DETERMINANTS OF YOUTH PARTICIPATION IN AGRIBUSINESS IN NYERI COUNTY, KENYA

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ABSTRACT

Involvement of youth in agribusiness has become a vital strategy for eradicating poverty and creating employment opportunities for Kenyan youth. However, their participation in the sector is still not satisfactory. The study asses sed the factors that influence youth participation in agribusiness in Mathira Constituency, Nyeri County. A sample of 288 youths was obtained through a stratified random sampling technique. A semi-structured questionnaire was used to collect data on factors influencing youth participation in agribusiness. Data were analyzed using descriptive statistics and a binary logit regression model. The results demonstrated that among the factors, age(p=0.005), gender (p=0.007), access to land (p=0.000), access to markets(p=0.014) access to agribusiness training(p=0.001), access to credit (p=0.021), access of agribusiness information(p=0.002) and had a significant and positive relationship with agribusiness participation. Youths' engagement in agricultural e-commerce (p=0.011) had a significant and negative relationship with youths' decision to participate in agribusiness. However, income, education level, household size, group membership, availability of modern farming technologies, access to the internet, and distance to output and input markets did not significantly (p >0.05) influence the participation of the youth in agribusiness. According to the findings, there is a need to avail agribusiness information and training to the youths to increase their chances of uptake of agriculture as a business. The study also encourages empowering youths through credit access, land access and agricultural market access to increase youths' involvement in commercial agriculture. This will help resolve the challenges of rising unemployment and poverty rates among Kenya's growing youth population and also help achieve food security.

Keywords: Agribusiness, Determinants, Youths, Participation, Employment.

INTRODUCTION

The global population is expected to increase by 2.7 billion people by the year 2050. The youths will constitute a sizeable proportion of this population accounting for 1.3 billion (Siddique *et al.,* 2021). However, governments all over the world are struggling to attract and integrate youth into agriculture, lagging behind the growth of this sector. Agriculture is responsible for 32% of all jobs worldwide, and in order to secure its viability, younger workers must be drawn to agriculture (Huijsmans *et al.,* 2021). The global youth population does not seem to be commensurate with the available employment opportunities, particularly in developing countries making unemployment a global burden. This rapid population growth also increases the gap between food production and food consumption. Therefore, there is a greater need to optimally utilize youths' potential in contributing to the agribusiness sector's goal of achieving food and nutrition security.

The economy in most countries, especially the developing ones, is agricultural-based, making it necessary to encourage and motivate young people to work in the agricultural sector for the economy to thrive and stabilize. Approximately 60% of Africans are under the age of 35. Compared to the rest of the world, African youth unemployment is higher (force (Okolo-obasi & Uduji 2021). The severity the of unemployment problem in Africa varies over time across sub-regions, countries, and even within a single country. Agriculture contributes to Africa's economic growth and social development, accounting for approximately 65% of the workforce and 30% of the GDP in most African countries (Ntabakirabose *et al.,* 2021). Youth participation in the agricultural sector is declining because of the strength of different push and pull factors based on world economic trends that have favored the other sectors over the agricultural sector, which have contributed to a labor shift away from agriculture (Geza *et al.,* 2021).

Kenya has a population of 47.6 million with youths accounting for 13.7 million (KNBS, 2019). Despite having a youthful population unemployment remains a problem, particularly in rural areas. Kenya has the highest proportion of unemployed youths in East Africa because the economy is not creating enough jobs to accommodate the growing population (Ouko *et al.,* 2022). It is estimated that 64% of unemployed Kenyans are young people, with the majority moving away from agriculture and into fast-growing non-agricultural sectors in urban areas (Wamuyu, 2022). This causes rural-to-urban migration, reducing the available energetic labor force in rural areas for agricultural work.

