

Influence of Members' Education Level Externality on Growth of Savings and Credit Co-operative Societies in Uasin Gishu County, Kenya

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Abstract

Member education levels is immensely an indispensable knowledge resource that may be fostered through co-operative education to improve member participation on contribution towards co-operative growth. However, in the recent years, most co-operative education programs target the co-operative board members and employees. This leaves aside members yet they are the decision makers, owners and patrons of co-operatives thus inhibiting their potentials from being fully used in aiding co-operatives growth. The purpose of this study was to examine the effects of member education levels externalities on growth of Savings and Credit Co-operative Societies (SACCOS). Absorption capacity theory guided the study. The theory states that absorption capacity is a set of organizational routines and processes, through which organizations accept education, learnt, assimilate and use acquired knowledge to transform. A sample of 147 SACCOS and 384 members were drawn with the aid of purposive and simple random sampling techniques. The research design used was cross-sectional while survey, in-depth interviews and focus group discussion were data collection techniques; data were analyzed using binary logistic regression and content analysis technique. Results revealed that member education levels have spillover effects that are significant predictors of member participation; the p values were all less than 0.05 at 0.05 significant level on share capital contribution. The member education level aspects that contribute to SACCOS growth were education attainment, literacy, occupation and knowledge. Co-operative education knowledge in member education levels contributes to spillover effects like innovation, watchdog role and building trust and loyalty. The study recommended SACCOS to tapped and utilize member education levels externality by enhancing mandatory provision of co-operative education to all members; mainstreaming co-operative education on education levels under strict supervision of the Ministry of Co-operatives and SMEs.

Keywords: Member Education Level Externalities Growth

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INTRODUCTION

Globally, co-operative movement distinctly play a critical role in economic development, it contributes an estimated UD\$ 2.2 trillion and employ about 12.6 million people; there

are over 2.6 million co-operatives with a membership of about 1 billion (Limnios, *et al.*, 2018). Savings and Credit Co-operative Societies (SACCOS) are one of the notable types of co-operatives defined as an autonomous voluntary association owned

and controlled by their members to promote savings and give credit (ICA, 2017). Although SACCOS spur economic development, dynamic complex business environment poses a threat (UN, 2023). In response, business enterprises have introduced continuous education to better knowledge capacity for survival and growth (Braunerhjelm *et al.*, 2018). Member Education Levels (MELs) are a classification of educational attainments specified by award of a primary, secondary or tertiary certificate (Olive *et al.*, 2018; Kocourek and Nedomlelova, 2018; Cardona, 2017; Kumbhat, 2016). It is streamlined and strengthened by Co-operative Education (CE) to improve an understanding on co-operative identity. Improving members' knowledge on co-operative understanding fosters teamwork, business loyalty and stimulates participation on share-capital contributions. However, in the recent years, experience point out that most CE programs do not target members limiting the benefits (externalities) from MELs. Aghion and Jaravel (2015) externalities definition was adopted in the study; it states that they are spillover benefits, which occur to an enterprise without cost implications. The idea of enlightening members about co-operative character originated from England among the Rochdale Pioneers in 1844 when they started their co-operative society by first educating members (Soni and Saluja, 2016). Providing CE positively affect participation outcomes (Jimenez *et al* 2015). It also helps to comply with the fifth International Co-operative Education Principle (ICA, 2017; Clamentina *et al.*, 2016; ICA, 2016; Sumelius *et al.*, 2015). Since colonial times, third world countries had a policy of educating co-operative members to augment MELs, in East Africa; Jeans School was built in 1951 at

