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ARTICLE

Operational Institutional Support Systems Contributing towards the Continuity of Broiler Farming among Youth Producers in the Vhembe District of Limpopo Province, South Africa

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ABSTRACT

Broiler farming is essential for improved livelihoods through nutrient nourishment, food security, and employment provisions in our society. Broiler farming serves as a lifeline for most youth due to its cost-friendly initial startup capital and provides them with sustainable job opportunities. Various technical and production components are involved in promoting long-term broiler production, with the need to fully understand the interconnect-edness of all the components involved. The current study sought to investigate institutional support systems that critically and significantly influence the continuity of broiler farming among youth producers. The study was conducted in the Thulamela municipality of the Vhembe district, Limpopo province. Data was collected from a sample size of 118 youth broiler producers, selected using the simple random sampling technique. Structured questionnaires were administered during in-person interviews with the study participants. The findings revealed that most participants had been in broiler production for between one and five years, most owning their ventures under sole proprietorship. The findings further revealed that institutional support systems relating to awareness and compliance with the governing legislation harmed the continuity of broiler production. Meanwhile, institutional

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support systems such as networking forums, weather forecasting services, and feed provision availability positively contributed to the sustainability of broiler production. The study recommends promoting legislation that governs livestock farming, including broilers, to young farmers, particularly emerging ones, for enhanced compliance with the said legislation.

Keywords: Youth Producers; Broiler Farming; Business Continuity; Institutional Support; Contribution

1. Introduction

The poultry industry remains fundamental to animal production, as it is committed to supplying nations with a relatively affordable source of good quality nutritious animal protein in terms of meat and eggs^[1]. Amenableness with procedures certifies that poultry processes encounter health and safety standards, which are crucial for product quality and immovability^[2]. Broiler production remains one of the most consumed products within the South African landscape. It has been noted that broiler meat further constitutes a significant portion of South Africa's meat consumption, highlighting its importance in domestic and regional markets^[3]. Broiler production has become progressively attractive for young people due to its productivity and prospective development within the poultry sector^[2]. The sector's relatively short production cycle, typically around six to seven weeks, enables quick returns on investment compared to other forms of livestock farming^[4]. The broiler farming landscape is concerned about its sustainability, animal welfare, and achieving healthy approved consumption standards due to the consumers' increase in organic and conventional poultry production over the last decade^[5]. In the current study, sustainability is associated with the undisrupted continuity of business operations emanating from the economic viability of the business. Sustainability in agribusiness encompasses growth, continuity, and strategies to safeguard business expansion and continuity^[6]. Furthermore, consumers are attracted to poultry products due to lower prices, product consistency and adaptability, higher protein, and lower fat content, and the lack of religious issues, propelling an increase in the need for an institutional support system to support such production^[7]. This rapid turnover is particularly advantageous for young entrepreneurs with limited capital seeking

faster financial outcomes. Moreover, broiler farming can be scaled up or down to suit various levels of investment, making it accessible to a wide range of new entrants in the agricultural sector^[8]. Furthermore, the broiler sector supports job creation in rural areas, contributing to local economic development and reducing the need for migration to urban centers^[3]. The broiler subsector requires a diverse skill set, including technical management, biosecurity measures, and marketing strategies, providing young farmers with valuable experience transferable to other agricultural ventures or business opportunities^[9]. Farm entrepreneurship is ideal for achieving societal objectives relating to economic development through food security and rural poverty alleviation^[10]. Within the current study context, institutional support is the support farmers receive from various entities, either freely or economically attached, that ensures business operations. In comparison, an institutional support system refers to a system that supports farmers to enable them to perform their farming activities.

A study on broiler production highlighted the importance of institutional support through personalized advisory services as it significantly enhances production efficiency and reduces the risk of failure within the agricultural landscape^[11]. This was supplemented by the study that noted that the comprehensive training programs cover various aspects of poultry management, including nutrition, disease control, and financial management, subsequently improving agricultural enterprises' well-being^[12]. Institutional support plays a crucial role in facilitating the success of young farmers in the broiler industry through various interventions that are essential to provide access to resources, training, and financial assistance, helping young farmers overcome barriers such as limited capital and technical knowledge^[13]. A similar study also supported the importance of the availability of insurance and access to training resources