In Nyeri County, the main economic activity is agribusiness, with coffee and dairy production being the main income earners to the County's farmers; the county also grows tea, potatoes, and cabbages as subsistence crops. The County Government of Nyeri report (2022) indicated that agriculture currently employs 32.84% of the population. With an agricultural potential of 758.5 square kilometers of arable land, agribusiness is one of the main economic activities within the county. This has given rise to other opportunities within the sector. Nyeri County Integrated Development Plan 2018- 2022 indicates that the county's unemployment rate is 17.5%, with just 347,502 people employed out of a potential labor force of 421,298. As a result, the county's dependency rate is 51% of the entire population (CNG, 2018).

Youths have potential in agricultural development, with only 10% directly participating in the sector (Wamuyu, 2022). Over time, very few young people have seen a future for themselves in the agricultural sector, resulting in a withdrawal from the industry in spite of its abundant potential to provide livelihood, income-generating, and wealth-creation opportunities (LaRue *et al.,* 2021). Youth non-involvement in the agribusiness sector is also reflected by an aging farmer population, with 66% of farmers being over the age of 50 and 48% being over the age of 61%. Young people are constrained from venturing into the sector by various factors, including access to land,

credit, markets, requisite skills, negative perceptions, and technological factors. Despite efforts, the agricultural industry has not yet fully utilized the potential of young people and is still largely unappealing to them. The Kenyan government must increase its investment in agriculture if it hopes to see the sector generate jobs and provide farmers with better yields and pay (Fox & Gandhi, 2021). This will promote professions in agriculture and food production among young people, improving their economic well-being and access to food. To ensure that there is enough food for the next generation by 2050, the young population has a responsibility to contribute to increasing global food security.

METHODOLOGY

This study used primary data collected in May 2023 in Nyeri County, Kenya. The County is located in the country's central region with a land area of 3,337.2 km^2.It is situated between longitudes 36° and 38° east and latitude 1° south. The youth in Mathira Constituency, Nyeri County, were the target population. The Constituency has a total population of 158,960, with 47,688 youths aged 18 to 35 (KNBS, 2019). The State Department of Gender, Youth, and Social Services within the study area assisted in identifying the target population. This enabled generation of a list of the, from which we selected 288 youths at random. The study adopted a descriptive cross-sectional research design. The stratified random sampling technique was used. Each sample member was classified as either a participant or a non- participant in agribusiness enterprises. The research used a semi-structured questionnaire to collect primary data. We used a semistructured questionnaire that was delivered via ODK on an Android phone to gather data. Questions were asked about socioeconomic, institutional, and technological factors, as well as their decision to engage in agricultural activities. Prior to analysis, data screening was carried out, and every sample respondent was interviewed, yielding a 100% success rate.

Analytical Model

The study used descriptive and inferential statistics as well as an econometric approach to analyze youth participation in agribusiness in Mathira Constituency. The descriptive statistics included means and frequencies of key characteristics of the youth. Furthermore, t-tests and p-values were used to determine the statistical significance of differences in socioeconomic, institutional and technological factors between participants and non-participants in agribusiness.

A binary logistic model was used to examine the factors influencing youth participation in agribusiness. The youth's intentions to participate in agribusiness were measured using a binary variable with a value of 1 when an individual intended to participate in agribusiness and 0 otherwise. Given the dependent variable's dichotomous nature, its relationship with the various explanatory variables was estimated using a binary logistic regression model. Equation (1) gives the general formula for the binary logistic

model. $Yij=\alpha j+\beta j\sum jx1nXij+ei+\beta j$:

Where:

Yij is the dependent variable (intention to participate in agribusiness).
$\sum njx1Xij$ represents the sum of explanatory variables (socio-economic, institutional and technological variables) for *j*th of the respondent, while $\alpha j \ldots \beta j \ldots \beta$ are the estimated coefficient, and ei is the error term.

Examples of the socio-economic variables considered in this study are land access, age, gender, access to markets, level of education, income earned and household size. Institutional factors included agricultural extension services, access to credit, group membership and availability of infrastructure. Technological factors included the availability of farming technologies, availability of communication and information resources and availability of e-commerce technologies.

