

Strategies to mitigate challenges facing students in selection and progression in agriculture career in tertiary institutions of Kenya

Annah Nawambisa Manyasi

manyasiann1972@gmail.com

<https://orcid.org/0000-0003-2081-6974>

Masinde Muliro University of Science and Technology, Kenya

<https://doi.org/10.51867/ajernet.7.2.65>

ABSTRACT

The purpose of this study was to evaluate the strategies to be employed to mitigate challenges facing students in selection and progression in agriculture careers in tertiary institutions of Bungoma and Kakamega counties, Kenya. Founded on the Occupation Choice Theory and Social Cognitive Career Theory (SCCT), the study employed a descriptive research design for data collection, coupled with mixed methods applying both quantitative and qualitative approaches for better triangulation of the findings. The study population from two counties comprised 694 university undergraduate students enrolled in agriculture programmes and 3855 technical and vocational training students enrolled for agricultural programmes. Purposive sampling was used to select Bungoma and Kakamega counties. Tertiary institutions were then selected by census method since all could be accessed to participate in the study. The data was collected using questionnaires, interview guides, focus group discussions and interview protocols. Due diligence was taken into consideration while collecting and processing data to ensure both reliability and validity of the study. The study used both descriptive and inferential techniques to analyse the collected data. Thematic analysis was appropriately used to guide and validate the contributions of the study. The greatest challenge to progression was poor ministry policies on programme selection in agriculture subjects in secondary schools of Kakamega and Bungoma Counties. The study revealed that the ministry of agriculture could review salary scales and create more job opportunities, while the ministry of education could make agricultural programmes business-orientated and lower entry grades to university or technical and vocational education training institutions, among other issues. The summary model significant test shows that the strategies mentioned accounted for 27.9% variance in mitigating challenges, $R^2=.279$, $F(4, 359) = 34.782$, $p < .05$. This implies that the strategies mentioned can significantly mitigate the challenges to selection and progression in agricultural programmes. The model coefficient analysis on strategies showed that creating more jobs ($\beta=.221$, $p<.05$), career guiding and counselling ($\beta=.392$, $p<.05$) and provision of scholarships ($\beta=.137$, $p<.05$) were some of the significant strategies to mitigate challenges facing progression in agricultural careers. The finding implies that the mentioned significant strategies are effective to mitigate challenges to progression in an agricultural career. The results obtained should guide effort for suggesting strategies to promote career progression of students in agricultural programmes in Kenya and inform policymakers on reorientation of agriculture education.

Keywords: Agriculture Career, Students, Selection and Progression, Tertiary Institutions

I. INTRODUCTION

Agriculture is one of the oldest economic activities in the world as it contributes to the livelihoods of a large percentage of the global population. The Food and Agriculture Organization (FAO, 2016) indicate that agriculture offers a livelihood to about 70 percent of the global population and accounts about 6.4 percent of the world Gross Domestic Product (GDP). In addition to its economic importance, agriculture is also instrumental in the provision of food security, rural development and conservation of cultural and social systems in most societies. Its significance cuts across all developed and developing countries and it is therefore a sector of international concern because of the impact it has on the stability of the economy, the sustainability of the environment and social well-being. Agriculture in Africa is still a leading industry with an average contribution of 15 percent to the GDP of the continent. The industry is the second largest contributor to national economy in Kenya after the services industry and it has a contribution of about 17.8 percent of GDP in comparison to 32.9 percent provided by the services sector according to the World Bank (2013). Also, agriculture is another pillar of economic development and poverty alleviation because it offers a significant number of rural citizens with jobs and incomes. Even though it is very crucial, the sector encounters many obstacles especially in the area of human resource capacity and participation of youths.

Worldwide, unemployment among young people is an issue of concern particularly in developing nations. According to the United Nations Development Programme (UNDP, 2014), it is estimated that about 85 percent of young people in the world live in developing countries where unemployment rates are quite high. Ironically, the agricultural sector offers huge job opportunities and entrepreneurship, and a number of the youths do not want to work

in the field. According to research like that of Tiraieyari and Krauss (2018), numerous nations have found it challenging to draw young people into agricultural education and careers, frequently because of the negative stereotypes, lack of motivation, and ignorance about the current agricultural prospects.

