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Posted Date: 3 September 2024

doi: 10.20944/preprints202408.2252.v1

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Article

Smallholder Market-Driven Cassava Production: Inefficiencies of Farmer-Led Small and Medium-Sized Enterprises in Lake Region, Kenya

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Abstract: This case study examined performance of rural cassava SMEs managed by small scale farmers in Busia and Kisumu Counties in the lake region of Kenya. Formal survey, focus group discussions and key informant interviews were used to collect data from farmers and stakeholders in the region. The data were analysed descriptively using proportions (percentages and proportions), means and standard deviation and inferentially, using statistical tests of significance. The findings revealed gross inefficiencies in the management of cassava SMEs. Grass-root SMEs lack professional managers and exhibit inadequate organizational, quantity and quality management, high operational costs, lack of trust from farmers, inadequate financing, weak technical, agribusiness skills and weak linkages with markets. The findings challenge promotion of farmer-led organizations in rural areas to perform additional roles such as processing and marketing functions beyond their core business which is production. To remain relevant in a competitive value chain, grass-root farmer-led SMEs need to be re structured into viable economic entities with clear market-orientation. Ordinary smallholder farmers should specialize in producing sufficient quantity and quality of agricultural commodities, while processing and marketing functions are taken up by professional entrepreneurs. This study recommends an entrepreneur model rather than farmer-led SMEs as potentially best suited in creating efficiency in the cassava value chain in the lake region of Kenya.

Keywords: farmer-led SMEs; market; Cassava value chain; entrepreneurial model; Lake Region Kenya

Introduction

In sub-Saharan Africa (SSA), smallholder market-driven production is important in integrating farmers in local and global markets (Ferris et al., 2014; Otekunrin et al., 2019). Market-oriented production enables farmers to access new markets created by increasing urbanization and population and economic growth (Abraham and Pingali; 2020). Smallholder market-driven production also allows farmers and small and medium sized enterprise (SMEs) to become technically and organizationally more efficient in production of high value products (Fold and Larsen, 2011). Furthermore, smallholder market-driven production facilitates functional and inter-sectoral upgrading which moves farmers and SMEs from traditional production to marketing functions. Thus, market-oriented production infuses entrepreneurship throughout the value chain, revitalizes existing farmers and firms, and facilities creation of new businesses (Zahra, 2008), thereby contributing to structural transformation of the agricultural sector for enhanced incomes and food security.

Smallholder farms in SSA, especially in rural areas, are scattered and therefore unable to realize economies of scale which is necessary in accessing markets. Consequently, farmer-led SMEs have

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emerged as important institutions for linking farmers to markets by encouraging smallholder market-driven production through collective action. Farmer organizations exploit economies of scale, minimize transaction costs by reducing logistic inefficiencies, and strengthen the bargaining power of smallholder producers (Bijman and Wijers; 2019). The push for farmer-led SMEs, according to the World Development Report (2008), is that such organizations can enable farmers to meet high product quantity and quality requirements and improve their position in value chains. Therefore, farmer-led organizations are a fundamental building block in pursuit of agriculture for development agenda (WDR, 2008). Bijman and Ton (2008) describes various forms of commodity-specific producer organizations (POs) and SMEs which comprise rural, national, and international with either community or market-orientation. Nevertheless, there are indeed few available farmer-led SMEs focusing on root and tuber crops in Sub Saharan Africa despite the crops' increasing demand in the international market.

Cassava (*Manihot esculenta)* is one of the important staple food crop in Sub-Saharan Africa after maize, rice, and wheat, contributing to livelihoods and income of thousands of households and has recorded strongest increase in output since 1960s (Scott, 2020). The area under cassava production expanded by over 280% from 5.6 million ha in 1961 to 21.6 million ha 2019, which translated into growth in output of 31.5 million tonnes in 1961 to 429.1 million tonnes in 2019 (FAOSTAT, 2021). Cassava production is mostly subsistence in nature and done by smallholder farmers. The leading cassava producing countries in SSA are Nigeria, DR Congo, Ghana, Angola, Benin, and Tanzania (FAOSTAT, 2021). However, like other root and tuber crops (RTC), cassava in SSA is mostly produced and traded locally due to its importance as a food security crop (Thiele and Friedmann, 2020).

