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Effects of Market Factors on Household Food Security among Food Vendors in Mbale, Vihiga County, Kenya

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Abstract

Purpose: Market factors such as market value of vended food has significant effect in the household food security among the food vendors in Mbale town, Vihiga County. The demand levels increase with types of food sold, etc. And this nature of the demand will determine the price ceiling for the food vendors. The study investigates the effects of demand level of food; market segmentation of food; and cost of preparation of food on household food security among food vendors in Mbale, Vihiga County.

Methodology: This research thus targeted 176 food vendors in Mbale town and all the respondents were used in census sampling. Structured questionnaires and interviews were applied in data collection, and analysis. This was further conducted by use of Statistical Package for Social Sciences (SPSS). Content analysis was used to analyze qualitative information. A multiple regression analysis was applied to test relationships between study parameters.

Findings: The research revealed that market demand is a critically significant determinant of food vending in Mbale (68.8%); with substantial 59.7% agreeing market segmentation through having specific clientele demand; and equally a considerable number (57.4%) agreeing that the costs of preparation are minimal due to the few inputs required.

Unique Contribution to Theory, Practice and Policy: The research recommends subsidies and maintenance of input costs by having bulk buying schemes; packaging material subsidies with regards to preparation costs.

Keywords: *Market Structure, Household Food Security, Marketing, Household Production, Food Industry*

JEL Codes: *D42, M31, D13, L66*

INTRODUCTION

Market value of vended food is among the several sub concept of market factors; which is tailored to give more meaning; to the explanation and wider understanding of how they affect household food security among food vendors. This is particularly so for the case of Mbale town in Vihiga sub county. According to Palmer and Stull (2001) a market is any place where goods, services, or ideas are bought and sold. It is also a group of people with needs and the financial ability and willingness to satisfy those needs. Marketing is as old as civilization itself, and began when one of our ancestors traded a product or service for another product or service Therefore determining and then emphasizing the needs or wants of the buyer is called the marketing concept. McEachern (2021) argues that markets can be viewed in terms of behavior, demand and supply, wage, work, competition, consumer income and expectations, consumer tastes, demand, exchange, interest rates, tax treatments, power, price and so on.

Varashney and Rashid (2021) refers to Food security as ensuring all the four pillars of food security-availability, accessibility, stability, and utilization exists -when all people have constant access to enough wholesome food to keep them healthy and active. In developing countries, where vulnerable populations such as the elderly, children, and women are disproportionately affected, it becomes challenging. Tysmbalyuk and Chin-Hong (2018) noted that food and nutrition security concept as an important element of poverty reduction. This has evolved significantly during the last decades in theory and practice; through a sequence of definitions and paradigms.

Scoones (2018) defines households as a group of people “eating from the same pot”, focusing on the domestic organization around food provision. Dasgupta (2006) expounds more on the meaning by suggesting; peasant household are involved in both production and consumption. The protypical household owns a small plot of land, purchases agricultural inputs and consumer goods from the market, sometimes leases in more land, grows subsistence crops, cooks food, rears children, sometimes hires out labour, and on occasion hires labour in to work on the land. The household purchases material inputs from the market (or from government) at a given price.

World Bank update (2025) findings outlines the critical status of food security worldwide, with more than 280 million people facing acute hunger daily. In Africa, according to World Vision (2025). Furthermore, currently Mali, South Sudan and Sudan are among the four countries most affected by catastrophic levels of food insecurity, which impact 1.9 million people globally. Thus, Fellows and Hilmi (2016) study found that food vending in this case plays a crucial role in food security for millions of low and middle income individuals in developing countries. Dasgupta and Robinson (2021) argues that complementary metrics must account for the diverse aspects of food security dimensions; which includes food expenditure, dietary diversity, consumption frequency, food insecurity experiences, and self-assessed indicators. Currently, no single measure comprehensively captures all the dimensions (pathways\) of food security.

Food vending sector falls under informal economy with today’s economy reflecting risks of increasing tensions and rising borrowing costs (FAO,2019). In Kenya, the national food and nutrition security policy states that all Kenyans should at all times have access to safe food of sufficient quantity and quality to satisfy their nutritional needs for optimal health (KDHS,2022). A study conducted by Owuor (2018) revealed that apart from creating employment for the entire family in the preparation and cooking as well as in the procurement of ingredients. However, Vihiga County profile (2022) indicates that the urbanization of Vihiga

county is at a rate of 31%, with Mbale town among the major towns. Thus, the food market has to serve the population projection of 146,119 in 2027.

Statement of the Problem

Approximately 2.5 billion people consume vended foods on a daily basis, and the majority of them live in developing countries (FAO,2011). The absolute number of undernourished people continues to increase slowly, with more than 820 million people in the world still hungry today. It underscores the challenges of achieving the zero Hunger target by 2030 (FAO,2019). The economy of Kenya, informal sector has registered a steady growth and food vending is at the core of this activity both in the urban and rural areas. Food vending significant economic role includes; employment creation, production and income generation.

Food vending as one of the many components of MSMEs sector is viable in economic condition of the urban poor. The sector of food vending sector contribution to the economy of Vihiga sub-county is significant, and needs to be supported; without which it is likely to dwindle. Thus, if not, this would result to an economic stager on the population that depend on it leading to poverty. Many households stand to lose economically if market factors intervention is not made. Apart from high poverty level, people invest in low capital business of food vending hence comes in order to improve food security and eradicate poverty (Vihiga county profile,2022).

Calaresu and Van den Heuvel (2018) argue that food vending is part of almost any distribution chain, and playing an important role in the marketing of consumer goods particularly to poorer customers. Despite that, for many decades there has been low food consumption presumed to be as a result of the undesirable result of discriminating policies against self-sufficiency in food supplies (Andersen,1988). However, there are minimal studies been undertaken concerning effects of market value of vended foods on household security among food vendors in the Kenya context. Thus this present study seeks to address the issue of effects of market factors such as demand levels; market segmentation; and cost of preparation among food vendors in Mbale town. The study attempts to filling information gap. This will contribute to policy identification and inclusion of informal food vending; subsidies and maintenance of input costs; and enhance future studies and continuous monitoring of market factors and food security outcomes. This will play the role of making sure that interventions are responsive to the realities of food vendors. An example of the lack of adequate information or knowledge presented by Lemomo (2020) whose comparative analysis of food vendors in Viwandani and Buru Buru areas of Nairobi rarely mentions the effects of market factors in terms of household food security within those areas of study.

