Drivers to Participation in SHGs and Changes in Household Livelihood Constructs: A Longitudinal Survey in Nyakach Sub-County, Kenya

Paul Okello Atieno

[1]Kisii University: KENYA

Abstract
Poverty reduction and socio-economic challenges since 1990s attracted institutions named Self-Help Groups (SHGs) among communities. Literature abound linking SHGs with empowerment especially of women albeit with weak methodology and failure to measure changes in livelihood participation. Poverty level still increased in areas like Nyakach Sub-County where SHGs operate. Poverty level increased from 18% to 43% until 2019, representing 238% rise. The study purposed to establish how participation in SHGs changed constructs of household livelihoods in Nyakach Sub-County, Kenya. The study hypotheses tested; absence of significant difference in household food security before and after joining SHGs, absence of significant difference in household healthcare access before and after joining SHGs, and absence of significant difference in household social capabilities before and after joining SHGs. Using Symbolic Interactionism Theory a longitudinal survey design was applied on 9450 target population. A sample of 384 provided data at two points before joining SHGs and after joining. Mean values of the two periods were compared using z-statistics. Findings showed that through participation in SHGs, improvement in food security (M=3.60; SD=1.39) and improvement in social capabilities (M=3.53; SD=1.36) were highly changed. Improvement in healthcare access was slight (M=2.73 ; SD=1.04). A significant and positive improvement in livelihood constructs of the SHG members was observed thus rejection of the null hypotheses ($H0_1$; $H0_2$ and $H0_3$). Conclusively, participation in SHGs had significant potential of improving livelihood constructs of households. It is recommended that healthcare as a construct of livelihood should be institutionalised through SHGs for more community reach.

Key words: Improvement in Food Security; Improvement in Healthcare Access; Improvement in Social Capabilities; Livelihood Constructs; Self-Help-Group; SHG Participation

1.1 Introduction

Self-help groups (SHGs) have been common member – based institutions the world over : in Africa, India, America, Europe and in many countries of the world. Since the original model self-help group (Alcoholics Anonymous -AA- founded in 1935), it is estimated that over 1 million people were attending more than 40,000 groups among 100 countries all over the world during 1990s (Aikaruwa, Sumari & Maleko, 2014). These entities have emerged as a development strategy having a primary focus on poverty alleviation and empowerment of poor people. According to Saha, Annear and Pathak (2013), a SHG is structurally a small economically homogeneous affinity group of the rural poor coming together to form savings and credit organizations. The drivers to SHG participation therefore originate from the urge to improve various constructs of livelihoods of households such as food security, healthcare access, and social capabilities (Olarinde, Abass, Abdoulaye, Adepoju, Adio, Fanifosi……2020). However, studies that have investigated the drivers of SHG participation have tended to adopt methodological approaches incapable of measuring the level of changes in livelihood constructs.

Food security forms a critical household problem whose solution is captured in both the Milleneum Development Goals (MDGs) and the Sustainable Development Goals (SDGs), as observed by Mpofu, Tichakunda and Phuti (2019). The role of SHGs in tackling food security has been widely discussed

particularly with regard to the role they play in providing informal micro-credit (Raghunathan, 2018 ; Anand, Swati, Rolando and Hai-Anh, 2019). Nevertheless, most of these discussions have tended to rely on snapshot investigations hence could not expose changes in food security status. For instance, Anand, et al. (2019), used cross-sectional design to assess the impact of SHG participation on quality of life in India. Similarly, another study by Raghunathan (2018) used cross-sectional data to investigate whether women's self-help groups could be an effective way of improving women's empowerment in agriculture and production diversity.

Access to healthcare is another concern around which international conventions have argued for the involvement of SHGs. According to Nickel, Trojan and Kofahl (2016), one of the recommendations from the WHO to national governments is to ensure representation of self-help groups and organizations at all relevant levels in decision-making bodies as one way of ensuring consumer participation in the health care system. However, literature focusing on impact of SHG participation and access to healthcare still suffer from lack of methodological approaches capable of measuring changes in improvement over time. For instance, Saha, Annear and Pathak (2013) used the entire dataset from the third national District Level Household Survey from 601 districts in India to assess the impact of the presence of SHGs on maternal health service uptake. On their part, Frimpong and Mensah (2020) examined the impact of a VSLA program using both quantitative data from individual surveys, and qualitative data from Focus Group Discussions (FGD) and key interviews. It seemed clear from the work of Saha et al (2013) as well as Frimpong and Mensah (2020) that shortcomings exist in methodology regarding measurements of change in livelihood constructs (such as healthcare access) as documented by many studies.

