



Informal Markets and Income Levels of Vegetable Vendors' Households in Rural Western Kenya

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Abstract: *The paucity of literature on the contribution of the informal market of vegetable vendors on improving the income level of households in rural areas forms the basis of this paper. Informal markets play a significant role in the informal economy in rural areas. However, there are no conclusive evidence that set a clear causal relationship between the informal market and the income levels of rural households rendering vegetable vendors invisible, especially in rural areas that are believed to heavily rely on on-farm activities for their livelihoods. Using a descriptive approach on a sample size of 103 traders in Kapsoit and Ahero markets the study shows that vegetable vending had a statistically significant influence on household income levels. The study established that vegetable vending in the informal market was gendered and dominated by more women 90% than men 10%. Findings also revealed that vegetable vending was a major source of income among the majority (67%) of the vendors' households. On average a vendor earns Kshs 300 daily from the vegetable vending business and spends between Kshs 150-200 daily. The study concludes that vegetable vending in the informal market presents a lucrative income-generating activity that should be embraced and supported by the government through targeted investment, policy, and training. The authors recommend that Informal market key players such as the county government trade and commerce department should introduce entrepreneurial training for vegetable vendors to increase their business skills and income management.*

Keywords: *Vegetable vendors, Informal markets, livelihoods, income, Rural Western Kenya*

Orlale, R., Oino, P. G. & Mose, G. (2022). Informal Markets and Income Levels of Vegetable Vendors' Households in Rural Western Kenya. *Journal of Research Innovation and Implications in Education*, 6(2), xxx - xxx.

1. Introduction

Informal markets play a pivotal role in driving the economy of nations globally. Informal consists of entrepreneurs working with factors of production to facilitate the provision of products and services which create wealth and improve household livelihoods. Ding, Wang, Liu, & Yu (2017) informed that informal markets enhanced livelihood skills including technical and vocational abilities (carpentry, sewing, weaving, and gardening, among others. In this study, the researchers considered livelihood skills to include the physical ability of household members to carry out activities regardless of their educational levels. Livelihood promotion is a set

of development-based interventions that involve improving the resilience of household livelihoods so that food and other basic needs can be met on a sustainable basis Interventions of this type entail strategies such as diversifying livelihoods strategies; creating alternative income (Amare and Simane, 2017). In this paper, the researchers were interested in examining how smallholder informal markets influence the income levels of vegetable vendors' households in rural western Kenya. The paper will analyze the demographic distribution of vegetable vendors, vegetable vendors' source of income, vegetable vendors' average daily income, and household expenditure and income levels.

2. Literature Review

Smallholder informal markets for vegetable vendors characterize some of these people who invest capital with the aim of generating profits that serve to sustain their household livelihoods. Vending is an integral sector in the urban area of many economically developing countries. However, in recent years, the practice is also done in rural areas. Vegetable vending provides income to unemployed people in both rural and urban areas, the more of street vegetable vendors' main aim is to earn more for their households, and their families, and to improve their standard of living (Tigari & Anushree, 2020). Banerjee (2014) conducted a study on the condition of vegetable vendors' income and expenditure. The study revealed that vegetable vendors come from low-income families and they have less money to do their business because of poverty.

Informal markets for vegetable vendors operate under trust and flexible arrangements. In some cases, producers supply commodities to traders on credit or traders are able to source their products directly from the farms (Williams & Nadin, 2010). At the regional level, more than three-quarters of the workforce in the informal market is from rural households and trade goods in large volumes (Olafunju, 2019). Despite the existence of vegetable vendors in the informal market spaces, this group has not been treated with the seriousness it deserves and their contribution to household income and livelihoods has been overlooked.

Rural household livelihood consists of human capabilities, assets, and social-economic activities that are needed as pre-requisite for development. The sustainable use of the various capitals is used sustainably to help households meet their basic needs and well-being without compromising the natural resources for future use (Serrat, 2017). Vegetable vendors applying the sustainable livelihood framework may realize an increased return on investment and positively influence the income levels of their households (Ntifo-Siaw, 2011). Several authors have described the informality of markets as a fragile economy, in that it is connected with low-income levels for the vulnerable rural and urban populations such as women, youth, and the rural poor.

