



Contributions of Informal Market Vegetable Vending on Food Availability in Rural Households in Western Kenya

Ruth Orlale¹ Peter Gutwa Oino²

School of Arts and Social Sciences

Department of Sociology, Gender and Development Studies

Kisii University, Kenya

Corresponding Author: komfort8@yahoo.com

Abstract: *Over the years, the different cadre of people in communities both in urban and rural settings have been engaged in informal markets to sustain food security in their households. Despite the knowledge gaps on how informal markets can be used, and improve household food security, most people in both rural and urban areas rely on the informal markets for their food needs. The paper examines the contribution of informal market vegetable vending on household food security in western Kenya. The paper used a descriptive cross-section survey to research vegetable vendors in Kapsoit and Ahero markets. The study targeted 140 traders in Ahero and Kapsoit markets located in western Kenya. Yamane's (1970) formula was used to determine a sample size of 103. Systematic random sampling with an interval of 10 was used to select the 103 respondents in Ahero and Kapsoit markets. Analysis was presented in form of frequencies and percentages. The findings revealed that vegetable vendors were able to increase food availability, and meet their household dietary needs. There was, however, low awareness of food health and safety practices among vegetable vendors. The paper concludes that informal markets of vegetable vendors positively contributed to food availability, consumption of a variety of food, and increased coping strategies for food insecurity in rural households. However, vegetable vendors had low awareness of food health and safety measures. The paper recommends that vendors be offered training on food health and safety in order to produce safe food for their families and other consumers.*

Keywords: *Informal Market, Vegetable Vending, Food Security, Rural Households, Western Kenya*

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1. Introduction

Informal market vending is a widespread activity in developing countries notwithstanding its absence of formal guidelines for operations (Verma & Kumar Misra, 2021). For Brown (2006), informal market vending

contributes in a positive manner to providing merchandise and ventures for low-income gatherings, hence improving household food security. The vendors have consistently stayed an essential part of many economies of the world in achieving food security. Food security denotes the access, availability, and consumption of a variety of foodstuff that have a balanced diet. Food

security has been one of the priorities for human societies, particularly for developing countries like Kenya (Liu et al. 2014; Oino, 2017). This is why in 1948 the United Nations recognized the right to food in its Declaration on Human Rights (FAO, 2006). Like elsewhere, achieving food security is a challenge for many rural households in sub-Saharan Africa (FAO, 2017). The 1996 World Food Summit defines food security as existing when all people, at all times, have physical and economic access to sufficient, safe, and nutritious food that meet their dietary needs and food preferences for active and healthy life (FAO, 2006). In Kenya, there is an increase in food insecurity levels, which has made interventions for household food security also refocus their efforts to informal markets. The informal economy is particularly common among youth (95.8% ages 15-24) and women (92.1%), and is an important contributor to poverty alleviation. This sector is expected to continue in the foreseeable future in light of Africa's growing population. With no access to social protection and meager or no savings to fall back on, the COVID-19 (coronavirus) pandemic has been decimating informal workers' livelihoods.

Kenya, like other Sub-Saharan countries, faces food insecurity with approximately 3.4 million people in 2017 being acutely food insecure and in need of humanitarian assistance (GoK, 2017). This is a significant increase of 67% from the 2.6 million identified in 2016 (Ibid). According to the government, this increase was because of below-average crop production in 2016 due to poor rains, increases in food prices, and reduced regional imports from neighboring countries that also faced below-average production. Poor agricultural practices, unreliable rains, and the high cost of farm inputs are among key contributors to food insecurity.

Oino, Kareith & Sorre (2017) note that achieving food security at both household and national levels is anchored in the Sustainable Development Goals. SDG 1: End poverty in all its forms; SDG 2: End hunger, achieve food security and improved nutrition, and promote sustainable agriculture; and SDG 12: Ensure sustainable consumption and production patterns. However, sustainable food security especially at the household level remains the greatest challenge facing Kenya due to poor household arrangement of agronomic activities, and poor farm management practices. In addition, informal markets especially vending are typically characterized by low productivity, resulting in low and irregular earnings. This is aggravated by a lack of access to basic services such as space to operate and access to high-value markets. Informal businesses are typically not financially supported by financial institutions, thus unable to make reliable business transactions, access credit for productive investments, or reliably save to prepare for unforeseen risks. In this paper, the authors aim to

examine the contribution of informal markets' vegetable vending to the food security of rural households drawing experiences from rural western Kenya.