LITERATURE REVIEW

Theoretical Framework

Sustainable Livelihood Approach

The Sustainable Livelihood (SL) concept is an attempt to go beyond the conventional definitions and approaches to poverty eradication. It now recognizes that more attention must be paid to the various factors and process which either constrain or enhance poor people's ability to make a living in an economically, ecologically, and socially sustainable manner.SL offers a more coherent and integrated approach to poverty (Krantz, Lasse,2001). The livelihood framework is a tool to improve our understanding of livelihoods, especially those of the poor. Sustainable Livelihood is when it can cope with and recover from stress and shocks and

maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base (Desai and Potter,2008).

Rural livelihood framework opposed to readymade interventionist instruments; was a response to the disappointing results of former approaches in devising effective policies to encourage development or eradicate poverty (Appendini,2001). The SL approaches has been applied by three agencies slightly differently. The SLF approach proponents were; Robert Chambers, Gordon Conway, and Ian Scoones. The Household Livelihood security concept derives from the classic definition of livelihoods developed by Chambers and Conway (1992). These includes three attributes; existence of economic activities, possession of human capabilities (education, skills, health, psychological orientation); and access to tangible and intangible assets. The former two authors proposed a composite definition of Sustainable Rural Livelihood as: comprising the capabilities, assets (stores, resources, claims and access) and activities required for a means of living: it is sustainable which can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide SL opportunities for the net generation; and which contributes net benefits to other livelihoods at the local and global levels and in the short and long term ((Krantz,2001).

According to UNDP (1997) suggests that it is the Brundtland commission on Environment and Development that first introduced the Sustainable Livelihoods idea. The concept was latter on expanded by United Nations conference on Environment and Development (UNCED) in the context of Agenda 21. It stated that SL could serve as an integrating factor that allows policies to address development, sustainable resource management, and poverty eradication simultaneously; by advocating for achievement of SL as a broad goal for poverty eradication,

UNDP uses the SL approach primarily as a programming framework to devise a set of integrated support activities to improve the sustainability of livelihoods among poor and vulnerable groups by strengthening the resilience of their coping and adaptive strategies. Also polices and governance issues concerning people's livelihood s are addressed with the programmes implemented at county level with ramification at the household level. CARE as an international NGO focus its programmes on helping the poorest and most vulnerable, either through regular development programmes or through relief work. It has used Household Livelihood security (HLS) as a framework for programme analysis, design, monitoring and evaluation (ibid).

According to Chambers and Conway (1992:6) noted that in 1992, the two authors produced a classic working paper for the Institute of Development Studies (IDS) which became the starting point for what came to be known as the sustainable livelihood approach in the 1990's development practice. Ian Scoones of IDS has been the leading proponent of the SL approach and operation proposed a modified definition of SL.; that it comprises the capabilities, assets (both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks, maintain or enhance its capabilities and assets, while not undermining the natural resource base. These new definition does not include 'contribution to net benefits to other livelihoods'. DFID also adopted this definition with some minor changes.

Scoones (2018) argues that livelihood studies focused on the microeconomics of farm production and patterns of household accumulation. In late 1980's, emerged the livelihood thinking connected within three words; sustainable, rural and livelihoods. The livelihood approach was now termed as "sustainable rural livelihoods" (or "rural "rural livelihoods",

"sustainable livelihoods" or simply "livelihoods". The connection informed the livelihoods application approach which the author suggests that the poor themselves often know their situation and needs best and must therefore be involved in the design of policies and project intended to better their lot.

DFID in 1997 affirmed its aim of eradicating poverty through commitment to policies and actions that promote Sustainable Livelihood. The core element of DFID approach is the SL framework. This analytical structure facilitates a broad and systematic understanding of the various factors which constrain or enhance livelihood opportunities, and to show how they relate to each other (Carney et al.,1999). SLF can be used in planning new development activities and assessing the contribution of livelihood sustainability as a result of existing activities. SFL Centres on people, provides a checklist of important issues and sketches out the way these link to each other. It looks at core influences and processes; and puts emphasis on multiple interactions between various factors that affect livelihoods.

Nussbaum (2003) suggests that livelihood can only be sustainable when it can cope with and recover from stresses and shocks, maintain or enhance its capabilities and assets, while not undermining the natural resource base. The livelihood approaches have become central to development programming. Sakdapolorak (2014) argues that the qualitative livelihood analysis gave way for welfare economists to formalize their analyses by looking at allocation approach which had utility maximization. A justifiable human action that tries to reduce negative effects through moral philosophy of utilitarian approach

The Sustainable Livelihood perspective relevance to the study is quite diverse. SLF helps to explain that the underlying causes of poverty by focusing on the variety of factors, at different levels that directly or indirectly determine or constrain poor people's access to resources/assets of different kinds, therefore their livelihoods. Some of these factors could be the market factors such as market value of vended food. The approach can be used to explain how the food vendors can be the entry point for analysis; with its adoption facilitating multiple functions and purposes. We can thus place the household food security of the food vendors as deepening on demand level; market segmentation; and cost of preparation of vended food.

Value of vended food is dynamic and has an effect among food vendors and food security of the various households in Mbale town, Vihiga sub-county. SFL is integrated and holistic perspective focuses on building existing strength and assets. The macro-micro linkages are necessary as research and development activities tend to focus on the two. From a livelihood perspective, linking these levels of concepts-value of vended food, food vendors and household food security helps to find better ways of analysis in terms of the present study.

Vulnerability as a livelihood aspect (yields to livelihood outcomes); frames the external environment in which the food vendors exist. Livelihoods are shaped by the institutions, organizations and policies and legislation operating at all levels from the household to the international arena. The SLF explains that the transforming structures (hardware) and processes includes; levels of government and private sector. The processes (software) includes laws, policies, culture and institutions. The use of livelihood strategies is necessary in order to have better livelihood outcomes (more income, increased well-being, reduced vulnerability, improved food security and more sustainable use of natural resource base. The core aim of SLA in terms of vulnerability, seeks to assist people through direct intervention; and to become resilient.