Nevertheless, the informal market supports 60% of the labor force and provides employment opportunities for more than 90% of all small and medium-size enterprises across the world (Etim, & Daramola, 2020). In sub-Saharan Africa, the informal market provides up to 90% of employment opportunities in some countries for impoverished households and contributes 38% of the GDP in others (Weng, 2015). In the recent decades, the rural economic activities have changed from wholly depending on the natural resource-based economy that has suffered from fragile environment and weather

adversities to running trade informal market spaces. The rural households now participate in the smallholder informal markets for purposes of improving income levels and meeting their daily needs. Over the years it has become an integral source of income and income level determinant for rural and urban low-income level households. This practice has become a major source of employment, and income for rural households (Uwitije, 2016).

In India, Adhikar (2011) conducted a study on income generation in the informal sector a case study of the street vendors of Kathmandu Metropolitan City. This study stated that street vending is playing a vital role in the socioeconomic of the country, mainly in creating job opportunities for themselves, production, and income generation in developing countries. This study found that the vendors invest less, and their aim is to earn more income for their livelihoods, hence, low returns.

Mramba (2015), observed that the informal market employed more than 1 million people in the capital of Dar-es-Salaam in Tanzania. Some forms of jobs created within the informal markets included the marketing of products, and transportation, among others thus providing a viable alternative source of employment. While Mramba (2015), observed a growing network of the informal market in Tanzania this information on informal markets was not specific to the role of vegetable vendors in the income generation of households in rural areas.

In Costa Rica, informal market workers had economic and non-economic reasons for staying in the informal markets. Mainly these people operated in the informal markets to earn money that was more than what they would get from the formal economy (Meghir et al., 2014). Charmes (2019), noted that in India, the entrance of a new economic and social transformation has been characterized by a rise in unemployment from 11% in 2002 to 22% in 2011 and 30% in 2015. The unemployment rate continued to rise and it is estimated to remain high above 50% by 2032. Rising population, job loss due to diseases, and reduced unemployment opportunities in the public and private sectors increase the demand and participation of the population in the informal markets. Hobson et al., (2018) argued that increased participation in the informal market through trade offered an opportunity for self-employment among youths and women in rural areas. The participation was however hindered by low education level, lack of skills, and poor attitude towards such jobs.

Gwadabe and Amirah (2017) noted that although the informal markets constituted a significant portion of the economies in developing countries, it is sometimes stigmatized as troublesome and unmanageable. The

majority of these studies have acknowledged that informal market trading exists some have argued that businesses run informally play an integral role in income generation. Other studies have mentioned that the income can only be significant if the businesses are formalized. Few studies have explicitly provided information on the influence of vegetable vendors participating informal markets on the income levels of households in rural areas such as Western Kenya. Jillard & Mercado (2018) conducted a study on the economic condition of street vegetable vendors in the five Municipalities of the Northern Part of Surigao Del Sur, Philippines. The study found that street vegetable vendors' daily income is not fixed. Sometimes they earn more money, and sometimes they earn less money depending on the availability of customers, thus affecting their income.

Studies have shown that Western Kenya is a prime example of the interconnected and complex issues of poverty, malnutrition, and low agricultural productivity (Conelly and Chaiken, 2000), which have created many foods insecure communities. However, in recent years the demand for fruits and vegetables, especially in urban centers, has outstripped the supply (Mwangi and Kimathi, 2006) which creates new challenges and opportunities for vegetable vendors (Croft, Marshall, and Hallett, 2016). This paper examines how smallholder informal markets influence the income levels of vegetable vendors' households' livelihoods in rural Western Kenya.