Kabete in Nairobi to train co-operators prior to Moshi College (Kobia, 2014). Kenyan CE policy according to Co-operative Act 490 of 2012 aim at expanding and encouraging co-operative sector driven learning that creates well informed and enlightened team. Kenya has about 15 000 SACCOS that contributes over Kenya shillings 1.4 trillion, which accounts for 45% of the total national savings (Muturi, 2015). Limited empirical related studies on CE and co-operatives growth including Kinyuira (2017); Kumbhat (2016); Lebowski (2015) have concentrated on explaining the importance of co-operative education, training and information in co-operatives to employees, managers and committee representatives leaving the members aside of it. Given that members are the patrons, decision makers and owners, they contribute most to the effective running of the co-operative enterprises if co-operative education is provided to them. From this limitation, scholars equally have not directed research on the link between members and co-operatives' growth leading to scarcity of clear information. Growth is an increase in quantity and quality, in this study it means increase in share capital while influence is the power to produce an effect on character, development or behavior. The purpose of this study was to examine the influence of MELs externalities on growth in SACCOS. Specifically, the study (i) analyze MELs on share-capital contributions and (ii) determine MEL aspects influencing share capital contributions. Absorption capacity theory by Cohen and Levinthal (2023) guided the study. The theory states that absorption capacity is a set of organizational routines and processes, through which organizations accept education, learnt, assimilate and use acquired knowledge to transform. It assumes that accepting new knowledge help

organizations to increase innovativeness. The theory is related to the co-operatives fifth principle, which posits that CE should be provided to members to create strong leadership capable of effectively running them. Absorption capacity theory emphasizes that organization having structures that make learning hard closes avenues for realization

of competitive advantage and make growth agenda difficult to achieve. This study is based on the hypothesized concept that MELs interaction with CE increases member participation on share capital contribution through innovations, watchdog and building trust/loyalty.