Social capabilities as reflected in social networks, technology transfers, and decision-making have all been linked to participation in SHGs during the last three decades (Meena & Singh, 2013 ; Mushumbusi & Kratzer, 2013). It is however significant to note that studies on SHG participation and social capabilities have employed cross-sectional designs without bothering to measure changes in the phenomena over time. Highlighting this argument, Kirori (2015) collected data from 340 households in Nyeri County (Kenya) to examine the role of social capital on livelihood of rural households. On the other hand, Chitere (2018) used data from 23 SHGs from 9 Counties in Kenya to analyse how the groups were used as a means for development and welfare based on the self-help approach, the life cycle of self-help groups and the social capital conceptual perspectives. It should nevertheless be highlighted that social capabilities inherent in decision-making, social networks resulting from SHG participation has not been measured at points prior to participation and after participation in both Kirori (2015) and Chitere (2018). Most studies have also fallen victim to this shortfall. Measurement of livelihood constructs (such as food security, healthcare access and social capabilities) due to participation in SHGs was given consideration in this paper.

Livelihood has been described as comprising of the capabilities, assets (including both material and social resources) and activities required for a means of living (Carney, 1988, cited in Rahman & Akter, 2014). The Sustainable Livelihoods Approach (SLA) developed by the British Department for International Development (DFID) in their cooperation development program since 1997 has at its core the livelihoods of households (Scoones, 2009). It is however critical to note that how participation in SHGs has changed constructs of household livelihoods has not been empirically measured, based on the status of before and after joining the groups. Furthermore, such focus would be significant in areas which, despite the existence of several SHGs, poverty incidents are still rampant.

Nyakach sub-county in Kenya has experienced a rise in the numbers of SHGs from 20 in 1980s to about 796 in 2015 (Republic of Kenya, 2019). At the same time, poverty level had moved from 18% to 43% in the same period, representing 238% rise (Republic of Kenya, 2010). Scores of researchers (Anand et al, 2019; Mpofu et al, 2019; Frimpong and Mensah, 2020) have highlighted the virtue of SHGs in enhancing socio-economic status of members particularly women. However, how the factors that have been driving the SHG members to particpate in such groupings been achieved over time has not been empirically measured.

1.2 Statement of the Problem
Self Help Groups (SHGs) have been used as a vehicle for addressing various issues pertaining to poverty reduction and socio-economic challenges over the last three decades. Although large amount of literature

exists linking SHGs with empowerment especially among women, most of these documentations suffer methodological strength to measure changes in livelihood from participation in SHGs. Moreover, poverty levels in some regions in Kenya such as Nyakach Sub-County are still high despite existence of several SHGs in the area. In the Sub-County, poverty level has moved from 18% to 43% in the period up to 2019, representing 238% rise. The situation contradicts evidence from other developed countries across the globe particularly parts of Asia and Europe which show that self-help groups have positive influence on the overall development of society. There was therefore need to employ a longitudinal design to measure improvement in livelihood constructs of SHG members to gain insight into changes before and after joining SHGs in the Sub-County.

1.3 Purpose of the Study

The purpose of the study was to establish how drivers to participation in self-help groups have changed constructs of household livelihoods in Nyakach Sub-County of Kisumu County, Kenya

Specific objectives were to:

i.   Determine how participation in SHGs had changed food security status among households in Nyakach Sub County, Kenya

ii. Establish how participation in SHGs had changed healthcare access among households in Nyakach Sub County, Kenya

iii. Assess how participation in SHGs had changed social capability among households in Nyakach Sub County, Kenya

Hypothesis

$H0_1$ There was no significant difference in household food security among households in Nyakach Sub-County before and after joining SHGs.

$H0_2$ There was no significant difference in household healthcare access among households in Nyakach Sub-County before and after joining SHGs.

$H0_3$ There was no significant difference in household social capabilities among households   in Nyakach Sub-County before and after joining SHGs.

2.0 Empirical Literature Review

2.1 SHG and Food Security

Anand, Swati, Rolando and Hai-Anh (2019) investigated a women's self-help group program with more than 1.5 million participants in one of the poorest rural areas of Northern India to explore whether there was any evidence that program membership was associated with quality of life improvement. The program had four streams of activity in micro-savings, agricultural enterprise training, health and nutrition education and political participation. The data used for this study came from a sample of approximately 6,000 observations collected from women across all the 32 districts where the program was undertaken. Findings showed that a majority of capabilities assessed were positively impacted by program membership.

