RELATIVE EFFICIENCY OF RURAL SAVING AND CREDIT COOPERATIVES; AN APPLICATION OF DATA ENVELOPMENT ANALYSIS. (A CASE STUDY IN KAFFA ZONE, SOUTH WEST ETHIOPIA REGION)

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Abstract

The objective of this study is to examine the relative efficiency of rural saving and credit cooperatives in the Kaffa zone, southwestern Ethiopia region. A descriptive research design was used with a quantitative research approach. Data Envelopment Analysis (DEA) was used to measure the relative efficiency of SACCOs. Both primary and secondary data were used. The result showed that Out Of the 15 SACCOs included in the study, seven were identified as "somewhat efficient," with a technical efficiency score of one. This means these SACCOs optimally utilise their resources and achieve the maximum output. However, the remaining eight SACCOs were found to be "relatively inefficient with efficiency scores lower than one. These SACCOs can improve efficiency by reducing their input resources and increasing output. In other words, they can either maximise their output with the given inputs or minimise them while maintaining a specific output level, depending on the resources utilised. It was found that most SACCOs were less efficient over the study year, and inefficient use of scarce resources was observed. In addition, there were significant differences in the efficiency between SACCOs. Hence, Sacco's are recommended in the vicinity to enhance their effectiveness through optimising resources (input) and reducing waste.

Keywords: Relative efficiency, saving and credit cooperative, data envelopment analysis, Kaffa zone- Ethiopia.

1. INTRODUCTION

The formal, semi-formal, and informal sectors constitute Ethiopia's financial services industry, each serving distinct purposes within the country's economic framework. At the apex of the formal sector are government-owned and privately held entities, including commercial banks and microfinance institutions, overseen by the National Bank of Ethiopia (NBE) (Begajo, 2018). Savings and Credit Cooperatives (SACCOs) are semi-formal financial institutions that primarily serve the financial needs of member-owned cooperatives. Their main objectives are to encourage saving habits and offer easily accessible credit services. (Feleke, 2018). Meanwhile, traditional informal systems like Iqub and Iddir play a significant role in financial transactions, underscoring Ethiopia's rich financial heritage (Feleke, 2018).

While efforts to expand formal financial services have been ongoing, challenges persist, particularly in rural areas with limited access ((Lakew & Azadi, 2020). However, in Ethiopia significant strides have been made in recent decades, catalysed by post-1991 financial reforms. These reforms opened avenues for private investment in banking, insurance, and microfinance, thereby spurring the growth of SACCOs and microfinance institutions (Yimer, 2011). The subsequent proliferation of SACCOs and microfinance institutions has enhanced financial inclusion, especially in underserved rural communities (Tirfe, 2014)

There are many different categories of efficiency. The relationship between the accomplishment of organizational goals and the usage of resources is represented by the concept of institutional efficiency. According to Kuosmanen and Johnson (2017), it is a method that determines the extent to which The amount of products generated by an entity for particular inputs differs from the volume of products generated by the entity that has the highest performance in the industry or cluster that is being considered. In the context of business, technical efficiency refers to the extent to which a company generates a quantity of outputs, such as revenues, from particular inputs, such as a variety of costs. According to Arunkumar and Kotreshwar (2012), it is necessary to implement a technologically efficient process to optimize outputs from a selection of specified inputs. Allocative efficiency, on the other hand, refers to the amount to which businesses make use of inputs in a variety of ratios while considering the most recent technological advancements and costs. The term refers to the process of selecting input combinations that are technically efficient to achieve the highest possible output results. According to Hackman (2018), economic efficiency, which is also known as productive efficiency, is something that is achieved through a blend of technical efficiency and allocative efficiency. The measuring of efficiency can be accomplished through a variety of approaches. Examples of non-parametric frontier approaches to measuring efficiency that rely on technological efficiency include data envelopment analysis (DEA). these approaches are examples of frontier approaches. The term "frontier analysis" refers to the process of comparing the efficiency of a company or department to that of the most successful performers in an organization with the goal of reducing the amount of inputs that are wasted or underproduced overall.

Sebhatu et al. (2013) comprehensively analysed saving and credit cooperatives (SACCOs) in the Tigrai region. Employing Data Envelopment Analysis (DEA), their findings showed an average efficiency score of only 21.3%, highlighting considerable inefficiency among these cooperatives.