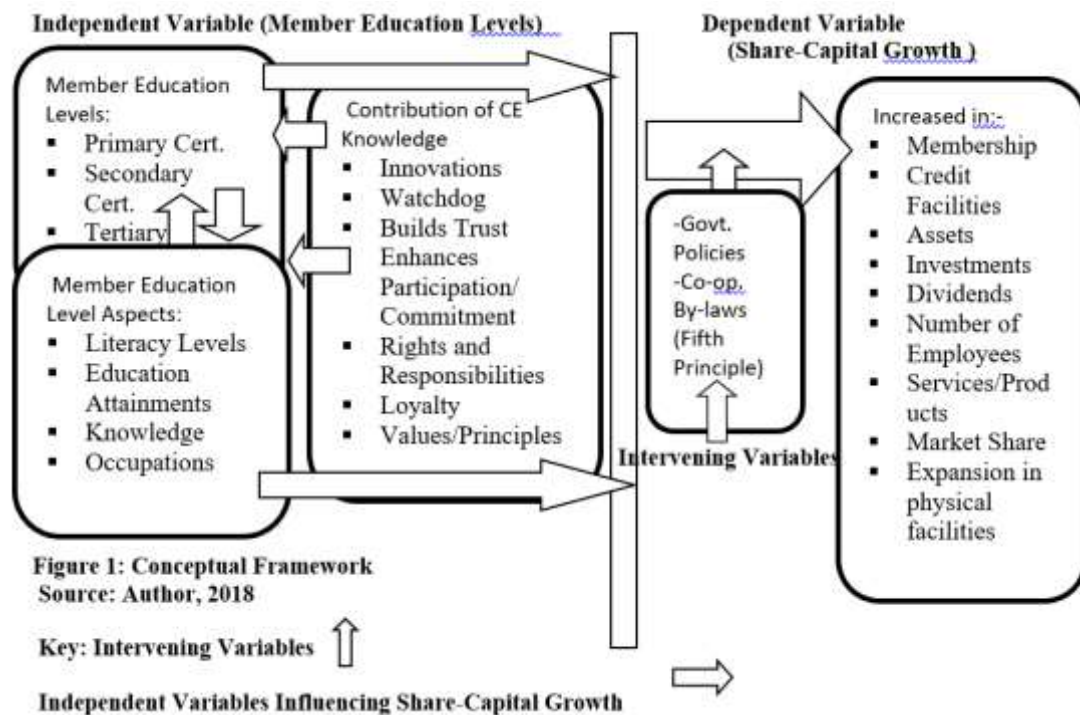


Figure 1: Conceptual Framework
Source: Author, 2018

METHODOLOGY

Study Area and Research Design: The study area was Uasin Gishu County in Kenya. The County was chosen because according to the Ministry of Co-operative and SMEs, statistics and National Transport and Safety Authority, NTSA (2017), it is a County with many SACCOS (238) than any other County in Kenya. The County is located in Northern part of Rift-Valley with its headquarters being in Eldoret. Research design adopted was a cross-sectional survey whereby data was collected from a single point at a time by capturing all the information of the state of a large member and SACCOS population and using it to

generalize the findings as recommended by (Rukwaru, 2015). The chosen design was used to perform binary logistic regression analysis and was also prevalent on precise and detailed description of the effect of interaction of MELs aspects over dependent variable share capital contributions at a time. The study adopted cross-sectional survey design because it is effective on description of interaction of one variable over the other, which was the same as MELs aspects and CE interaction on growth.

Sampling Technique and Sample Size: The sampling units for this study were all SACCOS and SACCOS members in Uasin

Gishu County. According to Uasin Gishu County Co-operative records at the time of study, there were 238 SACCOS with an estimated over 450,000 members. Cochran

sampling technique formulae for calculating sample size when population is infinite and finite was employed.

Table 1: Sampling Frame

Unit	Total Population(N)	Sampling Procedure	Sample Size(n)
All Members in SACCOS in Uasin Gishu County(Unit of Observation)	Infinity	Cochran(1977) Formula Used for infinite population	384
All SACCOS in Uasin Gishu County(Unit of Analysis)	238	Cochran(1977) Formula Used for finite popula.	147

After sample size had been determined, simple random sampling technique was applied to get 384 members. To sample SACCOS, simple random sampling technique lottery method was applied in which 238 disks were made to represent each SACCOS using code numbers labeled from one to 238. The list of the total SACCOS was obtained from the County Co-operative Officer. They were then placed in a container; mixed well then 147 disks were picked. When selection was complete, they were listed using full names of the SACCOS. For the members, Cochran formulae gave 384 members; these members were sampled from 147 SACCOS. To get the number of members, 384 were divided by 147 SACCOS, which gave an average of two members per SACCOS. Therefore, an average of two members on sampled SACCOS was picked randomly using simple random sampling technique. Simple random sampling was engaged by the study because according to Flick (2011) and Babbie (2013) it avoids bias and assures each individual an equal chance of being chosen.

Data Collection: Quantitative data were collected using questionnaire survey while qualitative data were collected through in-depth interviews and Focus Group Discussions (FGD) techniques. Further, the study problem was explored by obtaining

more information from managers and County Co-operative Officers who served as key informants. For questionnaire, both close and open ended were prepared. Interview was in-depth especially on MELs that gave insight information, which was administered by researcher. Questionnaire and interview checklists were simplified to make it easier for members to understand. This is because most of the SACCOS members were in school a long time ago. Before the instruments were administered, reliability tests were ascertained by carrying out pretests to remove vagueness and ambiguities in the neighboring County. Nandi County was used to pretest the instruments at Boresha SACCOS, Nandi Youth Bunge SACCOS, Nandi-Hills Ukulima SACCOS and Nandi County (MITCD). For validity, other conditions that could have influenced dependent variable were isolated and controlled through research design, which guaranteed results the possibility to be used to generalize. Measurement instruments, content and criterion validity was checked by ensuring that instruments captured exhaustively all the essential aspects and results of one measure corresponded with another respectively.

