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# Influencers of leadership styles used by farmer organisations in Uganda

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## ABSTRACT

Although leadership determines the performance of farmer organizations, the leadership styles used by farmer organizations in Uganda and factors influencing such styles have received limited attention in empirical studies. The available studies have focused mainly on the influence of leadership on performance, effectiveness, accountability, and transparency. This study determined: (1) leadership styles used by farmer organizations in Uganda; (2) differences in farmer organizational characteristics across the styles; and (3) factors that influence such styles. This study contributes to the understanding of leadership styles used by farmer organizations in Uganda and the factors that influence the choice of such styles. In order to collect quantitative data, a cross-sectional survey of 272 systematically selected farmer organizations was conducted in 12 districts of central and northern Uganda. 59.56% of farmer organizations used both democratic and autocratic leadership styles, according to the findings. Furthermore, savings and loan scheme, leadership passion, farm management training, leadership and management training, leaders' expertise, and leadership committee numbers varied across leadership styles. The logit results showed that the savings scheme, number of organizational departments, leadership passion, usage of market outlets, total costs, and leadership and management training influenced the use of both democratic and autocratic leadership styles. However, the use of solely the democratic leadership style was influenced by committee size, total income, and value-added training. Farmer organizations should continue to use both democratic and autocratic leadership styles for efficiency and effectiveness. Governments and other development partners should strengthen leadership and management training for farmer organizational leaders.

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## 1. Introduction

Over one-third of the world's population relies on agriculture for a living (Alston & Pardey, 2014; FAOSTAT, 2013). The majority of them are smallholders who face a variety of challenges that prevent them from experiencing consistent agricultural growth (Abraham & Pingali, 2020; Woodhill et al., 2020). They continue to live in substandard conditions, which ultimately lowers their earnings potential (Abraham & Pingali, 2020; Fan & Rue, 2020). To overcome these obstacles, smallholder farmers have been urged to create farmer organizations over the years to successfully and efficiently transition from subsistence to commercially focused farming (Frank & Penrose Buckley, 2012; Bizikova et al., 2020).

Worldwide, farmer organizations are renowned for assisting smallholder farmers in transitioning from subsistence to commercial production (Adong et al., 2013; Ampaire et al., 2013; Latynskiy & Berger, 2016; Owusu et al., 2013). They are significant ways to unite farmers behind a shared goal and are viewed as ways to implement policies and deliver services effectively (Frank & Penrose Buckley, 2012; Lin et al., 2021). Additionally, they help smallholder farmers overcome past obstacles that prevent them from maintaining agricultural growth. Farmer organizations minimize transaction costs, facilitate the adoption of

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new technologies, increase access to markets for inputs and outputs, and strengthen the bargaining position of smallholder farmers (Sinyolo & Mudhara, 2018). Furthermore, farmer organizations help mobilize and distribute financial capital, create solidarity schemes, and generate employment and income opportunities.

With the emphasis on the group approach to agricultural extension services provision in most of Sub-Saharan Africa (SSA), numerous farmer organizations have sprouted up in response to the appeal, with Uganda being no exception. In the past, farmer organizations in Uganda belonged to the state and were managed by village chiefs (Barungi et al., 2015). The chiefs took advantage of their power to compel farmers to adopt new technologies and boost their agricultural productivity. Historically, progressive farmers have offered technical assistance, input, and financing to other farmers. The method and similar methods became unsuccessful and unsustainable because of conflicts among farmers (Barungi et al., 2015). Member-owned farmer organizations arose as a result of this.

Currently, farmer organizations in Uganda are self-governing and member-owned. In addition, they operate as profitable and self-sufficient businesses (Latynskiy & Berger, 2016). The establishment of farmer organizations in Uganda is based on the common interests of farmers. Members pay a subscription fee to join the organization, and membership is voluntary and available to everyone (Latynskiy & Berger, 2016). Leadership normally comprises a chairman, vice-chairperson, secretary, and treasurer, all of whom are democratically elected by farmers. However, there are significant obstacles that farmer organizations must overcome to succeed (Adong et al., 2013; Latynskiy & Berger, 2016; Mwaura, 2014). These limitations include: lack of member commitment, inadequate organizational structures, lack of coordination among farmer organizations, poor mobilization, inadequate information and training, and insufficient leadership assistance (Ampaire et al., 2013; Wouterse & Francesconi, 2016). If farmer organizations adopt effective leadership philosophies, the aforementioned challenges could be successfully managed.

### **1.1. Literature review**

Leadership is a process in which one person guides, coordinates, and supervises others as they perform a common task (Khan et al., 2015). Effective leadership involves directing individuals towards shared objectives and giving them the freedom to take the necessary steps. It involves the capacity to persuade someone or a group to work towards a common objective (Khan et al., 2015). Leadership plays an important role in determining the performance of farmer organizations (Latynskiy & Berger, 2016). According to Lin et al. (2021), the leadership of an organization determines its transparency and effectiveness. The flow of resources, adoption of new technologies, sanctioning of behavior, upholding of the group's mission, and handling of internal conflicts depend heavily on leaders (Decuyper & Schaufeli, 2020; Lin et al., 2021). Leaders also connect their members to high-value marketplaces to increase the margins of their produce, advocating for institutional services such as marketing, extension services, and credit services. Leaders have a significant impact on members' willingness to selflessly contribute to achieving desired results (Decuyper & Schaufeli, 2020). Consequently, performance and organizational goals can be achieved more easily.