Furthermore, significant variations in efficiency scores were observed based on geographical location and size, with size emerging as a crucial determinant of SACCOs' overall effectiveness. It suggests that substantial inefficiencies within SACCOs must be addressed to improve their technical efficiency and overall performance. In another study, Tirfe (2014) focused on the development and financial performance of rural saving and credit cooperatives in the Tigray region of Ethiopia. Analysing data from 13 rural SACCOs, the study revealed substantial growth in loan disbursement, saving deposits, membership, total assets, and profitability. However, areas for improvement were identified in their financial structure and profit-generating capacity, attributed to inappropriate investments in less productive areas. It highlights a gap in the technical efficiency of these cooperatives, suggesting that better investment strategies are needed to enhance their financial performance.

Ayalew (2015) explored SACCOs' financial performance, challenges, and prospects in facilitating rural financing in the East and West Gojjam Zones. Using the World Council Credit Union (WOCCU) model and data from four SACCOs, the study identified various challenges SACCOs face in rural financing, including difficulties meeting members' loan demands and high transaction costs due to poor infrastructural facilities. These challenges underscore the need for infrastructural improvements and more effective loan demand management to enhance the technical efficiency of SACCOs. Gebremedhin (2016) examine the practices and challenges rural saving and credit cooperatives encountered in Adewa, Ethiopia. With a sample size of seven rural SACCOs and 115 respondents, the study revealed numerous management challenges, ranging from delays in auditing to limited training opportunities for members and a need for proper savings practices. These management challenges highlight a critical gap in the technical efficiency of SACCOs, indicating the need for improved management practices and member training. Marwa and Aziakpono (2016) examined the technical efficiency of savings and credit cooperatives in Tanzania. Using a Data Envelopment Analysis framework, they evaluated technical efficiency, scale efficiency, and pure technical efficiency. Their findings showed that the average score for technical efficiency was 42 percent, which indicated that the majority of businesses required assistance in order to utilize their resources as efficiently as possible and achieve maximum production. Suggests a significant gap in the technical efficiency of SACCOs, requiring targeted interventions to improve resource utilization and performance.

Saving and credit cooperatives provided vital financial solutions for low-income individuals and contributed significantly to short-term financing for agricultural production (Feleke, 2018). However, despite their essential role, areas for improvement in their technical efficiency to better support rural economic development remain. Finally, Begajo (2018)investigated the role of SACCOs in improving rural microfinancing in southwestern Ethiopia. The finding shows that SACCOs significantly improved rural areas' saving culture, loan provision, and overall financing flow. Despite these positive impacts, there is still a need to address the inefficiencies identified in previous studies to fully realise the potential of SACCOs in enhancing rural microfinancing.

Although there has been improvement, there are still unanswered problems surrounding the efficiency and optimisation of SACCOs in providing financial services. Moreover, Studies have highlighted the technological inefficiencies of SACCOs, underscoring the need for further investigation into the underlying causes.

(Abel Feleke, 2018; Begajo, 2018; Ayalew, 2015; Gebremedhin, 2016; Marwa & Aziakpono, 2016; Sebhatu et al., 2013; Tirfe, 2014). This study enhances the academic literature on saving and credit cooperative's efficiency by utilizing Data Envelopment Analysis (DEA) as a methodological tool. Furthermore, the study's results can provide policymakers with valuable insights into the efficiency of SACCs in the area and offer guidance for improving their performance. Plus, provides' insights into ways that can improve their contribution to promoting economic resilience and inclusivity in local communities. Hence, this study aims to evaluate the efficiency of Savings and Credit Cooperative Organisations (SACCOs) in the Kaffa Zone located in the southwest region of Ethiopia. The results indicate that the majority of SACCOs exhibited lower levels of efficiency during the study period, and there was evidence of poor utilization of limited resources. Furthermore, there were notable disparities in the efficacy among SACCOs.

The remainder of the paper is organized as follows: Section 2: Methodology of the study; Section 3: Results and Discussions. Finally, Section 4 ends with a conclusion and recommendation.

