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Impact of Self Help Groups on Household Food Production in Nyakach Sub County, Kenya

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Abstract:

Studies have revealed that participation in Self Help Groups (SHGs) significantly improves household food security in some divisions in Kenya. However, Kisumu County has suffered highest incidences of food poverty in Kenya with 53.4% of the population living below the food poverty line compared to 8.4% in Nairobi. Similarly, Nyakach Sub County within Kisumu County, with a population of about 600 SHGs, also faces a poverty level of 48%. The purpose of the study was to investigate the impact of SHGs on household food production in Nyakach Sub County. Specific objectives of the study were to establish the impact of SHGs on income, yields, asset acquisition, and number of meals in a day by households in Nyakach Sub County. The target population was 234 farmer groups in the sub county. Through stratified random sampling, 157 households who were members of the targeted farmer groups were selected for questionnaire administration. Three committee members of these SHGs were also interviewed. Descriptive statistics and t-test for independent variables were used to analyse data. The study found that 73.5% of the SHG members in Nyakach Sub County ($P < 0.01$) realized the improvement of their households' income, physical assets, crop yields and increase in number of meals in a day. The findings registered 50% and 160%, 80% and 160%, 100% and 200% increase of minimum and maximum income, crop yields and household assets for SHG members after joining SHGs respectively. The study recommended the following: members should use credit risk mitigation techniques including covering their business activities with insurance to reduce the amount of defaulted loans.

Keywords: Food production, household, asset acquisition, income, meals taken, impact, self help groups

1. Introduction

Although most people on the planet currently have enough food, most people in Sub Saharan Africa still face food deficit (Porter et al., 2014). Food insecurity among households has ostensibly been attributable to inability to produce enough food crops in the face of climate changes on the side of rural households who, apparently, are the majority among small holding farmers (Ikelegbe and Edokpa, 2013). Perhaps this is due to low capacity to achieve adequate production of food crops among households in rural areas. Ericksen, et al. (2010) and Ingram (2011) assert that food production is the process of gathering/catching, growing, harvesting (production aspects), storing, processing, packaging, transporting, marketing, and consuming of food, and disposing of food waste (non-production aspects). These processes impact on availability and utilization of, and access to food. However, according to a study by Digo, Koros, and Muleke (2014), participation of women in Self Help Groups (SHGs) was found to significantly improve household food security in some divisions in Kenya.

It has been argued that people who are vulnerable to poverty, shocks, and poor livelihood coping methods often pulled themselves together as a way of mobilizing savings and other coping initiatives for future preparedness (Karlan and Zinman, 2010). It is further noted that these self regulating groups (Self Help Groups) enable members to save and obtain credit thus giving them the capacity to acquire assets, do small scale farming, and start some income generating activities (Rathinam and Akudugu, 2014). Although SHGs have been defined and conceptualized in different ways, this paper followed the definition provided by Rathinam and Akudugu (2014). They referred to the term Self-Help (SH) as the situation in which an individual or a group of individuals engage in activities aimed at promoting self-improvement in socioeconomic, intellectual, political and psychological conditions among others. Self-help Group (SHG) therefore refers to a group of people with common interests coming together to work to improve their living conditions. Thus, as reflected by NABARD (2002), SHG is a homogenous group of individuals who come together with the sole objective of collectively addressing their common problems or pursuing a common goal.

Therefore, poor people, through SHGs, are able to cope with sudden increased expenses associated with death, serious illness, reduced food production owing to climate variability (among other causes) and loss of assets (Rathinam and Akudugu, 2014). Such Self-Help Groups (SHGs) vary from those which accumulate savings and loan to members (Accumulating Savings and Credit Associations-ASCAs; Rotating Savings and Credit Associations-ROSCAs; and self-help groups which are neither ASCAs nor ROSCAs (Ledgerwood, Earne, and Nelson, 2013). However, the impact that these SHGs have on food production has not been measured based

on the level of production before and after joining SHG. Moreover, instances of food insecurity are still rampant among several households, some of whose members are in SHGs.