Cassava production in Kenya is concentrated in the lake region and accounts for 60% of the national production. The crop is mainly subsistence with 90% of the output consumed at home, leaving only 10% for marketing (Tirra et al., 2019). There is need for commercialization of the sector to take advantage of the increasing demand for starch products. Farmer-led SMEs exist in the region yet, there is little information on whether these SMEs are performing economic or community functions. This study therefore assessed existing SMEs in the Lakeside counties of Kisumu and Busia to determine how they can drive cassava commercialization.

Methodology

Study Area

The study focused on Busia and Kisumu counties since cassava is a priority value chain in these two counties. Busia County lies between latitude 0º and 0º 45′ North and longitude 34º 25′ East and is the leading cassava producer in Kenya (County Government of Busia, 2018; MoALF, 2015). The total land area under cassava is estimated to be 20,000 ha. Cassava is one of the most important staple crop in Busia County contributing to household food security and income, but has not been fully exploited despite growing consumer and industrial demand, and relatively low cost of production compared to maize and sorghum (Githunguri & Njiru et al., 2020). Kisumu County is located on the shores of Lake Victoria and serves as the main commercial and transport hub for the western part of Kenya. It lies between longitudes 33° 20′ and 35° 20′ E and latitude 00° 20′ and 00° 50′ S (County Government of Kisumu, 2018). The two counties are implementing the Kenya Climate Smart Agriculture Project (KCSAP) for the cassava value chain and are also the leading cassava producing counties in Kenya (kcsap.go.ke). The two SMEs under the study were Kobondo-Kamicha in Kisumu County and TangaKona in Busia County with membership drawn from common interest groups (CIGs) and Vulnerable and marginalised groups (VMGs). The SMEs were first established as self-help groups but later evolved into SMEs to perform market functions.

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Research Design

Quantitative and qualitative methods were used to obtain relevant information on performance of farmer-led SMEs. The case study narrowed down to two SMEs in the two counties to provide detailed description and assessment of their capacities and capabilities (Rashid et al., 2019). The study also used surveys to collect data on the status of cassava marketing from members of the SMEs. Focus group discussions (FGDs) with farmer-led SMEs' officials were also conducted to gain insights into SMEs operations and performance. Additionally, key informant interviews (KII) with extension and agri-business staff, NGOs and other stakeholders were conducted.

Analytical Framework

Descriptive statistics (mean and significance tests) and thematic approaches were used to analyse quantitative and qualitative data which were then presented in Tables.

Results and Discussion

Status of Cassava Marketing in the Region

Table 1 presents the status on cassava yields and marketing disaggregated by County, group, and sex. All the parameters investigated were significant but at varying degrees (0.1, 0.05 and 0.01). There was a marginal significant ($p < 0.1$) difference in yields between male and female farmers but no significant differences between group and county. According to FGD and KII, more male farmers were reported to plant improved varieties because of better access to information and control over production resources. Most cassava in the region was sold as dry chips. Significantly ($p < 0.01$) more CIG members (68%) participated in the market than VMG members (54%) possibly because CIG member had more access to market information and capacity to sell than VMG members. About 53% of the harvested cassava chips were sold, with farmers in Kisumu selling significantly ($p < 0.01$) higher percentage (74%) than those in Busia (47%). Proximity to Kenya's third largest city could explain why cassava farmers in Kisumu County sold more cassava than those in Busia County. Additionally, cassava is a staple food in Busia, suggesting that most of the produce was retained for home consumption. The dominant marketing arrangement in the region is that farmers sold individually, and this was significant by county, sex, and group. According to information obtained through FGD and KII, although existing SMEs provide collective marketing, they were perceived to be mismanaged compelling farmers to resort to individual marketing. There were significant ($p < 0.01$) differences in terms of buyers that farmers sold cassava to by county, group type, and sex. Local markets were the dominant buyers of dry cassava chips while SMEs were found to be unpopular with farmers in the study area possibly due to weak backward linkages as revealed from FGDs and KIIs.

Table 1. Cassava yields and marketing parameters disaggregated by county, type of farmer group, and sex.

