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Smallholder Rice Farmers' Access to Information in Tanzania: Can Agricultural Marketing Co-operative Societies Provide Quality Information?

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Abstract

Access to quality information plays a crucial role in enhancing the competitiveness of smallholder rice farmers in Tanzania. Agricultural co-operatives have the potential to overcome smallholder farmers' information asymmetry. Yet, there is a lack of comprehensive understanding regarding the extent to which Agricultural Marketing Co-operative Societies (AMCOS) can effectively provide quality information to smallholder farmers as required by Co-operative Principle number five (Education, Training, and Information). This paper analyses the current level of access to information among smallholder rice farmers in AMCOS, evaluating the relevance, adequacy and reliability of information provided by AMCOS to its members and identifying the factors influencing the adequacy of the information provided by AMCOS. The study was conducted in Mvomero and Mbarali Districts. A cross-sectional research design was used and data were collected using a questionnaire that was administered to 382 randomly selected farmers based on registers availed by co-operative managers in three co-operatives. Data were analysed using Statistical Package for Social Sciences (SPSS) whereby ordinal logistic regression was used to estimate the influence of various factors on the adequacy of information obtained from AMCOS. The study found that 77.2% of farmers accessed information on rice agronomy. Smallholder rice farmers obtained adequate (52.6%), relevant (35.6%) and reliable (37.7%) information from their respective AMCOS. The adequacy of information was influenced by membership in social groups, access to rice agronomy information and financial information at $p<0.05$. It is concluded that agricultural co-operatives are potential platforms for providing quality information in enhancing smallholder rice farmers' informed decision-making. The study recommends that efforts should be made to strengthen AMCOS by providing them with resources, training, and support to enhance their capacity to deliver accurate and timely information to farmers. This include collaboration with agricultural extension service providers and leveraging their networks to access up-to-date information on agronomic practices, weather forecasts, and market trends to enhance farmers' competitiveness in rice farming.

Keywords: rice farming, adequacy, relevance, reliability and information access

1.0 Introduction

Smallholder agriculture contributes significantly to economic growth, job creation, and food self-sufficiency. Meeting farmers' information needs could help smallholder rice farmers increase agricultural productivity, and market accessibility as a key tool for rural development, poverty reduction, and food security. Different types of collective organisations including agricultural co-operatives have emerged and being recognised by academia, governments, and donors in the early years of the 21st century to improve the productivity and competitiveness of smallholder farmers (Tefera *et al.,* 2017). Smallholder farmers' challenges in farming include poor access to credit services (Deresse & Zerihun, 2018), shortage of training and low market access (Gashaw & Kibret, 2018), high transaction costs and information asymmetries (Cheng *et al.,* 2022), especially those living in rural remote areas.

In view of the above, one of the major issues impeding smallholder farmers' attempts to raise their output is access to relevant, timely and adequate agricultural information (Ndimbwa *et al.,* 2021). This may result in uninformed decisions on what to produce, when to produce, potential markets available, the quantities, and how to store produce (Singh *et al*., 2018). To limit the effect of such risks and doubts, smallholder farmers need to make well-versed decisions by having access and use of agricultural information that empowers them with the ability to plan and make informed decisions about farming activities (Ndimbwa *et al*., 2021). This is made possible when smallholder farmers have acceptable access to quality agricultural information. Mur *et al.* (2016) argue that the main criteria to assess the quality of information service to farmers include its relevance (being timely, addressing farmers' needs, affordable, applicable, tailored to farming and socioeconomic contexts), and reliability (being consistent, accurate, transparent, locally validated). To access the required type of information such as price and market information, post-harvest handling, rice agronomy information, and financial information, farmers must select pertinent and appropriate sources of agricultural information (Hilary *et al*., 2017; Mtega, 2021).

The mass media and mobile phones, fellow farmers, agricultural extension agents, and Agricultural Marketing Co-operative Societies (AMCOS) are the commonly used sources of agricultural information among smallholder farmers (Deresse & Zerihun, 2018; Mtega, 2021; Ndimbwa *et al.,* 2021; Nikam *et al*., 2022). However, co-operatives have gained attention as potential vehicles for the economic and social development of smallholder farmers, as they provide support for accessing information and advisory services through its operating principles. "Education, Training and Information" is one of the principle of cooperatives that requires AMCOS among other things to provide reliable and quality information to its members and general public (Cheng *et al.,* 2022; Mamo *et al.,* 2021; Muench *et al.,* 2021; Tumenta *et al.,* 2021).

It is well-established in the literature that AMCOS enhance farmers' access to information. For example FAO (2012), Deresse & Zerihun (2018), Liu *et al.*(2019), Bachke (2019), Achamyelh & Hailemariam (2020), Muench *et al.* (2021), Tuna & Karantininis (2021), Nikam *et al.* (2022) reported that agricultural co-operatives enhance smallholder farmers' access to information on markets, agronomy, credit, climate change and innovations. In particular, agricultural co-operatives serve as an information-exchange platforms where a farmer benefits from other farmers' experience, which helps them to implement the best agricultural practices to increase their productivity and livelihoods (Mahmood *et al*., 2021; Mamo *et al.,* 2021). It has been reported by Buadi *et al.* (2013), Jona & Terblanché (2015), Maake & Antwi (2022) and Sylla *et al.* (2019) that smallholder farmers receive relevant services from public and private agricultural extension service providers in various countries. However, farmers had mixed opinions concerning the services with respect to their adequacy, availability, effectiveness (Maake & Antwi, 2022) and timeliness of supply (Buadi *et al.,* 2013).

Studies such as those by Hilary *et al.* (2017) and Kassem *et al.* (2020) have reported on the quality of extension services provided through various communication channels in Uganda and Egypt. In their studies, extension services were perceived as relevant to farmer operations and needs. Studies have further reported the level of education, farm size, diversity of farming activities, annual incomes and participation in extension services as factors influencing farmers' satisfaction with the quality of extension services (Kassem *et al.,* 2021; Misozi & Chrispin, 2019). Evidence from

Hilary *et al.* (2017) on information quality in farmer organisations in Bugiri and Luwero districts of Uganda reported an exchange of quality and valuable information among farmer organisations, with information from government actors being the least reliable and that from the private actors being the most reliable.

In Tanzania, smallholder rice farmers face significant challenges in accessing quality information necessary for their agricultural practices. Despite the extensive literature on potential benefits of information dissemination through AMCOS, it remains unclear whether these co-operative societies can effectively provide smallholder rice farmers with the quality information basing on their needs. The lack of access to reliable and accurate information hampers the ability of smallholder rice farmers to make informed decisions regarding farm management and post-harvest practices. Therefore, it is essential to investigate whether AMCOS can fulfil the role of reliable information providers and address the information gap faced by smallholder rice farmers in Tanzania. This paper addresses this research gap by assessing the current level of access to information among smallholder rice farmers in AMCOS, evaluating the relevance, adequacy and reliability of information provided by AMCOS to smallholder rice farmers and identifying the factors influencing the adequacy of the information provided by AMCOS in Tanzania.

2.0 Methodology

The study was conducted in Mvomero and Mbarali districts of Morogoro and Mbeya regions, respectively in Tanzania. The districts were specifically chosen for the study because they are among the top rice-producing districts in Tanzania and include a significant number of rice value chain actors. The lack of access to reliable and accurate information in the study area hampers the farmers' ability to make informed decisions regarding crop management and post-harvest practices. The two districts also fall within acceptable agro-ecological zones for rice production in Tanzania (URT, 2017).

A cross-sectional research design was employed. A sample of 382 respondents was selected from the three registered co-operative societies; the sample size was estimated using Yamane's (2001) formula. Three AMCOS were purposefully chosen from the two districts namely; Kapunga smallholders and Madibira AMCOS in Mbarali District and UWAWAKUDA AMCOS in Mvomero District. This selection based on their functionality as well as information sharing with the farmers along the rice value chain and the period they have been engaged in rice farming activities. A simple random sampling procedure was used to select respondents from the list of smallholder farmers obtained from the AMCOS offices. A structured questionnaire was used to collect quantitative information from individual smallholder rice farmers. Focus Group Discussion (FGD) guide was used to gather information on the quality of agricultural information from farmers. Four FGDs were conducted and each comprised of eight participants purposively selected from smallholder farmers by the virtual of having high knowledge and experience in rice farming.

Data were analysed by using a computer based Statistical Package for Social Sciences (SPSS). Descriptive statistical analysis was computed to describe farmers' access to agricultural information in AMCOS, its adequacy, relevance and reliability. Three attributes of quality were measured on a three-point rating as follows: adequacy (inadequate, partially adequate and adequate), relevance (irrelevant, relevant and highly relevant) and reliability (not reliable, reliable, and highly reliable). The Kruskal-Wallis Test was employed to establish the variation of smallholder farmers' responses regarding adequacy, relevance and reliability between Kapunga, Madibira and UWAWAKUDA AMCOS.

The ordinal logistic regression analysis was used to determine influence of various factors on the adequacy of information received from AMCOS. In this model, the dependent variable (adequacy of information) was ranked as 0=Inadequate, 1=Partially Adequate and 2=Adequate. The ordinal logistic regression equation was specified as:

$$Y_{i1} = \lambda_j\left(\overset{x}{\rightarrow}\right) = \ln\left\{\frac{p}{1-p}\right\} = \alpha_j + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_p X_p$$

Where:

Y_i = Dependent variable (Adequacy of information received from AMCOS)

$\lambda_j\left(\overset{x}{\rightarrow}\right)$ = Logit link function of explanatory variables
$\overset{x}{\rightarrow}$ = Vector of explanatory variables
$X_1 - X_p$ = Explanatory variables
α_j = j^{th} intercept estimate (Threshold).
$\beta_1 - \beta_p$ = Location parameter estimates or slopes of explanatory variables.
p =Probability that information received is adequate compared to partially adequate and inadequate.
$1 - p$ = Probability that information received is inadequate compared to partially adequate and adequate

Table 1: Variable specifications

Symbol	Variable	Explanation	Expected sign
y_i	Adequacy of information received from AMCOS	0=Inadequate, 1=Partially Adequate and 2=Adequate.	
x_1	Experience	Years in AMCOS (cont…)	-
x_2	Land size	Land size of respondents (cont...)	+
x_3	Smartphone ownership	0=No 1=Yes(dummy)	-
x_4	Membership in other social groups	0=No 1=Yes(dummy)	-
x_5	Information on rice agronomic practices	0=No 1=Yes(dummy)	+
x_6	Information on storage	0=No 1=Yes(dummy)	+
x_7	Information on value addition	0=No 1=Yes(dummy)	+
x_8	Information on marketing	0=No 1=Yes(dummy)	+
x_9	Financial information	0=No 1=Yes(dummy)	+
x_{10}	Education level	0=No formal education 1=Formal education (dummy)	+
x_{11}	Water distribution	0=Poor 1=Good(dummy)	+

The model validity was determined by considering parallel assumption which restricts using the model when it is violated. During the test of parallel line, once the P-value is less than 5% the null hypothesis was rejected. It was observed that the information comprising explanatory variables adequately fitted the model as the difference between -2 log-likelihood for the model with intercept only and the model with explanatory variables was positive and statistically significant at the p-value < 0.05 level. Also, there was a goodness of fit since both Pearson chi-square and Deviance test were not statistically significant (p-value>0.05); hence the model had no over-dispersion problem. The model agreed with parallel lines assumptions as the score test (Chi-square test) was not statistically significant (p-value>0.05); hence, the parameter estimates were the same across all categories of the dependent variable. Therefore, the fitted model was appropriate, and the selected explanatory variables were appropriate for discussion of the factors influencing the adequacy of information received from AMCOS.

Content analysis was employed to systematically organise, re-arrange and manage the qualitative data obtained through FGDs in order to derive meaningful insights and patterns. The qualitative information that was collected was mainly on the farmers' information accessibility and the quality of the information received from co-operative societies.

3.0 Findings and Discussion

3.1 Farmers' socio-demographic attributes

The findings in Table 2 show that 73.6% of the respondents had at least primary school education. Level of education is anticipated to be an important factor that would affect the quality of information in rice farming as educated farmers find it easier to comprehend information concerning production technologies and farming practices. Also, the study revealed that 70.7% of

the respondents were males while 29.3% of them were females. Men are dominant in rice production in the research area as shown in Table 2. This is because in many households, men often have greater power in decision-making and control over resources including land and agricultural activities. It implies further that extension services should mobilise women for more involvement in rice production and enable interventions tailored to their needs.

Likewise, 11.5% of farmers were recorded in all co-operatives having rice farming as their only economic activity. The study also found that the average household size was 5 people. This emphasizes the importance of considering the dynamics of household decision-making, information sharing, and resource allocation when designing strategies for information dissemination and support services targeted at smallholder rice farmers. The average number of years in AMCOS and experience in rice farming were 14.04 and 18.02 years respectively. Mean years were found highest at Madibira (15.21) and lowest at Kapunga (11.85). Experience in rice farming can affect smallholder farmers' access to agricultural information. Farmers with more experience may have already acquired knowledge and skills through trial and error or through interactions with other farmers, while less experienced farmers may have limited knowledge and may require more information and support.

Table 2: Socio-demographic characteristics among farmers (n=382)

Variable	Classes	AMCOS			Pooled statistics n=382
		Kapunga %	Madibira %	UWAWAKUDA %	
Sex	Male	74.2	72.6	62.80	70.7
	Female	25.8	27.4	37.2	29.3
Marital status	Single	11.3	10.3	7.1	9.7
	Married	88.7	89.7	92.9	90.3
Education level	Informal education	1.6	3.8	5.8	3.9
	Primary	69.4	71.4	82.6	73.6
	Secondary	4.8	19.2	7.0	14.1
	Tertiary	24.2	5.6	4.7	8.4
Economic activities	Farming (Other crops)	40.3	42.7	22.1	37.7
	Livestock	0.0	1.3	2.3	1.3
	Business	0.0	12.8	23.3	13.1
	Farming, livestock and business	46.8	34.6	33.7	36.4
	Rice farming only	12.9	8.5	18.6	11.5
			Mean		
Household size		5	5	5	5
Experience in rice farming		21.24	17.77	16.35	18.02
Years in AMCOS		11.85	15.21	12.43	14.04

3.2 Smallholder farmers access to information

The findings on smallholder rice farmers' information accessibility indicated that the majority of farmers obtained information on rice agronomic practices (77.2%) and marketing (75.1%) from AMCOS as shown in Figure 1. This means that these co-operative societies are playing a key role in disseminating information on rice agronomic practices and marketing to smallholder farmers. The agronomic practices include land preparation, seed selection and preparation, nutrient management, irrigation, weeding and pests/disease management in rice farming. Co-operative societies can leverage their network and resources to provide agricultural information to their members, which can be especially beneficial for smallholder farmers who may have limited access to other information sources. The fact that the majority of smallholder rice farmers obtained information on rice agronomy and marketing from their co-operative societies suggests that these societies are effective in disseminating information to their members. This can contribute to improving the productivity and income of smallholder farmers hence competitiveness in rice farming.

The findings are in line with those by Misozi & Chrispin (2019) and Phiri *et al.* (2019) who reported that the majority of co-operative farmers' information needs were in areas of agricultural

technology and agronomic practices in Chibombo District of Zambia and Malawi, respectively. On the other hand, only 43.7% of farmers obtained financial information from AMCOS as shown in Figure 1. This is due to the presence of a number of financial institutions in the study areas including the Mufindi Community Bank, Victoria Microfinance, Access Bank, and Savings and Credit Co-operative Societies where the majority of farmers obtained financial information about rice farming. These were the alternative sources of financial information to smallholder rice farmers in the study area.

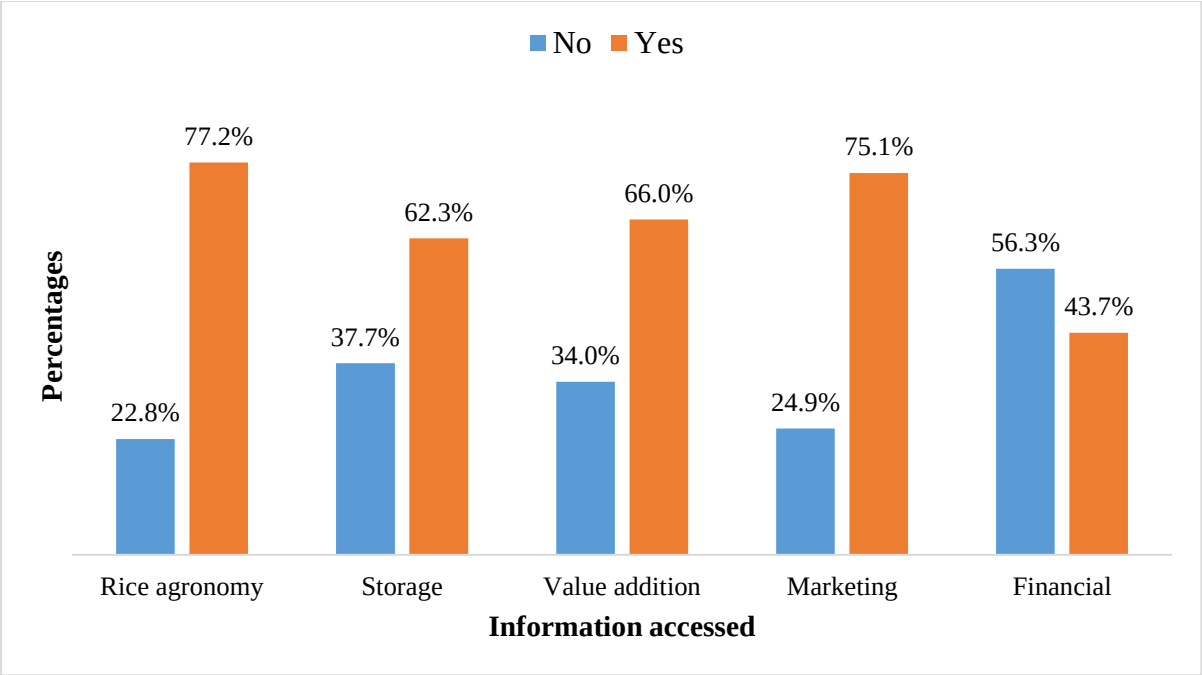

Figure 1: Information Accessibility among Smallholder Rice Farmers

Smallholder farmer reported having received no weather forecast information. Impliedly, the co-operatives societies had no expertise on information on weather condition. The results differ from those by Phiri *et al.* (2019) who found that 50% of smallholder farmers in Malawi obtained weather/ climate information from service providers co-operatives inclusive. Other sources of agricultural information for AMCOS members in the study area included input dealers, extension officers, research institutes, fellow farmers, mass media and traders. The rating on the quality of their information is as shown in Appendix 1.

3.3 Adequacy, relevance and reliability of information obtained from AMCOS

3.3.1 Adequacy

The majority of the respondents (52.6%) reported having received adequate information while 29.3% and 18.1% of them claimed to have received partially adequate and inadequate information respectively from their respective co-operative societies as shown in Table 3. This means that majority farmers feel the information provided is sufficient for their needs to some extent, but there may be some gaps or areas where more information is needed since farmers have different experiences in rice farming. This information can be helpful in identifying areas where additional information or support may be required to address the specific needs and challenges of smallholder farmers. The results on adequacy are well comparable with those by Buadi *et al.* (2013) who reported that farmers perceived agricultural information received to be adequate in the central region of Ghana. They are also comparable with findings by Jona and Terblanché (2015) who reported that farmer associations were ranked second after research institutes in the provision of adequate information to farmers in Namibia.

Table 3: Distribution of information adequacy among AMCOS members

Name of AMCOS	Adequate		Partially adequate		Inadequate	
	n	%	n	%	n	%
Kapunga	24	11.9	25	22.3	13	18.8
Madibira	140	69.7	67	59.8	27	39.1
UWAWAKUDA	37	18.4	20	17.9	29	42
Pooled	**201**	**52.6**	**112**	**29.3**	**69**	**18.1**

Among the three AMCOS considered, Madibira AMCOS had the highest proportion of farmers reporting adequate information (69.7%), followed by UWAWAKUDA AMCOS (18.4%) and Kapunga AMCOS (11.9%). These findings suggest that Madibira AMCOS has been more successful in providing agricultural information that meets the farmers' needs, while Kapunga AMCOS lags behind in terms of providing adequate information to their members. Agricultural information received from AMCOS was sufficient for the majority of farmers in making informed decisions on rice farming. However, within co-operatives, 42% of respondents in UWAWAKUDA reported having received inadequate information as shown in Table 3. Similarly, the results through FGDs revealed that majority of farmers in UWAWAKUDA had inadequate information from the AMCOS. One participant summarised the views of other respondents:

> *''....Our productivity and profitability in rice farming are directly impacted by the limited information flow that currently exists. Our co-operative society does not have a stationed extension officer; instead we rely on a government officer who has a large number of farmers to serve, and shortage of resources to facilitate him''* (FGD, Dakawa Village, March 2022).

A similar matter was raised by another FGD participant who enlightened that:

> *"... we need other actors to help us connect to the markets by providing us with enough information on rice farming and to connect our co-operative society to buyers, input suppliers, millers, exporters, and financial institutions, among others''*(FGD, Kapunga Village, February 2022).

Also, it was reported that:

> *"In the co-operative budget template, we have a section for farmers' capacity building every year, where farmers are trained and taken for study tours for adequate information on rice farming. In fact, Madibira has got a stationed extension staff; therefore, this co-operative society is providential and one step ahead when compared to Kapunga* (FGD, Charisuka Village, February 2022).

The study findings are supported by information from the FGDs that one of the reasons for inadequate information received in UWAWAKUDA, among others, could be absence of a stationed government extension officer for the irrigation scheme. The practice was different in the other co-operative societies such as Madibira. Additionally, availability of resources and connection with other actors like traders, input suppliers is vital for adequate information availability to smallholder rice farmers. In estimating the variations of smallholder farmers' responses regarding the adequacy of information in the three co-operative societies in the study area, the Kruskal-Wallis Test results show the significance (p=0.000) is less than the critical value of 0.05. This means that responses of farmers in the three co-operative societies differ significantly among AMCOS, where [H (2) = 0.639, p=0.000] were recorded. Further analysis was done to find out factors influencing the adequacy of information received from AMCOS.

3.3.2 Relevance

Assessment of the relevance of information received by farmers in terms of timeliness, addressing farmer's needs, and applicability in rice farming was done. An even distribution was revealed from the overall findings where 35.6%, 34.6% and 29.8% were observed in terms of highly relevant, relevant and irrelevant as shown in Table 4. The majority of farmers generally perceived the information to be highly relevant and relevant. When the majority of smallholder rice farmers rate

agricultural information as highly relevant and relevant, it indicates that the information provided is perceived to be useful and valuable to them. This means that the information meets their needs and expectations and can help them improve their farming practices, increase productivity, and potentially increase their incomes. This positive feedback from smallholder rice farmers is important because it suggests that the agricultural information is effective in addressing their specific needs and challenges. It also demonstrates that efforts to disseminate agricultural information to smallholder farmers are making a positive impact, which can ultimately contribute to smallholder farmers' competitiveness. The findings differ from those by Jona and Terblanché (2015) in Namibia who found that farmers were not satisfied with the relevance of information provided by farmer associations. Yet, the results support the findings by Alam and Guttormsen (2019) who reported that aquaculture farmers had received relevant financial information from co-operative organisations in Bangladesh.

Table 4: Distribution of information relevance among AMCOS members

Name of AMCOS	Highly relevant		Relevant		Irrelevant	
	n	%	n	%	n	%
Kapunga	16	11.8	27	20.5	19	16.7
Madibira	88	64.7	75	56.8	71	62.3
UWAWAKUDA	32	23.5	30	22.7	24	21.1
Pooled	**136**	**35.6**	**132**	**34.6**	**114**	**29.8**

Among the three AMCOS considered, Madibira AMCOS had the highest proportion of farmers reporting relevant information (64.7%), followed by UWAWAKUDA AMCOS (23.5%) and Kapunga AMCOS (11.8%). These findings suggest that Madibira AMCOS has been more successful in providing agricultural information that meets the farmers' needs, while Kapunga AMCOS lags behind in terms of providing relevant information to their members. In evaluating the variation of smallholder farmers' responses regarding the relevance of information between Kapunga, Madibira and UWAWAKUDA co-operative societies in the study area, Kruskal-Wallis Test findings revealed that, the significance ($p= 0.497$) is greater than the critical value of 0.05. This means that responses of farmers in the three co-operative societies did not differ significantly among AMCOS, where [$H (2) = 1.398$, $p= 0.497$] were recorded.

3.3.3 Reliability

The findings in Table 5 show that 37.7% of farmers argued that information obtained from AMCOS was reliable while 32.2% of farmers claimed that the information obtained was not reliable. When the majority of smallholder rice farmers rate agricultural information as highly reliable, it means that they trust the information and believe that it is accurate and trustworthy. This is important because reliable information can help farmers make informed decisions about their farming practices, such as when to plant, how much fertilizer to apply, and how to manage pests and diseases. When farmers have access to reliable agricultural information, they can increase their productivity and yields, reduce crop losses, and potentially increase their incomes. This, in turn, can contribute to improving food security and reducing poverty in rural areas. It is important to note that farmers may have different criteria for assessing the reliability of information and in this case, they trusted the source of information and the partnerships that exist between AMCOS and the research institutes. Therefore, it is important to understand the perspectives and needs of smallholder farmers when providing them with agricultural information to ensure that it is perceived as reliable and useful.

However, within co-operatives, the 19.5% respondents in Kapunga reported having received unreliable information from their co-operative society. The unreliable information was due to the lack of a stationed extension officer, less involvement of other actors in the rice value chain such as research institutes in Kapunga AMCOS. The study findings differ from those made by Jona and Terblanché (2015) who found that information provided by farmer associations in Namibia was not reliable, and hence farmers were not satisfied with its adequacy.

Table 5: Frequency distribution on the reliability of the information received

	Highly reliable		Reliable		Not reliable	
Name of AMCOS	**n**	**%**	**n**	**%**	**n**	**%**
Kapunga	19	16.5	19	13.2	24	19.5
Madibira	69	60	91	63.2	74	60.2
UWAWAKUDA	27	23.5	34	23.6	25	20.3
Pooled	**115**	**30.1**	**144**	**37.7**	**123**	**32.2**

In assessing the variation of smallholder farmers' responses regarding the reliability of information between Kapunga, Madibira and UWAWAKUDA co-operative societies in the study area, Kruskal-Wallis Test findings revealed that, the significance (p= 0.726) is greater than the critical value of 0.05. This means that there was no statistical difference between the mean scores in the three co-operatives, where [H (2) = 0.639, p= 0.726] were recorded.

3.4 Factors influencing adequacy of information accessed from AMCOS

Further analysis was done using ordinal logistic regression analysis to find influence of the factors listed in Table 6 on adequacy of information received from AMCOS. Membership in social groups, information on rice agronomic practices and information on finance had a positive and significant influence on adequacy at $p < 0.05$ while information on value addition negatively and significantly influenced adequacy as shown in Table 6. All other variables, except years in AMCOS, membership in social groups, information on value addition and marketing had their expected signs.

Table 6: Factors influencing adequacy of information received from AMCOS

		Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Threshold	[Inadequate = 0]	-0.424	0.490	0.747	1	0.387	-1.384	0.537
	[Partiallyadeq = 1]	1.636	0.500	10.689	1	0.001	0.655	2.616
Location	Years in AMCOS	0.028	0.018	2.466	1	0.116	-0.007	0.064
	Land size	-0.053	0.072	0.551	1	0.458	-0.194	0.087
	[Info on agronomy practices = 0]	1.532	0.342	20.048	1	0.000	0.861	2.202
	[Info on agronomy practices =1]	0a	.	.	0	.	.	.
	[Info on Storage=0]	-0.242	0.233	1.075	1	0.300	-0.699	0.215
	[Info on Storage=1]	0a	.	.	0	.	.	.
	[Info on Value addition=0]	-0.531	0.238	4.986	1	0.026	-0.997	-0.065
	[Info on Value addition =1]	0a	.	.	0	.	.	.
	[Info on Marketing=0]	-0.493	0.264	3.47	1	0.062	-1.011	0.026
	[Info on Marketing =1]	0a	.	.	0	.	.	.
	[Financial Information=0]	0.623	0.225	7.649	1	0.006	0.182	1.065
	[Financial Information =1]	0a	.	.	0	.	.	.
	[Membership in social groups=.00]	2.350	0.252	86.753	1	0.000	1.856	2.845
	[Membership in social groups=1.00]	0a	.	.	0	.	.	.
	[Education level=.00]	-0.159	0.54	0.087	1	0.768	-1.218	0.899
	[Education level =1.00]	0a	.	.	0	.	.	.
	[Water distribution=.00]	0.325	0.31	1.096	1	0.295	-0.283	0.932
	[Water distribution=1.00]	0a	.	.	0	.	.	.
	[Smartphone ownership=0]	-0.015	0.309	0.002	1	0.960	-0.621	0.59
	[Smartphone ownership=1]	0a	.	.	0	.	.	.

- Model fitting information: (Intercept only -2LL=742.887), (Final model -2LL=563.753, chi-square=179.134, df=11 and p-value = 0.000)
- Goodness of fit test: Pearson Chi-square=612.242, df = 667, P-value = 0.936 and Deviance = 540.395, df = 667, p-value = 1.000
- Coefficient of determination Pseudo R^2: Cox and Snell=37.5, Negelkerke = 43.2 and Mc Fadden = 23.3
- Test of Parallel lines: Null hypothesis -2LL=563.753, General -2LL=553.216, Chi-square=10.537, df=11, P-value = 0.483

Being part of other social networks demonstrate a strong positive and significant association with the adequacy of information received from AMCOS (coefficient estimate of 2.350, p-value of 0.000) as shown in Table 6. This shows that being a member of social groups tends to increase the adequacy of information compared to those who are not members. This means that members of social groups may access information from different angles but still rate information received from AMCOS as sufficient. This indicates that AMCOS is effectively meeting farmers' information needs, providing tailored and credible information that is valued and trusted by the members. It reflects the co-operative society's ability to understand and cater to the specific requirements of its members, ultimately contributing to their competitiveness in rice farming. The findings compare well with the findings by Petcho *et al.* (2019) in Thailand, who found that membership in other economic/social groups enhanced household members' knowledge and generated ideas related to production and marketing.

The variable information on agronomic practices shows a significant positive coefficient estimate (1.532) with a p-value of 0.000 which indicates a strong association between receiving information on agronomic practices and the perception of information adequacy among farmers. This suggest that farmers who receive information on agronomy practices are more likely to perceive the information as sufficient and satisfactory compared to those who do not receive such information. The increase in the frequency or extent of receiving agronomic information from AMCOS, increases farmers' likelihood to view that information as valuable and helpful in their farming practices. The results are in line with those by Frimpong-manso *et al.* (2022) in Ghana where active farmers who had received information on good agronomic practices for cocoa farming had a positive perception of co-operatives as a source of information.

The findings in Table 6 show that farmers who obtained financial information from AMCOS, their adequacy level increased by 0.623 logits at p-value of 0.006. This suggests that smallholder farmer who secured financial information from AMCOS are more likely to perceive the information received as adequate compared to their counterparts. The study results tend to reconcile with the findings by Alam and Guttormsen (2019) who found that farmers perceived co-operative organisations as a source of adequate farming information in Bangladesh. An increase in the provision of information concerning value addition decreased the adequacy of information by 0.623 units at p-value = 0.026. This means that the agricultural co-operatives either had insufficient information on value addition or had no expertise in the area and hence could not provide adequate information.

4.0 Conclusions and Recommendations

The highest information needs of smallholder rice farmers are in the areas of agronomic practices and marketing, and smallholder farmers reported no access to weather forecast information from AMCOS. Agricultural co-operatives are important platforms that provide quality information in enhancing smallholder farmers' informed decision-making. Financial and rice agronomy information are significant determinants of the adequacy of information received by smallholder farmers.

It is therefore recommended that, AMCOS should understand the specific information needs of smallholder farmers growing rice and tailor the information accordingly. This can be achieved through participatory approaches, such as farmer needs assessments and surveys, to identify the most relevant and useful information for farmers. Information should be provided in a format that is easily understood and accessible, taking into consideration the literacy levels and language preferences of the farmers. Collaborations with meteorological agencies and other relevant service providers should be established to ensure that farmers receive reliable and timely weather information. This can be achieved through the use of mobile technologies, such as SMS or smartphone applications to disseminate weather forecasts to farmers in a timely manner. Efforts should be made to strengthen AMCOS by providing them with resources, training, and support to enhance their capacity to deliver accurate and timely information to farmers. This can include collaboration with agricultural extension services and leveraging their networks to access up-to-date information on agronomic practices, weather forecasts, and market trends. Moreover, efforts should be made to improve farmers' access to financial and rice agronomy information, including information on good agronomic practices, accessing credit, savings, and investment opportunities.

This can be achieved through partnerships with financial institutions, training programs, and awareness campaigns on financial literacy tailored to the specific needs of smallholder farmers.

The Local Government Authority should put in place monitoring and evaluation mechanisms to assess the effectiveness of information dissemination strategies and interventions. This will help identify gaps and areas for improvement, allowing for adjustments and refinements in information delivery approaches. Feedback from farmers should be actively sought to ensure that the information provided is relevant, accurate, and meets their needs. To improve the smallholder rice farmer's competitiveness in rice farming, AMCOS and other stakeholders should enhance the information ecosystem for smallholder rice farmers, empower them with the knowledge and resources necessary to improve their agricultural practices, productivity, and livelihoods.