Different types of leadership can be used. A leader may practice any style of leadership, including democratic, autocratic, and laissez-faire, as may be deemed necessary (Crosby, 2021; Martin, 2015). In a democratic leadership style, the leader of an organization allows members of the organization to participate in decision-making (Crosby, 2021). This style fosters power-sharing, understanding, holistic learning, and a sense of agency, and addresses power imbalances. This consequently promotes the innovation and performance of the organization. However, this style is time-consuming (Khan et al., 2015).

In the autocratic leadership style, the leader has the most control and decision-making authority (Goleman, 2017; Khan et al., 2015). Employees are not allowed to offer any input or consult with the leader. Employees are expected to follow instructions without any explanation. This style uses rewards and penalties to motivate organizational members. However, compared to other organizations, those with authoritarian leaders typically have greater absenteeism and turnover rates.

In the laissez-faire style, the leader does not actively participate in decision making (Goleman, 2017; Khan et al., 2015). The leader entirely allows workers as much latitude as possible while offering limited and/or no direction to the employees. Employees are given complete control, and they are required to

set their own objectives, make decisions, and deal with issues. However, the *laissez-faire* style of leadership can easily cause misunderstandings and fights within an organization (Crosby, 2021). In addition, it may lead to suboptimal results or a lack of harmony in the organization.

Literature is replete with the factors that influence leadership styles that an organization chooses. The region of operation, organizational age, original purpose, type of business conducted, amount of value added by a farmer's organization, savings, and committee size are a few of these factors that may be taken into consideration (Crosby, 2021; Goleman, 2017; Khan et al., 2015; Martin, 2015). Additional factors that may affect the leadership style used in an organization include the number of departments within it, the age of its members, the leader's other sources of income, the channels through which it is distributed, the costs involved, the worth of its physical assets, the amount of money it brings in, and its financial dependence (Martin, 2015; Stempel et al., 2015). Doraiswamy (2012), Smith (2015), and Srivastava (2016) contend that the behavioral traits of individual leaders, such as propensity to mentor, train, or develop team members, propensity to delegate, and enthusiasm for leadership, can have an impact on the types of leadership practices utilized in an organization.

According to Crosby (2021), leaders can combine these styles. As organizational members gain more experience, leaders must gradually revert to a democratic leadership style after adopting an autocratic style. Using a *laissez-faire* approach with highly skilled employees may be necessary, but leaders must be careful not to go overboard. However, there is scarcity of literature about the influence of such factors on leadership styles used. Leadership-related concerns continue to affect sustainability of farmer organizations in Uganda (Barungi et al., 2015; Wouterse & Francesconi, 2016). While the principles of leadership and leadership styles have been extensively examined worldwide, there has been little research on the leadership styles used by farmer organizations in Uganda. Furthermore, the factors that influence the styles used by farmer organizations, as well as the extent of their influence, have scarcely been researched. Miriti (2012) and Mutmainah (2014) investigated the impact of leadership style on the effectiveness of farmer organizations. Lin et al. (2021) investigated the impact of leadership on technology adoption, while, Omotesho et al. (2019) investigated the impact of member characteristics on leadership effectiveness. Peterson et al. (2012) researched the influence of a leader's characteristics and behaviors on the performance of an organization. On the other hand, Ampaire et al. (2013), researched the influence of a leader's dedication, respect and commitment on effectiveness of a farmer organization. In their study, Ampaire et al. (2013), measured effectiveness of a farmer organization by the number of farmers who sell their output through the organization, and not by leadership styles used by the organization. In addition, their paper does not show how a leader's dedication, respect and commitment influence effectiveness of a farmer organization. Achdiyat (2018) also assessed the influence of leaders' behaviors and characteristics, on effectiveness of farmer organizations. However, Achdiyat (2018) measured effectiveness of a farmer organization in terms of organizational productivity, moral and member satisfaction. In addition, his study used Spearman's rank correlation for analysis. Omotesho et al. (2019) researched and found out that limited knowledge of roles and poor cooperation from members hindered leadership effectiveness. However, Omotesho et al. (2019) did not highlight how the factors influence the leadership style used. Lin et al. (2021) researched the influence of leadership on accountability and transparency in organizations. However, in their study, Lin et al. (2021) also did not look at the determinants of leadership styles used. Ellitan (2022), also, only looked at the importance of organizational governance and leadership structures in farmer organizations.

This study, therefore, aimed to determine: (1) leadership styles used by farmer organizations in Uganda; (2) differences in farmer organizational characteristics across the styles; and (3) factors that influence the styles used. Specifically, this study addressed the following research questions: (1) What leadership styles are used by farmer organizations in Uganda? (2) What are the differences in farmer organizational characteristics across leadership styles used? and (3) What factors influence the choice of leadership styles by farmer organizations in Uganda? In this study, a farmer organization is a group of farmers who work together in any agricultural activity. This study contributes to the understanding of the styles of leadership used by farmer organizations in Uganda and the factors that influence the choice of the styles used. Such information supports the leadership of farmer organizations in selecting appropriate leadership styles that effectively facilitate efficient operations and competitiveness. In addition, this information can

guide policymakers in developing appropriate management and leadership interventions to support the performance of farmer organizations.

## 1.2. Theoretical framework

This study is premised on the Vroom-Yetton-Jago model, which emphasizes that no single decision-making procedure fits every situation (Vignesh, 2020). Several theories exist to explain the different leadership styles (Situational Leadership Theory, the Path-Goal Theory, the Vroom-Yetton-Jago model). The Situational Leadership Theory was developed by Hersey and Blanchard (1969). The theory proposes that effective leaders adapt their leadership styles based on the maturity level of their followers and the task (Thompson & Glasø, 2015). With subordinate maturity, the theory refers to work maturity (education and experience) and psychological maturity (self-esteem and confidence). However, this theory concentrates only on the demands of the task and maturity of subordinates and pays little attention to many other factors that can influence choice leadership styles.