	County			Group type			Sex		
Parameter	Busia	Kisumu	*P*	CIG	VMG	*P*	Female	Male	*p*
Yields (kg per acre) of dry cassava	867.36	880.71	0.921	913.41	824.43	0.446	814.6	1053.2	0.082
Percentage of farmers that sold dry cassava	62.33	58	0.441	67.79	54.17	0.005	62.09	58.51	0.533
Percentage of dry cassava sold	47.05	74.08	0.000	51.20	54.78	0.510	52.81	52.38	0.947
Marketing arrangements (%)									
Individual	99.67	88	0.000	98.56	94.79	0.057	93.13	91.01	0.173
Group aggregation	0.33	12		1.44	5.21		4.26	3.67	
Buyers (%)									
Local market	42.37	45.79	0.000	43.13	43.37	0.000	42.26	46.74	0.000
Neighbours	32.4	40.19		35.5	32.53		34.82	32.61	
Village trader	16.51	8.41		14.12	15.06		14.58	14.13	
Broker	6.54	3.74		6.11	5.42		6.25	4.35	
Distance trader	1.56	1.87		1.15	2.41		1.49	2.17	
SMEs	0.62				1.2		0.6		

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doi:10.20944/preprints202408.2252.v1

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Constraints in Cassava Marketing

Farmers were asked to state challenges they faced in marketing dry cassava chips, and the results are presented in Table 2. Most farmers mentioned lack of formal buyers as the most limiting challenge which could be due to or attributed to the unstructured nature of markets that does not guarantee quality and quantity of cassava chips. Some farmers indicated that low pricess also limited cassava marketing in the study area. Other marketing challenges included poor market linkages, linkage with buyers and short shelf-life of dry cassava chips. The results show that athough the two counties are leading cassava producers in Kenya, there is lack of formal buyers (outlets), which is a great impedement to marketing and has implication on the need for smallholders to have partnerships in order to stimulate production. Shiferaw et al. (2012) underscored the important role of producer organizations in improving market access and agricultural productivity growth in Africa.

Table 2. Farmers' perception of constraints to cassava marketing in the study area.

	County			Group type			Sex		
Constraints	Busia	Kisumu	*p*	CIG	VMG	*p*	Female	Male	*p*-value
Lack of formal buyer	64	13	0.000	51.92	50.52	0.281	51.96	48.94	0.497
Low prices	24.33	17		24.52	20.31		22.88	21.28	
Poor linkages	2.67	7		2.88	4.69		2.94	6.38	
Short shelf life	9	63		20.67	24.48		22.22	23.4	

Additionally, farmers were asked to suggest ways of improving cassava marketing. Table 3 present farmers' preferred channels and options for improving marketing of cassava disaggregated by county, group type, and sex. The preferred channels were significantly different at 1% and 5% with respect to county and group type, respectively. Farmers preferred linkages with large formal buyers than existing SMEs at group and county levels. Furthermore, farmers were asked to state their preferred marketing models for improving marketing of cassava. Linkages with formal buyers emerged as the most preferred option for improving cassava marketing at sex and group levels but not at county level. Formal buyers have the capacity to buy large quantities of cassava and have stable prices compared to informal buyers. FDG and KII revealed that existing SMEs had weak backward linkages with cassava producers.

Table 3. Farmers preferred channels and options for improving marketing of cassava disaggregated by county, group type, and sex.

	County			Group type			Sex		
Parameter	Busia	Kisumu	*p*	CIG	VMG	*p*	Female	Male	*p*
Preferred channels									
Farmer direct to large formal buyer	81	64	0.002	71.63	82.29	0.039	78.43	71.28	0.282
Farmer to aggregation store to buyer	19	36		25.48	15.63		18.95	26.6	
Options for improving marketing									
Linkages with formal buyers	36.3	22.5	0.141	34.31	31.12	0.010	31.72	36.22	0.000
Production of improved varieties	22.43	30.5		25.25	23.67		24.37	24.86	
Collective marketing	23.29	22		22.79	23.14		23.37	21.62	
Cassava processing SMEs in the Wards	17.98	25		17.65	22.07		20.53	17.3	

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Capacities and Capabilities of Farmer-led SMEs

Performance of Existing SMEs to Link Farmers to Markets

Table 4 provides results on assessment of performance of farmer-led SMEs in the region regarding professionalism and management capacity, quantity and quality management, technological capability, economic viability, and chain-wide collaboration.

