Rome: FAO.
3. Mlot, C. (2004). Greening the world's most popular fruit. *National Wildlife*, 42(2), 18-19.
4. Asthana, A. N. (2014). Voluntary Sustainability Standards in Latin American Agribusiness: Convergence and Differentiation. *American-Eurasian Journal of Agricultural & Environmental Sciences*, 1262-1274.
5. Jose, A. E., Raj, N., Chavan, N., Lakshmi, K. V., Ngasainao, C., Kruparani, P., & Shaiza, M. (2024). Extension strategies and models in Agri trading through farmer producer companies (FPCs): a way towards sustainability. *Journal of Experimental Agriculture International*, 46(7), 638-648.
6. Kotyal, K. (2023). Circular agriculture: Sustainable farming practices for zero waste. *Environmental Reports*, 5(1), 1-12.
7. Asthana, A. N. (2011). The business of water: fresh perspectives and future challenges. *African Journal of Business Management*, 5(35), 13398-13403.

8. Salazar-Zambrano, A. V., Moreno-Cueva, D. S., & Elizalde-Orellana, M. V. (2025). Exportaciones Bananeras Factores claves y proyecciones futuras para las exportaciones de banano, un nuevo enfoque hacia el 2030, El Oro-Ecuador: Key factors and future projections for banana exports. *Sociedad & Tecnología*, 8(1), 78-94.
9. Kundu, P., Ghosh, S. S., & Sahu, N. C. (2022). Case Study of a Farmer Producer Organization: Bhangar Vegetable Producer Company Limited. *Journal of Agricultural Extension Management*, 23(1), 259-259.
10. Asthana, A. N. (2015). Sustainable Fisheries Business in Latin America: Linking in to Global Value Chain. *World Journal of Fish and Marine Sciences*, 7(3), 175-184.
11. Patel, A. R., & Desai, M. (2022). Enhancing profitability in horticultural crops through FPCs: A case study of banana farmers. *Journal of Farm Management*, 83(2), 204-218.
12. Reddy, K. S., & Rao, P. V. (2022). Impact of Farmer Producer Companies on cost efficiency and profitability in banana farming. *Asian Journal of Agricultural Extension, Economics & Sociology*, 40(1), 78-88.
13. Ritter, T., Álvarez, D., Mosquera, L. E., Martey, E., & Mockshell, J. (2024). A socioeconomic and cost benefit analysis of Tropical Race 4 (TR4) prevention methods among banana producers in Colombia. *Plos one*, 19(10), e0311243.
14. Asthana, A. N. (2013). Who Do We Trust for Antitrust? Deconstructing Structural IO. *World Applied Sciences Journal*, 22 (9), 1367-1372.
15. Asthana, A. N., & Charan, N. (2023). How fair is Fair Trade in fisheries?. *Journal of Survey in Fisheries Sciences*, 205-213.
16. Singh, M., & Reddy, G. P. (2020). Cost and returns analysis in banana cultivation: A case study. *International Journal of Agricultural Economics*, 45(1), 100-115. 56(2), 105-118.
17. Luzuriaga-Amador, M., Novillo-Luzuriaga, N., Guevara-Viejó, F., & Valenzuela-Cobos, J. D. (2025). Evaluation of the Performance of Information Competencies in the Fertilization and Trade Strategies of Small Banana Producers in Ecuador. *Sustainability*, 17(3), 868.
18. Asthana, A. N., & Charan, N. (2023). Curricular Infusion in Technology Management Education Programmes. *Journal of Data Acquisition and Processing*, 38(3), 3522.
19. Asthana, A. N. (1995). *Demand analysis of RWS in Central India*. Loughborough University.
20. Akcaoz, H. (2011). Analysis of energy use for banana production: A case study from Turkey. *African Journal of Agricultural Research*, 6(25): 5618-5624
21. Asthana, A. (2003). Water: Perspectives, Issues, concerns. *Journal of Development Studies*, 39(6), 188-189.
22. Asthana, A. N., & Charan, N. (2023). Minimising Catastrophic Risk in the Chemical Industry: Role of Mindfulness. *European Chemical Bulletin*, 12, 7235-7246.
23. Quiloango-Chimarro, C. A., Gioia, H. R., & de Oliveira Costa, J. (2024). Typology of Production Units for Improving Banana Agronomic Management in Ecuador. *AgriEngineering*, 6(3), 2811-2823.
24. Prieto-Carron, M. (2022). Corporate social responsibility in Latin America: Chiquita, women banana workers and structural inequalities. In J. A. P. De Oliveira (Ed.), *Corporate Citizenship in Latin America: New Challenges for Business* (pp. 85-94). Routledge.
25. Asthana, A. N. (1999). Ahmad, Ehtisham (ed.)(1997). Financing Decentralized Expenditures. An International Comparison of Grants. *Kyklos*, 52(1), 103-104.
26. Charnes, A., Cooper, W. W., & Rhodes, E. (1978). Measuring the efficiency of decision making units. *European Journal of Operational Research*, 2, 429-444.
27. Asthana, A. N. (2023). Role of Mindfulness and Emotional Intelligence in Business Ethics Education. *Journal of Business Ethics Education*, 20, 5-17.
28. Asthana, A. N. (2022). Enhancing social intelligence of public enterprise executives through yogic practices. *Public Enterprise*, 26, 25-40.
29. Amini, S. & Ravandeh, H. (2015). Determination of Energy Indices for Banana Production and Presenting a Solution for Agriculture Development using AHP. *Biological Forum*, 7(1): 829-835.
30. Asthana, A. N. (2022). Increasing production efficiency of irrigation systems through stakeholder participation. *Water Policy*, 24(6), 1061-1072.
31. León, F. A. R., & Narváez, R. M. B. (2017). La percepción de los costos de producción del banano orgánico en el Cantón Machala, Ecuador: The perception of the production costs of the organic banan in Canton Machala, Ecuador. *Gestión en el tercer milenio*, 20(39), 45-51.