as they significantly impact the resilience and sustainability of broiler production among young farmers^[14]. Broiler farmers with access to institutional support and systems such as advisory services, exposure, and interaction with experienced crossbreed animal experts have shown a trend of improving their farming practices and efficiency^[15]. In comparison, institutional support such as subsidizing the cost of feed, provision of vaccines and drugs to prevent and control disease outbreaks, and provision of financial support in the form of credit have been indicated as imperative determinants for broiler production growth, particularly in remote areas^[16]. A similar study on the profitability of poultry production has recommended revitalizing institutional support through government agencies and NGOs to assist poultry farmers by equipping them with knowledge of feed preparation skills to enable them to prepare quality feed for their birds. The study further recommended the provision of subsidies on feed preparation tools and equipment by these stakeholders^[17]. The importance of institutional support and systems was also emphasized in a study that showcased the need for collaboration and knowledge exchange among stakeholders and the crucial role of researchers, policymakers, and industry professionals in shaping a future where sustainable poultry practices lead the industry, committed to ethical and resilient poultry production^[18]. Furthermore, the coordination between supply chain players has shown great potential to streamline production and increase competitiveness in the market within the poultry sector^[19]. This was also supplemented by findings that show that farm entrepreneurship can be improved by strengthening regulatory, normative, and cognitive institutions to offer conducive support for farm businesses in developing countries^[10]. A related study on institutional systems concluded that building the adaptive capacity of officers and farmers by fostering systems thinking to enable smallholder farmers to tackle farming complexity in a changing world is essential for farming sustainability^[20]. Similar views were observed in a study that noted that developing networks among the different stakeholders, particularly between formal and informal extensions such as NGOs, farmer groups, and private players for the holistic extension systems and effective delivery to the farm-

ers has the potential to enhance the adoption of various sustained farming practices such as climate-smartagriculture^[21].

Despite these efforts, challenges remain, including fluctuating feed costs and market volatility, which necessitate ongoing support and strategic risk management^[9]. However, in contrast, several farm entrepreneurs often fail due to challenges relating to institutional systems, particularly in developing countries^[10]. A similar study has shown farmers suffering from institutional and structural impediments that subsequently affect their performance^[22]. Moreover, the essence of institutional systems and support must be addressed. with a study revealing the importance of farming institutional support as relevant to facilitating farm sustainability^[23]. Understanding how institutional systems contribute to the continuity of broiler production is vital for developing effective strategies to support young farmers and enhance the overall productivity of the sector^[24, 25]. Within the agricultural landscape, studies on institutional support primarily focus on their influence on enhancing the production and productivity of farmers on various commodities; however, the current study solely focused on institutional support systems associated with the operation segment of broiler farming businesses, with interests to pinpoint institutional support systems that contribute to the broiler farming continuity. This background propelled the current study to investigate the institutional support systems significantly influencing the broiler production continuity among youth producers.

2. Materials and Methods

This section discusses the study methodology, from the study area, population, and sampling technique. It further explains the data collection tool used in the study and the data analysis method used to come up with the results and discussions. The study was conducted in the Thulamela municipality of the Vhembe district, Limpopo province of South Africa. Thulamela Municipality has been notable for its agricultural activities and diverse rural communities^[26]. Thulamela is one of the four local municipalities in the Vhembe District, alongside Collins Chabane, Makhado, and Musina. It covers an area of approximately 3,595 square kilometers (km²), with approximate central coordinates being –22.3887° S latitude and 30.1801° E longitude^[27]. As of 2021, the estimated population was around 493,000^[28]. The municipality is integral to Limpopo's agricultural sector, contributing to crops and livestock production, including broilers^[29]. The combination of smallholder and commercial farms creates a dynamic environment where institutional support is crucial for enhancing agricultural productivity. With a predominantly rural population, Thulamela's economy heavily relies on agriculture, and youth involvement in broiler production is increasingly recognized as essential for regional development and food security^[28].

The population of the study was youth broiler producers. A simple random sampling technique was used to select 118 youth broiler producers from the 167 registered entities with the local authorities. The simple random sampling technique was preferred for its strength of giving all the units within the population an equal chance of being selected and providing the sample's representativeness^[30]. The study used the Raosoft sample size calculator to determine the recommended sample size. A sample size of 117 was recommended at a 95% confidence level and a 5% margin of error. The in-person interviews were preferred for data collection,

supplemented by the administration of the structured questionnaires. The in-person interviews were preferred for their unfathomable appointment and interpretation, providing better, more nuanced data ^[31]. Data collection was carried out using structured questionnaires. During the interviews, the study participants were given the questionnaires to complete, after which, the data was consolidated on the Statistical Package of Social Sciences (SPSS).