RESULTS

Summary of Descriptive Statistics

Table 1 summarizes the descriptive statistics used in estimation as well as the mean difference between participants and non-participants in agribusiness. According to the findings, the average age of youths is around 27 years. The number of females is slightly higher than the number of males. The data further indicates a mean education level of 13 years of formal schooling, ranging from 1 to 18 years. This is an indication that the majority of the youth in Mathira Constituency were literate but had only completed secondary school. The mean number of people living in a particular household in the study area for the past 12 months were¯4 people per house. The mean number of people living in a particular household in the study area for the past 12 months were 4 people per house. In relation to farm characteristics, the average farm size cultivated is around 2 hectares, with land access of about 44 %. This may suggest most youths in the study area did not access land for reasons which varied from land being too expensive to own or rent, land sub division into uneconomically viable units and parents not trusting the younger youths to own family/inherited land. Regarding market accessibility 65% of the youths had access to agricultural markets while 34% had no access to the market. Access to institutional services shows that only an average of 41% and 29% respectively accessed extension services and belonged to various groups. In addition, about 26% and about 46% of farmers indicated the availability of agribusiness training and accessed credit services respectively. The average distance to input and output markets was around 2.3 and 2.5 kilometers respectively. Regarding technological factors, the study results disclosed that 29.86 % of the youths accessed modern farming technologies. Further, the study results revealed that 30.56% of the youths traded agricultural goods through the internet and accessed e-commerce technologies. The vast majority of respondents 84% indicated they had access to the internet and used social media platforms. Table1 also shows the differences between the participants and non-participants in agribusiness enterprises. The results point to a few significant variables, namely that there is a significant difference between participants and non-participants in terms of gender, household size, land size, credit access, access to extension, group membership, availability of modern farming technologies, internet access, engaging in e-commerce and distance to input and output markets. Table 1 further indicates that the mean difference between participants and non-participants for all the outcome variable income. The outcome variable income is positive and participants had a higher income than non-participants.

	Total		Participants		Non participants		Mean Difference	T value	P value
Variable	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation			
Outcome Variable									
Total Income	137469.2	91629.200	142432.200	107950.80	133873.300	77850.740	-8558.925	-0.782	0.218
Independent Variables									
Age	26.726	4.435	29.579	3.586	24.659	3.805	-4.920	-11.093	0.000
Gender	0.493	0.501	0.579	0.496	0.431	0.497	-0.147	-2.487	0.007
Education	13.233	2.593	13.413	2.868	13.102	2.374	-0.311	-1.006	0.158
Household Size	4.340	1.833	4.165	1.583	4.467	1.990	0.302	1.381	0.084
Access to land	0.441	0.497	0.818	0.387	0.168	0.375	-0.651	-14.338	0.000
Land Size	1.621	0.749	1.621	1.159	1.621	0.000	0.000	0.000	0.500
Access to markets	0.653	0.477	0.959	0.200	0.431	0.497	-0.528	-11.048	0.000
Extension services	0.413	0.493	0.760	0.429	0.162	0.369	-0.599	-12.686	0.000
Training	0.340	0.475	0.587	0.494	0.162	0.369	-0.425	-8.353	0.000
Access to credit	0.462	0.499	0.702	0.459	0.287	0.454	-0.415	-7.623	0.000
Group membership	0.299	0.458	0.355	0.481	0.257	0.439	-0.098	-1.795	0.037
Distance to input	2.287	1.306	2.269	1.426	2.299	1.217	0.030	0.192	0.424
Distance to output	2.502	1.447	2.621	1.786	2.416	1.139	-0.204	-1.185	0.119
Farming technology	0.299	0.458	0.612	0.489	0.072	0.259	0.259	-12.106	0.000
Access to internet	0.840	0.367	0.876	0.331	0.814	0.390	-0.062	-1.410	0.080
Agribusiness Information	0.556	0.498	0.760	0.429	0.407	0.493	-0.353	-6.335	0.000
E-commerce	0.306	0.461	0.446	0.499	0.204	0.404	-0.243	-4.554	0.000

Table 1: Descriptive Statistics.

