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Global Influential Factors for Choice of Agriculture Related Courses among Students: A Review Paper.

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Abstract *Statistics from the past employment events show that agriculture is not the most popular major field for students at the time of career decision-making yet it's connected to people and communities, regardless of its negative reputation. Despite increase in overall University enrolment, there in a general decline in students' enrolment in agriculture programmes globally. The principle and factors based on by Students' to make choice of the job skill in their life need to be understood by the society at large. Five principle factors influencing the agricultural education training among learners are: family elements, Situational factors. Individual factors, society expectations and economic factors. Basing on the above principles influencing agriculture education training, the following factors have been identified to influence the decision by learners to choose agriculture related course: academic factors, interpersonal factors, personal factors, important persons, previous agricultural activities experience, previous experience with the university, environmental factors, career opportunities, government economic ability. However each of the studies did not highlight all possible factors influencing choice of Agriculture courses among students. There is need to explore the subject in broad to incorporate all the factors. Some researchers look at academic factors, others look at social factors, others look at demographic factors a lone hence there is need to include all factors for comparison purposes and recommendation. There is need to change the orientation of students towards agricultural education and profession by allowing all students to enrol for agriculture subject to ensure skills for production and global food security*

Key Words: *Agriculture related courses, Influential factors, Students' enrolment trends.*

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I. Introduction

Statistics from the past employment events show that agriculture is not the most popular major field for students at the time of career decision-making. The principle and factors based on by students to make choice of the job skill in their life need to be understood by the society at large.

II. Overview of agriculture sector

Agriculture is connected to people and communities, regardless of its negative reputation. It is the basis of the society since it satisfies human needs[1]. The agriculture sector has been confronted with the labour issue leading to the low productivity and profitability[2]. [3]study revealed that, despite its relevance demographic trends and growth, there is little empirical data on youth participation in agriculture sector in Malaysia. Evidences reveal that career in agriculture are not favoured by students, who see agriculture as the least choice after industry and retail sectors [4,5,6] . Reports from the Ministry of Human Resources shows declining trends of workforce in the agriculture sector at the rate of about 10 percent over the past few years [7].

To address the challenges in agricultural sector and for sustainability, adequate and consistence supply of qualified and experienced agricultural Extension officers is required [8]. Looking at developed countries, such as China, United States of America, and Brazil, agriculture is one of the courses highly ranked and compulsory offered in the curriculum [9]. The same practice is observed in developing countries such as Cuba where agriculture is taught from primary level of education and learners are involved in community voluntary work for three years upon completion of secondary education [10]. And this has changed individual and government perception of the course and improvement in agricultural production in the nation in the recent years.

In Africa continent, as much as the sector enjoys a huge support from international and local bodies, in South Africa, the number of churned out graduates yearly has remained poor as compared to other disciplines [11]. Colleges of Agriculture (CoA) in the country are estimated to supply only slightly more than half of the number of graduates needed to fill the job openings through 2015 [10].

In Nigeria, Agriculture is the main economic activity in the rural sector but has suffered neglect from students who opt to study Medicine, law, accounting and engineering [12]. Students in this country opine that

agriculture related courses do not earn them much like other mentioned courses hence they have less interest and have left it to old people. This has witnessed poor enrolment of students into the Faculty of Agricultural Sciences in Nigerian Universities.

In, Egypt, despite the fact that it is desert, agriculture education receives a lot of support more so irrigation using the river Nile waters and as we speak now and the country is one of the nations in Africa that is self- sufficient in food production [13].

Agriculture is the cornerstone of the Kenyan economy, and agriculture is a technical subject that is optional in secondary schools. Agriculture in Kenya contributes a 23-percentage of the Gross Domestic Product (GDP) of the country to a USD 11 million (USD) from the export sector in Kenya, as the Government's records in early 2013 indicate, according to its report presented at the State House by the Cabinet Secretary for Agriculture on August 15, 2016. By 2016, this rose to 30%. Commercial agriculture is designed to build jobs, as well as self-sufficiency in food for the region. In addition, agriculture education aims to enhance technical and professional skills in agriculture that coincide with the country's vision of 2030. [14] The emphasis was placed on agricultural education to give students the skills and knowledge of the world of work. The subject should improve the critical skills of the students with regard to their academic, practical and ethical aspects. Since revision of the curriculum in 2002 gives secondary school students poor background, the subject is not studied in the primary schools of Kenya.