The binary logistic regression model determined the institutional support systems that enhance sustainable broiler production among youth producers. The binary logistic regression model was deemed appropriate due to its ability to simultaneously assess the association of a dichotomous dependent variable and various independent variables^[32]. The dependent variable of the current study was measured using sustainable broiler production, whereby a viable broiler venture was denoted by 0, and a nonviable broiler venture was denoted by 1. The mathematical expression of the model is as follows:

$$Y = f(X_1, X_2, X_3, ..., X_n)$$
(1)

In the given scenario, the viable broiler venture was able to sustain its operations after honoring its liabilities at that given point. The explanatory variables are denoted by X_s , as listed in the description of variables in **Table 1** below.

Variable	Type of Measurement	Expected Sign
Advisory services	none = 0, production = 1, marketing = 2	+
Networking forums	participate = 0, do not participate = 1	+
Information centres	available = 0, not available = 1	+
Feeds provision availability	available = 0, not available = 1	+
Vaccines suppliers	limited = 0, adequate = 1, varieties = 2	+/-
Market agents	yes = 0, no = 1	+/-
Feed producers	available = 0, not available = 1	+
Financial institutional services	limited = 0, adequately accessible = 1, user friendly = 2, complicated = 3	+/-
Equipment suppliers	limited = 0, adequate = 1, varieties = 2	+/-
Types of subsidies	inputs = 0, monetary = 1, land = 2	+
Market information	not available = 0, readily available = 1 limited = 2, comprehensive = 3	+/-
Security services	yes = 0, no = 1	+/-
Awareness of regulations	limited awareness = 0, not aware = 1 comprehensive awareness = 2	+

Table 1. Description of independent variables used in the analysis.

Table 1. Cont.					
Variable Type of Measurement		Expected Sign			
Regulations compliance	noncompliant = 0, partially = 1, compliant = 2	+			
Training offerings	not available = 0, readily available = 1	+/-			
Weather forecast services	none = 0, daily = 1, weekly = 2, monthly = 3	+			
Infrastructure services	rare = 0, frequent = 1	+			
Courses Author's computation (2024)					

Source: Author's computation (2024).

3. Results and Discussions

This section discusses the study findings based on the distribution of the selected socioeconomic characteristics among the participants. Furthermore, the section also discusses the institutional support systems that significantly contribute towards sustainable broiler production among the youth broiler producers.

3.1. Discussion on the Socio-Economic Status of the Study Participants

The study used descriptive statistics to draw an insight into the socio-economic status of the study participants. The findings in Table 2 noted that the study sample was dominated by female youth producers, accounting for 61.9%. Regarding the years of broiler farming, it was noted that most study participants had been in broiler farming for a year up to five years. The second leading group was broiler producers, who had been producing for over five years, accounting for 39.5%. The study findings in **Table 2** revealed that most youth broiler producers within the study sample owned their business enterprises under sole proprietorship. The second dominating group was those who owned their business enterprises under partnership.

Furthermore, most study participants had funded their business ventures, 72.7%, followed by those who had funded and secured some form of sponsorship to finance their businesses. These findings highlight the need to improve the funding among youth venturing into broiler production as it is one of the agricultural enterprises that requires low start-up capital. The need for low start-up capital when venturing into broiler production could explain why most study participants manage to fund their business ventures. Regarding the number of birds young producers within the sample would keep, the findings revealed that most producers kept between one thousand and one and two thousand birds per batch. Furthermore, the second dominant group kept between one and one-thousand birds per batch. Meanwhile, the smallest group kept between three thousand and one and four thousand birds. The distribution of the number of birds kept by youth producers also signifies the potential for growth for broiler farming within the study area.

