

## The mediating role of Stakeholder Engagement on the relationship between Entrepreneurial Orientation and Agricultural Project Performance in Developing Countries

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### Abstract

*The purpose of the paper is to develop a theoretical model that orchestrates the relationship between stakeholder engagement, entrepreneurial orientation, and agricultural project performance in developing countries. The paper adopts the Med Graph and Sobel tests of mediation effect to develop a mediation model of agricultural project performance. The study draws on quantitative and cross-sectional research approaches. Random sampling technique was used to select the agricultural projects and purposive sampling was applied to select the respondents. The results reveal that stakeholder engagement and entrepreneurial orientation are invaluable resources that significantly affect agricultural project performance. The study empirically shows that stakeholder engagement and entrepreneurial orientation are significant predictors of project performance for agricultural projects in developing countries. This study makes a contribution to knowledge through the provision of relevant information that fills the practical gaps of agricultural projects in developing countries and makes a theoretical contribution to the project management discipline. This enables practitioners and scholars to comprehend and legitimize decisions that foster sustainable agricultural project performance in developing countries.*

**Keywords:** Agricultural Projects Performance, Stakeholder Engagement, Entrepreneurial Orientation and Developing Countries

### Introduction

Project performance remains a major challenge for the agricultural sector in developing countries. According to the Global Competitiveness Report (2015) cited in (Kankisingi & Dhliwayo, 2022) state that agriculture accounts for 18 percent of output and employs 47 percent of the workforce. However, the performance of the agricultural sector in developing countries continues to stagnate despite the government's heavy investment in agricultural projects with the hope of stimulating growth, employment, and economic development for over a decade (Meijerink & Roza, 2007; Bjornlund *et al.*, 2020). Surprisingly, Africa's economic growth rate and project performance outcomes are above the global average growth rate, but these parameters do not translate into social and economic protection for rural families and community livelihood (Da Silva, 2014; Nkurunziza *et al.*, 2016). Over time, government stakeholders, policymakers, and researchers around the world are devising means of project improvement in various entrepreneurial ecosystems with superficial knowledge of agricultural

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project management. Given the theoretical reviews from global and local perspectives, domesticating stakeholder entrepreneurship theory could provide a better explanation of the phenomenon. The stakeholder theory of entrepreneurship has been domesticated to explain the performance of agricultural projects in a developing-economy context. Managing stakeholders involved in entrepreneurial ventures is critical. This requires the connection of metaphors from stakeholder theory and entrepreneurship (Laplume, Walker, Zhang, & Yu, 2020; Freeman, 1984). As such, there is a need to develop a model that will transform developing economies from agriculture-based economies to ones that add value through agricultural project performance. This study is inspired by the current failure to realize expected agricultural project performance in the context of Uganda's agriculture and rural development, which can be translated into economic and social participation of the rural poor who heavily depend on agriculture for livelihood. The study proposes a model that will synchronize stakeholder engagement, entrepreneurial orientation, and performance of agricultural projects to propel agricultural performance in developing countries.

Developing countries continue to register poor agricultural project performance ( Bjornlund *et al.*, 2020). Uganda's agricultural performance rate is below the annual growth target of 6% and has continued to record declines in the sector (Benin, Nkanya, Okecho, Randriamamonjy, Kato, Lubade, & Kyotalimye, 2011; MAAIF Report, 2010). The poor performance of the agricultural sector has been attributed to high informalities in the sector and the use of traditional, rudimentary, and obsolete farming technologies (Nkurunziza *et al.*, 2016). Most policymakers in a developing world context are striving to advance entrepreneurial activity in agricultural project management; however, it is difficult to implement and ensure project performance outcomes without having the right data. This has prompted international agencies to assist developing countries through various agricultural projects in Africa, such as Delta Projects and Pharos Global Agriculture Funded Projects, to achieve the Millennium Development Goals of food security and poverty alleviation. Agricultural projects such as the National Agricultural Advisory Services, National Agricultural Research Organization, Agricultural Technology and Agribusiness Advisory Services, Buy Uganda, Build Uganda, and Youth Venture Capital are intended to provide employment, food security, boost household income, and promote the growth of rural communities. In the early 2000s, the National Agricultural Advisory Services projects gained a significant share of Uganda's GDP growth (Benin *et al.*, 2011; MAAIF Report, 2000). However, the performance of National Agricultural Advisory Services Projects has been disappointing over time, yet it's one of the most dominant wealth creation projects in the agricultural sector in Uganda, aimed at improving the livelihood and food security of its citizens.

