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counties, with a total household population of 194,513 was undertaken. The sub counties were purposively sampled forming the clusters of the study. Simple random sampling was applied to select a sample size of 399 households, and purposively selected 23 key informants and 10 FGDs. Data was collected using questionnaires, observation schedules, document reviews and interview guides. Qualitative data was thematically analyzed and presented as narrations. SPSS (version 24) was used to analyze the quantitative data. Descriptive statistics were analyzed through frequencies, percentages and means. Inferential statistics employed the logistic model. The findings show that the majority of the households belong to self-help groups (60.5%), welfare groups (50.1%). The main reasons for not joining groups are ethnic (27%), Social (36.8) and the lack of income (40.4%). The benefits derived from membership in social groups are credit access (69.2%), welfare (68.7%), technical advice (53.4%), market access (56.7%) and input access (65.7%). The binary logistic regression indicates that credit access and welfare are significant predictors of membership to a social group (social capital) – (χ^2) (1, N=367) =4.879, p=0.027 (<0.05) and (χ^2) (1,367) =27.679, p=0.000 respectively. The study recommends enhanced institutional support to mitigate barriers to group belongingness, enhance the distribution of group benefits and sensitize the community on the need to form and join more diversified farmers cooperatives and groups to enhance the benefits derived from membership in social groups.

1.0 Introduction

Agribusiness incubation plays a crucial role in empowering smallholder farmers to provide high-quality, sustainable agriculture production with an identified market destination (Haggblade *et al.*, 2012). The process facilitates access to basic production inputs, credit, capacity building, and

market-related information. It also provides an enabling environment through facilitating farmers' access to markets that acts as a catalyst for poverty reduction by improving business management skills and marketing strategies, access to knowledge and technologies required to meet quality and sanitary standards and provide adequate infrastructure.

Abstract

Globally, agribusiness is a critical driver of economic growth with strong multiplier effects. In Africa the benefits of agribusiness are highly constrained and yet there exists potential in agribusiness incubation that acts as conduit to secure livelihoods. The main objective of this study was to establish the linkage between social capital for agribusiness incubation and livelihood security. The modernization theory, neoliberal theory, and the DFID Livelihood Framework guided the study. The pragmatic paradigm was employed to the study. A cross sectional analysis of Bungoma North, Kanduyi, Bumula, Mt Elgon and Webuye West sub

Ideally, agribusiness incubation should enhance equity through ensuring that the economic gains in value chains are fairly distributed among the farmers by reducing market distortions, building relationships among various chain actors, strengthening farmers' organizations and traders (World Bank, 2011). The presence of social capital has the capacity of boosting a favourable setting for socially equitable friendliness within the society for sustainable agricultural practices, translating into secure livelihoods. Social capital facilitates community self-help, allowing communities to easily work together to solve their collective problems and determine their development. The building of social capital in agriculture practice is an important facilitator with a positive outcome in efforts for sustainable community development (Salau & Atta, 2012).

2.0 Literature Review

Social capital refers to the value of connectedness and trust between people and is one of the key assets for sustainable livelihoods. It is defined as 'the institutions, relationships, attitudes and values that govern interactions among people and contribute to economic and social development' (Grootaert *et al.*, 2002). Social capital enables collective action towards agribusiness incubation. The important features of social capital are relations of trust, reciprocity and exchanges, common rules, norms and actions and, networks and groups or connectedness. Connectedness can be considered from different angles: 'bonding' (within groups), 'bridging' (between groups) and 'linking' types, that is, with agencies concerned with agribusiness development (Pretty, 2003). Social capital includes social networks, norms or informal values, and trust that facilitate coordination and cooperation for mutual benefit and enhance the benefits of investment in physical and human capital (Albrecht *et al.*, 2013). Communities endowed with a diverse stock of civic associations and social networks are stronger in controlling poverty and vulnerability over time, absence of social capital in a group can bring fear of being left 'out of the loop' in committed networking (Ibrahim *et al.*, 2017; Narayan & Cassidy, 2001). Social capital helps in accelerating the development of wellbeing and sociality, as it is not the exclusive property of an individual but owned within different social groupings as a characteristic of the entire

social system (Ibrahim *et al.*, 2017). As social capital builds up, there are positive chances of community development due to its provision of repair networks that mend the trends of economic and political disintegration (Mayer & Rankin, 2002). Social capital is domiciled with specific individuals especially in the rural agricultural sector, and once mobilized for one purpose, can be conditioned for serving other customized purposes and it accumulates with continuous usage (Roseland, 2000).