The Kenya Inter-Agency Assessment Group carried out a baseline survey for humanitarian needs assessment in Kisumu (KIRA, 2014) and established that Kisumu has a global acute malnutrition of 5.9% (categorized as poor) and Severe Acute Malnutrition of 2% as at October 2013. Equally, the rate of poverty (adult equivalent poverty head count) was found to be 46.8% higher than the national rate of 45.9%. The same study found that Kisumu County ranked 21 out of 47 of the counties facing poverty. Moreover, UNCF & WHO (2014) assert that 15% of children under 5 are moderately or severely being breastfed. It is prudent to note that the impact of interventions brought about by SHGs among communities in Kisumu County have not been proved, more so in respect of food production. Thus, the present study used one sub county (Nyakach Sub County), with about 600 SHGs (District Social Services Office-Nyakach, 2016; Nyakach District Development Plan, 2013-2018).

1.1. Statement of the Problem

The pooling of resources method adopted by SHGs is aimed at achieving basic needs for poor households who are unable to access credit and other basic resources. Despite these initiatives, Kisumu has the highest incidence of food poverty in Kenya, with 53.4% of the population living below the food poverty line compared to 8.4% in Nairobi. Similarly, Nyakach Sub County within Kisumu County, with a population of 600 SHGs, faces a poverty level of 48%. Although scholars have illustrated that membership to SHGs enhances improved income, crop yields, assets acquisition, and increased number of daily meals taken among members' households, there is little information to support this in Nyakach Sub County. Moreover, there had been a dearth of information concerning actual contribution of SHGs towards food production as well as household food consumption in Nyakach Sub County. Despite the existence and operations of SHGs in Nyakach sub-county, most households still continue to experience food shortages, and at worst food insecurity. The success stories attributed to SHGs on food security (among other benefits) in the world, parts of Africa, and Kenya remained untested in Nyakach Sub County. It was therefore important to establish the impact that SHG activities have on food production, and consequently food security among households in Nyakach Sub County.

1.2. Purpose of the Study

The purpose of the study was to investigate the impact of SHGs on household food production in Nyakach Sub County. Specific objectives of the study were to:

- i. Assess the impact of SHGs on household income in Nyakach Sub County
- ii. Establish the impact of SHGs on household food yields in Nyakach Sub County
- iii. Determine the impact of SHGs on household asset acquisition in Nyakach Sub County
- iv. Establish the impact of SHGs on household meals taken in a day in Nyakach Sub County

2. Literature Review

The World's efforts to meet the second target of Sustainable Development Goals (SDGs) of ending hunger and ensure access by all people to safe, nutritious and sufficient food all year round by 2030 (ICSU, ISSC, 2015), may be far from reach. This is owed to the fact that nearly 70% of food production is attributed to small scale farmers in rural areas, who lack adequate capital and necessary resources (Owuor, De Groote, and Wangia, 2004). With the world's population set to reach 9 billion by 2050, agricultural production will need to increase by 70% in order to meet the demand. The constraints faced by small holders in accessing credit services have resulted in the formation of informal groupings like ROSCAs and ASCAs (Mwaura, 2014). Such groups, according to Sundaram (2012), do not only help in saving and financial decision making but also assists in access to credit. Sundaram (2012) argues that SHGs afford members an opportunity to save regularly, access formal saving and lending institutions and participate in the management of these savings. These groups have impressively struggled to bridge financial shortfalls for a number of farmers. In India, Kumar (2009) found out that SHGs generate substantial income and have significant outcomes on household welfare. The quantity and quality of food consumed, the health of household members, and children's education have improved, thus contributing greatly to improving household welfare.

In a study that examined the impacts of MFIs in Cambodia, Cambodia Institute of Development Study (CIDS, n. d) noted that the annual net household income of borrowers was 21% higher than non borrowers (USD 2170 versus USD 1800). It further noted that besides the higher crop yields for borrowers, they had more assets (bicycles, car, land, television, radio, telephones) and owned land 1.3 hectares compared to or 0.9 hectares than non-borrowers. Still, another study aimed at measuring the effects of CBO microcredit in Bangladesh by Haque, Akter and Laoubi (2011) revealed that CBO microcredit programme had significant positive relationship with livelihood of the beneficiaries. It was noted that 96%, 84%, 60%, 44%, 50%, 76% and 80% of CBO beneficiaries perceived the improvement of their family income, members' awareness of social, economic and environmental aspects, food intake, health facilities, clothing, education and furniture possession respectively. A study by Swamy and Tulasimala (2010) examined the impact of SHGs on the food security and non-food consumption of weaker sections of the society in India, and found significant success in achieving the objective of economic development of the weaker sections of the society.