The trends in the performance of agricultural projects can be attributed to a failure to engage key stakeholders and an inadequate entrepreneurial mindset that drives innovative and performing projects among agricultural entrepreneurs. Contextually, project performance as a general concept has been widely studied in a developed world setting, but comprehensible empirical evidence on the performance of agricultural projects in developing countries remains anecdotal and is developing at an embryonic stage (Seppala *et al.*, 2008; Yong-Hui Li *et al.*, 2008; Amran & Haniffa., 2011). From a scholarly perspective, previous attempts to explain the performance of agricultural projects have concentrated on stakeholder involvement (Castro *et al.*, 2005), stakeholder commitment (Lee & Tsai, 2005), communication (Subramanian *et al.*,

2009), and comparative advantage (Yong-Hui Li *et al.*, 2009; Kamya *et al.*, 2010), ignoring stakeholder engagement and entrepreneurial orientation that have the potential to enhance agricultural project performance in the world economy. Operationally, studies reveal that stakeholder engagement and entrepreneurial orientation are attracting the attention of entrepreneurship scholarship, particularly the intersection between the two variables (Riad Shams *et al.*, 2020; Njue, Mulwa, Kyalo, & Mbugua, 2021), though the link between project performance, particularly agricultural projects in a developing world context, requires further empirical testing. With empirical evidence from Uganda, this study examines the relationship between stakeholder engagement, entrepreneurial orientation, and the performance of agricultural projects in developing countries.

### **Theoretical Review**

The study was guided by stakeholder theory, which explains the power of stakeholder engagement and entrepreneurial orientation in improving the performance of agricultural projects (Laplume, Walker, Zhang, & Yu, 2020; Freeman, 1984). It explains entrepreneurial risk-taking behaviors, innovations, wealth creation processes, and expected outcomes of entrepreneurial ventures. The stakeholder theory of entrepreneurship integrates wealth creation among farmers by balancing stakeholder interests, utilizing physical and intangible resources such as stakeholders' knowledge for risk taking, and implementing business process innovations (Laplume *et al.*, 2020). For organizations to remain competitive, stakeholder engagement in terms of vigor, dedication, and absorption, and entrepreneurial orientation in form of risk-taking, and innovation play a critical role in enhancing the performance of agricultural project ventures. The theory further explains that entrepreneurial opportunities are born out of stakeholder differences. Entrepreneurs are able to discover business opportunities for marginalized stakeholders in rural communities so as to break the viscous cycle of poverty. Therefore, stakeholders contribute resources and exploit entrepreneurial opportunities to gain a competitive advantage (Barney, 2018). The stakeholder theory of entrepreneurship has interesting implications for entrepreneurship practice, creative destruction, and the discovery of new entrepreneurial opportunities.

### **Hypotheses Development**

#### ***Stakeholder engagement and project performance***

Stakeholder engagement creates innovation and partnerships among project stakeholders that include the society or local councils, farmers, the project team, and the government that take part in the project management and performance (Neil, 2009). Stakeholder engagement significantly affects the performance of construction projects (Wofuma, 2020). Further, studies reveal that stakeholder engagement forms the basis of the involvement of stakeholders, which inherently ensures smooth project planning, control, and improved performance outcomes (Githinji *et al.*, 2020). The study by Njue *et al.* (2021) determined the influence of stakeholder management on the performance of projects in the Kenyan context. Stakeholders are not only the members of National Agricultural Advisory Services communities or non-governmental organizations but also governmental organizations or projects. They are those individuals, groups of individuals, or organizations that affect and/or could be affected by an organization's activities, products, or services and associated performance with regard to the issues to be addressed by the engagement.