This is a trend that is noticeable in various areas such as West Africa whereby agricultural expertise and workforce have become apparent. In other countries like Nigeria, the youth are migrating more into urban centres seeking alternative jobs leaving agriculture to an ageing rural population (World Bank, 2013). This rural-urban migration has also led to low agricultural productivity and sustainability as Huitt, (2011) points out that an aging agricultural population is a major threat to future food production. The same case applies in Kenya whereby, although agriculture is vital in economic development and the subject has been incorporated in secondary school curriculums, the youths are not joining agricultural careers. Young people fail to take up courses related to agriculture at tertiary levels, which is one of the causes of the high rates of unemployment and non-exploitation of opportunities in the field by the young people. The lack of connection between education, professional choice, and labour market demands highlights the need to implement specific interventions. This paper therefore aims at filling this gap by identifying and recommending viable measures to curb the factors, which discourage students towards choosing and advancing their careers in agriculture related fields. The study targets to produce knowledge that can inform policy and practice by focusing on selected learning institutions in the counties of Bungoma and Kakamega in Kenya. The expectation is that the findings will assist the education sector, policymakers and stakeholders in coming up with strategies to improve enrolment, retention and progression in agricultural education and careers that will lead to sustainable development and economic growth in Kenya.

1.1 Statement of the Problem

The agriculture sector is key to Kenya since there are many prospects in the agriculture profession, yet many students drop agriculture technical subject for other subjects. This is a worrying trend since Kenya requires human resource to drive the agricultural sector. Studies (Ekwere, 2014; Muchiri *et al.*, 2013) were conducted to understand the challenges faced by students in selection of agriculture subject and perception of agriculture subject. Limited literature is available to prove research on students' selection and progression in agriculture career and suggest strategies that can be employed to mitigate the challenges. The current study will fill this gap. The focus of the study will be to evaluate existing challenges and suggest strategies that can be employed to mitigate the challenges facing students in selection and progression in agriculture career in tertiary institutions in Kenya

1.2 Research Objective

The specific objective for the study was: to evaluate the strategies to mitigate challenges facing students in selection and progression in agriculture career in tertiary institutions of Kenya from 2016-2021.

1.3 Research Hypothesis

H₀₁: There is no statistically significant relationship between strategies that can be employed to mitigate the challenges facing students in selection and progression in agriculture career in tertiary institutions in Kenya.

II. LITERATURE REVIEW

2.1. Theoretical Review

2.1.1 Occupational Choice Theory and Social Cognitive Theory

This paper is informed by Occupation Choice Theory, which was initially developed by Parsons (1909). According to the theory, people make career decisions through a combination of personal attributes, social factors and environmental factors. It underlines that interests, abilities, gender, societal expectations, and availability of opportunities influence career choices (Woelfel, 1975). Applying this theory to the context of careers in agriculture in Kenya, it is possible to understand why a certain group of students chooses or does not choose the course of agriculture-related studies and how these choices are facilitated or obstructed by internal and external factors. Moreover, the research is also guided by Social Cognitive Career Theory (SCCT) that was formulated by Lent *et al.*, (1994) According to SCCT, individual self-efficacy beliefs, outcome expectations and personal goals shape career choices. This theory suggests that students are more willing and will stick with a career path, provided they perceive themselves to have the capability to achieve success (self-efficacy), anticipate positive results, and get the proper support of their environment. This holds especially true in the case of agriculture where the students could be experiencing the following issues; negative perception of the subject, scarcity of resources, or role models.

These theories are combined together to form the theoretical framework of this study to explain both the selection and the progression of agriculture careers amongst students. Occupation Choice Theory assists in comprehending the initial choice process and Social Cognitive Career Theory underlines persistence and dropout rates

of students depending on confidence, motivation and environmental support. Poor career advice, restricted field experience, social perceptions of farming and financial pressures are some of the challenges that can adversely affect the decision-making process and career advancement. According to these theories, the paper hypothesizes that the best interventions to counteract these issues involve developing better self-efficacy in students, better access to career information, stronger mentorship and support networks, and a more facilitating learning environment. These strategies have the potential to enhance the interest, retention and success of students in agriculture-related programs in tertiary institutions in Kenya by addressing personal, social, and institutional factors.