Popular global careers

The occupations of women and men have improved over the past decades. Today there are many workers and many have moved from one place to another. Culture and economy have evolved over time. Many historical events have changed people's career fields, including business, community, climate and so many more. Therefore, over time, salaries, job rates and workers were affected. Events like the Industrial Revolution and the Great Depression in the history of the world have transformed the workforce. America's prosperity also has an effect on the labor market. The Industrial Revolution brought about a growth in the U.S. economy. Growing numbers of goods produced in plants have changed the industrial revolution's lifestyles. People have learnt how the goods are produced to live better at home [15].

Students can choose from several courses and career paths. Business administration and management, psychology, nursing, biology, and education are the top five college majors [16]. Agriculture is not the most popular major sector, according to statistics, but agricultural economics and agricultural production education are among the top ten majors in the United States with the highest employment rate (98 percent) [17].

Careers in agriculture

The agricultural labor market has spread to many areas. Animal science, plant science, soil science, agricultural business, and agricultural engineering are all options for students interested in a career in agriculture. In the past, after graduation from high school or college students with an interest in agriculture went home to work in a family farm. Some students also started a small farm with the hope of growing. In the agricultural sector there were few jobs compared to agriculture today [18]. Students now have the option of working in particular agricultural fields rather than going home to work on the farm [18]

III. Agriculture education

Training in agriculture is practical training and skills development. It is a type of education that prepares students for jobs in recognized employment, hence vocational training [20]. The foundation of Vocational Technical Education (VTE) is focused on the philosophy which has been developed to promote self-employment and graduate self-reliance. [20]. Agriculture is thus a subject of social acceptance, appropriate funding and choice for the family [20]. Agricultural education is therefore confronted with challenges which fail to fulfil its objectives. It teaches crop production, farm management, the preservation of soil and water, and other agricultural aspects [21] and therefore it's important function is to prepare youths and adults for careers in Agricultural education and ministry of agriculture [22]. Despite available rich agricultural resources, the growing population in developing countries, including Kenya, has resulted in severe food shortages and in the introduction of agricultural education programs on food security. Agricultural education can play a key role by providing a clear context for productive countries that are sustainable agricultural growth by efficient agriculture workers, researchers, educators, extension workers and professionals [23]. Choosing a career therefore, is a function of training, exposure, information and interest of the students.

Global comparison of determinant factors for need of agriculture programs

Agriculture education includes guidelines on cropping, management of animals, conservation of soil and water, irrigation between additional areas [24]. In addition, agricultural training includes food production to

enhance farmers' subsistence and commercial production contributing to population quality of life. Agriculture education also requires food production.

According to [25], in a study on the challenges of choosing agriculture as a profession in America, teachers emphasized that a lack of trained staff has an effect on current and future secondary agriculture programs, influencing learners' choice of subject. As a result of the scarcity of trained workers, agriculture must be chosen.

In Africa, [26] identified that the agricultural education of the secondary curriculum has many objectives. As in the case of Swaziland, the purpose of junior secondary agriculture education is to improve the gratitude of the students and their positive behaviour in relation to agriculture. [27] clarify that students in Swaziland opt for economic, personal, educational, family and social purposes to undertake high school agricultural activities. Agriculture in these countries is very important subjects as it decides a potential personal career and boosts the country's economy

In Nigeria, the youth prefer careers that will make them move to urban areas to look for white colour jobs. The sheer frenzy of agriculture not embraced by youths and rural-urban drift has dislocated the productive capacity of the country agriculturally and this has caused the farmer population to be aged such that per capital productivity and output have declined [28].

[29] state that the choice of agriculture as the career choice of secondary students in Ghana is dictated by the socio-economic context of the individual student. Agricultural colleges often influence learners, parental influence and the influence of their peers. Though farming has a lot of potential in the county, agriculture remains a choice in the curriculum for education, which leads to a small number of students studying farm.