Stakeholder engagement involves buffering and bridging (Freeman & McVea, 2001). Buffering reduces the tendencies of external stakeholder interference in project performance, and in bridging, stakeholder needs and project expectations are harmonized to ensure positive project performance (Kim & Kim, 2016). Stakeholder engagement is the process used by an organization to engage relevant stakeholders to manage different risks with a clear purpose to achieve accepted outcomes (Neil, 2009). It is now also recognized as a fundamental accountability mechanism, since it obliges an organization to involve stakeholders in identifying, understanding, and responding to sustainability issues and concerns, and to report, explain, and be answerable to stakeholders for decisions, actions, and performance (Curnin, Brooks, Owen, & Brooks, 2022). Today, prominent projects have started to develop an appreciation that stakeholder engagement can contribute to learning and innovation in products and processes, which further leads to improved productivity. From the above discussion, it emerges that stakeholder engagement plays a role in the performance of agricultural projects. We also hypothesize in **H<sub>1</sub>** that: ***Stakeholder engagement improves the performance of agricultural projects.***

### ***Entrepreneurial orientation and project performance***

Recent researchers in developed countries have focused on project performance management, particularly delivering the project within a given budget, but this overrides project performance. A longitudinal study carried out by Chen and Lin, (2018) indicates that quality, scope, team, communication, and risk have a strong, stable, and discriminatory power to predict project performance. The findings were consistent with other scholars' views, especially at project initiation and planning, which were consistent (Amran & Haniffa., 2010; Chen *et al.*, 2022; Hsu *et al.*, 2010). On the other hand, empirical studies on the determinants of firm performance have shown a consistent positive relationship between the entrepreneurial orientation of senior management and the resource acquisition capability of the firm (Huang *et al.*, 2010). Meta-analytic studies indicate that over 90% of the scholarly works reviewed suggest that entrepreneurial orientation positively impacts project performance. The empirical evidence derived suggests the development of hypothesis **H<sub>2</sub>**, which states that: ***There is a positive influence of entrepreneurial orientation on project performance.***

### **Methodology**

The study adopts a cross-sectional descriptive and analytical research design to provide a snapshot of the context using quantitative data. Analytical research design applies descriptive and inferential statistics to answer the formulated hypotheses. The researchers conducted a large-scale comprehensive survey of a random sample of Agricultural Advisory Services Projects in Mukono and Wakiso districts. Mukono and Wakiso were among the first districts to benefit from National Agricultural Advisory Projects across the country, and these districts have continuously faced challenges with the projects' performance during the planning and implementation phases. Secondly, these two districts have stakeholder innovation platforms that help farmers find solutions to performance issues. So these two districts were chosen as the testing ground because of the contextual and practical project performance issues. A self-administered questionnaire was used to generate responses on stakeholder engagement, entrepreneurial orientation, and project performance.

### ***Study population, research setting, sampling design and procedure***

The study population comprised a total of 13,347 National Agricultural Advisory Services projects in Mukono and Wakiso districts of Uganda (Mutumba, 2017; Muhanguzi, Lutwama, & Mwiine, 2012, Nkurunziza, *et al.*, 2016). Data was collected from stakeholders involved in agricultural projects in 18 sub-counties of Wakiso and Mukono districts in Uganda. The unit of analysis was agricultural projects in the sub-counties of the two districts of Uganda. A project in this study refers to any agricultural activity supported by the National Agricultural Advisory Services, regardless of its size and number of people involved. The agricultural projects surveyed in Uganda are funded by the government to boost household income and reduce poverty levels. The units of inquiry consisted of project coordinators or project team managers and model farmers. The study by Njue *et al.* (2021) studied the predictors of project performance in a Kenyan context, targeting more than one respondent using the same instrument. The key study respondents were project managers, project team leaders, project officers, and key beneficiary representatives. Their study used one questionnaire to gather quantitative data. Since the study context is more or less similar, we are confident that our results replicate the reality of agricultural project performance and that the results can be used for generalization. The choice of the respondents was therefore intended to handle aspects of self-reported biases.