Data Analysis: Qualitative data were analysed using content analysis technique with a goal of discovering useful information,

messages or suggestions. Data collected from questionnaire, interview-checklists, FGD and documentary review were processed by putting into broad themes in rows and columns. Content were summarized to skip less relevant information, filtered out to certain domains, looking for salient features to describe. Once organized, it was cleaned by removing errors, incomplete data or duplications then coded. The coded data were then analyzed using binary logistic regression. Quantitative data involved numerical representation and manipulation of observation for the purposes of describing and

explaining the phenomena that those observations reflected as recommended by (Babbie, 2013). Numerical data were put to computer code sheets for processing with the aid of binary logistic regression to find out which MELs and MEL aspects were more predictive to SACCOS growth; descriptive statistics frequencies and percentages were reported guided by research objectives. The strength of the relationship between these variables were tested with the aid of binary logistic regression output developed by Hosmer (1989). The model used was:

$$G\pi(\tilde{x}) = \log \left[\frac{\pi(\tilde{x})}{1-\pi(\tilde{x})} \right] = \alpha + \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_p x_p + \dots + e \quad (3)$$

Therefore: $\log \left[\frac{\pi(\tilde{x})}{1-\pi(\tilde{x})} \right] = G$, Growth was taken to be dichotomous represented by one for growth and zero for no growth over a trend analysis period of 5 years calculated as follows:- Growth=
$$\frac{(\text{Present Share-Capital Contribution}) - (\text{Past Share-Capital Contribution})}{(\text{Past Share-Capital Contribution})} \quad (4)$$

(1) To assess MELs, X_1 represented no formal education, X_2 primary education, X_3 secondary education, X_4 advanced secondary, X_5 college certificate, X_6 college diploma, X_7 degree.

(2) To determine MEL aspects, X_1 represented education attainment, X_2 literacy, X_3 occupations

and X_4 knowledge. Error was shown by e , β_0 was the constant term coefficient while α was a model intercept and $\beta_1 - \beta_p$ indicated coefficient of regression.

RESULTS AND DISCUSSION

Demographic Features of the

Respondents: There were 234 male and 150 female respondents, being 61% and 39% respectively, most male were engaged to the advantage of the study because they were majority in SACCOS. In terms of the age, it ranged from 18 to over 55 years; member respondents with 45-54 years were 41% and were the highest. The members aged 45-54 years were an advantage to the study because

they had SACCOS experiences and were very active as respondents. About occupations, civil servants were 53%, privately employed 35% and unemployed 12%. On education levels, participants who had secondary education were 33%, college certificate 24% and primary certificate 13%. Participants who had no formal education were 7%. Table 2 shows demographic information.

Table 2: Demographic Information

Variable	Frequency (n= 384)	Percent (%)
Age		
18 - 25 years	40	10
26 – 34 years	47	12
35 – 44 years	96	25
45 – 54 years	156	41
55 + years	45	12
Sex		
Female	234	61
Male	150	39
Occupations		
Civil Servant	204	53
Private Employed	134	35
Unemployed	46	12
Education Levels		
No formal Education	26	7
Primary Education	49	13
Secondary Education	128	33
Advance Secondary	22	6
Certificate	93	24
Diploma	18	5
Advanced Diploma	2	0
Degree	44	12
Postgraduate Degree	2	0
Literacy Levels		
Literate	358	93
Non-literate	26	7

MELs and Share-Capital Contributions:

MELs were assessed by asking each member; the information given was then tabulated by totaling the share-capital for each level group as shown on Table 3. The results on Table 3 indicate that members with no formal education had low share capital contributions in millions 2%, these were the members with no formal education and could be disadvantaged on occupations as demonstrated by their contributions. Members who had primary education level had 5% number of shares compared to members whose highest educational levels were secondary who had 21%. Members with advanced secondary education and certificate from college had 9% and 39% respectively.