3. Methodology

Descriptive research cross-sectional survey design with quantitative and qualitative approaches was used in this study for the purposes of presenting the situation of vegetable vendors as it was without manipulation. The study used Taro Yamane's (1970) formula to determine a sample size of 103. As shown below:

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

Systematic random sampling with an interval of 10 was used to select the 103 participants who responded to the

study questionnaire. The study targeted 140 traders in Ahero and Kapsoit markets located in western Kenya. 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 analyzed was presented in form of narratives. Descriptive and inferential statistical techniques were used. The key indicators measured were demographic distribution of vegetable vendors, vegetable vendors' source of income, vegetable vendors' average daily income, and household expenditure and income levels.

4. Results and Discussion

4.1 Traders' socio-economic Characteristics

Informal market vendors represent interesting socio-demographic characteristics. The study sought to establish the gender, age, and educational level of traders which were important aspects of trading and had a bearing on household livelihood. The study found that out of 103 vendors 90% were women while 10% were male. Women disintegration by market location showed that Kapsoit had 95% while Ahero had 90% women traders. These results showed a huge gender disparity in vegetable vendors implying it is a female-gendered activity. Similar results were observed by (Croft et al., 2016) and (Mutopo, 2014) who found that women denominated informal trade for traditional leafy vegetables in Africa. The dominance of women in the vegetable vending business was also featured during the focused group discussion and key informant interviewees. In the interviews, women's dominance was attributed to the cultural limitation of women to production capital such as land and low-income levels among women compared to men. Age is an important characteristic in determining traders' behavior in the uplifting livelihood of the household. The study sought to establish the age distribution of vegetable vendors in western Kenya. Data was collected and presented in table 1. below:

Table 1: Demographic distribution of vegetable vendors in Ahero and Kapsoit

Variables	Categories	Frequency	Percentage (%)
Gender	Female	93	90
	Male	10	10
Age (average years)	22	10	10
	32	25	24
	42	36	35
	≥ 52	32	31
Education level	Primary	65	63
	Secondary	33	32
	Tertiary/ and above	5	5

Analysis in table 1 above revealed that the majority 65% of the vendors were aged above 42 years, and 35% were aged between 20-40 years. This shows that the informal market was dominated by the high reproductive age of responsible people in society. This study contradicts the finding by Croft et al., (2016) who found the average age of leafy vegetable vendors was 36 years with a dispersion of 7.6. This finding could explain that youths in the study area were not engaging much in the vegetable vending business. FGD participants mentioned that vegetable vending was a common practice among youths who engage in other activities like hairdressing and motorbike riding in rural areas.

The role of education level in the informal market continues to be met with mixed reactions. Some studies have argued that a high education level contributes to higher income levels in the informal market. Other studies have also argued that education level plays an insignificant role in the income levels of traders in the informal markets. Due to this mixed reaction, the study sought to establish the trader's distribution by age and the effect of age on the income level of vegetable vendors traders.

The study noted a growing trend in the entrance of youthful age of 30 and below in the informal markets of vegetable vending. An interview discussion with market officials involved in the living of informal business revealed that young men and women aged 30 and below were taking up the vegetable vending business as a form of self-employment. This is because sometimes youths do not have the capital to engage in major businesses that require high-level investment. This is in concurrence with FAO (2014) study which states that youth often also lack access to credit, and many other productive resources necessary for investment in sectors such as agriculture.

We note that most financial service providers are reluctant to provide their services including credit, savings, and insurance to rural youth due to their lack of

collateral and financial literacy, among other reasons. Therefore, promoting financial products catered to youth, mentoring programs, and start-up funding opportunities can all help them scale up their activities as well as diversify their ventures for livelihood generation. From the interviews, it was also noted that the youth need to be encouraged to get involved in group informal savings clubs for financial enhancement.

To ascertain the influence of vendors' demographic characteristics on household income level, a chi-square test was performed. The results showed that gender and education level of the vendor had a significant influence on household income with a p-value of less than 0.05. Women vendors had more income as compared to men while more educated vendors generated more income than those with lower educational qualifications.