Knox *et al.* (2004) observe that a collective action approach has proved to be effective in enhancing the empowerment of farmers in the innovation system. Groups enhance dialogue, facilitate the organization of field days, promote efficient use of resources, improve farmers' collective confidence, ensure that their needs are taken into account, and the reaching of consensus positions. They provide an opportunity to share ideas and labour and the exchange of information to create a multiplier effect, which facilitates the spread of relevant technologies.

Heemskerk & Wennink (2004) further affirm that one of the key forms of social capital in innovation development is the linking element, that is, the ability of social groups to act in their collective interest. The institutional view on social capital suggests that political, legal, and institutional environments are the main determinants of the strength of communities and networks (Grootaert *et al.*, 2002). Traditionally, the initiative for linking up with farmer groups for innovation has come from public agricultural research and extension. Currently, the initiative is coming from farmer groups and other local-level organizations themselves looking for support for their innovation systems.

The public and private sectors as well as communities/civil society have no access on their own to the resources to develop innovation for sustainable and equitable growth (Grootaert *et al.*, 2002). An enormous wealth of social capital for innovation, for learning-by-doing, exists out there in rural space, waiting to be mobilized into the formal agricultural innovation systems (Collion, 2004; Rondot, 2004; Place *et al.*, 2002).

Group Belongingness

The value of connectedness and trust that exist between people sustains development. An individual acquires social capital through participation in informal networks, registered organizations,

associations of different kinds and social movement; it can also represent the sum of these experiences. (Adepoju *et al.*, 2011).

Siriwardana & Jayawardena (2015) indicate that farmers gain mutual benefits from group activities. A social group is a stage where members meet and negotiate personal interests. Some members try to obtain power and status through groups and organizations. For example, farmer groups reduce transaction costs, improve marketing facilities, reduce the cost of cultivation, and facilitate other services. Similarly, Choupkova & Bjornskov (2002), note that other benefits of farmer groups include initiating and establishing a culture of cooperation and coordination for their benefits, conducting collective actions to overcome common problems, improving resource management strategies resulting in the growth of the local market and rural economy, developing networks among members and facilitate members to share ideas and find ways for mutual supports. Farmers' groups help extension agents to improve member farmers' knowledge and practical skills of agricultural technologies. A study by Autio & Wennberg (2010) reveal the strong group-level effects on entrepreneurial behaviours. This was further confirmed by Jayawardena & Abeyrathna (2013) in a study conducted in Sri Lanka in which they observed a significant relationship between the group interaction level and entrepreneurial behaviour of farmers.

The sustainability of local institution requires the participation of its members (Shah and Baporikar 2012). This promotes their sense of belonging and responsibility toward the program or institution (Munasib & Jordan 2011). Noteworthy are the social sanctions which significantly influence the members' behaviour regarding irrigation, farming, and other economic activities. They include water distribution and allocation, cropping pattern, cropping schedules, rituals, meetings, credit/loan mechanisms, membership, and management tasks. Social norms as a component of social capital can be measured in terms of knowledge, the attitude of members toward the internal regulations and the strength of the internal regulations to govern members and make them abide with the norms (Albrecht *et al.*, 2013). Social networks foster cooperative behaviour; ease coordination problems; raise awareness of new technologies; provide farmer-led, group-based

training in new practices; and maintenance of links with government agencies (Pretty, 2003). Involving stakeholders in early stages of development is of crucial importance as it leads to better targeting technologies; a greater sense of local ownership; economically securer livelihoods; the reduced time between initiation research and adoption; increased rate and pace of adoption; a greater impact on farmers' human and social capital and joint experimentation and sharing of innovations (Knox *et al.*, 2004).

Opportunities of Social Groups

Social capital helps to reduce poverty by availing useful information to the poor, improving growth and income redistribution. The existence of social ties can both be a blessing and blight; however, its non-existence can lead to denial of key resources. This is because it has important implications for economic development and poverty reduction as well as on the welfare of the poor by improving the outcome of activities which affects them. Social capital has the potential to improve the efficiency of development programmes by increasing agricultural productivity, management of common resources, and people or households, water, sanitation, credit and education. Okunmadewa, *et al.* (2005) study indicates that social assets include norms, values and attitudes that predispose people to cooperate with others based on trust, reciprocity and obligations. These are connected and structured in networks and groups and enhance and strengthen other forms of capital. This recognition probably explains the promotion of social connectedness as an important requirement for the poor to benefit from some of the public instituted poverty reduction programme. Group formation (social network) is now seen as a requisite for the poor to benefit from some of the public instituted poverty reduction programmes (Adepoju *et al.*, 2011).