There was a slight difference between members with advanced diploma and those with diploma certificates, being 0.11% and 8% respectively. However, members who had Bachelors' degree recorded a slightly highest share capital 15%, an indicator of the most literate with better occupations. This implies that high level of education was positively related to share-capital contribution. Result empirically has connection with Toscano *et al* (2017) finding, which had it that education brings lifelong skills outcome. According to absorption capacity theory by Cohen and Levinthal (2023) and another related study by Aghion and Jaravel (2015) stakeholders of an organisation are supposed to be the source of external knowledge. Given that most of the

SACCOS members have secondary education, it implies that CE is needed most for them to increase co-operative understanding and foster member participation on contributions. When the Uasin Gishu Co-operative County Officer was asked about members' education levels and share capital contributions, she says:-

“members with low levels of education have challenges in understanding SACCOS issues

hence equally affecting their contributions, a case in hand is the vehicle transport SACCOS popularly known as matatu industry. It brings on board people from all education levels and those with higher education levels are organized compared with their counterparts with low education levels”. (County Co-operative Officer, Uasin-Gishu- 21 August 2018).

Table 3: Members' Education Levels and Share-Capital Contributions

Level of Education	Total Share-Capital (Ksh.) in Millions (n=19.628)	Percent, n=384 (%)
Non-Educated	0.390*	2
Primary	1.050	5
Secondary O Level	4.092	21
Secondary Advanced	1.770	9
Certificate College	7.600*	39
Diploma College	1.640	8
Advanced Diploma	0.022	0.11
Bachelors Degree	2.960*	15
Degree Masters'	0.104	0.5

Key: * Significant in Share-Capital Contribution

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matatu industry. It brings on board people from all education levels and those with higher education levels are organized compared with their counterparts with low education levels”. (County Co-operative Officer, Uasin-Gishu- 21 August 2018).

CE Knowledge in MELs and Share-Capital Growth: The importance of members' CE knowledge on share capital growth was assessed through multiple responses. Members were asked to react to selected variables on CE knowledge in SACCOS and share capital growth. Innovative, building trust, enhancing member participation, making members to know rights and responsibilities were identified. About innovations, members

stated that they make suggestions for improvement of products such as artifacts and information technology if they understand co-operative issues. This result supports what Braunerhjelm (2018) postulated that knowledge give rise to innovative ideas that are vital to organizations in attracting new membership leading to contributions of shares.

Relationship between MELs and Share-Capital Contributions: The relationship between MELs and share-capital contribution was tested using binary logistic regression. The results shows that Pearson's Correlation in the five out of seven MELs variables were statistically very significant with ($P < 0.05$) except for advanced secondary level of education that ($P = 0.143$) and members with diploma education that were almost significant ($P = 0.64$). Chi-Square on Hosmer and Lemeshow test statistics was ($\chi^2 = 181.3$, $p = 0.986$), the insignificant p shows

that the model was a good fit. Further, the results indicated that Nagelkerke pseudo R^2 that shows adjusted Cox and Snell pseudo R^2 indicated 0.677, which indicates that MELs explained 67.7% of the variation on the dependent variable share-capital growth. The overall percentage on the classification table was 86% indicating also that the results on the model were 86% correct. The results on Table 5, disclosed that members with degree were the highest predictors of share-capital contributions ($P < 0.006$). Perhaps this could be because member graduates are better placed to understand the importance of co-operatives and plan for contributions. Members with no formal education were second most predictors on contribution. The researcher interpreted that they were significant because their contributions were very small, hence impacted on the growth of SACCOS.

Table 5: Results of the Logistic Regression Model

Variable	B	Wald	df	Sign	Exp(B)
No Education	0.0010	6.936	1	0.008**	1.0010
Primary	0.0005	5.818	1	0.016*	1.0005
Secondary	0.0005	5.554	1	0.018*	1.0005
Advanced Secondary	-0.0010	2.143	1	0.143	0.998
College Certificate	0.0004	4.781	1	0.029*	1.0004
Diploma Certificate	-0.0017	3.441	1	0.064	1.0017
Degree	0.0019	7.476	1	0.006**	1.0019
Constant	0.0070	0.000	1	0.993	1.0070

Key= ** very significant, * significant, significant of variables was at $p < 0.05$, Nagelkerke $R^2 = 0.667$, Cox and Snell = 0.507, Hosmer and Lemeshow test (Chi-square = 181.3, sign = 0.986)