4.2 Vegetable Vendors' Source of Income

The study was also interested in the source of income for vegetable vendors operating in the informal markets of Ahero and Kapsoit. Respondents were requested to share information on the primary sources of income for their households. Results in figure 1 demonstrated that an overwhelming majority, 100%, indicated vegetable vending as their main source of income. This was followed by 66% on-farm activities, 63% wage/salary, and 44% spouse remittance/support. These results implied that traders in the informal markets relied on vegetable vending and on-farm activities as the main sources of income for their households. Mazhambe (2017) study found that street vending in Zimbabwe was a major source of household income and an alternative source of income for women. Sangaya (2019) contradicted these results emphasizing that rural households' main source of income was on-farm activities. However, we argue that on-farm activities may not generate enough income for households, hence, the need for diversification of income-generating activities such as vending.

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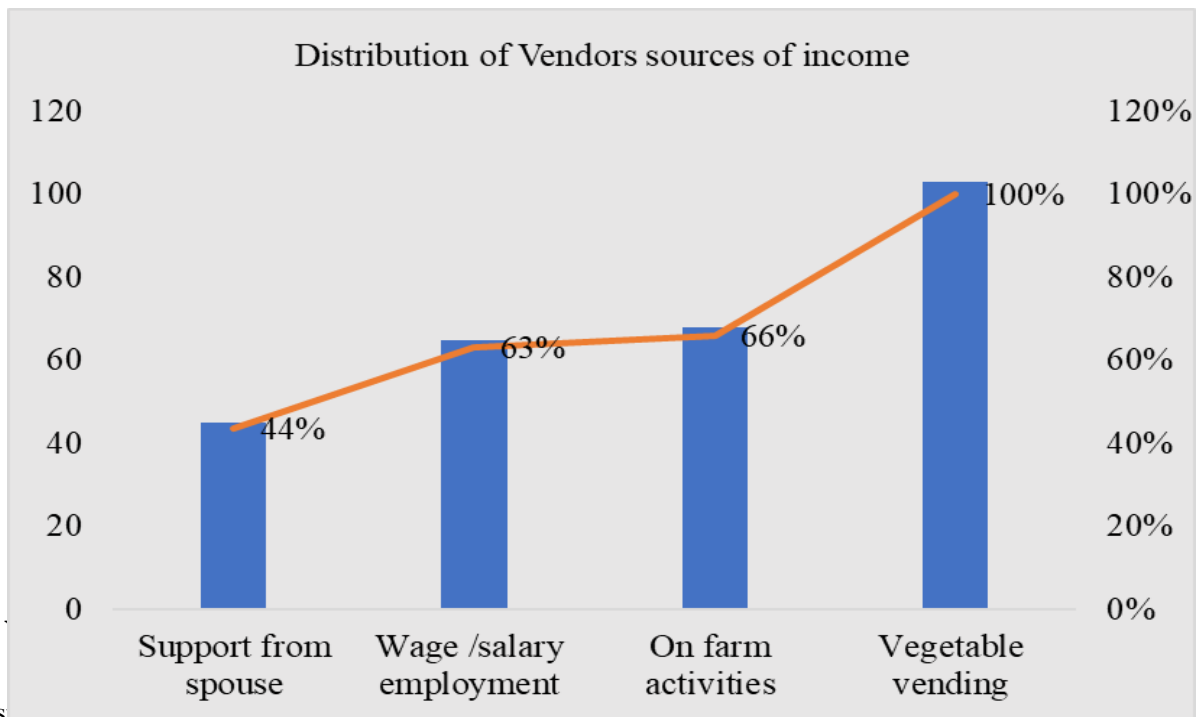


Figure 1: Vegetable vendor’s sources of income

Average Daily Income	Frequency	Percentage
300	47	46%
400	33	32%
200	13	12%
Above 500	10	10%

In table 2 above, the study found that 46% of the vegetable vendors had an average daily income of KES. 300.00, 32 percent of them earned an average of KES. 400.00, 12% earned an average of KES. 200.00, while 10% earned above KES. 500.00. Most of the traders operated 6 days a week working for at least 4 hours. The results showed that vegetable vendors earned slightly higher wages than domestic workers in Kenya who earn between 5000-7000 for 26 days of work (ILO, 2020). This implies that vegetable vending provides traders with higher wages than domestic work employment thus, making it an important source of income. Research Solutions Africa (2015) reported that margins between farm gate prices and consumer prices were wide among traders in the informal markets. This further shows that vegetable vending in the informal market contributes to increased household income levels.