Livelihoods in any setting are complex and have multiple dimensions. The SLF approach explains that assets as a core component of livelihood is concerned with people, therefore this can help us to gain a realistic understanding of the food vendor's strengths (assets or capital endowments). The food vendors use assets to gain a living, hence providing ways in which they can be turned into positive livelihood outcomes. Livelihoods and asset availability affected by trends may have influence on economic rates of return, shocks (flood, conflict) and seasonality (shifts in prices, employment opportunities and food availability are source of hardship for the poor).

Food vending activity is both an urban and rural livelihood that translates also to employment. It combines different elements between people and across time and space. It also brings out the idea of specialization and diversification. SLF approach has been used to explain and provide a clear understanding to the term 'capital' (product of investment which yields a flow of benefits over time). It posits that not all the assets are capital stocks in the strict economic sense of the term. SFL as a dynamic process is also used to provide insights; into how demand levels; market segmentation; and cost of preparation affects the food vendors. This is not only as a livelihood activity but also outcomes at household level n terms of attaining food security.

A summary of the use of SLF use to the main components of the effects of market factors on household food security among food vendors in Mbale town; offers adaptation to meet the needs of any given situation. The concepts of market factor, food vending and household food security concepts is holistic and dynamic. These combine together to meet the various needs of food vendors at different times; and giving insights to the importance of negotiating diverse meanings food security strategies and how it's experienced (or not). It as well looks at the influences, processes and multiple interactions between this factors.

From SFL explanation, we can be able to see how food vendors can build on their strength, e.g. local knowledge/information and practices; and also promote macro-micro linkages, e.g. lobbying for their rights to secure local access to commodities. we can analyze the range of assets or capital endowments owned by food vendors; and how this is affected by market factor in household food security. Particularly for the poor food vending households in Mbale whose access to any given category of assets, supposedly. The theory has a unique contribution both in practice and policy;

Conceptual Framework

Conceptual framework guides the paths of a research and offer the foundation for establishing its credibility (Adom, Kamil &Agyem,2018). The conceptual framework in this study presents an integrated way of observing and describing the relationship between independent and dependent variable. The independent variable which is the market factors includes the sub-concept of market value of food; under one umbrella of market value. It does not exist in a 'vacuum' but interrelates with the other market factors like, the sales pricing of food; cost of preparation of vended food; and statutory charges. The dependent variable is the household food security as reflected in figure 1

Market Factors

Household Food Sec

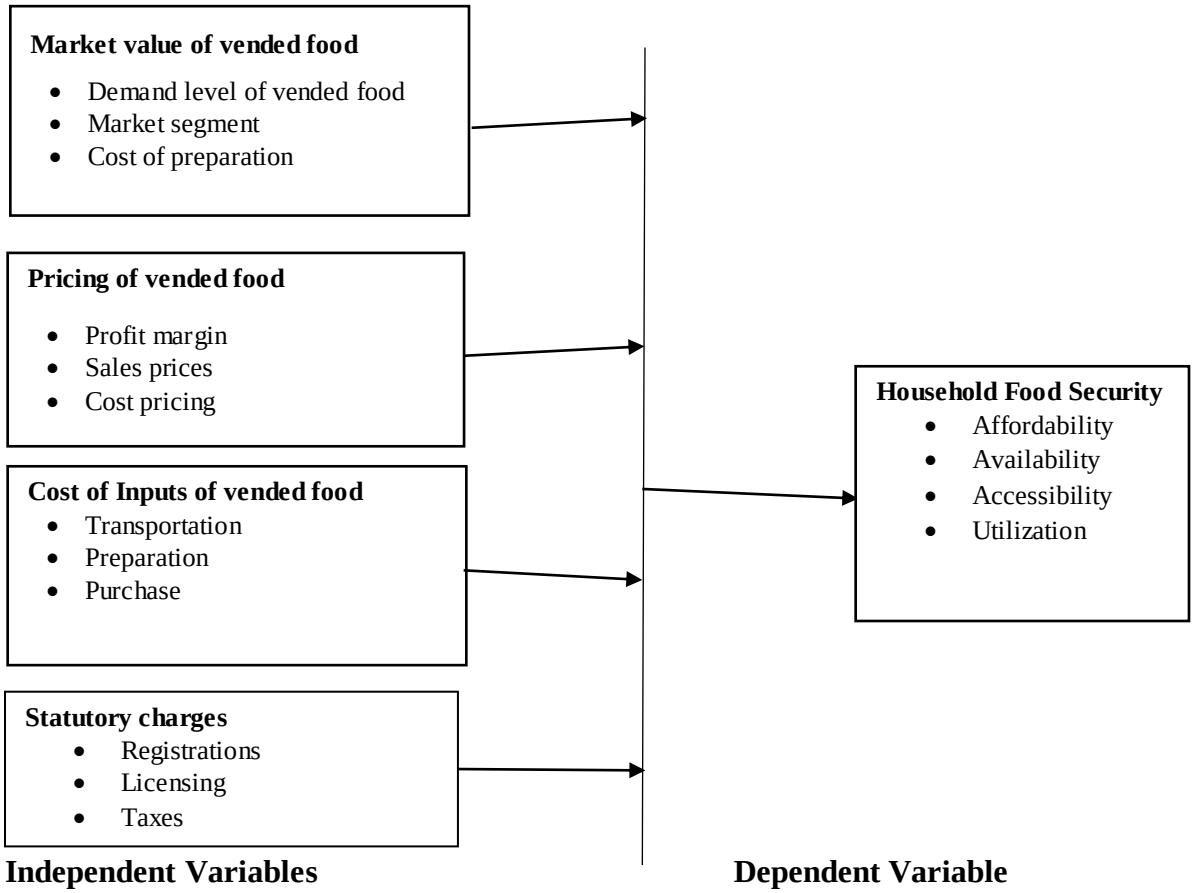

Figure 1: Conceptual Framework

Source: Researcher, 2024

Empirical Review

Market Value of Vended Food

Market value approach remains significant in its role of explaining the types of vended food in terms of its high and low values; several critics remain skeptical about it. Arnold (1998) suggests that the four key elements of value creation include; amount of capital invested; actual rate of return on capital; required rate of return; and planning horizon (for performance spread persistence. Maximizing the productivity of resources enables high economic growth and higher standards of living. High market share is an important factor but some firms seem to be trapped in an obsessive search for market share. At the same time, money has a time value and investors value shares on the basis. Earnings can lead to higher shareholder value in some circumstances. In others, it can lead to value destruction.