Table 2. Distribution of socioeconomic characteristics among narticinante

Variable	Percentage (%)
Gender of respondent	
Female	61.9
Male	38.1
Years in broiler farming	
Less than a year	5.1
Between 1–5 years	55.4
More than 5 years	39.5
Form of business ownership	
Sole-proprietorship	52.7
Partnership	32.7
Agricultural Cooperative	14.6
Source of funding	
Self-funding	72.7
Sponsored	11.4
Combination of both	15.9
Number of birds kept per batch	
Between 1 and 1,000	27.4
Between 1,001 and 2,000	35.4
Between 2,001 and 3,000	18.7
Between 3,001 and 4,000	8.4
More than 4,000	10.1
Total	100

Source: Author's computation (2024).

3.2. Discussion on the Institutional Support Systems Contributing to the Continuity of Broiler Production

3.2.1. Networking Forums

The study findings in Table 3 revealed that networking forums had a positive and significant relationship with business continuity among broiler producers. The networking forums were statistically significant at a 5% significance level. The findings imply that networking forums improve business continuity among broiler producers through information sharing. The coefficient value of 0.439 indicates that broiler producers' participation in the networking forums improves their business continuity by 0.439 units. Furthermore, the study findings indicate the importance of information sharing and various platforms that enhance information sharing. The findings could further suggest that broiler producers who share information and knowledge are better positioned to implement various practices that could enhance their business survival and sustainability. The current findings are backed by a similar study that emphasized the importance of networking forums in shaping young farmers through connecting with experienced producers and industry experts and subsequently facilitating the sharing of best practices and innovative techniques^[33]. A similar study has highlighted that participation in networking initiatives among farmers leads to improved operational efficiencies and innovative farming practices^[34]. Results from a similar study have indicated that participants who had the opportunity to network with fellow farmers have reported significant improvements in their production efficiency, with many adopting sustainable practices learned through peer exchanges and mentorship^[35]. These findings reveal the importance of networking with farmers to share their successive practices under various circumstances. A study on the nutrition of poultry production highlighted the importance of education on effective and costfriendly feed formulation that results in better growth rates, including balancing protein, energy, vitamins, and minerals in their feed mixes^[36]. These findings elucidate the purports of networking forums as they positively enhance business continuity through sharing experiences and knowledge that could shape the future and improve broiler farming practices.

3.2.2. Feeds Provision Availability

The findings have highlighted feed provision availability as significant for the business continuity of broiler production. The feed availability statistically influenced business continuity at a 10% significance level. The same observations were made in networking forum partity at a 10% significance level. The same observations were made in networking forum par-

ticipation, wherein the results indicated that whenever broiler producers do not struggle to find feeds for their chickens, the continuity of their business is enhanced, as denoted by the positive coefficient value of 0.687. Furthermore, the study findings imply that the availability of feeds plays a vital role in the continued broiler production. The study findings are substantiated by the importance of feeds in the value chain of broiler production, as they significantly influence the well-being and quality of the broilers. The current study's findings bear the same observation as those of Kim and Nguyen^[37], who echoed the importance of securing highgrade feed as it is crucial for sustaining optimum growing proportions and health in broiler production. Furthermore, it was also noted that securing feed companies utilizing bulk procuring arrangements is considered ideal for enriching feed accessibility for minor producers, and such methods not only diminish costs but similarly certify a firm supply of essential nutrients^[38]. It was concluded that institutional support that includes affordable feed options is crucial for the sustainability of youth broiler producers^[39]. Furthermore, partnerships between farmers and local feed manufacturers or cooperatives can effectively reduce costs through bulk purchasing and enhance broiler production. Effective feed management practices shared through networking platforms among farmers can substantially improve feed conversion ratios, thereby enhancing overall production efficiency^[40]. A similar study emphasizes the importance of integrating sustainable practices in feed production, such as using locally sourced ingredients and incorporating alternative protein sources like insects or plantbased proteins^[41].

3.2.3. Awareness of Legislation

The study findings uncovered that awareness of the governing legislation among the study participants significantly and negatively influenced the business continuity within broiler farming. Awareness of the governing legislation statistically influenced business continuity at a 10% significance level. The findings revealed that the lack of legislation awareness among the broiler producers regresses the continuity of their business by 2.113 chances. The study findings imply that producers unaware of legislation tend to have their entities' business continuity impaired. Furthermore, the study results indicate that the higher the level of unawareness of business legislation among the study participants, the more negatively impacted their business continuity. The findings could be influenced by the fact that most study participants showed a low awareness of the governing legislation. Moreover, the study results could also be influenced by broiler producers being largely aware of the business registering authorities without explicit knowledge of the entities they must contact to ensure compliance with the legislation. Furthermore, the study results signify the importance of promoting awareness of the governing legislation among business owners, as it enhances business continuity. The current study's findings align with those of Johnson^[24], who underline the prominence of informative programs and conducting workshops that emphasize lawful features of poultry production. Awareness of rights and regulations among agricultural producers, including fair treatment, access to markets, and the right to voice concerns, significantly impacts a young farmer's ability to operate effectively^[41]. Conversely, the programs are deemed essential as they provide young producers with information regarding animal wealth regulations, conservational regulations, and foodstuff security principles, which could reduce the danger of legal concerns and nurture long-standing production accomplishments^[42].