2.2 Empirical Review

Globally, nations are attempting to devise the most effective techniques for enhancing agriculture education so as to increase productivity and wealth. Anquilo-de Asis (2013) found that, there is a strong argument that streamlining the approved agricultural education curricula and implementing agricultural entrepreneurship is a feasible strategy for agricultural education, Applying the "hands-on activities, mind-on approach" According to Calvin and Pense (2013), establishing community-based courses within the curriculum and/or attaching a field/practical component to different courses that can be tied to ongoing research and development would strengthen the connection between extension and education. Almocera et al., (2020) recommend that among the policies that support agricultural education and training are the development of occupational agricultural colleges to reflect agricultural practices. Societies and youth from both low-income and high-income nations view agriculture as unattractive career path, poor income, or low pay relative as stated by Ariyo and Mortimore (2012). According to Pratley and Crawley (2008), the decline in agricultural program enrolment in the United States is due to a lack of skilled people, which impacts current and future agricultural secondary programs as well as learner preference. Ochuodho (2016) found that students are admitted to degree programs and universities that are not of their choosing. The University of Eldoret found that students attempt to switch to popular courses or what they claim to be their love.

Adebo and Sekumade (2013) argue that, many young Nigerians choose careers that require them to move to the cities in quest of white-collar work hence rural-urban drift, has reduce agricultural productive capacity, caused farmer population to age while Taghibaygi et al., (2015)) study claims that a lack of motivation among students prevents acquiring the skills and technologies necessary for agricultural vocations and businesses. Placement department must realize that a student's choice of college is considerably more significant than college placement (Chapman, 1981). College selection should always take into account the student's educational goals. Ongang'a (2015), reported that students' attitudes of agriculture as a career were modest, and agricultural exhibitions should be used to enhance students' agricultural skills and knowledge

Manyasi (2021) review illustrates that many nations have reported a decline in agricultural programs enrollment. In spite of bountiful agricultural resources, the rising population in developing countries like Kenya has led to severe food shortages and the establishment of agricultural education programs on food security. In countries with efficient farm laborers, researchers, educators, extension agents, and professionals, agricultural education may play a crucial role in providing a clear context for profitable and sustainable agricultural expansion. Governments should strongly support agriculture education by financing agriculture education research, while the profession must be altered by encouraging everyone to learn farming and participate in Kenya's new Competency-Based Education (CBE) in senior school.

III. METHODOLOGY

3.1 Research Design

A descriptive design was used in the study and allowed the researcher to collect both qualitative and quantitative data at roughly same time. Institutional and governmental strategies used to motivate students to select agriculture subject and or enrol in agricultural programs were the measurable indicators or variables.

3.2 Study Area

The study was conducted in Bungoma and Kakamega counties of Western Kenya. The Counties were preferred for this study due to their large population that has necessitated construction of several variety of learning institutions which offer agriculture education.

3.3 Target Population

The study population from (Two) 2 Counties of Kakamega and Bungoma comprised of 694 University undergraduate students enrolled in agriculture programs, 3855 technical and vocational training students enrolled for agricultural programs.

Table 1*Target Population*

| No | Institutions | Kakamega | Bungoma | Total |
|--------------|-------------------|-----------|----------|-------------|
| 1 | Universities | 1 | 1 | 2 |
| 2 | Tertiary colleges | 9 | 8 | 17 |
| Total | | 10 | 9 | 19 |
| | Students | Kakamega | Bungoma | Total |
| | Universities | 468 | 226 | 694 |
| | Tertiary colleges | 3023 | 812 | 3855 |
| Total | | | | 4549 |

3.4 Sampling Techniques and Sample Size

Purposive sampling was used to select Bungoma and Kakamega Counties. Tertiary institutions were then selected by Census method since all could be accessed to participate in the survey. Two public Universities were selected by Census method. Nine (9) agricultural colleges from Kakamega County and eight (8) agricultural colleges from Bungoma County were sampled to take part in the study. Heads of Department of Technical and Vocational Education Training colleges (9) and chair of departments of the universities, one(1 Per) were selected purposively to provide key and critical information for the research study since they interact with students and access records of enrolment as indicated in Table 2. Technical Vocational Education Training and University undergraduate students of agriculture were selected by stratified random sampling basing on agricultural programs of study, and year of study as shown in Table 3 and Table 4. Both qualitative and quantitative research approaches were therefore used to collect both qualitative and quantitative data of primary and secondary type.