8-4-4 education system was implemented in Kenya in 1985. According to [30], who attempted to vocationalize the curriculum, the decline in the choice of agriculture as a subject of professionalism was thus neglected among the subjects that required a lot of practical education in secondary schools According to [31], the number of students choosing agriculture in Kenyan high schools has dropped from 70% in the early 1990s to 40% today.

Principle factors influencing agriculture education training

Five principle factors influence the agricultural education training among learners [23]**.** The principles are individual, family, socio-cultural, socio-economic and situational factors.

1. Individual: features such as the student's competence in the language of instruction, study effort, participation and age decide the performance and control of students have a positive impact on the progress of school students. [23]

2. Family: Parents participate in academic outcomes [32]. Family influences affect student performance and thus parental expectations and aspirations influence successful research in agriculture in the course of education and learning.

3. Socio-cultural: Socio-cultural factors for agricultural education achievement include student mobility, racial background, social class and different ethnicity [33]. So, in science, including agriculture, social expectations have important effects on student achievement.

4. Socio-economic factors are indirectly linked by parenthood, finance and actions to child academic performance [34]. Since parenthood, family size and income can be observed as well as empirical evidence that parenthood, the schooling of children and earnings are linked as parenthood and family income define a person's living condition.

5. Situational factors in the teaching and learning process: Academic success is influenced by factors such as school safety and adaptive grouping. Improvements in school situations such as improved school funding and student discipline increase learning [23] and affect readiness to study agriculture.

In line with the above principles, trends in enrolment in agriculture programs as well as factors influencing learners to enrol and study agriculture related programs have been discussed below.

Trends in Students Enrolments in Agriculture-related Programs

Most of the studies reviewed have posted a decline in enrolment in agriculture programmes globally. The decline in agricultural program enrolment in the United States is due to a lack of skilled staff affecting current and potential agricultural secondary programs and learner preference [35, 10]. In Australia, demand for agricultural-related programmes declined as stated by [36]. The same decline was reported in New Zealand respondents to a research study by [37]**.**

In Africa many countries announced a decrease of enrolment for agricultural schemes regardless of the fact that agriculture accounts for 40 percent of GDP and 70 percent of employment. In Egypt, there is high enrolment into programmes in other departments except for students of agriculture [38]**.**In Nigeria, the youth prefer careers that will make them move to urban areas to look for white colour jobs. The sheer frenzy of agriculture not embraced by youths and rural-urban drift has dislocated the productive capacity of the country agriculturally and this has caused the farmer population to be aged such that per capital productivity and output

have declined [28] hence enrolment in agriculture-related programmes is lowest as stated by [39] while in Niger. enrolment in agriculture programmes has also declined hence taking the same trend as asserted by [40].

In Zimbabwe, there is unproportional enrolment in undergraduate and graduate programmes where more students enrol for undergraduate programmes but fewer at post-graduate level Studies revealed that very few mentors have succeeded as agricultural professionals. Some abandon agriculture career and join other professions. These has led to reducing trend in agriculture programmes despite the increase in number of agriculture courses. Similarly, the share of enrolment in these programmes compared to overall enrolments show downwards trend.[41].