This finding fits in on the observation made by Bee (2014) on the challenges and opportunities of co-operatives in Africa and Obaka (2013) on the challenges affecting Kenya Planters Co-operative Union. Both studies identified lack of enlightenment among co-operative members as posing a

threat to its growth, which the study redresses to be emanating from the levels of education. Wald test or likelihood ration test was more than one on most cases implying that the variables were contributing to the model. The Beta values and exponential Beta-log odds point out that for every change on

predictor variable MELs, there was a corresponding change of one time on the dependent variable. From this result, degree holders were 1.0019 times more likely to predict share-capital contributions. Members with primary, secondary and college certificate were very good predictors of share-capital contributions. The implication of the result is that MELs affect member individual organization to contribute hence subsequent share-capital given out. This finding relates to the theory by Cohen and Levinthal, which had it that organizations with educated clients are better placed to gain competitive advantage over those without. From the results on Table 5 in which most MELs were significant with $p < 0.05$, null hypothesis which stated that MELs do not predict share-capital contributions were rejected and the alternative taken.

MEL Aspects Influencing Share-Capital Contribution: The MEL aspect variables gauged on share capital contributions were literacy, educational attainments, occupations, and knowledge. On Table 6, literate had contributed the highest amount of

shares 25% million compared to 0% for those who had no formal education at the time of study. Civil servants had relatively high contribution 14% compared to 8% for the privately employed and 3% for unemployed. In terms of education levels, those who had college certificate had 10% compared to 4% for the degree holders and 1% for those with primary certificate. To determine whether MEL aspects:- literacy, educational attainment, occupations and knowledge predict share capital contribution, binary logistic regression tests was run, Table 7 reveals the results. Table 7 indicates that educational attainments were very dominant in predicting share-capital contributions ($p < 0.004$). Cox and Snell was 0.515, Nagelkerke R^2 pseudo was 0.696, implying that the variation on dependent variable growth was 69.6% explained by the MEL aspects. This result could be because the levels of education have silent hidden knowledge on how a member understands SACCOS and are engaged in its activities. Literacy was second most predictive ($p < 0.009$).

Table 6: Member Education Level (MEL) Aspects

Co-op. Members' Education Level Aspects	Sub-Aspects		(In Millions in Ksh.) Total Share- Capital (n=78.122)	Percent n=384 (%)
Literacy	1	Literate	19.238*	25
	2	Illiterate	0.390	0
	1	Primary	1.050	1
	2	Secondary	4.092*	5
	3	Advanced Secondary	1.770	2

Educational Attainment	4	Certificate	7.600*	10
	5	Diploma	1.640	2
	6	Advanced Diploma	0.022	0
	7	Bachelor	2.960	4
	8	Masters	0.104	1
Occupations	1	Civil servant	11.234*	14
	2	Private Employment	6.004	8
	3	Non-Employed	2.390	3
Knowledge	1	Skilled	10.274*	12
	2	Unskilled	9.354	13

Key: * Indicates a Significant Result

Beta values were positive and exponential Beta was more than one unit, implying that for every improvement on independent variable, there was a positive increase on dependent variable. Exponential Beta on educational attainment was 6.072, indicating that it was 6.072 times likely to predict dependent variable share-capital. From experience, literate people have more chances of engagement in job opportunities

and are very likely to make more money leading to higher contributions. The findings can be associated with what Olive *et al.* (2018) observed, they stated that levels of education have significant relationship with individual participation, educated people are an asset; and a liability if limited in an organization which is closely related to the study contributions.

Table 7: Logistic Estimates for MEL aspects.

Variable	B	Wald	Df.	Sign.	Exp(B)
Educational Attainment	2.121	15.314	1	0.004**	6.072
Literacy	0.803	6.806	1	0.009**	2.625
Occupation	0.602	4.004	1	0.045*	2.334
Knowledge	0.737	5.967	1	0.024*	2.411
Constant	-1.364	11.099	1	0.025	0.021

Key: *Significant Levels, Significant at $P < 0.05$, Cox and Snell R^2 0.515, Nagelkerke R^2 0.696, Overall percentage 85.