Table 2*Sampling Strategy for Respondents in Bungoma and Kakamega counties, Kenya*

| Description | Sample Size | | Sampling design | Instruments of data collection |
|--|-------------|---------|----------------------------|--------------------------------|
| | Kakamega | Bungoma | | |
| Director of studies | 9 | 8 | Purposive | Interview guide |
| H.o.D of agriculture of TVET institutions | 9 | 8 | Purposive | Interview guide |
| C.o.D of university | 1 | 1 | Purposive | Interview guide |
| County director of TVET | 1 | 1 | Purposive | Interview guide |
| TVET students of agriculture programs | 103 | 28 | Stratified random sampling | Questionnaires |
| University students of agriculture programs | 16 | 8 | Stratified random sampling | Questionnaires |
| County Quality Assurance and Standards Officers of education | 1 | 1 | Purposive | Interview guide |
| Focus Group Discussion | | 18 | Quota | FGD Guide |

Table 3*Sampling of Student respondents*

| Sampling Year | Year of Study | Year 4 | Year 3 | Year 2 | Year 1 | Total | Total |
|---------------|---------------|--------|--------|--------|--------|-------|-------|
| 2016 | TVET | 3 | 2 | 5 | 10 | 20 | 22 |
| | University | 0 | 0 | 1 | 1 | 2 | |
| 2017 | TVET | 6 | 2 | 4 | 7 | 17 | 19 |
| | University | 1 | 0 | 0 | 1 | 2 | |
| 2018 | TVET | 4 | 3 | 6 | 13 | 22 | 24 |
| | University | 0 | 0 | 1 | 1 | 2 | |
| 2019 | TVET | 0 | 0 | 8 | 12 | 20 | 24 |
| | University | 1 | 0 | 1 | 2 | 4 | |
| 2020 | TVET | 6 | 4 | 4 | 10 | 20 | 26 |
| | University | 0 | 1 | 2 | 3 | 6 | |
| 2021 | TVET | 8 | 4 | 6 | 22 | 32 | 40 |
| | University | 1 | 1 | 3 | 3 | 8 | |

Table 4*Sample Size of Student Respondents in Bungoma and Kakamega Counties, Kenya*

| Students | Kakamega County | Bungoma County | Total |
|-----------------------|-----------------|----------------|-------|
| Universities students | 16 | 8 | 24 |
| TVET students | 103 | 28 | 131 |
| Total | 119 | 36 | 155 |

3.5 Data collection tools

Interview guides, questionnaires and document content guides and focus Group Discussion were used to collect data from the respondents. Less structured research instruments were used to gather data. More in depth information was obtained by asking open-ended questions as posited by (Mugenda & Mugenda, 2008). Qualitative research provided detailed views of respondents while Quantitative research was carried out to provide numerical data. Quality was ensured in both the quantitative and qualitative research methods by checking for validity, reliability of the quantitative data, and the trustworthiness of qualitative data. To affirm the degree of content validity of the instruments of data collection used, a pilot study was done to pre-test the instruments. Cronbach reliability coefficient was used to establish the internal consistency of the responses. During pilot study the split- half method was used and a reliability coefficient value of 0.75 was attained which was then considered reliable (Orodho & Kombo, 2002).

3.6 Data Analysis

Collected data was edited, coded and entered into the data sheets ready for processing using Statistical Package for Social Sciences version 25. All quantitative data collected was subjected to descriptive statistics first before being analysed inferentially. Descriptive statistics analysis was used to determine frequencies, variance, percentages, means and standard deviation and was presented in form of tables, graphs and charts. Regression analysis was carried out to establish the influence of strategies and motivational factor on enrolment and progression.

3.7 Ethical Considerations

Ethical compliance and cooperation were achieved by obtaining permission and approval to ensure adherence to these by the researcher and the concerned authorities. The research was conducted in accordance with ethical considerations such as informed consent in which the participants were thoroughly informed of the research and given the right to choose whether they wanted to take part in the research or not, and at any point, they could withdraw. Anonymity and confidentiality were ensured by not taking names but instead used codes or pseudonyms. Privacy was observed in data collected. The study was purely voluntary and without coercion and backed by signed consent forms. Psychological and emotional discomfort was also prevented by not asking sensitive or personal questions. In order to minimize bias, the research design, sampling, objectivity in analysis of data and fair treatment of all respondents were all used to ensure quality of the research.