Table 4. Current capacities and capabilities of farmer-led small and medium-sized enterprises.

Parameter	**Kisumu**	**Busia**
Business plan	None	Available
Strategic plan	None	None
Technical capacity	• Basic machinery exist. • Manual peeling • Value - 6 Million (USD 60,000)	Basic machinery exist but dormant Value - 4 Million (USD 40,000)
Professional education and training	• Ordinary farmers • Secondary education • Trained on cassava production and quality aspects	Ordinary farmers Secondary education Trained on cassava production and quality aspects
Management	• Registered as community based organization (CBO) • Current officials are the founders for the last 10 years	Registered as Farmers' cooperative Current officials are the founders for the last 10 years
Funding	Mainly memberships fees	Mainly memberships fees
	Donations from well wishers	Donations from well wishers
	Revenues from cassava chips	Revenues from cassava chips
No. of organizations supporting SMEs in the past ten years	6	15
	NGOs, Ministry of Agriculture, County governments, Research institutes, and development projects	NGOs, Ministry of Agriculture, County governments, Research institutes, and development projects
Indebted	Yes	Yes

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Information systems/bookkeeping	Not digitized	Not digitized
	Lack of traceability	Lack of traceability
	Lack of efficient information sharing system	Lack of efficient information sharing system
Linkages with stakeholders		
Farmers	Weak	Weak
Buyers	Weak and unreliable	Weak and unreliable
Other value chain actors	Weak	Weak
Quantity and quality management	Buys less than 2% from members	Buys less than 1% from members
	Quality not assured	Quality not assured
	Mainly cassava chips	Mainly cassava chips

Professional and Management Capacity

The existing SMEs neither had business nor strategic plans to guide the enterprises. These results suggest that producer-led SMEs in the two counties do not have clear roadmaps that identifies their current and potential customers (buyers of cassava products), as well as strategies for promoting production and marketing activities, reducing exposure to risks, and responding to changes in external business environment. The results further indicate that the SMEs are managed by ordinary farmers with inadequate academic and professional qualifications and have been in office for more than a decade. The SMES also tend to perform economic function, yet they are community oriented. The finding reveals inefficiency of this structure in performing economic functions.

Quantity and Quality Management

The study results revealed that existing SMEs were only able to buy less than 2% of the cassava produced in the region. Additionally, the quality of cassava chips processed by the SMEs was low. This finding is a further reflection of inefficiency of existing SMEs which makes them unattractive to cassava producers and consumers of cassava products. Quantity and quality management have been reported to be very important in enabling smallholder farmers access markets (Bijman and Ton, 2008).

Technological Capacity

The information sharing systems between SMEs and farmers and between SMEs and other stakeholders were found to be weak and the accounting systems lacked traceability. Record keeping was found to be done manually. The results also indicate that though the SMEs had basic machinery acquired through donation some years back, most of the equipment were underutilized. For SMEs to perform economic functions, technological capacity and information sharing are important in enhancing product quality and diversification and hence access to new market opportunities.

Economic Viability

The study also found that existing SMEs were indebted, and their main sources of financing were membership fees, donations from well-wishers, and revenues from sale of cassava chips. From FGD and KII, it was revealed that the SMEs were financially mismanaged, lacked farmers trust, and hence unable to buy sufficient quantities of cassava that would generate enough revenues from processed products. It was also revealed that SMEs had not paid farmers for previous deliveries.

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Chain-Wide Collaboration

The study revealed that existing SMEs had weak backward linkages with farmers as well as forward linkages with the market. This was another source of inefficiency since they cannot effectively operate as business entities in a business environment where partnerships are critical enhancing access to support services and markets. The results further showed that the SMEs had been supported by more than ten different organizations on various aspects, including capacity building, donation of machinery, finances, and improved varieties, yet they have not taken off as viable business entities.