2. Literature Review

Many scholars have argued that a household's strategy for food security would go beyond reliance on-farm activities, among them trading that ensures the household has access to adequate nutritious food. According to Verma & Kumar Misra (2021) the informal share of the market, which eventually bolsters the conventional economy, is expanding step by step. Karaan (2013) argues that vegetable vendors in an informal market influence food security in townships and rural areas, absorption of labor in areas of high unemployment, promote the economy, and enhance financial flows among the informal market vendors.

Once people are engaged in employment and there is money flow then households could have access to a variety of food items for utilization. In Thailand and Indonesia, informal markets are central to the food security of the urban working poor (Carrillo-Rodriguez and Reed, 2018). The role of street vendors and informal food providers is considered relevant to the food and nutrition security of textile factory workers. Yet, in the informal economy, the majority of the actors are poor and suffer from low-quality nutrition and food security, provision of unsafe and unclean water, poor sanitation which are determinants of poverty, and a poor work environment.

Despite the above challenges, smallholder informal markets contribute to food security as they play an important role in the diet of many people, especially those from low-income backgrounds. Karaan (2013) finds that vendors in an informal market absorb labor in areas where there is no formal employment, thus, promoting the economy and financial flow in the market. Consumers purchase the same products from vegetable sellers that they may be able to find anywhere else. A significant proportion of the demand for goods and services is met by vendors and street vegetables (Renner & Pegler, 1997).

According to Arora & Taore, (2010) hawking is the main distribution channel for a variety of products, including fruits and vegetables, where hawkers play an important role in the economy by acting as a bridge between the numerous small buyers and small producers by buying commodities in small quantities from small producers in rural areas at low prices and selling the same goods to buyers who may have limited purchasing power (Dey and Dasugupta, 2009). Saha, (2018) notes that as fruits and vegetables are transited from rural areas to urban centers, the urban rich also benefit because vegetable

vendors provide them with daily requirements on their doorsteps.

It has been evidenced that the conditions of conducting vegetable vending have been marred by challenges including poor environmental conditions that affect the quality of vegetables before they get to the hands of buyers. This, affects the sustainability of household food security (Duryuea, 2016)

Research shows that it has been difficult to map, document, and empower all vegetable vendor in informal markets. As Bhatt (2018) finds, street vegetable vendors are a type of informal workers that are always on transit and difficult to monitor and empower, as they engage in selling without being registered and stationed at a permanent location. This is also confirmed by Harvey (2016) that it is difficult to estimate the number of smallholder informal markets in the street because they are mobile and driven by market needs. Therefore, in this paper, we argue that the unavailability of data on the numbers of street vegetable vendors has made most studies fail to understand their contribution to food security in households, especially in rural areas where their numbers are minimal.

Rural households, especially women, are vulnerable to income shocks, and prone to food insecurity aggravated by a lack of access to productive assets; yet, they have the role of providing food for their families (Muiruri, 2010). They have been forced to diversify their labor by participating in the smallholder informal markets to complement their household income. Majority of the rural household's trade-in metalwork, carpentry, electronics, beauty products, and repairs of motor vehicles and food systems. The statistics on the impact of the smallholder informal markets on several food system actors and impacts on slum dweller livelihoods in major towns and cities have been researched. However, research on the impact of smallholder informal markets on vegetable vendors 'households' food security is lacking.