According to Kuriloff (2022) value is an illusory term-is in the mind of the buyer. Value for consumers can lie in personalized, friendly service, honest value, trust in the entrepreneur or in the reputation of the business, high quality of the product or service, or status in owning something unique. Since consumers dominate the market, purchases will be carefully planned

and buyers will be more discriminating Value offered in durability or reliability will become as important as, or more important than, style and features.

Chee and Harris (2022) believe that values and attitudes are important determinants of consumer behavior. Social norms are the modes of behavior and the accepted roles and standards in a society. A belief is a person's opinion about something- based on real fact, opinion or faith. An attitude is a person's point of view towards something like food, and usually involves liking or disliking-leading to consistent behavior pattern towards a product. Channon (2019) provides key success factor analysis; segments; network; selling; operations; financing; innovation; systems; promotion/communications as key success factors using a Likert scale.

Demand Level of vended food

Demand is an economic term which is used to indicate the number of people in the market who have the money and are willing to spend that money for a particular product or service. As price is lowered, the quantity of that product demanded (number of items purchased) increases. This is made possible through an effective marketing strategy (Kuriloff,2022).The world population has increased by 2.5 billion to reach 7.7 billion worldwide in 2019.Thus, population growth is and will remain a driver for food demand in the future, albeit at rates closer to 1%.Consumption facilitated by trade had been growing faster than population in the past two decades, resulting in the rise of consumption per capita. Meat consumption growth has been decelerating in Asia and Africa whilst vegetable oil consumption has a been growing steadily at an average rate of 4% per year over the period. Income growth in emerging economies led to increasing consumption of products of higher value such as meats and dairy products (EU,2019).

Varian (2010) states that demand function is the function relating to the optimal choice-the quantities demanded to the different values of prices and income. The total change in demand becomes the change in demand as result of the change in price, holding income constant. Chee and Harris (2022) noted that demand condition is a market factor (a function of many factors among which one of them) is price- a critical factor in market pricing.

Market Segment

Bradley (2021) defines market segmentation as dividing the market into customer groups who might merit separate marketing mixes reflecting different product benefits. Decisions regarding three factors assist in the segmentation process: those which relate to the technology embodied in the product, the customer segment served and the function performed. Etzl et al. (2022) define market segmentation as process of dividing the total market for a good or service into several smaller, internally homogeneous groups. The essence being that the member of each groups are similar with respect to the factors that influence demand.

Market segmentation is customer oriented, and consistent with the marketing concept. A study conducted by Were, G., Were, L.,and Aduol,K. (2020) on hygiene practices and microbial contamination of street vended foods in Kenyatta University's environs. It reveals that market segmentation in the area was such that the food vendors were largely situated at the main entrance to the university. Twelve stalls were located at the main entrance (gate A) and at the hind gate at KM shopping center; and random sampling to four stalls out of the 12. This study clearly shows that the targeted market in this segmentation are students who have little (low) income and majority of them depend on their parents or guardians for financial upkeep.

Cost of Preparations of Vended Food

Bradley (2021) argues that consumer product is a physical item that provides satisfaction to the buyer, including colour, form, function ingredients, packaging, service, smell, taste, texture and warranty, branding and distribution. Physical attributes are required to create the product's core or primary function. The core product is supported by packaging and service. The firm must consider the product adaptation issue at three levels-core product itself (platform design function); packaging (quality, pricing, package, trade mark, brand name), and at the service level (delivery, warranty, maintenance and repair, spare parts, legal). When evaluating a product developed for one market for possible sale in another market the extent of the adaptation required depends on cultural differences in product use and different product perceptions.

Correa and Campos (2022) pointed that the food preparations incudes cooking, packaging; and the preparation and provision of ant type of food to be consumed by the clients on the spot or any other chosen place is provided by food service sector. Ratto (2019) argues that food vendors who prepare lunches on consumer's demand means that, the supply of a great variety of lunch may increase costs that are not compatible to increase of income and profits. According to McEachern (2021) this then suggests that the two come together in resource market to determine resource prices that flows as income to households. The food vendors usually buy from small scale enterprise or scale suppliers including fruit and vegetable vendors and butchers, thus linking directly with others.

Household Food Security

Munawar (2021) during research analysis on effect of access to the market on household food security found that market and marketing facilities play a very important role in determining household food security. Jones et al. (2018) point that, the complexity of factors contributing to food security and the importance of context in interpreting these factors has led to some institutions prioritizing consultative methods for developing food security measurement tools.

Gitz et al. (2021) points out that during the last 10 years there has been a significant evolution in global discourses related to food security, nutrition and food systems. Duchelle et al. (2018) provides an understanding of how forest and trees indirectly contribute to food security and nutrition through the income they generate for individual s and communities that is used to purchase food.FTA (2021) assert that there have been global challenges associated with the current food dominant systems that leads to unhealthy diets and environmental degradation.

Ickowitz et al. (2021) provides a study by FTA scientists partnered with FAO in Zambia with regards to forest food use which surveyed 209 rural households across all agro ecological zones of the country and found very high use of forest foods across all sites. The rates of collection and consumption of wild fruits were high, with individual intake equivalent to about 80% of average national fruit consumption.

Food Affordability

Cafer and Kaiser (2018) defines food affordability as the ability to purchase enough safe and nutritious food given demands on household income outside of food. This definition has been explained further by Carson and Boege (2020) referring affordability to the cost of food and also considering non-food demands on household income, and the availability of nutrition supports to help defray those costs. High food prices and non-food demands on household resources shape whether food is affordable for consumers. Affordability is one of the best-

known dimensions of food security; and is not a static characteristic of food or food sources; but is best understood alongside characteristics of people, households, and communities.