Still in India, Raghunathan (2018) investigated whether women's self-help groups could be an effective way of improving access to information, women's empowerment in agriculture, improved agricultural practices, and production diversity. The study used cross-sectional data on close to 3000 women from 5 states in India, and employed nearest-neighbor matching models to match SHG and non-SHG women along a range of predetermined characteristics. Findings showed that participation in a SHG increases women's access to information and their participation in some agricultural decisions, but had limited impact on agricultural practices or outcomes. Other constraints like income and social norms could be limiting the translation of knowledge into practice.

Mpofu, Tichakunda and Phuti (2019) sought to establish the impact of Self-help projects on the livelihoods of women at Esibomvu peri-urban settlement in Matabeleland, Zimbabwe. Purposive sampling was used to

select 50 women and 3 Community Development Officers in the area. Mixed methods research using both quantitative and qualitative methods of data collection was employed. Data were collected using interviews, questionnaires and focus group discussions. The findings of the study showed that Self-help Group projects transformed women's livelihoods, their families and communities.

Contributing on the same discourse, Wanjala (2012) examined the contribution of SHGs to household food security by comparing the food security status between members and non-members of SHGs. The study was conducted amongst 150 Self Help Groups operating within Kakamega Central District. The findings revealed that the factors that influence the effectiveness of SHGs were commitment and unity among members, transparency and good leadership, availability of funds and sound planning and managerial skills. The study established that members of Self Help Groups were more food secure as compared to non-members. The study established that the constraints facing Self Help Groups were inadequate funds, lack of adequate knowledge and necessary skills to run Self Help Groups, lack of group cohesion as a setback to members' progress, lack of transparency and poor leadership. Opportunities for SHGs included availability of loans and grants from micro-finance institutions and Department of Gender and Social Development respectively, which were not fully utilized.

2.2 SHG and Healthcare Access

Nickel, Trojan and Kofahl (2016) explored how patients were involved in the development of SHG by summarizing a number of studies on the importance and feasibility of SHG. In a series of participative studies, SHG was shaped, tested and implemented in 40 health-care institutions in Germany. Representatives from 157 self-help groups (SHGs), 50 self-help organizations and 17 self-help clearing houses were actively involved. Findings showed that patient involvement included the following: identification of the needs and wishes of SHGs regarding co-operation, their involvement in the definition of quality criteria of co-operation, having a crucial role during the implementation of SHG and accrediting health-care institutions as self-help friendly. The ten criteria in total were positively valued and perceived as moderately practicable.

Whereas Nickel et al (2016) looked at the importance and feasibility of SHG on health, Saggurti et al (2018) evaluated the effect of health intervention integration within women's self-help groups on collectivization and healthy practices around reproductive, maternal, neonatal and child health (MNCH) in rural India. Using a pre-post quasi-experimental design, a total of 545 SHGs were divided into two groups: a control group, which received the usual microcredit intervention; and an intervention group, which received additional participatory training around maternal, neonatal, and child health issues. Findings demonstrated that structured participatory communication on MNCH with women's groups improve positive health practices. In addition, SHGs can reach a substantial proportion of women while providing an avenue for pregnant women and young mothers to be assisted by others in learning and practicing healthy behaviors, thus building social cohesion on health.

In another study, Saha et al (2013) assessed the impact of the presence of SHGs on maternal health service uptake using the entire dataset from the third national District Level Household Survey from 601 districts in India. The primary predictor variable was presence of a SHG in the village. The outcome variables were: institutional delivery; feeding new-borns colostrum; knowledge about family planning methods; and if ever used family planning. Findings showed that the presence of SHGs in a village was associated with higher knowledge of family planning and maternal health service uptake in rural India.

Developing on the work of Saha et al. (2013) seven years later, Frimpong and Mensah (2020) examined the impact of one of a VSLA programs, commissioned by the Progressive Excellence Youth Organisation (PEYORG), using both quantitative data from individual surveys, and qualitative data from Focus Group Discussions (FGD) and key interviews. They found that participation in the program had an overall positive impact on various indicators of household and individual welfare, including asset expenditure levels, the development of Income-Generating Activities (IGAs), education expenses, access to health services, nutritional levels, and quality of housing. Such positive results were particularly encouraging given the long-term sustainability of the VSLA model - the program did not rely on outside donor funding and did not require continued support from the founding organization.