Analysis of the data was done quantitatively and qualitatively. Descriptive statistics (percentages, means, and standard deviation) were used to analyse quantitative data and were provided in the form of tables and graphs. The qualitative information was coded and analysed. Relationships were tested with advanced methods such as factor analysis and trend analysis, and data triangulation increased the validity of the information as it cross-verified the information of several sources.

IV. FINDINGS & DISCUSSION**4.1 Findings**

Challenges to Progression in Agriculture careers in Bungoma and Kakamega Counties. Whereas students seek to study Agricultural programs, they at times encounter some challenges that hinder them from selecting and progressing as shown in Table 5.

Table 5*Challenges to Progression in Agriculture careers in Bungoma and Kakamega Counties, Kenya (N=155)*

| Challenges | SD (1) | D (2) | N(3) | A(4) | SA (5) | Mean | SD |
|--|----------|----------|----------|----------|----------|-------------|--------------|
| Ministry policies on program | 25(16.7) | 26(17.3) | 16(9.9) | 43(27.2) | 46(29) | 3.35 | 1.472 |
| School policy | 31(19.8) | 26(17.3) | 45(29) | 40(25.3) | 13(8.6) | 2.86 | 1.245 |
| Parents decision | 14(8.6) | 41(25.9) | 7(4.3) | 74(49.4) | 19(11.7) | 3.30 | 1.220 |
| Teachers influence | 19(11.7) | 31(19.8) | 7(4.3) | 74(47.5) | 26(16.7) | 3.19 | 1.264 |
| Peer compliance | 22(14.2) | 46(29.6) | 25(16) | 48(30.9) | 14(9.3) | 2.19 | 1.243 |
| Lack of involvement in policy dialogue | 10(7.1) | 49(32.2) | 45(29.6) | 39(26) | 13(8.3) | 3.06 | 1.277 |
| Lack of modern agriculture curricular and technology | 12(7.4) | 51(32.7) | 33(21.6) | 36(23.5) | 23(14.8) | 3.06 | 1.207 |
| Lack of government scholarship in agriculture | 17(11.1) | 8(5.6) | 19(12.3) | 78(50) | 33(21) | 3.64 | 1.198 |
| Composite mean and standard deviation | | | | | | 3.08 | 0.429 |

Table 5 shows that cumulatively, 89(56.2%) of the students agreed that ministry policies were a challenge to progression in Agricultural Programs. However, 16(9.9%) of them remained neutral on the subject. 25(16.7%) strongly disagreed and 26(17.3%) disagreed cumulatively, 55(34%) of the students disagreed that ministry policies were a challenge. It can be noted from a comparative observation of the findings that ministry policies are a challenge to progression in Agricultural programs, which is also evidenced by a high mean ($M=3.35$, $SD=1.472$) although with a high standard deviation. A low mean ($M=2.86$) and high standard deviation ($STD=1.245$) confirmed that school/department policies were not a challenge despite high variation in the response as indicated by the standard deviation. Parental decision gained much approval among majority of students 74(49.4%) who agreed as well as 19(11.7%) who strongly agreed. A high mean and standard deviation ($M=3.30$, $SD=1.220$) indicated that averagely, there was high approval of parental decision as a challenge to progression in agricultural programs. Majority, 74(47.5%) of the students agreed that teacher influence was a challenge to their progression in agricultural courses. To affirm these finding, a high mean ($M=3.19$, $STD=1.264$) confirmed that teacher influence is a challenge to student's progression in agricultural programs.