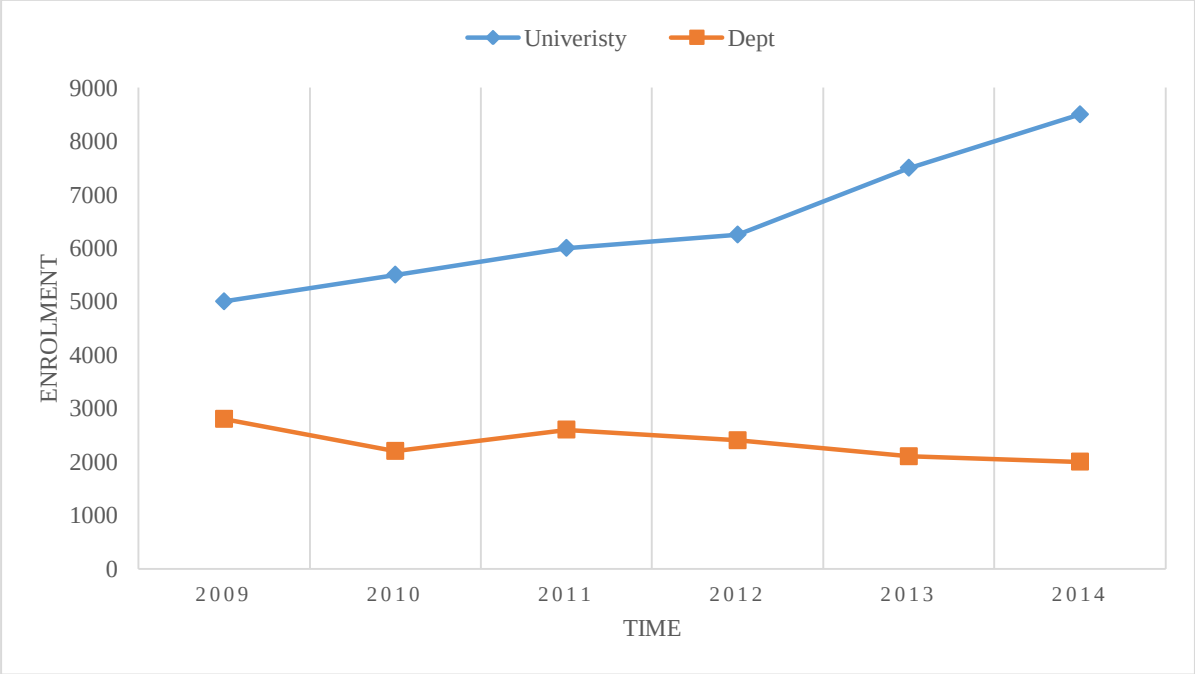

Figure 1.1: Trend of enrolment of students in Universities and department of agriculture in Zimbabwe Source:(41)

According to [29], despite the fact that Ghana has a lot of agricultural potential, agriculture as a career subject is still optional in the education curriculum, resulting in a low number of students in agriculture classes.

In Kenya, the 8-4-4 system of education was implemented in 1985. According to [31], in the early 1990s the number of high school students in the field of agriculture decreased from 70% to 40%.

As explained by [30] 8-4-4 system attempted to vocationalize the Curriculum and agriculture was among the subjects that needed a lot of practical's but practical teaching in secondary schools has been neglected and currently experiencing a decline in number of students choosing agriculture programs.

Since the main turning point in the life of students is their career choice, certain pertinent questions must be asked:

I. Should we continue the trend?

II. What are the factors affecting agricultural career choices? Would you like to remain on the job?

III. How do we help the farming profession in securing the nation's future?

These are the questions that we must pose and try to find answers for students in Kenya as a country in selecting their agricultural profession as their career.

Factors influencing choice of agriculture programs

College choice of students and programme verses students' choice of college and programme

Colleges are known to have been established for specific subject majors or courses. For example Masinde Muliro University of Science and Technology is established to offer training in science and technology programmes while Kenyatta University is established to offer education Programmes. Hence, aspirations to join a certain college or university among secondary school students is always connected to the aspirations to major in a certain field of study. Hence factors influencing the selection of a college major could alongside be factors influencing the choice of a college to join after the secondary education. Earlier researcher pointed out that exposure to agricultural college becomes a motivating factors for selecting a programme in agriculture as stated by [42] and it familiarizes the learner with the environment so that knowing the expectation in such a college, they select the college and a programme.

Usually colleges choose students to join their programmes depending on the level of education and high school performance, but its importance for the placement department to understand that, student`s choice of college matters much more than college placement. The student`s choice of college will always put in consideration the level of education aspirations as well as. College life expectations such as costs, location and availability of the program they want to study. The student also listens and values the opinions of friends, parents and secondary school teachers and lastly their experiences with the university in terms of visits and communications [43].

In consideration of the above explain and the principle factors influencing agriculture education training the following factors are highly considered to influence the choice of agriculture programs by learners. According to [44] these factors influence choice of agriculture in phases. The students must go through the exposure phase, then search phase before the choice of agriculture program.