2. Methodology of the study

2.1. Description of Study Area

According to the Kaffa biosphere report in **Figure 1**, the Kaffa zone is located in the southwestern part of Ethiopia between 6° 24' to 7° 70' North and 35° 69' to 36° 78' East, approximately 460 km southwest of Addis Ababa. The Kaffa zone is divided into 12 woredas and five city administrations. The zone's total area is 10.636Skm2, which accounts for 7% of the entire area of the region. The zone is a shared boundary with the Oromiya region in the North, northeast, and northwest directions. In the east and southeast, there is the Konta zone. The south shares a boundary with the Southern Omo zone. The southwest part of the Bench shako zone. Furthermore, around the 9th century Coffee plants originated in the region of Kaffa, Ethiopia. specifically, the place is called Decha Woreda, Mankira Kebele, Buni Village. Then after, it is distributed to the world.



Figure 1 Map of study area Keffa Zone

Source: Kaffa Biosphere Reserve

2.2. Research design and approach

The study applied a descriptive research design with a quantitative approach and data envelopment analyses to explain the relative efficiency of rural saving and credit cooperatives. To explain the existing state of affairs, the study used Descriptive statistics, mainly mean, minimum and maximum.

2.3. Target population

The target population of this study was a savings and credit cooperative institution found in the Kaffa zone in the southwest Ethiopian region of Ethiopia.

2.4. Sampling design and sample size

A three-stage sampling technique was used to determine sample size. In the first stage, five woredas were purposively selected based on the existence of active primary SACCOs. Gimbo, Decha, Gewata, Bita, and Gesha Woreda were selected for this study because all SACCOs were purposively taken based on data availability and records' completeness. It needs to select SACCOs with appropriate financial reports to employing DEA to assess the efficiency of sample SACCOs. In the second stage, primary SACCOs were selected from each woreda based on their activity and age of five years and above. In the third stage, the selection of sample respondents from each Sacco is proportionally based on the size of SACCO in terms of its members. The Kaffa zone cooperative agency indicates that approximately 42 primary SACCOs are registered in the Kaffa zone. Out of the 42 SACCOs in the zone, 15 primary savings and credit cooperatives were taken for analysis; this is because of a lack of complete data for the remaining savings and credit cooperatives.

Figure 2 Sampling procedure



Source: Researchers' constructions

2.5. Data source and collection tools

The data were collected from both primary and secondary sources. Primary data were obtained from members of SACCOs based on self-administered questionnaires, observations, and focus group discussions from SACCOs in the Kaffa Zone. Secondary data were collected from the zone cooperative agency.

2.6. Measuring efficiency using the DEA Approach

The study applied Data Envelopment Analysis (DEA) to characterise the frontier of inputoutput technology and the proportional distance of each observation from the frontier. This model was developed by (Farrell, 1957) for the first time and later extended by (Charnes et al., 1978). DEA is one of the tools that can be used to calculate the best practices for the production frontier (Kamu, 2017). The principal advantage of DEA is that it does not impose parametric restrictions on the underlying technology(Kamu, 2017), and DEA is applicable for multiple inputs and outputs (Marwa & Aziakpono, 2016). An efficient frontier is known as either an output orientation or an input orientation

It is possible to assess DEA efficiency estimates under variable returns to scale (VRS) or constant returns to scale (CRS) (Vidyarthi, 2019). Charnes et al., 1978) proposed an inputoriented model within CRS, yielding a score representing the DMUs' total TE. Let us assume a dataset consisting of K inputs and M outputs for every DMU within a set of N MFI. For the ith DMU, xi and yi are the input and output vectors, respectively. All N MFI data are represented by the $K \times N$ input matrix (X) and the $M \times N$ output matrix (Y). using an individual DMU's input-oriented measure and Following the work of (Vidyarthi, 2019), the study estimated the following model.

Minimize $\theta \lambda \theta$

Subject to
$$-Yq+\lambda y \ge 0$$

 $\theta X-\lambda X \ge 0$
 $\lambda \ge 0$

The amount of input Bundle that the Nth MFI needs to generate its output is represented by the value of θ . X and Y are M * N input and output matrices, respectively, and λ is a N*1 vector of constant ($\lambda = \lambda 1, \lambda 2, ..., \lambda n$) that indicates the strength of each MFI utilised in the frontier firm design. Determine the lowest value of θ using the linear program, keeping in mind that the magnitude of the variable must not be negative and that the proportionately enlarged output and input vectors must be in a feasible set.