References

Achamyelh, K., & Hailemariam, M. (2020). Challenges and Opportunities of Soybean Marketing in Chewaka District, Ethiopia. *Asian Journal of Economics, Business and Accounting*, 2020: 13–22. https://doi.org/10.9734/ajeba/2020/v17i130250

Alam, M. A., & Guttormsen, A. G. (2019). Risk in aquaculture: farmers' perceptions and management strategies in Bangladesh. *Aquaculture Economics and Management*, 23(4): 359–381. https://doi.org/10.1080/13657305.2019.1641568

Bachke, M. E. (2019). Do farmers' organizations enhance the welfare of smallholders? Findings from the Mozambican national agricultural survey. *Food Policy*, 89pp.

Buadi, D. K., Anaman, K. A., & Kwarteng, J. A. (2013). Farmers' perceptions of the quality of extension services provided by non-governmental organisations in two municipalities in the central region of Ghana. *Agricultural Systems*, 120: 20–26. https://doi.org/10.1016/j.agsy.2013.05.002

Cheng, J., Wang, Q., Li, D., & Yu, J. (2022). Comparative Analysis of Environmental and Economic Performance of Agricultural Cooperatives and Smallholder Farmers for Apple Production in China. *Agriculture*, 12(8): 1-22. https://doi.org/10.3390/ agriculture12081281

Deresse, M., & Zerihun, A. (2018). Financing challenges of smallholder farmers: A study on members of agricultural cooperatives in Southwest Oromia Region, Ethiopia. *African Journal of Business Management*, 12(10): 285–293. https://doi.org/10.5897/ ajbm2018.8517

FAO. (2012). Agricultural cooperatives : paving the way for food security and rural development Cooperatives : a pillar for agricultural development and food security. 11pp.

Frimpong-manso, J., Tham-Agyekum, E. K., Colecraft Aidoo, D., Boansi, D., Jones, E. O., & Bakang, J.-E. A. (2022). Cooperative Membership Status And Adoption Of Good Agronomic Practices : Empirical Evidence From Cocoa Farmers in Atwima Mponua District, Ghana. *The Bangladesh Journal of Agricultural Economics* 43(1): 1–17.

Gashaw, B. A., & Kibret, S. M. (2018). Factors Influencing Farmers' Membership Preferences in Agricultural Cooperatives in Ethiopia. *American Journal of Rural Development*, 6(3): 94–103. https://doi.org/10.12691/ajrd-6-3-4

Hilary, R. S., Sseguya, H., & Kibwika, P. (2017). Information quality , sharing and usage in farmer organizations : The case of rice value chains in Bugiri and Luwero Districts , Uganda Information quality , sharing and usage in farmer organizations : The case of rice value chains in Bugiri and Luwero Di. *Cogent Food & Agriculture*, 84(1). https://doi.org/10.1080/23311932.2017.1350089

Jona, & Terblanché, C. N. (2015). Farmers' perception on contact frequency, adequacy, relevance and quality of agriculture support services (ass) in oshikoto region in namibia. In *Tydskr. Landbouvoorl./S. African Journal of Agricultural Extension*, 43(1): 1-17.

Kassem, H. S., Alhafi, B. A., Muddassir, M., & Herab, A. (2021). Factors influencing farmers ' satisfaction with the quality of agricultural extension services. *Evaluation and Program Planning*, 85: 1-10. https://doi.org/10.1016/j.evalprogplan.2021.101912

Kassem, H. S., Shabana, R. M., Ghoneim, Y. A., & Alotaibi, B. M. (2020). Farmers ' perception of the quality of mobile-based extension services in Egypt : A comparison between public and private provision. *Information Development* 36(2): 161–180. https://doi.org/10.1177/0266666919832649

Liu, Y., Ma, W., Renwick, A., & Fu, X. (2019). The role of agricultural cooperatives in serving as a

marketing channel: Evidence from low-income regions of Sichuan province in China. *International Food and Agribusiness Management Review*, 22(2): 265–282. https://doi.org/10.22434/IFAMR2018.0058

Maake, M. M. S., & Antwi, M. A. (2022). Farmer's perceptions of effectiveness of public agricultural extension services in South Africa: an exploratory analysis of associated factors. *Agriculture and Food Security*, 11(1): 1-15. https://doi.org/10.1186/s40066-022-00372-7

Mahmood, N., Arshad, M., Mehmood, Y., Faisal Shahzad, M., & Kächele, H. (2021). Farmers' perceptions and role of institutional arrangements in climate change adaptation: Insights from rainfed Pakistan. *Climate Risk Management*, 32: 1-14. https://doi.org/ 10.1016/j.crm.2021.100288

Mamo, Y. A., Haji, J., Legesse, B., & Sassi, M. (2021). Challenges of Agricultural Cooperatives And Their Impact on Profitability of Potato Growers in Eastern Ethiopia. *Review of Agricultural and Applied Economics*, 24(2): 62–77. https://doi.org/10.15414/raae. 2021.24.02.62-77

Misozi, N., & Chrispin, H. (2019). Agricultural Information Provision for Enhancing Crop Productivity in Chibombo District of Zambia. In *Zambia Journal of Library & Information Science,* 3(1): 1-16.

Mtega, W. P. (2021). Communication channels for exchanging agricultural information among Tanzanian farmers: A meta-analysis. SAGE, In: *IFLA Journal* 47(4): 570–579. Publications Ltd. https://doi.org/10.1177/03400352211023837

Muench, S., Bavorova, M., & Pradhan, P. (2021). Climate Change Adaptation by Smallholder Tea Farmers: a Case Study of Nepal. *Environmental Science and Policy*, 116: 136–146. https://doi.org/10.1016/j.envsci.2020.10.012

Mur, R., Oonk, L., & Bitzer, V. (2016). *Quality of content in agricultural extension*. KIT working paper. 12pp.

Ndimbwa, T., Mwantimwa, K., & Ndumbaro, F. (2021). Channels used to deliver agricultural information and knowledge to smallholder farmers. *IFLA Journal*, 47(2): 153–167. https://doi.org/10.1177/0340035220951828

Nikam, V., Ashok, A., & Pal, S. (2022). Farmers' information needs, access and its impact: Evidence from different cotton producing regions in the Maharashtra state of India. *Agricultural Systems*, 196: 1-12. https://doi.org/10.1016/j.agsy.2021.103317

Ortega, D. L., Bro, A. S., Clay, D. C., Lopez, M. C., Tuyisenge, E., Church, R. A., & Bizoza, A. R. (2019). Cooperative membership and coffee productivity in Rwanda's specialty coffee sector. *Food Security*, 11(4): 967–979. https://doi.org/10.1007/s12571-019-00952-9

Petcho, W., Szabo, S., Kusakabe, K., & Yukongdi, V. (2019). Farmers' perception and drivers of membership in rice production community enterprises: Evidence from the central region, Thailand. *Sustainability (Switzerland)*, 11(19): 1-17. https://doi.org/10.3390/ su11195445

Phiri, A., Chipeta, G. T., & Chawinga, W. D. (2019). Information needs and barriers of rural smallholder farmers in developing countries: A case study of rural smallholder farmers in Malawi. *Information Development*, 35(3): 421–434. https://doi.org/10.1177/ 0266666918755222

Singh, A., Kumari, S., Malekpoor, H., & Mishra, N. (2018). SC. *Journal of Cleaner Production*, https://doi.org/10.1016/j.jclepro.2018.07.236

Sylla, A. Y., Mahama Al-Hassan, R., Egyir, I. S., & Anim-Somuah, H. (2019). Perceptions about quality of public and private agricultural extension in Africa: Evidence from farmers in Burkina Faso. *Cogent Food and Agriculture*, 5(1): 1-14. https://doi.org/10.1080/23311932.2019.1685861

Tefera, D. A., Bijman, J., & Slingerland, M. A. (2017). Agricultural Co-Operatives in Ethiopia: Evolution, Functions and Impact. *Journal of International Development*, 29(4): 431–453. https://doi.org/10.1002/JID.3240

Trebbin, A. (2014). Linking small farmers to modern retail through producer organizations - Experiences with producer companies in India. *Food Policy*, 45(2014): 35–44. https://doi.org/10.1016/j.foodpol.2013.12.007

Tumenta, B. F., Amungwa, F. A., & Nformi, Manu, I. (2021). Role of agricultural cooperatives in rural development in the era of liberalization in the North West and South West regions of Cameroon. *Journal of Agricultural Extension and Rural Development*, 13(1): 69–81.

https://doi.org/10.5897/jaerd2020.1211

Tuna, E., & Karantininis, K. (2021). Agricultural cooperatives as social capital hubs – A case in a post-socialist country. *Journal of Co-Operative Organization and Management*, 9(1). https://doi.org/10.1016/j.jcom.2021.100134

URT (United Republic of Tanzania), (2017). Ministry of Agriculture, 2016/17 Annual Agriculture Sample Survey Crop and Livestock Report, Dar es Salaam, Tanzania. 88pp.

Yamane, T. (1967). Statistics: An Introductory Analysis, 2nd Ed., New York: Harper and Row. pp22.

Appendix: Agricultural Information Providers

SERVICE PROVIDER	VARIABLES		Kapunga		Madibira AMCOS		UWAWAKUDA			
			n	%	n	%	n	%	Total	%
AMCOS	ADEQUACY	Inadequate	13	18.80	27	39.10	29	42.00	69	18.06
		Partially adequate	25	22.30	67	59.80	20	17.90	112	29.32
		Adequate	24	11.90	140	69.70	37	18.40	201	52.62
		Total	62		234		86		382	100.00
	RELEVANCE	Irrelevant	19	16.70	71	62.30	24	21.10	114	29.84
		Relevant	27	20.50	75	56.80	30	22.70	132	34.55
		Highly relevant	16	11.80	88	64.70	32	23.50	136	35.60
		Total	62		234		86		382	100.00
	RELIABILITY	Not reliable	24	19.50	74	60.20	25	20.30	123	32.20
		Reliable	19	13.20	91	63.20	34	23.60	144	37.70
		Highly reliable	19	16.50	69	60.00	27	23.50	115	30.10
		Total	62		234		86		382	100.00
EXTENSION OFFICERS	ADEQUACY	Inadequate	20	29.90	24	35.80	23	34.30	67	17.54
		Partially adequate	20	13.10	106	69.30	27	17.60	153	40.05
		Adequate	22	13.60	104	64.20	36	22.20	162	42.41
		Total	62		234		86		382	100.00
	RELEVANCE	Irrelevant	9	60.00	3	20.00	3	20.00	15	3.93
		Relevant	51	16.70	183	59.80	72	23.50	306	80.10
		Highly relevant	2	3.30	48	78.70	11	18.00	61	15.97
		Total	62		234		86		382	100.00
	RELIABILITY	Not reliable	23	41.10	17	30.40	16	28.60	56	14.66
		Reliable	27	11.30	159	66.30	54	22.50	240	62.83
		Highly reliable	12	14.00	58	67.40	16	18.60	86	22.51
		Total	62		234		86		382	100.00
MASS MEDIA(TV,Radio,Mobile)	ADEQUACY	Inadequate	30	21.70	97	64.50	24	15.90	151	39.53
		Partially adequate	31	19.90	88	61.50	24	16.80	143	37.43
		Adequate	1	1.10	49	55.70	38	43.20	88	23.04
		Total	62		234		86		382	100.00
	RELEVANCE	Irrelevant	23	39.00	20	33.90	16	27.10	59	15.45
		Relevant	33	11.80	208	74.60	38	13.60	279	73.04
		Highly relevant	6	13.60	6	13.60	32	72.70	44	11.52
		Total	62		234		86		382	100.00
	RELIABILITY	Not reliable	28	29.80	46	48.90	20	21.30	94	24.61
		Reliable	25	12.80	143	73.30	27	13.80	195	51.05
		Highly reliable	9	9.70	45	48.40	39	41.90	93	24.35
		Total	62		234		86		382	100.00
INPUT DEALERS	ADEQUACY	Inadequate	12	17.10	75	50.00	33	32.90	120	31.41
		Partially adequate	24	15.40	99	68.60	25	16.00	148	38.74
		Adequate	26	16.70	60	59.00	28	24.40	114	29.84
		Total	62		234		86		382	100.00
	RELEVANCE	Irrelevant	10	35.70	15	53.60	3	10.70	28	7.33
		Relevant	50	15.40	194	59.90	80	24.70	324	84.82

SERVICE PROVIDER	VARIABLES		Kapunga		Madibira AMCOS		UWAWAKUDA			
			n	%	n	%	n	%	Total	%
		Highly relevant	2	6.70	25	83.30	3	10.00	30	7.85
		Total	62		234		86		382	100.00
	RELIABILITY	Not reliable	17	28.80	36	61.00	6	10.20	59	15.45
		Reliable	42	15.90	162	61.40	60	22.70	264	69.11
		Highly reliable	3	5.10	36	61.00	20	33.90	59	15.45
			62		234		86		382	100.00
RESEARCH INSTITUTES	ADEQUACY	Inadequate	43	25.90	106	63.90	17	10.20	166	43.46
		Partially adequate	16	11.20	82	57.30	45	31.50	143	37.43
		Adequate	3	4.10	46	63.00	24	32.90	73	19.11
		Total	62		234		86		382	100.00
	RELEVANCE	Irrelevant	29	63.00	13	28.30	4	8.70	46	12.04
		Relevant	32	10.90	202	68.70	60	20.40	294	76.96
		Highly relevant	1	2.40	19	45.20	22	52.40	42	10.99
		Total	62		234		86		382	100.00
	RELIABILITY	Not reliable	39	65.00	17	28.30	4	6.70	60	15.71
		Reliable	22	9.50	155	66.80	55	23.70	232	60.73
		Highly reliable	1	1.10	62	68.90	27	30.00	90	23.56
		Total	62		234		86		382	100.00
FELLOW FARMER	ADEQUACY	Inadequate	32	27.40	54	46.20	31	26.50	117	30.63
		Partially adequate	15	9.30	115	71.00	32	19.80	162	42.41
		Adequate	15	14.60	65	63.10	23	22.30	103	26.96
		Total	62		234		86		382	100.00
	RELEVANCE	Irrelevant	18	50.00	7	19.40	11	30.60	36	9.42
		Relevant	39	12.10	212	66.00	70	21.80	321	84.03
		Highly relevant	5	20.00	15	60.00	5	20.00	25	6.54
		Total	62		234		86		382	100.00
	RELIABILITY	Not reliable	14	15.10	63	67.70	16	17.20	93	24.35
		Reliable	43	16.70	148	57.60	66	25.70	257	67.28
		Highly reliable	5	15.60	23	71.90	4	12.50	32	8.38
		Total	62		234		86		382	100.00
TRADER (Including Millers and brokers)	ADEQUACY	Inadequate	39	18.70	110	52.60	60	28.70	209	54.71
		Partially adequate	22	13.40	117	71.30	25	15.20	164	42.93
		Adequate	1	11.10	7	77.80	1	11.10	9	2.36
		Total	62		234		86		382	100.00
	RELEVANCE	Irrelevant	41	12.50	202	61.80	84	25.70	327	85.60
		Relevant	21	38.20	32	58.20	2	3.60	55	14.40
		Highly relevant	0	0.00	0	0.00	0	0.00	0	0.00
		Total	62		234		86		382	100.00
	RELIABILITY	Not reliable	19	8.10	164	69.50	53	22.50	236	61.78
		Reliable	37	27.00	67	48.90	33	24.10	137	35.86
		Highly reliable	6	66.70	3	33.30	0	0.00	9	2.36
		Total	62		234		86		382	100.00

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Managing Institutional Innovations through Farmers Organizations in the Sugarcane Subsector in Tanzania: Potentials and Limitations

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Abstract

Institutional innovations such as contract farming are essential for facilitating agricultural transformation with smallholder farmers being key players. While contract farming (CF) provides smallholder farmers with access to production and marketing opportunities, the role of farmer organizations (FOs) that are entrusted to manage CF arrangement remains less understood. In this paper, the potentials and limitations of FOs in managing institutional innovations are assessed based on a qualitative study involving farmer organizations, Kilombero Sugarcane Company Limited and government institutions between June and October 2021. The study used thematic analysis to analyze the collected data in order to generate new insights and concepts. The findings suggest that proper management of CF enables smallholder farmers to access credit and improved agricultural inputs as well as extension services and improved infrastructure from the sugarcane companies. While access to output markets at reasonable prices remains a major incentive mechanism for improving technical efficiency and productivity, FOs strengthen social cohesion and hence, the social capital for smallholder farmers. The study indicates that, insufficient market facilities and information, inadequate extension services as well as bureaucracy in the distribution of input credit through FOs are some of the limitations facing smallholder farmers in CF. Based on the foregoing, it is pertinent to recommend that concerted efforts are needed from diverse stakeholders to strengthen FOs thus enabling them to effectively deliver services to the members. Limitations and avenues for further research are also discussed in the text.

Keywords: *Farmer organizations, Institutional innovations, Contract Farming, and smallholder Sugarcane Farmers*

1.0 Introduction

Sugarcane is an important commercial crop, and it is the main source of sugar produced for both export and domestic consumption. In Tanzania, most sugarcane is grown in estates, owned by sugar processing factories and out growers (Kuzilwa., *et al.,* 2017). Most of the out growers are smallholder farmers who encounter multitude and often complex constraints that hinder productivity and growth. Consequently, they are often caught in the vicious cycle of poverty. Most of the constraints are institutional, resulting from imperfections and failures of input and output markets. These manifests themselves in lack of access to agricultural inputs and output markets (Meemken & Bellemare, 2020; Ren *et al*., 2021; Tibamanya, Henningsen & Milanzi, 2022).

Contract farming scheme has emerged as an institutional innovation for addressing the problem of market failures. CF is understood as a preharvest agreement between a farmer and a buyer/processing and/or marketing firm. The scheme also calls for the purchaser to provide some technical production support such as the supply of critical agricultural inputs including fertilizers, improved seeds, and extension services. CF entails a commitment by farmers through their Farmer Organizations (FOs) to supply the agreed quantities of the agricultural outputs at the specified quality standards as determined by the purchaser.

On the other hand, the purchaser commits to support production and purchase the produced crop. CF accelerates capital inflow, technology transfer, and assured market for crop production hence, regarded as a mechanism for addressing agricultural production and marketing challenges (URT, 2013; Bahera & Swain, 2021) thereby reducing transaction costs and risks. Similarly, CF scheme integrates smallholder farmers and the private sector enabling them to participate in global agricultural value chains thereby contributing to yield and productivity enhancement (Vicol *et al.,* 2022; Bellemare & Novak, 2017). As such, CF scheme is one of the institutional innovations for agricultural transformation. In view of the importance of CF, government, non-governmental organizations, the private sector and the international community widely promote the adoption of CF.

Central to the discourse of contract farming schemes are the intermediary roles of Farmer Organizations (FOs). FOs are found in diverse forms and they play different functions depending on the purpose of their establishment such as coordinating production and marketing activities as well as advocacy and local economic development (LED). All FOs are designed on the principle of collective action of smallholder farmers (Shiferaw, Obare & Muricho, 2006).

While contract farming (CF) provides smallholder farmers with access to production and marketing opportunities, the role of farmer organizations (FOs) that are entrusted to manage CF arrangement remains less understood. Even though there is a plethora of studies on CF, scanty knowledge exists on potentials and limitations of FOs in managing CF. Makoye and Milanzi (2019) show that despite numerous benefits of CF, exit intention has been high and most smallholder farmers showed an interest of operating independently. This suggests there are limitations to CF especially as coordinated by FOs. In contrary, Armah *et al.* (2010); Wainaina *et al.* (2014)and Satish (2021) revealed that smallholder farmers enjoy the existence of CF through FOs. Nonetheless, the findings of different previous studies on managing CF through FOs have been mixed. Therefore, the current paper is an attempt to understand the potentials and limitations of FOs in managing institutional innovations in sugarcane contract farming in Tanzania.

The rest of the paper is structured as follows. Section 2 briefly presents a review of theoretical and empirical literature, section 3 describes the methodology of the study, section 4 presents results

and discussion. Section 5 concludes and highlights the implications of the study's findings for policy, practice and research.

2.0 Literature Review

2.1 Innovation, contract farming, and farmer organizations

Innovation is referred to as a process by which a domain, a product, or a service is renewed and brought up to date by applying new processes, introducing new techniques, or establishing successful ideas to create new value (AlMalki & Durugbo, 2017). The institutional innovation is based on the development and implementation of new or modified systems, structures, rules, policies, or practices within organizations, societies, or broader institutional contexts. Innovations aim to address existing challenges, improve efficiency, promote positive change, or adapt to changing circumstances (AlMalki & Durugbo, 2017). Institutional innovations can lead to shifts in power dynamics, decision-making processes, accountability mechanisms, and overall institutional arrangements, with the goal of achieving improved outcomes, sustainability, or responsiveness to emerging needs and demands.

Contract farming is indeed considered as an institutional innovation. It involves a contractual arrangement between farmers (often smallholders) and agribusiness firms or buyers. In this arrangement, the farmer agrees to produce a specific agricultural commodity based on predetermined terms and conditions, including quality standards, quantities, and pricing (FAO, 2013).

Worldwide, there are many forms of farmer organizations (FOs). These are organisations, associations, cooperatives, saving and credit societies, commodity farmer associations and rural farmers' organizations. FOs as farmers' institutions act as mouthpieces of smallholder farmers who are united to form an organization platform from which their issues are discussed within the range of common interests (FAO, 2020). The FOs are designed to represent the interest of farmers in the CF arrangement with regard to productivity and market.

2.2 Theoretical review

The study is based on collective action theory which was initially developed by Mancur Olson in 1965 and popularized by Olson (1965). The theory integrates group and rational choice theories to explain how individuals make collection decisions. The theory explains that any group of individuals attempting to provide a public good face a free ride problem emanating from group size. The group of individuals with a common interest is expected to act on behalf of their common interest much as single individuals are often expected to act on behalf of their personal interests (Vicol *et al.,* 2022). Olson goes further to explain that individual actions are based on the rational behaviour such that individuals tend to act collectively on issue that assures utility maximization. Although the reason behind the formation of collective actions goes beyond the individual utility maximization, to act collectively is essentially a voluntary action whereby an individual has to choose to either associate or dissociate.

The collective action theory also considers the construction of new institutions innovations through the social, economic and political behaviour of many actors who play diverse and partisan roles in the organizational field or network that emerges around a social movement or technical innovation. Behera and Swain, (2021) noted that the collective action theory is emerging primarily in the social movement and technological innovation movement. Collective action theory identifies novel institutional arrangements emerge to address a social problem or develop and commercialize a new technology. Collective action theory assumes that innovation originating from farmers and their FOs are blamed for its lack of response to the needs of

farmers. Rather, the farmers who do not adopt the innovation are blamed for their lack of response.

The study chooses this theory because FOs can be understood through the lens of collective action theory. FOs enables farmers to overcome collective action problems by developing a collective identity, forming shared goals and mobilizing collectively. By engaging in FOs, farmers can leverage their collective strength, negotiate better terms, and access markets that would be challenging to reach individually. Selective incentives offered by agribusiness firms motivate farmers to participate, and the power dynamics and bargaining process between farmers and firms can be analysed through the framework of collective action theory. Understanding the outcomes and impacts of FOs requires considering the strength of collective action, resource disparities, and the broader institutional context that shapes the dynamics of power, benefits distribution, and sustainability within these arrangements.

2.3 Empirical review

Theoretically, the main role of FOs is to manage human exchanges to a pattern of economic arrangement (Nazifi *et al.,* 2021). Nevertheless, FOs organize activities to a pattern of economic arrangement, many researches on agribusiness argue that exchange relationships are arranged not only by contracts, as agreed by theory of agency, but also via vertical integration and social networks (Dubbert & Abdulai, 2021). Such organization tends to be influenced by market concentration, asset specificity, small number situations, property rights, and trust (Adabe *et al.,* 2019). In this paper, a smallholder farmer is therefore defined as an agri-business enterprise in which the pattern of economic organization is influenced mostly by social networks (Dubbert & Abdulai, 2021). As such, smallholder farmers are subject to institutional factors such as market power, asset specificity, property rights, and trust, which influence the coordination of their production and marketing activities. For instance, when looking at technological innovations, property rights tend to internalize externalities thereby accruing the benefits to the innovator, which provides more incentives for further innovation (Adabe *et al.,* 2019).

However, this is different from institutional forms of innovation where the commercialization option of the innovation was often not feasible. The main challenge of innovation adoptions is the transactions costs, and when such costs are perceived to be high, formal institutions become important (Arouna, Michler & Lokossou, 2021). Societies developed informal institutions, such as culture, norms, trust and kinship, as well as formal institutions, to reduce the negative effects of transactions costs (Mishra *et al.,* 2018). Both formal and informal institutions had an influence on the innovation process and its adoption thereof. For instance, Bidzakin *et al.* (2020) analyzed panel data from developing and industrialized countries and found national culture to be a determinant factor affecting the intensity of adoption of research and development initiatives. In comparing countries with similar culture and norms, Bidzakin *et al.,* (2020) found the stability of the institutional environment to be an important factor explaining the propensity to patent an innovation.

The FOs as agents fulfill the demands of the smallholder farmers. Impliedly the efficiency and productivity level of sugarcane farmers are low due to mismanagement of the FOs. Yeshitila *et al.,* (2020) argue that FO are supposed to provide services that enhance capability, Innovations, networks making of the smallholder farmers as to increase the yield of produce. Mishra, Mayorga and Kumar, (2020) posited that the FOs are to link smallholder farmer to sources of agricultural produce and buyers of the agricultural produce. However, FOs were found to be weak and incompetent in discharging their duties and obligations to smallholder farmers. According to URT (2017), FOs play six major roles which are: organizational services,

production services, input supply roles, marketing services, financial services, and technological services. Despite of the establishment of FOs, in Kilombero the productivity of smallholder farmer is still low to the tune of 37 tons/hectare compared to global benchmark of 63 tons/hectare (Thibane *et al.,* 2023; URT, 2021). Similarly, Magongo (2018) revealed that Kilombero out-growers were facing some problems including; poor drainage, low levels of fertilizer and herbicides use, lack of extension services, lack of credits, food shortage, poor services from Kilombero Sugar Company Limited (KSCL), poor sugarcane pricing, poor road networks and inadequate farm machinery.

Despite many studies examining the role of CFs, the role of FOs in managing institutional innovations has rarely been examined. Few studies have done contract farming institutional innovation including Mishra, Mayorga and Kumar, (2020) and Yeshitila *et al.,* (2020). However, these studies are limited in terms of geographical, crop and methodological contexts and hence are not generalizable to the current context. The current study is an attempt to addresses such lacuna of knowledge through understanding the potentials and limitations of FOs in managing institutional innovations in sugarcane contract farming in Tanzania.

3.0 Methodology

The study was conducted in Kilombero valley, which is found in two districts of Morogoro region namely Kilombero and Kilosa districts. Kilombero valley is leading in sugarcane production, having more than 16,000 hectares of sugarcane. The Kilombero valley comprises 97% of smallholder sugarcane farmers (SHSCFs) in Tanzania most of them operating under CF arrangements (Kuzilwa *et al.,* 2017). The study used purposive sampling technique to select FOs leaders (chairperson, secretary, and treasurer), representatives from Kilombero Sugar Company Limited (out-growers manager and cane supply manager) and government officials (District Agriculture Irrigation and Cooperative Officer from Kilombero). The study selected those informants because they contain vital information concerning the potentials and limitations of FOs in managing institutional innovation. The study used primary data which was collected through interviews on 14 key informants. The interview method was used because it is a valuable and powerful method for collecting qualitative data as compared to observation and focus group discussion methods (Creswell, 2014).

The study used a thematic analysis technique to analyse collected data. This technique was used to generate new insights and concepts derived from data. In addition, the method provides a rigorous and comprehensive approach to analyze the qualitative data (Creswell, 2014). The researcher listened to the recorded interviews and read the written data numerous times to understand and translate the content. Thereafter, the researcher extracted and combined text about the potentials and limitations of FOs in managing institutional innovation to identify themes which were analysed by using NVivo data analysis software. The NVivo software was employed to condense and abstract the themes into codes, which were then categorized and applied to the entire set of collected data. The data was reviewed to ensure that the script's original meaning is maintained.

4.0 Results and Discussion

4.1 An overview

The purpose of the current study was to examine potentials and limitations of FOs in managing institutional innovation such as CF. For the past three decades, FOs have been managing and coordinate contracts between smallholder farmers and agro-processors via forward agreement, normally at pre-determined prices. In this section major potentials of FOs in managing CF are assessed.

Two themes were generated which are: potential in managing CF through FOs and limitation in managing CF through FOs. The layout of the findings is derived from the key informants through the in-depth interview. Supporting quotations from the study participants have been included to illustrate the messages being communicated. Findings are presented based on the identified themes. Table 1 shows the results with respect to the potentials of FOs in managing contract farming through FOs.

Table 1: Thematic analysis for compliance with potential in managing contract farming

Code	Sub-theme	Theme
Farm-level knowledge dissemination and training	Extension services and knowledge dissemination to smallholder farmers in CF	Potential in managing CF through FOs
Facilitation and distribution of agricultural inputs	Role of FOs in inputs supply	
Challenges in inputs supply		
Timely market information dissemination	Market information dissemination	
Importance of market information for farmers		
Role of FOs in accessing input credit	Accessibility of input credit to farmers	
Benefits of input credit accessibility for farmers		

4.2 Potentials of farmer organizations

Knowledge Services: Agricultural knowledge and skills are supposed to be spread and utilized in farming. The service is normally provided through the agricultural extension officers. In this, knowledge and skills in applying new farming techniques and agricultural innovation are disseminated at a farm level. The results of analysis suggest that, FOs are vested to ensure that the agreement between smallholder farmers and agro-processor to provide extension services is fulfilled. During the interview with Ruhembe AMCOS leadership, it was observed that provision of extension is central to the CF agreement as attested as follows:

> *"Farm extension service is one of the main parts in contract farming that is managed by FOs. FOs ensure processing and/marketing firms provide agricultural training and seminars to smallholder farmers in order to improve their knowledge and skills so as to improve quantities and quality standards determined by the purchaser. FOs ensure agricultural extension officers conduct farm visit, and train farmers"* (Leadership FGD in Ruhembe AMCOS, Oct. 2021)

Extension officers provide reliable and simply interpreted information to Small-Holder Sugarcane Contract Farmers (SHSCFs) on the preference of sugarcane demanded by KSCL, the quantity demanded at particular season and the price offered by KSCL. Similarly, the market information dissemination emphasizes using simplified means such as at meetings, displaying information on the notice boards available at the FO offices and in the villages offices where everybody can access. The finding is consistent with Dubbert, (2019) who revealed that, farm visits is a farm extension service that has been most unique, influential and successful in numerous aspects. In recent past, there has been an increasing demand for extension services owing to a strong interest by farmers to improve farming practices thereby, improving the quality, technical efficiency and productivity leading to high sugarcane price.

Inputs Supply: In the procedure of agricultural development, it is important to supply farmers with sufficient and advanced inputs such as fertilizer, improved seeds, and pesticides of sugarcane farming. Also, FOs have engaged in an effective role in the inputs purchase in the sugarcane production programme, FOs are responsible for facilitation of the purchase and distribution of

industrial fertilizer to farmers (URT, 2017). Nevertheless, actual supply is handled by the FOs as they are suitably distributed and well-equipped with warehousing facilities. Recently, to encounter the requirements for sugarcane production, FOs have made substantial efforts to develop self-initiated buying and distribution services. The distribution of pesticides, fertilizers, and farm implements, has increased yearly. However, it was reported that, Kilombero sugarcane Company Limited had planned program to collect fertilizer requirements of all SHSCFs from all FOs in the area in the year 2021 but the plan failed because farmers were engaged into other fertilizer supply contract with other companies.

Market Information: Recently FOs in Kilombero facilitated established of newly sugarcane commercialized system. As sugarcane production become more commercialized, FOs ensure all members know the current situation of sugarcane market including sucrose level measurement and price. Market information of the sugarcane and sugar is timely informed to the farmers/members by the respective FOs. Ruml, and Qaim, (2021) state that, in the procedure of agricultural development, it is important to supply farmers with sufficient and advanced information concerning market for their products (sugarcane) as interviewed with Ruhembe AMCOS Secretary states thus:

> "*SHSCFs take their sugarcane to the factory while they have priori information of selling price. It was found that market information dissemination is mainly done by displaying sugarcane price on the notice boards which are available at the FOs offices and in the villages offices where everybody can access*" (Interview with Ruhembe AMCOS Secretary, Oct. 2021)

Financial Services (Accessibility of input credit to Farmers): The use of improved farm inputs leads to increase in the cost of sugarcane production. Since majority of farmers are small scale farmers and who are still economically poor, the improved farm inputs become a heavy burden to them to buy them on cash basis, thus they need input credit. Before the application of farms transformation, about Tshs. 500 million worth of input credit to farmers was provided (Costales & Catelo, 2019). Currently, input credit of nearly Tshs. 900 million for sugarcane production is provided to the farmers and more than 50 percent of farmers have got input credit through FOs so as to meet their financial needs for sugarcane production (URT, 2021). FOs search input credit providers and act as guarantors to farmers to access input credit. Access to input credit enables the farmer to use mostly needed production inputs like improved seeds, industrial fertilizers, and pesticides.