Academic factors influencing choice of agriculture programmes

According to [45], choice of future agriculture courses is tied to academic performance in agriculture at high school. Low academic performance has a strong, negative influence on choice of agriculture as future career. High academic performance has strong positive influence on choice of career in agriculture. Academic performance in agriculture is major predictor for choosing agriculture as a future career. Low academic performance in agriculture was a hindrance to the choice of agriculture as a future career. Students that chose agriculture are few in number than those students who did not choose agriculture programmes as future career partially due to low performance in agriculture [45].

Interpersonal factors

Individual factors and viewpoints affect the decision of a student to select an important one [43]. Current students value certain individuals and their opinions in choosing subjects and related programmes. They consider the opinion of parents, teachers and peers in decision-making process with parents first. Mob psychology is common feature of the students in schools. Due to age and reasoning factor, they can easily influence one another on course choice. Because of their friends and peers' view that it is an out of date, boring, time consuming and has no future growth, many of them do not like agricultural courses because it's not the same for themselves. This shows that peers influence each other in the choice of agriculture.

[2] posted that students influence each in the choice of agriculture courses when some respondents in his study agreed that they selected agriculture because his friends study the same subject while another student claimed to have selected the subject because friends assisted him to select. In selecting optional courses by students, parents play an important role. Most parents want their children to follow their own path, but they have never been able to influence their children on it. Moreover, since parents know what is outside, they encourage their children to take courses to earn decent job.

According to [46], parents discourage their children from selecting agriculture because they feel that they will not have a better future and will not succeed in their careers.

According to [2], some parents encourage their siblings to select agriculture so that they can support their established agricultural enterprise. Or are working with the ministry of agriculture'

Important persons

According to [47] students, parental support or discouragement affects agricultural choice among other matters. They consider their parents as role models. .Important people in the life of a student influence them by their suggestions, comments and encouragement to choose agriculture. According to [44] important persons are student's role models, and those persons included parents, friends, high school personnel and college instructors. Parents or guardians have been reported to have the most influence according to several studies on choice of agriculture [48, 49, 50, 51, 52, 53] that all found parents and guardians to be the most influential people in a student's, followed by friends. [54] indicated that factors like the setting, opportunity and personality can also affect the choice of career among high school students.

Personal characteristics

Personal characteristics are either demographic information psychographic information about the student [44] Demographic information include age, socio-economic status, gender, ethnicity, high school performance, religion, and parents' educational levels. Psychographic information include the personality traits, student's interest and ability in the subject, and aspirations, work values, previous experiences [43, 44, 55, 56] In their analysis of factors affecting the choices of students as a principal accounting, social standards have a great impact on the choice of the main students.

According **to** [49] differences in gender pertaining to personal influences, reveals that males were more likely to choose a career related to agriculture than females Whites were more likely to choose a career in agriculture based on personal experiences than other races [49]**.** Students from a rural background were more likely to choose a career based on school-related influencers than those from urban [49, 48] posted that students who majored in on farm agriculture degree program have grown up on a farm than those who chose non-production agriculture programs like agricultural education. Personal interests must fit the job prospects of the student following graduation [57].Students who major in agriculture have an interest in science and enjoy taking science courses in high school [58, 59] that a student's choice of agriculture and satisfaction with it in part, are due to the intrinsic traits of the student and less about the academic aspects of the subject itself [59]**.**

All items describing general attitudes of students towards agriculture are included here or rather their feelings. This includes both positive and negative feelings. According to [60] attitudes influence the willingness of a student to study agriculture, Mostly students feel that studying agriculture or studying in an agricultural college will destroy their life. This will discourage choice of agriculture.

Students are made to choose a positive attitude towards a course by the teachers. According to [2], few students, especially girls, opt for agriculture because of their time-consuming and underpaying attitude, but the boys find the courses a source of jobs. A person's approach to a course promotes or discourages a student from choosing it as a choice.

According to [61], the study shows that many students are not interested as a career in agriculture because they have an interest in white or blue collar jobs because of what makes a poor enrolment in the farm lesson. Furthermore, internal factors have been established that affect the choices between courses in agriculture, for example students' social economic features and how a student views the subject or attitudes to it. Other students do not find agriculture interest, time consumption and thus negative behaviour.