Isaboke (2017) sought to understand how and why self helps groups have been formed; the nature of activities they undertake and the benefits they bring to members; how they have been able to solidify their strengths and used them to integrate the communities. The study adopted descriptive cum case study research design and used content analysis technique. Findings showed that SHG members have been able to develop their talents, skills and abilities in different productive social and economic activities. For instance, they have been able to save whatever amount of money they can save every month and mutually agree to contribute to a common fund with a view to lending to their members for meeting their productive and emergent credit needs.

2.3 SHG - Social Capability and Livelihood

Nithyanandhana and Mansor (2015) analysed significance and effect of programmes by Self Help Groups (SHGs) by comparing empowerment levels before and after three years of programme intervention based on a survey conducted in the city of Chennai, Tamil Nadu. Quantitative methodology was adopted using the self-reporting method. Friedman test, Chi Square test and Anova followed by a DMRT test were used to measure the relationship between observed variables. The study revealed that levels of self-confidence and self-esteem of women increased indicating positive changes. The women in SHGs emerged as more assertive of their rights, in particular when dealing with the local community and on social matters.

A study by Olarinde et al (2020) investigated the effects of social capital on food security, using data collected on a cross-section of 775 cassava farming households from four zones of Nigeria. About 58% of the respondents (cassava farming households) fell under the intermediate category in terms of the benefits received from belonging in social groups. Age and educational level increased the probability to receive benefit from group activities ($p < 0.05$), while membership density, labor contribution and decision making significantly affected the level of benefit received ($p < 0.10$). Based on the estimated food security line, 41% of the cassava households were food secure, while 59% were food insecure. Membership density, cash and labor contribution significantly affected food security. Membership density ($p < 0.10$) and cash contribution ($p < 0.05$) increased the probability of being food secure.

Aikaruwa, Sumari and Maleko (2014) examined the social functionality of Self Help Groups (SHGs) in two wards of Shinyanga District (Samuye and Kizumbi) in Tanzania. In this study, data both primary and secondary was collected from the field using various data collection techniques including interview, questionnaire, focus group discussion and documentary review. The findings revealed that the groups were purely informal and people joined for various motives including credit and saving, social support and technical support. They therefore concluded that these groups had been beneficial to members both socially and economically.

Using quantitative and qualitative data from three regions of Tanzania, Mushumbusi and Kratzer (2013) explored whether women members of microfinance institutions (MFIs) were more empowered compared to non-members in non-program areas. The results showed a significant difference between the women members of MFIs and non-members in the dependent variables related to women empowerment. Women members of MFIs had more control over savings and income generated from the business, greater role in decision-making, greater self-efficacy and self-esteem, and greater freedom of mobility and increased activities outside home.

Chitere (2018) analysed how self-help groups could be used as a means for development and welfare in Kenya based on the self-help approach, the life cycle of self-help groups and the social capital conceptual perspectives. Data were collected from 23 self-help groups and their 15 members from nine districts (now, counties) of the country. It was found among other things, that leaders of the groups were aware of various problems of their communities as well as registration requirements for their groups. Most of the groups had been formed by local leaders with development and welfare concerns as their objectives. About 70 per cent of the groups had performed better compared to the remaining ones. However, among the characteristics of the groups studied, only their formalization in terms of better observance of corporate governance practices and number of activities they carried out explained their better performance compared to the other groups.

Contributing on social capital, Kirori (2015) examined the hypothesis that social capital has a crucial role to play in improving rural livelihoods. The study used primary data collected from a sample of 340 households from Nyeri district to demonstrate the linkage between social capital and rural livelihoods. The outcome of rural livelihoods was proxied by total household expenditure and by household poverty status. Descriptive and econometric methods were used to explore the nexus between social capital and rural livelihood outcomes. Results showed that social capital significantly affected total household expenditure and poverty status. There was evidence in the study area that social capital enables households to generate livelihood sources that support non-monetary forms of exchange. This non-monetary exchange seems to reduce transactions demand for cash and to facilitate household savings. Contrary to previous studies, it was found that total household expenditure was negatively associated with aggregate social capital. This finding suggests that social capital reduces household welfare.

It is worth noting that discussions on SHGs have significantly concentrated upon access to credit, social networks, food security and improvement in asset acquisition. More important to note is the fact that these discussions have not endeavored to measure changes in livelihood constructs such as changes in food security, healthcare access or social capabilities in before and after joining such groups. While it would be assumed that such SHG contributions would automatically lead to improved livelihood, methodological approaches used to undertake these investigations have tended to describe the situations as they exist at a particular time, without measuring changes in livelihoods attributable to participation in SHGs.