Input and output variables

Financial institutions, such as banks and microfinance institutions (MFIs), face difficulties in clearly defining the input and output variables. Within the banking literature, there exist two distinct approaches: the intermediation approach and the production approach. The intermediation method asserts that banks utilize deposits as one of several inputs to provide financial services. Conversely, the second approach considers banks as producers of loans and deposit accounts, regarding interest on deposits as one of the inputs among other inputs. (Sebhatu et al., 2013). The study utilizes the intermediation approach to identify the input and output variables (as shown in table 1). The input variables include total expense and saving/deposit, while the output variables consist of loan and total income.

Variables	Definition	Input/ Output			
Total	The amount paid as interest on wages, deposits, other	Input			
expenses	employee benefits, and other expenses.				
Total Deposit	Deposits mobilised from the members include share	Input			
	capital and voluntary and compulsory savings.				
Total Loans	Amount of loan dispersed to the members.	Output			
Total income	Income is received from income-generating activities	Output			
	and investments as interest.				

Table 1 Input-output specifications.

Source: adapted from (Sebhatu et al., 2013; Vidyarthi, 2019)

3. Finding and Discussion

Table 2 Descriptive statistics of key variables.								
Variables	Obs	Minimum	Maximum	Mean	Std. Deviation			
Number of active clients	15	120.00	1046.00	549.00	425.33			
Percent of women client	15	.18	.35	.2612	.052			
Total number of	f15	20.00	307.00	146.75	123.25			
borrower								
Total asset	15	182620.00	23733780.27	8576311.75	9238036.84			
Total deposit mobilised	115	267572.14	261363101.00	46805356.48	105231927.60			
from members								
Total loan issued	15	80650.00	172922310.00	26618167.74	59407849.30			
Total current liability	15	56870.00	6591799.00	1661571.20	2502427.57			
Interest expense	15	15270.00	2874977.29	480963.43	978702.91			
Expense on other	15	5670.00	1303061.78	260226.31	448340.70			

Table 2 Descriptive statistics of key variables.

Source: researcher's survey, 2022.

Table 2 presents the descriptive statistics of this study. The results indicate that the rural SACCOS had a minimum membership of 120 individuals and a maximum membership of 1046. It shows rural SACCOS with small and huge memberships. The statistics also indicate that the lowest possible total expense for rural SACCOs was 20940 birr, while the highest possible expense was 3,005,283.46 million birr. The results show a significant variance in the expenses incurred by the SACCOS. According to efficiency theory, a DMU's efficiency drops as costs rise. As a result, SACCOS, which had more costs, may have been more effective. The minimum and maximum deposits, according to this study, were 267,572.14 and 261,363,101.00 br, respectively. The results also revealed differences in deposits and savings between rural SACCOS. In general, when loans are made insufficient to compensate for greater levels of savings and deposits, rural SACCOS's efficiency is diminished. This happens when there are more members and more expenses.

Marwa & Aziakpono, (2016) claimed that when SACCOS offers credit and savings services, its costs rise. Low efficiency scores are therefore associated with a large number of savings and deposits that have low loan amounts granted. Additionally, Table 2 reveals that the greatest loan amount given was 172,922,310.00 br, while the smallest loan amount was 80,650.00 br. The data also demonstrate the variation in capital amounts among rural SACCOS, which may have an impact on their effectiveness.

3.1. The efficiency of SACCOs is based on estimated DEA scores.

The study presents the efficiency of Saving and credit cooperatives using DEA based on a constant return to scale (CRS) and variable return scale (VRS); accordingly, the first part shows CRS, and the second part presents VRS.

Table 5 Summary of efficiency scores						
S.n	DMU	CRS TE	VRS TE			
1	Hidasie	0.053	0.606			
2	Boja	0.069	0.083			
3	Dojet	0.333	1			
4	Mtesaseb	0.010	0.008			
5	Medegagef	1	1			
6	Edigte	0.018	0.065			
7	uffa	0.018	0.170			
8	Mdefegna	0.077	1			
9	Gojeb	1	1			
10	Wushwush	0.879	1			
11	Daka	0.106	0.432			
12	Mesham	0.014	0.133			
13	Enat	1	1			
14	Bonga	1	1			
15	Birhan	0.427	0.750			
	Mean	0.40	0.616			