3.0 Study Methodology

Conceptually, the study focused on social capital for agribusiness incubation and its implication of livelihood security in Bungoma County. However social capital is not the only capital that is adopted in agribusiness incubation. There are other capitals which include the physical, natural and financial for agribusiness incubation. The adopted mixed methods approach. A sample size of 399 household heads was randomly selected from the target population of 194,513 households based on the Robert V. Krejcie and Dayle N. Morgans. In addition 28 key informants were interviewed and 10 focus group discussions were carried out.

**4.0 Results and Discussions
Social Group Belonging**

The study sought to establish a variety of social groups that households belong to. Group membership is a strong indicator of livelihood security.

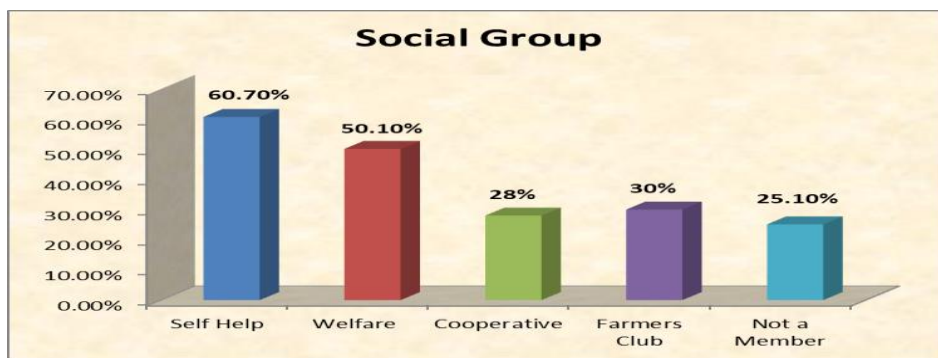


Figure 1: Social Group that Household Belongs
Source: Researcher, 2020

The majority of the household heads belong to a self-help group at 60.5% and welfare group at 50.1%. The focus group discussions revealed that inclusion into cooperatives was restricted mostly to farmers who were in coffee and dairy farming. Groups were created to synchronize agripreneurs actions and achieve goals which cannot be accomplished alone resulting into great impact on livelihoods. Association with groups develops individual senses, enhances self-awareness and general behaviour regulation.

Membership in farmer organizations or groups is positively associated with increased market participation. Collective action is critical in facilitating access to information and credit that are relevant in accessing market opportunities. A group of smallholder farmers join forces to have better access to credit and obtain better credit terms. Organizations of smallholder farmers have many advantages and are set up to serve the interests of the

members and to be directed and managed by them. The provision of services is driven by members’ and market needs. The associations also provide a forum where all members have equal rights and can voice their concerns, for example, they could raise the issue of road maintenance and lobby for better service. The formation of associations among smallholder farmers enables donor sponsored projects to be delivered in a far more cost-effective manner and training can be more easily carried out. The sub-county agribusiness officers prefer to use the group model to reach the community. They also prefer other stakeholders to channel their support through the same common interest groups. Belonging to a social group increases the chance for capacity building and other institutional support as well as acting as collateral for credit institutions. Other advantages include: knowledge sharing, sharing risks, reducing costs on feeds, veterinary services, repairs and maintenance, more bargaining power in setting selling rates and

having more capacity to transport materials among others. In some cases, professional staff may be hired to manage an association of smallholder farmers. Such associations not only provide an effective means for self-realization and capacity building of their members but have important spillover effects within the wider community. Associations increase rural mobility and create a demand for associated services, generate employment opportunities,

strengthen the democratic process, and encourage dialogue in the local community.

Reasons for not Joining Group

The study further sought to understand the barriers to joining the social groups. Social groups reinforce the accomplishments of households and there are a variety of groups in existence.