The Path-Goal theory was invented by Robert House in 1971 (Bans-Akutey, 2021). This theory is primarily concerned with how the leader influences the perceptions of subordinates' job goals, personal goals, and approaches to goal attainment. According to this theory, a leader employs a leadership style that supports followers in accomplishing their goals by providing proper direction, support, and incentives (Bans-Akutey, 2021). The theory suggests that the type of leadership chosen is determined by the characteristics of the followers and nature of the work. However, this theory focuses on the characteristics of followers and the environment. Little consideration has been given to the relevance of the decision or characteristics of the leader.

On the other hand, the Vroom-Yetton-Jagon model suggests that the best method to make a decision is to base it on the current scenario or problem rather than on the decision maker's particular attributes or style (Vignesh, 2020). To establish the right level of follower involvement in decision making, the Vroom-Yetton-Jagon model suggests that a leader must examine numerous situational elements, such as the relevance of the decision, the leader's expertise, and the followers' capabilities and commitment (Vignesh, 2020). Consequently, a leader may adopt an autocratic or democratic leadership style. For example, if haste and divisiveness are desired, it points to an authoritarian procedure. If collaboration is required, this will lead to a more democratic approach. The Vroom-Yetton-Jagon model considers various aspects of the situation, that is, the nature of the decision to be made, the leader and followers. This study was therefore premised on this theory because it considers the leader, followers, task/relevance of the decision, and environment. The theory informed the model specification and guided the development of data collection tools for situational factors. The remainder of this paper is organized as follows. Section 2 presents the methodology, Section 3 presents the results and discussion and Section 4 presents the conclusions and recommendations.

## 2. Materials and methods

A multi-stage sampling procedure was used to conduct a cross-sectional survey in two contrasting regions of Uganda, that is; northern and central. In the first stage, the two regions were purposively selected out of five regions. This was because, the northern region has the highest number of farmer organizations, is predominant in the production of annual crops (cereals, legumes, pulses, and oil seed crops), and has a history of political and civil unrest. On the other hand, the central region has fewer farmer organizations (Adong et al., 2013; Mwaura, 2014; Uganda Bureau of Statistics [UBOS], 2010), produces both annual and perennial crops (coffee, vanilla, and cocoa), and has enjoyed relative political stability. In terms of institutional support, the northern region receives relatively more support from both government and non-government organizations, as a way of relieving the region from poverty and food insecurity caused by the political instability (Birner et al., 2011). This enabled the study to obtain comparable findings about the leadership styles of farmer organizations in two diverse geographical regions of Uganda. In the second stage, 12 districts were randomly selected; seven from the northern region and five from the central region. The seven districts included Arua, Koboko, Yumbe,

Gulu, Agago, Apac, and Amolatar, whereas, the five districts included Nakasongola, Mityana, Gomba, Buikwe, and Kayunga. In the third and last stage of sampling, lists of farmer organizations per district were obtained from the District Farmers Associations (DFAs) of the respective districts, and every fifth farmer organization was selected.

For moral justification, the study sought ethical clearance from the Gulu University Research and Ethics Committee (GUREC) (Appendix A). Furthermore, before interviewing farmer organizations, permission was obtained from District Farmers' Associations (DFAs) and community leaders. Informed consent was also obtained from all study participants. A researcher-administered pre-tested questionnaire was used to obtain quantitative primary data for the study from 272 farmer organizations (Fawcett, 2015; Santos et al., 2017). The sample size was determined using Cochran's (1963) formula in Equation 1:

$$n = Z^2 \frac{P(1-P)}{e^2} \quad (1)$$

where  $n$  is the sample size,  $Z^2$  is the abscissa of the normal curve that cuts off an area at the tails,  $e$  is the desired level of precision,  $P$  is the estimated proportion of an attribute present in the population.  $Z$  is 1.96, and  $e^2$  is 0.05. To obtain the sample size for farmer organizations, this study assumed  $P$  to be 0.23, as there are few farmer organizations that have good leadership and are thus able to survive in an ever-changing environment (Barungi et al., 2015; Latynskiy & Berger, 2016; Wedig & Wiegatz, 2018). Substituting 0.23 in the formula generated 272.

The 272 farmer organizations were distributed proportionately between the northern and central regions (Equation 2).

$$n_{gr} = \frac{F_r}{F_R} * N_g \quad (2)$$

$n_{gr}$  represents the number of farmer organizations interviewed per region,  $F_r$  represents the approximate number of farmer organizations per region,  $F_R$  represents the approximate total number of farmer organizations in the two regions, and  $N_g$  represents the total number of farmer organizations interviewed for the whole study (272).

The northern region had approximately 18,644 farmer organizations, while the central region had approximately 7,177 (Table 1; UBOS, 2010). Altogether, there were approximately 25,821 registered farmer organizations across the two regions (Table 1).

However, due to Covid-19 restrictions, only 177 farmer organizations were interviewed in northern Uganda. The discrepancy was, however, compensated for in central Uganda, where, 95 farmer organizations were interviewed, to achieve a target sample size of 272. Trained research assistants administered questionnaires to collect the data.