Table 3 Summary of efficiency scores

Source: Results from DEAP Version 2.1

3.2. Technical efficiency of SACCOs under constant return scale

Our study focuses on assessing the efficiency of Savings and Credit Cooperatives (SACCOs) in the Kaffa Zone, utilising a relative efficiency measurement against the top-performing SACCOs in the industry rather than an absolute assessment. Table 4 presents the technical efficiency scores of individual SACCOs in the region, analysed using the Data Envelopment Analysis (DEA) program version 2.1. Notably, SACCOs such as Medegagef, Gojeb, Enat, and Bonga demonstrate higher efficiency scores, achieving a Technical Efficiency (TE) score of one, indicating optimal input utilisation. For instance, SACCO number 10 displays relatively higher efficiency with a TE score of 0.879, implying a 12.1% input wastage. Conversely, SACCOs like Hidasie, Boja, Dojet, Mtesaseb, Edigte, Uffa, Mdefegna, Daka, Mesham, and Birhan exhibit significantly lower TE scores ranging from 0.053 to 0.427, highlighting inefficient input utilisation.

Overall, the average technical efficiency score for SACCOs in the Kaffa zone stands at 0.40 under constant returns to scale. It implies that approximately 60% of inputs are underutilised by SACCOs in the area. It underscores the imperative for SACCOs to enhance their input utilisation practices and the potential for a substantial 60% efficiency improvement.

Our findings align with previous research on the efficiency of SACCOs in similar contexts. For example, Sebhatu et al. (2013) conducted a comprehensive analysis of SACCOs in the Tigrai region, employing Data Envelopment Analysis (DEA). They observed variations in efficiency scores across SACCOs, with some achieving higher efficiency levels than others. Similarly, Tirfe (2014) focused on SACCOs in the Tigray region of Ethiopia and noted significant disparities in efficiency scores based on geographical location and size. Our study corroborates these findings, as evidenced by the varying efficiency scores among SACCOs in the Kaffa Zone. Specifically, SACCOs such as Medegagef, Gojeb, Enat, and Bonga exhibit higher efficiency scores, consistent with previous research indicating pockets of high efficiency within the SACCO sector. Conversely, SACCOs with lower efficiency scores, such as Hidasie, Boja, Dojet, Mtesaseb, Edigte, Uffa, Mdefegna, Daka, Mesham, and Birhan, reflect the presence of inefficiencies similar to those observed in other studies. Overall, our findings align with previous research in highlighting the need for SACCOs to enhance efficiency in input utilisation to improve overall performance (Sebhatu et al., 2013; Tirfe, 2014).

3.3. Technical Efficiency Of Saccos Under Variable Return Scale

The study conducted DEA with variable returns to scale and revealed that SACCOs' average relative technical efficiency in 2013 was 0.616. which indicates that, on average, SACCOs operate at a technical inefficiency rate of 61.6%. The SACCOs listed as efficient, such as Medegagef, Gojeb, Wushwush, Enat, and Bonga, have achieved perfect efficiency scores of 1 under the VRS model. which indicates that these SACCOs are operating optimally, utilising their inputs efficiently to generate outputs. They are considered exemplars of efficiency within the SACCO sector, demonstrating effective resource utilisation and maximising output with the available inputs. These SACCOs serve as benchmarks for others to emulate best practices in operational efficiency and productivity enhancement.

Conversely, SACCOs like Hidasie, Boja, Edigte, Uffa, Daka, Mesham, and Birhan exhibit VRS efficiency scores below 1, indicating inefficiencies. These SACCOs can improve their output levels with the same inputs or reduce their input levels while maintaining the current output. The inefficiencies observed in these SACCOs may stem from various factors such as suboptimal resource allocation, ineffective management practices, or operational inefficiencies. By addressing these inefficiencies and implementing strategies to enhance operational efficiency, these SACCOs can improve their performance, better serve their members, and contribute more effectively to their communities and stakeholders.

By comparing our results with previous research, we reaffirm the importance of addressing inefficiencies and implementing strategies to enhance operational efficiency within SACCOs (Marwa & Aziakpono, 2016; Sebhatu et al., 2013).