Factors Influencing Youth Participation in Agribusiness

Table 2 shows the probability estimates of the binary logistic model as well as the coefficients of youths' participation in agribusiness enterprises. As depicts in table 2, age, gender, access to land, access to market, access to agribusiness training, access to credit, access of agribusiness information and had a significant and positive relationship with agribusiness participation with a 95 percent confidence level. Other factors such as land size, education, household size, group membership, access internet, availability of farming technologies and distance to output and input markets had an insignificant relationship with youth participation in agribusiness.

Participation in agribusiness was positively impacted by gender and statistically significant (P=0.000). This might be as a result of women's empowerment in access to training, advice, and other productive resources like land and agricultural technologies. The findings do not agree with the results by Girdziute *et al.* (2022), who reported that gender had a negative effect and significantly decreased the willingness to work in agriculture, with women being less likely to be willing. The results agree with the findings of Akrong & Kotu (2022), who opined that gender and agripreneurship have a positive relationship; however, agriculture was primarily undertaken by men.

The results on age showed a significant positive correlation with agribusiness participation (p= 0.000). This shows that the likelihood of young people choosing agricultural businesses rises as they get older. This might be the case because, over time, youth accumulate assets that can be used as capital for agriculture. The results were consistent with those of Mulema *et al.* (2021), who reported that the age of respondents and involvement in agribusiness were significantly and positively correlated. This suggests that older youths were more likely to work in agriculture than younger ones.

The results demonstrated a significant (p=0.001) and positive relationship between the youths' decision to engage in agribusiness and access to the market. This indicates that youths accessing markets are more likely to participate in agribusiness. The results are consistent with the findings by Njeru & Mwangi (2015) that revealed a statistically significant positive relationship between Kajiado North youth access to markets and their involvement in agriculture (r=0.330, p=0.001). Youth with easy access to markets for their goods participated in agricultural activities at a higher rate than those with limited access to markets

Additionally, the findings showed a significant (p=0.001) and positive correlation between the youths' choice to engage in agribusiness and access to land. This implies that youths who have access to land are more likely to be involved in agribusiness. The findings aligned with those of Fasakin *et al.* (2022), who discovered a favorable and significant relationship between the choice to engage in intensive agriculture and access to land. This suggested that youth decisions to be involved in agriculture, particularly in the agricultural production value chain, are strongly influenced by access to land.

The findings showed that access to training had a significant (p=0.001) and positive relationship with the youth's decision to participate in agribusiness. This demonstrated that increased extensional training and accessibility resulted in increased agribusiness participation due to increased knowledge. Bello *et al.* (2021) also found training to increase the likelihood of participating in youth in agribusiness programs significantly.

According to the findings, credit had a significant and positive relationship with engaging in agribusiness (p = 0.000). This is because by providing the necessary financial resources, credit enables young individuals to overcome the barrier of limited startup capital and establish their agricultural ventures. It allows them to invest in modern technologies, acquire essential resources, and implement efficient farming practices, ultimately enhancing their productivity and competitiveness. These findings are consistent with Ankrah *et al.* (2020), who opined that the participation of rural youth farmers in agriculture is significantly impacted by credit availability.

The findings of the study revealed a significant and positive relationship between the availability of farming technologies and the

choice to engage in agribusiness ($p = 0.000$). The study's findings indicated that youths' access to farming technologies was a significant factor in their decision to engage in agribusiness activities. This showed that an increase in available farm technologies led to more participation in agribusiness due to the increased ease in production. The findings are in line with those of Sudarshanie (2015), who reported that the availability of agricultural machinery was a significantly influential factor ($p<0.05$) in participation in agriculture.