Owuor et al., (2017) and Bhowmik (2015) observed that vegetable vendors were able to enhance the food supply for informal settlements by availing all forms of vegetables and fruits at lower prices. This makes food not only affordable but available for sustaining the consumption needs of households. According to Huyer and Westholm (2017), vendors are not only an urban phenomenon. Vendors are particularly numerous along village crossroads. Many farmers practice road market vegetable hawking as a second or seasonal job for food security. The question is, is this the case in the study area? In the case of Vegetable Vendors in Kericho and Kisumu Counties of western Kenya, the proportion of informal employment is greater in the agricultural industry than in the on-agricultural industry. The largest

category of vendors sells vegetable products, while 38.2% sell vegetables and fruit.

Despite the policy gap in the protection of informal markets and the improvement of food systems in the informal markets, studies have noted that most people in both rural and urban areas rely on the informal markets for their food needs. Notwithstanding, this understanding, studies on the influence of vegetable vendors from rural households on food security are however limited by the assumption that rural areas are food secure. On this basis, this paper examines the contribution of informal market vegetable vending on food security of rural households in western Kenya.

3. Methodology

This study used a descriptive cross-section survey to research on vegetable vendors in Kapsoit and Ahero markets. The study targeted 140 traders in Ahero and Kapsoit markets located in western Kenya. The study used Taro Yamane's (1970) formula to determine a sample size of 103. As shown below:

$$n = \frac{N}{1 + N(e^2)}; n = \text{sample size}; N = \text{total study population / household size}; e = 0.05 \text{ (significant level)}$$
$$n = 140 / 1 + 40(0.005)^2 = 103.$$

Systematic random sampling, with an interval of 10, was used to select the 103 participants who responded to the study questionnaire. Quantitative data was analyzed by use of SPSS Analysis was presented in form of frequencies and percentages. Convenience sampling was used to access traders who were identified at the market and selected on the basis of the commodity they sold.

Qualitative data was analyzed descriptively and presented in form of narratives. The study used a quantitative and qualitative approach to gathering data. Traders' questionnaire comprised of open and closed questions. Researchers conducted four focus group discussions with 12 traders in Ahero and Kapsoit markets. Descriptive and inferential statistical techniques were used to assess the influence of informal market vegetable vending on the food security of rural households. The key indicators measured were adequacy of food, variety, preference of food consumed, and the number of meals taken in the vendors' households.

4. Results and Discussion

4.1 Adequacy of food Supply in Vegetable Vendors' Households

This study measured the contribution of vegetable vending on household food adequacy. The vendors were asked to rate food adequacy across the 12 months in their households. Data obtained was disintegrated by the two

market studies. Results show that majority of the households had adequate food between August-December the percentages ranging from 92%-67%. Food adequacy varied by county with vendors from Kapsoit market having a higher food adequacy level than those from Ahero. Household insecurity access prevalence reported that 71.3% of households in Kisumu County did not have access to adequate food compared to 57.3% of households in Kericho County. Further results

demonstrate that the household food supply for both markets was low between the months of January-March. Food adequacy between May and April was generally very low among the households as illustrated in figure 1.