The administered questionnaire was comprised of questions that explored the fundamental and internal aspects of agricultural projects in the Wakiso and Mukono districts. The unifying factor was that these individuals were involved in the planning, decision-making processes, implementation, and evaluation of agricultural projects to ascertain their performance aspects. These were both primary and secondary stakeholders. Primary stakeholders and beneficiaries of the project, especially model farmers and the project team as a group of farmers from different sub counties, were engaged in the study. The engagement of the stakeholders was analyzed in terms of vigor, dedication, and absorption based on the characterized groups under survey. Using the formula provided by Krejcie and Morgan (1970) a sample size of 375 agricultural projects was derived. The power of the sample size was explained by a 95% confidence interval and an acceptable error of 5%. The Krejcie, and Morgan (1970) sample size determination approach was preferred as it yielded a representative sample, which one would expect even if other popular approaches such as Yamane (1973) were used.

A simple random sampling technique was used to select the projects. To ensure a representative random sample, a table of random numbers was generated using EPITABLE-random number listings. All National Agricultural Advisory Services projects were listed in alphabetical order and assigned numbers from 00001 to 13,347. In the context of the study, the sample selection criterion was based on the length of the largest numbers on the population list. Consistent with the rules, the drawing was based on the table of random numbers. Using this process, the researcher ignored all repeated numbers and numbers that were not on the population list. This process was continued until the desired sample size of 375 was achieved. The fact that both primary and secondary stakeholders were involved in agricultural projects that had similar characteristics made it imperative to select the agricultural projects and respondents using simple random and purposive sampling techniques, respectively. According to Gay and Diehl (1992), generally, the number of respondents acceptable for a study depends upon the type of research involved. Bryk and Weisberg (1977) cite a 3%–4% acceptable error rate in survey research.

### **Data sources, data collection instrument and measurement of variable**

Primary data was collected from the project coordinators, project team, model farmers, and government officials using a self-administered questionnaire. Items on the study instruments were anchored on a 5-point Likert scale ranging from strongly disagree as a response of 1 to strongly agree as a response of 5. Agricultural project performance was measured in terms of reliability, effectiveness, and efficiency using constructs of time, scope, costs, and quality as defined in the Project Management Body of Knowledge-PMBOK (1996). Entrepreneurial orientation was measured by adapting item scales developed by Li *et al.* (2008). Stakeholder engagement was measured by adapting the work engagement item scales developed by Seppala *et al.* (2008) and the Utrecht Work Engagement Scale. Data was subjected to missing value analysis, outlier analysis, and parametric testing prior to descriptive and inferential analysis.

### **Missing values and outlier analysis and parametric tests**

Data cleaning was considered in this study. The study subjected the data to preliminary data checks. Before conducting the analysis related to the study objectives, we checked the data for outliers and missing values. The results showed an acceptable range of missing values, which was less than 5 percent (Sekaran, 2003). The researchers then tested for parametric data assumptions. The data analysis revealed that there were no major issues. Indeed, factor analysis was used to reduce the redundant dataset before actual data aggregation to the unit of analysis, descriptive and inferential statistics were done, and the results conformed to this guideline.

### **Validity and reliability of the instrument**

The items in the study instruments were derived from previous studies and modified to suit the Ugandan context. These item scales were given to experts to assess their relevance for the study. The researchers piloted the questionnaire using a sample size of 68 respondents to determine the validity and reliability of the research instruments, as indicated in Table 1.