The findings showed that access to agribusiness information through online platforms had a significant ($p=0.006$) positive relationship with the youth's decision to engage in agribusiness. This is because access to agribusiness information via online platforms provides youths with the knowledge, skills, connections, and inspiration they need to make informed decisions about engaging in agribusiness. Khumoetsile (2021) also reported that at a 5% level, agricultural information had a statistically significant impact on the respondents' participation in agriculture and number of activities undertaken.

Agribusiness Participation	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
Income	-4.93E-06	2.99E-06	-1.65	0.099	-0.000	9.29E-07
Age	0.191	0.071	2.69	0.007	0.052	0.330
Gender	1.212	0.540	2.25	0.025	0.154	2.271
Education	-0.202	0.213	-0.95	0.341	-0.620	0.215
Household size	-0.273	0.160	-1.70	0.088	-0.586	0.041
Access to land	2.967	0.602	4.93	0.000	1.787	4.146
Land size	0.590	0.252	2.34	0.019	0.097	1.082
Access to market	1.096	0.869	1.26	0.207	-0.607	2.799
Extension services	0.524	0.622	0.84	0.399	-0.695	1.744
Access to training	1.991	0.710	2.81	0.005	0.601	3.383
Access to credit	1.242	0.554	2.24	0.025	0.157	2.328
Group membership	-0.641	0.589	-1.13	0.260	-1.756	0.474
Distance to input markets	-0.287	0.255	-1.13	0.260	-0.787	0.213
Distance to output markets	0.319	0.245	1.30	0.194	-0.161	0.799
Farming technologies	1.143	0.591	1.93	0.005	-0.015	2.300
Access to internet	-0.927	0.908	-1.02	0.307	-2.707	0.852
Agribusiness information	2.453	0.752	3.26	0.001	0.980	3.926
E-commerce	-2.095	0.754	-2.78	0.065	-3.572	-0.617
_cons	-8.557	2.343	-3.65	0	-13.150	-3.964

Number of observations:288 LR chi2(18) = 257.67 Prob > chi2 = 0.0000 Pseudo R2 = 0.6575 Log likelihood = -67.09975

Table 2: Determinants of Youth Participation

CONCLUSIONS

The study assessed the influence of various factors on youth participation in agribusiness in Mathira Constituency, Nyeri County. The study results concluded that gender, age, access to land, access to markets, access to training, access to credit, availability of farming technologies and availability of agribusiness information through social media platforms influenced agribusiness participation positively. Access to land and access to agricultural markets positively influenced youths' participation in agribusiness, as it increases their investment potential and ensures a reliable outlet for their produce, respectively. Access to training was the most reliable source of agribusiness information; access to credit provided youths with the necessary financial resources to establish agribusiness ventures and distance to the output market increased market responsiveness. The accessibility of farming technologies reduced the amount of physical labor required for various tasks, making farming more appealing to the youth. The study recommended that in order to increase youth participation in agribusiness, an agricultural youth fund should be established with the goal of improving access to financial credit and loans for youth to acquire land and other production resources for meaningful commercial agriculture. Assessing these factors aids in understanding the underlying issues that influence youth participation in the sector. The study findings provided necessary information helpful to youth, policymakers, and agricultural stakeholders to enhance youth employment in Kenya through participation in agribusiness.

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REFERENCES

Nagabhushana, P., & Sarkar, A. (2022). The Population Control Bill, 2021: Exploring newer perspectives. *Journal of Family Medicine and Primary Care*, *11*(7), 4113-4114.

Siddique, A., Nakseemok, P., & Liu, L. (2021). Youth leadership in a circular economy: education enabled by STEAM platform. In *an Introduction to Circular Economy* (pp. 597-622). Springer, Singapore.

Huijsmans, R., Ambarwati, A., Chazali, C., & Vijayabaskar, M. (2021). Farming, gender and aspirations across young people's life course: Attempting to keep things open while becoming a farmer. *The European Journal of Development Research*, *33*(1), 71-88.