Peer compliance had a high rating ($M=3.0$, $STD=1.42$). Cumulatively, 62(40.2%) of the students agreed on peer compliance as a challenge while 68(43.8%) disagreed. Cumulatively, 58% of the students agreed that their involvement on policy dialogue was a challenge to progression in agricultural programs. A low mean ($M=3.06$, $STD=1.277$) and a high standard deviation confirmed that little student's involvement was not a challenge to progression in agricultural programs. Cumulatively 62(38.3%) approved lack of modern agricultural curricula and technology as a challenge. However, based on the low mean response, lack of modern agricultural curricula and technology was not a major challenge to progression. Limited government scholarships in agriculture sector emerged a major challenge as indicated by a high rating ($M=3.64$, $STD=1.198$). Cumulatively, 115(71%) of the students agreed that limited government scholarships in agriculture sector was a challenge to progression in agricultural programs implying that students encountered challenges in their quest to progress in agricultural programs.

A Focus group discussion comprising of students from different tertiary institutions claimed that, the mean grade, clusters of subjects together with grades obtained in the cluster subjects could not allow them to apply for agricultural programs of their choice. The key informant heads of department claimed that students end up with programs which were not of their choice. They affirmed that academic achievement policy curbs students' willingness to progress in agriculture program. It is critical for the placement department to understand that a student's choice of college and hence choice of program is far more important than college placement (Chapman, 1981). Ochuodho (2016) found that students are admitted to degree programs and universities that are not of their choosing. The University of Eldoret found that students attempt to switch to popular courses or what they claim to be their love.

4.2 Strategies to Mitigate Challenges to Progression in Agriculture Career

Students of agricultural programs as well as key informants suggest strategies that can be employed by the Ministry of agriculture and the Ministry education to mitigate the challenges to progression.

4.2.1 Strategies to the Ministry of Education

The students outlined the strategies for progression in agriculture in order of preference in Table 6



Table 6

Suggested Strategies to the Ministry of Education in Bungoma and Kakamega Counties, Kenya

| | |
|------|--|
| i) | Making Agricultural course business oriented |
| ii) | Making Agricultural course more practically oriented |
| iii) | Prioritizing staffing for teachers of agriculture |
| iv) | Agriculture must be made a compulsory learning area. |
| v) | Intensifying career guiding and counselling in Agricultural course in learning institutions |
| vi) | The ministry of education should lower the entry grades to Agricultural courses |
| vii) | The government to Provide work-equipment and machinery which give self-employment after training |

The above order of strategies in Table 6 implies that students prefer learning more of entrepreneurial part of agriculture as well as the practical agriculture to as life-skills though; they would also like to be employed by the ministry of education. Taghibaygi *et al.*, (2015) claimed that, a lack of motivation among students prevents acquiring the skills and technologies necessary for agricultural vocations and businesses. Placement department must realize that a student's choice of college is considerably more significant than college placement (Chapman, 1981). College selection should always take into account the student's educational intentions.

4.2.2 Strategies to the Ministry of Agriculture

The students outlined the strategies to be considered by the Ministry of agriculture in order of preference in Table 7.

Table 7 *Suggested Strategies to the Ministry of Agriculture in Bungoma and Kakamega Counties, Kenya*

| | |
|------|---|
| i) | Creating more job opportunities in Agriculture sector |
| ii) | Providing incentives and scholarships to agricultural students |
| iii) | Create Entrepreneurial start up kits for agricultural students |
| iv) | Legal requirement to set up Agri-based industries for self-employment by agricultural students should be of less cost |
| v) | The government to construct more agricultural colleges equipped with relevant resources in line with the course |
| vi) | Ministry to consider reviewing salary packages for the officers who are already working in this field |

The order of strategies in Table 7 implies that students prefer employment in the ministry of agriculture as well as higher education that opens avenues in the ministry of agriculture if scholarships are availed for studies. According to them reviewing salaries come least. Ongang'a (2015) reported that students' attitudes of agriculture as a career were modest. Results of the current study reveal positive attitude towards agriculture as a learning area.

A rank order carried out on all the above suggested strategies revealed the critical strategies to be employed by the Ministry of agriculture and the Ministry of education so as to mitigate the challenges faced by students in selection and progression in agriculture career. Findings presented in Table 8

Table 8

Ranking Order for Strategies for Agriculture Progression

| Strategies | Mean (M) | STD Deviation | Ranking Order |
|---|----------|---------------|---------------|
| Ministry of education to intensify Career guiding | 2.27 | 0.944 | 1 |
| Ministry of agriculture to Providing incentives and scholarships Scholarships | 2.22 | 0.926 | 2 |
| Ministry of agriculture to create more job opportunities | 2.14 | 0.870 | 3 |
| Ministry of education to priotize Staffing agriculture graduates | 1.97 | 0.845 | 4 |
| Ministry of agriculture to consider reviewing salary packages for employees | 1.96 | 0.918 | 5 |

The Ranking order implied that the best strategy for the Ministry of education is to intensify Career guiding with the highest Mean (M) (2.27) and (STD 0.944). The best strategy for the Ministry of agriculture to providing incentives and scholarships Scholarships mean (M) (2.22), (STD: 0.926).