Test of Ordinal Association: Further, Kendall's Tau (τ) measure of ordinal association between two measured quantities

was performed on MELs and MEL aspects on share capital contributions to re-confirm the results obtained.

Table 8: Kendall's Tau Correlations

			Share- Capital	Levels of Educa.
Kendall's tau	Share-Capital	Correlation	1.000	0.771
		Sign. 2-tailed		0.001
		N	11	11
	CMELs and	Correlation Coefficient	0.771	1.00
	CMEL aspects	Sign. 2 tailed	0.001	
		N	11	11

Key: p significant at less than 0.05

Kendal tau correlation coefficient was found to be 0.77, which discloses that there were about 77% relationship between MELs and

MEL aspects on share-capital contribution. Therefore, from the results on Table 7, that shows that ($p < 0.05$), null hypothesis, which

stated that MEL aspects do not predict share capital contributions was rejected, and the alternative taken.

Implications of the Results on the Theories and Related Studies: The study has hinted out that although SACCOS have a lot of potential in form of MELs, these knowledge powers have not been fully activated through CE and exploited to aid growth in SACCOS and co-operatives in general which is related to what absorption capacity theory guiding the study postulates. According to absorption capacity theory, organizations that create a very difficult environment to key stakeholders to learn and use acquired knowledge disadvantaged it from having competitive advantage. MELs have silent hidden spillover benefits that can occur to a SACCOS without being reflected in cost. SACCOS should create proper clear structures for member CE to enhance learning for the importance of these MELs to be felt in totality. Further, the findings confirmed the absorption capacity theory on innovativeness as depending on antecedents' prior knowledge stocks and flows, which can be recalled and used. According to the absorption capacity theory, the gatekeepers of the learning environment and costs mediate external knowledge, when gatekeepers block learning environment, they lock out knowledge flows and stocks likely to affect organisation negatively. The results has also confirmed and expanded a study by Karlson and Grasjo (2015) which dwelt on knowledge benefits only to include MELs and MEL aspects. About a study by Jimenz *et al* (2015) on the impact of educational levels and entrepreneurship growth, which its findings did not show significant relationship between too high levels of educations such as holders of degree certificate on enterprise growth, the study has disapproved it.

CONCLUSION

AND

RECOMMENDATIONS

The study concludes that despite SACCOS having MELs knowledge resource, it has not been fully activated and exploited to the advantage of SACCOS and co-operatives growth. The findings point out that MELs and MEL aspects predict share-capital contributions. The MELs that predict share-capital contributions are primary, secondary, college and degree while MELs aspects are educational attainment, literacy, occupations and knowledge. Members' CE knowledge in SACCOS acts as a source of innovations plays watchdog role and builds trust by providing effective communication. Other contributions of member CE are improvement on member participation, commitment and acquisition of knowledge on co-operative values, principles, member rights and co-operative identity. Members in SACCOS are agents of change and outside ambassadors to SACCOS. Knowledgeable and enlightened members in terms of SACCOS issues have better chances to communicate, advocate and win new potential members to join SACCOS leading to increase in share –capital compared to those who are least knowledgeable on CE. MELs have hidden, silent spillover externalities in form of literacy, educational attainment, knowledge, and occupations that may benefit SACCOS if it creates proper structures for an interaction with CE. In the light of the study results, it recommends that all SACCOS should utilized MELs skills for growth and development. Mandatory, quarterly provision of CE under supervision of the Ministry of Industry Trade and Co-operative Development should be prioritized for growth and development in SACCOS. CE should be provided to members, employees, committee representatives, youth and public to accord with the fifth international co-operative

principle. In the light of the MELs and MEL aspects that have spillover benefits emanating from co-operative knowledge understanding within these levels; the study recommended that CE should be mainstreamed within these education levels. The co-operative administrators should sensitize members about the importance and benefits of attending CE day.

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