4. Conclusion

This study assessed the relative efficiency of rural Savings and Credit Cooperative Societies (SACCOS) in the Kaffa zone, located in the southwest region of Ethiopia. The study utilised a descriptive research design and a quantitative technique to thoroughly investigate the efficiency levels of Savings and Credit Cooperatives (SACCOs) operating in the Kaffa Zone in southwest Ethiopia. A complete evaluation of SACCO efficiency was conducted by employing both Constant Returns to Scale (CRS) and Variable Returns to Scale (VRS) models using Data Envelopment Analysis (DEA). The results demonstrate substantial diversity in the attributes and economic viability of rural Savings and Credit Cooperative Societies (SACCOS). The membership numbers varied from a minimum of 120 to a maximum of 1,046, indicating the presence of both small and large SACCOS. The range of total expenses was quite extensive, ranging from 20,940 birr to 3,005,283.46 million birr, indicating a significant difference in operational costs. Efficiency theory suggests that as costs increase, efficiency tends to decline. This implies that SACCOS with larger expenses may have been less efficient. The deposits exhibited significant variation, ranging from a minimum of 267,572.14 birr to a maximum of 261,363,101.00 birr, highlighting disparities in savings and deposits among the SACCOS. The efficiency is challenged when the loans granted do not match the larger quantities of savings and deposits, particularly when expenses and membership numbers are high. According to Marwa & Aziakpono (2016), the expenses of SACCOS increase when they offer more savings and credit services. They found a connection between lesser loan issuance and lower efficiency scores. The loans given varied from 80,650.00 birr to 172,922,310.00 birr, indicating the different levels of capital possessed by rural SACCOS, which can have an effect on their effectiveness.

The study's findings revealed a wide range of efficiency scores across the investigated SACCOs, indicating both areas of high efficiency and significant inefficiency. Significant disparities in efficiency scores were identified within the SACCO sector, highlighting the importance of comprehending operational methods and resource allocation in detail. SACCOs like Medegagef, Gojeb, Enat, and Bonga have demonstrated exceptional efficiency by effectively using their resources and optimising their production with their invested resources. These SACCOs act as standards for optimal practices in the industry, showcasing the capacity for SACCOs to function at maximum efficiency levels.

On the other hand, a particular group of SACCOs, namely Hidasie, Boja, Edigte, Uffa, Daka, Mesham, and Birhan, demonstrated inefficiencies in their operations. It was evident from their efficiency scores, which were below the recommended values. These Savings and Credit Cooperative Organizations (SACCOs) have the potential to enhance their resource allocation, management techniques, and operational processes to increase overall efficiency and performance. It is crucial to address these inefficiencies so that SACCOs can effectively fulfil their objective of serving their members and significantly contributing to community development.

These studies underscore the significance of rectifying inefficiencies to improve overall performance. By correlating our discoveries with preexisting research, we strengthen SACCOs' need to consistently assess and enhance their operating procedures to cater more effectively to their members and communities.

Ultimately, this study offers valuable perspectives on the effectiveness of SACCOs in the Kaffa Zone, highlighting both outstanding achievements and opportunities for enhancement. This study enhances the understanding of SACCO operations by using DEA models and comparing them with earlier studies. It emphasises the need for continuous efforts to improve efficiency in the sector.

5. Recommendations

Based on the findings of this study, we recommend the following actions to improve the efficiency of Rural SACCOS:

- > Utilise deposits and expenses effectively to improve efficiency.
- > Better use of resources and reduced waste in SACCOS in the area to enhance efficiency.
- Despite the average results indicating high efficiency, the low number of SACCOS on the frontier line suggests that most still have room for improvement in reaching the efficiency frontier line.
- The observed inefficiency is primarily technical, emphasising the need for better resource allocation and reduced wasted input resources.
- The study highlights the significant scope for enhancing inefficiency by selecting the correct input-output mix and choosing an appropriate scale size.

6. Limitations of the Study and suggestions for future research

The constraints of this study include the data for the year 2022, which was gathered by utilising the data from Sacco. Future studies should include more extended periods and more Saccos, which can be compared with the results of this study. In addition, an attempt has yet to be made to assess the efficiency of the different types of cooperatives in the Kaffa zone. Therefore, the efficiency analysis in this study is based on SACCOs and is difficult to generalise to the whole cooperative society so that future researchers can include different types of saccos.

7. Author Contributions

Conceptualization, TYW; B V and *K A* Methodology, TYW; BV and JR; resources BV; KA and JR; data collection, TYW writing—original draft preparation, JR; B V and *K A* Writing—review and editing. We have read and agreed to the publication version of the manuscript.

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9. Competing Interest

There is no conflicting interest in this manuscript.

Data Availability Statement

Data are available upon request.

10. Reference

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