In Cameroon, Ngehnevu & Nembo (2010) established that savings through SHGs has a positive impact in the development of the members' businesses. These groups provide its members with financial and social intermediation services to help improve their businesses. In Ghana, Basoah (2010) maintains that the 'susu' scheme (a local name for ROSCAs) has had a significant impact on the economic empowerment of the market women interviewed; that the number of years of being a 'susu' contributor and the amount contributed per day do not explain the variability in the economic empowerment level of a market woman; that the majority of the

market women in the study had seen the benefit of the 'susu' scheme and; that the scheme has helped the market women to build up cash savings.

Another study done by Mwaura (2014) aimed at providing information on whether the use of farmer' groups approach in agricultural information dissemination is resulting in increased adoption of technologies and improved yields. It was found that membership to farmer groups in Uganda is low. Only 16 percent of household heads belonged to a group. Although membership to groups resulted in increased yields for banana and cassava farmers, negative impacts were observed for sweet potatoes, beans and maize. Group members were less likely to adopt inorganic fertilisers ($P < 0.01$) and improved seed ($P < 0.05$) than non-groups members. Magali (2013) applied the paired t-test and logistic regression analysis to assess the impacts of the rural SACCOS' loans on borrowers in Tanzania where 431 borrowers from 37 rural SACCOS in Morogoro, Dodoma and Kilimanjaro regions were involved. It revealed that 73.5% of the rural SACCOS' borrowers in Tanzania ($P < 0.01$) realized the improvement of their livelihood on education and health, physical assets, crop yields and business capital. The study registered the increase of 50% to 200% of minimum and maximum value of the impacts variables after taking loans and the study noted that the high impacts of loans and low default rate for borrowers were positively related.

In Kenya, Fafchamps and La Ferrara (2011) examined SHGs in an urban setting (Nairobi,) and emphasized the risk-sharing role of SHGs. They demonstrated that SHG composition was linked to how much collective action was taken toward the provision of public goods. They showed that the composition of members was linked to the financial benefits of membership. Another study by Digo, et al (2014) assessed household food security among women groups in Kaiti Division (Kenya) and revealed that household food security is significantly and positively influenced by participation of women farmers in women groups. However, the level of intensity of participation in group activities was found to not significantly influence household food security, and that linking with outside agencies was positively and significantly correlated to group performance measured in terms of benefits availed to the members through their groups (Digo, et al., 2014). Still in Kenya, Adoyo (2013) drew specifically on the distinction between member-based and government/donor supported Micro Credit/Microfinance models, using a case study of women Development Fund and OGUL Development Group (ODG) in Gem Constituency in Western Kenya. It revealed that while WEDF program exposes the beneficiaries to rigid conditions to acquire the small loans, OGUL has accorded its members the opportunity to upgrade/transform group (Chama) into a member-based-microfinance) where community members (men, women and youth) have the choices either to save or borrow small loans by way of co-guarantee mechanism.

Reviewed studies illustrate that SHGs have the potential to enhance or improve activities that group members are engaged in, like market business, farming, and household welfare. However, little focus has been made to establish how SHG activities impact on household food production and food consumption.

3. Materials and Methods

3.1. Study Area

The study location was Nyakach sub – county. With the new constitutional dispensation and the county governance, Nyakach Sub County is administratively in Kisumu County. It is located between Kericho County to the East, Homa Bay County to the West, and Nyamira County to the South East. The Sub-County is served by two tarmac roads (Kisumu-Kisii) and (Katito - Kendu Bay) and several murram roads in pathetic conditions. It is one of the seven sub counties of Kisumu County with others being Nyando, Muhoroni, Kisumu East, Kisumu West/Kisumu North, Kisumu Central and Seme. The population of the Sub-County is 139,589 which is 23.3% of the County's population (Central Bureau of Statistics, (CBS, 2014). The sub county is served by two rivers; Nyando and Sondu –Miriu with several other seasonal streams. Under normal circumstances, however, the two rivers provide water for rice growing by irrigation. Sondu-Miriu River also provides water for running Sondu –Miriu Hydro power Station which generates 60 megawatts of electricity to the national Electricity grid. The swamps along river Nyando in Lower Nyakach are best suited for rice growing under irrigation. Nyabondo Plateau with its red volcanic soil attracted brick making ventures which led to soil exhaustion and dereliction of land (Nyakach District Development Plan 2010-2015). The map of the study area is presented in Figure 1.