SPSS 24 was used for data entry and STATA 13 software was used for analysis. The data were examined for multi-collinearity among variables using a correlation matrix (Appendix B). To determine the leadership styles used by farmer organizations and the differences in characteristics of farmer organizations across the styles, descriptive statistics (chi-square and  $t$ -tests) were generated (Waller & Johnson, 2013). Guided by the Leadership Practices Inventory (Kouzes & Posner, 2003), three statements were utilized to examine the leadership styles used by farmer organizations. To the three statements, the leaders would react with justifications. The statements included: (1) 'I discuss with my followers what to do, how to and when to do', (2) 'I tell my followers what to do, how to do and when to do', and (3) 'My followers decide on what to do, how to do and when to do'.

**Table 1.** Total number of farmer organizations and those sampled per region.

Region	Approximate number of farmer organizations per region	Farmer organizations interviewed per region
Northern	18,644	196
Central	7,177	76
Total	25,821	272

Source: UBOS (2010).

To determine the factors influencing the choice of leadership style used by farmer organizations, a logit regression was used for analysis. A logit regression was used because, the dependent variable leadership style was binary in nature (0= only democratic style, 1= both democratic and autocratic styles) (Del Hoyo et al., 2011; Minah, 2021). Logit regression is suitable for estimating the probabilistic relationship between one or more explanatory factors and a binary response variable that can, in essence, take values of zero and one (e.g., whether an organization has only a democratic leadership style or both democratic and autocratic leadership styles) (Promme et al., 2017; Suvedi et al., 2017).

The characteristics of a farmer organization and the leader were the independent variables and included: organization age, marketing purpose, savings scheme, organization departments, leadership committee size, organization coverage, leadership passion, leader's other sources of income, use of outlets for distribution, organization costs, organization revenue, receipt of value addition training, receipt of farm management training, receipt of leadership and management training, leaders' expertise, tertiary value addition, and value of physical resources (Table 2). In general, the model was expressed by Equation 3:

$$Y_i = B_0 + B_1X_1 + \dots + B_{19}X_{19} + U_i \dots \dots \dots \quad (3)$$

where  $Y_i$  = Response variable, 'leadership style (0 = only democratic, 1 = both democratic and autocratic)';  $B_0$  = Constant,  $B_1 \dots B_{19}$  = Parameter estimated,  $U_i$  = Stochastic error term; and  $X_1 \dots X_{19}$  = Explanatory variables as named in Table 2.

**Table 2.** Logistic model variables for factors influencing choice of leadership styles.

Dependent variable: Leadership style (0=only democratic, 1=both democratic and autocratic)			
Explanatory variables	Description	Expected sign	Source
Leader's expertise	Number of fields in which the leader is knowledgeable.	±	Smith (2015) and Vignesh (2020)
Organization age	Number of years a farmer organization has been in existence	±	Martin (2015) and Thompson and Glasø (2015)
Marketing purpose	Organization pursues marketing purpose (0=No, 1=yes)	±	Bans-Akutey (2021) Srivastava (2016)
Tertiary value addition	Organization goes beyond processing flour to other products (0=No, 1=Yes)	±	Srivastava (2016)
Savings and loan scheme	Organization has a savings and loan scheme (0=No, 1=Yes)	±	Martin (2015) and Vignesh (2020)
Leadership committee size	Leadership committee members (number)	±	Tallam et al. (2016) Vignesh (2020)
Organization departments	Organization departments (number)	±	Cosh et al. (2012) and Vignesh (2020)
Value addition trainings	Organization receives value addition trainings (yes/ no)	±	Martin (2015)
Organizational coverage	Sub counties of operation of an organization (number)	±	Tallam et al. (2016)
Leadership passion	Leader expressed interest, contested and won elections (0=not passionate, 1=passionate)	±	Stempel et al. (2015)
Leadership passion	Leader contested and won elections (0=not passionate, 1= passionate)	±	Stempel et al. (2015)
Leader's other income sources	Number of leader's other sources of income	±	Srivastava (2016)
Outlets distribution	Organization uses marketing outlets (0=No, 1=Yes)	±	Martin (2015)
Total costs	Total annual costs of an organization (UGX)	±	Doraiswamy (2012)
Farm management trainings	Organization receives farm management trainings (yes/no)	±	Smith (2015)
Physical resources	Value of physical resources owned by an organization (UGX)	±	Stempel et al. (2015)
Total revenue	Total annual revenue of an organization (UGX)	±	Doraiswamy (2012)
Leadership and management trainings	Organization receives leadership and management trainings (yes/no)	±	Martin (2015)

### 3. Results and discussions

#### 3.1. Descriptive statistics

Table 3 shows that the majority of farmers who used both democratic and autocratic leadership styles, had a saving and loan scheme, and were headed by passionate leaders who expressed interest in leadership, and won the election. The majority of farmer organizations interviewed pursued marketing purposes, and received farm management, leadership, and management training. However, many of the farmer organizations did not engage in the tertiary value addition of further processing of flour into other products (Table 3). This means that many organizations either added value to their produce at the primary level of just drying, sorting, and grading or at the secondary level of processing their produce into flour. The majority of the farmer organizations did not use marketing outlets other than the farm gate to sell their produce (Table 3). Lastly, many of the farmer organizations interviewed did not receive value addition training from their partners (Table 3).

From Table 3, the following farmer organizational characteristics were found to have significant relationships with the style of leadership used by a farmer organization: Savings and loan schemes had a significant ( $p \leq 0.05$ ) relationship with leadership styles used by farmer organizations (Table 3). The majority of farmer organizations with savings and loan schemes used both democratic and autocratic leadership styles. This implies that savings and loan schemes need more serious control than the democratic leadership style. This is because savings are always contributed to by members with the purpose of making profits through the interests earned. Thus, serious accountability, caution, and care are required to ensure the safety of members' money (Jain & Chaudhary, 2014).