The result from the survey shows that, access to input credit enables farmers to use advanced technology to improve land preparation, production, and harvesting. The largest part of the input credit provided is for the purpose of sugarcane production. The lending funds to FOs members mainly come from commercial banks and micro-financing companies to solve the problem of capital shortage for the particular farming season. FOs are trusted by financial institutions and they are believed as the most useful in facilitating accessibility of input to farmers and keeping in touch on the repayment schedule. This is facilitated by the structure and function of FOs. Also, the result from the field indicates that, FOs are custodian of all particulars of farmers and detailed information of the requirements of farmers and are able to connect the input credit providers with farmers so they provide agency and guarantee role to farmers. Again, on the other hand farmers normally feel more comfortable to disclosing their monetary problems to leaders of the FOs than with bank officers. FOs go with the total input credit amount needed by all farmers to the bank or micro-finance company. Input credits are directed through the FOs to make sure that the input credit provided is in safe hand. This has greatly influenced the successful application of agricultural development programs and improve sugarcane production. According to cane supplier manager;

"*The input credit could enable the farmers to have the capital to purchase inputs and to have resources to prepare their land on time before planting*" (Interview with cane supplier manager in KSCL, Oct. 2021)

Kilombero AMCOS Chairperson added;

"*Access to credit is an important source of capital to trigger socio-economic development in a country. Sugarcane farming is likely to be influenced by existence of finance support through input credit from financial institutions to enhance capital investment. This is particularly important because sugarcane farming requires capital investment to meet operations in production of sugarcane and other marketing cost obligation*" (Interview with Kilombero AMCOS Chairperson, Oct. 2021).

Furthermore, Table 2 shows the results concerning limitation in managing contract farming through FOs.

Table 2: Thematic analysis for compliance with limitations in managing contract farming

Code	Sub-theme	Theme
Limited access to extension services	Access to extension services	Limitation in managing CF through FOs
Training and efficiency of FOs leaders		
Bureaucracy and Unbalanced Distribution of Loans	Challenges in financial services	
Corruption and mismanagement of loans		
High production costs for smallholder farmers		
Inefficient distribution and transport services (networks)	Challenges in marketing services	
Insufficient market facilities and information		
Inability to realize profits		

4.3 Limitations of farmer organizations

Despite the importance of FOs for managing institutional innovations, the results of analysis suggest that there exists several are limitations. These are discussed below. -

Extension Services Access: The facilitation of extension services has been the most significant factor for agricultural development and improvement of sugarcane production. In provision of this service, the results show that few farmers access extension services. Studies have shown that being a member of FO can guarantee access to extension services (Bellemare, 2018), however, there has been heterogenous access to extension service in the study area. This is attributable to a number of reasons as follows. First, there are inadequate extension officers from the government and private entities. Second, FOs have inadequate power to influence neither the allocation of the extension officers in their respective areas nor their employment. One of the interviewed agricultural officers testifies as follows:

"*Here in Kilombero valley there are more than 16,000 acres of sugarcane owned by smallholder farmers, but there are only six extension officers"* (Interview with agricultural officer in Kilombero, Oct. 2021)

The finding is consistent with Prowse, (2018) whose study revealed that, only 15% of farmers receive extension services. The study further revealed that, on average farmers receiving extension services once in the entire farming season. This finding is also confirmed by Bijman, and Wollni (2018). Moreover, the study revealed that, many FOs leaders are generally less trained on

sugarcane production and management technologies hence less efficient in the management of FOs and hence, managing contract farming poorly.

Uneven distribution of Financial Services: In the field, it was revealed that there is bureaucracy in the distribution of loans received from the financial institutions. Despite great work done by FOs of guarantee loans to farmers, there is unbalanced distribution of loans to farmers. DAICO of Kilombero revealed;

> "*Some SHSCFs are facing challenges such as poor access to input credit arising from unbalanced distribution of loans to farmers*" (Interview with agricultural officer in Kilombero, Oct. 2021)

For example, Mishra, Mayorga and Kumar (2020) noted that there was corruption in the form of nepotism in the distribution of loans received from financial institutions. Also, Khan, Nakano and Kurosaki, (2019) found that, some FOs are featured with bribery, favouritism, unfair weighing system and poor planning of the mechanization coordination, and mismanagement of loans received from financial institutions. Therefore, many farmers (small scale farmers) face high costs in the production of sugarcane, making them unable to cover production costs.

Marketing Services: The purpose of establishing FOs is to enhance the bargaining power of weak small-scale farmers in dealing with agro-processors and contracted sugarcane transporters. Most of the key informants interviewed indicated that FOs fail to ensure efficient distribution output to market. In some cases, the transport services they coordinate offer poor services resulting in a delay in delivery and loss of quality of sugarcane hence, rejected at the factory. For example, the agricultural officer interviewed indicated that:

> "*In the 2020/2021 season late delivery of the harvested sugarcane led to more than 200 tons of sugarcane rejected by the factory"* (Interview with agricultural officer in Kilombero, October 2021)

The result in the current study confirms Bezabeh *et al.* (2020)'s findings which suggest that many FOs provide insufficient market facilities, insufficient market information and low prices to their farmers. Even those farmers who managed to produce sugarcane of good quality were not able to realize profits due to inefficiencies in the marketing role played by FOs.

5.0 Conclusion and Implications

The present study explored potentials and limitations of FOs in managing the institutional innovation such as contract farming (CF), which is important for improving access to critical input and output markets thereby enhancing sugarcane production and socio-economic welfare of the smallholder farmers. The study posited that increased sugarcane production beyond the production frontier, depends on efficient management of FOs in managing CF system. The results showed that proper management of contract farming indeed enabled farmer to access credit, improved inputs, extension services, strengthen social networks of farmers, improved transport and infrastructures, and better prices which all in in turn, would improve technical efficiency and productivity of smallholder farmers. However, the study revealed that FOs have several weaknesses that limit their ability to effectively deliver services to the members. These limitations include insufficient market facilities and information, as well as limited influence on extension service provision, and failure to manage bureaucracy and corruption in the distribution of critical inputs such as agricultural credits.

In light of the foregoing, it is reasonable to recommend continued strengthening of FOs to enable them to effectively deliver services to their members. The government should prepare and endorse favourable policies for financial institutions to continue providing input credit to FOs for smallholder farmers. The findings and conclusion of this study should be interpreted in the light of two limitations. First, the current study was conducted in the Kilombero valley Tanzania. Though the research setting provides a good testing ground for the validity of theories mainly developed in the context of industrialized economies, the current study's conclusions may be country specific and hence lacking external validity. Second, the study was based on a qualitative approach. It is difficult to determine the extent to which FOs performance affect the performance of smallholder farmers. Certainly, this entails conducting quantitative research to measure and test the argument of the present study. Nevertheless, the findings are still valid and provide relevant input for policy considerations.

6.0 References

Adabe, K.E., Abbey, A.G., Egyir, I.S., Kuwornu, J.K.M. and Anim-Somuah, H. (2019). Impact of contract farming on product quality upgrading: The case of rice in Togo. *Journal of Agribusiness in Developing and Emerging Economies*, 9(3), 314–332.

AlMalki, H.A., Durugbo, C.M. (2017). Systematic review of institutional innovation literature: towards a multi-level management model. *Management Review Quarterly*. 73(4), 731–785.

Armah J, Schneider K, Plotnick R, Gugetly MK. (2010). Smallholder Contract Farming in Sub-Saharan Africa and South Asia. Evans School. University of Washington.

Arouna, A., Michler, J.D. and Lokossou, J.C. (2021). Contract farming and rural transformation: Evidence from a field experiment in Benin. *Journal of Development Economics*, 151(C), 102-126.

Behera, D.K. and Swain, B.B. (2021). Coperative-Led Contract Farming on Farm Productivity in India. *Applied Econometrics and International Development*, 21(2), 49–58.

Bellemare, M. F. (2018). Contract farming: opportunity cost and trade-offs. *Agricultural Economics*, 49 (2018): 279-288.

Bellemare, M.F. and Novak, L. (2017). Contract farming and food security. *American Journal of Agricultural Economics*, 99(2), 357–378.

Bezabeh, A., Beyene, F., Haji, J. and Lemma, T. (2020). Impact of contract farming on income of smallholder malt barley farmers in Arsi and West Arsi zones of Oromia region, Ethiopia. *Cogent Food & Agriculture*, 6(1), 134-162.

Bidzakin, J.K., Fialor, S.C., Awunyo-Vitor, D. and Yahaya, I. (2020). Contract farming and rice production efficiency in Ghana. *Journal of Agribusiness in Developing and Emerging Economies*, 10(3), 269–284.

Bijman, J, and Wollni, M. (2018). Producer organizations and vertical coordination: an economic organization theory perspective. Paper presented at the International Conference on Cooperative Studies (ICCS), 7 – 9 October 2008, Kolln, Germany

Costales, A. and Catelo, M. A. O. (2019). Contract Farming as an Institution for Integrating Rural Smallholders in Markets for Livestock Products in Developing Countries: (II) Results in Case Countries. Pro-poor Livestock Policy Initiative. A living from livestock. Research report Nr. 09 – 04. http://www.fao.org/ag/againfo/programmes/en/pplpi/docarc/rep-0812_contractfarming.pdf

Creswell, R. (2014). Research Design: Qualitative, Quantitative, and Mixed Methods Approaches. USA: SAGE Publications.

Dubbert, C. (2019). Participation in contract farming and farm performance: Insights from cashew farmers in Ghana. *Agricultural Economics*, 50(6), 749–763.

Dubbert, C. and Abdulai, A. (2021). Does the Contract Type Matter? Impact of Marketing and Production Contracts on Cashew Farmers' Farm Performance in Ghana. *Journal of Agricultural & Food Industrial Organization*, 20(1), 119–134.

FAO. (2020). The State of Agricultural Commodity Markets 2020. Agricultural Markets and

Sustainable Development: Global Value Chains, Smallholder Farmers and Digital Innovations; FAO: Rome, Italy.

Ibrahim, A.Y., Hudu, Z. and Samuel, S.A. (2022). Contract farming and farmers' well-being: The case of yam farmers in the Mion district of the Northern Region of Ghana. *Journal of Development and Agricultural Economics*, 14(1), 11–19.

Khan, M.F., Nakano, Y. and Kurosaki, T. (2019). Impact of contract farming on land productivity and income of maize and potato growers in Pakistan. *Food Policy*, 85, 28–39.

Kuzilwa, J. A., Fold, N., Henningsen, A., and Larsen, M. N. (2017). Contract Farming and the Development of Smallholder Agricultural Businesses: Improving Markets and Value Chains in Tanzania. Milton Park, England: Routledge: Taylor and Francis Group.

Magongo, J.K. (2018). The role of contract farming in upgrading of smallholder farmers in sugar industry in Tanzania. A master dissertation presented in partial fulfilment of the requirements for obtaining the degree of Master of Arts in Development Studies at the Institute of Social Studies. The Hague, Netherlands. 62pp

Makoye, E. B. and Milanzi, M.A. (2019). Contract farming exit intention: evidence from smallholder tobacco farmers in Urambo, district Tanzania. *Rural Planning Journal*, 21(1): 1-21.

Meemken, E.M. and Bellemare, M.F. (2020). Smallholder farmers and contract farming in developing countries. *Proceedings of the National Academy of Sciences of the United States of America*, 117(1), 259–264.

Mishra, A.K., Mayorga, J. and Kumar, A. (2020). Technology and Managerial Gaps in Contract Farming: The Case of Specialty Crop Production. *Journal of Agricultural and Resource Economics*, 47(1), 77–96.

Mishra, A.K., Shaik, S., Khanal, A.R. and Bairagi, S. (2018). Contract farming and technical efficiency: Evidence from low-value and high-value crops in Nepal. *Agribusiness*, 34, 426–440.

Nazifi, B., Bello, M., Suleiman, A. and Suleiman, M.S. (2021). Impact of Contract Farming on Productivity and Food Security Status of Smallholder Maize Farmer's Households in Kano and Kaduna States, Nigeria. *International Journal of Agriculture, Environment and Food Sciences*, 5(2), 571–579.

Ren, Y., Peng, Y., Campos, B.C. and Li, H. (2021). The Effect of Contract Farming on the Environmentally Sustainable Production of Rice in China. *Sustainable Production and Consumption*, 28, 1381–1395.

Ruml, A. and Qaim, M. (2021). Smallholder farmers' dissatisfaction with contract schemes in spite of economic benefits: Issues of mistrust and lack of transparency. *Journal of Development Studies*, 57(6), 1106–1119.

Satish, B.S. (2021). Contract Farming - A way to Sustainable Agriculture: A Case of Mango Contract Farming in Karnataka. *SDMIMD Journal of Management*, 11(1), 9–20.

Shiferaw, B., Obare, G and Muricho, G. (2006). Rural institutions and organizations in imperfect markets: experiences from producer marketing groups in semi-arid Eastern Kenya. *SAT eJournal*, 2 (1), 1-36.

Tibamanya, F. Y., Henningsen, A. and Milanzi, M. A. (2022). Drivers and barriers to adoption of improved sunflower varieties amongst smallholder farmers in Singida, Tanzania: A double-hurdle approach. *Q-Open Journal*, 2 (2022), 1-25

Thibane, Z., Soni, S., Phali, L. and Mdoda, L. (2023). Factors impacting sugarcane production by small-scale farmers in KwaZulu-Natal Provience-South Africa. *A Cell Press Journal*, 9(1), 5-14.

URT. (2013). National Agriculture Policy of 2013. Government Printer, Dar es Salaam. 82pp.

URT. (2017). Agricultural Sector Development Programme. Framework and Process Document. Government Printer, Dar es Salaam. 65pp.

URT (2021). National Sample Census of Agriculture Smallholder Agriculture. NBS, Dodoma,

Tanzania. This publication is available at https://www.nbs.go.tz/index.php/en/census-surveys/agriculture-statistics/661-2019-20-national-sample-census-of-agriculture-main-report

Vicol, M., Fold, N., Hambloch, C., Narayanan, S. and Pérez Niño, H. (2022). Twenty-five years of Living Under Contract: Contract farming and agrarian change in the developing world. *Journal of Agrarian Change*, 22, 3–18.

Wainaina W, Okello J, Nzuma M. (2014). Blessing or Evil? Contract Farming, Smallholder Poultry Production and Household Welfare in Kenya. *Quarterly Journal of International Agriculture,* 53(4), 319-40.

Yeshitila, M., Bunyasiri, I., Sirisupluxana, P. and Suebpongsakorn, A. (2020). The Impact of Contract Farming on Technical Efficiency in Ethiopia's Smallholder Sesame Production. *Journal of the Austrian Society of Agricultural Economics*, 16(1), 57–66.

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'Hybridization of cooperatives': Challenges and Prospects of Managing Corporate Bodies owned by Co-operatives in Tanzania

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Abstract

Hybrid cooperatives (HBCs) refer to cooperative business organizations formed out of combining cooperative and company characteristics or elements in their establishment. They differ from ordinary or traditional cooperatives in that, while traditional cooperatives give more emphasis on member participation through patronage and less on share acquisition and management, HBCs give emphasis on both patronage and shareholding. The main objective of this paper is to create an understanding of the concept of hybrid cooperatives, their ownership and management challenges when run in the context of traditional cooperative approach, and prospects of the solutions found in adopting new cooperative models. The paper highlights the challenges faced by members of Tanzanian hybrid cooperatives which are based on a traditional model. It also considers prospects of using new models, namely proportional investment cooperatives (PICs) and new generation cooperatives (NGCs) as a solution to the challenges. The argument advanced is that Tanzanian hybrid cooperatives should adopt new models in order to address their current ownership and management problems. Using a study of selected hybrid cooperative companies from Tanzania the paper observes that their economic performance deteriorated because of, inter-alia, decline in member patronization due to non-involvement of members in ownership and management. The paper reckons that in a quest to exploit recent government industrialization plans, it is likely that more HBCs will be established in the country, if their ownership and management challenges are resolved. It therefore recommends that Tanzania cooperative policy and legislation should adopt Proportional Investment Cooperatives (PIC) and New Generation Cooperatives (NGC) models as one of the solutions to the challenges faced by the HBCs.

Key words: Hybrid cooperatives, traditional cooperatives, proportional investment cooperatives and new generation cooperatives.

1.0 Introduction

Increasing changes in inter-organizational business relations continue to influence the socio-economic dynamic development of cooperative societies, thereby compelling them to establish new business structures so as to withstand competition and survive within the global markets against other forms of business organizations.[1]Some cooperatives in that endeavour tend to adopt investor-oriented cooperative business structures while abandoning some of the user-oriented ones. This leads to the establishment of new cooperative structures with business traits that depict both cooperative and company characteristics suiting the relevant cooperative business.[2] The cooperative hybrid form is one of such structures.[3] Hybrid cooperatives (HBCs) refer to cooperative business organizations established out of combining cooperative and company characteristics or elements by members/shareholders who enter into firm commitments or agreements to conduct their business transactions through use of services provided by the hybrid.[4]Cooperative members as patrons play active roles in their business operations, both as members and as shareholders. As members their roles may include active participation in the services offered by the cooperative.[5]Yet as shareholders members contribute to equity capital, which is required to finance other operations, including meeting business management expenses.[6] However, operations of HBCs totally depend on the services provided by members in their respective cooperatives.

HBCs differ from ordinary or traditional cooperatives in that while traditional cooperatives give more emphasis on member participation through patronage and less on share acquisition,[7] HBCs give emphasis on both patronage and shareholding, thereby enabling HBC businesses to be more responsive to market demands and capable of withstanding competition.[8] Consequently, in their establishment and operation HBCs in some instances are compelled to overlook some of the classical cooperative principles and values as well as some elements of a company form, in order to respond adequately to the demands of the markets.[9]This also explains why some HBCs take a modified company form in which cooperative members contribute equity capital as well as their patronage. In some hybrids, cooperatives may team-up with non-member investors to establish a

[1] See Jasper Grashuis (2018) 'An Exploratory Study of Cooperative Survival: Strategic Adaptation to External Developments, *Sustainability*, 10, 652; doi:10.3390/su10030652 www.mdpi.com/journal/sustainability, available at Downloads/sustainability-10-00652-v2.pdf accessed on 24th April 2022.

[2] Nilson (2001), *'Farmer cooperatives: organizational models and their business environment'*, in Birchall J., ed., The New Mutualism in Public Policy, Routledge, London.

[3] Chaddad and Cook (2204) 'The Economics of Organization Structure Changes: a US perspective on Demutualization', Annals *of Public and Cooperative Economics* 75:4 2004 pp. 575–594

[4] However, it does not necessarily mean that hybrids are established by combining a cooperative and a company. They may be established by combining a cooperative and another cooperative, provided that the hybrid established combines both cooperative as well as company characteristics or elements. A good authoritative example is found on section 26 of the Tanzanian Cooperative Societies Act, 20013. It provides that in a situation where "it is necessary or desirable for the efficient operation of a business to be operated by two or more societies", such societies may establish a cooperative joint enterprise or in cases where cooperative join with privet companies, a cooperative joint venture. Such cooperative joint enterprises or cooperative joint ventures may be referred to as cooperative hybrids if their establishing documents portray both cooperative and company elements. See also ICA Guidance Notes to the Cooperative Principles, (2015) which defines at pg. 100 a Hybrid cooperative as: *"a cooperative which has issued equity shares to non-member investors."*

[5] For example, in the case of an agriculturally based cooperative hybrid whose main activities may include collecting, processing and marketing of produce, see our discussion infra on establishment of The Farmers of Kilimanjaro Coffee Company Ltd. (FAKICO) see our discussion infra. at pp. 18 – 19.

[6] For example, the Tanzania Banking and Financial Institutions Act, 2006 provides for certain capital thresholds for establishment of a bank, this includes establishment of cooperative hybrid bank.

[7] Refer to Principle, No. 3 of ICA, it does not give emphasis on members entitlement to dividends. It provides that dividends '*if any'* are to be distributed as the last part of the surplus, meaning that in traditional cooperative models, share ownership is not supposed to generate profit to the shareholder.

[8] See Menard C (2007), Cooperatives: Hierarchies or Hybrids? available at https://www.researchgate.net/publication/225231064_Cooperatives_Hierarchies_or_Hybrids, accessed last on 10th March 2022 at 12.40. See also Menard C (2004) 2004. "The Economics of Hybrid Organizations." *Journal of Institutional and Theoretical Economics*160(3):345-376 available at https://www.researchgate.net/publication/5174293_The_Economics_of_Hybrid_Organization accessed on 10th March 2022.

[9] This is because as opposed to cooperatives, company legislation limit powers of registrars of companies to interfere into the affairs of private companies, which if allowed, would have a negative effect to the business of the companies.

hybrid cooperative company.[10] Because a company form is considered to be more efficient in competitive business decision making than traditional cooperative forms, hybrid cooperatives normally prefer the company form. But what makes them to be identified as hybrid cooperatives is that their operations highly depend on services or products contributed by cooperative members (patronage) as inputs to the business operations of the hybrid.[11] In some developing countries cooperative companies may also be established to avoid unnecessary interreference by the registrars of cooperatives or other government officials.[12]Some HBCs are established as companies in order to meet the requirements of being listed under stock exchange authorities of their respective countries, so that they can rise a part of their financial capital from non-cooperative members.[13]

In developed countries such as United States of America[14] and Western European countries[15] HBCs became prominent in 1980s through a process termed as 'demutualization' of cooperatives. Demutualization means the process of converting user owned and controlled organizations (cooperative societies) into stock associations or cooperative companies. In these countries demutualization resulted in reassigning residual claim and control rights to shareholders leading to cooperatives acquiring company behaviours. Whereas for cooperatives that acquired hybrid cooperative characters demutualization resulted in adopting new cooperative models such as proportional investment cooperative (PIC) and new generation cooperative (NGC) in order to assure members/shareholders enjoyment of both residual claim rights and patronage refunds.[16]

In Tanzania establishment of hybrid cooperatives took a reverse trend by involving cooperative ownership in some organizations previously registered as companies. After Tanganyika had attained independence in 1961 a number of coffee processing factories which were established by colonial companies were taken over by companies which were later owned by cooperative unions in the form of hybrid cooperatives.[17]Shares in those hybrids were primarily acquired/allotted in proportion to volumes of produce (mainly coffee) that was contributed by the respective member cooperatives. However, guarantee of rights of contributors of those produce to these hybrids has remained a challenge.

Using an example of selected hybrid cooperative companies from Tanzania this paper discusses challenges of operating HBCs based on traditional cooperative models. The research finds out that economic performance of the selected HBCs declined because of, *inter alia,* deteriorating patronization of their members/shareholders. Thus, necessitating the need for looking for cooperative models that would address ownership and management issues currently faced by these cooperatives.

The main objective of this study is to create an understanding of the concept of hybrid cooperatives and their ownership and management challenges, if based on traditional cooperative models and prospects of solutions found in adopting new cooperative models. Specifically, the paper highlights on challenges faced by members of Tanzanian hybrid cooperatives which are based on traditional

[10] See for example, hybrid cooperatives in the form of companies discussed infra under part 5 *infra*.
[11] In traditional cooperatives decision may require calling members' general meetings which may take relatively longer time to organize, ending up in losing the business opportunity.
[12] Especially in countries such as Tanzania where cooperatives may be regarded as public or quasi-governmental organizations. See Rutabanzibwa , A (2020) Cooperative Legal Framework Analysis, National Report, ICA-Africa at https://coops4dev.coop/sites/default/files/2020-05/TANZANIA%20LEGAL%20FRAMEWORK%20ANALYSIS.pdf accessed on 10th March 2022
[13] For example, the Kenya Cooperative Bank, See The Co-operative Bank of Kenya Limited Ownership Structure as at 31.07.2021, available at https://www.co-opbank.co.ke/wp-content/uploads/2021/12/Share_Holder_Profile_AS_AT_31_07_2021_c03ff692ee-1.pdf, accessed on 6th May 2022

[14] See Chaddad and Cook (2204) op cit in fn. 3
[15] See Nilson (2001) op cit. at fn. 2
[16] See Chaddad, F.R. and Cook, M.L. (2004). Understanding New Cooperative Models: An Ownership-control Rights Typology. *Review of Agricultural Economics*, Vol.26, No. 3, pp. 248-360.PIC and NGC models are discussed in section 4.0 of this study.
[17] For example, Tanganyika Coffee Curing Company (TCCCo Ltd.) and Mbinga Coffee Curing Company (MCCCo Ltd.)

cooperative models.[18] It also considers prospects of using new models, namely proportional investment cooperatives (PICs) and new generation cooperatives (NGCs)[19] as potential solutions to problems faced by the Tanzanian hybrid cooperatives.

The study employs a qualitative content analysis approach. The information used was obtained through purposeful interviews[20], and library as well as on-line literature reviews. The next part of the paper proceeds with an analysis of the concept of hybridization of cooperatives and its general effects to their governance. The third part discusses challenges of using traditional cooperative models in the ownership and governing of hybrid cooperatives. It demonstrates how HBC management may diminish the involvement of member-patrons, which may jeopardize the sustainability of the 'hybridized cooperatives. The fourth part demonstrates how new cooperative models, namely the PIC and NGC may be used to address challenges caused by use of traditional cooperative models. The fifth part gives a case study of selected hybrid cooperatives from Tanzania. Lastly, the paper recommends mechanisms which may address the shortcomings of the Tanzanian hybrid cooperatives.

2.0 The Concept of Hybridization of Co-operatives

Generally, the term 'hybrid' in business organizations may mean a myriad of business arrangements.[21]Some institutional economists agree that hybrids are organizations which exist between markets and hierarchies or between competition and cooperation.[22]However, sometimes hybridization in cooperatives may be taken to mean a tendency where one or more co-operatives utilize liberalized economic structures for purposes of establishing a business organization either as a way of owning subsidiaries or as a way of combining activities with other societies, where share ownership in such a subsidiary is controlled by those co-operative societies through both cooperative and company governance principles and procedures. Hybridization may also mean establishment of holding company structures for cooperative joint venturing and merging activities where such holding structures employ share-based types of ownership.[23]

Thus, the term "hybrid" may portray an amorphous picture when used in relation to cooperative structures. Some authors construe cooperative hybridization to denote establishment of cooperative structures whose membership is multi-stakeholder, differentiating it from traditional co-operatives which have homogeneous membership.[24] For example, workers cooperatives may form hybrid cooperatives with other types of cooperatives, such as credit and savings cooperative societies. A hybrid cooperative established out of such a hybridization takes a form which accommodates workers providing patronage in kind (labour) and their savings providing the required working capital. The need to accommodate heterogeneity of membership may compel establishment of a cooperative structure which derogates the classical cooperative structures[25] and renders the established cooperative to become a hybrid cooperative. Some authors have referred the process of establishing cooperative structures which adopt company methods of capitalizing

[18] Defined *infra* on pp.6- 7

[19] Discussed infra on pp. 9 and 12

[20] The author wishes to thank Dr. Jones T. Kaleshu and Professor L. Donge and other members of the team from Moshi Cooperative University who studied TCCCO Ltd and accepted to share their data. The author also thanks Professor Deogratias Rutatora and MS Rodness Milton for the information they provided on TANICA Co Ltd. when he visited the company. Thanks also are extended to Mr. G. Ulomi, Awaliali Nanyaro, G Lyatuu and Frank Materu board members of FAKICO Ltd. for their valuable information and inputs to this study.

[21] The term may be taken to mean symbiotic arrangements, networks, clusters or supply chain systems, etc. See Menard C. (2007) Cooperatives: Hierarchies or Hybrids? available at https://www.researchgate.net/publication/225231064 accessed on 3rd March 2022.

[22] Section 26 of the Tanzania Cooperative Societies, 2013 recognizes these type of hybrid cooperatives as joint venture cooperatives. See also Menard ibid, See also Ménard C. Hybrids: where are we? *Journal of Institutional Economics*(2021), 1–16

[23]See Chaddad, F.R. and Cook, M.L. (2004). Understanding New Cooperative Models: An Ownership-control Rights Typology. *Review of Agricultural Economics*, Vol.26, No. 3, pp. 248-360.

[24] See Chaddad and Cook ibid.

[25] Such as providing difference in voting rights, depending on the level of member's patronage.

their operations such as issuance of different classes of shares to members as hybridization.[26] Under such circumstances a cooperative society is partially converted into a company model for purposes of accessing finance from members as well as from non-members.[27]A company on the other hand, may also be regarded as a hybrid cooperative, if it adopts some of the basic cooperative principles.[28]

Essentially hybrid cooperatives may take a company or cooperative form, provided that a hybrid structure which is established guarantees members 'commitment to contribute to the assets of the said hybrid through patronage and share acquisition. In a cooperative hybrid which adopts a company form, the hybrid which is registered as a company meets minimum requirements for it to be registered as a company, while at the same time retaining some of cooperative elements or characteristics such as democratic member control, member economic participation and autonomy and independence, thereby ignoring some company principles as to decision making, and share transfer.[29]On the other hand, some cooperative principles may as well be disregarded, including open and voluntary membership[30] and to some extent, care for community.[31]

Chaddad and Cook in 2003[32] conducted a study on several demutualized cooperatives (savings, loan and insurance cooperative associations) in United States after noting an increasing number of demutualized cooperatives since 1980s. They observed that the hybrid cooperatives which were established due to demutualization:

- had changes in their organizational structures which enhanced their efficiency;
- their perceived financial constraints were ameliorated;
- their members/shareholders got access to unlocated equity and reserves;
- the weak governance trend which had previously become rampant was reversed by aligning interests of managers with those of the members and that resulted in reducing agency costs;

Generally, demutualization in developed countries resulted in the establishment of hybrid cooperatives, the process which addressed challenges of cooperative ownership and management. The latter challenges were due to adhering to traditional cooperatives models of ownership and governance.

3.0 Challenges of HBCS using Traditional Co-operative Models

Traditional or first-generation cooperatives refer to cooperatives that are established based on International Cooperative Alliance (ICA)principles as pronounced in the Statement on Cooperative Identity in 1995. According to the Rochdale traditions cooperatives must provide for a limited return on capital and mostly the accruing profits or surplus should be distributed to the members in proportion to their use of the cooperative services (patronage), after deducting a bigger portion

[26] See Bekkum, O.F. van, and J. Bijman (2006) "Innovations in Cooperative Ownership: Converted and Hybrid Listed Cooperatives", Business paper presented at the 7th International Conference on Management in Agri-Food Chains and Networks, Ede, The Netherlands, 31 May – 2 June, 2006 available at https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.128.4735&rep=rep1&type=pdf accessed on18th May 2022

[27] For example, when the cooperative is transformed into a stock company for purposes of being listed under stock exchange, see Bekkum ibid.

[28]See Paranque B. and Willmott H. (2014) "Cooperatives - Survivors or gravediggers of capitalism? The ambivalent case of the John Lewis Partnership", available at https://www.academia.edu/7501186/Cooperatives_saviours_or_gravediggers_of_capitalism_The_ambivalent_case_of_the_John_Lewis_Partnership?auto=downloaaccessed on 21/1/2022

[29] Chaddad and Cook *supra* at fn. 16

[30] Referring to the 1st ICA principle, the HBC would allow only the members who will be ready to contribute their patronage as well as acquisition of the required shares that meet the needs of the required capital.

[31] Referring to the 7th ICA principle as the established HBC may not be required to observe the requirement for establishing mandatory cooperative social responsibility so as to guarantee future membership because in a HBC membership is not open to any person. Instead, it may need to create an institutional framework that would guarantee shareholders who invested in the HBC to enjoy residual rights claims. See Chaddad and Cook *supra* fn. 16

[32] Chaddad and Cook supra fn. 3

of the net surplus which should be allocated to an indivisible reserve.[33] This tradition, a remnant of the Owenite perception of ownership of cooperative institutional capital[34] was maintained through cooperative principles since the establishment of the ICA.[35] Today the formulation is reflected in the third ICA principle which stresses on member economic participation as the main criterion for having a stake in the proceeds of the cooperative society.[36] Thus, in traditional cooperatives member use, or patronage is the only factor which links members with the control of the cooperative enterprise. Such cooperatives disregard balancing patronage with the degree of monetary investment a member owns in the cooperative. In this sense the traditional cooperative models do not accord due consideration to the investment rights of members who, apart from being patrons of the said societies, are supposed to be the residual rights claimants of the cooperative assets.

However, the traditional cooperative formulation worked well in traditional agricultural cooperatives, where members were the main or the only users of the services offered by the cooperatives as well as the direct beneficiaries of those services. Challenges start to ensue when one or more cooperatives decide to invest in a subsidiary structure, normally in a company form based on share ownership for purposes of benefiting from a variety of interests in the market through a process which we have termed as 'hybridization of cooperatives.'[37]

According to Chaddad and Cook[38]in traditional or classical cooperatives (TCs) ownership rights are restricted to members who are the patrons but their stakes in the cooperatives are non-transferable and non-appreciable. They are only redeemable when a member leaves the cooperative or dies. Moreover, the said rights are vaguely defined, thus making it difficult for a member to refer to them when identifying himself or herself with the cooperative society. The rights of members of primary cooperatives become more unascertainable in the hybrid organizations owned by cooperative affiliates.[39] This leaves wide open the question of what stakes an individual member of a primary cooperative society should own in hybrids established by such affiliates. [40]

Thus, problems associated with hybridization of cooperatives through traditional cooperative models are multifarious, but all revolve around diminishing control of the residual rights owners as the distance between the rights owners in primary cooperatives and the established hybrids increases.[41]In a hybrid cooperative where the shareholders are cooperative affiliates, residual rights ownership sometimes get diffused. This tendency may result in 'patronage decay' on the side of primary cooperative members as they lose incentives to continue transacting through 'parent' cooperatives. On the other hand, since residual rights ownership is diffused, accountability of the board of directors of the hybrid to the would-be residual rights holders becomes virtually non-existent and this may lead to the collapse of the hybrid cooperatives. Our discussion on part five covers a case study of Tanganyika Coffee Curing Company Limited (TCCCo) and the Tanganyika

[33] According to ICA Guidance Notice to the Cooperative Principles, on pg. 29
[34] Refer Quotation by Robert Owen on perception of 'institutional capital' provided in ICA ibid.
[35] See ICA Guidance Notice to Cooperative Principles pg. 29
[36] Ibid at pp. 29 – 30.
[37] Enzo Pezzini (2004) ' *The European co-operative society: a new step in European company law*', in Carlo Borzaga and Roger Spear (eds) **Trends and challenges for co-operatives and social enterprises in developed and transition countries,** Da Legoprint S.p.A. – Lavis (TN), available at www.edizioni31.it accessed on 21/11/2021 pg. 97 -135 at pg. 112
[38] Supra fn. 16. at pg. 350
[39] For example, secondary or tertiary cooperative societies.
[40] This becomes complex when such secondary or tertiary level cooperative societies establish a hybrid cooperative society which is supposed to process produce of a member of a primary cooperative society, which is a member of such a secondary or tertiary cooperative society, as the case may be.
[41] Hypothetically therefore, diminishing control problems of residual rights holders (patrons) may be less experienced in hybrid cooperatives which are established by primary cooperatives than it is the case in cooperatives which are established by secondary or tertiary cooperatives.