Nyakach Sub County was selected for this study for several reasons. First, agricultural products like maize, sorghum, cow peas, and sweet potato (among others) are the major food crops that households depend on in the area. Besides, many small-scale farmers belong to SHGs. The groups have been established to exist in the sub county as early as the 1980s (GOK, 1986). Therefore, the sub county provides a suitable case for this study and is applicable to similar groups of farmers in other parts of Kenya.

3.2. Research Methodology

A comparative research design was adopted, which involved comparison of impact of SHGs between groups. The research was conducted at two levels: a survey of existing informal savings and loan associations, combined with a survey of farm households, all conducted from March to May 2016. For both survey levels, a two-stage approach was used. In the first stage, six sub-locations were randomly selected out of the 12 in the sub county, this number being determined by limitations in time and finance. In each sub location a list of all the existing groups (67 in total) was established with key resource people. For each sub-location, 6 groups were selected randomly, and 7 for one sub-location with a particular large number of groups. All 37 groups were visited with a structured questionnaire, and a discussion was organized with the groups' committee (chairman, secretary and treasurer). In almost all cases, several group members also assisted. The discussion covered the group's leadership and organization, the mobilization of their funds, and the criteria and amounts in their lending program.

For the second stage of the household survey, a list of households for each sub-location was assembled and 15 households were selected from each sub-location (or 90 in total), using a stratified random sampling design. First, all households were split according to their membership of an informal credit and savings association. Since one third of the households belonged to such a group, they comprised the first stratum, and 5 households were selected randomly from that stratum for each sub-location. This resulted into 157 as the total sample size. The group discussions had revealed that about one third of the household members were able to secure a loan from the group each year. Therefore, the member households were split into another two strata: those members who had borrowed during 2015, and those first stratum for each sub-location, and three from the second stratum. The topics addressed in the questionnaires were household profile, amount of income, amount of food crop yields, households' asset acquisition, and number of meals taken in a day before and after joining SHGs.

Descriptive statistics involving measure of central tendency as well as t-test of independent variables were used to analyze the variables.

4. Study Findings

4.1. Groups' Organisation and Management Structure

All groups interviewed had the same basic structure. The management of the group was in the hands of the committee, composed of three people: a chairperson, a treasurer and a secretary. This committee also doubled as signatories to any official transactions in the group. Apart from this committee, the groups also had organising officers, who organise and facilitate contacts and meetings with external parties.

Group size varied between 5 and 45 members, with an average of 19 members. Women constituted the large majority of members (94%). The government requirement that self-help groups register with the Ministry of Culture and Social Services (through the Community Development Assistant), seem to have bore some fruit, since 94% of the interviewed groups had done so. On average each group met twice a month, with each member at a meeting contributing an average of 100 Kenya Shillings (Ksh) per person.