**Table 1: Validity and reliability results**

<i>Variable</i>	<i>No of Items</i>	<i>Cronbach Alpha</i>	<i>Content Validity Index</i>
Entrepreneurial Orientation	24	.881	.792
Stakeholder Engagement	18	.933	.833
Project Performance	18	.959	.778

Cronbach's alpha coefficient was used to check the reliability of the instrument in figure (i). As justified by Neumann (2006) and Nunnally (1978), all variables of study conformed to the minimum cut-off point of 0.7 and above. While conceptual and relational analyses are the two types of content analysis, the quantitative approach to content analysis was preferred. In this study, we used conceptual analysis to quantify and count the relevant items for each concept in the self-administered questionnaire to check the relevance of the content in the instrument text. The focus was to examine the occurrence of selected relevant terms in the data. Conclusions and generalizations were drawn based on the results. The irrelevant, unwanted, or unused texts were rephrased, and others were dropped. We therefore emphasize that entrepreneurial orientation was assessed using dimensions that include innovativeness, risk-taking, pro-activeness, competitive aggressiveness, and autonomy. Stakeholder engagement was analyzed in terms of

the dimensions of vigor, dedication, and absorption. Project performance was assessed using the dimensions of time, scope, and quality.

## Results

### *Descriptive Statistics*

The descriptive statistics show that 9% of the agricultural projects were from Gomma sub-county, while 3% of agricultural projects were from Nansana and Seeta Namagunga sub-counties. The results also show that 69% had been in business for more than five years, 24% for two to five years, and 7% for less than two years. 76% of the respondents per project were male and 24% were female. The results show that 63% were married while 37% of the respondents were single. 3% of the respondents were below 20 years, between; 20 and 29 years, 14%; 30 and 39, 34%; 40 and 49, 40%; and 9% were above 49. The majority of respondents were between the ages of 40 and 49, indicating that the majority of them were young, with only a small number of people over the age of 49. In terms of level of education, it was observed that the majority of respondents per project had certificates (Primary Leaving Certificate, Uganda Certificate of Education, and Uganda Advanced Certificate of Education), as indicated by about 67%, diplomas, 19%, degrees, 11%, and master's degrees, 3%. In terms of work experience, 33.6% had 3-5 years, while 8.8% had more than 10 years. Stakeholders included 33% project team members, 32% coordinators, 23% model farmers, and 12% government officials.

### *Correlation Statistics*

The study conducted a zero-order correlation, where mean responses with the corresponding standard deviations for each variable was computed that is; entrepreneurial orientation (mean = 3.11, SD = 0.97), stakeholder engagement (mean = 3.04, SD = 1.07), and project performance (mean = 3.02, SD = 1.17). The mean scores for the study variables ranged between 3.11 and 3.02 on a 5-point Likert scale, and the standard deviations were in the range of 0.97 and 1.17. The correlation results reveal a significant positive relationship between entrepreneurial orientation and stakeholder engagement ( $r = 0.60$ ,  $p = 0.01$ ), implying that a change in stakeholder engagement is associated with a change in entrepreneurial orientation. Similarly, entrepreneurial orientation and performance of agricultural projects were significantly and positively correlated ( $r = 0.56$ ,  $p = 0.01$ ), implying that a change in entrepreneurial orientation is associated with a change in project performance. Additionally, there is a significant positive correlation between stakeholder engagement and the performance of agricultural projects ( $r = 0.48$ ,  $p = 0.01$ ), meaning that a change in stakeholder engagement is associated with a change in project performance. The correlation statistics are shown in **Table 2** below:

**Table 2: Ccorrelation Statistics**

	Mean	SD	1	2	3
Entrepreneurial orientation (1)	3.11	0.97	1.00		
Stakeholder engagement (2)	3.04	1.07	.60**	1.00	
Project performance (3)	3.02	1.17	.56**	.48**	1.00