Previous agricultural activities experiences

Experience or exposure to a activities in the field of agriculture has been cited to be a motivating factor when it comes to choosing agriculture programs. This is one of the reasons why practical agriculture and participation in young farmers' clubs is highly encouraged at high school level of education. [48, 58]**.**

Students see agriculture as a daunting and poor career [2] and very few mentors and role models succeed as farmers. Most of them abandon agriculture career and take up other professions. At school where learning of agriculture take place, it is used as a punishment while at home parents tell them to work hard for white collar jobs otherwise they will be tilling land for people after they fail. These lowers determination to study agriculture as posted by [2].

Previous experiences with University

Earlier researcher pointed out that exposure to agricultural college becomes a motivating factors for selecting a programme in agriculture as stated by [42] and it familiarizes the learner with the environment so that knowing the expectation in such a college, they select the college and a programme. [52] in his study comparing motivating factors between matriculant and non-enrolled students affirmed that students' participation in events on campus was the most useful source of information before enrolling. [51] asserted that university's Internet sources were most influential.

Environmental factors

Environmental factors, may be family, socioeconomic status and peer group influence students' choice of career subject as posted by [54] which could be environmental factors could be institutional factors or quality of instruction as posted by [44]. Career factors include perceptions, [43] of employment opportunity. The academic reputation of the university and department, is very important to the students as the ability to obtain a good job, admission to top graduate programs, and academic reputation influence them to choose a college [62]. The cost of living and tuition is a concern to students and parents and therefore a factor to consider while selecting a course in agriculture. Considering the environment, [58] affirmed that Campus environment friendliness of the students are influencers for students since location and campus facilities are important in their selection of a college. [63] affordability of tuition, followed by scholarship influences students to to choose a program due to the fact that family is usually who provided financial supports to them. Factors dealing with employment during and after obtaining a degree, potential income, career opportunities, and attachment are all environmental and influences

that fit within the career factor as pointed out by [44]. [59] found that salary and remunerations were factors in choice of a program.

[51] posted that agriculture majors are highly influenced by income gained after college and that high payment is a significant factor in their decision to attend college. According to [62] is level of pay was slightly important to men than women hence potential income is influential in the choice of programs in agriculture.

Career opportunities.

Job placement after graduation is an influential factor in choosing their institution and a program on future job market opportunities [48]. [58] also posted that career opportunities after graduation influence selection of agriculture. Internship opportunities is very important to young people [64] because it provides training for a specific career.

Agriculture is associated with rural and dull life which is not civilized. Additionally the image of agricultural professionals does not portray enjoying life like their colleagues in white collar jobs [10, 2] posted that agricultural activities can be a platform for career development. The study asserts that agricultural activities are a strategy to reduce unemployment even though [30] had earlier affirmed that most countries in Africa have low agricultural production and job opportunities even after acquisition of knowledge and skills in the course. Hence agriculture is a neglected field. The choice of agriculture by students greatly influenced by career aspirations. According to [46], Students, in particular girls, misunderstand agricultural professions because they think that they are filthy and underpaying.

IV. Limitations

Different researchers have carried out studies on the topic factors for choice of agriculture major as well as other majors globally and interestingly found that parents and peers representing interpersonal characteristics or factors have the greatest influence on choice of agriculture programs. The choice of students is influenced by [65] family members and peers; [66] researched and found that parents have a large impact in farming choices; [2] showed that students of universities and non-universities in a survey have strongly indicated that parents are the most powerful or significant individual to decide on and study courses in college and university. [67, 68, 54, 69, 46, 48, 49, 50, 51, 52, 53, 70]. However each of the studies did not highlight all possible factors influencing choice of Agriculture courses among students. There is need to explore the subject in broad. In Kenya the same study by recent researchers have not explored to incorporate all the factors. Some researchers look at academic factors, others look at social factors, others look at demographic factors a lone hence there is need to include all factors for comparison purposes and recommendation.

V. Conclusion

The government should strongly support agriculture education by funding agriculture education research, hence improve students perception, attitude and hence influence their willingness to study agriculture

The orientation of students towards agriculture education and the profession must be changed by encouraging everyone to learn farming and to participate in the new Competence Based Curriculum (CBC) for a secondary school certificate in Kenya.

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