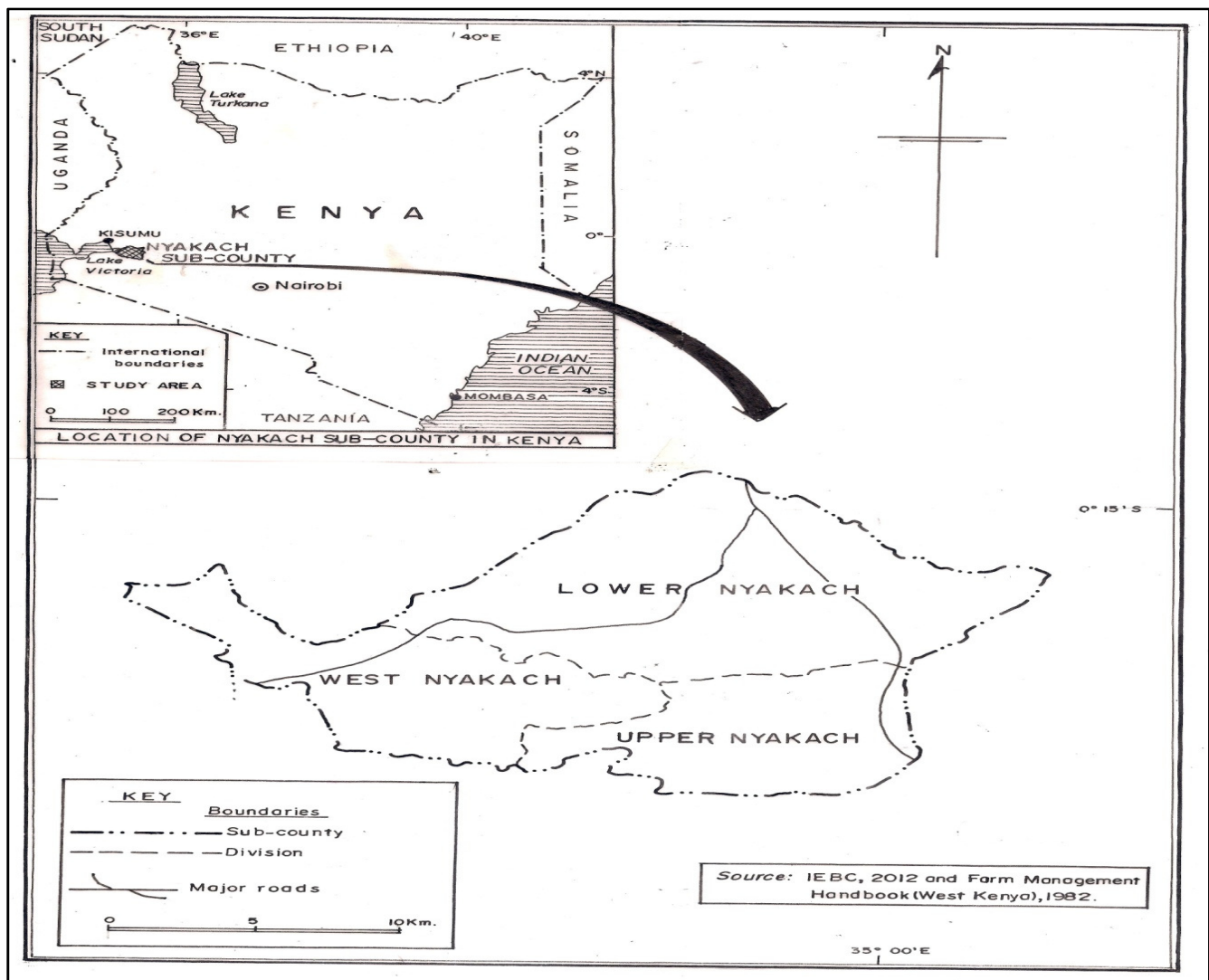


Figure 1: Map of Nyakach Sub County

4.1. Impact of SHG on Household Food Security

In assessing the impact of SHG on food security, the researcher investigated the impact on income, yields asset acquisition, and meals taken per day. Table 1 presents the descriptive analysis of the variables.

Variables (Measured Per annum)	N	Min.	Max.	Mean	Std Dev.
Income before joining SHG (Kshs)	157	30,000.00	50,000.00	21,400.00	32,230.00
Income after joining SHG (Kshs)	157	150,000.00	300,000.00	200,450.00	316,120.00
Yields before joining SHG (Kg)	157	124.00	1,824.00	568.35	648.15
Yields after joining SHG (Kg)	157	60,400.00	250,640.00	120,650.00	314,734.00
Assets acquisition before joining SHG (Kshs)	157	20,000.00	100,000.00	45,000.00	56,005.00
Assets acquisition after joining SHG (Kshs)	157	50,000.00	230,000.00	140,250.00	235,025.00
Number of meals before joining SHG	157	1.00	3.00	1.76	0.45964
Number of meals after joining SHG	157	2.00	4.00	2.86	0.364

Table 1: Descriptive analysis of Variables

The findings from Table 1 show that the SHG members experienced an increased income from a mean of 21,400.00 Shillings to 200,450.00 Shillings per annum after joining the groups. Similarly, results from Table 1 ($p < 0.01$) show that there is a significant increase of income before and after joining SHGs. These findings are in line with Kihongo (2005) and Digo, et al (2014) who reported the improvement of income by MFIs clients in Tanzania. Similarly, Grades (2007) revealed the improvement of income by Kenyan MFIs clients while Haque et al (2011) found an increase of income in Bangladesh where 96% of CBO MFI beneficiaries perceived the improvement of family income and Kyeyune (2007) who reported the increase of income by MFIs in Uganda, to mention a few.

Moreover, findings from Table 1 show that yields of SHG members increased from a mean of 568.35Kgs before joining to a mean of 120,650Kgs after joining SHG. Results presented in Table 1 also show that at $p < 0.01$, the minimum and maximum crop yields for members of SHGs increased significantly. The results of the paired t-tests before and after using loans show that the paired difference mean is -1,695.2. The mean difference value indicates the variations of crop yields from one member to another. The negative sign of the mean difference show that there is an increase of yields for members after joining SHG. The results from this study are in line with CIDS (n.d) who revealed that the use of SHG credit resulted in higher yields and better quality outputs for SHG members in Cambodia. Similarly, Magali (2013) revealed that 73.5% of the rural SACCOS' borrowers in Tanzania ($P < 0.01$) realized an improvement of their livelihood on education and health, physical assets, crop yields and business capital.