3.2.4. Weather Forecast Services

The results in Table 3 indicate that the weather forecast service significantly and positively contributes to business continuity. Weather forecast services statistically influence business continuity at a 1% significance level. Meanwhile, the positive coefficient value of 0.22 shows that the availability and accessibility of weather forecasting information contribute to enhancing business continuity. The study findings imply that accessing the weather forecasts significantly contributed to the sustainability of broiler farming within the study area. With broiler production being one of the most climate-sensitive livestock ventures, providing weather forecasting services would be ideal for developing and implementing mitigating practices. The climate variabilities within the study area could significantly influence the study findings. The current findings also suggest the

importance of securing weather-related information to align the broiler production with the weather patterns. as it minimizes the mortality rate of the broiler chickens. Furthermore, the findings of the study about the weather forecasting services being essential and influential on the production continuity of broiler production could be primarily influenced by the impact of weather on broiler production. These observations align with the study of Kpomasse et al.^[43], which alluded that the harsh environmental conditions concerning thermal stress are some of the challenges that hinder optimal growth of the birds. Furthermore, the study showed that fluctuations in temperature have been found to significantly influence feed intake, water consumption, and susceptibility to diseases in broiler chickens^[36]. Brown and [ohnson^[44] emphasize that integrating weather data into daily operations can help farmers optimize feeding schedules and improve animal welfare.

3.2.5. Legislation Compliance

The study findings noted that compliance of youth broiler producers had a significant but negative relationship with their business continuity. The study results indicate legislation compliance being significant at a 1% significance level, implying its sturdy importance on business continuity. The study findings imply that the more broiler producers are noncompliant with the local legislation, the probability of 1.229 chances impairing their business continuity arises. The current study findings signify that business owners' noncompliance with legislation significantly and negatively tempers with their business continuity, particularly in the long run. The study findings could be influenced mainly by most participants, indicating they must become more familiar with the governing legislation, particularly concerning poultry and broiler production governance. The study findings are supported by a related study that denoted that compliance with agricultural regulations remains vital for the maintainable administration of broiler production as it affords vibrant strategies and sustenance contrivances for young producers that enrich amenability amounts and, subsequently, production steadiness^[45]. A study on business compliance with legislation underscores that non-compliance has often led to severe penalties, including fines, loss of market

access, and damage to reputation, which ultimately contributed to the non-sustainability of agricultural enterprises. Furthermore, the study revealed that such repercussions can devastate young farmers facing financial constraints and market entry challenges^[46]. A related study emphasized that structured training programs can significantly enhance understanding of critical regulations, such as those governing the use of antibiotics, animal welfare standards, and biosecurity measures^[47]. At the same time, organizations such as agricultural cooperatives and government agencies offer valuable resources, training sessions, and workshops that break down legislative requirements into manageable components^[41]. These findings suggest that compliance with legislation safeguards the lifespan of broiler farming.

3.2.6. Market Information

Regarding the market information, the findings in **Table 3** revealed that its access has a significant positive relationship with business continuity. Market information was found to significantly influence the business

continuity among broiler producers at a 5% significance level. Market information improves business continuity through informed decision-making among broiler producers, including ensuring inputs and supplying their broilers to the market. From the findings, it is evident that market information plays a significant role in the continuity of broiler farming in that it keeps the producers abreast of the market forces and ultimately enhances their projections, which substantially impacts the future of the business. Furthermore, the findings suggest that the provision or availability of market information enhances business continuity among broiler producers by 4.231 chances. The study findings are supplemented by the findings of Martin and Thompson^[48], who revealed the importance of market information within the poultry sector, and it enhances producers' market leanings and pricing practices, as it subsequently inflates the production approaches of youth producers. Lastly, the findings resonate with the typical economic trends of marketing information, channeling producers to make informed decisions about their productions and marketing participation for optimal profit margins.