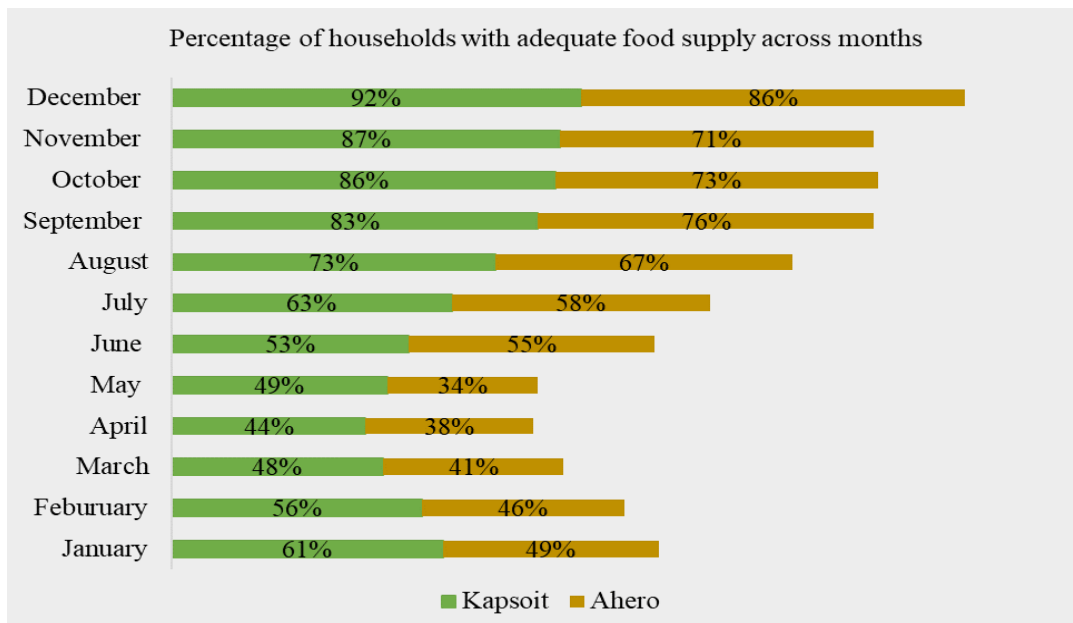


Figure 1: Adequacy of food security for vegetable vendors

4.2 Food Variety of Dietary Consumption in Vendors' Households

The study asked vendors to indicate their daily uptake of the different diets. Data obtained was summarized by market areas as shown in table 4.8, results show that carbohydrates dominated the daily diet uptake in the vendors' households as mentioned by 100% of vendors in Kapsoit and 99% in Ahero. Vitamin vegetable was also high among households as indicated by 94% of traders in Kapsoit and 70% in Ahero. The overall uptake of carbohydrates was 96% and vitamins and vegetables 82%.

Crop protein uptake varied by the market location with household vendors from Ahero having higher consumption of 91% as compared to 46% from Kapsoit. The overall consumption of crop proteins was moderate with a representation of 69% of vendors mentioning that they provide this for the household. Vitamin uptake from

fruits was low in both locations as 31% of the vegetable vendors agreed that their household took fruits daily. Fruit consumption was mentioned by very few 28% of vendors in Ahero. These results show that vegetable vendors' households have access to a variety of food however fruit and crop protein consumption was low in some areas.

The finding concedes with that of (Mwangi et al., 2012) who observed that street vendors in Nairobi County had access to a variety of food but lacked adequate education on how to combine the foods to achieve a balanced diet. Dhandevi (2015), argued that despite vitamins and fruits being important to household health there were limited nutritional education intervention programs among households. Finding from this study establish that households have access to a variety of food but there is low uptake of vitamins fruits which could comprise food security of the households.

Table 1: Distribution of vegetable vendors' daily dietary composition

Dietary consumed	Kapsoit n=50	Ahero n=53	Overall
Animal Proteins	43(86%)	34(64%)	77(75%)
Crop Proteins	23(46%)	48(91%)	71(69%)
Carbohydrates (starch)	50(100%)	49(92%)	99(96%)
Vitamins Fruits	19(34%)	26(28%)	32(31%)
Vitamins Vegetables	47(94%)	37(70%)	84(82%)

**Multiple response question

4.3 Vendors' Food Security Coping Strategy

The vendors were asked to mention ways in which they ensured their households were food secure. A summary of the findings is presented in figure 2 below.