Costs and Gross Margins

Table 5 presents annual operational cost, revenues, and gross margins of the two SMEs in Kisumu and Busia counties. The results show that the annual operational costs exceeded their revenues in the two counties and therefore they are indebted. These, together with inefficiencies revealed in Table 4 indicate that the SMEs are not financially viable.

Table 5. Annual operational costs, revenue and Gross margins of farmer-led SMEs.

	Kisumu (SME- Kobondo-Kamicha)	Busia (Tangakona CBO)
Item	Amount (KES)	Amount (KES)
Purchasing cassava	360,000	1,200,000
Rent	84,000	48,000
Salaries and wages	360,000	648,000
Processing	300,000	360,000
Water bill	30,000	
Transport		300,000
Packaging material	60,000	210,000
Allowances		180,000
Cost of chips for flour		828,000
Total operation cost	**1,194,000**	**3,774,000**
Revenue	**1,077,600**	**3,747,600**
GM	**-116,400**	**-26,400**

Source: Focus group discussions.

The findings of this study seem to challenge the current thinking on promotion of farmer-led SMEs to perform additional activities in the value chain such as processing and marketing with the expectation that these would enhance their bargaining power and collective action (AGRA, 2017). Whereas there have been some successful case studies of farmer organizations taking up more functions beyond production, (AGRA, 2017), the findings suggest that ordinary farmers lack the requisite professional, organizational, technological, financial, and agribusiness skills necessary to perform functions beyond farm-level. Globalization of agricultural trade challenges small scale farmer organizations particularly in SSA. First, farmers need to invest in technology, agribusiness, financing and networks that connect to national, regional and global markets, which ordinary farmers managing SMEs in rural areas do not possess. Secondly, value chains are highly integrated and operate stringent quantity, quality and safety requirements. Third, the reality of trade distortion as a result of imports of similar products which rural farmers also produce. Based on the study findings, it is argued that ordinary smallholder farmers should do what they are best at, that is, specialize in production by producing sufficient quantity and quality of agricultural commodities, while market

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functions are taken up by other actors who are professional entrepreneurs. Additionally, from this study, two potential options for enhancing smallholder market-driven production in the lake region emerge namely, the entrepreneur model and the need to re-structure existing cassava SMEs.

Case for Entrepreneur Model

Recent literature has affirmed the importance of entrepreneurial competencies in the management of SMEs especially in a dynamic and competitive business and policy environment (Gwadabe and Amirah, 2017; Zizile and Tendai, 2018). Ibidunni et al. (2021) in a recent study revealed that entrepreneurial competencies namely, organizing, conceptual, learning, strategic opportunity and risk-taking, were a viable pathway for improving the performance of SMEs in Nigeria. Based on inefficiencies and challenges entailed in transforming farmer-led SMEs into business entities, it is argued that an entrepreneur model would be suited for linking cassava farmers to markets. An entrepreneur has commercial interest in the commodity, has or can outsource the requisite professional and management skills, can acquire the necessary technology, financial resources, and able to forge strategic market linkages at national and global level.

Restructuring Existing Cassava SMEs

Based on the findings of this study, for existing SMEs to become viable business entities linking farmers to markets, they need to be restructured (Bijman and Wijers., 2019). Restructuring should be done at four levels, namely management, membership, technology, and chain-wide collaborations. Management restructuring should entail professional managers, while membership restructuring should entail retaining members that have a stake in the SMEs (Mwmabi et al., 2020) and are prepared to reap from the benefits and also share in the risks rather than the current scenario in which majority of the members are free riders. Technology restructuring should entail investment in processing and value addition to take advantage of the increasing global demand for cassava products, including market for starch, pharmaceutical products, and animal feed. To respond to these market demand, SMEs need to invest in the requisite technology otherwise they become irreverent in competitive business. Another level of restructuring is on chain-wide collaboration which should entail backward linkages with farmers to ensure production of sufficient quantity and quality of cassava and forward linkage with different market segments and support services. Previous studies have demonstrated that farmer-led SMEs that restructured at management and functional levels became attractive business entities in a competitive environment (Bijman et al., 2012; Olson, 2009; Ortman et al., 2007).