Leadership passion was significantly ( $p \leq 0.01$ ) related to leadership styles used by farmer organizations (Table 3). Most farmer organizations that were headed by leaders who had passion for leadership used both democratic and autocratic leadership styles. This implies that passion for leadership calls for all the necessary leadership styles for effectiveness. Leaders with passion for leadership are always fully committed and have the courage to pursue the intended purposes of a farmer organization in all ways that the leader may deem necessary (Sirén et al., 2016). This may include full participation in the day-to-day running of the organization and encouraging and supporting members to participate in organizational decision-making. This finding is in agreement with Ho and Astakhova (2020), who found that leaders with love for leadership tend to use several leadership styles that encourage innovation, allowing feedback to acquire social acceptance, and to keep members on track.

Farm management training was significantly ( $p \leq 0.01$ ) related to styles of leadership used by farmer organizations (Table 3). Most farmer organizations that received farm management trainings used both democratic and autocratic leadership styles. This finding implies that farm management training requires an autocratic leadership style, especially during the knowledge transfer process, in which an expert guides farmers on what to do. According to Durmus and Kirca (2020), an autocratic leadership style is effective in guiding inexperienced followers.

**Table 3.** Chi square results for organizational leader's characteristics with leadership styles.

Variable	Category	Only democratic (40.44%)	Both democratic and autocratic (59.56%)	Chi2
Marketing purpose	No	3.64	0.62	3.31*
	Yes	96.36	99.38	
Tertiary value addition	No	95.45	96.30	0.12
	Yes	4.55	3.70	
Savings and loan scheme	No	14.55	6.79	4.41**
	Yes	85.45	93.21	
Leadership passion	Not passionate	56.36	33.33	14.21***
	Passionate	43.64	66.67	
Outlet distribution	No	70.91	60.49	3.11*
	Yes	29.09	39.51	
Farm management trainings	No	22.73	9.88	8.45***
	Yes	77.27	90.12	
Leadership and management trainings	No	29.09	6.17	26.35***
	Yes	70.91	93.83	
Value addition trainings	No	70.91	77.78	1.65
	Yes	29.09	22.22	

Note: \*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% levels, respectively. Source: Authors' survey (2020).

Leadership and management training were significantly ( $P < 0.05$ ) related to leadership styles used by a farmer organization (Table 3). Many farmer organizations that received leadership and management training used both democratic and autocratic leadership styles. This finding implies that leadership and management training widens leadership knowledge. According to Seidman et al. (2020), leadership training improves leaders' knowledge and skills, which helps them use appropriate and practical leadership styles for different situations.

From Table 4, it was revealed that farmer organizations that were interviewed, on average, had been in existence for 7.2 years, had a leadership committee of six members, and had two departments. In addition, the organizations, on average, operated in one sub-county, were headed by leaders who had expertise in two fields and at least, had one other source of income than farming (Table 4). Further, Table 4 reveals that the interviewed farmer organizations, on average, owned physical resources worth UGX4,406,975.00, earned UGX2,511,283.00, and incurred total costs of UGX891,575.40 annually.

From Table 4, the following differences were observed in organizational characteristics across the two categories of leadership used: leadership committee size of farmer organizations was significantly ( $p \leq 0.01$ ) different across the two categories of leadership styles used (Table 4). Farmer organizations with larger committee sizes used only the democratic style of leadership compared to organizations with smaller committee sizes. This implies that a larger committee size effectively supports a democratic style of leadership. This could be because a larger committee size brings together members with different knowledge and skills, which leads to quality decision making (Elmaghrabi, 2021). Golensky and Hager (2020) also supported the idea that a larger committee size improves the capacity to make quality decisions.

Leaders' expertise differed significantly ( $p \leq 0.01$ ) across the two categories of leadership styles used by farmer organizations (Table 4). Organizational leaders with expertise in more fields, such as production, marketing, leadership, and financial management used both democratic and autocratic leadership styles, as compared to those who had expertise in one field. This implies that having expertise in more fields increases leaders' autocracy power. This is because leaders with expertise in more than one field have diverse knowledge and skills, which puts them in better control of organization members (Goleman, 2017). This finding is also supported by Khan et al. (2015), who also suggest that more knowledgeable leaders tend to be autocratic as a way of guiding organizational members on what to do.

### 3.2. Logistic regression results for factors influencing leadership styles used by farmer organizations

From Table 5, passion for leadership, use of market outlets (marketing stores and shops in different trading centers), total costs incurred (transportation, administrative, registration, farm, coordination,

**Table 4.** T-test results comparing means of organizational leader's characteristics and choice of leadership styles.

Variable	Combined	Both democratic and autocratic		Mean diff	T-value
		Only democratic	Mean		
Organization age	7.24 (0.32)	7.43 (0.51)	7.11 (0.42)	0.32 (0.66)	0.48
Leadership committee size	6.11 (0.17)	7.12 (0.35)	5.43 (0.13)	1.68 (0.33)	5.05***
Organization departments	2.39 (0.05)	2.28 (0.08)	2.46 (0.06)	-0.18 (0.10)	-1.89*
Leader's other sources of income	1.22 (0.04)	1.14 (0.07)	1.27 (0.05)	-0.14 (0.09)	-1.58
Leader's expertise	1.94 (0.04)	1.80 (0.06)	2.04 (0.04)	-0.24 (0.07)	-3.30***
Organizational physical resources	4,406,975.00 (803,042.90)	3,906,596.00 (897,952.50)	4,746,739.00 (1,204,197.00)	-840,144.00 (16,638,495.00)	-0.51
Organizational costs	891,575.40 (182,243.70)	478,567.30 (95,050.12)	1,172,013.00 (297,495.50)	-693,446.00 (369,622.00)	-1.88*
Organizational revenue	2,511,283.00 (261,806.70)	2,447,262.00 (345,179.70)	2,554,755.00 (372,707.20)	-107,493.00 (534,399.40)	-0.20
Organizational coverage	1.08 (0.03)	1.03 (0.02)	1.13 (0.04)	-0.10 (0.05)	-1.94*

Note: \*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% levels, respectively; standard errors are in parentheses. Source: Authors' survey (2020).