Instant Coffee Company Limited (TANICA) which are hybrid cooperatives owned by secondary cooperative societies in Kilimanjaro and Kagera regions of Tanzania, respectively indicates that the economic performance of these hybrids deteriorated because of the following challenges which were due to using the traditional cooperative models of ownership and management:

(i) Decreasing member patronage

Although both TCCCo and TANICA were planned to depend on members' coffee for processing, the anticipated quantities were not met by the members because in the case of TCCCo, some shareholders established their own coffee processing facilities[42] and some decided to process their coffee using private coffee processors. In the case of TANICA the main shareholders (KCU and KDCU) were not willing to 'sell' their better-quality coffee to the TANICA for processing. Instead, they preferred allowing the company to source its raw materials from private dealers.[43]Moreover, the whole exercise was engulfed with conflict of interests among the members of the board.[44]

A number of literatures, has indicated that one of the reasons that contribute to the decrease of patronage in hybrid cooperatives established based on traditional cooperative models is vague definition of property rights owned by shareholders in the cooperatives. Particularly, lack of a legal and institutional framework which protects the rights of residual rights claimants.[45]They argue that uncertainty on the ownership of residual rights by contributors of raw materials (patrons) dissuades them from patronizing with the hybrid cooperative. Although this study is deficient of empirical evidence to this effect, it is highly suspicious that lack of clarity on benefits the patrons of the hybrids (suppliers of raw materials) expected or were getting, might have contributed significantly to the decreasing patronage in the studied hybrid cooperatives.

(ii) Governance: Challenges of member control

Hybrid cooperatives which are owned by consortia of secondary cooperative societies are faced with the challenge of governance, if operated using traditional cooperative model. In these hybrids, membership to their respective boards of directors is either composed of the chairpersons and deputies of the unions' boards of directors[46] or are chairpersons and managers of the unions.[47]Same members of boards of the hybrids, plus other members of boards of directors of the respective unions attend general meetings of the hybrids, representing their respective shareholder unions. In essence therefore, the AGMs of the hybrids are organized in order to endorse or rubber-stamp the decisions made by hybrids' boards of directors, however unpopular or damaging to the hybrids they might be.[48]

On the other hand, there may be a horizon problem among the members of boards of directors of the hybrids. Most of them are not versed with business management professionalism and their articles of associations do not indicate competence in business management as a criterion for being appointed as directors. Indeed, their appointments to the respective unions' boards of directors sometimes are based not on qualifications, but on their popularity or influence. Therefore, there may be a great possibility that decisions in hybrid boards of directors or in their respective AGMs are deficient of technical and professional inputs or advices.[49]In most times the decisions also do

[42] TCCCo (2021) Corporate Strategic Plan, 2020/2021 – 2024/2025 at pp. 15 -16

[43] *Infra* at pp. 14 - 16

[44] Ibid.

[45] See Menard C. (2007) infra fn .21 and Chaddad and Cook (2004) infra fn. 23

[46] In case of TCCCo Ltd.

[47] In case of TANICA

[48] An example of decision made by TCCCo Board of Directors to sell some of its houses in 2014 was endorsed by the AGM, though later turned out to be a scam. Another example are decisions made by TANICA board of directors to involve the company in the water and gas projects in 2014/2015 ended up in occasioning losses to the company were endorsed by the AGM without thorough shareholder scrutiny, see infra pp. 14 - 16.

[49] The fact that some members of these boards like that of TANICA represent the Government (Treasurer Registrar) and TFC who were supposed to appoint more competent representatives notwithstanding.

not undergo conventional procedures of scrutiny, either by patrons[50] or regulators.[51] Thus, there may be a need of revisiting hybrid cooperative constitutions to increase the number of professionals in their respective Boards of Directors.

4.0 Co-operative Hybrids using the Second-Generation Co-operative Models

4.1 An overview

The literature which suggests solutions to problems associated with decision making in hybrid cooperatives established according to traditional cooperative models, propose several cooperative structural options which may be used to ensure patrons of such hybrids are guaranteed of legal protection on their residual ownership rights.[52] The proposed cooperative structures are hybrids that may exist between two opposite business organization forms. On one hand there is a traditional cooperative model and on the other, there is the investor-owned firm (IOF) or a company form. The traditional hybrid cooperative model, whether in the company form or otherwise, which when established with an intention of avoiding classical cooperative values and principles, may end up being established in a structure which resembles an IOF, adhering to classical company principles and that structure may not have associative elements.[53]Different cooperative institutional writers posit that there is a variety of cooperative structures existing between the two polar structures[54] which cooperators may adopt as a solution to the problems of participation of the residual rights holders in hybrid cooperatives, depending on the purpose of such hybrids.[55]The latter cooperatives have a heterogenous membership and are aimed at serving a wider range of interests, apart from those of the members, depending on the demand of their services (the markets).

4.2 Types of Hybrid Co-operatives under the Second-Generation Cooperative Models

Chaddad and Cook identify three non-traditional cooperative models, which manifest organizational variations in the ownership rights of members of cooperative societies, as possible solutions or answers to the question of property rights ownership in cooperatives. They include: (a) member-investor cooperatives (MICs),[56] (b) proportional investment cooperatives (PICs), and (c) new generation cooperatives (NGCs). This study will however, deal with the latter two models.

(a)The Proportional Investment Co-operatives (PICs model)

In the PICs, members are expected to invest in the cooperative in proportional to their patronage. In other words, their patronage in a cooperative determines the level of share ownership they should have in the cooperative and when their patronage decreases, their share ownership

[50] For example, financial reports of the hybrids may not be reported at the respective AGMs of shareholder unions.

[51] Neither are they scrutinized by external auditors of the respective shareholder unions and because they are registered as companies the Registrar of Cooperatives is not legally mandated to supervise them.

[52] See for example, CHADDAD RF and COOK L. M, Understanding New Cooperative Models: An Ownership- Control Rights Typology, *Review of Agricultural Economics*, Volume 26, Number 3, pp. 340 – 360; Chaddad R. F and Cook I. M the economics of organization structure changes: a us perspective on demutualization, Annals *of Public and Cooperative Economics* 75:4 2004 pp. 575– file:///E:/RESEARCH%20WORK/HYBRISATION/CHADDAD%20%20DEMUTUALIZASATION.pdf 594; available at accessed on 30/11/2021; See also NICOLS A., 1967, 'Stock versus mutual savings and loan associations: some evidence of differences in behavior', American Economic Review, 57, 337–346.

[53] For example, giving a majority shareholder in the hybrid to make decisions in the hybrid board of directors or in the AGM in disregard of other minority shareholders using 'one share one vote' principle.

[54] That is, the traditional cooperatives and the IOFs

[55]For purpose of simplicity, this study clusters these hybrid cooperatives as "second generation cooperatives".

[56]The MICs model, sometimes known as 'investor-share cooperative model' refers to a cooperative in which members/investors receive ownership rights in the cooperative in addition to the traditional cooperative ownership rights held by member-patrons. The model thus combines both investment which is contributed by members in terms of share acquisition and at the same time the members remain patrons of the cooperative.

decreases accordingly. Further, in the PICs model, ownership rights are restricted to the current members only. The said rights are non-transferable, they do not appreciate, but may be redeemed or transferred to existing members in circumstances where the member fails to meet his or her patronage requirements, withdraws the membership or dies.[57]

PICs have a number of advantages when compared to TCs, namely: (i) PICs may encourage an increase in cooperative membership as the prospective or potential members get assured of future residual rights ownership in the cooperative; (ii)They incentivize members who wish to own more stakes in the cooperative to increase their level of trading through a cooperative (patronage levels) and thereby increase the business of the cooperative;(iii) PICs also reduce/eliminate 'free-rider members'[58] because only residual rights holders are acceptable to trade through the cooperative; (iv) PICs may also assist in sorting out loyal and disloyal members. For example, members who side-sell their produce through channels other than the cooperative eventually lose their share control in the PICs.

Proportional Investment Cooperatives thus, differ from TCs by the fact that member investments in those cooperatives are proportional to their patronage and may therefore be used to accommodate hybrid cooperatives whether in the company or cooperative form. This is because, the member who is expected to use the services of the hybrid will equally be obliged to proportionally invest in the capital of the hybrid and his membership as a shareholder will continue to be legally recognized only as long as he continues to be an active patron of the hybrid.

Some literature emphasizes on the importance of capital management policies in PICs for legitimization of the proportionality of members' contributions (patronage) and provision of the efficient PIC management.[59]Such policies include preparation and implementation of base capital plans. A Base Capital Plan (BCP) is a document prepared by a cooperative, which intends to transform itself into a second-generation cooperative form, or which is established by more than two cooperatives as a hybrid cooperative for purposes of conducting certain joint activities such as joint processing and marketing.[60]The BCP document prescribes internal procedures of capital acquisition from members in proportion to their levels of business transactions with the cooperative. The first step in preparing the BCP is determining the minimum capital requirements, based on the cooperative future market opportunities and also the willingness of the members/patrons to supply the required capital. The second step is determination of levels of members' use of the cooperative services (patronage), which is subsequently used to calculate the proportion of share contribution by each member. The plan then sets a criterion of increasing share ownership to members whose patronage levels were underrated or of redeeming shares from members whose patronage levels were overrated and this would subsequently continue, depending on levels of member participation in the activities of the cooperative society. The plan also may allow more frequent participating members to buy the redeemed shares from less participating members.

When the proportional investment cooperative is established at a secondary or tertiary level, as is the case of TCCCo and TANICA the primary cooperatives or secondary cooperatives, as the case may be, become centres of aligning members share ownership in proportion to their participation in the PIC activities (patronage). Their contributions to the cooperatives are aggregated upward in the cooperative hierarchy by their primary, secondary and tertiary cooperative societies, but share

[57] Chaddad and Cook *supra* fn. 23.
[58] Free-riders in cooperatives mean less committed members because of the low or negligible ownership stakes in cooperatives who utilize common services of the cooperatives such as inputs, storage and marketing facilities, but would decline contributing to their acquisition or maintenance. These may include members who acquire the necessary minimum shares in the cooperative or sometimes do not have any shares, but expect to benefit from the services offered by the cooperative. Some free-rider members decline or by-pass cooperative facilities and sell to outside vendors, despite the fact that they used cooperative facilities and inputs in production. Also, these may include non-members who, because of government directive or otherwise market their crops through cooperatives.
[59] Refer for example, Chaddad and Cook *supra* fn. 23.
[60] Ibid.

ownership in the PIC is supposed to belong to an individual member of the primary cooperative society whose produce is processed by the PIC. For example, if it is an agricultural cooperative, the individual member share ownership level in the PIC will increase or decrease depending on how much produce (in terms of quantity) the primary, secondary or tertiary cooperative will deliver to the PIC on the member's behalf. Similarly, if it is a diary marketing cooperative society which invests in the diary processing PIC, ownership of individual members of the primary cooperative in the diary processing PIC will depend on daily milk quantities the primary, secondary or tertiary cooperative collects and delivers to PIC on producer-member behalf. The cooperative society therefore becomes the producer-member's milk collection centre.[61] This will give members an incentive to improve their participation in the activities of the respective cooperative society so that they can increase their share ownership in the PIC.

The PIC model fits in the above description of a hybrid cooperative and may be utilized by cooperatives which wish to establish cooperative joint enterprises or cooperative joint ventures for purposes of adding value to the members' produce, aimed at enhancing their business competitiveness in the market.[62]

(b) New Generation Co-operative Model (NGC Models)

The new generation cooperative model is the opposite of the PIC model in the sense that it uses future market demands of the cooperative processed products or goods to determine the level of share ownership of its members in the cooperative. In other words, it links cooperative ownership with member deliveries of the produce to be processed and marketed by the cooperative. According to this model the relevant cooperative enters into advance marketing agreements with the buyers of the processed goods. Later, based on the quantity of supplies required by the market, the cooperative makes offer to member-patrons to acquire shares in the cooperative with attached delivery rights of the quantities and qualities required by the market, as per the marketing agreements. Thus, the more the number of shares the member buys the more delivery rights in terms of the required quantities the member gets. Further, the shares and delivery rights purchased by the member-patrons are tradable on the secondary markets and this helps to determine the market value of the produce at the time of delivery. The cooperative on the other hand, gets internal capital, which it uses to finance storage and processing operations.

The share and its attached delivery rights create a right to the purchaser (the shareholder) to deliver to the cooperative an amount of the produce represented on the share document. Yet on the side of the cooperative the delivery right creates an obligation to the cooperative to purchase the tonnage of the produce represented on the document. Thus, through sale of shares the cooperative generates internal capital from members. Also, through delivery of the required produce members become patrons and at the same time the shareholders of the cooperative.

The price of a share and the delivery rights each share should carry, is determined by the cooperative, after securing commodity supply agreements, which assist the cooperative to determine the required processing costs and the required quantities to be processed. The cooperative therefore has to have the required expertise to determine the initial offer (IO) of share/delivery rights purchase to its members.

The advantage the NGC model has over TC model is that as opposed to the latter the NGC is assured of member patronage. Also, production is done according to market requirements with quantity

[61] Thus, the PIC model could be used to solve the problems of ownership and management currently faced by the Tanga Fresh Company Limited (TFL) which is a cooperative hybrid diary company owned by Tanga Diary Cooperative Union (TDCU) and other investors who contributed financial capital to the company, but the company operations and services totally dependent on the milk supplied by members of dairy primary cooperative societies who are members of TDCU. Currently the said members do not participate in the ownership and management of TFL, despite of the fact that the survival of the company depends to totally on their milk.

[62] In which case they may decide to register such hybrid cooperative as a cooperative joint enterprise or venture pursuant to section 26 of the Tanzanian Cooperative Societies Act, 2013 or as a company pursuant to the Companies Act, (Cap.212) of the Tanzanian Laws.

and quality being pre-determined. The NGC model also solves the problem of free-ridership as all the producers have to have delivery rights to trade and subsequently benefit from the cooperative. Moreover, allowing the delivery rights to be traded at secondary markets enables the member-patrons to control a larger segment of the value chain of their products. NGC models may be used by hybrid cooperatives in case where some members of traditional cooperatives wish to establish cooperatives with members who are committed with meeting market demands. Like in the case of PICs they may be established in the cooperative or company form.

5.0 Case Study of Hybrid Co-operatives of Tanzania

(i) The Tanganyika Coffee Curing Company Limited (TCCCo Ltd.)

The Tanganyika Coffee Curing Company Limited (TCCCo Ltd.) which was established in 1920 was taken over by co-operative unions in 1989 with share ownership allotted in proportional to the value of coffee marketed by the member cooperative unions. The share ownership in the company by those unions is currently as indicated in Table 1.

Table 1: Share Ownership in Tanganyika Coffee Curing Company

Shareholder	Region	Ordinary Shares	Preference Shares	Percentage
KNCU Ltd	Kilimanjaro	4,590,000	216,000	54
ACU Ltd	Arusha	850,000	40,000	10
TCGA	ACPR*	2,635,000	124,000	31
VCU Ltd	Kilimanjaro	170,000	8,000	02
TARECU Ltd	Tanga	127,000	6,000	1.5
BUHA Ltd	Kigoma	42,000	2,000	0.5
RIVACU Ltd	Manyara	42,500	2,000	0.5
MORECU Ltd	Morogoro	42,500	2,000	0.5
Total		**8,499,000**	**400,000**	**100**

Source: TCCCo. Strategic Plan, 2020/2021 – 2024/2015 at pg. 2
Key: * All coffee-producing regions

TCCCo is the largest coffee curing company in the country owned by cooperatives. It has the capacity of curing 50,000 tons of coffee per year. The factory was anticipated would foster coffee production through value addition and consequently, contribute to employment creation and revenue generation at the grassroots level. However, due to numerous shortcomings, most of which are related with inadequate shareholders patronage participation and poor governance,[63]for the past ten years TCCCo has been faced with a deteriorating economic performance trend, to the extent of being outcompeted by private curing companies established in Kilimanjaro, after liberalization of coffee trade in 1990s.

Records show that the patronization of members by shareholder unions has been weakening and delivery of parchment coffee to TCCCo Ltd has been regressively decreasing. [64]Some shareholders such as BUHA Ltd (Kigoma) and MORECU Ltd (Morogoro) ceased to patronize TCCCo Ltd due to the establishment of coffee curing plants in their areas of operation. Records also show that other union shareholders such as KNCU Ltd which is a majority shareholder, VCU Ltd and Usambara Cooperative Union Ltd did not deliver any parchment coffee to TCCCo Ltd from the years 2017/2018 to 2018/2019. [65]Most members of KNCU (primary cooperatives) preferred curing their coffee in private curing companies, rather than patronizing with their company through their unions as a way of avoiding abnormal curing losses and other governance issues. The implication of Low patronization by shareholders is that these shareholders have lost the right to ownership of the company.[66]Because of inadequate patronization by shareholders and governance problems,

[63] TCCCo Strategic Plan at pg. 5
[64] Ibid at pp. 13-14
[65] Ibid
[66] Ibid

economic performance of TCCCo was in the negative growth for almost the past ten years (2008/09 – 2018/19) as demonstrated in Table 2 in the appendix.

(ii) The Tanganyika Instant Coffee Company Limited (TANICA)

The second example is the Tanganyika Instant Coffee Company Limited (TANICA), which was established in 1963 being owned by Tanganyika Development Finance Corporation (TDFL), which had 90 percent share ownership and the Bukoba Native Cooperative Union (BNCU) which had 10 percent share ownership. TANICA was taken over in 1976 by Tanzania Coffee Authority (TCA) and later by Tanzania Coffee Marketing Board (TCMB) in 1984 when the Authority was disbanded. In 2000, TANICA underwent privatization under the Parastatal Sector Reform Commission (PSRC). According to the privatization package the consortium of cooperative unions, namely Kagera Cooperative Union Limited (KCU Ltd.), Karagwe District Cooperative Union Limited (KDCU Ltd.) and Tanzania Federation of Cooperatives Limited (TFC Ltd.) acquired shares worth Tanzania shillings 200,000,000/=. Whereby, KCU was allotted 52% of the shares, KDCU 31% and TFC 2%. In addition, Tanzania Coffee Board on behalf of Treasurer Registrar (TCB/TR) remained with 10% of the shares and the rest of the shares, that is, 5% were allotted to TANICA employees as deferred shares.

The structure of share ownership changed in 2008 when the company required additional working capital, which was eventually provided by KCU Ltd. and KDCU Ltd., resulting in increasing the share ownership of KCU to 53.3% and KDCU to 31.83%, TR 7.67%, TFC 6.22% and the employees 0.9%respectively, as indicated in Table 3 in the Appendix. The economic performance of TANICA for the season starting from 2015/2016 to 2016/2017 witnessed serious losses which were mainly due to bad governance and inappropriate management decisions. In 2015 the company commissioned two projects, namely production of mineral water and supply of domestic gas, without conducting a proper feasibility study.

Both projects ended up making losses. In addition, the company adopted a new policy of sourcing raw material (coffee) from private agents, instead of sourcing it from shareholder unions (patrons).[67]Also, there was gross business mis-management, which was coupled with abuses in employment procedures, which included over payments of extra-working hours allowances to employees. All these resulted in reducing the working capital of the company by Tanzania Shilling 1,774,284,938 as indicated in Table 4 in the Appendix. Generally, the business performance report of TANICA for years preceding the 2015/2016 season indicate that the recovery trend of the company, which had started in 2011/2012 was thwarted from 2015/2016 when the company started operating at a loss, as demonstrated in Table 5 in the Appendix. According to TANICA management other factors which contributed to the downward economic performance trend included the following:

- Increasing competition from two private coffee roasting companies which were licensed to start coffee roasting business in Kagera region[68];
- Inefficient and almost dilapidated factory machines which require frequent repairs, resulting in higher production costs compared to sales proceeds;
- Outdated technology as the factory machines could not produce granulated coffee, a brand currently preferred by the market;
- Poor quality of coffee that TANICA receives for processing as a result of implementing the outdated TANICA policy that the company should process the last grade coffee (triage), which cannot fetch market at the auction.

[67] It was later discovered that this move was an act of sabotage between the General manager of TANICA and the General Managers of KCU and KDCU who were owners of the said private coffee trading companies.
[68] Amir Hamza Company Ltd. and HAKIKA Co. Ltd.

(iii) The Farmers Kilimanjaro Coffee Limited (FAKICO Ltd.)

The third example involves the Farmers Kilimanjaro Coffee Limited (FAKICO Ltd.), which is a private company whose 80% of its shares is owned by 26 agricultural marketing primary cooperative societies within Kilimanjaro region and 20% of the shares was earmarked to be allocated to other investors, including individual shareholders. FAKICO was established in November 2021 after the Registrar of Cooperatives had decided to deregister G32Kilimanjaro New Cooperative Initiatives – Joint Venture Enterprise Ltd. (G32 KNCI – JVE Ltd.) which had been established by 32 Kilimanjaro primary cooperatives societies in2008. It was deregistered because the registrar claimed that it was conducting business similar to that conducted by the Kilimanjaro Native Cooperative Union (KNCU Ltd.).

The primary cooperatives which were members of G 32 KNCI – JVE Ltd. are also members of KNCU Ltd. The establishment of G 32 KNCI – JVE Ltd. in 2008 was compliant to the provisions of the then Cooperative Societies Act of 2003.[69] Similar provisions were retained by the current Act.[70]The provisions allow cooperatives who are members of a cooperative union to establish cooperative joint enterprises for purposes of enhancing efficiency in their businesses, provided such an establishment would not amount to establishing a new union. In other words, the provisions allow primary cooperatives to establish joint business enterprises for purposes of transacting their businesses to meet competitive market demands, but remained committed members of the union (KNCU).[71]

FAKICO was established to fulfil a main function of facilitating exportation of coffee of member cooperatives, just as it was the case of the defunct G 32 KNCI – JVE Ltd. In addition, according to its Memorandum and Articles of Association FAKICO may also be engaged in buying and exporting coffee of non-members. In future FAKICO intends to carry on the business of coffee roasting, blending and packing. The contribution of the coffee from member cooperatives who are also the shareholders of the company, is considered critical for the smooth conduct of the company's main business. Further, the contribution of share capital by the same primary cooperatives are necessary to facilitate other mandated activities of the company.

So far FAKICO has not yet experienced any challenges of running the company as its members still meet their commitments of contributing the green coffee beans it requires to meet coffee orders from coffee roasting and blending companies abroad. This study, serves as a lesson to FAKICO and other future potential cooperative hybrids when planning on how to involve members in their ownership and operation.

6. 0 Prospects of Managing Hybrid Co-operatives based on New Co-operative Models

6.1 An overview

The Tanzania National Five-Year Economic Development Plan (2021/22 -2025/26)[72] indicates that in year 2019/20 there were 113 agriculturally based industries owned by cooperatives. Some of these industries are hybrid cooperatives. The plan foresees that industries owned by cooperatives will increase to 183 by 2025/2026.[73] Indeed, they may be more than the projected ones if the data would include industries owned by cooperatives in other sectors such as mining and manufacturing[74] and if the deteriorating trend in the economic performance of existing hybrid

[69] Section .. of the Cooperative Societies Act, 2003 now repealed and replaced by Act No. 6 of 2013.
[70] No. 6 of 2013. Under section 26 the Act gives power to the Registrar of Cooperatives to allow two or more cooperatives to establish a cooperative business joint enterprise for purposes of enhancing efficiency in their business.
[71] The deregistration of G 32 was therefore not legally justifiable because the activities it was conducting were same as the ones which the same Registrar of Cooperatives had registered it to perform. Indeed, records show primary cooperatives who were members of G 32 KNIC – JVE Ltd. are the ones patronizing with TCCCo Ltd. more than other primary cooperative societies members of KNCU Ltd.
[72] NFYDP
[73] Ibid at pg.89
[74] Recent data (2021) on industries owned by cooperatives

cooperatives would be reversed. The experience of the above studied hybrid cooperatives indicates that the economic performance of both TCCCo Ltd. and TANICA Ltd. is deteriorating and that non-participation of produce suppliers in their ownership and management may be one of its main reasons. Unfortunately, the current Tanzania cooperative development policy and legislation do not embrace the above discussed new cooperative models as possible solutions to the current disappointing performance of the hybrid cooperatives. This study therefore recommends the following interventions in the Tanzanian cooperative development policy and legislation.

6.2 Need for matching patronage with shareholding

Considering the current economic development policy of Tanzania and targets for industrialization through cooperatives,[75] the ministry responsible for cooperatives is promoting value addition on agricultural produce, partially through cooperatives. In addition, in recent years the ministry has been embarking on a program of rehabilitating cooperative society factories in the cotton industry. It is expected that the establishment of future hybrid cooperatives, will as much as possible avoid the shortfalls experienced by the existing hybrid cooperatives, which were based on traditional models of hybrid cooperatives. Of much relevancy is the fact that hybrid cooperatives whether in a company form or otherwise will highly depend on raw material produced by members of primary cooperative societies in their respective areas. Secondly, given the current policy of trade liberalization, the farmers are not likely to agree to contribute their produce to the hybrids if their commitment to contribute will not be reciprocated with an assurance of ownership rights in those hybrid cooperatives. This calls for having a cooperative institutional framework that will match farmer(member) patronage with ownership of residual rights in the future hybrid cooperatives. In addition, there may be a need for revisiting their constitutions or Memoranda and Articles of Associations to ensure management bodies involve professionals who are knowledgeable of preparing and implementing CBPs, in case they opt to adopt a PIC or NGC model. To this effect policy directives which will later be implemented through a reviewed cooperative societies legislation will be required.

6.3 Need for adoption of new co-operative models

In an endeavour to look for an institutional framework that would facilitate establishment of hybrid cooperatives and which assures availability of raw materials to the hybrids and at the same time ownership rights to the producers, Tanzanian cooperators need to consider establishing or transforming themselves into either proportional investment or new generation cooperative models. The existing legal framework, particularly section 26 of Cooperative Societies Act[76] which allows cooperatives to establish cooperative joint enterprises or cooperative joint ventures may, as a starting point, accommodate these structures, if proper technical guidelines and policy directives to such effect are issued. The said guidelines can be issued under the provisions of Regulation 71 (3) of Cooperative Societies Regulations[77], which gives power to the Cooperative Commission to issue guidelines on the modalities for the formation, registration and management of cooperative joint enterprises.

For the cooperatives which wish to establish new generation cooperatives, it is advisable that relevant crops better be traded under the commodity exchange facility also currently existing in Tanzania. This mechanism would eventually eliminate middlemen traders who utilize the warehouse receipt facility to exploit producers. It will also encourage the culture of investment by the producers. However, both models need to be understood first and preparation of appropriate strategies undertaken before their introduction.

[75] See The Tanzania National Five-Year Economic Development Plan (2021/22 -2025/26) infra fn. 54

[76] This is because the section and Regulation 70 of the Cooperative Societies Regulations provides for modalities for establishing such bodies, except in the instances where members may wish to establish their hybrid as a company, in which case they will have to comply with the provisions of the Companies Act (Cap. 212)

[77] G.N No. 272 of 2015.

7.0 Conclusion

The main objective of this paper was to create an understanding of the concept of hybridization of cooperatives and how it could be utilized by Tanzanian cooperatives to grapple with challenges occasioned by trade liberalization policies, which were introduced in the country in the past two decades. The study has found that hybridization could be utilized by cooperatives as a way of avoiding some of the traditional cooperative principles which potentially might have delayed efficiency in cooperative business undertakings, while maintaining those which continue to differentiate them from IOFs. Of much significance is recognition of the fact that cooperative members who supply raw materials to hybrid cooperatives as part of their patronization, need to be assured of their residual claimant rights for the sustainability of future cooperative hybrids. The latter understanding was ignored by hybrid cooperatives which applied traditional cooperative models. These traditional cooperative hybrids could operate properly during the pre-trade liberalization era when cooperatives had a monopoly of being sole traders in the local markets. Under a liberalized environment absence of property rights ownership in the assets of the hybrids may dissuade the patrons from contributing the required raw materials to the hybrids. On the other hand, in the absence of member-patron control the uncontrolled management of those hybrids may endanger their competitiveness and hence their sustainability.

Using examples of hybrid cooperatives established in Tanzania before the era of trade liberalization, particularly TCCCO Ltd. and TANICA Ltd. this study has tried to demonstrate challenges which such hybrid cooperatives faced after the trade liberalization era, when they continued to operate along traditional cooperative models. The study has investigated into what it has called 'second generation cooperative models', namely, proportional investment cooperatives and new generation cooperatives. These are models which associate member contributions of raw materials in the form of patronage with rights obtained through share acquisitions and through that they recognize residual rights claims of the members. While the PIC model is closed only to the members, the NGC model allows raw material delivery rights to be traded at secondary commodity markets. Thus, if the latter models are introduced in Tanzania, they may assist to eliminate middle men who enjoy the benefits of warehouse receipt and commodity exchange systems, which result in reducing the income of cooperative members.

It is expected that before considering to introduce the second-generation models, more empirically based studies will be conducted to justify their appropriateness in Tanzania. What this study has attempted to demonstrate is the inappropriateness of operating hybrid cooperatives using traditional cooperative models under the liberalized trade environment. This may assist hybrid cooperatives which are being established today such as FAKICO and many future ones to draw an early lesson. Possibilities of utilizing the provisions of section 26 of the current Cooperative Societies Act, 2013 should also be investigated as a starting point for promotion of more industrial-based hybrid cooperatives. Due to the current economic development policies and plans, the latter are likely to feature in the future Tanzania. The paper therefore recommends incorporation in the national cooperative policies, legal frameworks and institutional structures that would provide solutions to the challenges encountered by the current HBCs.

Reference

Bernard Paranque and Hugh Willmott (2014) 'Cooperatives - Survivors or Gravediggers of Capitalism? The ambivalent case of the John Lewis Partnership', available at https://www.academia.edu/7501186/Cooperatives_saviours_or_gravediggers_of_capitalism_Theambivalent_case_of_the_John_Lewis_Partnership?auto=download, accessed on 21/1/2022

Chaddad, F.R. and Cook, M.L. (2004). 'Understanding New Cooperative Models: An Ownership-control Rights Typology'. *Review of Agricultural Economics*, Vol.26, No. 3, pp. 248-360.

Chaddad F.R. & Iliopoulos C., (2013) 'Control Rights, Governance and the Costs of Ownership in Agricultural Cooperatives', 29 *Agribusiness: An International Journal 1*, pp. 3-22.

Cook, M.L. and Chaddad, F.R., (2004). 'Redesigning Cooperative Boundaries: The Emergence of New Models'' *American Journal of Agricultural Economics*, Vol. 6, No. 5, pp. 1249-1253.

Cook, M.L. and Iliopoulos. C (2000). "Ill-defined Property Rights in Collective Action: The Case of US Agricultural Cooperatives." In C. Menard (ed.) Institutions, Contracts and Organizations. Perspectives from New Institutional Economics. Cheltenham: E. Elgar, pp. 335-348.

Cook M.L. (1995), "The Future of U.S. Agricultural Cooperatives: A Neo-Institutional Approach", 77 *American Journal of Agricultural Economics*, , pp. 1153-1159.

Cornforth. C (2002) "Making sense of co-operative governance: competing models and tensions" *Review of International Co-operation* Vol.95, 1 pp. 51-57.

Hansmann, H. (1996), The Ownership of Enterprise, Harvard University Press, Cambridge, MA.

Hansmann, H. 1988. 'The Ownership of the Firm'. *Journal of Law, Economics and Organization* 4(2) :267-304.

Iliopoulos C. & M.L. Cook,(2013) *'Property Rights Constraints in Producer- Owned Firms: Solutions as Prerequisites for Successful Collective Entrepreneurship*', Sixth International Conference on Economics and Management of Networks (EMnet), Agadir, Morocco, November 21-23, 2013. Operational and Financial Decisions Within Proportional Investment Cooperatives

Jonathan R. Macey (1999), 'Fiduciary Duties as Residual Claims: Obligations to Non- shareholder Constituencies from a Theory of the Firm Perspective', *84 Cornell L.Rev. 1266* Available at: http://scholarship.law.cornell.edu/clr/vol84/iss5/5

ICA (2015), Guidance Notice to the Cooperative Principles, International Cooperative Alliance

Ménard, C. (2007). *'Cooperatives: Hierarchies or Hybrids? Vertical Markets and Cooperative Hierarchies: The Role of Cooperatives*', in the Agri-Food Industry, K. Karantininis and J. Nilsson (eds.), Dordrecht: Springer, pp. 1-17.

Ménard, C. (1996), 'On Clusters, Hybrids and other Strange Forms. The Case of the French Poultry Industry'. *Journal of Institutional and Theoretical Economics* 152(1):154-183.