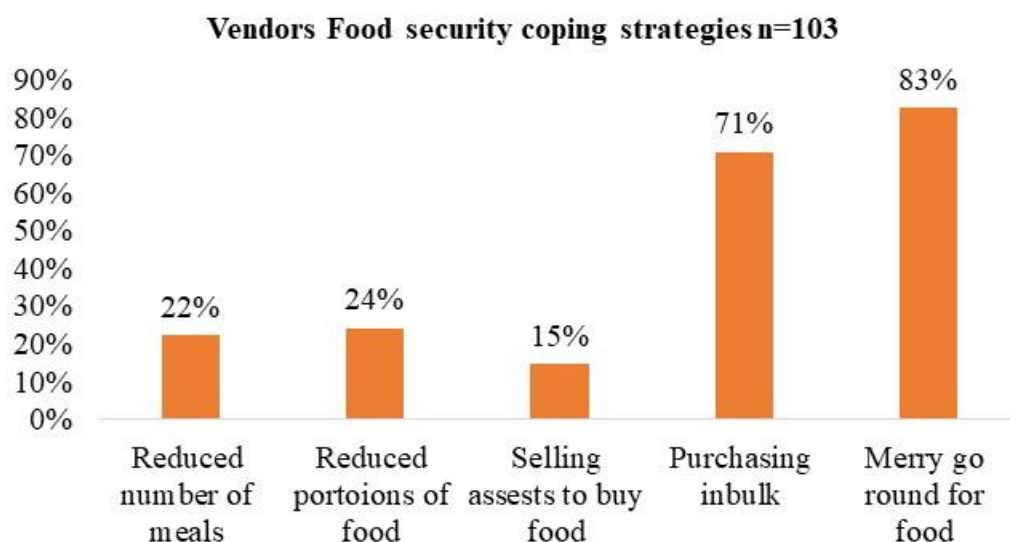


Figure 2: Vendors Food Security Coping Strategy

Analysis in figure 2 above shows that a majority (83%) of vegetable vendors had joined merry-go-rounds to ensure continued food supply in their households. The majority (71%) of made bulk purchases of consumables to ensure their households had adequate food supply. Few vendors reduced the number of meals (22%) reduced portions of food (24%) and sold assets (15%) to ensure food security in their homes. These results contradicted findings by Asefefa (2018), who found that households in urban areas used the change of consumption partners and selling off assets as a major strategy for securing food supply in town. The findings in this study show that vegetable vendors employ more sustainable strategies that are promoted by the nature of their business to ensure their households are food secure.

4.4 Vendors' Awareness of Food Health and Safety Measures

The analysis revealed that the majority (87%) of the respondents were not aware of food health and safety measures while 13% were aware. Those who are aware of food health and safety measures mentioned had acquired the knowledge from training in food and beverage production. These results thus, show lack of awareness of food health and safety measures undermined the securing of food systems in vendors' households. Generally, the street vendors who were interviewed were not aware of or did not have an understanding of food health and safety. Only one street vendor had attended a food safety seminar by the Office of Cooperatives and Small and Medium Enterprises in the previous year. It was also revealed that the vendors are not registered hence, the lack of data, cripples efforts

to train them on aspects of food health and safety. These findings are supported by Verma & Kumar Misra (2021) who aver that most vendors are unregistered and unrecorded in the data collection exercises including census or other authority measurements consequently, giving them an unrecognized status by the public authority.

Overall, from the study findings, the researchers observe that vegetable vending provides employment for the very bottom of the pyramid population in the rural areas with limited income opportunities, as well provides a pathway out from severe hunger and poverty. Mobile vegetable vendors, especially the women, who are responsible for feeding their families, have engaged their labor in the smallholder informal markets for an alternative income stream to support their households' livelihoods. The author observes that despite the government's priority in investing in SMEs, there is a need for consideration of informal economies especially vending to promote increased productivity to help informal businesses progressively move closer to the formal sector while improving their food security status.

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5. Conclusion and Recommendations

The paper concludes that informal markets of vegetable vendors positively contributed to food availability, consumption of a variety of food, and increased coping strategies for food insecurity in rural households. The study found that there was increased access to a variety of food and the financial capability of vendors to purchase food for their households. However, vegetable vendors had low awareness of food health and safety measures. The paper recommends that to promote food security for rural households, vendors should be offered training on food health and safety in order to ensure that they produce safe food for their families and consumers. The low knowledge of secure food consumption partners among vegetable vendors should be addressed through training and the creation of awareness on the consumption of a balanced diet to further increase food security in vendors' households. There is also a need to empower informal market groups to increase diversity in their income-generating activities for sustainability.

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