**Table 5.** Logit results for factors influencing leadership styles used by farmer organizations in Uganda.

Dependent variable: Leadership style (0 = Only democratic, 1 = Both democratic and autocratic)		
Explanatory variables	Coef	Dy/dx
Organization age	-0.06 (0.03)*	-0.01 (0.00)*
Marketing purpose	2.19 (1.39)	0.34 (0.21)
Savings and loan scheme	1.43 (0.54)***	0.22 (0.08)***
Leadership committee size	-0.40 (0.08)***	-0.06 (0.01)***
Organizational departments	0.44 (0.21)**	0.07 (0.03)**
Organizational coverage	1.18 (0.68)*	0.18 (0.11)*
Leadership passion	0.86 (0.35)**	0.13 (0.05)***
Leader's other income sources	0.41 (0.25)*	0.07 (0.04)*
Outlet distribution	0.79 (0.35)**	0.12 (0.05)**
log_ organizational costs	0.29 (0.12)**	0.05 (0.02)**
log_ organizational revenue	-0.39 (0.17)**	-0.06 (0.03)**
Receive value addition trainings	-0.78 (0.37)**	-0.12 (0.06)**
Receive farm management trainings	0.74 (0.48)	0.12 (0.07)
Receive management and leadership trainings	1.12 (0.47)**	0.18 (0.07)**
Leader's expertise	0.03 (0.02)*	0.01 (0.00)*
Tertiary value addition	-0.93 (0.74)	-0.15 (0.12)
log_ value of physical resources	0.05 (0.03)	0.01 (0.00)
_cons	-4.06 (2.52)	
LRchi2(17)	107.16	
Prob > chi2	0.00	
Log likelihood	-129.95	
Pseudo R <sup>2</sup>	0.29	
Number of observations (N)	272.00	
Dependent variable: Leadership Style (0 = Only democratic, 1 = Both democratic and autocratic)		
Explanatory variables	Coef.	Dy/dx
Tests of Goodness-of-Fit		
Number of observations		272.00
Number of covariate patterns		272.00
Pearson chi2(254)		264.74
Prob > chi2		0.31
Classifications		
	----- True -----	
Classified	D	~D
+	139.00	39.00
-	23.00	71.00
Total	162.00	110.00
Classified + if predicted Pr(D) >= .50		
True D defined as Leadership Style != 0.00		
Sensitivity	Pr(+ D)	85.80%
Specificity	Pr(- ~D)	64.55%
Positive predictive value	Pr(D +)	78.09%
Negative predictive value	Pr(~D -)	75.53%
False + rate for true ~D	Pr(+ ~D)	35.45%
False - rate for true D	Pr(- D)	14.20%
False + rate for classified +	Pr(~D +)	21.91%
False - rate for classified -	Pr(D -)	24.47%
Correctly classified		77.21%

Note: \*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10%, levels respectively; dy/dx=marginal effects, and standard errors are in parentheses.

facilitation, and processing, among others), savings and loan schemes, number of organizational departments, and receipt of management and leadership training by a farmer organization positively influenced the leadership styles used by a farmer organization. On the other hand, leadership committee size, total revenue earned (sales, asset rent, earnings from savings, fines, registration, and subscription), and receipt of value addition training had a negative influence on leadership styles used by a farmer organization (Table 5).

Table 5 also presents tests for model fit and confirms that the model fits the data. This is shown by the Prob>chi2 figure, and, further confirmed by the sensitivity, specificity, and overall classification of the model.

The savings and loan scheme had a significant ( $p \leq 0.01$ ) positive influence on the leadership style used by a farmer organization (Table 5). Holding other factors constant, having a savings and loan scheme increases the probability that a farmer organization uses both democratic and autocratic styles of leadership by 22.25%. This implies that savings require tighter control measures to prevent defaulting and ensure the safety of members' money, which cannot be attained by using only a democratic style of leadership. According to Eken et al. (2014), an autocratic leadership style offers more supervision and control to followers, which can help control savings. This idea is also supported by Jain and Chaudhary (2014) and Mohammad et al. (2017), who suggest that an autocratic leadership style can support situations that involve serious safety risks. As the democratic style ensures effectiveness in an organization, the autocratic style can help control money-handling activities and ensure proper accountability, responsibility, and avoid loan defaulting by organization members.

The leadership committee size of a farmer organization had a significant ( $p \leq 0.01$ ) but negative influence on the leadership styles used (Table 5). Other factors held constant: an increase in the leadership committee size of a farmer organization reduces the probability that the organization would use both democratic and autocratic leadership styles by 6.25%. The implication of this is that larger committee sizes reduce the power of a leader as a central decision maker, as it brings together a wide range of skills, knowledge, and expertise, which can effectively support quality decision-making (Golensky & Hager, 2020). This finding is supported by Joubert (2020), who posits that committee diversity improves organizational decision making.