Ménard, C. (2004), 'The Economics of Hybrid Organizations', *Journal of Institutional and Theoretical Economics,* 160(3): pp.345–376.

Ménard, C. (2009), *'Oliver Williamson and the Logic of Hybrid Organizations',* in M. Morroni (ed.), Corporate Governance, Organization Design and the Firm. Cooperation and Outsourcing in the Global Economy. Cheltenham: Edward Elgar, pp.87–103.

Ménard, C. (2013), *"Hybrid Modes of Organization. Alliances, Joint Ventures, Networks, and Other 'Strange' Animals",* in R. Gibbons and J. Roberts (eds.), The Handbook of Organizational Economics, Princeton: Princeton University Press, pp.1066–1108.

Nilsson J., (2001), *'Farmer cooperatives: organizational models and their business environment'* in Birchall J., ed., The New Mutualism in Public Policy, Routledge, London.

Williamson, O. E. (1996), The Mechanisms of Governance, Oxford: Oxford University Press.

Xiaoyan Qian & Tava Lennon Olsen, (2020). 'Operational and Financial Decisions Within Proportional Investment Cooperatives', *Manufacturing & Service Operations Management*, INFORMS, vol. 22(3), pages 545-561, May. https://ideas.repec.org/a/inm/ormsom/v22y2020i3p545-561.html accessed on 28th February 2022 at 7:11 PM

Appendix

Table 2: TCCCo Costs vs. Revenues from 2008/09 to 2018/19

Narration	Total - TZS Million	Average	% of Revenue
Cost of Sales	2874.3	261.3	62
Administration expenses	2747.0	249.7	59
Sub-total	**5621.3**	**511.0**	**122**
Net income before depreciation	-1002.6	-91.1	-22
Depreciation	4985.0	453.2	108
Net Profit	-5987.5	-544.3	-130
Profit on asset disposal	976.1	88.7	21
Net Profit after disposal	-5011.4	-455.6	-109

Source: TCCCo Ltd. Strategic Plan, 2021 at pg. 8

Table 3: Current TANICA Share Ownership Structure

Name of the Shareholder	No. of shares (allotted)	Book value in TZS.	Percentage
Kagera Cooperative Union (KCU) 1990 Ltd	9,656,391	772,511,280	53.00
Karagwe District Cooperative Union (KDCU) Ltd	5,758,740	460,699,200	32.00
Treasury Registrar on Behalf of the Government	1,388,000	111,040,000	8.00
Tanzania Federation of Cooperatives (TFC)	1,125,000	90,000,000	6.00
TANICA Workers	166,437	13,314,960	1.00
Total	**18,094,568**	**1,447,565,440**	**100.00**

Source: TANICA, 2017

Table 4: Reduction in TANICA's Working Capital

VOTE/PROJECT	2016/2017	2015/2016	AMOUNT	TOTAL
	TZS	TZS	TZS	TZS
Gas Project - Season 2013/14			98,123,843	98,123,843
Mineral water Project – 2014/15			414,019,095	414,019,095
Project for joining DSE 2015/16			13,000,000	13,000,000
Purchase of raw mater(coffee) from private agencies	674,711,000	179,988,000	0	854,699,000
Salary +PPF/NSSF & allowances	227,891,000	166,552,000	0	394,443,000
Total				**1,774,284,938**

Source: TANICA, 2017

Table 5: TANICA Profit/ (Loss) per Season from 2011/2012 to 2016/2017: in TZS'000'

Season	2016/17	2015/16	2014/15	2013/14	2012/13	2011/12
Income: Sales	8,120,486	6,968,008	6,569,502	6,180,131	5,583,853	4,946,167
PC	6,467,917	4,848,683	5,081,076	4,145,099	3,765,741	3,144,745
Net profit	1,652,569	1,886,932	1,720,819	2,035,032	1,818,112	1,801,422
AC	1,648,955	1,364,360	1,127,453	1,159,577	1,036,675	1,005,956
Marketing & supply	370,343	407,895	477,715	774,820	743,825	624,987
Audit fee	5,000	6,000	5,850	9,900	6,000	6,000
Total administration cost	2,024,298	1,778,255	1,611,018	1,944,297	1,785,500	1,636,943
Net profit (loss)	(371,729)	108,677	109,801	90,735	32,612	164,479
Other incomes	7,329	49,403	27,304	31,292	11,425	74,132
Profit (loss) before tax	(364,399)	158,080	137,105	122,027	44,037	238,611
Tax	0	(53,385)	(53,137)	(67,564)	(43,282)	(71,583)
Profit (loss) after Tax	(364,399)	104,695	83,968	54,464	756	167,028

Source: TANICA, 2017

Key: PC=Production Cost
AC=Administrative Cost

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COVID-19 Pandemic and Family Business Coping Strategies in Tanzania

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Abstract

Covid19 pandemic affected businesses in many parts of the world including Tanzania. The disaster reduced the number of customers and negatively affected the business' supply chain which led to limited availability of supplies, high cost of running businesses, and bad enough the closure and retardation of many core family businesses. Thus, the purpose of this study was to investigate family business coping strategies amidst COVID 19 pandemic in Tanzania. A case study approach was adopted in this study. The target population was family business owners in Sinza, Dar es Salaam. Data were collected through face-to-face interviews with heads and members of family businesses. Data were analysed thematically by using MAXQDA software. The study's findings revealed that during COVID-19 period, many families were forced to think aloud on alternative sources of generating revenues which contributed to self-sufficiency, servicing loan facilities, and retaining connection with customers. The coping strategies were new product development, market development, usage of social media and cost minimization. The study concludes that the pandemic had immediate and long-term negative effects to the survival of family businesses in Tanzania. To ensure the sustainability of family businesses, the study provides several recommendations. Family business must think outside the box and identify potential new sources of revenue that align with their core competencies. In addition, family businesses must be innovative and adaptive to digital/online means of conducting business

operations. For cost optimization, family businesses must be helped to optimize their costs by identifying areas where expenses can be reduced without compromising quality or customer experience. Furthermore, instead of reducing employee wages, family business must focus on engaging and motivating employees to be more productive and efficient. Finally, it is important to assist family businesses in making informed decisions about their operations by assessing the performance of different business units.

Keywords: Family business, COVID 19-pandemic, Revenue streams, Coping strategies

1.0 Introduction

The outbreak of the Corona Virus disease in 2019 (COVID-19) had negative impacts to the economy, politics, health, culture, and social-life of people in many parts of the world (WHO, 2020). Considering its consequences, the World Health Organization (WHO) declared the outbreak to be a Public Health Emergency of International Concern on 30/01/2020 and recognized it as a pandemic on 03/11/2020. The number of people diagnosed with COVID-19 worldwide crossed the one million mark on 04/02/2020; the case fatality rate (CFR) across 204 countries and territories was 5.2% (Dudel *et al*., 2020; World Health Organization, 2022). The pandemic had some noticeable effects in many areas, including negative effects to small businesses whereby business operations failed due to lack of customers, reduced employment, reduced spending, plant closure, lack of finance resources, travel restrictions, limited sales volume and high cost of doing business and low-profit levels (Bartik *et al.,* 2020; KPMG, 2020; UNCTAD, 2019).

Given the impact of the COVID 19 pandemic, family businesses were forced to look for new ways to ensure sustainability of their revenue streams. According to United Nations Environment Programme (UNEP, 2021) in a period of uncertainty, there is no incentive like survival, which implies that smart businesses will profit from world transformative changes by proactively changing the way they conduct business. The approach is affirmed by Calabro *et al.* (2021) who declared that one of the alternatives to the impact of COVID-19 to family businesses and legacy was to transform into other businesses of demand during the pandemic. Accordingly, Faherty *et al.* (2021) showed that there were a number of ways where family businesses responded to the pandemic, including diversification into new markets and launching new products. Moreover, Basco (2021) found that family businesses demonstrated a resilient mindset and commitment to the future in their approach to overcome the pandemic.

Likewise, the pandemic called for alternative sources of income. The International Labour Organization (2020) advised that to ensure temporary relief from the pandemic, provision of financial support, searching of markets for short-lived products and undertaking long-term diversification measures were key. The advice concurs with KPMG (2021) who found that family businesses were starting to reshape their businesses based on what was in front of them by exploring a wider range of markets and making sure their products are relevant in the new reality, diversifying their wealth while maintaining and growing the family business.

Equally, Matajira (2021) studying how family business survived the crisis, found that efforts to survive resulted in the realization that more family involvement and input was needed by combining the efforts of both younger generations and older family members. In fact, the pandemic increased work commitment to family business employees and employers (McDowell, 2021). Employees showed loyalty and dedication to their organization and acted as ambassadors for their company throughout the pandemic. That means the pandemic has led to huge changes in work routines and employee patterns. According to Eckey and Memmel (2022) family involvement in the business enhances the potential for resilience in such firms in the period of disasters.

For instance, in Nigeria, Benue State, literature shows that there are both negative and significant effects of COVID-19 on the survival strategies of small business owners (Dane *et al.,* 2022). Furthermore, COVID-19 enables small business owners to adopt survival strategies such as curtailment investment, and two-pronged strategies. The negative impact of COVID-19 was reduced employment among small businesses, reduced spending, plant closures, lack of innovation,

very weak growth in terms of branches, lack of resources to purchase necessary raw materials, curtailment of assets, poor development of products. The negative effects were also found in many previous studies (Bartika *et al*., 2020; KPMG, 2020; United Nations Conference on Trade and Development, 2022; Dane *et al.,* 2022) recommended that small businesses adopt survival strategies during the COVID-19 such as downsizing strategies in terms of job cuts, reduction of expenses (additional costs or overheads) and closing of other branches of business.

Examining how tour, porters and guides survived during the COVID-19 pandemic, Kabonda (2021), declared that the pandemic had many negative impacts including a reduction in individual and family income caused by the decrease in the number of visitors due to COVID-19 pandemic. The study found that the means for survival took various forms including increased personal savings, use of gifts and grants, subsistence allowances from their employers and engaging in other income-generating activities such as subsistence small-scale farming, sedentary livestock keeping, seeking for alternative employment, and engaging in small business and entrepreneurship. These survival strategies were also highlighted in a study by George (2021) who found that COVID-19 forced family members to look for new sources of revenue including making and selling face masks and liquid soaps, herbal products, and healthy food that boost the human body's immunity such as lemon, peppers, and tamarind. The studies underscored the role of planning among business owners as the means to be well prepared to cope up with the negative economic impacts that will be caused by any other disasters to the industry in future.

Despite of the fact that there are handful of studies on how small businesses survived during and after the pandemic (Calabro *et al*., 2021; Dane *et al.,* 2022; Faherty *et al*., 2021; McDowell, 2021) there is no conclusive set of strategies which family businesses can use in the time of disasters. In addition, since the outbreak of COVID-19 in Tanzania, there is scanty evidence from studies that looked at family business survival strategies while coping with the pandemic. Studies on COVID-19 do exist in Tanzania but they focused on the tourism sector survival strategies (George, 2021; Henseler *et al*., 2022; Kabonda, 2021; Mwamwaja & Mlozi, 2020). This poses a danger of survival strategies generalizability in other types of businesses. Moreover, even though similar studies have been done in countries other than Tanzania, due to different social, economic, political and technological orientations between countries, it is implausible to transfer the strategies identified in other places in a different business environment, and type into Tanzania context.

The dearth of information on how family businesses in Tanzania developed new revenue streams to cope with the impact of the COVID -19 pandemic, is regrettable because such information would be essential in future for minimizing the vulnerability of such businesses in the period of disasters and uncertainty. This study, therefore, attempted to contribute to the knowledge base by exploring the sources of new revenue streams of family businesses during and after the COVID-19 pandemic.

2.0 Methodology

The study was conducted in Sinza, Ubungo District Dar-es-salaam Tanzania. The area was selected since it contains more businesses than other areas of the city (Shangwe, 2019). An exploratory case study design was used to achieve the research's main purpose. The study's target population was family businesses operating in the Ubungo district. The sample size for the study was 20 respondents who were family businesses performing retail businesses, especially selling cloth (10), shoes (6), and hair-dressing saloons (4). The sample was enough as per the suggestions of Saunder *et al*. (2012) who argued that the sample size for a qualitative study ranging from 5-25 respondents can provide the required results. Purposive sampling was employed in the study to get respondents with enough information regarding the family business affected by pandemic and their coping strategies. Again, snowballing techniques was used to get more family business affected by the pandemic as they were difficulties to identify. Hence the first affected family provided the researcher with contacts of other family businesses affected by COVID-19. Structured interviews were employed to collect data from managers of the business and heads of the family. All information were recorded in a voice recorder and notebook.

Data from the interview's transcripts were analyzed thematically. As part of the data analysis process the interviews were transcribed, followed by typing up of detailed field notes in the Microsoft Word page, familiarization with the data and reading and re-reading of the data as preparatory stages for exporting the data into MAXQDA. During this stage, the responses of each interviewee was recorded and saved in an organized folder. The folder was named by using the name and the type of business for every person interviewed. To start the analysis, the "Open New Project" option was clicked and new MAXQDA project was created, allowing to perform all data analysis activities. Once the project was created it was saved on the desktop for easy access. Then documents were imported into the "Document System" window, where all files were conveniently managed for analysis. Initial codes and sub-codes were generated initial codes based on the key issues explored in the study and the responses from the interview transcripts.

The tasks mentioned above, involved working with code system and document browser windows. The process included segmenting the text and applying codes to the relevant parts by simply dragging and dropping the code over the highlighted text. Later, thematic coding took place where codes were organized into potential themes and all the data related to each potential theme was put together. After a thorough analysis, the themes were carefully reviewed, refined, and given appropriate names. As Creswell (2006) suggests, these themes represent significant findings in qualitative studies and are commonly used to structure the findings section of research report. To access the responses from each participant and identify common themes, "Retrieve Segment" feature was activated. Additionally, the "interactive quote matrix" command was used to compare the responses. The data was then saved as Microsoft Word documents, extracted, and presented in the form of a report with text, addressing the key research questions of this study. In addition, all ethical protocols were adhered including obtaining research clearance before the start of data collection.

3.0 Findings and Discussion

3.1 Demographic characteristics of respondents

Table 1 presents the demographic characteristics of respondents included in the analysis as follows:

Table 1: Demographic characteristics of respondents included in analysis

Demographic Information		Frequency (20)	Percent (%)
Gender	Males	12	60
	Females	08	40
Age (years)	18 – 25	02	10
	26 – 35	07	35
	36 – 45	05	25
	Above 45	06	30
Position	Employee	02	10
	Manager	01	5
	Ass. head of business	05	25
	Head of business	12	60
Work Experience	0 – 3	02	10
	4 – 7	03	15
	8 – 10	11	55
	Over 11	04	20

Gender of respondents: The study involved both males and females, where 16 males (80%) and four (4) females (20%) participated in the study. Age of Respondents was also considered as a demographic factor whereby there were two (2) respondents aged between 18 – 25, equivalent to 10%, and 7 respondents aged between 26 – 35, equivalent to 35%, and 5 respondents aged between 36 – 45, equivalent to 25%, and lastly above 45 years equivalent to 30%. Hence the majority of the respondents were aged between 26 – 35 years.

Position of respondents: Another demographic feature was the position of respondents in the family business. There were two (2) employees which is equivalent to 10%, and only one (1) manager which is equivalent to 5%, and five (5) assistant heads of the family business which is equivalent to 25%, and lastly 12 heads of the family business which is equivalent to 60%. Hence the majority of the respondents were the heads of the family business.

Work experience: Similarly, the work experience of respondents in a family business was considered, whereby there were two (2) respondents with work experience of below three (3) years which is equivalent to 10%, and three (3) respondents with work experience between 4 – 7 years which is equivalent to 15%, and 11 respondents with work experience between 8 – 11 years which is equivalent to 55% and lastly four (4) respondents with experience of more than 11 years which are equivalent to 20%. Hence the respondents with work experience of between 8 – 11 years make up the majority of the respondents.

3.2 Family businesses coping strategies

The main motive of this study was to investigate family business coping strategies during the COVID-19 pandemic. Thus, the authors sought information on how family businesses generated revenues during the pandemic. Respondents had different responses as presented in the preceding sub-themes.

3.2.1 Introduction of new products/diversification

Findings revealed that the introduction of new products was essential in ensuring that there are new sources of revenues due to the decrease in the number of customers as a result of COVID - 19 pandemic. Respondents revealed that most of the family businesses were negatively affected, hence families were struggling to survive, thus they had to transform into other businesses to maintain their daily living standards. Family businesses identified commodities that were of demand during the pandemic which included face masks, examination gloves, non-contact thermometers, hand sanitiser, shoe and hair covers, liquid soap, fast food delivery and home delivery of devices.

Several representatives of the family business said:

> "*The number of customers has decreased significantly due to COVID-19 which has made many customers avoid unnecessary movements, the few available had limited requirements, so we have to sell what was in high demand to stay in business". In addition, this was necessary as the landlord was pushing us every month to pay their rent, and school fees obligations were as usual''* (Interviews, Sinza, June 2022).

Other respondents said:

> *"Our business almost died until we started selling water buckets, hand sanitizers and face masks to have some money to maintain our standard of living." Though the pandemic negatively affected our routine businesses, it gave us opportunity for coming up with new products"* (Interviews June 2022).

Similar findings were revealed in a study conducted by Calabro *et al*. (2021) who studied how family businesses are overcoming COVID-19. They found that transforming into other businesses of demand during the pandemic was an altenative means to respond to the impact that COVID-19 had on family business and legacy. They further explored that streamlining of business operations, implementing new financial measures, creating new products, exploring new markets and adopting to new technological solutions were key approaches in ensuring sustainability of family businesses.

Moreover, Faherty *et al.* (2021) revealed similar findings and proved that diversification into new markets and launching of new products were used as key responses toward the pandemic. Therefore, findings of this study provide a reflection that introduction of new products was key for sustainability of family businesses in Tanzania, considering that prior study in the country focused on the impact of COVID-19 to the tourism sector rather to family businesses (George, 2021; Henseler, *et al.,* 2022; Kabonda, 2021; Mwamwaja & Mlozi, 2020).

3.2.2 Searching of new markets

The study also revealed that the new sources of revenues were generated by transforming into new markets. One head of a family business was quoted saying:

> *"During the pandemic, we had to find new markets whereby we were forced to take clothes out of shops and sell them in various regions. In some regions the products were sold at higher prices but in many places the products were sold at lower prices. Moving to new markets led to high cost of operating business. We are happy and thankful that all family members worked together with high degree of commitment. The money obtained from this business enabled us to pay rents, service loans and even fees for our children"* (Intervie, June 2022).

The respondent view is supported by Faherty *et al.* (2021) who showed that family businesses responded to the pandemic in different ways where some diversified into new markets, while others launched new products.

Meanwhile, Basco (2021) found that family businesses demonstrated a resilient mindset and commitment to the future in their approach to overcoming the pandemic. By their very existence, they have demonstrated the ability to overcome significant obstacles and evolve to meet often changing markets and demands while honoring past heritage and preserving core family values. KPMG (2021) found that family businesses were starting to reshape their businesses based on what was in front of them by exploring a wider range of markets and make sure their products are relevant in the new reality, diversifying their wealth while maintaining and growing the family business.

Though, introducing new markets was one of the approaches in coping with the pandemic,however, findings of this study revealed that moving into new markets was associated with challenges such as high cost to family business operations.

3.2.3. Use of social media to sell products Online

The study also revealed that the pandemic forced the respondents to adopt new technologies for continuous generation of income for their business and family survival, whereby many family businesses had to adopt digital means that could enable business operations with no need to meet with customers physically. One of the members of the family businesses was quoted as follows:

> *"We didn't know how to promote our business through social media and we thought it was only for huge business, but due to the pandemic we were forced to get as close as possible to customers, so we had to create WhatsApp groups where we promoted our business and informed customers about new products''* (Interview, June 2022).

Another respondent said:

> *"One day when I was on the Instagram, I found a number of sellers displaying their products and asked buyers to choose with free delivery services. After seeing this, I asked my friend to open Instagram account for me where I displayed various gowns that were never sold for months. Just after posting the gowns, I started receiving calls from different individuals and I sold 50 gowns in a week" (*Interview, June 2022).

Likewise, Hu (2022), argues that digital technologies and communication enhanced existing assets and capabilities, creating new customer value during the COVID-19 outbreak. The pandemic increased the relevance of social media as an effective tool for the provision of updated information and training. Equally, Hu *et al.* (2023) affirmed that adopting social media platforms and integrating them within marketing strategies during COVID-19 was one of the fundamental approaches toward ensuring business survival during the pandemic.

3.2.4 Cost reduction

Findings revealed that family businesses for the sake of maintaining any generated revenues, must cut some of the expenses. The respondents had different responses as hereunder presented:

> *"The outbreak of COVID- 19 forced us to reduce the cost of running a business by reducing employee wages, closing a business, cutting expenses, reducing assets, initiate new product development and innovation*" (Interview, June 2022).

Another family member asserted:

> *"We cut staff to reduce the business's cost and closed two of our branches to save capital as we were paying rent and had no customers"* (Interview, June 2022).

The respondents' actions were in line with those found by Dan *et al.* (2022) whereby due to COVID-19 small business survival in Nigeria adopted survival strategies such as curtailment strategies, investment strategies and two-pronged strategies. They further revealed that the negative impact of the pandemic has resulted in reduced employment for small businesses, reduced spending, plant closures, lack of innovation, very weak growth in terms of branches, lack of resources to purchase the necessary raw materials, curtailment of assets and poor product development. Arosha *et al*. (2021) presented similar view as they argue that during the pandemic, there were concurrent needs for cost reductions to survive the financial difficulties, companies were forced to make difficult decisions such as retrenchments and layoffs. Likewise, Mwita (2020) found out that number of employee recruitment and selection activities drastically decreased due to COVID-19.

3.2.5 Strengthening customer relationship

Family businesses had to create closeness with customers to retain them for long survival by creating a database of information about each customer to increase personalization and inform them about any changes. Several members of family business said:

> *"We started collecting information about all customers after the transaction and we use this information to inform them when we introduce new products. The pandemic has changed how we do business, because few people keep moving around; so, having communication data base*

> *makes us inform them about new products, and sometimes we deliver goods to their convenient places*" (Interview, June 2022).

Afaq *et al.* (2023) revealed that customer engagement significantly impacts improved customer service. Although the pandemic extensively impacted the customers and were initially hesitant to visit hotels, Customer Relationship Management (CRM) proved to be a powerful tool to gain back customer trust during the shadows of COVID-19. Similar findings are also revealed by Chaudhuri *et al.* (2023) who recommended adopting CRM technology to manage customer relations for family business during crises.

Another respondent said:

> *"During COVID-19 very few customers could make physical visit. Since we were not used to keeping customer contacts and make regular communications it was hard to find them. However, as we discovered that it was important to have their information; we saw the impacts on sales of products"* (Interview, June 2022).

Since no similar study has been conducted in Tanzania to justify customer relationship approaches during COVID-19, this study sets a foundation that, strengthening customer relationship during the pandemic is one of the key strategies to cope with the pandemic and ensure family business sustainability in Tanzania.

4.0 Conclusion and Recommendations

The findings of this study reveal that for family business to survive they had to find out new revenue streams and hence various approaches to ensure family business sustainability including adapting digital/online means of business operations. The study concludes that the pandemic had immediate and long-term negative effects to the survival of family businesses in Tanzania. Major lessons drawn from this study is that strengthening customer relationship during the pandemic is one of the key strategies to cope with the pandemic and ensure family business sustainability in Tanzania.

Based on the findings of the study, the following recommendations are suggested to ensure the sustainability of family businesses. Firstly, family business must continue to explore new revenue streams. This requires encouraging family businesses to think outside the box and identify potential new sources of revenue that align with their core competencies, for example, by diversifying their product or service offerings, exploring untapped markets, or even considering strategic partnerships. Secondly, family business must be innovative and adapt to digital means of conducting business operations. This might involve investing in technology, such as e-commerce platforms or online marketing strategies, to reach a wider customer base and enhance operational efficiency. Thirdly, for cost optimization family businesses must be helped to optimize their costs by identifying areas where expenses can be reduced without compromising on quality or customer experience. This may involve renegotiating supplier contracts, implementing energy-saving measures, or exploring more cost-effective ways of delivering products or services. Fourthly, instead of reducing employee wages, family business must focus on engaging and motivating employees to be more productive and efficient. They must encourage a culture of open communication and involvement, where employees feel empowered to contribute their ideas and suggestions for improving business operations. Finally, it is important to assist family businesses in making informed decisions about their operations by assessing the performance of different business units, to ascertain their profitability or considering closing down nonperforming ventures.

References

Afaq, A., Gaur, L., & Sigh, G. (2023). Social CRM: linking the dots of customer service and customer loyalty during COVID-19 in the hotel industry. *International Journal of Contemporary Hospitality Management, (35),* 3, 992-1009. https://doi.org/10.1108/IJCHM-04-2022-0428

Argento R., Bryant V., & Sabelhaus J. (2013). Early withdrawals from retirement accounts during the great recession. *Contemporary Economic Policy*, 33. https://doi.org/10.2139/ssrn.2262718.

Aldrich, H. & Cliff, J. (2003). The pervasive effects of family on entrepreneurship: Toward a family embeddedness perspective. *Journal of Business Venturing, 18*(5), 573-596 https://doi.org/10.1016/S0883-9026 (03)00011-9

Arosha, S., Naotunna, N.P.G.S.I., & Priyankara, H.P.R. (2021). Battling COVID-19 with human resource management bundling. *Employee Relations, 43*(6), 1269-1289. https://doi.org/10.1108/ER-08-2020-039

Assefa, M. (2021). COVID-19 Lockdown Restrictions and Small Business Survival Strategy: Government Supporting Schemes. *Business Perspectives and Research*, 1–19. https://doi.org/10.1177/22785337211045182

Bartik, A. W., Bertrand, M., Cullen, Z., Glaeser, E. L., Luca, M., & Stanton, C. (2020). The impact of COVID-19 on small business outcomes and expectations. *Proceedings of the National Academy of Sciences of the United States of America*, *117*(30), 17656–17666. https://doi.org/10.1073/pnas.2006991117

Basco, R., Stough, R., & Suwala, L. (2021). *Family Business and Regional Development*. Routledge. USA

Calabro, A. (2021). *A research agenda for family business: A Way Ahead for the field*. Edward Elgar Publishing. France.

Chaudhuri, R., Chatterjee, S., Kraus, S., & Vronts, D. (2023). Assessing the AI-CRM technology capability for sustaining family businesses in times of crisis: the moderating role of strategic intent. *Journal of Family Business Management, 13*(1), 46-67. https://doi.org/10.1108/JFBM-12-2021-0153

Chopra, H. (2022). Revenue: Definition, types and examples. https://www.indeed.com/career-advice/career-development/revenue-definition

Chrisman, J.J., Chua, J.H., & Sharma, P. (2005). Trends and Directions in the Development of a Strategic Management Theory of the Family Firm. Entrepreneurship Theory and Practice. *American Journal of Industrial and Business Management, 9(*4) .https://doi.org/10.1111/j.1540-6520.2005.00098.x

Creswell, J.W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches,* (3rd ed.). Singapore: SAGE Publications Asia-Pacific Pte. Ltd.

Dane, S., Akyuz, M., & Opusunju,M.I. (2022). COVID-19 and Survival Strategies of Small Businesses in Nigeria. *Journal of Research in Medical and Dental Science, 10* (2):49-55. https://www.jrmds.in/articles/covid19-and-survival-strategies-of-small-businesses-in-nigeria-91066.html

Dudel, C., Riffe, T., Acosta, E., van Raalte, A., Strozza, C., & Myrskylä, M. (2020). Monitoring trends and differences in COVID-19 case-fatality rates using decomposition methods: Contributions of age structure and age-specific fatality. *PLoS ONE*, *15*(9 September), 1–11. https://doi.org/10.1371/journal.pone.0238904

Eckey, M., & Memmel, S. (2022). Impact of COVID-19 on family business performance: evidence from listed companies in Germany. *Journal of Family Business Management*. https://doi.org/10.1108/JFBM-11-2021-0143

Faherty, C., Smyth, I., Farrelly, K., Burrows, S., Crossley, C., McDowell, D., & Greene, L. (2021). *Surviving a Crisis as a Family Business: An All-Ireland Study*. https://pure.ulster.ac.uk/en/publications/surviving-a-crisis-as-a-family-business-an-all-ireland-study/fingerprints

George, C. (2021). *The impact of COVID-19 on gender aspects of the informal sector in Tanzania.* Policy Brief. Research on Poverty Aleviation (REPOA).

Henseler, M., Maisonnave, H., & Maskaeva, A. (2022). Economic impacts of COVID-19 on the tourism sector in Tanzania. *Annals of Tourism Research Empirical Insights,3*(1), https://doi.org/10.1016/j.annale.2022.100042

Hu, L. (2022). The PPE industry in Italy during COVID-19: supply chain disruption and the adoption of digital and social media in B2B firms. *Journal of Business & Industrial Marketing, 37(*10), 2050-2063. https://doi.org/10.1108/JBIM-01-2021-0005

Hu, L., Olivieri, M., & Rialti, R. (2023). Dynamically adapting to the new normal: unpacking SMEs' adoption of social media during COVID-19 outbreaks. *Journal of Business & Industrial Marketing,* Vol. ahead-of-print No. ahead-of-print. https://doi.org/10.1108/JBIM-01-2022-0052

Kabonda, V. J. (2021). Surviving Amidst COVID-19 Economic Impacts in Tanzania: Learning from Porters and Guides at Kilimanjaro National Park. *International Tourism and Hospitality Journal*, *4*(10), 1–15. https://doi.org/10.37227/ithj-2021-9-316

KPMG. (2020). *The Twin Shocks (COVID-19 Pandemic & Oil Price Crisis) and Implications for Nigerian Family Businesses*. Nigeria.

KPMG. (2021). *Mastering a comeback: How family businesses are triumphing over COVID-19. Global family business report*: COVID-19 edition.

Matajira, L. (2021). From family businesses to entrepreneurial families: tacit knowledge at the core of entrepreneurial learning, Springer Books, in: Matt R. Allen & William B. Gartner (ed.). *Family Entrepreneurshi*p, chapter 12, pages 161-172, Springer.

McDowell, D. (2021). Surviving a crisis as a family business - are family firms more resilient? The Irish News. https://www.irishnews.com/business/2021/05/04/news/surviving-a-crisis-as-a-family-business---are-family-firms-more-resilient--2306632/

Mwamwaja, E. E., & Mlozi, S. (2020). An assessment of the impact of COVID-19 pandemic in the tourism sector in Tanzania. *International Tourism and Hospitality Journal, 3*(4), 1-15.

Mwita, K.M. (2020). Effects of corona virus pandemic (COVID-19) on selected human resource management practices in Tanzania. *East African Journal of Social and Applied Sciences, 2*(2), 252-259.

Saunder, M., Lewis, P., & Thornhill, A. (2012). *Research Methods for Business Students*. (7th ed.). Pearson Education Limited.

Shangwe, D. (2019). *Factors Affecting the Growth of Small and Medium Enterprises*. Open University of Tanzania.

UNCTAD. (2019). *The contribution of consumer protection to sustainable consumption* (Vol. 06943, Issue April).

United Nations Environment Programme. (2021). Adapt to Survive: Business transformation in a time of uncertainty. UNEP, Nairobi. https://www.unep.org/resources/publication/adapt-survive-business-transformation-time-uncertainty

World Health Organization. (2020). *Coronavirus.* World Health Organization. https://www.who.int/

World Health Organization. (2021). *Coronavirus.* World Health Organization. https://www.who.int/

World Health Organization. (2022). *Coronavirus.* World Health Organization.

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Determinants of Education Provision among Agricultural Marketing Co-operative Societies in Sengerema and Ukerewe Districts; Tanzania

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Abstract
Co-operative Education (CE) is a crucial component of sustainability of the co-operatives including Agricultural Marketing Co-operative Societies (AMCOS). For AMCOS' objectives to be realised, among other strategies, member education is critical. This paper examines factors influencing the provision of CE in Tanzania, taking Sengerema and Ukerewe districts as case studies. Specifically, the study sought to examine the influence of membership size, funding and cost of education, activeness of the AMCOS Management, and readiness of members on the provision of CE in AMCOS. The study adopted a cross-sectional design where data were collected at once in time. Primary data were collected using Focus Group Discussions (FGDs), Key informant Interviews (KIIs), and documentary review. Data were analysed using Content Analysis. The analysis of data from FGDs and KIs was facilitated by Atlas.ti computer software. Findings show that CE programmes provided in Sengerema and Ukerewe districts were determined by prioritising the needs of AMCOS. The study further found that AMCOS with a large number of members had their training cost burden reduced and could easily attract trainers than those with fewer members. Moreover, the study found that the availability of funding has a direct relationship with the capacity of the AMCOS to finance its education programmes as it dictates the number of trainees, the group to be trained, frequency of the education, and the AMCOS' decision to withdraw or indulge in the programme. It was further found that the more active the AMCOS management becomes, the more frequent members of AMCOS receive education. Lastly, it was also found that the timing of CE provision determines the attendance (participation) of members. It is recommended that AMCOS with a small number of members and a weak financial base should make use of the shared service approach to join their efforts so as to attract good trainers and reduce the training cost burden. Trainers of CE are also requested to develop training programmes that consider appropriate timing of participants to enhance participation in CE. In terms of leadership, AMCOS are urged to elect active leaders who prioritise AMCOS interests. The Tanzania Co-operative Development Commission (TCDC) and the responsible Ministry as well as other co-operative stakeholders are asked to facilitate member education. Equally, AMCOS are called upon to adhere to the International Co-operative alliance's (ICA's) requirements of setting aside funds for education and training.