Further analysis was also carried out to establish whether there are significant strategies to mitigate the challenges facing students in selection and progression as shown in Table 9



Table 9

Model Summary on Strategies to Mitigate Challenges

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | |
|-------|-------------------|----------|-------------------|----------------------------|-------------------|----------|-----|-----|---------------|
| | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change |
| 1 | .528 ^a | .279 | .271 | .50853 | .279 | 34.782 | 4 | 359 | .000 |

a. Predictors: (Constant), create more jobs, scholarships, staffing, career guiding and counseling

From the findings in Table 9, it is clear that the strategies mentioned account for 27.9% variance in mitigating challenges, R Square=.279, F (4, 359) =34.782, p<.05. This implies that the strategies mentioned significant mitigate the challenges to progression in agriculture programs. Further analysis on the model coefficients is presented in Table 10.

Table 10

Model Coefficients on Strategies to mitigate challenges

| Model | | Coefficients ^a | | | t | Sig. |
|-------|-------------------------------|-----------------------------|------------|---------------------------|--------|------|
| | | Unstandardized Coefficients | | Standardized Coefficients | | |
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 2.082 | .125 | | 16.680 | .000 |
| | Scholarships | .091 | .030 | .137 | 3.044 | .003 |
| | Staffing | -.047 | .034 | -.064 | -1.381 | .168 |
| | career guiding and counseling | .248 | .030 | .392 | 8.263 | .000 |
| | create more jobs | .161 | .036 | .221 | 4.524 | .000 |

a. Dependent Variable: mean challenges

The findings in Table 10 show that creating more jobs ($\beta=.221$, $p<.05$), career guiding and counseling ($\beta=.392$, $p<.05$) and provision of scholarships ($\beta=.137$, $p<.05$) were some of the significant strategies to mitigate challenges facing progression with agricultural programs. Anquilo-de Asis (2013), argued that streamlining the approved agricultural education curricula and implementing agricultural entrepreneurship was a feasible strategy for agricultural education. According to Pratley and Crawley (2008), the decline in agricultural program progression in the United States is due to a lack of skilled people, which impacts current and future agriculture secondary school programs. College selection should therefore take into account the student's educational goals. This will stop them from streaming away from rural area even after training in land use and agriculture. Ongang'a (2015) reported that students' reflection of agriculture as a career were modest, despite the fact that their career aspirations had little influence on them. He insisted that to improve their morale and attitudes towards agriculture, agricultural educators must demystify agriculture as a science subject. Students should be encouraged to select a career path as early as form one and two in order to develop a positive attitude toward the subject. Governments should strongly support agriculture education by financing agriculture education research, which will improve students' perspectives, attitudes, and desire to study agriculture. Students' perspectives on agriculture education and the profession must be altered by encouraging everyone to learn farming and participate in Kenya's new Competency-Based Curriculum (CBC) for high school graduation.

V. CONCLUSION & RECOMMENDATION

5.1 Conclusion

There are challenges that affecting students in their selection and progression in agricultural programs. However, the ministries of education and that of agriculture have significant strategies to effectively mitigate the challenges to selection and progression in agriculture career.

5.2 Recommendation

The national and county government ministry of education and agriculture should provide scholarships for agricultural students and create employment opportunities. However, the ministry of education should lower entry grades, making the course more practical, business oriented and increasing staffing for agricultural teachers. The ministry of education should formulate strategies such as lowering the entry grades in agriculture science, making the programs more practical by improving on technologies used in production, making the programs business oriented and increasing staff in the school of agriculture. Implying that the mentioned strategies are effective to mitigate challenges to progression in agriculture career.