The number of departments in a farmer organization had a significant ( $p \leq 0.05$ ) positive influence on leadership styles used by the organization (Table 5). An increase in the number of departments of a farmer organization by one department, increases the likelihood that the organization uses both democratic and autocratic leadership styles by 6.87%, holding other factors constant. This indicates that, as an increase in organization departments increases specialization and, consequently, quality of work done, the farmer organization leader may still need supervision, guidance, check progress against goals, and keep members on track. This finding is supported by Aldoshan (2016), who also suggests that leaders dealing with many departments must use a combination of styles because different departments pose a diversity of skills, knowledge, and culture that cannot be managed by one leadership style.

Leadership passion significantly ( $p \leq 0.01$ ) and positively influenced the leadership styles used by farmer organizations (Table 5). *Ceteris paribus*, passion for leadership increases the likelihood that a leader of a farmer organization uses both democratic and autocratic leadership styles by 13.46%. The implication of this is that passion for leadership brings about full engagement and commitment in a leader, to achieve his/her goals and help members achieve their goals too. Thus, a leader uses a combination of leadership styles, depending on the situation and task at hand, to ensure that organizational goals are attained (Sirén et al., 2016). According to Sirén et al. (2016), passion for leadership makes a leader clearly communicate the vision of a group, inspire innovative thinking, and seek feedback from group members, thereby using a democratic style. However, in an attempt to keep group members on track, pursue personal agendas, acquire social acceptance, and improve their self-esteem, the leader must use an autocratic style. This finding is in agreement with Ho and Astakhova (2020), who found that leaders who have love for leadership tend to use several leadership styles that encourage innovation, allowing feedback to acquire social acceptance, and to keep members on track.

Market outlets were found to have a significant ( $p \leq 0.05$ ) positive influence on the leadership styles used by farmer organizations (Table 5). Other factors remaining constant; the use of market outlets such as market stores and shops in trading centers and towns, for selling organizational products increases the probability that a leader uses both democratic and autocratic leadership styles by 12.33%. This indicates that the use of market outlets requires serious control measures that can regulate marketing activities and marketers' behaviors and minimize costs incurred by the organization (Okeke, 2019). Mihai (2015) also supports this finding, suggesting that autocratic and democratic leadership styles work better when used jointly to control organizational costs than when only the democratic leadership style is used.

The total costs incurred by a farmer organization significantly ( $p \leq 0.05$ ) and positively influenced the leadership styles used (Table 4). Keeping other factors constant, an increase in the total costs incurred by a farmer organization by one Uganda shilling increases the probability that a leader would use both democratic and autocratic leadership styles by 4.59%. This implies that the autocratic leadership style, if combined with the democratic style, can offer more effective control measures that can help to minimize costs than the democratic style if used alone. Farmer organizations incur costs, that may include, transportation, administration, facilitation, processing, farm-related, meeting-related, maintenance, registration, and subscription costs; which may not be effectively controlled by only the democratic leadership style (Mihai, 2015). According to Todorova and Vasilev (2017), farmer organizations that incur high costs tend to use an autocratic leadership style. The autocratic leadership style helps to keenly and critically guide and monitor organizational operations in a bid to control costs and ensure efficiency for the organization.

Total revenue incurred by a farmer organization was found to have a significant ( $p \leq 0.05$ ) and negative impact on the styles of leadership used (Table 5). An increase in the total revenue earned by a farmer organization by one shilling decreases the probability that a leader uses both democratic and autocratic leadership styles by 6.19%, holding other factors constant. This finding implies that earning higher revenues attracts members' vigilance, which increases their chances of using only the democratic leadership style. This is because the revenue earned by farmer organizations is earned out of investments that are primarily financed by members' contributions and efforts (Table 2). Thus, any money earned by the organization should be clearly reported and jointly decided upon. This finding contradicts those of Geddes et al. (2014) and Ahmed et al. (2020), who suggest that higher revenues/incomes increase the probability of adopting an autocratic leadership style. Bentzen et al. (2017) also posit that leaders in organizations with more revenues are less likely to use democratic leadership styles alone due to their selfish interests. The contradictions in this finding could be due to the fact that farmer organizations mostly operate on members' contributions and savings as capital, which increases members' alertness about earnings and thus leaves the leader with only the democratic leadership style as an option.

Value addition training had a significant ( $p \leq 0.05$ ) but negative effect on leadership styles (Table 5). Other factors held constant: receiving value addition training by a farmer organization reduces the probability that a leader uses both democratic and autocratic leadership styles by 12.15%. This finding implies that a democratic style of leadership provides a conducive environment for effective learning. According to Clinton (2015), the democratic leadership style allows for participation from members, which can increase members' morale and commitment to value-addition training and consequently lead to higher learning outcomes. Del Maestro Filho et al. (2015) support the finding, as they suggest that a democratic leadership style leads to effective learning because it attracts harmony from members and allows them to participate in the learning process.

Management and leadership training significantly ( $p \leq 0.05$ ) and positively influenced the leadership styles used by farmer organizations (Table 5). *Ceteri paribus*, receiving management and leadership training in a farmer organization increases the probability that the leader uses both democratic and autocratic leadership styles by 17.59%. This finding implies that leadership and management training widens leaders' knowledge and skills. According to Mutale et al. (2017), leadership and management training improves leaders' management capabilities and enables them to effectively face more difficult situations. This finding is also supported by Seidman et al. (2020), who suggested that leadership and management training improve leaders' knowledge and skills, that they can use to apply different leadership styles which are appropriate and practical for different situations.