4.4 Household Expenditure and Income Levels

To further explain the influence of vegetable vending on household income household expenditure was an important indicator for measurement. Respondents were asked to select the amount they spend per day in their household. Data gathered was summarized as demonstrated in table 3. The majority of the results, 41% of the vendors spend between Ksh. 100-150, this was followed by 30% spending between Ksh. 151-200 and 11% spending between KES 50-99. Very few 8% of the vendors spend less than KES 50 in their households daily. These results show that majority of the households were in the expenditure bracket of between KES 100-150 per day.

A poverty report by the Kenya National Bureau of Statistics (KNBS, 2021), suggests that the Kenyan

poverty index is at \$ 1.90 per day for the households. According to this report, 16% of Kenyans lived below the poverty line and thus were not able to spend 1.90 per day at the household level. This was a downward trend compared to 43.1% of households living below the poverty line in 2018. With the advent of COVID-19, many people lost their jobs and business became an important source of livelihood and income-generating activity.

Vegetable and fruit consumption went high consequently increasing the profitability of vegetable vending. Croft et al., (2016) study confirmed that 97% of vendors indicated that the vegetable market was growing and expanding rapidly in western Kenya. However, during the interview it was shared that vegetable vendors lead their life to struggle life since some days, they do not get any profit from what they sell. As Banerjee (2014) reveal, street vendors come from low-income families and they have less money to do their business because of poverty.

Table 3: Distribution of vendors' expenses at household Level n=103

Average Daily Income (KES)	Frequency	Percentage
100-150	42	41%
151-200	31	30%
50-99	12	11%
Below 50	8	8%

To ascertain the contribution of vegetable vendors in meeting household expenses the study performed a correlational analysis to establish if there was a

correlation between daily income by vegetable vendors and household expenses. This is illustrated in table 4 below:

Table 4: Correlation between vendors' income and household expenses N=100

Rural households		Income/ month	expenditure on food per day
Vendor's income	Pearson Correlation	1	.864**
	Sig. (2-tailed)		.000
average daily expenditure	Pearson Correlation	.864**	1
	Sig. (2-tailed)	.000	

** . Correlation is significant at the 0.01 level (2-tailed).

The results from the analysis in table 4 above demonstrated that there was a positive relationship between the vendor's average income per month and daily expenditure, using Pearson's correlation coefficient was 0.864, and it was statistically significant at (p=.000). This showed a strong, positive correlation between a household's average income per month and household daily expenditure.

5. Conclusion and Recommendations

5.1 Conclusion

Small-scale Informal market for vegetable vendors is an emerging income-generating activity not only for urban but also in rural areas. Demographically, the vegetable vending trade in western Kenya was dominated by women demonstrating that it was a gendered income-

generating activity. The education level and gender of the vegetable vendors were found to have a significant influence on the income levels of traders. Women made higher income than men traders so were the most educated group of traders. The majority of the traders had primary and incomplete secondary education. The study found that vegetable vending was the main source of income for traders in Kapsoit and Ahero markets of western Kenya. Vegetable vendors in western Kenya can make an average daily income of between Ksh. 300-700. This matched up as a significant income contributor for a household expenditure of between Ksh. 150-200 daily. The study thus established that vegetable vending was an important source of income for rural households and contributed to the improvement of households' livelihood.

5.2 Recommendations

The study thus recommends that Informal market key players such as the county government trade and commerce department should introduce entrepreneurial training for vegetable vendors to increase their business skills and income management. To increase the income of the traders the county government and trade authorities such as the municipal tax collectors should

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