Affordability of food is about determining if the food vendors have enough resources to afford the food they need; and examines factors such as social; safety nets, food expenditure, income levels, and comparing against the cost of a nutrient-adequate diet. Carson and Boege (2020) argue that food affordability does not refer to the cost of food alone, but should also consider non-food demands on household income, and the availability of nutrition supports to help defray those costs. The principle that guides affordability is that it should be a progressive sliding standard scale which involves all out of pocket costs. Conversely, food insecurity is lack of affordability due to less supply and high food prices (Von Grebmer et al.,2018).

Food affordability is the capacity to pay a market price for food compared to the proportion of the household's income and other expenses. Healthy diets in low-income nations cost more than the world Bank's set international poverty line of $1.90 per day which large population lives, thus making it hard for the transition to healthy and sustainable diets (Bai et al.,2020). And as a key determinant of food security and adequate nutrition (access to food and healthy diets), affordability of food is situated within broader food systems as one of the factors that comprise the food environment. This is viewed in the light of billions of the most vulnerable people globally being unable to afford a healthy diet. It then implies that one that contains not only foods that provide sufficient energy in the form of calories, but also foods that deliver adequate levels of important nutrients, with diversity across and within food groups (FAO,2021).

Food Availability

Food availability varies widely, and a well-functioning market enhances food availability. Vended food contributes to household food security by increasing availability especially for low-income households by providing diverse, convenient and often inexpensive meals. Boege and Carson (2020) state that availability is the "supply side" of food security determined by factors such as production, household or market level food stocks, and net trade (balance of food imported and exported). Jones et al. (2018). noted that GFSI similar to other national-level metrics ranks the performance of countries in achieving food security, uses quantitative and qualitative indicators that reflect food accessibility (food consumption as a proportion of total household expenditure, proportion of population living under or close to the global poverty line, food prices), food availability, and diet quality (e.g., dietary availability of micronutrients). The GFSI is recalculated quarterly based on shifts in food price data.

Boege and Carson (2020) suggest that availability is the degree to which food is consistently physically obtainable in desired quantities, shaped by the production, distribution, and exchange patterns of food goods. The availability of food is as a result of; people's sufficient purchasing power, appropriate distribution, and adequate use of food at the household level which aggravates food insecurity worldwide. FAO (2025) points out that today, the disruptions in the food and energy systems are reducing the availability of food system inputs, making prices to shoot up, and igniting the present food crisis.

Accessibility

Boege and Carson (2020) defines food accessibility as the ability to obtain food free from barriers posed by travel time, physical features of the area and store, neighborhood safety, and transportation costs. The authors noted that private transportation is meaningful indicator of food access. Public transportation could support food access, especially for those with no

transportation, although routes would need to be convenient and reach into neighborhoods with supermarkets.

Cafer and Kaiser (2019) defines accessibility as the ability to obtain food free from barriers posed by travel time, physical features of the area and store, neighborhood safety, and transportation costs. Conversely, Abbade (2017) argues that in a strictly technical sense, economic access (measured by economic development) and physical access (measured by logistical performance are not dimensions of food security; but drivers associated with the general category of food access dimension.

Food Utilization

Whilst, FAO (2022) defines food utilization dimension as commonly understood as the way the individual absorb the nutrients from food; FAO (2024) provides a different perspective of the utilization of food by households in specific population groups. This is referred to as the use that households make of the food to which they have access and individual's ability to absorb and metabolize the nutrients and the conversion efficiency of the body. World Bank (2024) report underscores importance of nutrition, and finds that nutrition transition trends vary from country to country and do not give rise to globalized dietary pattern, as the share of staple foods in total calories available declining. The dietary patterns of lower-income countries, during the same period changed more slowly. The shift from undernutrition to overweight and obesity is the most significant characteristic of the nutrition transition.

Zezza and Tasciotti (2018) argue that households that engage in subsistence farming have access to comparatively cheaper food and to a variety of nutritious food, especially vegetables and fruits that are rich in micronutrients. According to Vihiga county profile (2019, November) Vihiga is considered a food secure county, with subsistence farming as the main source of livelihood, however, one quarter of children under five years have stunted growth, with 6% of children underweight. This is contrary to IPC report, Feb-June which indicated that the overall situation of acute malnutrition in Kenya has improved with 847,000 children under 5 facing acute malnutrition.

Vhurumuku (2014) asserts that indicators to collect at HH in terms of food utilization includes water sources, sanitation and access; and health. Whilst Sibhatu and Qaim (2018) argue that if markets are well functioning, then households can separate their production decision from the consumption decision and move towards specialization to achieve higher income from the production. However, in subsistence households, diversifying farm production is a direct way to improve dietary diversity.

Research Gaps

Research gap is defined as a question or a problem that has not been answered by any of the existing studies or research within your field; and it is a new idea or concept (Kothari and Garg, 2019).The several comparative studies suggested have not addressed the issues of the market factors in its entirety on household food security among food vendors. Currently, few studies have focused on the study title thus contributing to information gap. Other studies that focus on this subject also seem to reveal methodological gaps in terms of the research design used.

Purchasing behavior of vended food Vended food makes an important contribution to the low and middle income dwellers. However, there is no information provided by the Central Asia data apart from purchase and nutritional value with regards to the present study undertaken. The study was conducted in 2016/2017 period; provides no census survey; and uses a

multicenter cross sectional study only aimed to describe the patterns of vended food purchasing in central Asia, in terms of time and place of purchase. It was a random and systematic sampling procedure done in four countries main urban areas; Tajikistan; Kyrgyzstan; Turkmenistan and Kazakhstan (Gabriela et al.,2021).

(Cafer et al.2018) the national study undertaken provided evidence that food affordability varies between rural and urban counties in the United States. Households in rural counties spend 19% of income on food compared to 17% in urban counties. The rural places have lower household incomes, lower access to food which were found to contribute to lower food affordability. However, market factors such as demand level of vended food; market segmentation; cost of preparation, cost of transport; and statutory charges were not factored.