Conclusion and Recommendations

This case study investigated performance of rural cassava SMEs managed by small scale farmers in Busia and Kisumu Counties in the lake region of Kenya, which is the leading producer of cassava in the country.

The findings revealed gross inefficiencies in the management of cassava SMEs. Despite many years of support by various organizations, they have not taken off on a business path due to inadequate organizational, quantity and quality management, high operational costs, lack of trust from farmers due to mismanagement, inadequate financial, technical, agribusiness skills and weak linkages with markets. The findings of this study seem to challenge the current thinking and promotion of farmer-led organizations to perform additional activities in the value chain such as processing and marketing. To remain relevant in a competitive value chain, grass-root farmer-led SMEs need to be re structured into viable economic entities. We argue that ordinary smallholder farmers should do what they are best at, namely, specialize in producing sufficient quantity and quality of agricultural commodities, while processing and marketing functions are taken up by professional entrepreneurs. Thus, an entrepreneur model which buys produce from rural farmers and connects to end markets, rather than farmer-led SMEs, would be best suited in creating efficiency in the cassava value chain in the region.

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Funding: This research was supported by the Kenya Climate Smart Agriculture Project (KCSAP) under the theme, "Strengthening Agricultural Research and Seed Systems", Project No. KCSAP/CROPS/APPLIED RESEARCH / 012.

Acknowledgement: The authors thank all cassava stakeholders and the County Governments of Busia and Kisumu for participating in the study. Special appreciation to the Director-General KALRO, for facilitating field study.

Conflict of interest: The authors confirm no conflict of interests

References

Abraham M. and Pingali P. (2020). Transforming smallholder agriculture to achieve the SDGs. In: Paloma S. G. Y., Riesgo L. and Louhichi K. (Eds.). *The Role of Smallholder Farms in Food and Nutrition Security*. Cham, Switzerland, pp. 173—209.

AGRA. (2017). Africa Agriculture Status Report: The business of smallholder agriculture in SubSaharan Africa, *AGRA*. Available at: https://agra.org/wp-content/uploads/2017/09/Final AASR-2017-Aug-28.pdf.

Bijman J. and Wijers G. (2019). Exploring the inclusiveness of producer cooperatives. *Current opinion in environmental sustainability*, *41*, 74–79.

Bijman J., Van der Sangen G., Poppe K.J. and Doorneweert B. (2012). Support for Farmers' Cooperatives; Country Report The Netherlands. Wageningen: Wageningen UR.

Bijman J. and Ton G. (2008). Producer organizations and value chains capacity. *https://www.researchgate.net/publication/281358003_Producer_organizations_and_value_chains_capacity*

County Government of Busia. (2018). County Integrated Development Plan Busia*:* 2018-2022. Available at: https://cog.go.ke/media-multimedia/reportss/category/106-county-integrated-development-plans-2018-2022?download=324:busia-county-integrated-development-plan-2018-2022. Last accessed 1.02.2023.

County Government of Kisumu. (2018). County Integrated Development Plan Kisumu: 2018-2022. Available at: https://www.kisumu.go.ke/wp-content/uploads/2018/11/Kisumu-County-CIDP-II-2018-2022.pdf. Last accessed 1.02.2023.

Ferris S., Robbins P., Best R., Seville D., Buxton A., Shriver J. and Wei E. (2014). Linking Smallholder Farmers to Markets and the Implications for Extension and Advisory Services. FTF USAID. Available at: https://www.fao.org/3/ca8199en/CA8199EN.pdf.

Fold N. and Larsen M.N. (2011). Upgrading of smallholder agro-food production in Africa: the role of lead firm strategies and new markets. In: Staritz C., Gereffi G. and Cattaneo O. (eds). Shifting end markets and upgrading prospects in global value chains: *International Journal of Technological Learning, Innovation and Development, Vol. 4, Nos. 1/2/3, 2011.*

Ibidunni A.S., Ogundana O.M and Okonkwo A. (2021). Entrepreneurial Competencies and the Performance of Informal SMEs: The Contingent Role of Business Environment. *Journal of African Business* ,Volume 22, Issue 4. https://doi.org/10.1080/15228916.2021.1874784.