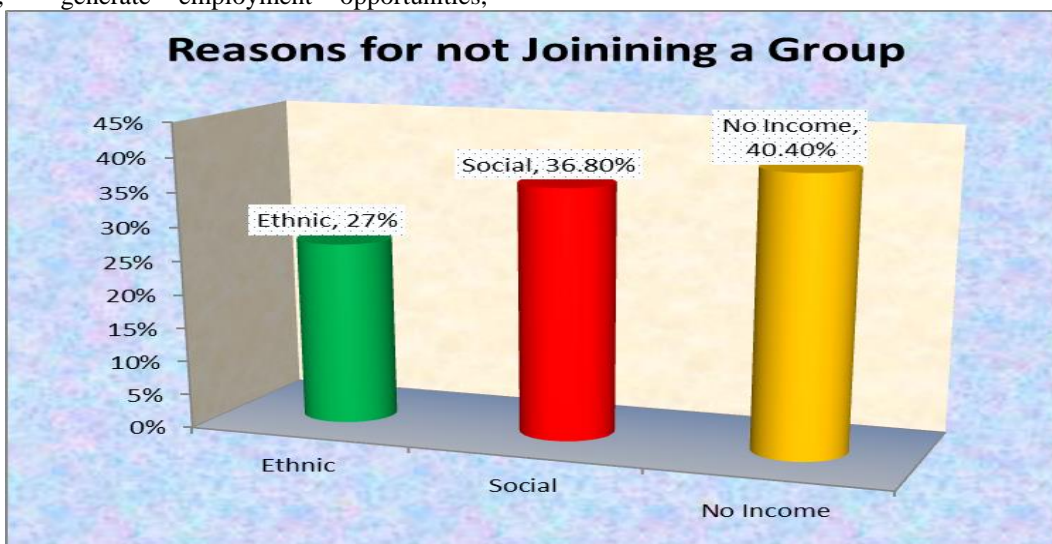


Figure 2: Reasons for Not Joining Groups
Source: Researcher, 2020

The study findings indicate that the reasons for the agribusiness oriented households not joining groups include the lack of income at 40.4%, social class at 36.8 and ethnicity at 27%. Though the households face barriers to the joining of social groups, these reasons do not entirely exclude them from joining social groups. The low-income levels act as a barrier to group inclusion because most groups charge membership fees and rotational funds to support members. The group projects in most cases require equal contributions from each member so that the benefits can be shared equally. The focus group discussions revealed that groups existing now as

farmer or agribusiness groups were initially formed for the welfare mandate and converted to meet economic needs and donor requirements. In most cases, members evade the risk of incorporating strangers. From their experiences, default cases from members are higher from the engagement of strangers whose group loyalty levels are weak and cannot be easily traced when they relocate.

Benefits Derived from Membership in Social Groups

Additionally, the study sought to establish the benefits derived from membership in social groups.

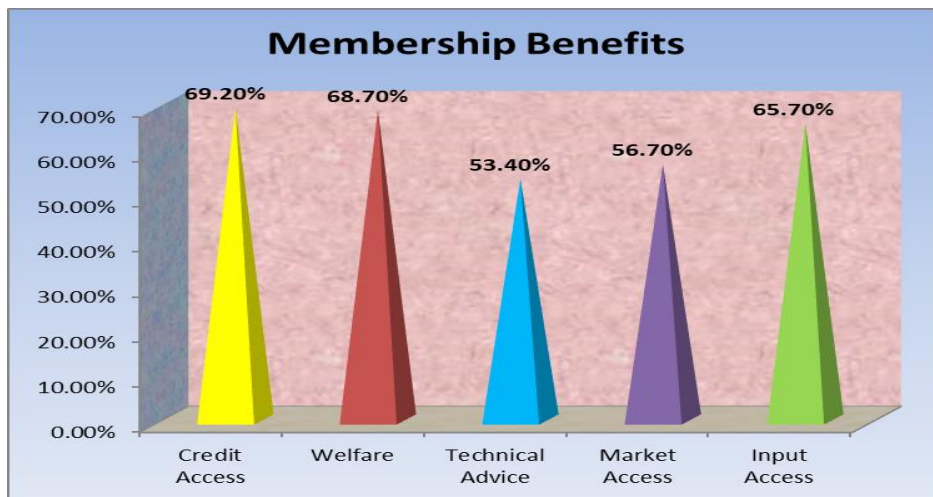


Figure 3: Benefits Derived from Membership in Social Groups
Source: Researcher, 2020

The findings showed that the benefits derived from membership in social groups was in terms of credit access at 69.2%, welfare benefits at 68.7%, input access at 65.7%, market access at 56.7% and technical advice at 53.4%. Social groups are beneficial to the household's access to credit, technical advice, markets and inputs which are crucial in the agricultural transformation that feeds into agribusiness uptake translating into secure households. Group membership acts as an avenue for sharing technological information and may facilitate access to services such as credit and extension.

Through membership in social groups, households access credit and market their produce. These groups help strengthen household links to markets and diversify their economic activities. Cooperatives generate employment, increase income of the members, and provide social protection through educating members. For example the coffee savings and credit cooperatives provide development loans for housing, solar installation and water harvesting. The loans have enabled members to improve their standards of living. Agriculture generally is a risky venture requiring social cushioning of the households from the losses. The fact that most of the Bungoma dwellers are small scale farmers, collective action of the households helps them to borrow money in groups, share technology, attract institutional support services and pool supplies to meet the threshold demanded in the markets.