METHODOLOGY

The study makes use of mixed method approach of both qualitative and quantitative data. Questionnaire and key informant questions will be applied. The study population was 176 food vendors registered in the county under Mbale market CBO according to County Trade Department (2022). The census approach will be used to get the target population. The study sample was derived from the target population among the food vendors consisting of fruit vendors; hoteliers and fish vendors. Stratified sampling was applied. Statistical Package for Social Sciences (SPSS) was used for data analysis. Data was presented inform of tables and figures.

FINDINGS

Demographic Characteristics

The demographic profile in Table 1 of the respondents reveals that the majority of food vendors in Mbale are women (60.8%), compared to men (39.2%). This is consistent with the broader structure of Kenya's informal food sector, where women dominate small-scale vending due to limited access to formal employment. Women's dominance in food vending is particularly significant, as they are traditionally responsible for household food provision, meaning their engagement in vending directly contributes to household food security (Blackmore et al., 2021; Khumalo & Ntini, 2021).

In terms of age, most respondents fell within the 26 -40-year age range (63.1%), a group that is economically active and often balances caregiving responsibilities with income generation. The educational distribution shows that the majority had attained only primary (35.2%) or secondary (43.2%) education, while a smaller proportion had reached college level (21.6%). According to Khumalo & Ntini, (2021), limited education may limit access to formal employment opportunities. Still, secondary and college-educated vendors are likely better equipped to make informed business and nutritional decisions, which can lead to improved household dietary outcomes.

Table 1: Demographic Characteristics

		Frequency	Percentage (%)
Gender	Male	69	39.2
	Female	107	60.8
Age	18-25 years	37	21.0
	26-35 years	60	34.1
	36-40 years	51	29.0
	above 40 years	28	15.9
Education level	Primary	62	35.2
	Secondary	76	43.2
	College	38	21.6
Marital Status	Single	38	21.6
	Married	92	52.3
	divorced/separated	28	15.9
	Widow	18	10.2
Number of Children	0	37	21.0
	1-2	55	31.3
	3-4	44	25.0
	5-6	34	19.3
	>6	6	3.4
Experience in Vending	0.5-1 year	21	11.9
	2-3 years	29	16.5
	4-5 years	42	23.9
	6-7 years	45	25.6
	> 7 years	39	22.2

Regarding marital status, more than half of the respondents (52.3%) were married, indicating that food vending provides a reliable income stream to support family needs. Household size was moderate, with most respondents reporting one to four children (56.3%). Vendors with dependents are more motivated to sustain their businesses, as income directly translates into household consumption and school-related expenditures.

Regarding business experience, nearly half of the respondents (49.5%) had been in vending for four to seven years, while 22.2% had operated for over seven years, underscoring the sector's long-term stability. Longer business experience not only reflects resilience but also suggests accumulated knowledge in managing costs, coping with shocks, and sustaining food supply chains, which in turn enhances household food security. Collectively, these demographic characteristics position food vending as a gendered, family-centered, and experience-driven livelihood strategy that plays a central role in ensuring food access, availability, and affordability for households in Mbale.

Descriptive Statistics

Effects of Market Value of Vended Food on Household Food Security

The findings addressing the first objective indicate that market demand is a critical determinant of food vending in Mbale. A majority of respondents (68.8%) agreed or strongly agreed that the food they vend is highly demanded in the market, while 62.4% reported that they deliberately focus on items with high demand. Furthermore, 65.3% of vendors agreed or strongly agreed that the food they sell is easy to prepare and requires minimal inputs. In

contrast, perceptions regarding the affordability of inputs were more divided: only 55.7% agreed or strongly agreed that inputs are affordable, while 21.6% were uncertain about this. The overall mean score of 3.64 and standard deviation of 1.15 reflect moderate agreement, with some variation across the sample.

The findings indicate that food vendors in Mbale deliberately align their operations with consumer demand as a means of guaranteeing steady sales and safeguarding household income. For many vendors, prioritizing food items that are easy to prepare and require fewer inputs reflects a pragmatic approach to minimizing daily operating costs while sustaining profitability. This strategy is particularly evident among fruit sellers, who primarily deal with products that require little to no preparation and fewer inputs, thereby allowing them to operate with lower overhead costs and more predictable returns. In contrast, most hoteliers reported greater concern over the affordability of inputs, as their businesses rely on a wider variety of ingredients, fuel, packaging, and labor. Their responses suggest that while demand for prepared meals may be stable, the volatility of input prices significantly constrains their capacity to maximize profits and, by extension, support household food security.

The majority of fishmongers, on the other hand, occupy a middle ground. While fish is a high-demand commodity, it faces unique challenges in terms of perishability and storage costs, which limit its flexibility despite strong consumer demand. The findings align with Boyer et al. (2021), who noted that while consumer demand acts as a unifying driver, differences in product type, preparation requirements, and cost structures shape distinct opportunities and constraints for vendors. Furthermore, the dynamics emphasize that interventions aimed at strengthening household food security among food vendors should recognize the diverse realities of hoteliers, fishmongers, and fruit sellers. As FAO (2021) highlights, sustainable food systems are best supported by context-specific strategies that acknowledge the diversity of actors and the varying pressures they face within local markets.

Table 2: Effects of Market Value of Vended Food on Household Food Security

Statement	Strongly Disagree (%)	Disagree (%)	Not Sure (%)	Agree (%)	Strongly Agree (%)	Mean	Std. Dev.
The demand is high for the food I vend.	2 (1.1)	21 (11.9)	32 (18.2)	64 (36.4)	57 (32.4)	3.87	1.04
The food I vend is highly demanded in the market.	13 (7.4)	21 (11.9)	40 (22.7)	55 (31.3)	47 (26.7)	3.58	1.21
I only vend food with high demand.	11 (6.3)	21 (11.9)	35 (19.9)	69 (39.2)	40 (22.7)	3.6	1.15
The food I vend is mainly demanded by specific clientele	5 (2.8)	27 (15.3)	39 (22.2)	55 (31.3)	50 (28.4)	3.67	1.13
The food I vend is easy to prepare.	9 (5.1)	26 (14.8)	26 (14.8)	62 (35.2)	53 (30.1)	3.7	1.19
The food I vend requires very few inputs to prepare.	8 (4.5)	30 (17.0)	37 (21.0)	54 (30.7)	47 (26.7)	3.58	1.18
The inputs of the food I vend are very affordable.	10 (5.7)	30 (17.0)	38 (21.6)	58 (33.0)	40 (22.7)	3.5	1.18

Food Security among Food Vendors

Elaine (2022) notes that the four basic methods of obtaining a food history may be used alone or in combination. None of the method is without pitfalls and may be adapted for computer

analysis. These tools include: 24-Hour Recall; Food Frequency Questionnaire; Typical pattern, and Diet Diary.