Ministry of Agriculture, livestock and fisheries Kenya. 2015. Economic review of Agriculture. Available at: - http://kilimodata.developlocal.org/dataset/0db0b38f-a79e-44f9-b200-95e232baa207/resource/e01448e4-52fc-48d9-a5fc-e220d27d957d/download/economic-review-of-agriculture_2015.pdf

FAOSTAT. (2021) World cassava situation and Recent Trends ..https://www.fao.org/3/x4007e/X4007E04.htm.

Githunguri C. M. and Njiru E. N. (2020). Role of cassava and sweetpotato in mitigating drought in Semi-Arid Makueni County in Kenya. In: Filho W. L., Oguge., Ayal N., Adeleke L. and da Silva I. (eds.). African Handbook of Climate Change Adaptation. Cham, Switzerland, pp. 1--19.

Preprints.org (www.preprints.org) | NOT PEER-REVIEWED | Posted: 3 September 2024 doi:10.20944/preprints202408.2252.v1

Gupta J. and Pouw N. (2017). Towards a trans-disciplinary conceptualization of inclusive development. *Current Opinion in Environmental Sustainability*, *24*, 96--103. 96-103. https://doi.org/10.1016/j.cosust.2017.03.004.

Gwadabe U.M. and Noor N.A.M. (2017).Entrepreneurial Competencies: SMEs Performance Factor in the Challenging Nigerian Economy. Available at: https://www.researchgate.net/publication/321051145_Entrepreneurial_Competencies_SMEs_Performance_Factor_in_the_Challenging_Nigerian_Economy

Mwambi, M., Bijman, J.& Mshenga, P. (2020). Which type of producer organization is (more) inclusive? Dynamics of farmers' membership and participation in the decision-making process. *Annalas of public and cooperative economics. https://doi.org/*10.1111/apce.12269

Olson F. (2009). United Producers Inc. Chapter 11 Restructuring. *Journal of Cooperatives.* 23:130-140.

Ortmann G.F and King R.P. (2007). Agricultural cooperatives I&II. *Agrekon 46, 1:40-68 & 2: 219-244.*

Otekunrin O.A. and Sawicka B. (2019). Cassava A 21st Century Staple Crop: How can Nigeria Harness its Enormous Trade Potentials? *Acta Scientific Agriculture*, Volume 3:8.

Scott G. (2020). A Review of Root, Tuber and Banana Crops in Developing Countries: Past, Present, and Future. *International Journal of Food Science and Technology*, 56(98). https://doi.org/10.1111/ijfs.14778.

Rashid Y., Rashis A. and Waseem A. (2019). Case Study Method: A Step-by-Step Guide for Business Researchers. *International journal of Qualitative Methods,* Vol. 18:1-13 https://doi.org/10.1177/1609406919862424.

Thiele G. and Friedmann M. (2020). The vital importance of RTB crops in the One CGIAR portfolio. RTB Research Brief 02. 4 p. Lima, Peru: CGIAR Research Program on Roots, Tubers. Available at: https://cgspace.cgiar.org/bitstream/handle/10568/109915/The%20vital%20importance%20of%20RTB%20crops_ResearchBrief02.pdf?sequence=3&isAllowed=y

Tirra A.N., Oluoch-Kosura W., Nyanganga H. and Mwang'ombe A.W. (2019). Factors influencing the level of commercialization among smallholder cassava farmers in Taita-Taveta and Kilifi Counties, Kenya. *African Journal of Agricultural Research*, Vol. 14(32), pp. 1584 -1592. https://doi.org/10.5897/AJAR2019.14222

Zahra S.A. (2008). Being entrepreneurial and market driven: implications for company performance. *Journal of Strategy and Management*, Vol. 1 No. 2, pp. 125-142. https://doi.org/10.1108/17554250810926339.

Zizile T. and Tendai C. (2018). The Importance of Entrepreneurial Competencies On The Performance Of Women Entrepreneurs In South Africa. Journal of Applied Business Research. *Journal of Applied Business Research*, Vol 34:2

World Bank. (2008). Bringing agriculture to the market. World Development Report:

Agriculture for Development. Washington DC: The World Bank.

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