2.4 Theoretical Foundation
The study was founded on symbolic interactionism theory. According to Redmond (2015), symbolic interactionism theory postulates that we acquire symbols from interactions with society and other people which allows us to develop a sense of self and mind in our thinking. Societies exist because people are able to interact with each another through symbols. Originating from the thinking of George Herbert Mead (1863-1931), symbolic interactionism is the manner in which the individual is connected to the social structure and the possible interplay between the individual and others (Dong, 2008). In symbolic interactionism, the source of data is human interaction, while perspectives and empathy developing abilities of participants are the key subjects of symbolic interaction (Aksana, Kısaca, Aydına & Demirbuken, 2009). In SHGs, the interactions between members enable them to acquire knowledge which enhance their ability to expand their livelihood opportunities: food security, healthcare access, and social capabilities. These form the drive for pooling together resources (savings) to fend off poverty, mitigate lack of access to healthcare and fight social vulnerability.

2.5 Conceptual Framework
The interactions among SHG members bear a symbol of basic properties of human social interaction for fending off food insecurity, mitigating lack of access to healthcare services and

fighting social vulnerability among others (Dong, 2008). Information gained from interacting with members in SHGs enable members to build perspectives and empathy, further equiping them with the ability to nurture livelihood opportunities befitting each member (Aksana et al, 2009). It is thus conceptualized that SHGs built upon by symbolic interactionism influence livelihoods of households. Figure 1 presents the conceptual framework of the study.
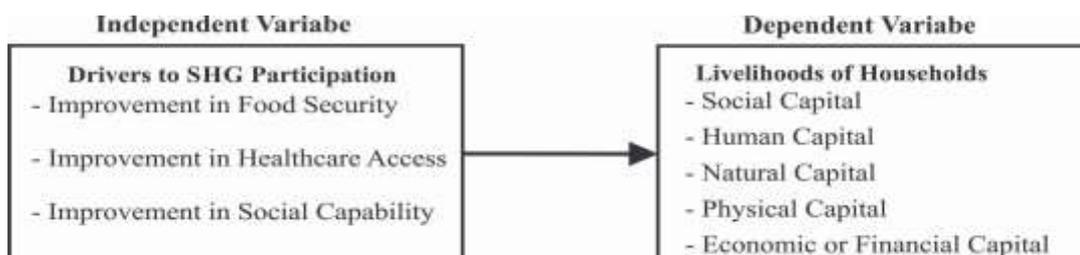

Figure 1 : Relationship between Drivers to SHG Participation and Livelihood of Households

The conceptual framework illustrated in Figure 1 indicates that drivers to SHG participation is denoted by improvement in food security, improvement in healthcare access, and improvement in social capabilities' drivers. These influence the livelihoods of households, the dependent variables in terms of their social capital, human capital, natural capital, physical capital, and economic capital.

3.0 Methodology and Materials

3.1 Research Design
This study adopted longitudinal survey design. Longitudinal surveys are administered to a population more than once with significant period of time elapsing between each administration of the surveys (Gay, Mills & Airasian, 2012). The main strength of longitudinal research is the capacity that it has to study change and development, enabling observation of people or events over time hence allowing the researcher to exercise a measure of control over variables being studied (Saunders, Lewis & Thornhill, 2007). This design fitted the study since it sought to describe how participation in SHGs has changed or improved the livelihoods of members' households in terms of food security, access to healthcare, and social capabilities.