Okolo-obasi, N. E., & Uduji, J. I. (2021). Does agri-business/small and medium enterprise investment scheme (AGSMEIS) impact on youth entrepreneurship development in sub-Saharan Africa? Evidence from Nigeria. *Journal of Economic and Administrative Sciences*.

Ntabakirabose, G., Tumukunde, R., Tuyisenge, J. C., Musabyimana, J. C., Mburu, D. M., Murindangabo, Y. T., ... & Senyanzobe, J. M. V. (2021). An Economic Analysis of the Impact of Contract Farming of Broccoli Production on Youth Development: A Case of Musanze District. *Innovation*, *2*(4), 56-66.

Geza, W., Ngidi, M., Ojo, T., Adetoro, A. A., Slotow, R., & Mabhaudhi, T. (2021). Youth participation in agriculture: a scoping review. *Sustainability*, *13*(16), 9120.

Kenya National Bureau of Statistics (KNBS) and Society for International Development (SID).

Ouko, K. O., Ogola, J. R. O., Ng'on'ga, C. A., & Wairimu, J. R. (2022). Youth involvement in agripreneurship as Nexus for poverty reduction and rural employment in Kenya. *Cogent Social Sciences*, *8*(1), 2078527.

Wamuyu, H. (2022). Improving Land Access by the Youth for Agriculture: Whither legal Incentives?. *KAS African Law Study Library*, *9*(1), 54-64.

County government of Nyeri. (2021). County government of Nyeri. *County Government of Nyeri Agribusiness Investment Opportunities*. https://www.nyeri.go.ke/investment-opportunities/

LaRue, K., Daum, T., Mausch, K., & Harris, D. (2021). Who wants to farm? Answers depend on how you ask: A case study on youth aspirations in Kenya. *The European Journal of Development Research*, *33*(4), 885-909.

Fox, L., & Gandhi, D. (2021). Youth employment in sub-Saharan Africa: Progress and prospects.

Girdziute, L., Besuspariene, E., Nausediene, A., Novikova, A., Leppala, J., & Jakob, M. (2022). Youth's (Un) willingness to work in agriculture sector. *Frontiers in Public Health*, *10*, 937657.

Akrong, R., & Kotu, B. H. (2022). Economic analysis of youth participation in agripreneurship in Benin. *Heliyon*, *8*(1), e08738.

Mulema, J., Mugambi, I., Kansiime, M., Chan, H. T., Chimalizeni, M., Pham, T. X., & Oduor, G. (2021). Barriers and opportunities for the youth engagement in agribusiness: empirical evidence from Zambia and Vietnam. *Development in Practice*, *31*(5), 690-706.

Njeru, L. K., & Mwangi, J. G. (2017). Influence of gender differences on youth participation in agriculture in Kajiado North Sub County, Kenya. *International Journal of Development and Sustainability*, *6*(8), 851-861.

Fasakin, I. J., Ogunniyi, A. I., Bello, L. O., Mignouna, D., Adeoti, R., Bamba, Z., ... & Awotide, B. A. (2022). Impact of intensive youth participation in agriculture on rural households' revenue: Evidence from rice farming households in Nigeria. *Agriculture*, *12*(5), 584.

Bello, L. O., Baiyegunhi, L. J. S., Mignouna, D., Adeoti, R., Dontsop-Nguezet, P. M., Abdoulaye, T., ... & Awotide, B. A. (2021). Impact of youth-in-agribusiness program on employment creation in Nigeria. *Sustainability*, *13*(14), 7801.

Ankrah Twumasi, M., Jiang, Y., & Owusu Acheampong, M. (2020). Capital and credit constraints in the engagement of youth in Ghanaian agriculture. *Agricultural Finance Review*, *80*(1), 22-37.

Sudarshanie, S. D. P. (2015). *Factors affecting on youth participation and satisfaction in occupation related to agriculture* (Doctoral dissertation).

Khumoetsile, O. S. (2021). *Effects of Social Media Platforms' Use on Youth Participation in Agriculture in Njoro Sub- County, Kenya* (Masters dissertation, Egerton University).