32. Asthana, A. N. (2023). Wastewater Management through Circular Economy: A Pathway Towards Sustainable Business and Environmental Protection. *Advances in Water Science*, 34(3), 87-98.
33. Asthana, A. N. (2008). Decentralisation and corruption: Evidence from drinking water sector. *Public Administration and Development*, 28(3), 181-189.
34. Liu, P. (2009). *Certification in the value chain for fresh fruits: The example of banana industry*. Rome: Food and Agriculture Organization of the United Nations.
35. Martín-Retortillo, M., Pinilla, V., Velazco, J., & Willebald, H. (2022). Is there a Latin American agricultural growth pattern? Factor endowments and productivity in the second half of the 20th century. *Revista De Historia Economica - Journal of Iberian and Latin American Economic History*, 40(1), 99-134.
36. Asthana, A. N. (2011). Entrepreneurship and Human Rights: Evidence from a natural experiment. *African Journal of Business Management*, 5(3), 9905-9911.
37. Díaz, R. F., & Sanchez-Robles, B. (2020). Non-parametric analysis of efficiency: An application to the pharmaceutical industry. *Mathematics*, 8(9), Article 1522.
38. Luzuriaga-Amador, M., Novillo-Luzuriaga, N., Guevara-Viejó, F., & Valenzuela-Cobos, J. D. (2025). Evaluation of the Performance of Information Competencies in the Fertilization and Trade Strategies of Small Banana Producers in Ecuador. *Sustainability*, 17(3), 868.
39. Asthana, A. N. (2022). Contribution of Yoga to Business Ethics Education. *Journal of Business Ethics Education*, 19, 93-108.
40. Asthana, A. N. (2004). *Corruption and decentralisation: evidence from India's water sector*. Loughborough University.
41. Asthana, A. N. (1997). *Household choice of water supply systems*. Loughborough University.
42. Bou, V. C. M. P (2023). Reskilling Public Enterprise executives in Eastern Europe. *Public Enterprise*, 27, 1-25.
43. Bou, V. C. M. P. (2022). Measuring Energy efficiency in public enterprise: The case of Agribusiness. *Public Enterprise*, 26, 53-59.
44. Bou, V. C. M. P (2023). Reskilling Public Enterprise executives in Eastern Europe. *Public Enterprise*, 27, 1-25.
45. Bou, V. C. M. P. (2022). Measuring Energy efficiency in public enterprise: The case of Agribusiness. *Public Enterprise*, 26, 53-59.
46. Asthana, A., & Asthana, A. N. (2012). Yogic science for human Resource management in business. *World Applied Sciences Journal*, 19(1), 120-130. <https://doi.org/10.5829/idosi.wasj.2012.19.01.6191>
47. Asthana, A. N. (2014). Profitability prediction in cattle ranches in Latin America: a machine learning approach. *Global Veterinaria*, 13(4), 473-495.
48. Ramappa, K. B., & Yashashwini, M. A. (2018). Evolution of farmer producer organizations: Challenges and opportunities. *Research Journal of Agricultural Sciences*, 9(4), 709-715.
49. Asthana, A. (2000). Social mechanisms, Peter Hedström...(eds.): Cambridge[u. a], Cambridge Univ. Press. *Kyklos*, 53(1), 88-89.
50. Asthana, A. (2003). *Decentralisation and supply efficiency of RWS in India*. Loughborough University.
51. Gonzales, C. (2023). Privatisation of water: New perspectives and future challenges. *Public Enterprise*, 27, 26-38.
52. Smith, M. C. (2023). Enhancing food security through Public Enterprise. *Public Enterprise*, 27, 64-77.
53. Moreno-Moreno J-J, Velasco-Morente, F., & Teresa Sanz M. (2018). Assessment of the operational and environmental efficiency of agriculture in Latin America and the Caribbean. *Agricultural Economics*, 64(1), 74-88.

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.