Variable	В	S. E	Sig.	
Advisory services	-0.037	0.025	0.223	
Networking forums	0.439	0.620	0.021**	
Information centres	-1.252	0.406	0.317	
Feeds provision availability	0.687	0.100	0.064*	
Vaccines suppliers	0.017	0.027	0.328	
Market agents	-1.914	2.071	0.610	
Feed producers	-0.493	0.522	0.274	
Financial institutional services	-0.180	0.121	0.377	
Equipment suppliers	4.374	1.140	0.142	
Types of subsidies	0.738	0.637	0.157	
Market information	4.231	0.727	0.032**	
Security services	0.176	1.175	0.661	
Awareness of regulations	-2.113	1.021	0.072*	
Regulations compliance	-1.229	0.626	0.003***	
Training offerings	0.132	0.133	222	
Weather forecast services	0.022	0.435	000***	
Infrastructure services	-0.717	0.220	0.435	
Constant	1.001	1.105	0.606	
Diagnostics	Classification:	Goodness of Fit:		
–2 Log likelihood = 58.176	Viable = 76.3%	χ2 = 2.133		
Cox & Snell = 0.617	Nonviable = 72.1%	df = 1		
Nagelkerke = 0.811	Overall = 79.3%	Sig. =	= 0.721	

Table 3. Results on institutional support systems sustaining broiler production.

Source: Field survey (2024).

Note: Significant levels: *** (1%), **(5%) and * (10%).

Results in **Table 3** above present the outcomes of the estimated model. The model classified rates of 76.3% for broiler ventures deemed viable during the data collection period, 72.1% for broiler ventures found to be nonviable, and an overall classification rate of 79.3%. These estimations indicate the degree of accuracy of the model and, therefore, the reliability of the resulting estimated coefficients with their accompanying statistics. From the data, the dependent variable would explain 61.7% and 81.1% of the variation in results, as indicated by the diagnostics. The non-significance of the goodness of fit indicates that the model fits the data well^[49].

4. Conclusions

The study findings revealed that most participants within the sample were female, while most broiler producers were in farming, ranging from one year to five years. Most participants owned their business ventures under sole proprietorship. The study investigated the operational institutional support systems that significantly contributed to sustaining broiler farming and enhancing business continuity. The study noted that institutional support systems, such as feed availability and information services, were essential in promoting broiler business continuity. Furthermore, institutional support such as networking forums and weather-related information significantly influenced broiler business continuity, mainly through developing and implementing improved practices informed by information sharing and early warnings from weather forecasts. Meanwhile, low awareness of related legislation and noncompliance with such legislation had a regressive relationship with the broiler business continuity.

5. Implications of the Study Findings and Recommendations

The study findings imply that emerging youth broiler farmers should be informed of the importance of institutional support systems, as they contribute to sustainable broiler production. At a policy level, the study's implication includes streamlining the institutional system within the agricultural landscape to foster accessible and regulated institutional support that aligns with the needs of broiler producers. Lastly, the study findings imply that future research should also move towards a tailored assessment of broiler production to identify areas of improvement within the broiler production chain. The findings suggest that institutional support systems that provide producers with inputs should be readily available, as they improve broiler production continuity. The study recommends promoting legislation that governs livestock farming, including broilers, for enhanced compliance with the said legislation. Moreover, the study recommends promoting information sharing between experienced and young broiler producers to enhance the implementation of best practices, resulting in continuous interactions among broiler producers. Lastly, the study recommends setting up sustainable institutional support systems as their absence substantially impairs broiler production continuity.

Author Contributions

M.T. (Mashudu Tshikororo): Conceptualization, data collection, data analysis, manuscript writing and editing; M.T. (Mpho Tshikororo): Conceptualization, manuscript writing, supervision, data analysis and editing.

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Institutional Review Board Statement

The study was conducted in accordance with the Declaration of Helsinki, and approved by the Ethics Committee of University of Venda (protocol code: FSEA/23/AECA/05, 30 October 2023.

Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

Data Availability Statement

Data is available on request, subject to adherence to the POPI Act 2013 of the Republic of South Africa.

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Conflicts of Interest

All authors declare no conflict of interest.

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