Social Capital and Membership Benefits: Logistic Model

Logistic regression is used to predict a categorical (usually dichotomous) variable from a set of predictor variables. It is often chosen if the predictor variables are a mix of continuous and categorical variables. For logistic regression, the predicted dependent variable is a function of the probability that a particular subject will be in one of the categories (for example, the probability that one is a member of a social group or not)

Membership to a social group was coded = 1, non-membership to social group = 0. The regression model predicted the logit, that is, the natural log of the odds of being a member of a social group or otherwise against the benefits associated with this membership. The general logistic regression is given by;

$$P(\text{Event}) = \frac{1}{1 + e^{-z}} \text{ where } \hat{y} = b_0 + b_1X_1 + \dots + b_nX_n \text{ ----- (1)}$$

Where \hat{y} is the predicted probability of the event which is coded with 1 (membership to a social group) rather than with 0 (not a member of a social group). The predictor variables (X_i) were; Credit access, Welfare, Technical advice, Market access and Input access

$$Y = b_0 + \beta_1X_1 + \beta_2X_2 + \dots + \beta_nX_n \text{ ----- (2)}$$

Applying the natural log

Logit(y)= natural log(odds) = $\ln\left(\frac{\pi}{1-\pi}\right)=$
 $Z= \beta_0 + \beta_i X_i$ -----(3)
 To conduct the logistic regression, a model specification test was conducted to establish whether the logistic regression was the best model to fit in the data.

Logistic Regression Analysis

Table of Logistic Regression Analysis of Benefits of Social Groups

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
							Lower	Upper
Credit access	.220	.100	4.88	1	.027	1.247	1.025	1.516
Welfare	.563	.107	27.68	1	.000	1.756	1.424	2.165
Technical advice	-.212	.140	2.307	1	.129	.809	.615	1.063
Market access	-.084	.137	.374	1	.541	.920	.703	1.203
Input access	.075	.123	.374	1	.541	1.078	.847	1.374
Constant	-2.502	.311	64.78	1	.000	.082		

Source: Researcher 2020

The result in Table 1; shows that the predicted logit of (Membership to a social group) = -2.502+ .22(Credit Access) +.563(Welfare) - .212(Technical Advice)-.084(Market Access) +.075(Input Access). The binary logistic regression indicates that credit access and welfare are significant predictors of membership to a social group (social capital) – ($\chi^2(1, N=367) =4.879, p=0.027 (<0.05)$ and ($\chi^2(1,367) =27.679, p=0.000$ respectively). The other three predictors, that is, technical advice, market access and input access are not significant predictors of membership to a social group. All the five predictors explained 77.9% of the variability of social capital for agribusiness livelihood security. The odds ratio (OR) for credit access is 1.247 at 95% Confidence Interval. This implies that a member of a social group is 1.2 times likely to get credit access as compared to a non-member Exp(B)= 1.24. Similarly,

A two-predictor logistic model was fitted to the data to test the research hypothesis regarding the relationship between the likelihood that social capital (belonging to a social group) is associated with membership benefits (livelihood security). The logistic regression analysis was carried out by the Logistic procedure in SPSS version 23. The results of the overall model evaluation for logistic regression analysis of 367 respondents for the benefits of social capital on group membership are shown in Table.

a member of a social group is 1.76 times likely to benefit from welfare as opposed to a nonmember (Exp (B)=1.76). However, social group membership was not dependent on the remaining three predictor variables. The model correctly predicted 88.7% of cases of non-membership to a social group and 45.7% of cases of membership to a social group, giving an overall percentage correct prediction rate of 77.9%.

5.0 Conclusion

Social capital holds a strong position to confront poverty and vulnerability, resolve disputes, and share beneficial information for the agripreneurs. Households utilize the social groups to cope with the risk of income fluctuations, access to credit, welfare aspects, dispute resolution and enhance economic achievement through increased trust and lower

transaction cost. All of these mechanisms potentially affect welfare and alleviate poverty. Barriers to group inclusion are eminent which include income, social class, ethnicity and group loyalty. The study concludes that credit access and welfare are significant predictors of membership to a social group. The study recommends for institutional support to be harmonized with that of the common interest groups, to mitigate the barriers to joining groups and enhance the distribution and sustainability of group benefits. The community should be sensitized to form and join cooperatives and farmers groups in order to enhance the benefits derived from social groups.

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