The food security status of vendor households in Mbale market reflects a mixture of resilience and vulnerability. As shown in Table 4.10a, almost half of the respondents (49–53%) reported never worrying about not having enough food, nor experiencing food shortages, hunger, or going a whole day without eating. Similarly, 59% indicated that they had not reduced meals due to a lack of income. However, a significant proportion still reported food insecurity: about one in five experienced these conditions "rarely," while another 18–19% admitted to "sometimes" going without food, and close to 11% reported doing so "often."

These findings suggest that although the majority of vendor households maintain some degree of stability, a sizeable minority still grapples with periodic shortages, meal reductions, and dietary insufficiency. This pattern resonates with FAO's (2022) assertion that urban and peri-urban households may exhibit simultaneous food access and insecurity, depending on income fluctuations and household shocks.

Beyond the frequency of food insecurity events, Table 4.10b highlights household practices and coping strategies employed by households. A majority of respondents (79%) reported eating two to three meals per day, while 12.5% reported eating only one meal per day. Dietary sources were fairly diversified, with maize (30.1%), beans (23.3%), and vegetables (34.7%) being the most common, while fruits were less frequently grown (11.9%). Harvest outcomes were generally modest, with 26.1% producing less than one bag, and 22.2% making only three bags. Losses from spoilage were evident, with 27.3% of the samples losing "less than one bag" and 22.2% losing at least one bag due to poor storage conditions.

Regarding consumption patterns, 21–27% of households reported consuming less than or up to two bags, with a similar proportion indicating limited sales. Cooking methods were dominated by boiling (54%) and frying (33.5%), with steaming and other techniques used less frequently. These findings demonstrate that while vendors employ strategies to maximize food access and utilization, the small-scale nature of production, spoilage losses, and reliance on basic cooking methods reflect structural limitations in their operations.

The results emphasize that household food security among vendors is determined not only by their market participation but also by underlying vulnerabilities in production, storage, and income flows. The coexistence of adequate daily meals for some households alongside persistent hunger for others aligns with Herrero et al.'s (2023) notion of "unequal resilience," where some groups manage to buffer shocks while others remain highly exposed. Furthermore, the finding that many households regard the cost of healthy diets as unaffordable reflects FAO (2024 update). Affordability, particularly in less developed nations rather than availability, remains the most significant constraint to accessing nutritious foods in low-income settings. Similarly, the influence of transportation, market information, and input costs, as observed in earlier sections, supports Udo's (2024) conclusion that supportive infrastructure and access to reliable information are crucial enablers of resilience in informal markets.

Overall, these findings suggest that the interplay of income, access, utilisation, and stability factors influences food security in the Mbale market. While many vendors sustain their households through market-based strategies, persistent structural costs, storage inefficiencies, and income variability undermine universal security.

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Table 3: Food Security Frequency Indicators

	Response Category	Worried about not having enough food (How often)	Experienced food shortage in last 6 months (How often)	Slept hungry in past 4 weeks (How often)	Went a whole day without eating (How often)	Reduced meals due to lack of income (How often)
No	No	86 (48.9%)	92 (52.3%)	87 (49.4%)	89 (50.6%)	104 (59.1%)
	Rarely	38 (21.6%)	36 (20.5%)	37 (21.0%)	36 (20.5%)	29 (16.5%)
	Sometimes	32 (18.2%)	30 (17.0%)	33 (18.8%)	30 (17.0%)	26 (14.8%)
Yes	Often	20 (11.4%)	18 (10.2%)	19 (10.8%)	21 (11.9%)	17 (9.7%)
	Total (n)	176	176	176	176	176

Table 4: Food Security Related Practices

Response Category	Meals per Day	Crops Grown	Quantity Harvested	Spoilage due to Storage	Quantity Consumed (Household)	Quantity Sold	Cooking Method
Option 1	22 (12.5%) Once	53 (30.1%) Maize	46 (26.1%) Less than 1 bag	52 (29.5%) None	37 (21.0%) Less than 1 bag	33 (18.7%) Less than 1 bag	95 (54.0%) Boiling
Option 2	71 (40.3%) Twice	41 (23.3%) Beans	58 (33.0%) 2 bags	48 (27.3%) Less than 1 bag	42 (23.9%) 1 bag	46 (26.1%) 1 bag	59 (33.5%) Frying
Option 3	68 (38.6%) Thrice	61 (34.7%) Vegetables	39 (22.2%) 3 bags	39 (22.2%) 1 bag	48 (27.3%) 2 bags	51 (29.0%) 2 bags	22 (12.5%) Steaming
Option 4	15 (8.5%) More than thrice	21 (11.9%) Fruits	33 (18.7%) More than 3 bags	23 (13.1%) 2 bags14 (8.0%) 3 bags	29 (16.5%) 3 bags20 (11.3%) >3 bags	28 (15.9%) 3 bags18 (10.2%) >3 bags	
Total (n)	176	176	176	176	176	176	176

Regression Analysis

Market Value of Vended Food Regression

The regression model in Table 4.11 assessing the effect of the market value of vended food on household food security yielded an R^2 of 0.794, indicating that demand for vended food, market segmentation, and the cost of preparation collectively explain 79.4% of the variation in household food security among vendors in Mbale town. The adjusted R^2 of 0.888 further confirms the model's robustness. The coefficients reveal the distinct influence of each predictor: the positive and significant effects of demand of vended food ($B = 0.065$, $\beta = 0.21$, $p = 0.001$) and market segmentation ($B = 0.045$, $\beta = 0.18$, $p < 0.001$) suggest that increased consumer demand and effective targeting of customer groups enhance vendor income, thereby improving household food access and stability. Conversely, the negative and significant coefficient of cost of preparation ($B = –0.056$, $\beta = –0.165$, $p = 0.029$) underscores how rising

operational expenses, such as fuel, packaging, and raw inputs, reduce disposable resources, weakening household consumption capacity.