3.2 Study Area

The study location was Nyakach sub-County of Kisumu County, Kenya. The area borders Lake Victoria to the East and lies to the 0.4 S latitude and 35 E Longitudes. It has a mean annual rainfall of between 1000-1500 mm (Republic of Kenya, 2013). The sub county covers an area of approximately 357.30 square kms and is divided into 3 administrative regions namely : west, lower and upper divisions. It has a population of 133, 041 (Republic of Kenya, 2013). Figure 2 presents the map of the area.
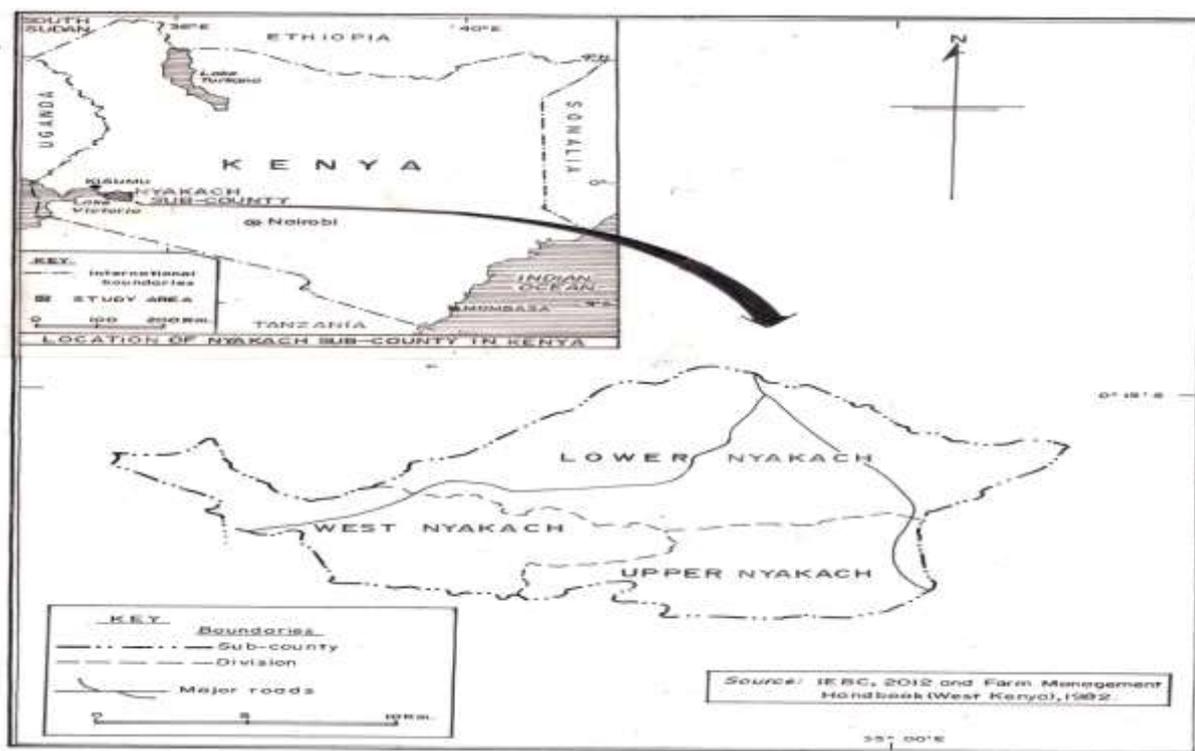

Figure 2 : Map of the Study Area

3.3 Target Population and Sample Size
Nyakach Sub County is made up of three (3) divisions. Accordingly, the target population of the study therefore was 630 self-help groups with a membership of 9450. The focus of analyses for the study was group members. This study adopted Yamane (1967 ; cited in Israel, 2012) formula to calculate the sample size of group members as shown below :

$$n = \frac{N}{1 + N(e)2}$$

$$n = \frac{9450}{1+9450\,(0.05)2} = 384$$

Where *n* is the sample size, *N* is the population size, and *e* is the level of precision (0.05).

Stratified random sampling involving dividing the population into homogeneous subgroups and then taking a simple random sample of *f = n/Nx sample size* in each subgroup was used to ensure equal representation of each division (Patton, 2002). Where *f* was the sample size of the sub group ; *n* was the population of the sub group ; and *N* was the target population. The sample distribution of SHG members was as shown in Table 1.

Table 1 : Sample Distribution of SHG Members

Divisions	Target Population (SHGs)	Membership (Group members)	Sample Size
Upper Nyakach	242	3630	148
Lower Nyakach	288	4320	175
West Nyakach	100	1500	61
TOTAL	630	9450	384

3.4 Data Collection Instruments

Data was collected using structured questionnaires. Survey research requires the collection of standardized, quantifiable information from all members of a population or of a sample. To obtain comparable data from all participants, the researcher must ask each of them the same questions. Surveys generally take one of two forms, questionnaires or interviews (Gay et al, 2012). Questionnaire was used to collect data from SHG members.

3.5 Validity and Reliability of Instruments

Instrument validity was measured by conducting construct validity measurements. Construct validity was attained through operationalization of the research variables, by ensuring that variable translation reflects the true meaning of the constructs (Creswell, 2014). To ensure instrument reliability, test retest method was done during pilot study with randomly selected 38 respondents. Internal consistency of the instrument was determined via the test/re-test reliability index using Cronbach's Alpha coefficient (Cronbach, 1970). This involved administering the same test on the same individuals at two different times (Kumar, 2005). The reliability test generated an Alpha coefficient of 0.849 which was greater than the threshold of 0.7 espoused by Nunnaly (1978).