Key words: Co-operative society; Education, Cooperative Education, Determinants, AMCOS.

1.0. Introduction

The worldwide history of cooperation shows that the first cooperative society was established in Rochdale, England in 1844 by a group of weavers who pooled their resources to form a consumer co-operative society in order to purchase food at a lower cost through their formed co-operative. This model spread to other countries, including Germany, France, and Italy, and eventually to other continents Ever since, various forms of co-operatives have evolved and they include Agricultural Marketing Co-operative Societies (AMCOS). The AMCOS have equally a long history that dates back to the late 18th century in Europe and the United States. These co-operative societies were initially established as a means for farmers to jointly acquire farming inputs, and collectively market their produce to achieve better prices (Dugger, 2008). Over time, the cooperative movement spread to other parts of the world, including Tanzania, as a response to the challenges faced by small-scale farmers (Hossain, 2009). The first AMCOS in Tanzania was formed by coffee farmers in Kilimanjaro during the early British colonial period.

By joining together in cooperatives, farmers can collectively negotiate better prices for their produce, mitigate the risks associated with market volatility, and enhance their access to inputs such as seeds, fertilisers, and machinery (Smith, 2020; Jones et al., 2018). AMCOS provides a platform for farmers to pool their resources, strengthen their bargaining power, and improve their overall market competitiveness. Thus, in the world today, Agricultural Marketing Co-operative Societies (AMCOS) have become important enterprises among the business concerns providing employment and subsequently improving the living standards of the people (Arayesh, 2011; Mruma, 2014; Kinyuira, 2017). In Tanzania, AMCOS were formed to address the issues of market volatility, unfair pricing, lack of bargaining power among individual farmers, and limited access to farm inputs. These challenges often hindered farmers from achieving fair and stable returns on their agricultural products (Jones *et al*. 2018).

Historically, AMCOS were initiated in Tanzania in the mid-1920s by cash crop farmers as a means of improving the marketing of crops such as coffee and cotton. According to Seimu (2022) and Mdoe (2012) the first AMCOS was established in Kilimanjaro in 1925. Then, after the Tanzania Mainland's independence in 1961, the government recognised the potential of AMCOS in addressing challenges facing small-scale farmers such as limited market access, low bargaining power, and inadequate infrastructure for post-harvest handling (Kandiero & John, 2014). Hence, the newly independent government supported the establishment of cooperative movement, specifically the AMCOS throughout the country for the purpose of promoting agricultural development in the country.

The primary reason(s) for the establishment of AMCOS in Tanzania was to empower smallholder farmers by enabling them to organise themselves into groups and leverage their collective bargaining power to negotiate better prices for their produce. These cooperatives provided farmers with access to credit, inputs, and extension services, which helped to improve their productivity and profitability (Mdoe, 2012). In addition to improving the marketing of agricultural produce, AMCOS have also played a crucial role in rural development by providing employment opportunities and promoting social cohesion among rural communities. They also helped to address the problem of food insecurity by promoting the production of food crops and facilitating their distribution to the local markets (Mdoe, 2012).

Even with those notable successes, AMCOS in Tanzania have gone through a number of serious challenges that have threatened their survival. These challenges include poor governance, rampant theft of AMCOS' assets by dishonest leaders and members, nepotism, lack of capital, and inadequate infrastructure. Others include unfair competition from private traders and uncalled for government interference. Some of these challenges are, to a considerable extent, attributed to inadequate or lack of effective CE provision among members of AMCOS, leading to ineffectiveness in the governance and monitoring of their AMCOS. In this context, co-operative education (CE) refers to a process through which members are enabled to increase their understanding of the co-operatives identity and development by equipping them with co-operative management and supervision knowledge/skills. CE is what enables members to effectively cooperate, and participate fully in the management of their own society (Amendah *et al*, 2012; Gimenes *et al.,*

2016). CE is essentially a tool for attracting and maintaining co-operative society's membership (Donge, n.d; Anania & Kimaro, 2016).

It is a well-known fact that the sustainability and success of a co-operative including AMCOS depends on the effective provision of co-operative education (CE) to members, among other factors. Inadequate access to education by members, the Board and its committees and employed staff has been associated with poor performance, dormancy and even collapse of the AMCOS (Asiimwe and Nahamya, 2006). This is due to the fact that the absence or poor provision of CE negatively affects AMCOS in terms of management, productivity and sustenance of the prior goals (Asiimwe & Nahamya , 2006; Bee, 2011; Anania & Rwekaza, 2017).

In recent years, efforts have been made to revitalise AMCOS in Tanzania through policy reforms, CE provision and capacity building programs (Mdoe, 2012). AMCOS, on their part, have been struggling to assist their members and the community at large to improve their performance through provision of the required services including education (Anania & Rwekaza, 2018; Maghimbi, 2010). In responding to the urgency of CE and recognizing the importance of CE and training, the government of Tanzania through various actors including Moshi Co-operative University (MoCU), Tanzania Co-operative Development Commission (TCDC), Tanzania Federation of Co-operatives (TFC), Co-operative Audit and Supervision Corporation (COASCO) and Savings and Credit Union League of Tanzania (SCULT) has developed and implemented various local and national level CE programmes to empower co-operative societies and members at large (URT, 2018; Anania and Rwekaza, 2018).

Some of the national level CE programmes are Member Empowerment in Co-operatives (MEMCOOP) conducted in Kilimanjaro and Arusha by Moshi Co-operative University (MoCU) from 1996 to 2004, Co-operative Reform and Modernisation Programmes (CRMP) of 2005 to 2015 and capacity building of rural AMCOS through Market Infrastructure, Value Addition and Rural Finance (MIVARF) programme conducted throughout the country. Also, TCDC in collaboration with MoCU have been running annual capacity building co-operative programmes harmonised by the regional education committees by considering the nature and needs of a specific region (TCDC, 2017; Bee, 2011). Once more, the 2002's Co-operative Policy in Tanzania further calls for promotion of CE to members of co-operative societies (URT, 2003; Bee, 2014; Chambo, 2009).

Among the Regions in Tanzania, Mwanza Region adopted the effort to ensure AMCOS members are provided with proper cooperative education for the sustainability of such societies in the region. The major efforts included establishing the Regional Cooperative Education Committee (CEC) which has been launching annual capacity building co-operative programs for members, board and staff. In the year 2017/ 2018 and as a response to the requirements of the Tanzania Mainland Co-operative Education Programme (2017/18), the CE programme started implementing the annual capacity building programmes aiming at harmonising the prepared national education programme into specific areas' contextual requirements (TCDC, 2017).

In the Mwanza Region CE programme, among the taught courses to members included the concept of co-operatives, principles of good farming, importance of opening a bank account, warehouse receipt systems, leadership and ethics, business planning, production, marketing and facilitation, preparation of meeting minutes, financial statements, member responsibility and rights, entrepreneurship, interpretation of audit report and auditor's opinion, capital expansion and investment (URT, 2018). The expected result as stated in the programme was to improve the performance of co-operative societies in terms of effective leadership and supervision, member awareness on membership roles and responsibilities, improvement in preparation and reading of financial reports, effective member meeting attendance and increased membership (URT, 2018).

As earlier stated, it was expected that provision of CE to members would offset a great deal of AMCOS challenges; leading to increased membership, increased productivity, new registrations of AMCOS, awakening dormant AMCOS, and improvement of financial situation of AMCOS and individual members. However, despite the implementation of the regional CE programme, the expected results have not been realised (URT, 2018). The Mwanza Region Cooperative Education

Implementation Report indicates that AMCOS in Sengerema and Ukerewe districts are continuously losing members (URT, 2019). While the report shows that in Ukerewe district, by 2015 there were 1143 AMCOS, the number of members dropped to 654 in 2018, which means there was a loss of 489 members in three years. With respect to Sengerema district, in 2015 there were 8806 AMCOS members. However, by 2018, there were 5535 members only; which means, there was a drop out of 3271 members in three years (URT, 2018).

Furthermore, evidence from the 2019 report shows that the registration status has been stagnant in Ukerewe since there were no new registrations from 2015 to 2018 while in Sengerema, only 8 new members were registered from 2015 to 2018 (URT, 2019). Moreover, there is evidence of dormancy of co-operative societies in Sengerema and Ukerewe District (URT, 2019). By the year 2017, Ukerewe district had a total of 14 dormant AMCOS. Furthermore, the report by COASCO (2017) shows that Sengerema and Ukerewe were among the many districts in the country whose AMCOS got adverse opinions due to inadequate capacity and ignorance on the preparation and reading of financial reports (TCDC, 2017; URT, 2018). Such a situation provides evidence that CE provided among AMCOS in Sengerema and Ukerewe districts was not effective enough for the advancement of AMCOS.

Low or lack of effectiveness in the CE programme could imply that the determinants of CE provision among AMCOS in Ukerewe and Sengerema districts were unknown. This could be due to a number of reasons including the CE provided might have been delivered out of context and training needs of the AMCOS. Other probable reasons could be the strategies for provision of CE were improperly handled including the poor preparation by training providers and improper timing of the training. Whether these probable reasons are true or not, and whether there are other reasons beyond these, to the best of our knowledge, no studies have been carried out to establish the determinants of the CE in AMCOS with respect to Ukerewe and Sengerema districts. Thus, this article sought to explore the determinants for CE provision among AMCOS in Ukerewe and Sengerema districts with the intention to respond to the following questions: How does membership size drive provision of CE in AMCOS? What is the influence of funding and cost of education on the provision of CE in AMCOS? How does activeness of the AMCOS Management and readiness of members determine provision of CE in AMCOS? What is the influence of timing on provision of CE in AMCOS? The findings of this article are expected to contribute in adding knowledge on the subject matter by creating an understanding of the need for CE among actors in the co-operative movement and also shed light on what influences provision of CE in AMCOS and challenges facing provision of CE in co-operative societies, particularly in AMCOS.

CE is crucial for enhancing the performance and sustainability of AMCOS by addressing challenges like poor governance, low productivity, and inadequate infrastructure. Despite efforts to provide cooperative education, this study aims to uncover the reasons behind the limited impact of these initiatives. By understanding the influencing factors and challenges related to cooperative education provision, this research contributes to the co-operative movement's development and offers insights into effective strategies for improving the education provided to AMCOS members, thereby enhancing their performance and overall impact.

2.0. Theoretical Review

This article draws insights from the Rational Choice Theory (Norkus, 2005). The Rational Choice Theory, originally developed by economist and social scientist James Buchanan and his colleague Gordon Tullock in the 1960s, serves as a foundation for understanding decision-making in economics and political science (Buchanan, 1962; Norkus, 2005a). Over time, this theory has been expanded and refined by numerous scholars and researchers in fields such as sociology, psychology, and criminology (Norkus, 2005a). At its core, the Rational Choice Theory suggests that individuals, as rational actors, carefully assess the costs, risks, and benefits before making decisions they consider to be the most advantageous option (De Jonge, 2011; Udehn, 2005). In this study focusing on CE and training provision in Sengerema and Ukerewe Districts, Tanzania, the Rational Choice Theory is employed to achieve objective one, which involves examining the determinants of CE provision. The theory provides a suitable framework for understanding the relationship between individuals and the scenarios underlying the study. Rational actors in this context are

individuals who make calculated choices based on available information to maximise their own advantages while minimising losses. In this paper, rational actors refer to members of AMCOS (Agricultural Marketing Cooperative Societies) who choose to engage in CE and training to enhance the value of their cooperative society. However, there are also members referred to as irrational who do not make rational choices regarding CE and training (De Jonge, 2011).

Self-interest is another aspect of the Rational Choice Theory, suggesting that individuals driven by self-interest and rationality can generate benefits for the community as a whole. In this study, AMCOS members motivated by self-interest and rational decision-making are expected to make choices that contribute positively to their cooperative societies by engaging in the provision of cooperative education and training. The third aspect, referred to as the "invisible hand," represents unseen forces that influence events. Within this study, the invisible hands shaping CE and training include cooperative policies, education programs, projects, and stakeholders. While these forces are not directly connected to individual AMCOS, they play a significant role in ensuring the smooth functioning of the cooperative sector, including the implementation of CE and training (Udehn, 2005).

The Tanzania Cooperative Policy of 2002 recognizes the importance of education in cooperative settings and mandates its provision. Cooperative education and training projects and programs are designed to be implemented to directly impact AMCOS performance. Additionally, cooperative stakeholders contribute by funding CE and overseeing activities in the cooperative sector, including cooperative education and training. These external factors influence the decision-making processes and outcomes related to CE within AMCOS (Chaddad & Cook, 2004; Fernandez & Noronnah, 2017).

The Rational Choice Theory helps explain the decisions made by cooperative societies regarding the provision of education. Choices made by AMCOS to pay for CE are considered rational actions, where agents seek to maximise expected benefits. This study employs the Rational Choice Theory to identify factors that facilitate or hinder the provision of cooperative education and training. It recognizes the contextual, structural, and financial variations among AMCOS, as well as the potential impact of social exclusion, which can affect the decision-making processes.
While the Rational Choice Theory has its limitations, it remains relevant in this study due to its strengths in explaining individual and collective behaviours within AMCOS (Čižikienė & Urmanavičienė, 2018; Scholtz, 2015; Norkus, 1999). By considering costs and rewards, the theory sheds light on seemingly irrational behaviours and emphasises that all actions can be analysed for their underlying rational motivations structurally and financially.

3.0. Research Methods

This study was conducted in Sengerema and Ukerewe districts. The selection of the two districts in Mwanza region was based on two criteria: registration status (number of AMCOS) and membership size. As of January 2023, Sengerema district ranked the highest in both registration status (65 AMCOS) and membership size (77,586 members) (TCDC, 2023). On the other hand, Ukerewe district ranked last but one (being above Mwanza City) with 14 registered AMCOS and 13,967 members (TCDC, 2023). Carrying research in the two districts with high disparities in statistical data was considered important in understanding the determinants of CE and training provision.

Primary data was collected from three AMCOS in Ukerewe and from thirteen AMCOS in Sengerema. In Ukerewe, the following AMCOS were involved: namely, Bugorola, Murutunguru, and Musozi out of 14 registered AMCOS. The thirteen AMCOS from Sengerema district were Busulwagili, Butonga, Buzilasoga, Chamabanda, Ibondo, Igulumuki, Ilekanilo, Irunda, Ishishang'olo, Nyamatongo, Nyamtelela, Nyasenga, and Sima out of 48 registered AMCOS. Use of Key Informants (KIs) and Focus Group Discussions (FGDs) constituted by members from the sixteen selected AMCOS were considered sufficient to address the research questions and reach the point of saturation where no new information or observations would be emerging (Sharan & Tisdell, 2016).

The study employed both random sampling and purposive sampling. Random sampling was applied in selecting participants in the Focus Group Discussions (FGDs). Register of members from the selected AMCOS was used to randomly selected participants. Eight FGD sessions (three from

Ukerewe and five from Sengerema) were conducted, with each session comprising an average of eight participants making a total of 64 participants. Consent was obtained from the participants before recording the discussions. Purposive sampling involved the deliberate selection of Key Informants (KIs) based on the researcher's judgement and prior information (Kothari, 2004). Mugenda and Mugenda (2003) further describe purposive sampling as a technique that allows the researcher to choose cases that possess the necessary information relevant to the study's objectives. This approach simplifies research activities, saves time, and reduces costs, as noted by Bryman (2012).

Key Informants involved AMCOS managers and Board members. These were selected by virtue of their positions within the cooperative. These individuals were chosen because they could provide valuable insights regarding the status of cooperative education. This aligns with Saunders' (2012) assertion that purposive sampling is suitable when the researcher aims to explore a particular population and gain an understanding of their experiences, such as in the case of cooperative education. Considering the responsibilities of AMCOS managers in overseeing and coordinating the functions of AMCOS, they were identified as key informants for this study. Their role as decision-makers and overseers of the day-to-day performance of AMCOS in the areas under investigation made them particularly suitable for providing reliable information. Other KIs were District Co-operative Officers, Regional CE committee members, and other stakeholders familiar with CE.

Data collection and analysis were conducted simultaneously. Content analysis was used to analyse data generated from FGDs and KIs. Firstly, data gathered from field notes and recordings were transcribed. Then, coding of the opinions and responses of interviewees was done. The data were categorised based on the topics identified in the interview guide and study objectives. The categorised data were analysed in three stages: data reduction (including selection, simplification, and transferring raw data to an analysable format), data display, and drawing conclusions. Qualitative descriptions and interpretations were documented. The analysis of data from FGDs and KIs was facilitated by the Atlas.ti7 computer software.

To supplement primary data, secondary data were collected from various documents such as National co-operative societies' statistics for the years 2015, 2017, and 2018, the National Co-operative Development Policy (2003), the Co-operative Reform and Modernization Programme (CRMP) of 2005-2015, the Tanzania Mainland co-operative education programme for members, management, and the board of co-operative societies for the year 2017-2018, the Mwanza Region co-operative education programme for the year 2020, and the Mwanza Region co-operative societies' statistics for the years 2015, 2018, and 2019.

4.0. Findings and Discussion

4.1 Demographic characteristics of the respondents

Demographic characteristics of respondents as indicated in Table 1 shed light on the nature and features of members of AMCOS who participated in the study. A total of 64 members participated in the Focus Group Discussions (FGDs).

Table 1: Demographic characteristics of respondents

Demographic Information		Frequency	Percent (%)
Gender	Males	39	61
	Females	25	39
Age (years)	20 – 29	04	06
	30 – 39	16	25
	40 – 49	28	44
	50 and Above	16	25
Occupation	Farming only	32	50
	Business	11	17
	Salaried	05	08
	Animal keeping	14	22
	Motorbike services	02	03
Education level	Illiterate	10	16
	Primary school	40	63
	Ordinary Level Sec.	07	10
	Certificate	04	06
	Diploma	02	03
	Bachelor Degree	01	02
Membership duration	Less than 5 years	-	00
	5-10 years	21	33
	Above 10 years	43	67
Marital Status	Married	49	76.5
	Single	-	00
	Widowed	08	12.5
	Separated	07	11
Household size (Number of Children)	2	02	03
	3	06	09
	4	20	31
	5	12	19
	More than 5	24	38

Gender representation: Out of 64 respondents, 39% were females and 61% were males. This reflects the broader trend observed in AMCOS, where women are outnumbered by men. This gender imbalance may be attributed to traditional roles and land ownership patterns, with men typically controlling land resources and opportunities.

Age distribution: Respondents' ages ranged from 20 to 78 years, with a mean age of 54. The majority fell within the age group of 40-49 years (44%) while the percentage of participants from the youth group was only 6%. This suggests low youth involvement in AMCOS, potentially due to the negative image of the co-operatives in the past and the tendency of youths to shift from farming to non-farming activities. The prevailing land tenure practices and lack of opportunities for the youth to own land for agriculture might also have contributed to their reduced participation in AMCOS.

Occupation of the respondents: Farming was the primary occupation for about 50% of respondents, while others engaged in a combination of farming with either business, salaried employment, animal keeping or motorbike transport services.

Level of education: Regarding education, 10% of respondents were illiterate, 63% had only primary school education, 10% had secondary education, and 6% had attended various courses at certificate, diploma, or bachelor's degree levels. With 73% of respondents being primary school leavers or illiterate, it suggests a lack of knowledgeable human resources in who can readily accommodate innovation and new farming skills in AMCOS.

Membership duration: The majority of respondents (67%) had been active AMCOS members for over 10 years, indicating a lack of youth interest in AMCOS since the 1990s. This lack of new members raises concerns about the sustainability of AMCOS, as younger members are essential for AMCOS' continuity.

Marital status: With 76.5% of respondents being married, the predominance of married respondents aligns with typical family-based responsibilities within the demographic cohort studied. It also implies that most AMCOS are dominated by adults who already have family responsibilities.

Household size: Respondents had varying household sizes in terms of the number of children, with 37% having 2-3 children, 57% having 4-5 children, and 6% having more than 5. The presence of dependents, including adult offspring, might impact their participation in AMCOS activities.

4.2 Factors influencing provision of Co-operative education in AMCOS

This study revealed a number of determinants influencing the provision of CE in the Sengerema and Ukerewe districts. Factors featuring as determinants include, membership size, funding and cost of training, activeness of the AMCOS management, and readiness of members as well as time.

4.2.1 Membership size

Analysis of findings revealed that the size of the membership was one of the factors that determined the provision of CE. It was found that the larger the size of the membership, the more the capacity of AMCOS to provide education to members. While AMCOS with larger size of membership could easily organise training on CE, further analysis showed that AMCOS with few members could not organise education programmes themselves as they did not have enough financial muscles to pay for education. Interviews with KIs revealed that small membership creates a burden for AMCOS to effectively provide education. These findings concur with the assertion from the Mwanza Region Co-operative Education Report (2018) showing that in Ukerewe, AMCOS with a hundred members received more education annually than those with less than a hundred members. One of the KIs had the following to say:

> *"An AMCOS with many members can run itself and even if we are doing it ourselves the burden is not as great as the AMCOS with few people. Then these education officers also look at where there are more people, which is why SACCOS with many members are visited more often. We recently agreed in a December session for small AMCOS to join so that even if the facilitator comes, then the small AMCOS can share the cost and thus do not have to worry. By sharing cost, it becomes cheaper for them" (KI1, Sengerema, May, 2019)*

From the KIs quote, three implications can be derived. First, when the smaller AMCOS agree to undertake training together by sharing training costs, it reduces the burden for members to pay since the individual contribution per member would just be a small amount. Similarly, findings from Key Informants and FGDs in Sengerema confirmed that AMCOS with more members received education more frequently than those with fewer members. The second implication is that the larger the size of the membership, the more attractive an AMCOS becomes to the CE facilitators. This is due to the fact that facilitators tend to relate a number of members with the potential commitment and readiness of members to fund their co-operative organisations. These findings concur with those of Clementina et al (2015) who reported that membership base had an influence on the provision of CE in Enugu, Nigeria. The third implication is that sharing of training costs is a clear manifestation of the practicability of the sixth co-operative principle, namely, cooperation among co-operatives. AMCOS with few members and resources remain disadvantaged. However, they can minimise some of these disadvantages and challenges by sharing services such as CE and training.

These findings further confirm the Rational Choice Theory (Norkus 2005) advocating for individuals or organisations' choice of the preferences out of the available alternatives which in the context of these findings refers to the decision of the AMCOS with few people to merge their efforts instead of remaining irrational (alone) and miss education opportunities. It was further revealed that using Annual General Meetings (AGMs) was less costly and the best alternative in attempting to provide CE to many members at once.

4.2.2 Funding and cost of education

The study revealed that funding availability was among the basic determinants of CE provision as it has a direct relationship with the capacity of the AMCOS to finance its education programmes. The findings showed that funding and education costs dictate the number of trainees, a group to be trained, frequency of the provision of CE and training, and the AMCOS decision to indulge or withdraw from the programme. The FGDs findings showed that some AMCOS had never organised CE for more than three years due to financial constraints. Paying the trainers, preparation of the education materials, food and drinks during education were reported to be very costly compared to the capacity of AMCOS to pay. One of the FGD members in Sengerema reported that:

> *"The problem is money, my brother. You might think that the co-operatives are reluctant to provide education, but for real, everyone needs training. The problem is that our co-operatives do not have enough money to pay for trainers, food, handouts and many other things"* (FGD 3, Sengerema, May, 2019).

Equally, these findings went together with those of KIs, that it was a common practice for AMCOS to fail to make full payments even if the education programs are conducted. They rely much on external assistance and exemptions of some charges given by the education institutions and facilitators. KIs interview revealed that funding ranks number one when it comes to the AMCOS' decision to offer or skip education programmes. On the other hand, the provision of CE was found to be determined by the cost of education. FGD results showed that in case of the high cost of education for the highly demanded education, the AMCOS management opted for providing education to a few selected people. In cases where education is less expensive, more people have been involved. The costs were found to be related to expenses for transport and accommodations for trainers and trainees, facilitation fees, venue, and stationeries. Representing the general consensus, one of the FGD members said:

> *"The costs are too high for us to manage, that is why when funding is available, education is conducted for everyone. Given the current economic situation of our AMCOS, it is very difficult for education programmes to be conducted regularly since we have to cover all costs related to facilitators, revenue, food for participants, and learning materials"* (FGD 4, Ukerewe, June 2019).

These findings are similar to those of Woodin & Shaw (2019) in their study on the contribution of co-operative societies in providing CE in the selected AMCOS in Moshi Municipality as they reported financial constraints as the leading factor for the failure of AMCOS. The findings further confirm those of Kinyuira, (2017) who reported that the financial position of a co-operative society determines the capacity of an AMCOS to run education programmes smoothly and efficiently. Even though funding is considered the major constraint to the provision of CE, further scrutiny shows that most AMCOS do not take meaningful effort to set aside some money from the annual surplus for the purpose of funding CE and training. The low or insufficient effort to set aside education funding is contrary to the Rational Choice theory (Scott, 2000) which advocates for the rational decision which is more advantageous to them, of which in the context of this study, the AMCOS opted for irrationality for not prioritizing co-operative education even though there is money scarcity.

4.2.3 Activeness of the AMCOS' Management and readiness of members

The study further revealed that the activeness of the AMCOS management was a determinant of the provision of CE. The FGD participants expressed concern that the AMCOS whose management was more active frequently received education contrary to those with inactive management. Likewise, KIs results indicated that active leadership and staff help to set priority groups, and the content and allocate resources for implementation. One of the FGD participants said that:

> *"The leaders are everything, if they are inactive, nothing will function, not just education, even the sessions will not be attended. For us here, since the death of Elder Kagoro, we have never been visited, trained or even conducted any meeting but back then he was always on the*

lookout to act. So, the worst situation you are seeing here is contributed greatly by our inactive leaders" (FGD 1, Ukerewe, June 2019)

It was further revealed that limited education received by members in some AMCOS was found to generate leaders who were uninterested in prioritising AMCOS targets, rather they were more active in funding education programmes targeting themselves while forgetting members. Equally, members' readiness was found to have an influence on the provision of CE in terms of frequency and the content choice. Some KIs who are engaged in the provision of CE revealed that they have been facing difficulties in providing education to some AMCOS whose members show very low interest in receiving CE; hence making them offer education to those co-operatives which were ready to receive the training. One of the KIs had the following to say:

"*We work hard to make sure that every group receives education every year as per our timetable but sometimes we fail to reach some AMCOS because they don't show concern and even if they are invited, only few members show up. Even in a situation where we use other stakeholders and Nyanza Co-operative union, still, the response remains low*" (KI2, Ukerewe, June 2019)

The KI's response on the readiness of the management and members' interests concur with those of the education attendance and report that showed discrepancies in the education frequency where three AMCOS in Ukerewe seemed to frequently get training than others. In Sengerema District, one AMCOS seemed to get training more frequently than all others. Even the reports and attendance for such training were readily available in the offices of district co-operative officers. The FGDs findings also affirmed that members' interest dictates the provision of education in the AMCOS. One of the FGD members during a session reported that:

"Our problem is that we talk too much than we actually implement what we are speaking. Here people are too talkative but in fact, you can't force a cow to drink water. When it reaches the time for education, everyone claims to have their own work to do" (FGD 2, Ukerewe, June 2019)

On the other hand, it was revealed that existence of disparity of the training needs between members and leaders tended to negatively influence the provision of CE in AMCOS. One of the key informants had the following to say:

"You know, members and the AMCOS leadership normally differ in their interests when it comes to topics to be taught. Members are mostly interested in crop production, general CE, financial literacy, entrepreneurship, business planning, and management while the leaders and management are interested in content related to leadership, governance and gender" (KI3, Mwanza, June 2019)

The disparities in the training topics has tended to influence the frequency of the education, the topics to be taught, and the education modalities. These findings concur with Clementina *et al* (2015) who viewed that any inconsistencies in the training interests of management and that of members tend to determine the presence or absence of CE in specific AMCOS. The findings further reflect those of Anania and Rwekaza (2018) who found active leadership and management, among other factors as a factor influencing the provision of co-operative education and education in Dodoma and Singida regions, Tanzania. Likewise, the rational choice theory advocates for a rational decision of the agent towards the choice of the best alternative which according to these findings refers to the choice of members and management on the best topics to be chosen for CE and training.

4.2.4 Timing of the training

The findings further revealed that timing of CE provision had an implication on attendance (participation) of members. The KIs showed that training that was conducted during the farming seasons got very few participants compared to those which were conducted after the farming seasons. One of the Key informants said:

> *It is difficult to assemble people during farming seasons because as you know, most of them depend on farming to run their families. That is why in our timetables, most of the training conducted regularly is for leaders and management. For members, we always target the AGMs because of their timetables*" (KI4, Sengerema, May 2019)

The implication drawn here is that post-harvest season is more appropriate for providing education to the members. Therefore, provision of CE during the farming season automatically excludes most members from participating in CE programmes. Discussions with KIs revealed that education programmes conducted at the end of the year during the Annual General Meetings got more participants since the majority of the members had ample time to attend. However, it was also revealed that the period from the end of the year to the beginning of the New Year (December to January) was not conducive for education since most of the members would be busy looking for money for paying school fees for their children/relatives. One of the KIs had the following to say:

> *"It is difficult to get people for training when it approaches the end of the year because people seem to be occupied much by family responsibilities, holidays and preparations for school fees. At least the management is flexible"* (KI4, Mwanza, June 2019)

According to Fulton, M. (2000), timing is a factor that makes some AMCOS fail to implement its prior set CE programmes. The findings further reflect those of Gathigia (2008) who reported that timely provision of education is an indicator of the performance of co-operative societies. Anania and Rwekaza (2018) also found that, timing of co-operative education and education provision influenced attendance and readiness of the co-operative members in Dodoma and Singida regions. Likewise, the findings on the influence of timing in cooperative education provision align with the Rational Choice Theory (Norkus, 2005). Rational actors, represented by AMCOS members, consider timing and external circumstances when deciding to participate in education programs. Education sessions held during farming seasons or when members are busy with family responsibilities tend to have fewer participants, while sessions planned after the farming season or during annual general meetings attract more members.

5.0. Conclusion and Recommendations

5.1. Conclusion

This paper examined factor influencing the provision of Cooperative Education (CE) in Sengerema and Ukerewe districts. Several conclusions can be drawn. First, the CE programs offered prioritise the needs of AMCOS by addressing the training needs and utilising the trainers with the required experience, capability, and skills. Second, large membership size is associated with a reduced financial burden on AMCOS members, making education more accessible. AMCOS with large memberships are more attractive to facilitators, leading to more frequent education provision. Adequate funding is essential in determining the number of trainees, the frequency of education, and the decision of AMCOS to engage in educational activities. Active management is linked to setting priority areas for education and efficiently allocating resources for implementation. Moreover, the timing of CE provision is found to significantly influence the attendance and participation of AMCOS members.

5.2 Recommendations

It is recommended as follows, firstly, trainers involved in providing CE should leverage their expertise to thoroughly understand the specific needs of AMCOS in the districts. By doing so, they can tailor education programs to address the unique challenges and requirements of each co-operative. Additionally, trainers should adopt suitable strategies and methodologies to effectively deliver the educational content and ensure its relevance to the members' practical needs. Conducting follow-up evaluations after education sessions will enable trainers to assess the impact of the programs and make necessary adjustments for continuous improvement. Secondly, it is recommended that AMCOS with low membership and limited financial resources should collaborate with other co-operatives in the area through a shared resources spirit. Shared resources approach is a practical implementation of the cooperation among co-operatives. Furthermore, AMCOS should set aside funds for education purposes to comply with the

International Cooperative Alliance (ICA) requirements. Allocating a specific portion of their resources to education demonstrates a commitment to investing in the knowledge and skills development of their members, which ultimately contributes to the long-term growth and sustainability of the co-operatives. The Tanzania Co-operative Development Commission (TCDC) and the responsible Ministry as well as other co-operative stakeholders are asked to facilitate member education and training.

References

Amendah, E., Eklou, M., & Clamp, C. (2014). CE Inventory Study. Retrieved from http://communitywealth.org/sites/cl one.communitywealth.org/files/downloads/report-amendahclamp.pdf on 15th August 2020.

Anania, P., & Kimaro, P. J. (2016). Factors affecting effective youths' participation in agricultural marketing co-operatives in Tanzania; Experience from Selected Agricultural Co-operatives in Arusha and Moshi District Councils, Tanzania. *International Journal of Economics, Commerce and Management*, 4(2), 709-731.

Anania, P., & Rwekaza, G. (2017). The Determinants of Success in Agricultural Marketing Co-operatives in Tanzania; the experience from Mweka Sungu, Mruwia and Uru North Njari Agricultural Marketing Co-operatives in Moshi District. *European Journal of Research in Social Sciences*, 4(3), 62-75.

Anania, P., & Rwekaza, G. C. (2018). Co-operative education and education as a means to improve performance in co-operative societies. *Sumerians Journal of Social Science*, 1(2), 39-50.

Arayesh, B. (2011). Identifying the Factors affecting the Participation of Agricultural Co-operative Members. *American Journal Agriculture Biological Science*, 6(4), 5606.

Asiimwe, G., & Nahamya, K. W. (2006). Challenges of Co-operative Institutions in the Post-Colonial Transformation of Uganda. Nuru Publications.

Bee, F. (2014). Co-operative Education in Africa. Case of Moshi University College of Co-operatives and Business Studies, Tanzania. *Asian Journal of Humanities and Social Studies*, 2(1), 2321-2799.

Bee, F. (2011). Co-operative Education in Africa: Opportunities and Challenges. A paper prepared for presentation at the ICA Global Research Conference, under Sub-Theme Four: Multidisciplinary Teaching and Research on Co-operatives to be held at Mikkeli, Finland 24–27 August 2011. International Co-operative Alliance (ICA).