#### 4. Conclusion and recommendations

This study aimed to determine the leadership styles used by farmer organizations in Uganda, the differences in the characteristics of farmer organizations across styles, and the factors that influence such styles. While the principles of leadership and leadership styles have been extensively examined, the leadership styles used by farmer organizations in Uganda, as well as the factors that drive them, have received less attention. Due to leadership issues, farmer organizations in Uganda continue to struggle with sustainability. Therefore, analyzing these elements contributes significantly to the understanding of the leadership styles

used by farmer organizations in Uganda, as well as the factors that influence the styles. According to the findings, most farmer organizations in Uganda employ both democratic and autocratic leadership approaches. The findings also show that farmer organizations differed in the following areas across the two leadership styles: savings and loan schemes, leadership passion, farm management training, leadership and management training, leaders' expertise, and leadership committee size. The logit regression results showed that the savings scheme, number of organizational departments, leadership passion, usage of market outlets, total expenditures incurred, and leadership and management training influenced the use of both democratic and autocratic leadership styles. However, committee size, total income collected, and value-addition training influenced the use of a solely democratic leadership style. To achieve efficiency and effectiveness, we advocate that farmer organizations continue employing both democratic and autocratic leadership approaches rather than just a democratic approach. While the democratic approach improves organizational members' innovation, well-being, skills, and knowledge, the autocratic approach protects organizational resources and products, keeps members on track, and directs all ideas generated by members towards the achievement of the intended goals. Government and other development partners working with farmer organizations may increase the number of leadership and management trainings available, to improve the leadership abilities of farmer organization leaders.

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### Data availability statement

Data sharing may not be applicable to this specific article as the manuscript is part of a larger study. Data will be shared later once all the work has been published.


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## Appendix A: Ethical approval


<b>GULU UNIVERSITY</b>
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<b>RESEARCH ETHICS COMMITTEE</b>

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May 24, 2021

**APPROVAL NOTICE**

Mr Rachael Nangabi  
Egerton University  
Kenya

Re: Application No. GUREC-015-21

Type of review:  
 Initial review  
 Amendment  
 Continuing review  
 Termination of study  
 SALs  
 Other, Specify: \_\_\_\_\_


Title of Proposal: "INSTITUTIONAL AND MANAGEMENT FACTORS INFLUENCING SUSTAINABILITY OF FARMER ORGANIZATIONS IN UGANDA"

I am pleased to inform you that at the 61<sup>st</sup> convened meeting on 16<sup>th</sup> January 2021, the Gulu University Research Ethics Committee (GUREC) voted to approve the above referenced application.

Approval of the research is for the period of 24<sup>th</sup> May 2021 to 23<sup>rd</sup> May 2022

As Principal Investigator of the research, you are responsible for fulfilling the following requirements of approval:

1. All co-investigators must be kept informed of the status of the research.
2. Changes, amendments, and addenda to the protocol or the consent form must be submitted to the GUREC for re-review and approval prior to the activation of the changes. The GUREC application number assigned to the research should be cited in any correspondence.



GULU UNIVERSITY  
INSTITUTIONAL REVIEW COMMITTEE  
APPROVED UNTIL  
★ 23 MAY 2022 ★  
FACULTY OF MEDICINE  
P. O. Box 166, Gulu

**Appendix B: Correlation matrix for variables in the logit model**

	OrgAge	Market~p	Savings	Commits~e	OrgDep~s	OrgCov~e	LeadPa~n	LeadOt~e	Outlet~n	log_g~s	log_g~ue	RecBiz~n	RecFm~n	RecMgt~n	Intell~h	TertVa~d
OrgAge	1															
MarketGroup	0.0629	1														
Savings	0.0497	-0.0454	1													
Commitsize	0.018	0.0738	0.1096	1												
OrgDepartm~s	0.1449	0.1037	-0.0234	0.127	1											
OrgCoverage	0.1024	0.0282	-0.1039	-0.0265	-0.0039	1										
LeadPassion	-0.1406	0.048	0.0369	0.0817	0.1166	0.0041	1									
LeadOthYSo~e	-0.0552	0.122	0.0685	0.1223	-0.0614	0.1091	0.1414	1								
OutletDist~n	-0.0217	0.1011	-0.0636	0.0176	0.0157	0.1532	-0.0787	0.0131	1							
log_gprpcosts	0.1003	0.054	0.1369	0.0106	0.2165	0.0984	0.2573	0.0226	-0.0638	1						
log_gprpvnu	0.1058	0.0577	0.1433	0.1056	0.246	0.2127	0.1533	0.204	0.0775	0.3813	1					
RecBizVlUA~n	0.0556	0.0158	-0.1491	-0.0439	0.1255	0.0991	-0.0858	0.0522	0.0888	0.0158	0.1161	1				
RecFrmMgt~n	0.1818	0.0188	-0.0368	-0.0898	0.1582	0.0868	0.0107	0.0133	0.1176	0.129	0.0527	0.1958	1			
RecMgtLrds~n	-0.0018	-0.0585	0.0963	-0.1248	0.0571	0.0168	0.2693	0.134	0.0814	0.1979	0.0775	0.0822	0.2181	1		
IntelectB~h	-0.005	-0.0124	0.0104	-0.1045	0.0844	0.0046	0.0931	0.1598	0.0418	0.2555	0.13	0.1364	0.148	0.1959	1	
TertValueAdd	-0.0128	-0.1108	-0.0567	-0.0414	-0.0069	-0.0423	0.1016	0.1245	-0.0345	0.129	0.0227	0.097	-0.0178	0.0877	0.0802	1

Source: Authors' survey, 2020.