These findings imply that food security among vendors is strengthened by market opportunities but undermined by cost pressures. The significance of all three predictors underscores the dual importance of leveraging demand and segmentation while controlling costs, consistent with the evidence presented by Roy et al. (2023), who emphasize that both market opportunities and operational constraints shape food security in informal systems.

Table 5: Market Value of Vended Food Regression

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	.891[a]	0.794	0.888	0.23181	1.903

a. Predictors: (Constant), Cost of preparation, Demand of Vended Food, Market Segmentation

b. Dependent Variable: Household Food Security

ANOVA[a]

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	1.05	3	0.35	6.481	0.000b
Residual	8.542	172	0.05		
Total	**9.592**	**175**			

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	0.95	0.12		7.917	.000
Demand of Vended Food	0.065	0.02	0.21	3.25	.001
Market Segmentation	0.045	0.018	0.18	2.5	.000
Cost of preparation	-0.056	.025	.165	-2.195	.029

a. Dependent Variable: Household Food Security

Table 6: Market Value of Vended Food Regression

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.879a	0.773	0.764	0.11234	1.921

a. Predictors: (Constant), Cost Pricing, Profit Margin, Sele Pricing

b. Dependent Variable: Household Food Security

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
	Regression	7.404	3	2.468	64.792	.000b
	Residual	2.188	172	0.013		
	Total	**9.592**	**175**			

a. Dependent Variable: Household Food Security

b. Predictors: (Constant), Cost Pricing, Profit Margin, Sales Pricing

Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	0.982	0.041		23.95	0
Sale Pricing	0.421	0.039	0.412	10.79	0.013
Profit Margin	0.356	0.036	0.381	9.89	0.011
Cost Pricing	0.298	0.032	0.327	9.31	0.001

a. Dependent Variable: Household Food Security

CONCLUSION ANDRECOMMENDATION

Conclusion

This study aimed to investigate the impact of market-related factors, specifically, market value, pricing, input costs, and statutory charges, on household food security among ready-to-eat food vendors in Mbale town, Vihiga sub-county. The analysis established that informal food vending is not only a vital source of livelihood but also a key determinant of household food access and nutritional well-being.

The demographic profile revealed that food vending is primarily dominated by women and is concentrated within the productive age groups, indicating its significance in sustaining households and providing employment opportunities, particularly for those with limited access to formal wage employment. Most vendors had attained at least a secondary level of education, suggesting that food vending attracts individuals with the capacity to manage small-scale enterprises and adapt to market dynamics. The marital and family profiles further underscored the critical role of vending in supporting household needs, with most respondents being married and responsible for multiple dependents.

Descriptive findings highlighted that demand is a central factor in food vending decisions. Vendors prioritize high-demand items that are easy to prepare and require fewer inputs, thereby maximizing sales while minimizing operational risks. Pricing practices were shown to directly influence the affordability and accessibility of food, both for customers and vendors' households. However, the affordability of inputs remained a persistent challenge, with rising costs of transportation, packaging, and equipment exerting financial strain. Statutory charges, such as registration fees, licensing fees, and waste management levies, also emerged as significant burdens, although their impact varied across different types of vendors.

The regression analysis revealed a robust demonstration of the multidimensional factors of household food security among the food vendors. The model affirmed that the most decisive determinants are statutory charges and input costs that represent the structural and operational constraints that directly limit the welfare of households. Market value and pricing, although still influential, had a relatively small impact, which highlights their supportive, rather than dominant, influence on the outcome. These results indicate that the ability of vendors to exploit demand and pricing mechanisms to maintain food security is somewhat masked by the regulatory cost burden and the prohibitive prices of basic inputs. Simply put, the market opportunity is not the sole determinant of household food security in this regard; rather, the ability of vendors to negotiate and absorb systemic cost-related pressures is.

Recommendations

According to the study results, the following recommendations are suggested to enhance the household food security of food vendors in Mbale:

Minimization of Statutory Fees and Easing of the Licensing Processes

The fees, licenses, and taxes imposed by local authorities on food vendors should be reviewed and rationalized, as statutory charges have been identified as having the most significant impact on household food security. The ease of registration and subsidized or flexible licensing plans simplify the burden on small-scale operators, promoting compliance without compromising household income.

Subsidies and Maintenance of Input Costs

As the price of inputs has become a significant constraint, targeted solutions such as bulk buying schemes, packaging material subsidies, or equipment and storage support programs are necessary. To reduce the cost of transacting business and enhance bargaining power in sourcing affordable inputs, county governments and development partners could establish vendor cooperatives.

Pricing and Market Information Capacity Building

Although situating the price at a moderate level had a moderate influence on household food security, training vendors on the fundamentals of financial literacy, cost management, and price setting would enable them to maximize profits without making the products unaffordable to the end consumer. Greater market information distribution (e.g., daily prices of various commodities) via digital platforms or market boards would help improve transparency and enhance decision-making among vendors.

Enhancing Market and Transport Infrastructure

One of the challenges discussed was transportation costs and accessibility. Better feeder roads, affordable transport services, and well-planned market areas with sufficient facilities would also help reduce the costs of vendors and, consequently, improve the food security of households.

Policy Identification and Inclusion of Informal Food Vending

The analysis reveals that women are the primary operators of food vending, and their income is a substantial source of family income. The role of informal vendors in food systems should be formally considered and integrated into national and county-level urban food security strategies. This may involve special tax breaks, social security, and programs for women vendors.

Future Studies and Continuous Monitoring

It is advisable to conduct continuous monitoring of market conditions, statutory frameworks, and food security outcomes to make sure that interventions are responsive to the realities of vendors. Future researchers may extend to other areas or consider nutritional quality measures to supplement the economic aspect of food security.

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