Bitomio, J. (2012). Evolution of Co-operative Principles. Dar es Salaam: DUP.

Bygstad, B., & Munkvold, B. E. (2007, January). The significance of member validation in qualitative analysis: Experiences from a longitudinal case study. In 2007 40th Annual Hawaii International Conference on System Sciences (HICSS'07) (pp. 243 b-243b). IEEE.

Chambo, S. (2009). "Cooperative Education in Tanzania." A paper presented at the Institute of Co-operative Studies of the University of East London, South Africa.

Clamentina, O. N., Maurice, E. I., & Choma, D. O. (2015). Factors Influencing the Implementation of CE in Enugu State, Nigeria. *World Applied Sciences Journal*, 3(5), 809-813.

Cohen, L., Manion, L., & Morrison, K. (2018). Research methods in education. Routledge.

Creswell, J. W. (2017). Qualitative inquiry and research design: Choosing among five approaches. Sage publications.

Creswell, J. W., & Poth, C. N. (2018). Qualitative inquiry and research design: Choosing among five approaches. Sage Publications.

Donge, L. N. (n.d). Distance Education for Rural Community-Based Organisations: Correspondence Courses for Rural Co-operatives in Tanzania.

Dugger, W. M. (2008). The cooperative advantage. Rural Cooperatives, 75(5), 24-27.

Higginbottom, G. M. A. (2004). Sampling issues in qualitative research. Nurse Researcher (through 2013), 12(1), 7.

Isaacs, A. N. (2014). An overview of qualitative research methodology for public health researchers. *International Journal of Medical and Public Health*, 4, 318-323.

Jones, A., Johnson, B., & Smith, C. (2018). The role of agricultural marketing cooperatives in addressing market volatility and input accessibility. *Journal of Agricultural Economics*, 42(3), 231-245.

Kinyuira, D. K. (2017). Assessing the Effectiveness of CE Capacity Building on Co-operative Performance*. JSPM-Journal of Strategy and Performance Management*, 5(1), 23-41.

Lovren, V. O., Maruna, M., & Stanarevic, S. (2020). Reflections on the learning objectives for sustainable development in the higher education curricula–three cases from the University of Belgrade. *International Journal of Sustainability in Higher Education*, 21(2),315-335

Mdoe, N. (2012). The role of agricultural marketing cooperative societies in rural development: The Tanzanian experience. *Journal of Development and Agricultural Economics*, 4(4), 68-76.

Norkus, Z. (2005). Mechanisms as miracle makers? The rise and inconsistencies of the "mechanistic approach" in social science and history. History and Theory, 44(3), 348-372.

Pandey, D. P., & Pandey, D. M. (2015). Research Methodology: Tools and Techniques. Romania: Bridge Centre.

Saunders, M., Lewis, P., & Thornhill, A. (2012). Research Methods for Business Students (6th edition). Pearson Education Limited.

Scott, J. (2000). Rational choice theory. Understanding contemporary society: Theories of the present, 129, 126-138.

Silverman, D. (Ed.). (2020). Qualitative research. Sage.

Slettebo, T. (2021). Participant validation: Exploring a contested tool in qualitative research. *Qualitative Social Work,* 20(5), 1223-1238.

Smith, D. (2020). The impact of agricultural marketing cooperatives on farmers' access to inputs and market outcomes. *Agricultural Journal*, 15(2), 87-102.

TCDC (2017). Takwimu za Vyama vya Ushirika, Machi 2017.

URT (2003). Co-operative Development Policy. Retrieved from http://www.tzonline.org/pdf/Co-operative%20developmentpolicy.pdf

URT (2005). The Co-operative Reform and Modernization Programme (CRMP), Ministry of Co-operative and Marketing, Main Report, 2005–2015. Dar es Salaam: Government Printer.

URT (2017). Mpango Wa Mafunzo Kwa Wanachama, Viongozi na Watendaji wa Vyama vya Ushirika, Tanzania Bara 2017–2018.

URT (2018). Mpango wa Mafunzo ya Elimu ya Ushirika kwa Mwaka 2020 Mkoa wa Mwanza.

URT (2019). Cooperative Education and Training Implementation Report for Mwanza Region, January 2019.

URT (2019). Takwimu za Vyama vya Ushirika Mkoa wa Mwanza, January 2019.

Woodin, T., & Shaw, L. (2019). Learning for a Co-Operative World: Education, Social Change and the Co-Operative College. Trentham Books. Available from: UCL IOE Press, UCL Institute of Education, 20 Bedford Way, London, WC1H 0AL, UK

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Monetary Policy Dynamics and Non- Performing Loans among Commercial banks in Tanzania

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Abstract

A high ratio of Non-performing loans (NPLs) in the banking sector, particularly in commercial banks (CBs), threatens financial stability, impedes the intermediation of funds from savers to borrowers, and reduces investment and economic growth. Monetary policy dynamics are viewed as potential drivers of NPLs. In this regard, the main objective of this study was to test the hypothesis that monetary policy dynamics influence NPLs in Tanzania. Using panel data from 2011 to 2020, the study used a one-step system generalized method of moments (GMM) approach to estimate the effects of monetary policy dynamics on the percentage growth of NPLs. The results are presented for both bank size and ownership category. The study found a significant positive impact of monetary policy dynamics on the growth of NPLs. The results indicate that the occurrence of monetary policy dynamics affects the lending decisions of CBs and borrowers' cash flows, leading to a decrease in the debt-paying abilities of bank customers. Therefore, the study recommends that banks pay more attention to the monetary policy dynamics to balance security, liquidity, and profitability when serving the real economy. Furthermore, the policymakers should create a stable monetary policy; in effect, this will help reduce the growth of NPLs, improve bank profitability, increase the financial intermediation capacity of banks, and subsequently boost economic growth in Tanzania.

Keywords: **Monetary Policy, Non-performing Loans, Commercial Banks, One-Step System GMM.**

1.0. Introduction

Monetary policy consists of government's formal efforts to manage the money in its economy to realize specific economic goals (Bech & Melkhozov, 2016). Three basic kinds of monetary policy decisions can be made: the amount of money in circulation, the level of interest rates, and the functions of credit markets and the banking system (Borio *et al.,* 2017). It's noted that higher volumes of monetary policy adjustment could lead to a decline in investment and employment by motivating banks and households to postpone investments for more specific times (Kang *et al.,* 2014; Bachmann *et al.,* 2013). This adjustment hurts stock returns (Bordo *et al.* 2016) as well as bank lending operations (Hu & Gong, 2019), leading to the accumulation of non-performing loans (NPLs). This is where a deliberate change in monetary variables influences the movement of many other variables in the financial sector (Jiménez *et al.,* 2009). Indeed, the monetary policy issued by the government often confuses participants like commercial banks (CBs) in business activities or prompts the government to oppose a policy's original intention when enforced; ultimately generating uncertainty shocks (Loannidou *et al.,* 2015).

High and rising levels of NPLs in many developing countries, including Tanzania, continue to negatively affect the bank's balance sheet, possibly adversely affecting bank lending operations. Furthermore, NPLs may also cause market risk that may, in turn, lead to a run-on deposit, significantly reducing the intermediation power of banks (Louri & Karadima, 2020; Dao *et al.,* 2020; Dimitrios *et al.,* 2018). NPLs are money lent to an individual who fails to honour his/her repayment obligation, and total principal and interest payments are no longer anticipated. Thus, the principal or interest is 90 days or more delinquent, the maturity date has passed, and repayment in full has not been made (Dell *et al.,* 2016; Louzis *et al.,* 2012). In Tanzania, the ratio of NPLs to total gross loans (NPL ratio) of commercial banks (CBs) increased to 9.3% in 2020, following an upward trend since its lowest of around 5.4% in 2011. Still, large diffusions remain across these banks, placing severe constraints on the lending capacity of banks, risking financial stability, creating a pressing need for recapitalization, and delaying economic growth (BoT, 2020).

The literature state that NPLs are affected by bank-related variables, such as market structure and unethical management, and macro variables, such as inflation, exchange rate, GDP growth, public debt, and unemployment (Anastasiou *et al.,* 2019; Beck *et al.,* 2015). In addition, different economic policies, for example, monetary policy set by the Central Bank, produce a variety of imbalances affecting banking stability; it has recently been found to affect credit risk as the frequent and vague changes to monetary policy may lead to misallocation of bank's credit resources or deterioration of borrower's firm's operations (Chi & Li, 2017). These frequent monetary policy adjustments can cause banks' operations to fluctuate, making their financial situations more unstable. This, in turn, shocks the debt-paying abilities of customer banks. Louri and Karadima (2020) argue that monetary policy dynamics have often been blamed for introducing and spreading NPLs.

Hada *et al.* (2020) make a similar argument, emphasizing that monetary policy indirectly affects banks through its impact on the private sector. Since banks are the most common source of financing for businesses, a decline in a bank's financial health or bankruptcy affects the sizes of NPLs and impacts CBs' operational performance. Asiama and Anthony (2018) reported that the private sector, described as an area of economic growth, had limited access to credit and faced high lending rates, necessary to instigate high ratio of NPLs. Narman and Serpil (2019) confirmed that the rising average of NPLs affects lending institutions worldwide, especially CBs. For instance, the average NPLs for the entire world was reported to be 6.78%; in Africa, it was 11.55%; and for Tanzania, the average NPLs between 2011 and 2020 was 8.34%. Both reported statistics exceed the acceptable 5% threshold for NPLs (BoT, 2018; World Bank, 2018).

Previous studies show that monetary policy dynamics influence NPL in large and small banks regardless of ownership status (Louri & Karadima, 2020; Adusei, 2018; Akinlo & Emmanuel, 2014; Rao & Jiang, 2013). Studies (Asiama & Anthony, 2018; Li & Yang, 2015; Prasanna, 2014; Akinlo & Emmanuel, 2014; Vo & Nguyen, 2014; Rao & Jiang, 2013) have shown that the dynamics of monetary policy aspects, including lending interest rates, credit to the private sector, the bank discount rate, all have a positive effect on NPLs, confirmed that adjustment had been a cause for initiating and spreading NPLs. However, other studies on monetary policy dynamics show that money supply m2

and m3, and credit to private sectors negatively affect NPLs (Caglayan & Xu, 2019; Zhang & Saffar, 2019; Radivojevic & Jovovic,2017; Bordo *et al*., 2016; Badar & Javid, 2013).

Further, studies (e.g., Louri & Karadima, 2020; Radivojevic & Jovovic, 2017; Rao & Jiang, 2013) support that NPLs benefit from high lending interest rates to customers. As a result, high default rates are typically expected in a country with frequent monetary adjustments like Tanzania, given such raised lending interest rates. In particular, Asima and Anthony (2018) found that rising NPL ratios due to high default rates among bank loan borrowers have hurt banks' ability to operate effectively. This inefficiency implies that banks may not direct loanable funds to more productive and dependable sectors. Moreover, a rise in NPLs lowers the value of private investment. Due to their increased risk of loan default, the private sector receives less credit (Borio *et al.,* 2017). Thus, the foregoing discussions imply that higher NPLs decrease credit to the private sector, whereas increasing credit to the private sector would cause NPLs to fall (Diana & Carla, 2014; Akinlo & Emmanuel, 2014).

Bank discount rate is identified as one of the monetary policy changes that could increase NPLs. Excessive lending by CBs due to the discount rate offered by the central bank is often identified as an essential determinant of NPLs (Tarron and Sukrishnalall, 2016). The central bank attracts CBs to borrow at a low rate. These low-rate funds from central banks may encourage CBs managers to issue more loans to irresponsible customers (defaulters) leading to increased NPLs (Rao & Jiang, 2015). Furthermore, it is estimated that the rate of NPLs will rise during inflation because the central bank increases the cost of borrowing from banks (Diana & Carla, 2014). Those financing loans cannot service these debts because of their reduced income value. Such people are fixed-income earners with fixed interest rates on loans. Similarly, the level of NPLs in CBs could be influenced by changes in the broad and extended money supply (M2) (Adusei, 2018).

The effect of monetary policy adjustments has been the subject of research in the West (Hada *et al*., 2020; Vo & Nguyen, 2014; Jimenez *et al.,* 2024); however, emerging economies like Tanzania have received little attention. Sincere attempts in this area were made by Louri and Karadima (2020), Zhang and Saffar (2019), Asiama and Anthony (2018), Diana and Carla (2014), and Rao and Jiang (2013). Still, their research was conducted in contexts distinct from the current one, and they did not offer a complete picture of how monetary policy dynamics affect NPLs. To date, a study of this nature is not well documented in the Tanzanian context that has measured the influence of monetary policy dynamics on NPLs, taking bank value (total assets), loan-to-asset ratio, bank age, and gross Domestic Product (GDP) as control variables. Hence, the present study responds to this gap to broaden the scope of the existing knowledge on the subject concern. With more than 51 banks (38 CBs), analyzing the relationship between monetary policy dynamics and NPLs is critical for policy makers and bankers.

The present study is different from previous studies in many ways. First, it assesses the effect of monetary policy dynamics on NPLs in CBs through bank size and ownership categories. Second, it examines the impact of monetary policy dynamics on the one-step system generalized method of moments (GMM) model. The model used has time-invariant effects and contains the lagged dependent variables, which some previous Tanzania studies did not cover regarding their methodology. The rest of the paper is presented as follows: Section two reviews both theoretical and empirical literature that attempt to describe the effect of monetary policy factors on NPLs, section three describes the methodology, section four considers the results and discussion of the findings, and section five concludes and discusses policy implications.

2.0. Empirical Studies and Hypothesis Development

2.1. Review of the empirical studies

A series of studies on NPLs (Vo & Nguyen, 2014; Louzis *et al.*, 2012) focused exclusively on the role of country-specific or macroeconomic determinants and found that they exerted the most significant effect. In particular, Caglayan and Xu (2019), Asiama and Antony (2018), Adusei (2018), Gambacorta (2017), Chi and Li (2017), Reddy (2015), Akinlo and Emmanuel (2014), Jimenez *et al*. (2014), Rao and Jiang (2013), Badar and Javid (2013), Sofoklis and Eftychia (2011), Yener *et al.* (2010), and attempted to investigate the effect of monetary policy adjustments focused on variables such as interest rates, credit to the private sector, discount rates, and money supply (m2,

m3) in their regression estimations. The results have produced conflicting findings regarding the direction, intensity, and significance of monetary policy dynamics of NPLs. Furthermore, the findings are evident, not only in terms of the intensity and importance of individual factors in the occurrence and movement of NPLs but also in terms of signs.

Dimitrios *et al.* (2018) studied 138 core and 88 periphery banks within the Euro Area and employed fully modified ordinary least square (OLS) and Bayesian panel-cointegration vector autorepression techniques. The study found adverse and statistically significant effects on bank size and credit to the private sector for NPLs. Dimitrios *et al.* (2018) findings are in line with the later studies of Diana and Carla (2014) and Hu *et al*. (2004). In an attempt to extend the previous research, Asiama and Anthony (2018) examine the NPLs and monetary policy dynamics in Ghana between 2000 and 2016. They found evidence that lending rates, credit to the private sector, and discount rates positively influence the NPL growth of NPLs in the long run. However, in the short run, the influence is not significant. The other studies supported these findings (Nikola *et al.,* 2019; Prassana, 2014; Akinlo & Emmanuel, 2014). Louzis *et al.* (2012) investigated macroeconomic and bank-specific determinants of NPLs in Greece. The study found a positive correlation between GDP and lending interest rates, with NPLs in all categories of loans. On the contrary, Haniifah (2017) and Radivojevic and Jovovic (2017) found that lending interest rates and GDP had a significant negative relationship with NPLs.

Badar and Javid (2013) analyzed the impact of macroeconomic forces and NPLs on CBs in Pakistan between 2002 and 2011. The study found a strong negative long-run relationship between lending interest rate, GDP, money supply (m2 and m3), and NPLs. Also, Adusei (2018) finds a similar negative correlation between the money supply and the level of NPLs. On the contrary, Sofoklis and Eftychia (2011) found a positive and significant relationship between money supply and NPLs. The study by Caglayan and Xu (2019) and Jimenez *et al.* (2014) found that low interest rates reduce the probability of default on outstanding variable-rate loans by lowering the interest burdens of previous borrowers. In the medium term, however, due to higher collateral values and search for yield, banks tend to grant more risky loans to soften their lending standards: they lend more to borrowers with a bad credit history and with more uncertain prospects. Asiama and Anthony (2018) stated that there are conflicting signs of credit to the private sector. The sign may be negative or positive regarding the banks' preferences. Higher NPL could result, for instance, if increased economic credit is associated with riskier behavior. However, reduced NPLs are anticipated if it encourages more attention.

To investigate the effects of monetary policy, we control for a broad set of alternative factors that could impact risk-taking attitudes, including bank-specific characteristics (bank value, bank age, and bank deposit), macroeconomic conditions (gross domestic product-GDP) of interest to avoid bias (Yener *et al.,* 2010). Tarron and Sukrishnalall's (2016) research shows that NPL levels significantly impact GDP. This has been noticed to suggest that a growing economy helps to improve earnings (or income), which in turn improves borrowers' ability to pay off their debt and, as a result, lowers NPLs. In contrast, when the economy slows (as seen by low or negative GDP growth), banks' NPL portfolios will likely grow due to borrowers' decreased ability to service their loans.

Karsten and Lenno (2019) found that GDP negatively affects NPL levels. This has been interpreted to mean that an expanding economy contributes to an improvement in earnings (or income), which in turn enhances the debt-servicing capacity of borrowers and, consequently, lower NPLs. Conversely, when there is a slowdown in the economy (as reflected by low or negative GDP growth), the NPL portfolios of banks are likely to increase due to the lower debt-servicing capacity of borrowers. The empirical evidence relating to the impact of bank size, age, and loan-to-deposit ratio on NPLs appears to be mixed. For instance, some studies report a negative association between NPLs and bank value (Biekpe, 2011; Hu *et al.,* 2004). According to these studies, the inverse relationship means that significant bank value has superior risk management strategies that usually translate into an outstanding loan portfolio vis-à-vis their smaller counterparts. Chaibi and Ftiti (2015) and Louzis *et al*. (2012) reported controversial findings on bank size. The loan-to-deposit ratio (LTD), on the other hand, is anticipated to have a positive correlation with non-performing loans (NPLs), as a more significant proportion of loans to deposits indicates easier loan giving, a risk-loving attitude, and, thus, a greater possibility of creating NPLs (Zampala *et al.,* 2017).

A positive association between lagged NPLs and current NPLs was also discovered by Dao *et al*. (2020) and Nikola *et al*. (2019). This shows that the banking sector would probably be affected if NPL suddenly increased, unlike Berna and Ibrahim (2020), who stated that the lagged NPLs negatively affected NPLs.

2.2. Hypothesis development

The literature review generally shows inconsistent results on the effects of monetary policy dynamics and NPLs. All in all, further research is needed to gain deeper insight into this area, given the different opinions expressed by various researchers. Therefore, based on the literature, the researcher developed the following hypotheses:

Ho_1: Lending interest rates and NPLs at CBs have a positive association.

Ho_2: Money supply (M2) and NPLs have a positive relationship.

Ho_3: Discount rates have a negative relationship with the NPLs of CBs.

Ho_4: There is a negative relationship between Credit to the private sector and NPLs

3.0. Research Methodology

3.1. Data selection and collection approach

This study used a quantitative research design as it utilised quantitative data. Adeola & Ikpesu (2017) assert that a research design based on a quantitative approach is independent of the researcher. The study further postulates that quantitative research uses thorough processes and procedures that help reduce the researcher's bias. In this case, it makes the final result of the research more reliable and representative of the population on which the study is based. The dataset for NPLs is fetched from audited financial reports from 2011 to 2020 in 31 CBs. It is further collected from the Bank of Tanzania (BoT) and National Bureau of Statistics (NBS) database, which supplies all information regarding all banks working in Tanzania. It is considered the most common and authenticated database for banking system information. The study's variables, banks, and periods were chosen based on the data from BoT and particular CBs. The study focused on the rising NPLs in Tanzania that exceeded the permissible limit of not more than 5% (BoT, 2020). The base year used was 2011, as the average percentage of NPLs in the country increased from 5.4% at the end of 2011 to 11.5% in 2017 before falling to 9.3% in 2020 (BoT, 2020).

3.2. Model specification

The study used the generalized method of moment (GMM) model proposed by Arellano and Bond (1991) to investigate the effect of monetary policy dynamics on NPLs. The study adopts a model similar to that explored by Asiama and Amoah (2019) and Altunbas *et al*. (2012), with some changes made suitable for Tanzania. The study uses this model because it considers the time persistence of NPLs and accounts for possible correlations between independent variables (Altunbas *et al*., 2012). Moreover, in the presence of a lagged dependent variable, the use of traditional panel data models such as pooled OLS, fixed effect, and random effect become biased and inconsistent due to the introduction of the first lag of the dependent variable on the right- side of the equation (Dorgan & Eksi, 2020; Ameni *et al.,* 2017). In addition, the GMM model generates correct standard errors and p-values, provided that the specified moment conditions are valid. It is based on the simple idea that the estimations of parameters are done by solving a set of moment conditions. Furthermore, the strength of the GMM model resides in the fact that it requires the use of instruments. These instruments correlate with the dependent variable but not with the error term (Ameni *et al.,* 2017). In this regard, an instrumental variable test was applied to address the endogeneity problem in this study. The model specification used to investigate the relationship between monetary policy dynamics and NPL results was as follows:

$$NPL_{i,t}=\propto+\beta 1NPL_{i,t-1}+\beta 2LIR_{i,t}+\beta 3CPS_{i,t}+\beta 4DRT_{i,}t+\beta 5M2_{i,t}+\varphi AGE_{i,t}+\varphi DGDP_{i,t}+\varphi BV_{i,t}+\varphi LTD_{i,t}+\varepsilon_{i,t} \quad (1)$$

Where NPL is the ratio of non-performing loans to total loans as a proxy for the dependent variable, NPL-1 refers to the first lag of the bank NPL to total gross loans, LIR_{it} means the lending interest

rate in CBs, CPS_{it} stands for credit granted to the private sectors, DRT_{it} refers to the discount rate per year, $M2_{it}$ stand for intermediate money which comprises m1 plus highly liquid deposits. AGE_{it} stands for the number of years from the date of establishment as CBs, GDT_{it} refers to the gross domestic product, BV_{it} stands for total assets, LTD_{it} refers to the loan to deposit ratio, ε_{it} is the error term. Letter D represents the first difference value of the variable in the equation (GDP). Furthermore, the subscript *i* refers to different CBs (31CBs), and *t* is the time covered (2011-2020).

3.3. Measurement and operational variable definition

The ratio of NPL to total loans is a dependent variable. The explanatory variables for monetary policy include lending interest rates, money supply (M2), bank discount rates, and loans to the private sector. Furthermore, the study includes GDP, bank age, loan-to-deposit ratio, and bank value as control variables. The lagged NPLs were also considered as part of the independent variables.

3.3.1. Non-performing loans (NPLs)

The dependent variable is the ratio of Non-performing loans to total loans. Following Ameni *et al*. (2017) and Ghosh (2015), our study's usual measure of NPLs is the sum of non-accrual loans and all loans past due for 90 days or more. As suggested by Kazucu and Kazucu (2019), non-accrual loans are loans not earning the predetermined interest rate either because the complete accumulation of principal is uncertain or the payment of interest has not been completed.

3.3.2. The lagged NPLs (NPL-1)

NPL persistence was measured using first-lagged bank NPL to total gross loans (asset quality). The asset quality from the previous year tends to affect the current NPL level. Previous research has demonstrated that NPLs are persistent and that reducing them requires time (Dao *et al.,* 2020; Ghosh, 2015). The lag of NPLs is included as part of the GMM approach, so the coefficients on this lag are expected to be positive. This is because previous NPLs add to the stock of NPLs for the current period.

3.3.3. Lending interest rates (LIR)

Since lending interest rates directly impact the borrower's repayment capacity and equally affect banks' interest profits, they are regarded as a determinant of NPLs and have a significant and favourable effect on them (Jimenez *et al.,* 2014; Rao & Jiang, 2013). Thus, high lending rates produce an additional burden and increase the level of NPLs. Other studies also have demonstrated that high interest rates considerably impact NPLs (Dao *et al.*, 2020; Nikola *et al*., 2019). Therefore, an increase in interest rates raises the cost of doing business for borrowers, which raises the credit risk and ultimately raises the possibility that they will not be approved for a loan because they are less able to pay off their debts (Vo & Nguyen, 2014). As interest rates decline, the cost of borrowing and the chance of defaulting decrease; hence, the lending interest rate covariance is expected to be negative.

3.3.4. Credit to private sectors (CPS)

Higher NPLs could result from increased risk-taking behavior, which is implied by increased loans to the economy's private sector. But if it increases carefulness, reduced NPLs are anticipated (Zhang & Saffar, 2019; Akinlo & Emmanuel, 2014). Moreover, a rise in NPLs lowers the value of private investment. It increases the risk of loan default for the private sector, which results in less Credit being extended to them (Asiama & Anthony, 2018). The coefficients of CPS are expected to be negative as part of a priori expectations because we believe that a productive sector will eventually be able to create enough money to pay off its loan commitments.

3.3.5. Discount rate (DRT)

As the lender of last resort, the central bank induces CBs to borrow money at low rates through a discount window. These low rates encourage CBs to extend more loans to customers at low rates, and the reverse is also true (BoT, 2020; Yener *et al.,* 2010). Also, when there is inflation, the central bank raises the bank rate, ultimately raising the cost of borrowing money from the bank because

other banks and CBs increase their discount rates for the general public in response to the higher rate. Because lowering the bank rate should also result in lower lending rates, which will reduce the cost of borrowing and the probability of default, the coefficient of the bank rate is anticipated to be negative.

3.3.6. Money supply (M2 growth rate)

Monetary policy influences the money supply through its effects on banks' intermediation activity (BoT, 2020). However, most changes in money occurring in the economy result from developments in how banks conduct their business (Yener *et al*., 2010). Changes in the money supply can have an impact on the economy through two general transmission channels. The first channel rests on the effect of the availability of credit in the economy, and the second one on the impact of liquidity on the allocation of asset portfolios. These channels are not mutually exclusive but rather complement each other. A country's money supply significantly affects its macroeconomic profile, particularly concerning interest rates, inflation, business cycle, and NPLs (Jimenez *et el*., 2014). The coefficient of money supply on NPLs is expected to be positive as part of prior expectations since growing living expenses (inflation) may make it harder for people to repay their debts and may even raise the possibility that they would default (Adusei, 2018; Sofoklis & Eftychia, 2011).

3.3.7. Age (AGE)

This is how long the bank has been open for business. Ayayi and Sene (2010) contend that as banks mature, they accumulate experience in banking operations, increasing their potential to reduce NPL risks by offering efficient services. Almansour *et al.* (2019) noted that the traditional relationships between age and reputation are not always observed in the banking business due to the complex and specialized nature of their activities.

3.3.8. Gross domestic product (GDP)

Economic growth increases borrowers' ability to repay loans and is linked to increased household income (Narman and Serpil, 2019). As a result, NPLs are inversely correlated with GDP growth. According to Ahlem and Fathi (2013), more substantial positive GDP growth is often accompanied by increased income, which enhances the borrower's capacity to repay debts and lowers the level of NPLs.

3.3.9. Bank value (Total assets)

Because a bank with more significant overall assets may be risk-loving or risk-averse, the sign of bank value is contradictory (Dimitrios *et al*., 2018). Like Chaibi and Ftiti (2015), the natural logarithm of the bank's total assets is used to determine the institution's size. For instance, a large bank may extend loans to riskier borrowers and expand its financial leverage more effectively. It might also feel "too big to fail" and decide to forego taking on additional risk in the understanding that there is only potential for advantage, or it might be risk-averse. Due to its size, which may be too large to preserve, use caution. According to Louzis *et al*. (2012), bank size positively influences NPLs. In contrast, according to the explanation of the diversification by bank size, Biekpe (2011) and HU *et al.* (2004) discover that a bank's size negatively influences the amount of non-performing loans it has.

3.3.10. Loan-to-deposit ratio (LTD)

Credit, scaled by bank deposit, shows the bank's use of warranties (credit) and indicates the bank's riskiness. Credit is a risky output, according to Berna and Ibrahim (2020); there is always a chance that the bank will have loan delays or a default issue. Dimitrios *et al.* (2018) concluded that LTD is expected to be positively related to NPLs because a higher ratio of loans concerning deposits means easier loan granting, a risk-loving attitude, and, therefore, a higher probability of rising NPLs.

3.4. Theoretical framework

The theoretical framework under this study assumes that the nature of the firm (herein referred to as CBs) is based on profit maximization (Primeaux & Stieber, 1994). Since profit has always been the top priority of banking operations over the years, CBs maximize the net interest margin by charging more interest to the borrowers and offering lower interest to the depositors. Their

aggressive lending strategies can sometimes result in credit risk, moral hazard, and NPLs. Moreover, the central bank provides directives on CBs lending interest rates to support the growth of private sectors as part of implementing monetary policy (Asiama & Anthony, 2018). Such orders limit or empower CB's position to credit creation. As a result, trends of NPLs are also affected. The bottom line is that central banks' directives may increase or decrease the CB's lending interest, affecting current and previous loan portfolios. The effect on the current and previous loan portfolios may increase or reduce the default rates among borrowers, impacting the NPLs in CBs (Vo & Nguyen, 2014). Furthermore, the changes in discount rates may also affect the portfolio of CBs by increasing the profitability or default rates among borrowers. This implies that CB's interest rate on credit will also fall if the central bank discount rate falls. Such grounds will motivate the private sector, which is believed to be the device of economic growth. On the contrary, the rising level of monetary policy indicators, particularly on bank rates, lending interest rate, and money supply M2 will increase NPLs, demoralising the private sector borrowing and stifling potential economic activity. Table 1 below presents the pre-hypothesized sign effects of the independent variables on NPLs

Table 1. Variable measurement and expected signs

Variables	Measurement	Expected sign	Source/literature
	Dependent variable		
NPLs	NPL/total loans		Dao *et al*. (2020), Karsten & Lenno, (2019),
	Independent variables		
NPL-1	The first lag of bank NPLs to total gross loans	+	
LIR	The lending interest rate at year-t	+	Mahrous et al. (2020), Adusei (2018), Diana & Carla (2014)
CPS	Credit to the private non-financial sector (% of GDP)	-	Asiama & Anthony (2018), Akinlo & Emmanuel (2014)
DRT	Cost of borrowing to CBs at year t	-	Asiama & Anthony (2018), Vo & Nguyen (2014), Yener *et al.* (2010)
M2	Intermediate money. Comprises M1 plus highly liquid deposits	+	Adusei (2018), Sofoklis & Eftychia (2011)
	Control Variables		
AGE	The natural logarithm of the number of years from the date of establishment as CBs	-	Towo (2019), Ayayi & Sene (2010)
BV	The natural logarithm of the banks' total assets	-	Warue (2013), Boudriga *et al*. (2010), Hu *et al.* (2004)
LTD	Scaled by the bank's deposit, this indicator of bank riskiness depicts how the bank uses deposits.	+	Al Masud & Mohammed (2020), Dimitrios et al. (2018)
GDP	Annual change in the percentage growth of GDP	-	Karsten & Lenno (2019), Ahmad & Bashir (2013)

Source: Developed based on the literature

3.5. Panel unit root test

All other variables are also expressed in their logarithmic forms. We performed the Fisher and Levin-Lin panel unit root test that assumes a standard unit root process (Mondal,2016; Choi, 2001). This unit root test aimed to analyze the level and then differentiate to determine the order of integration of each variable. The results show that GDP was not stationary at this level. Yet, upon the first differencing, this non-stationary variable became stationary (see Table 2). The unit root test has two implications. First, the presence of a unit implies that the estimating technique cannot use Ordinary least squares (OLS). Using OLS as an econometric approach for an estimate when a panel has a unit root test may result in an over- or underestimation of the parameter's value and

the parameter's sign being in the incorrect location. Second, the economic implication is that the presence of a unit root in a data panel causes a shock to have a lasting effect (Adusei, 2018).

Table 2. Unit Root Test (Test for Stationarity)

	Fisher-type unit-root test		Levin-Lin-Chu unit-root test	
Variable name	Statistic	p-value	Statistic	p-value
NPLs	122.5683	0.0000***	-4.6636	0.0000***
NPLs-1	113.7443	0.0001***	-5.2442	0.0000***
LIR	44.8421	0.9277	0.3818	0.6487
M2	158.4558	0.0000***	2.8799	0.0000***
DRT	17.2693	1.0000	6.5638	1.0000
CPS	32.4074	0.9993	-5.0443	0.0000***
Size	299.7988	0.0000***	-14.6811	0.0000***
Age	2234.7065	0.0000***	-20.9548	0.0000***
LTD	212.5111	0.0000***	-21.9294	0.0000***
DGDP	572.0579	0.0000***	3.7409	0.0020**

Note: **and *** represent 5% and 1% significance levels, respectively.

4.0. Results and Discussion

4.1. Bank category

CBs were categorized as small or large depending on the extent of their assets. Assets between 711,259 and 75,591 million TZS were held by 22 small and nine large banks, respectively (BoT, 2020). There were 31 commercial banks (CBs) in operation, 13 banks being locally owned and 18 owned by foreign entities. Figures 1 and 2 depict trends in non-performing loans among Tanzanian CBs from 2011 to 2020 by bank size and ownership categories.

4.1.1. NPLs Trends by Bank Size

Figure 1 presents NPL trends for bank size category among CBs in Tanzania from 2011 to 2020.