3.6 Data Analysis and Presentation

For measuring the changes in livelihood constructs among SHG members, data were solicited on four-point continuum, viz. *No Change*=1, *Slightly Changed*=2, Highly *Changed*=3 and *Very Highly Changed*=4. The instrument used consisted of 9 items. The minimum and maximum possible scores were 9 and 36, respectively. The data were solicited from randomly selected 384 SHGs members in Nyakach Sub County. The data were recorded at two points of time, i e before (year 2016) and after (year 2020) joining the SHG. The mean values of two situations (before and after situation) were compared (*z*-statistics) to observe the change in constructs of livelihood among the SHG members. The overall change in livelihood constructs of SHG members was also measured and categorized based on mean value and standard deviation.

4.0 Results and Discussions

Changes emanating from participation in SHGs tend to vary from individual member to another, hence the significance in difference was measured using z-test. Table 2 presents the before and after SHG participation mean and z-test values of members obtained through longitudinal survey.

Table 2: Change in Livelihood Constructs among SHG members in Nyakach Sub County (N=384)

	After joining SHG		Before Joining SHG		Z
	Mean	SD	Mean	SD	Value
Improvement in Food Security					
Acquisition of food everyday	3.73	1.31	1.68	0.78	11.30*
Acquisition of 3 meals daily	3.48	1.48	1.77	0.82	9.64*
Ability to store food for future use	3.61	1.39	1.82	0.89	10.93*
Mean	**3.60**	**1.39**	**1.76**	**0.83**	
Improvement Healthcare					
Ability to afford treatment cost	2.74	1.43	1.59	0.69	7.19*
Knowledge and access to proper reproductive healthcare	2.78	0.85	1.72	0.75	7.56*
Ability to seek for testing and treatment of diseases	2.68	0.85	1.68	0.67	7.09*
Mean	**2.73**	**1.04**	**1.66**	**0.70**	
Improvement in Social Capabilities					
Ability to have strong decision-making capacity	3.48	1.39	1.81	0.82	9.65*
Ability to acquire farm/business loan	3.45	1.39	1.76	0.81	9.63*
Ability to be self-reliant	3.66	1.31	1.79	0.76	10.96*
Mean	**3.53**	**1.36**	**1.79**	**0.80**	
Overall mean and std. Dev	3.29	1.26	1.74	0.78	9.33*

Rating Scale : *No Change=1, Slightly Changed=2; Highly Changed=3 and Very Highly Changed=4; *Indicates that "z" value is significant at 0.05% level of confidence (df=383).*

According to Table 2, the overall mean value of before situation ranged from 1.59 to 1.81, however, its increase in after SHG participation ranged from 2.68 to 3.73. Through comparison of both situations, a significant improvement was observed. The *"z"* value was significant at 0.05% level of confidence (*df*=383). They experienced improvement in various livelihood constructs. Through participation in SHGs, improvement in food security (M=3.60 ; SD=1.39) and improvement in social capabilities (M=3.53 ; SD=1.36) were highly changed. However, improvement in healthcare access (M=2.73 ; SD=1.04) was slightly changed.

Whether participation in SHGs leads to a change in food security, Table 2 illustrates that acquisition of food everyday improved from a mean of 1.68 to 3.73 (SD=1.31), acquisition of 3 meals daily improved from a mean of 1.77 to 3.48 (SD=1.48), and ability to store food for future use improved from a mean of 1.82 to 3.61 (SD=1.39). Similarly, whether there was a change in healthcare access after joining SHGs, Table 2 indicates that ability to afford treatment costs changed from a mean of 1.59 to 2.74 (SD=1.43), knowledge and access to proper reproductive healthcare changed from a mean of 1.72 to 2.78 (SD=0.85), while ability to seek for testing and treatment of diseases also changed from a mean of 1.68 to 2.68 (SD=0.85). Finally, as to whether there was a change in social capabilities after joining SHGs, it was illustrated in Table 2 that the ability to have a strong decision-making capacity changed from a mean of 1.81 to 3.48 (SD=1.39), ability to acquire farm/business loans changed from a mean of 1.76 to 3.45 (SD=1.39), while the ability to be self-reliant changed from a mean of 1.79 to 3.66 (SD=1.31).

To test the research hypotheses that there was no significant difference in livelihood constructs before and after joining SHGs among members, a z-test for two-sample means was conducted. Table 3 presents the results of z-test.