\*\**. Correlation is significant at the 0.01 level (2-tailed)*

### *Hierarchical regression analysis*

The study ran three hierarchical regression models to establish the predictive potential of stakeholder engagement and entrepreneurial orientation on the performance of agricultural

projects. The results are contained in **Table 3**. Model 1 indicate that age is associated with the level of agricultural project performance. Model 2 reveals that stakeholder engagement significantly predicted performance of agricultural projects accounting for 23% of the variance ( $\beta = 0.48$ ,  $p < 0.05$ ). Also, in model 3, entrepreneurial orientation significantly predicted 11% of the variance in performance of agricultural projects ( $\beta = 0.41$ ,  $p < 0.05$ ). Overall, the variables under study predicted 35% of the variance in the performance of agricultural projects. Intercept in Model 3 is not significant, indicating the likelihood of having exponential and curvilinear relationships between stakeholder engagement, entrepreneurial orientations, and project performance. The study included age as a control variable in Model 1 and was found to be significant, which is consistent with Cohen and Cohen (2003) who state that model selection should be based on statistically significant variable improvements to account for the explained variance. This is also consistent with Wuensch (2006) who argued that for a variable to be retained in the hierarchical regression model, its coefficient should be significant and able to account for at least 2% of the variation in the dependent variable. The model results reveal that stakeholder engagement and entrepreneurial orientation are the key predictors of performance of agricultural projects in developing world context.

**Table 3: Hierarchical regression results**

Variable	Model 1		Model 2		Model 3	
	B	SE	B	SE	B	SE
Intercept	3.17**	.24	1.61**	.26	0.19	.28
Project age	.13*	.10	.12*	.09	.10*	.08
Stakeholder engagement			.48**	.05	.23**	.06
Entrepreneurial orientation					.41**	.07
R	.13		.50		.60	
R <sup>2</sup>	.02		.25		.35	
Adjusted R <sup>2</sup>	.01		.24		.35	
$\Delta R^2$	.01		.23		.11	
F Change	5.80		104.01		51.51	
Sig. F Change	.02		.00		.00	
Df	340		339		330	
F	5.80		55.78		61.67	
Sig.	.02		.00		.00	
N (1 per project)	342		342		342	

**Dependent variable: Performance of agricultural projects**

**\*\*Regression is significant at the 0.01 level (2-tailed)**

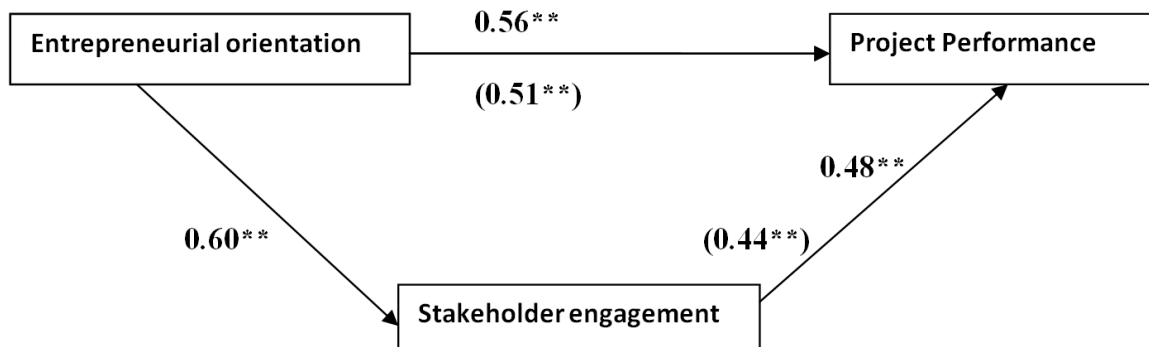
**\*Regression is significant at the 0.05 level (2-tailed)**

***The mediating role of stakeholder engagement on the relationship between entrepreneurial orientation and project performance***

The study developed a mediation path analysis to understand the mediating role of stakeholder engagement on the relationship between entrepreneurial orientation and project performance. Path modelling was used as a causal modelling approach that specifies a system of equations that capture theoretical or conceptual models. This test was theoretically driven. Analytically, after data interrogation to confirm whether the data meets the parametric assumptions and after confirming the conditions of mediation testing as suggested by Barony and Kenny (1986), The



study used the Med Graph program, a modified version of the Sobel test, to compute the Sobel z-value and the significance of the mediation effect of stakeholder engagement in the association between entrepreneurial orientation and agricultural project performance. The significance of the mediation effect and type of mediation was also tested based on Sobel's z-value and ratio index calculated using the Med Graph. The results are shown in **Figure 1**.