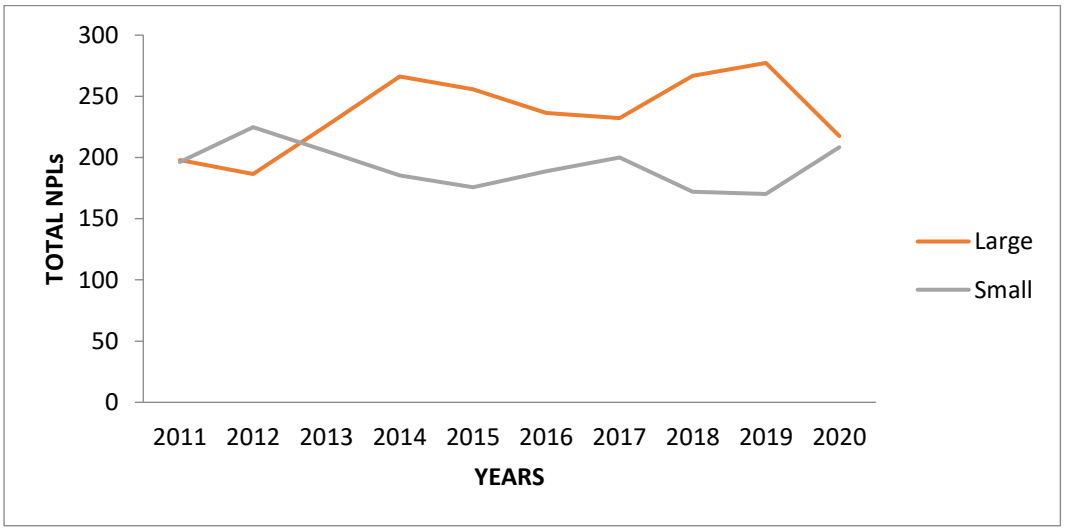

Figure 1: NPL trends for bank size category among CBs in Tanzania from 2011 to 2020.

According to Figure 1, in 2020, small banks had a growing trend of NPLs, while large banks depicted a decreased level of NPL. The increased level of NPLs in small banks is attributed to a number of factors including striving for market share by offering loans with lax screening requirements and diminished incentive programs designed to encourage borrowers to pay their debts (Budotela *et al.,* 2022; Warue, 2013).

4.1.2. NPLs trends by bank ownership

Figure 2 depicts the trends in NPLs per CBs ownership between 2011 and 2020.

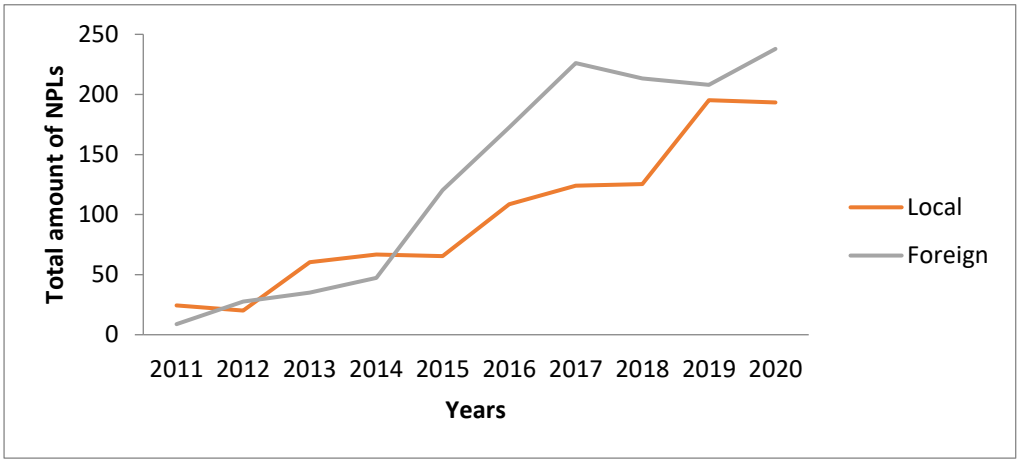

Figure 2: PLs per CBs ownership between 2011 and 2020.

From Figure 2, NPL performance under bank ownership categories shows that foreign banks had the highest NPLs, followed by locally owned banks. Both local and foreign banks showed an overall rise in NPLs. The struggle to gain market share may have contributed to the increase of NPLs by employing techniques with lesser encouragement to persuade borrowers to pay debts regardless of their financial situation. This scenario was similar to observations made in bank size analysis, as shown in Figure 1.

4.2. Descriptive statistics

Tables 3(a) and 3(b) present descriptive statistics on variables overviewing bank size and ownership categories. This table displays each variable's mean, minimum, maximum, and standard deviation.

Table 3(a). Overall descriptive statistics

Variable	Mean	Std	Min	Max
NPLs	1.81	1.03	-2.66	4.19
Lagged NPLs	1.67	1.11	-2.30	4.17
LIR	1.73	1.04	-2.66	4.19
M2	10.76	4.22	3.8	17
DRT	11.58	4.17	5	16
CPS	11.73	7.66	1.7	24.8
Age	3.06	1.02	0	4.82
Size	13.88	3.84	0	20.85
LTD	4.37	0.45	2.03	5.93
DGDP	6.60	0.92	4.8	7.9

Table 3(b). Descriptive statistics of variables across bank size and bank ownership

Variable	3(bi) Bank size							
	Small (n=168)				Large (n=142)			
	Mean	Std	Min	Max	Mean	Std	Min	Max
NPLs	1.87	1.22	-2.66	4.19	1.76	0.84	-1.27	3.87
NPLs-1	1.78	1.26	-1.61	4.17	1.58	0.96	-2.30	3.85
LIR	1.81	1.27	-2.66	4.19	1.67	0.82	-1.27	3.14
M2	10.88	4.21	3.8	17	10.63	4.23	3.8	17
DRT	11.66	4.11	5	16	11.49	4.26	5	16
CPS	11.85	7.67	1.7	24.8	11.59	7.68	1.7	24.8
Age	3.02	1.09	0	4.74	3.11	0.94	0	4.82
Size	11.47	2.98	0	13.45	16.76	2.57	13.49	20.85
LTD	4.42	0.49	2.03	5.93	4.31	0.39	2.39	5.52
DGDP	6.6	0.95	6.57	7.9	6.63	0.88	4.8	7.9

3b(ii)Bank Ownership

Variable	Local (n = 130)				Foreign (n = 180)			
	Mean	Std.	Min	Max	Mean	Std.	Min	Max
NPLs	1.8	0.9	-2.3	3.9	1.8	1.1	-2.7	4.2
Lagged NPLs	1.6	1.1	-1.6	3.9	1.7	1.1	-2.3	4.2
LIR	1.8	0.9	-2.3	3.9	1.7	1.1	-2.7	4.2
M2	10.8	4.2	3.8	17	10.8	4.2	3.8	17
DRT	11.6	4.2	5	16	11.6	4.2	5	16
CPS	11.7	7.7	1.7	24.8	11.7	7.7	1.7	24.8
Age	2.7	0.9	0	4.6	3.3	1.0	0	4.8
Size(TOTAL ASSET)	13.7	4.9	0	20.8	14.0	2.9	10.4	20.4
LTD	4.4	0.4	2.3	5.6	4.3	0.4	2.0	5.9
DGDP	6.6	0.9	4.8	7.9	6.6	0.9	4.8	7.9

Note: Tables 3(a) and 3 (b) present the descriptive statistics in general and across bank size and ownership categories for the variables in the study. The variable definitions are provided in Table 1.

The study used the mean to describe the central tendency of the data while the standard deviation was used to explain the dispersion within the data. The data set's proxies for bank size to total assets showed that large banks and foreign banks had the highest mean ranges, respectively. The highest mean values and comparatively high levels of dispersion were found in the ratios of credit to private sectors, M2, and discount rate, which had respective standard deviations of 7.66, 4.22, and 4.17 (see Table 3(a)), respectively and in bank size and ownership categories of 7.7, 4.23, and 4.26 (see Table 3(bi) and 3(bii)), respectively. Lending interest rate, age, bank deposits, and GDP measurements all showed standard deviations between 0.39 and 1.27 and mean values between 1.67 and 6.63. The bank lending interest rate showed the lowest degree of dispersion, with a standard deviation of 1.04.

4.3. Pearson Correlation analysis

The correlation matrices were used to evaluate how the variables interacted. Table 4 shows strong correlations of 0.638 and a minimum value of 0.0003. The correlation coefficients between the explanatory factors are moderate (Isik & Ince, 2016). NPLs were discovered to correlate with LIR, M2, and LTD positively. In contrast, it is found that there is a negative and statistically significant correlation coefficient between NPLs and M2, DRT, CPS, BV (total assets), bank age, and GDP.

Table 4. The Pearson correlation matrix

Variables	NPLs	NPLs-1	LIR	M2	DRT	CPS	Size	Age	LTD	DGDP	VIF
NPLs	1.0										
NPLs-1	0.797	1.0									2.15
LIR	0.657	0.707	1.0								2.15
M2	0.234	0.267	0.181	1.0							4.06
DRT	-0.208	-0.197	-0.267	0.368	1.0						1.56
CPS	-0.294	-0.317	-0.273	0.638	0.422	1.0					5.56
Size	-0.022	-0.047	-0.067	0.007	-0.004	0.004	1.0				1.02
Age	-0.034	-0.008	-0.006	-0.093	-0.102	-0.117	0.098	1.0			1.05
LTD	0.109	0.106	0.027	0.054	-0.037	0.030	-0.048	-0.115	1.0		1.05
DGDP	-0.0003	-0.028	-0.078	-0.178	0.328	-0.004	0.062	-0.031	-0.092	1.0	1.29

Note: Table 4 presents the correlation matrix for variables in the study. The variable definitions are provided in Table 1.

The correlation test results indicate no multivariate multicollinearity issue because all VIF values are less than 10, and this limit was proposed by Isik & Ince (2016). Variables with negative signs indicate a decline in NPLs; thus, when these variables rise, NPLs fall. On the other hand, variables with positive signs implied the increase of NPLs, meaning that as these variables increase, NPLs also increase.

4.4. Regression results

To test the overall validity of instruments used in the model, the study conducted the Sargan test of over-identification constraints to examine the general validity of the instruments used. This test provides a statistic distributed $\chi 2$ under the null hypothesis of the validity instruments (Arellano and Bond, 1991). It's essential to use the Sargan test to make sure the GMM estimators are reliable. The Arellano-Bond autocorrelation tests AR (1) and AR (2), the first-order and second-order autocorrelation of the residuals in the differenced equation are also used given the GMM estimator's assumption that there is no serial correlation between error terms. The null hypothesis that there is no second-order autocorrelation of the residuals in the differenced equation is rejected because it implies that the error components are serially correlated at the level and may, thus, indicate that the GMM estimator is inconsistent (Arellano and Bond, 1991). According to the Arellano-Bond technique, one should reject AR's (1) null hypothesis and accept AR's (2) null hypothesis.

With smaller sample sizes, the one-step system GMM estimator is preferred over the two-step GMM because it is less likely to be biased (Ameni *et al.,* 2017; Umanto, 2017). The results of the one-step system GMM estimates for the dynamic model in Eq (1) on the entire sample (baseline model, bank size, and ownership) categories are shown in Table 5.

Table 5: Estimation results of monetary policy variables and NPLs

Variables	Baseline model	One-step system GMM			
		Bank ownership		Bank size	
		Foreign	Local	Small	Large
NPLs-1	0.520***	0.733***	0.789***	0.805***	0.690***
LIR	0.241***	0.476***	0.699***	0.281**	0.475***
M2	0.002**	0.006*	0.011*	0.00**	0.005**
DRT	-0.029***	-0.006*	-0.002	-0.005*	-0.003*
CPS	-0.048***	-.030**	-0.018**	-0.007**	-0.003*
Bank value (size)	-0.011*	0.002**	-0.015*	-0.010*	-0.005**
AGE	-0.059*	-0.005**	-0.027*	-0.001**	-0.005**
LTD	0.004**	0.022*	0.014*	0.016*	0.048*
DGDP	0.055*	0.049*	0.146*	0.014*	0.037*
Test for AR(1)	z = -15.62(0.000)	z=-0.28(0.778)	z=0.71(0.477)	z= 0.63(0.526)	z=-0.94(0.348)
Test for AR(2)	z = 0.55(0.579)	z=-0.85(0.398)	z=0.41(0.680)	z = -1.64(0.101)	z= 0.90(0.367)
Sargan test	chi2(49) = 77.43(0.006)	chi2(53) = 177.38(0.000)	chi2(24) = 43.65 (0.008)	chi2(53) = 166.85(0.000)	chi2(56) = 171.67(0.000

="* p<0.05 ** p<0.01 *** p<0.001"

The regression results indicate that CBs in the country are affected by changes in monetary policy. As shown in Table 5, the coefficient of the lagged dependent variable was positive and statistically significant on both baseline, bank ownership, and bank size. These findings suggest that a shock to NPLs will likely have a prolonged effect on the banking system because of delinquent loans. The results are similar to the previous study by Dao *et al.* (2020) and Karsten and Lenno (2019). The coefficient value for the relationship between lending interest rates and NPLs is positive and significant. This result suggests that increase in interest rates results in an increased NPLs ratio, supported by the findings of Mahrous *et al*. (2020) and Diana and Carla (2014). The theoretical justification of these results is that a rise in lending interest rates (i.e., floating interest rates) increases the value of borrowers' debt and makes debt servicing more expensive. This will increase loan defaults and, hence, NPLs. Moreover, more significant interest rate uncertainty due to monetary policy dynamics affects banks' source of funds, influencing loan growth and NPLs (Ghosh, 2015).

Concerning the money supply (M2) variable, the effect is statistically significant and positively related to NPLs. This is expected and supports the H2 hypothesis. The positive relationship between M2 and NPL suggests that growth in money supply (M2) creates inflation in the country, and the outcome after that is high default rates. Moreover, high inflation passes through to nominal interest rates, reducing borrowers' loan-servicing capacity thus negatively affecting their real income when nominal wages are sticky. If the income does not increase in line with inflation caused by M2, a rise in inflation increases costs (for both households and corporations), thus lowering the amount of available funds for debt repayment. These results are supported by Skarica (2014) and Sofoklis and Eftychia (2011).

The co-efficient value for the relationship between discount rate (DRT) and NPLs is negative and significant. The justification of this result is that, with an increase in the bank rates (discount rate), CBs also reduce the lending rates. On the contrary, when the central bank lowers the bank discount rate, the spot interest rate increases and expected long-term interest increases lead to decreased investment and consumption (Vo & Nguyen, 2014). Furthermore, it contributes to reduced income and ability to repay the loan, which amounts to bank NPLs.

The results in Table 5 provide a negative significant relationship between NPLs and credit to the private sector and are consistent with the findings of existing studies (Asiama & Anthony, 2018; Akinlo & Emmanuel, 2014). The results suggested that increasing credit to private sectors decreases the level of NPLs in the economy. This is because when loans are granted to productive industries, they can generate income to satisfy their loan obligation over time. Defaulting is less significant when loans are given to productive sectors. Other things being equal, when the central bank allows CBs to issue more credits to private sectors, it is expected to boost private investment, stimulating more economic activities. This is expected to produce a positive performance on the

previous CB's loan portfolios, reducing the possibility of defaults and, hence, lower NPLs (Prasanna). In the same vein, as NPLs rise, the value of private projects declines, and the private sector becomes more prone to loan defaults, which reduces the amount of credit available to them.

The control variables of bank value (total assets), bank age, loan-to-deposit ratio, and GDP were also analyzed similarly on the GMM model and found significant in explaining bank NPL variations. For instance, bank value significantly influenced NPLs in local and small banks, suggesting that bank value (total assets) significantly negatively affects decreasing NPLs. The theoretical justification for the negative association is that larger banks have more resources and are more experienced in dealing better with defaulters' borrowers, hence the low NPLs ratio. On the contrary, small banks may be exposed to adverse selection problems due to the lack of sufficient competencies and experience to assess the credit quality of borrowers effectively. The adverse finding is consistent with the literature (Biekpe, 201; Hu *et al.,* 2004).

The study found a negative and significant relationship between NPLs and bank age. The negative relationship suggests that as banks mature, they accumulate experience in banking operations, increasing their possibility of reducing NPL risks by offering efficient services.

The co-efficient value for the relationship between NPLs and loan to deposit ratio is positive. The positive results were expected because a higher proportion of loans concerning deposits means easier loan granting and, therefore, a higher probability of developing NPLs. Additional justification of this finding is that when banks have more deposits, management provides more loans at lower interest rates and maintains low credit standards to capture the market share. Such poor credit standard increases the possibility of borrowers' default. On the other hand, banks adopt a 'liberal credit policy' by extending new loans to insolvent borrowers so that borrowers keep repaying old loans so those loans do not turn bad.

The co-efficient value for the relationship between NPLs and GDP is positive and statistically significant. The theoretical justification for the important positive relationship is that the high demand for loans due to economic expansion caused banks to give more loans without making proper customer credit ratings. So, some less creditworthy customers get the loan, which leads to increased NPLs. This finding is in line with the study by Beck *et al*. (2015). Moreover, banks reduce their credit conditions in the boom period, leading to the deterioration of the bank assets' quality. In contrast, this finding contradicts that obtained by Ahlem and Fathi (2013), who found the inverse relationship between the GDP and NPLs. This negative result has been interpreted to mean that an expanding economy contributes to an improvement in income, which in turn enhances the debt-servicing capacity of borrowers and, consequently, lower NPLs.

4.4.1 Different measures for bank NPLs

Also, the one-step difference GMM was applied to test and confirm the consistency of the outcomes obtained by one one-step system, as shown in Table 5. Results obtained by one one-step system may not be sufficient to capture specific properties of NPLs that build up over a longer time frame. Equation (1) was rerun using the one-step difference GMM approach to address this. The results in Table 6 are similar to those for the baseline model. This implies that the baseline model results were valid and reliable to represent the total population of Tanzania banks.

Table 6: Estimation results of monetary policy variables and NPLs

Variables	One-step difference GMM				
		Bank ownership		Bank size	
	Baseline model	Foreign	Local	Small	Large
NPLs-1	0.002**	0.000***	0.001***	0.0002***	0.004***
LIR	0.014*	0.003**	0.000***	0.001**	0.000***
M2	-0.002	0.011*	0.008	-0.020*	0.004**
DRT	-0.024**	-0.002**	-0.006*	-0.005*	-0.004**
CPS	-0.000***	-.003*	-0.000***	-0.002*	-0.001**
Bank value (size)	-0.001**	-0.005**	-0.007**	-0.004**	-0.009*
AGE	-0.023*	-0.048*	-0.031*	-0.006*	-0.001**
LTD	0.047*	0.031*	0.042*	0.041*	0.054*
DGDP	0.047	0.033*	0.016*	-0.013*	0.025*
Test for AR(1)	z = -7.11(0.000)	Z=-0.17 (0.866)	z=0.81(0.417)	z= 1.03(0.304)	z = -0.96(0.338)
Test for AR(2)	z = -0.00(0.998)	Z= -1.26 (0.208)	z 0.31(0.758)	z= -1.52(0.129)	z = -1.10(0.270)
Sargan test	chi2(25) = 44.24(0.010)	chi2(24) = 77.96(0.000)	chi2(25) = 77.43(0.000)	chi2(51) = 200.34(0.000	chi2(25) = 75.86(0.000

="* p<0.05 ** p<0.01 *** p<0.001"

5.0. Conclusions, Implications, Recommendations, and Limitations

Like many emerging markets, Tanzania's economy has been growing very fast in recent years; however, the economy, especially of firms is highly dependent on banks for credit. Even though the role of bank lending channels in monetary transmission has been widely studied in developed economies, little attention has been given to investigating this issue in Tanzania. This study investigates the effect of monetary policy on non-performing loans among commercial banks in Tanzania. We suggest that it is essential to consider discount rate, lending interest rate, credit to the private sector, reserve requirements, and other inflation and bank size when analysing the functioning of the bank lending channel of monetary policy.

To study the effect of monetary policy on NPLs, we used the dynamic panel GMM model. The results show that the relationship between monetary policy indicators and NPLs is positive and statistically significant. Thus, increased lending interest rates due to policy rate changes to the upside help explain why there are more NPLs in the banking sector (CBs). This is because raising the lending interest rate stresses borrowers severely, increasing the possibility of defaulted and non-performing loans. Hence, the central bank in the country needs to decrease the lending interest rate at an affordable level to reduce the effect of monetary policy on NPLs. The interest rate channel for the policy rate must work practically to reduce the trends in the growth of NPLs. Using lending rates as policy instruments to influence NPL would effectively change the level of NPL.

The analysis also reveals that money supply (M2) was positive and significant, affecting country trends in NPLs. More specifically, the effect on NPLs becomes more important when the central bank supplies the money in circulation due to the inflation rate. Additionally, monetary policy supports the private sector through credit, which has an essential effect on the country's NPLs. This finding supports the need for tighter controls on expectations and inflation. While doing this, policymakers must consider that the private sector leads the effort to reduce NPLs in the country by helping to provide an attractive environment for it to operate in and helping it establish a strong credit profile.

The results of this study can help the bank supervisor and government to enhance their banking system stability and economic policies. The main policy implication drawn from the study's findings is that policymakers in the country need to adopt a suitable monetary policy according to the risk appetite of the country's monetary authority. They should consider the effect of their policies on the NPLs in the banking system and other considerations like economic stability and inflation. Further, the study concluded that the government should create stable financial circumstances. This can be done by reducing banks' borrowing and operating costs, decreasing the difference between interest rates and bank rates, and allowing the private sector to participate actively in development. The Tanzania Reference Rate should be implemented to ensure transparency in the calculation of the commercial interest rate because it reflects the relationship between the bank rate, the interest rate on commercial loans, and, ultimately, NPLs. As a result, more credit will be made available to the private sector and other borrowers, the risk of default

and NPLs will be lower, a more productive industry will be drawn to the financial market, recognition of viable projects will grow, and Tanzania's economic development will be improved.

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References

Adeola, O., & Ikpesu, F. (2017). Macroeconomic determinants of non-performing loans in Nigeria: An empirical analysis. The Journal of Developing Areas, 51(2), 31-43.

Adusei, C. (2018). Determinants of non-performing loans in the banking sector of Ghana between 1998 and 2013.Asian Development Policy Review,6(3),142-154.

Akinlo, O. and Emmanuel, M. (2014), "Determinants of non-performing loans in Nigeria," Accounting and Taxation, 6(2), 21-28.

Al Masud, A., and Hossain, M.A. (2020). Determinants of Non-performing Loan: A case of an emerging economy. Southeast Business Review, 10(1): 46-60.

Almansour, A., Alrawashdeh, N., and Almansour, B. (2019). The impact of capital structure on the performance of microfinance institutions. Management Science Letters, 10(4),881-888.

Almaqtari, F. A., Al-Homaidi, E. A., Tabash, M. I., and Farhan, N. H. (2018). The determinants of profitability of Indian commercial banks: A panel data approach. International Journal of Finance & Economics, 1–18. doi:10.1002/ijfe.1655

Altunbas, Y., Gambacorta, L., & Marques-Ibanez, D. (2010). Does monetary policy affect bank risk-taking? BIS, working paper no 298pp. 1-11.

Altunbas, Y., Gambacorta,L., & Marques-Ibanez, D. (2012). Do bank characteristics influence the effect of monetary policy on bank risk? Economics letters, 117, 220-222.

Anastasiou, D., Louri, H., & Tsionas, M. (2019). Non-performing loans in the euro area: A recore–periphery banking markets fragmented?. International Journal of Finance & Economics, 24(1), 97-112.

Arellano, M., and Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. The Review of Economic Studies, 58(2): 277-297.

Arhin, E. E. (2016). Economic determinants of non-performing loans among nine banks in the Ghanaian economy. Institute of Distance Learning (IDL), Kwame Nkrumah University of Science and Technology. 1-55.

Asiama, R. K., and Amoah, A. (2019). Non-performing loans and monetary policy dynamics in Ghana. African Journal of Economic and Management Studies, 10(2), 169-184.

Ayayi, A. G., and Sene, M. (2010). What drives microfinance institutions' financial sustainability? The Journal of Developing Areas, 44(1), 303-324.

Bachmann, R., Elstner, S., & Sims, E. R. (2013). Uncertainty and economic activity: Evidence from business survey data. American Economic Journal: Macroeconomics, 5(2), 217-249.

Badar, M. and A.Y. Javid. (2013). Impact of macroeconomic forces on non-performing loans: An empirical study of commercial banks in Pakistan. Wseas Transactions on Business and Economics, 10(1): 40-48.

Bech, M. L., & Malkhozov, A. (2016). How have central banks implemented negative policy rates? BIS Quarterly Review, March, pp 31-44.

Beck, R., Jakubik, P., and Piloiu, A. (2015). Critical determinants of non-performing loans: new evidence from a global sample. Open Economies Review, 26(3), 525-550.

Biekpe, N., 2011. The competitiveness of commercial banks in Ghana. African Development Review 23: 75-87.

Bordo, M. D., Duca, J. V., & Koch, C. (2016). Economic policy uncertainty and the credit channel: Aggregate and bank-level US evidence over several decades. Journal of Financial Stability, 26, 90-106.

Borio, C., Gambacorta, L., & Hofmann, B. (2017). The influence of monetary policy on bank profitability. International finance, 20(1), 48-63.

BOT (2018). Banking sector summary. BOT search engine http://www.mondaq.com/x/684574/financial+service/Bank+Tanzania+Circular+on+NPLs.Thesitevisited on 15/04/2022.

BOT (2020). Bank of Tanzania Annual Report. BOT search engine http://www.mondaq.com/x/684574/financial+service/Bank+Tanzania+Circular+on+NPLs.Thesitevisited on 26/11/2022.

Budotela, G. T., Mmari, G., & Towo, N. (2022). Effect of bank-specific factors on non-performing loans among commercial banks in Tanzania. Journal of Accounting Research, Organization, and Economics 5 (3), 267-281.

Caglayan, M., & Xu, B. (2019). Economic policy uncertainty affects the credit and stability of financial institutions. Bulletin of Economic Research, 71(3), 342-347.

Chaibi, H., and Ftiti, Z. (2015). Credit risk determinants: Evidence from a cross-country study. Research in international business and finance, 33: 1-16.

Chi, Q., & Li, W. (2017). Economic policy uncertainty, credit risks and banks' lending decisions: Evidence from Chinese commercial banks. China Journal of Accounting Research, 10(1), 33-50.

Choi (2001). Unit root tests for panel data. Journal of International Money and Finance, 20, 249-272.

Dao, K. O., Nguyen, T. Y., Hussain, S., and Nguyen, V. C. (2020). Factors affecting non-performing loans of commercial banks: The role of bank performance and credit growth. Banks and Bank Systems, 15(3): 44-54.

Dell'Ariccia, G., & Marquez, R. (2016). Interest rates and the bank risk-taking channel. Annual Review of Financial Economics, 5(1), 123-141.

Diana, B. and Carla, S. (2014). The Risk-Taking Channel of Monetary Policy– Exploring All Avenues, Banco de Portugal, Economics and Research Departmental, Lisboa, 71(2),169-244.

Dimitrios, A., Helen, L., and Mike, T. (2018). Determinants of non-performing loans: Evidence from Euro-area countries. Finance research letters,18,116-119.

Doğan, B., & Ekşi, İ. H. (2020). The effect of the board of directors characteristics on risk and bank performance: Evidence from Turkey. Economics and Business Review, 6(3), 88–104. https://doi.org/10.18559/ebr.2020.3.5

Fajar, H., & Umanto, U. (2017). The impact of macroeconomic and bank-specific factors on non-performing loans: Indonesian public banks' evidence. Banks & bank systems, 12(1), 67-74.

Ghosh, A. (2015). Banking-industry specific and regional economic determinants of non-performing loans: Evidence from US states. Journal of Financial Stability, 20, 93–104. https://doi.org/10.1016/j.jfs.2015.08.004.

Hada, T., Bărbuţă-Mişu, N., Iuga, I. C., and Wainberg, D. (2020). Macroeconomic determinants of non-performing loans of Romanian banks. Sustainability, 12(18): 7533.

Haneef, S., Riaz, T., Ramzan, M., Rana, A.M., Ishaq, H.M. and Karim, Y. (2012), "Impact of risk management on non-performing loans and profitability of banking sector of Pakistan," International Journal of Business and Social Science, Vol. 3 No. 7, pp. 307-315.

Hu, J. L., Li, Y., and Chiu, Y. H. (2004). Ownership and non-performing loans: Evidence from Taiwan's banks. The Developing Economies, 42(3): 405-420.

Hu, S., & Gong, D. (2019). Economic policy uncertainty, prudential regulation, and bank lending. Finance Research Letters, 29, 373-378.

Ioannidou, V., Ongena, S., & Peydró, J. L. (2015). Monetary policy, risk-taking, and pricing: Evidence from a quasi-natural experiment. Review of Finance, 19(1), 95-144.

Isik, O., and Ince, A. R. (2016). Board size, composition, and performance: An investigation on Turkish banks. International Business Research, 9(2), 74-84.

Jiménez G., Ongena S., Peydrò J.L. and Saurina J. (2009), "Hazardous Times for Monetary Policy: What do Twenty-Three Million Bank Loans Say About the Effects of Monetary Policy on Credit Risk-Taking?", Banco de España Working Paper, No. 0833.

Jiménez, G., Ongena, S., Peydró, J. L., & Saurina, J. (2014). Hazardous times for monetary policy: What do twenty-three million bank loans say about the effects of monetary policy on credit risk-taking? Econometrica, 82(2), 463-505.

Kang, W., Lee, K., & Ratti, R. A. (2014). Economic policy uncertainty and firm-level investment. Journal of Macroeconomics, 39, 42-53.

Karadima, M., & Louri, H. (2021). Economic policy uncertainty and non-performing loans: The moderating role of bank concentration. Finance Research Letters, 38, 101458.

Karsten, S. & Lenno, U. (2019). Macroeconomic and macro-financial factors as leading indicators of non-performing loans. Evidence from the EU countries. Journal of Economic Studies, 48(3), 720-740.

Khemraj, T., and Pasha, S. (2016). The determinants of non-performing loans: an econometric case study of Guyana. 3rd Biennial International Conference on Business, Banking and Finance, St. Augustine, Trinidad, 169-187.

Kuzucu, N., and Kuzucu, S. (2019). What drives non-performing loans? Evidence from emerging and advanced economies during the pre-and post-global financial crisis. Emerging Markets Finance and Trade, 55(8), 1694-1708.

Li, F. Y., & Yang, M. Z. (2015). Does economic policy uncertainty reduce the investment of firms? Evidence from China's monetary policy uncertainty index. Journal of Finance Research, 4(2), 115-129.

Louzi, D.P., Vouldish, A.T., and Metaxas, V.L. (2012). Macroeconomic and bank-specific determinants of non-performing loans in Greece: A comparative study of mortgage, business and consumer loan portfolios. Journal of Banking and Finance, 36(4), 1012-1027.

Mahrous, S.N., Samak, N., & Abdelsalam, M.A.M. (2020). The effect of monetary policy on credit risk: evidence from the MENA region countries. Review of Economics and Political Science, 5(4), 289-304.

Messai, A.S., and Fathi, J. (2013). Micro and macro determinants of non-performing loans. International journal of economics and financial issues, 3(4), 852-860.

Mondal, T. (2016). Sensitivity of non-performing loan to macroeconomic variables: empirical evidence from banking industry of Bangladesh. Global Journal of Management and Business Research, 4(10): 31-38.

Ng, J., Saffar, W., & Zhang, J. J. (2020). Policy uncertainty and loan loss provisions in the banking industry. Review of Accounting Studies, 25, 726-777.

Prasanna, K.P. (2014), "Determinants of non-performing loans in the Indian banking system," Third International Conference on Management, Behavioral Sciences and Economics Issues, February 11–12.

Primeaux, P., & Stieber, J. (1994). Profit maximization: The ethical mandate of business. Journal of Business Ethics, 13, 287-294.

Radivojevic, N., & Jovovic, J. (2017). Examining of determinants of non-performing loans. Prague Economic Papers, 26(3), 300-316.

Rao, P. G., & Jiang, G. H. (2013). The impact of monetary policy on the relationship between bank loans and business credits. Economic Research Journal, 1(48), 68-82.

Reddy, S. (2015). Non-performing loans in emerging economies–a case study of India. Asian Journal of Finance & Accounting, 7(1): 183-206.

Tarchouna, A., Jarraya, B., & Bouri, A. (2017). How to explain non-performing loans by many corporate governance variables simultaneously? A corporate governance index is built for US commercial banks. Research in International Business and Finance, 42, 645-657.

Vo, X. V., & Nguyen, P. C. (2014). Monetary policy and bank credit risk in Vietnam pre and post-global financial crisis. In Risk management post-financial crisis: A period of monetary easing, Emerald Group Publishing Limited, 277-290.

Vogiazas, S. D., & Nikolaidou, E. (2011). Investigating the determinants of non-performing loans in the Romanian banking system: An empirical study with reference to the Greek crisis. Economics Research International, 1-13.

Warue, B. N. (2013). The effects of bank-specific and macroeconomic factors on non-performing loans in commercial banks in Kenya: A comparative panel data analysis. Advances in Management and Applied Economics, 3(2), 135.

World Bank Group (2018). World development indicators. Washington DC: Publishing and Knowledge Division.

Zampara, K., Giannopoulos, M., & Koufopoulos, D. N. (2017). Macroeconomic and industry-specific determinants of Greek bank profitability. International Journal of Business and Economic Sciences Applied Research, 10(1), 3-22.