Declaration of Interest

The author declare that she does not have any known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Funding Declaration

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

REFERENCES

- Adebo, G. M., & Sekumade, A. B. (2013). Determinants of career choice of agricultural profession among the students of the Faculty of Agricultural Sciences in Ekiti State University, Nigeria. *Journal of Agricultural Extension and Rural Development*, 5(11), 249–255. <https://doi.org/10.5897/JAERD2013.0508>
- Almocera, R. J., Conway, G. D., & Ouano, J. A. (2020). Investigating homesickness among first-year university students: Relations with social connectedness and academic engagement. *Philippine Journal of Counselling Psychology*, 22(1), 61–80.
- Anquilo-de Asis, L. (2013). Issues and strategic approaches in strengthening agricultural education: The case of The University of Eastern Philippines. *Journal of Energy Technologies and Policy*, 3(11), 46–51.
- Ariyo, J. A., & Mortimore, M. (2012). Youth farming and Nigeria's development dilemma: The Shonga experiment. *IDS Bulletin*, 43(6), 58–66.
- Calvin, J., & Pense, S. L. (2013). Barriers and solutions to recruitment strategies of students into post-secondary agricultural education programs: A focus group approach. *Journal of Agricultural Education*, 54(4), 45–57.
- Chapman, D. W. (1981). A model of student college choice. *The Journal of Higher Education*, 52(5), 490–505.
- Ekwere, U. E. (2014). Impact of practicals on students' choice of agricultural science in secondary schools in Abi Local Government Area of Cross River State [Seminar paper, University of Calabar, Department of Vocational and Special Education, Faculty of Education].
- Food and Agriculture Organization of the United Nations. (2016). *The state of food and agriculture: Climate change, agriculture and food security*. FAO.
- Huitt, W. (2011). Bloom et al.'s taxonomy of the cognitive domain. *Educational Psychology Interactive*, 22, 1–4.
- Lent, R. W., Brown, S. D., & Hackett, G. (1994). Toward a unifying social cognitive theory of career interest, choice, and performance. *Journal of Vocational Behavior*, 45(1), 79–122. <https://doi.org/10.1006/jvbe.1994.1027>
- Manyasi, A. N. (2021). Global influential factors for choice of agriculture related courses among students: A review paper. *IOSR Journal of Research & Method in Education*, 11(2), 20–28. <https://doi.org/10.9790/7388-1102062028>
- Mugenda, A. G. (2008). *Social science research: Theory and principles*. Acts Press.
- Ochuodho, J. O. (2016). Status of the higher agricultural education sector in Kenya: A sector at crossroads. *African Journal of Rural Development*, 1(2), 171–178.
- Ongang'a, P. O., Nkurumwa, A. O., & Konyango, J. J. O. (2015). Factors related to secondary school students' choice of agriculture subject in Uriri Sub-County, Kenya. *IOSR Journal of Research & Method in Education*, 5(2), 46–55. <https://doi.org/10.9790/7388-05234655>
- Orodho, A. J., & Kombo, D. K. (2002). *Research methods*. Kenyatta University, Institute of Open Learning.
- Parsons, F. (1909). *Choosing a vocation*. Houghton Mifflin.
- Pratley, J., & Crawley, N. (2018). Graduate destinations in agriculture. *Agricultural Science*, 29(2/1), 6–15.
- Taghibaygi, M., Rafe, M., & Moosavi, S. A. (2015). Analysis of students' motivation in vocational schools and agricultural training centers in Kermanshah Province toward studying the field of agriculture. *International Journal of Advanced Biological and Biomedical Research*, 3(1), 105–114.
- Tiraieyari, N., & Krauss, S. E. (2018). Predicting youth participation in urban agriculture in Malaysia: Insights from the theory of planned behavior and the functional approach to volunteer motivation. *Agriculture and Human Values*, 35(3), 637–650.
- United Nations Development Programme. (2014). *Assessing the socio-economic impacts of Ebola virus disease in Guinea, Liberia and Sierra Leone: The road to recovery* (Report No. 267621). UNDP.
- Woelfel, J. (1975). A theory of occupational choice. In Picou, J. S., & Campbell, R. B. (Eds.), *Career behavior: Theory and research* (pp. 41–62).
- World Bank. (2013). *World development indicators 2013*. World Bank. <https://data.worldbank.org>