**Figure 1: Mediation results**

These results indicate that, since the Sobel Z-value is large with a p-value less than 0.01 (Sobel Z-value: 3.02,  $p < 0.01$ ), a significant mediation of stakeholder engagement on the relationship between entrepreneurial orientation and performance of agricultural projects exists in the model. In a real sense, it indicates that the association between the entrepreneurial variable and the performance of agricultural projects has been significantly reduced from 0.56 to 0.51 by the inclusion of stakeholder engagement in the third regression model (Jose, 2004; Jose, 2008). Secondly, a partial type of mediation was also registered because the correlation between the independent variable and the dependent variable was reduced to a significant level (from 0.56\*\* to 0.51\*\*). Thirdly, the ratio index of 9.8% ( $0.05/0.51 \times 100 = 9.8$ ) implies that 9.8 percent of the effect of stakeholder engagement on the performance of agricultural projects goes through entrepreneurial orientation and that about 90.2% of the effect in the closed loop model is direct.

## Discussions

The research examined the mediating effect of stakeholder engagement on the relationship between entrepreneurial orientation and the performance of agricultural projects in developing countries using empirical evidence from Uganda. The results indicate that stakeholder engagement is a means through which entrepreneurial orientation improves the performance of agricultural projects. The results show that stakeholder engagement partially mediates the relationship between entrepreneurial orientation and the performance of agricultural projects in developing countries. This means that the performance of agricultural projects in developing countries has two paths: the direct and indirect paths. The direct path is explained by the presence of entrepreneurial orientation, which requires agricultural entrepreneurs of the selected projects to have a positive mindset geared towards investing in agriculture that will translate into improvement in agricultural productivity for the sustenance of the developing countries' economies.

Conversely, the indirect path implies that for agricultural projects to succeed, people with an entrepreneurial mindset need to engage the stakeholders in the performance-related activities of

the agricultural projects using various means such as communication, meetings, workshops, seminars, participations, and involvement. Such stakeholder management initiatives in various agricultural activities translate into the improvement of the performance of agricultural projects. Stakeholder engagement among agricultural entrepreneurs induces the performance of agricultural projects and partially acts as a conduit in the association between entrepreneurial orientation and the performance of agricultural projects in the agricultural sector. With support from previous studies, our results further indicate that entrepreneurial orientation through innovativeness, risk-taking, pro-activeness, competitive aggressiveness, and autonomy in the presence of stakeholder engagement drives the performance of agricultural projects in the context of developing countries. Indeed, the results are supported by previous findings: entrepreneurial orientation and stakeholder engagement contribute to the performance of agricultural projects, justifying a new economic era of wealth creation (Lee & Choi, 2003; Chia, 2003).

Stakeholder engagement is a valuable intangible resource that permits project management, and it provides a conduit between entrepreneurial orientation and the performance of agricultural projects. These findings are supported by the work of previous scholars (Githinji *et al.*, 2020; Bourne & Walker, 2005; Curnin, Brooks, Owen, & Brooks, 2022), who reveal that engaging stakeholders in project activities is an assured test of project performance. The findings indicate that stakeholders must be absorbed in agricultural project activities, dedicated to work, and enthusiastic about work in order to improve agricultural project performance. This will help the projects achieve deliverables that conform to the required standards.

As a confounding variable, project age significantly predicts the performance of agricultural projects. The age of the project is an important predictor of agricultural project performance. The project duration is shorter, the project operating costs are lower, the expected quality of deliverables is higher, and the project scope is also satisfactory. This implies that project coordinators, project team managers, and other stakeholders of agricultural projects should consider the duration of the projects if project performance is to improve, as supported by Cohen and Cohen (2003). Stakeholders need open minds, dedication, and enthusiasm to enhance performance. However, the level of agricultural project performance is critically dependent on the ability to change project schedules as they occur. The fact that project team managers, model farmers, and other stakeholders of agricultural projects tend to be heterogeneous and others homogeneous means that developing competitive teams in different clusters, especially at village and sub-county levels, is absolutely the way to go if we are to improve the performance of agricultural projects. For a group of model farmers that do not have similar characteristics, engaging them requires clustering farmers in small groups so as to enable them to acquire, store, and retrieve relevant knowledge through training so as to focus on improving the performance of agricultural projects.