Equally, findings in Table 1 reveal that there is improvement in the number of meals (ostensibly due to improved income and crop yields) among members of SHGs in the area. The results ($P < 0.01$) shows that the number of meals before and after joining SHGs changed significantly. The findings show that the minimum and maximum number of meals before and after joining SHGs was 1 and 3 and 2 and 4 respectively. The results from this study are in tandem with Sharma et al (2012) who noted that the per capita expenditure on food consumption of MFIs member was higher than that of non-MFIs members in Nepal. Also the study noted that MFIs members' households consumed nutrient (dietary) food such as meat, milk, egg, fruits more frequently than non-member households. Similarly, Haque (2011) reported that 60% of CBO MFI borrowers perceived the change in their food intake in Bangladesh. Lapenu and Reboul (2006) revealed that 92% of MFI clients felt that the loan has helped them to improve their family's situation through food expenditure in Comoro while Brannen (2010) noted that Village Savings and Loan Association (VSLA) Program in Zanzibar-Tanzania improved food intake and the quality of meal for members. However, Diagne and Zeller (2001) did not find significant impact of access to credits on the per capita incomes, food security and nutritional status of credit program members in Malawi.

Table 1 also illustrates that asset acquisition for SHG members have increased from a mean of 45,000.00 to a mean of 140,250.00 Shillings after joining SHG. The results of the paired t-tests before and after taking loans from Table 1 ($P < 0.01$) also show that asset acquisition changed significantly. The findings of this study are consistent with Magali (2013) who asserted that MFIs' clients in Tanzania have increased their incomes and capital asset invested and therefore expanded their businesses and household assets. Correspondingly, Haque (2011) found out that 54% of the CBO MFIs perceived that their business assets have been improved in Bangladesh. Kihongo (2005) noted that 57.5% of VICOBA clients affirmed the growth of their business in Tanzania. Kyeyune (2007) also confirmed that 25% of the MFIs clients reported business expansion as the major economic contribution of microfinance in Uganda. Likewise Ngehnevu and Nembo (2010) revealed that Cameroon Cooperative Credit Union League (CamCCUL) had a positive impact on the development of the members' businesses in Cameroon as a few cases in point.

4.2. Paired T – test of the variables

In order to assess if there was significant differences on the changes of income, yield, asset acquisition and number of meals taken in a day before and after joining SHGs, paired t-test analysis was run by the researcher.

		Paired Difference					T	df	Sig (2-tailed)
		Mean	Std Dev.	Std error Mean	99% confidence interval of the difference				
					Lower	Upper			
Pair 1	Income before – after joining SHG	-755986	1299740	81713.8	-96807	-54390	-9.25	254	0.000
Pair 2	Yields before – yields after joining SHG	-1,695.2	3076	234.56	-2306	-1084	-7.23	171	0.000
Pair 3	Assets acquisition before – after joining SHG	-1165690	1970460	149811	-15559	-7755	-7.78	173	0.000
Pair 4	Number of meals before – after joining SHG	-1.01	0.66	0.06	-1.16	-0.87	-17.9	134	0.000

Table 2: Paired T-test coefficients of variables

5. Conclusions and Recommendations

By using descriptive statistics and the paired t-test, this study noted that 73.5% of the SHG members in Nyakach Sub County ($P < 0.01$) realized the improvement of their households' income, physical assets, crop yields and meals taken in a day. The findings registered 50% and 160%, 80% and 160%, 100% and 200% increase of minimum and maximum income, crop yields and household assets for SHG members after joining SHGs, respectively. For significant realization of impacts by SHGs among members, this study recommended the following: members should use credits risks mitigation techniques including covering their business activities with insurance to reduce the amount of defaulted loans. This is because high amount of the defaulted creditors lowered the intensity of impacts for borrowing amongst members. Moreover, credits should strictly be used to enhance food crop production and not for any other purpose. Further still, members should be trained on how to spend the credit obtained from SHGs before any credit is given out. This would help in enhancing skills on the usage of the extended facility (ies). Lastly, the regulatory authorities (for instance, the community development assistant and the SACCO regulatory authority) should extend their services to SHGs to enhance compliance with set rules.

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