Table 3 : Z – Test for Two- Sample Means of Livelihood Constructs Change

Instrument	Observation	After Mean	Before Mean	df	Z Mean
Change in constructs of Livelihood	384	3.29	1.74	383	34.83*

Overall, it was observed that there was a significant and positive improvement in livelihood of the SHG members in before and after joining SHGs (Table 3). Therefore, the null hypotheses (H0$_1$; H0$_2$ and H0$_3$) that : there was no significant difference in household food security among household in Nyakach Sub County before and after joining SHGs, there was no significant difference in household healthcare access among household in Nyakach Sub County before and after joining SHGs, and that there was no significant difference in household social capabilities among household in Nyakach Sub County before and after joining SHGs were rejected.

The overall change in livelihood constructs among SHG members was also measured and categorized based on mean value and standard deviation. Table 4 presents the overall change in livelihood constructs among SHG members during pre-membership and post-membership.

Table 4 : Overall change in livelihood constructs of SHG members in the Study Area (N=384)

Level of Livelihood change	Category Mean±SD	Pre-SHG Membership Mean= 47.13 SD= 4.09	Post-SHG membership Mean=70.46 SD=6.13	Overall pre-membership score	Overall post-membership score	Improvement in livelihood constructs (post-pre)
Very highly changed	<(Mean-SD)	21	26	46.1%	82%	35.9%
Highly changed	<(Mean-SD)	38	45			
Medium changed	Between (M-SD-M+SD)	251	276			
Less changed	> (Mean+SD)	74	37			

Table 4 illustrates that there was an overall improvement of 35.9% in livelihood constructs among SHG members. The table reveals that the pre-SHG membership score was 46.1%, while the post-SHG membership score reached up to 82%. An overall improvement of 35.9% was recorded in livelihood of SHG members.

4.2 Discussions
The study has revealed that constructs of livelihood are significantly improved via participation in SHGs. Household food security in terms of acquisition of food daily, number of meals consumed per day, and the ability to store food for future use was significantly improved through participation in SHGs. The findings concurs with Wanjala (2012) which revealed that members of Self Help Groups were more food secure as compared to non-members in a study that investigated the contribution of SHGs to food security in Kenya. However, these findings tend to contradict some previous studies which showed that participation in SHGs did not automatically result into changes in household food security. For instance, Raghunathan (2018) showed in a study done in India that participation in a SHG increases women's access to information and their participation in some agricultural decisions, but has limited impact on agricultural practices or outcomes, and in turn food security. The study attributed constraints like income and social norms as limiting the translation of knowledge into practice through SHGs. Similarly, Olarinde et al (2020), in a study which investigated the effects of SHG social capital on food security in Nigeria, found that 41% of the households were food secure while 59% were food insecure.

The current study also revealed that participation in SHGs slightly improves access to healthcare among members. Elements like the ability to afford treatment costs, knowledge and access to reproductive health, and ability to seek for testing and treatment of diseases had only slightly improved due to participation in SHGs. It therefore appears that there are factors beyond the ability of SHGs which constrains healthcare access among vulnerable populations. This finding however, contradicts earlier studies which have showed that presence of SHGs widens the opportunities of accessing healthcare within an area. In support of this assertion, Saha et al (2013) revealed in a study done in India that the presence of SHGs in a village is associated with higher knowledge of family planning and maternal health service uptake. Another study by Anand et al (2019) also showed that healthcare and nutrition education are positively impacted by SHG membership in another study done in India. It could therefore imply that though respondents in the current study could be aware of various options for healthcare access, issues like costs and distance may have created slight improvement in this livelihood construct.

The study findings have also shown that social capabilities have improved owing to participation in SHGs. Thus, the ability to have strong decision-making capacity, ability to acquire farm/business loans, and the ability to be self-reliant changed among members after joining SHGs. This points at social capital endowment. Indeed this concurs with Kirori (2015) which showed in a study done in Kenya that households with large social capital endowments are able to meet their basic needs through non-cash transactions. Social capital can enable households to increase consumption without cash expenditure, and without relying on self-purchased goods. Another study by Nithyanandhana and Mansor (2015) also showed that levels of self-confidence and self-esteem of women in SHGs do increase, indicating positive changes. The women in SHGs emerged as more assertive of their rights, in particular when dealing with the local community and on social matters.

5.0 Conclusions and Recommendations

It is concluded by the study that household food security and social capabilities are two livelihood constructs which highly improve owing to participation in SHGs. The social networks created through SHG participation enable members to acquire agricultural products without spending much cash. The study also concludes that healthcare access is moderately changed through SHG participation because of the costs of services and distance to health facilities. The study recommends that healthcare infrastructure should be built through SHG outreach at the grassroots so as to enhance coverage of as many needy populations as possible.

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