Entrepreneurship has become the primary source of projects' performance and sustainability, leading to wealth creation. The results are consistent with those of earlier scholars like Li *et al.* (2008). It is emphasized that efficient and effective agricultural project management necessitates farmers and project team managers being willing to take risks, respond aggressively to new process and structural changes, and acquire new agro-innovations from other partners in developing and developed economies. We further indicate that a project that embraces risk-

taking, innovations, and responsiveness is expected to gain sustainable project performance. So, the efficacy, effectiveness, and quality relevance of project deliverables will be improved through improved entrepreneurial orientations, as justified by empirical and practical project performance realities. The results indicate that stakeholders' capability and competence in areas of entrepreneurship to change their negative perceptions before starting businesses significantly boost agricultural project performance, as consistently supported by Njue *et al.* (2021).

The findings further justify that the positive entrepreneurial orientation required by agricultural projects is created by different stakeholders through continuous managerial training programs. It is thus imperative to state that entrepreneurial orientation is one of the important ingredients of agricultural projects in developing countries, especially Uganda. When the performance of the agricultural projects is recommendable, this indicates wealth creation in the economy. We further emphasize that developing an entrepreneurial orientation to agricultural projects is crucial for poverty reduction and household incomes in developing countries. The partial mediation of stakeholder engagement on the relationship between entrepreneurial orientation and agricultural project performance exists, and this makes a significant contribution to the existing body of knowledge generation in the field of project and management operations. Indeed, in the study, the results are consistent with the works of Njue *et al.* (2021), who further assert that resource mobilization, stakeholder planning, stakeholder communication, and stakeholder monitoring have a positive and significant effect on the performance of projects. The discussion of results forms a strong foundation for stating the conclusions of the study.

## **Conclusion**

Stakeholder engagement partially mediates the relationship between entrepreneurial orientation and project performance. Entrepreneurial orientation and stakeholder engagement are significant predictors of performance of agricultural projects in developing countries. The project team, model farmers and other stakeholders in agricultural projects should be equipped with entrepreneurial skills to engage in agricultural projects in a bid to improve performance in the sector.

## **Research implications**

The results of the study highlights numerous points of emphasis to researchers, managers and policy makers to understand and apply the mediation model in fostering agricultural project performance in developing countries. Engaging agricultural entrepreneurs through trainings in agricultural and entrepreneurial life skills has the capacity to change the mindsets of the entrepreneurs for pro-active decisions in agricultural activities.

Project managers should equip farmers with innovative ideas on how to improve project quality, minimize costs and manage project scope through risk taking, responsive strategies and risk taking to create value addition in the agricultural projects. This will enhance value creation, effectiveness, efficiency and sustained performance of the agricultural projects. The study has policy implications in terms of assessment procedures and remuneration of project team and other stakeholders in agricultural projects. There is entrepreneurial orientation vacuum for developing countries which when dealt with will help government to break the viscous cycle of poverty and develop modes of financing agricultural projects in the country. This is achieved

when government funds the agricultural projects through entrepreneurial orientation and stakeholder engagement.

The findings affirm that there is need to enhance entrepreneurial competences so as to change the perceptions of stakeholders and improve on the quality of agricultural projects. This will transform the rural community through increased earnings from value of agricultural project yields. Furthermore, basing on the findings, stakeholder engagement is another predictor of performance of agricultural projects. This means that there is need to engage project team (i.e. primary and secondary stakeholders) in the decision making process in all the stages of project life cycle. We also advance the need to develop a holistic model that creates bondage of engagement and entrepreneurial orientation in agricultural projects. In a nut shell, the utility of the model can be applied in a theoretical perspective in a way that scholars need to advance the model using other concepts that were not part of the model to enhance the predictive potentials of agricultural project performance in other contexts.

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